A University of Sussex DPhil thesis

Available online via Sussex Research Online:

http://sro.sussex.ac.uk/

This thesis is protected by copyright which belongs to the author.

This thesis cannot be reproduced or quoted extensively from without first obtaining permission in writing from the Author

The content must not be changed in any way or sold commercially in any format or medium without the formal permission of the Author

When referring to this work, full bibliographic details including the author, title, awarding institution and date of the thesis must be given

Please visit Sussex Research Online for more information and further details

Essays on Migration between Senegal and Europe:
Migration Attempts, Investment at Origin and Returnees' Occupational Status

Cora Leonie Mezger Kveder

Thesis
Submitted for the Degree of
Doctor of Philosophy

Department of Economics

July 2012

University of Sussex

Statement

I hereby declare that this thesis has not been and will not be submitted in whole or in part to another University for the award of any other degree or as part of required coursework.

I hereby declare that this thesis is product of my own research. The collection of policy data and construction of indicators presented in Chapter 2 is joint work with Amparo González Ferrer (Spanish National Research Council) to the extent described in the text.

Signature

UNIVERSITY OF SUSSEX

CORA LEONIE MEZGER KVEDER

PhD ECONOMICS

ESSAYS ON MIGRATION BETWEEN SENEGAL AND EUROPE:

MIGRATION ATTEMPTS, INVESTMENT AT ORIGIN AND RETURNEES' OCCUPATIONAL STATUS

SUMMARY

The aim of the thesis is to contribute to the better understanding of determinants and consequences of international migration from Senegal, a West-African country with a long-standing tradition of migration to both African and European countries. Using a longitudinal (retrospective) and multi-sited micro dataset on "Migration between Africa and Europe" (MAFE-SN), three selected topics are explored empirically. Firstly, the research examines the role of individual and contextual factors for the migration decision-making process, analysing jointly selection into migration attempts and departure. Results indicate that selection processes at the decision and realisation stages do not necessarily coincide, for instance with regard to the role of sex, education, but also immigration policies. Secondly, the impact of international migration experience on investments in real estate or business assets in the country of origin is examined. Direct migration experience is found to stimulate investment, though the effect varies according to the type of asset, the location and the destination region. International migration also appears as a way to overcome certain social disadvantages in terms of access to property. However, non-migrants with access to migrant networks are not more likely to invest. Thirdly, the thesis investigates the effect of return migrant status on occupational attainment in Dakar. The main result obtained, a positive effect on self-employment, conforms to previous studies' findings on other countries. Yet, when using variables on the hierarchical socio-economic status or prestige position of the occupation, the positive effect of return migration is confined to wage-employed activities. In addition to the empirical analyses, the thesis contributes to the conceptual and methodological discussion on measurement of immigration policies. A database with detailed data on immigration policies in France, Italy and Spain over the period from 1960 to 2008 is constructed and qualitative information is converted into quantitative scores.

(295 words)

Acknowledgements

Coming close to concluding this chapter of my life, I would like to express my gratitude to all those who have accompanied me throughout the PhD years, providing advice, support, and encouragement.

I would like to thank my supervisors at the University of Sussex: Barry Reilly, who convinced me to continue my studies in Economics and at Sussex and who inspired me with discussions about data, econometrics (and football) when I came for visits to the university; Alan Winters, who always found time in his busy schedule to give detailed feedback on my work and encouragement for the next steps; and Andy McKay, who did much more than the job of a "substitute" supervisor during the last year and offered guidance during the last stages. I often shared my doubts about the challenges of interdisciplinary work with you, and thanks to your faith in this project I carried on.

I am deeply grateful to Cris Beauchemin, my supervisor and mentor at INED, who made this PhD possible by giving me the opportunity to work on the MAFE project. During more than four years, I was lucky to have your guidance, support, trust, and friendship. I have learned so much in this time, not just about developing research questions and writing articles, but also about conducting surveys, the functioning of large research projects, and about the qualities of a perfect mentor: demanding but never asking for too much, present and supportive, but leaving enough time and freedom to try things out on my own, and generating every day an extremely positive work atmosphere. Merci infiniment!

This atmosphere made the entire MAFE team feel like a family rather than a group of colleagues. I thank all of you for endless discussions and productive work, but also for sharing travelling experiences, evenings out, laughs and sorrows, and providing a home wherever I went! Thank you, Amparo, Lama, Marie-Laurence, Sorana, Catherine, and all MAFE colleagues in Italy, Spain, France, Belgium, the Netherlands, and England. I am looking forward to the next adventures and collaborations! Raquel, you helped me

Contents

List of Tables

vi

List of Figures

List of Acronyms

ADB African Development Bank

AGEVEN "Age+Event" biographic questionnaire grid

ANSD Agence Nationale de la Statistique et de la Démographie

BAOS Bureau d'Accueil, d'Orientation et de Suivi

BHS Banque de l'Habitat du Sénégal

CDI Commitment to Development Index

CESEDA Code de l'entrée et du séjour des étrangers et du droit d'asile

CIEMI Centre d'information et d'études sur les migrations internationales

CIMADE Comité Inter-Mouvements Auprès des Evacués

DEmIS Enquête sur les Déterminants de l'Emigration Internationale

DIOC Database on immigrants in OECD countries

DPS Direction de la prévision et de la statistique

ECOWAS Economic Community of West African States

EDMC Enquête sur les Dépenses des Ménages de la Capitale

EMIUB Enquête Migration, Insertion Urbaine et Environnement au Burkina Faso

EMUS Enquête sur les Migrations et l'Urbanisation au Sénégal

EPPS Enquête de Perception de la Pauvreté au Sénégal

ESAM II Deuxième Enquête Sénégalaise auprès des Ménages

ESPS Enquête de Suivi de la Pauvreté au Sénégal

FCFA Franc de la Communauté Financière d'Afrique

FF Franc français

fRDB Fondazione Rodolfo De Benedetti

FRONTEX European Agency for the Management of Operational Cooperation at the External Borders of the Member States of the European Union

GDP Gross Domestic Product

gisti Groupe d'information et de soutien des immigrés

IMPALA International Migration Policy and Law Analysis

INED Institut National d'Etudes Démographiques

IOM International Organization for Migration

IRCA Immigration Reform and Control Act

ISCO International Standard Classification of Occupations

ISEI International Socio-Economic Index of occupational status

LAMP Latin American Migration Project

LSMS Living Standards Measurement Survey

MAFE Migration between Africa and Europe project

MIDDAS Migration and Development in Senegal project

MIPEX Migration Integration Policy Index

MMP Mexican Migration Project

NELM New Economics of Labour Migration

NGO Non-governmental organization

NINEA Numéro d'identification national des entreprises et des associations

OECD Organisation for Economic Co-operation and Development

ONI Office National d'Immigration

ORSTOM Office de la Recherche Scientifique et Technique d'Outre-Mer

PPP Purchasing Power Parity

PRSP Poverty Reduction Strategy Paper

PSM Propensity Score Matching

REICAZ Real e Ilustre Colegio de Abogados de Zaragoza

REMUAO Réseau migration et urbanisation en Afrique de l'Ouest

RGPH III Troisième Recensement Général de la Population et de l'Habitat

SAP Structural Adjustment Programme

SICAP Société Immobilière du Cap-Vert

SIOPS Standard International Occupational Prestige Scale

SN HLM Office des Habitats à Loyer Modéré

UNDP United Nations Development Programme

UNGMD United Nations Global Migration Database

WAEMU West African Economic and Monetary Union

WDI World Development Indicators

WZB Wissenschaftszentrum Berlin für Sozialforschung

Chapter 1

Motivation and background of the thesis

"Il y a trop d'étrangers sur notre territoire" ("There are too many foreigners in our country")

Nicolas Sarkozy (then President of the France), 6 March 2012

"No puede entrar todo el mundo que quiera sin control porque no cabemos" ("Not everyone who wants to come can come without any controls, because there is no room for any more")

Mariano Rajoy (then leader of the opposition, now Prime Minister of Spain), 28 February 2008

"Sul fronte dell'immigrazione clandestina questo Governo ha ottenuto grazie alla politica dei respingimenti e degli accordi internazionali, un grande risultato. Abbiamo ridotto dell'88 per cento gli sbarchi di clandestine che sono passati dai 29 mila del 2008-2009 ai 3.500 dell'ultimo anno." ("This government has obtained great results on the illegal immigration front, thanks to the policy of deportation and to the international agreements. We have reduced the disembarkations of illegals by 88 percent. They have gone down from 29 thousand in 2008-2009 to 3500 last year.")

Silvio Berlusconi (then Prime Minister of Italy), 29 September 2010

1.1   Introduction

Migration has been a central theme in European media and the political discourse since the oil and economic crisis of the mid-1970s and is nowadays linked to rather negative connotations, as the above quotes by European political leaders in three major host countries for African migrants - France, Spain and Italy - illustrate. The emphasis on controlled and selective immigration, in particular with regard to migration from Africa, has also been reflected in numerous bilateral agreements between European destination countries and African origin countries (Adepoju et al., 2010). Empirical research on African migration, in terms of patterns, determinants of moving abroad or returning home, destination choice

and the consequences of migration for the origin country and the destination country, has, however, been slow in reacting to the political and public debate and has only gained momentum during the last decade.

The research-base for policies on immigration into Europe is often weak, with the different strands of international migration theory largely tested in the context of migration from Mexico to the United States. Are conclusions with regard to patterns, causes and consequences transferable to different migration processes? Sub-Saharan African international migration is characterised by adaptive "multi-destination multi-origin" patterns both within the African continent and the "Global North", as compared to the dyadic migration "system" between Mexico and the US, which has proven to be very stable in time.

One key reason for the gap between research needs and research coverage is the lack and quality of data on migration from African countries, as highlighted by, amongst others, Lucas (2006). The aim of this thesis is to contribute to the still limited empirical literature on Sub-Saharan African migration by exploiting a new and innovative data source, the Migration between Africa and Europe (MAFE) survey.[1] The MAFE survey allows for some of the features of African migration processes to be accounted for: the importance of considering both origin and destination perspectives; complex patterns of migration that go beyond unidirectional moves from one origin to one destination; the role of heterogeneity in terms of individual behaviour as well as contextual settings; and the longitudinal dimension, accounting for changes in international migration from the independence of African states to today.

The research focuses on international migration from Senegal, a West-African country that has been characterised by a long-standing tradition of mostly economically-motivated international migration, to both African and European countries. Among the latter destinations, France, Spain and Italy have been particularly prominent. In three empirical studies, the thesis investigates elements of the migration cycle, taking account of both origin and destination country perspectives. After an account of the data, the thesis starts with an analysis of the factors determining the decision to leave Senegal and the selection-

effects present in the observed migration (Chapter 3); it continues with the analysis of decisions to invest in the origin country while abroad, but also after return (Chapter 4); and it concludes with an examination of the labour market experience of individuals after their return to Senegal (Chapter 5).

The following aspects stand out as defining features of the thesis. Firstly, all three chapters investigate questions which are prominent in the policy discourse and have been translated into policy instruments of European destination countries as well as in the country of origin, Senegal. Who migrates and who should migrate out of a pool of migrant candidates? This question is at the core of immigration policies aiming to steer the volume and composition of migrant flows. In how far do migrants engage in real estate or business investments in their origin country? The last decade has seen the proliferation of so called "co-development policies", which, amongst other things, aim to enhance the developmental role of the migrant. Finally, what becomes of those who return to their country of origin (voluntarily or involuntarily), in particular in terms of labour market status? Policy schemes encouraging return have been part of destination countries' policy instruments since the late 1970s, and have experienced a revival in more recent years with the signing of readmission agreements. Also origin countries have emphasised the importance of return migration to exploit skills and know-how of migrants and combat brain drain. However, quantitative evaluation of the role of policy instruments in influencing these migration processes is a very challenging task. This thesis makes an attempt to provide some insights regarding the role of immigration policy for migration-decision making, the question tackled in Chapter 3.[2]

A second characteristic of the thesis, in particular of Chapter 3 on the migration decision and Chapter 4 on investments, is the conceptual and empirical integration of the time dimension. In both chapters, longitudinal analysis methods are used to exploit the nature of the innovative "biographic" survey data at hand. The data provide detailed information about a wide range of events and trajectories experienced by individuals, such as the places they lived in, the activities they performed, their union formation and childbearing behaviour, and the timing and characteristics of investments in land, housing and business assets. This individual-level analysis is complemented in Chapter 3 by the exploration of longitudinal measures of country-specific information, relating in particular to indicators of the restrictiveness of policies regulating immigration to France, Spain and Italy.

---

[2]While the inclusion of policy measures is also desirable in the context of the second and third empirical chapters on asset acquisition and return migrants' labour market status, this goes beyond the scope of this thesis and opens up possibilities for future research.

The collection of immigration policy data and the construction of time series indicators represents another major part of this thesis research, as explained further below.

A third feature of the thesis present in all empirical chapters is the comparison of individuals with and without migration experience. Both determinants and consequences of migration can only be understood when strictly comparable information on non-migrants is available. Finally, conditioned by the data that centre on the individual respondent, all three chapters focus on processes of individual decision-making, as opposed to decision-making at the household or group-level.

The work contained in this PhD research contributes new empirical evidence on migration from Sub-Saharan Africa, a region on which very little quantitative analysis exists. The use of timed data from the biographic surveys with identical questionnaires applied to migrant respondents, returnees and non-migrants allows for contributions with regard to the research questions posed as well as econometric methodologies employed. The following section outlines the specific research questions of this thesis and emphasises contributions to the relevant literature. Section 1.3 provides a description of the context of Senegalese international migration. It gives a brief introduction to the country itself in terms of geographical and socio-demographic characteristics, followed by a summary of Senegal's migration history since the beginning of the 20th century and its socio-economic setting. A "profile" of recent Senegalese migration based on OECD data and Senegalese census data (RGPH III) from 2002 completes the background information on the context in which the empirical analyses are placed.

1.2   Specific research questions and thesis outline

This research aims to contribute to the literature on international migration from Sub-Saharan Africa, focusing on the case of Senegal, by providing new empirical evidence on three selected topics.

In the first empirical chapter (Chapter 3), the migration decision-making process is analysed from the perspective of the origin country. The research question guiding this analysis is the following:

Which individual, family or contextual factors explain why Senegalese decide to attempt migration to Europe, and are the same factors determining whether the migration actually happens?

Restrictive immigration policies are regarded by European destination countries as a way to control migration, but may at the same time build up "pools of migrant candidates" in the origin countries. In such a context, one needs not only a better understanding of the motives and characteristics of migrants at destination, but also of those migrant candidates remaining at origin, and of the factors determining whether they do or do not carry out the move. Does immigration policy play a role? And if yes, does it affect the migration decision or the actual move to Europe? Or are other factors dominating at the two stages (decision-making and actual move), in particular the presence of a migrant network?

The aim of the chapter is to investigate the two processes - migration decision and actual migration - jointly. We analyse the case of Senegalese migration "candidates" and their actual move to the three main European destination countries, France, Italy and Spain, and we account for the changes in migrant characteristics and migration context over time by using methods of longitudinal data analysis. To operationalise the migration decision-making before departure, we use information about migration "attempts", which reflect the stated intention but require in addition that the individual has already taken some concrete steps towards migrating. More specifically, the research objective is to examine if and how factors determining migration, in particular immigration policies as well as the existence and location of migrant networks, affect the attempt to migrate to France, Italy and Spain, the successful realisation of the attempt, or both processes.

The existing empirical literature on determinants of migration is to a large extent restricted to either realised migration or stated intentions before moving. The focus on the observed behaviour is the preferred approach chosen in the economic literature on migration. In this case, individuals who "attempted" migration, but did not move, are conflated with those who do not attempt migration in a "non-migrant" group, although characteristics may be different. At the same time, there is a considerable literature, mainly in the sociological and demographic fields, analysing stated intentions to migrate as a proxy of actual migration. The main reference in this literature is the "theory of planned behaviour" (Ajzen, 1985), which considers intentions to be the main determinant of behaviour. Once again, two sub-populations are thus grouped together; those who decide to migrate but stay, and those who actually leave their home country. These conflations of sub-populations with diverse behaviour regarding migration decision-making imply a large heterogeneity that may mask important selection processes.

Studies that investigate gaps between the migration decision and the outcome examine

mostly internal migration patterns and conclude that there is a significant group showing "inconsistent" behaviour, not acting upon the stated intention (e.g. Sly and Wrigley, 1985 (Kenya); Fuller et al., 1985 (Thailand); Gardner et al., 1985 (Philippines); De Jong, 2000 (Thailand)). Analysing intentions/attempts as well as actual migration behaviour in the context of long-distance international migration is rather challenging and empirical evidence remains scarce. An exception is the study by van Dalen et al. (2005), who use data from a survey capturing migration intentions in the Netherlands, as well as a tracer survey two years later to ascertain in how far migration intentions were realised. The findings suggest that intentions are an important but far from perfect predictor of migration, and that the same factors determine intentions and actual migration.

However, to the author's knowledge, no comparable study exists for the context of a least-developed country. In addition, given that studies have focused on internal migration and migration of Europeans, the role of immigration policies targeting non-EU foreign born has not been examined. The findings of this analysis provide new insights into selection processes in international migration, by disentangling the "attempt" stage from actual migration and introducing the time dimension in the modelling of migration. In addition to this theoretical, empirical and methodological contribution, the study is also of relevance in the debate on European immigration policies, as it uses new and original data on policies from the 1970s to the 2000s.

The second empirical chapter (Chapter 4) is anchored in the literature on consequences of international migration on the country of origin and the analysis is guided by the following research question:

To what extent do international migration experience and access to migrant networks affect personal acquisitions of real estate assets (land and housing) and investment in business activities in the origin country?

Potential positive effects of migration on the origin country in the form of remittances, knowledge transfers and investments by migrants and returnees have been highlighted by both policy-makers and researchers. Yet, periods of developmental optimism have been alternating with rather pessimistic views regarding the gains from migration, in particular with regard to migrants' capacity to invest and the choice of assets targeted by migrants or their families in the origin country (de Haas, 2010). Taking an optimistic stance, international migration can be regarded as a strategy to overcome constraints in terms of access to financial, human, and to some extent also social capital, especially in countries where credit markets are imperfect and access to formal or informal education limited.

Depending on the migration context and objective, however, stays abroad may not allow for accumulation of savings, and human capital acquisition may be constrained if available jobs are not matched to the migrant's education, or if skills are not transferable to the home country.

We formulate three specific research objectives related to Senegalese personal investments in real estate and business activities. The former are highlighted by qualitative studies as important investment target for Senegalese migrants, while the latter are at the core of so called "co-development" policies adopted by European destination countries over the past decade. Firstly, we study whether personal experiences of international migration have a positive direct effect on investment and explore the role of timing (investments as current migrants, return migrants) and the destination region on the choice of asset. Secondly, we analyse whether international migration helps certain groups of individuals overcome social disadvantages in the access to asset ownership. Migration experience may, for instance, close the gender gap in access to assets, or facilitate individual investments by individuals with low levels of education. Thirdly, we examine whether international migration has an indirect effect on investment: it is possible that people who are not migrants themselves are more likely to invest because they have migrants and returnees in their social network. Varying migrant network compositions are explored to establish what types of links are determinant for the potential indirect effect on investment.

We thus aim to add to the relevant literature on the direct or indirect involvement of migrants in investments in assets in their home country, studying the case of an African country, a context relatively little explored to date. Empirical studies using longitudinal data to compare the individual investment behaviour of non-migrants, current migrants and return migrants are relatively scarce. The role of migration experience for business investments, for instance, has been predominantly studied in the context of return migration. One exception is a study based on the Mexican Migration Project data (Massey and Parrado, 1998), which has exploited timed data in the analysis of investments of non-migrants as well as current migrants. However, no comparable analysis has been carried out in the African context. The acquisition of real estate as an alternative target is also little explored in quantitative studies, in particular from the individual migrant or return migrant perspective.

Positive effects of migration may also be linked to the role of return migrants in the labour markets. In Chapter 5, the third empirical chapter, we shift the focus back to the origin country and investigate the following research question:

In how far does past migration experience affect the occupational status of Senegalese in the labour market context of the Dakar region?

After an initial spell in migration research during which migration was treated predominantly as a unidirectional move, the understanding of return moves back to the origin country and the consequences of return migration at the individual and country-levels have been established as central elements since the 1980s, in particular by the New Economics of Labour Migration literature (e.g., Stark and Bloom, 1985; Stark, 1991). This study joins this strand of research, with the objective to provide evidence on the professional situation of Senegalese return migrants, and to contrast their labour market characteristics with individuals who never migrated. In addition to the self-employment category, we distinguish between wage-employment and being out of the labour force or without income-generating activity to capture possible alternative strategies. Furthermore, we use socio-economic status and prestige variables to provide some, albeit limited, insights into the role of job quality in addition to occupational status attainment.

Similar questions have been tackled for the case of various country contexts, among others in Eastern and South-East Europe (e.g. Piracha and Vadean, 2010; Borodak and Piracha, 2011) and North Africa (e.g. Wahba and Zenou, 2009; Mesnard, 2004). Most authors have focused on the question whether return migrants benefit from their migration experience in accessing more easily self-employed or entrepreneurial activities than non-migrants. In general, findings suggest an over-representation of return migrants among the self-employed. The situation of return migrants compared to non-migrants in the labour market remains less explored in the Sub-Saharan African context. The chapter applies several empirical methods (regression analysis, decomposition analysis and propensity score matching) to test the robustness of the results regarding occupational status outcomes.

In addition to these three empirical studies, the thesis contributes to the increasingly active discussion on measurement of immigration policies (see, for instance, Czaika and de Haas, 2011). Contextual information, in particular on immigration policies, is most often used to illustrate empirical results from micro-level studies. Difficulties in operationalising measures of immigration policies have so far constrained the number of applications that can go further by incorporating quantitative policy indicators in the empirical analysis, in particular when analysing immigration and not integration in the host country. For the latter field, an important effort has been made by the experts and researchers involved in the development of MIPEX (Migrant Integration Policy Index), coordinated by the Migration Policy Group. The work discussed in Chapter 2 represents an attempt at col-

lecting immigration policy data and constructing policy variables for France, Spain and Italy and covering the period from the 1960s to 2008. Theoretical and methodological questions tackled concern the type of data that researchers can use to measure the restrictiveness of immigration policies (legal texts or policy outcomes); the definition of criteria to guide the choice of policy variables in longitudinal comparative research; and issues to consider when converting qualitative policy information into quantitative data. In addition to reviewing past efforts, we describe and discuss our approach for the specific case of immigration policies affecting Senegalese migration to France, Italy, and Spain (ImPol-MAFE(SN) database). The focus is placed on admission or entry policies through four legal channels, namely short-term stays, family reunification, work and study, and in addition selected indicators that reflect conditions for illegal migrants (through illegal entry and/or stay). We explain our rationale in establishing a list of policy constructs, as well as a set of indicators within each dimension. Furthermore, we elaborate on the data collection efforts, the process of attributing a scale to each indicator, and the coding. Each step in the construction of the indicators is critically appraised and limitations and possible ways for improvement are highlighted. The indicators used in the empirical analysis on migration attempts in Chapter 3 constitute only a subset of the collected data and both the data collection and the coding remain a work in progress at the time of writing.

The following section summarizes basic information about Senegal in terms of the country's geographic, demographic and socio-economic characteristics as well as its international migration history and current migration patterns. This sets out the contextual framework for the selected empirical studies on migration attempts, investment behaviour and return migrants' labour market integration.

1.3 Background

1.3.1 Senegal - Basic facts

Geography

Senegal is a West African state on the Atlantic coast, bordering Mauritania in the North, Mali in the East, Guinea and Guinea-Bissau in the South, and enclosing in its territory the small state of The Gambia. It ranges from the dry Sahara desert in the North to a relatively humid area in the South. Subject to variable rainfall as all countries in the

Sahel region, Senegal has experienced a protracted period of drought, starting in the late 1960s (Fall et al., 2006). At the same time, strong rains over short periods of time have, over the past 10 years, led to floods, which are particularly problematic in the urban and suburban regions of its capital city Dakar (ANSD, 2010).
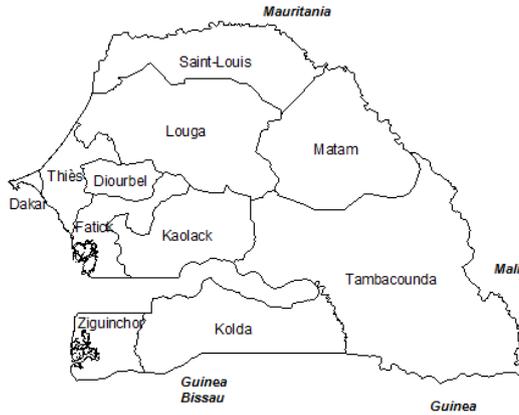
Figure 1.1: *Senegalese administrative regions*
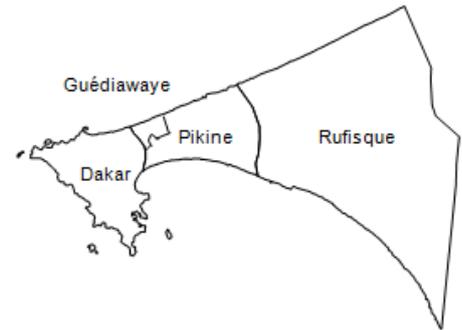
Figure 1.2: *Region of Dakar with departments*

Source: author's elaboration

The map of Senegal (Figure 1.1)[3] depicts the country's administrative regions. However, in migration research, the following broader regional entities are more commonly referred to. The capital *Dakar* is located on the Cape Verde peninsula in the Atlantic Ocean. The region's territory is small compared to the rest of the country, but the four administrative departments, Dakar, Pikine, Rufisque and Guédiawaye (Figure 1.2), comprise approximately one-fifth of the country's population (RGPH III). The *Senegal River Valley* encompasses the trans-border region along the river Senegal, which forms the border between Senegal and Mauritania, and continues into Mali. Its western-most feeder river, the Faleme, constitutes for most of its length the border between Senegal and Mali. When speaking of the upper part of the valley one refers usually to the area between Bakel and Bafulabé in Mali, while the middle valley is located between Matam and Bakel. The river delta stretches out to St. Louis in the north-west of the country. The *Peanut Basin* takes its name from the cultivation of peanuts, Senegal's main agricultural cash crop. The region of Kaolack represents the heart of the Peanut Basin, but it extends into Fatick, Thiès, Diourbel and Louga. The *Casamance* region is located south of The Gambia. It is named after the river Casamance, and extends over the administrative regions of Ziguinchor and Kolda. Although Senegal's history since its independence from its former colonial power

---

[3]The shapefiles for all maps included in this chapter have been obtained from the GADM database of Global Administrative Areas (http://www.gadm.org/). Administrative boundaries have been modified several times over the past decade. Those provided by GADM correspond to the boundaries before the 2002 census round and reflect those used in the analysis.

France in 1960 has been peaceful compared to other countries in the region, conflicts have repeatedly erupted in the Casamance region (Evans, 2000). Since the beginning of the 1980s, the Mouvement des Forces Démocratiques de la Casamance has been fighting for an independent Casamance, and violent conflict has intensified throughout the 1990s. Migratory movements in the form of displacement thus do exist in the Senegalese context, though most displaced inhabitants from the more affected rural areas have moved to towns in Senegal (e.g., Ziguinchor) or to neighbouring countries rather than to Europe. The climate of insecurity has had negative effects on the region's economic situation. Moreover, Senegal's relations with its southern neighbour Guinea-Bissau, which is suspected of supporting the separatist movement, have suffered from the conflict (ibid.).

Socio-demographic characteristics

The Senegalese population is growing at a continuously high rate of over 2.6%, increasing from approximately three million in 1960 to more than 12 million in 2010 (Figure 1.3). At the same time, Senegal is maintaining a pyramid-shaped age structure, with one out of two inhabitants being younger than 20 years old (ANSD, 2010). This population growth is accompanied by a strong urbanisation trend. In 2010, almost every second Senegalese lived in an urban area, and there is particular pressure on the region of Dakar. It has been the target for more than 40% of life-time internal migrants according to both the 1988 and the 2002 censuses (ANSD, 2008). Surrounded on most sides by water, the capital region can only expand towards the North-Eastern hinterland, as well as vertically by adding floors to existing buildings (Lessault et al., 2011). Consequently, population density in the Dakar is high and on the increase (from 2.707/km2 in 1988 to 4.646/km2 in 2009; ANSD, 2010).

While classified as a Least Developed Country by the United Nations, the past 50 years have, however, also shown improvements in terms of health and access to education. Life expectancy at birth was only 39 years in 1960, and had increased to 59 years by 2009 (World Bank, 2011). Literacy rates also improved considerably and are now at 50% at the national level, though women still lag behind (39%; World Bank, 2011). The region of Dakar remains advantaged in terms of school infrastructure, which is reflected in having higher literacy and primary school enrolment rates than most other regions (except for Ziguinchor) (ANSD, 2010). The Dakar region does also better in terms of poverty when using asset-based or food-based indicators constructed using the 2002 census data. Figure 1.4 displays the proportion of households classified in the lowest two quintiles ac-
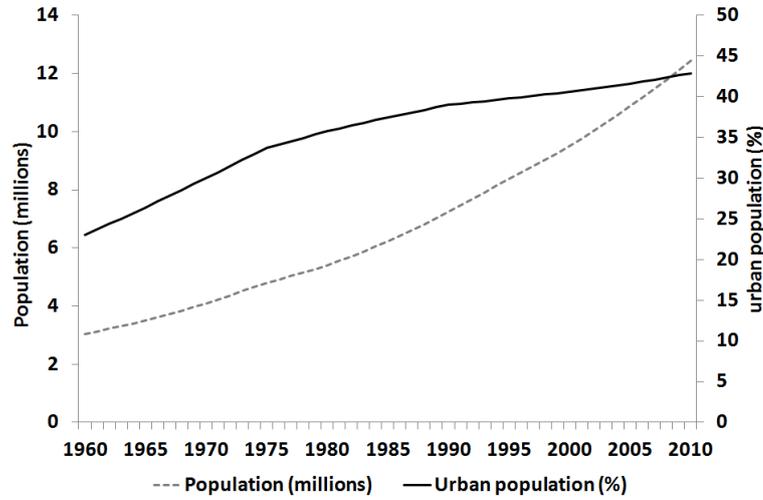
Figure 1.3: *Senegalese total population and share of urban population, 1960-2010*

Source: World Development Indicators (WDI), The World Bank, 2011.

cording to an asset/housing characteristic index measure (see Mezger, 2008 and Lessault and Mezger, 2010 for a detailed description of the asset index). Given that housing characteristics differ greatly between urban and rural areas and are hence difficult to compare across Senegal, we use as a second indicator the percentage of households declaring that the household has "skipped a meal during the past 12 months due to lack of resources" (Figure 1.5). In both cases, the households in the departments of Dakar appear to be less deprived than those in the East of the country.
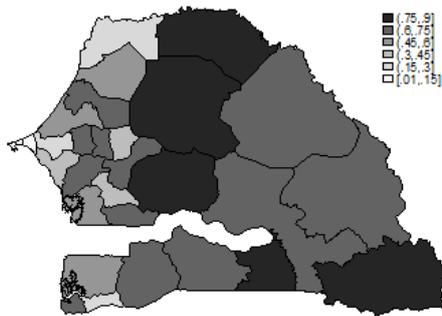
Figure 1.4: *Asset-poor in 2002 (% in 1ˢᵗ/2ⁿᵈ quintile)*
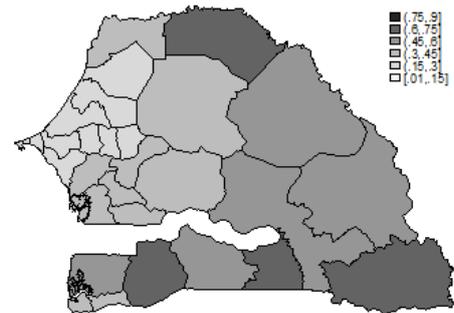
Figure 1.5: *Food-poor in 2002 (%)*

Source: author's elaboration based on RGPH III data

Senegal is a predominantly Muslim country (approx. 95%, author's calculation, RGPH III). Moreover, a multitude of ethnicities is present in Senegal, but according to the Second Senegalese Household Survey (author's calculations, ESAM II in 2001), the Wolof/Lébou (45%), the Pular (25%) and the Serer (14%) are the three predominant ethnic groups. The

Wolof population, strongly represented among Senegalese traders, has traditionally been living in the West and centre of the country, north of the border with The Gambia. The Lébou, often fishermen, are the autochthonous population from the Cape Verde peninsula and play as such an important role as landowners in the region of Dakar, though their influence has weakened over the past decades (Tall, 2009). The Pular originate from the North of the country and the Senegalese River valley, and have traditionally been involved in cattle farming, agriculture and trading (Traore, 1994). The Serer can mainly be found along the coast south of Dakar down to the border with The Gambia, and are the ethnic group with the strongest presence of Christianity. Other ethnicities include the Diola, who live predominantly in the Casamance region. Despite being a small minority in Senegal inhabiting mainly the upper Senegal River Valley, the Soninké are known for their role in initiating Senegalese international migration (Traore, 1994). They were also the first ethnicity to convert to Islam, and more precisely Sufism, which is nowadays the predominant dimension of Islam in Senegal (Mbacké and Hunwick, 2005). Most Senegalese adhere to one of the four main Sufi brotherhoods, the Tidiane, Mouride, Layne and Khadre. The Tidiane form the largest brotherhood in Senegal, with strongholds in Tivaouane and Kaolack, followed by the Mourides, whose holy city is Touba, located to the east of Dakar. The transnational networks developed by Mourides, who are mainly of Wolof ethnicity, appear to have come to play an important role in international migration, particularly for migration to Italy and the United States (Babou, 2002; Riccio, 2001; Ebin, 1995). Authors have stressed the existence of a Mouride 'culture' of migration which is based both on vertical ties between the 'marabout', the religious guide, and his disciples ('talibé') as well as on horizontal ties of solidarity among Mourides (Riccio, 2001; Ebin, 1995). The small Layène brotherhood is concentrated in the Cape Verde peninsula, the area of the Lébou people, though Dakar features now a large mix of religions and ethnicities due to its function as internal (and international) migration target. Finally, the Khadre, the oldest Sufi brotherhood in Senegal, plays nowadays a minor role, being mostly confined to the East of the country (Mbacké and Hunwick, 2005).

Structure of the Senegalese economy

The structure of the economy in terms of contributions of primary, secondary and tertiary sectors to GDP has hardly changed over the past decades. The service sector's share fluctuates around 60%, and agriculture and industry contribute each around 20% (World Bank, 2011). The main export staples are peanuts and cotton, and production is extremely

dependent on annual rainfall. The fishing sector, concentrated in the regions of Thiès, St. Louis and Dakar, represents only a small share of the economy in terms of its share of GDP. However, artisanal fishery remains important for employment, as well as in terms of its contribution to exports (ANSD, 2010). Both the secondary sector, with the three main sub-sectors construction, energy, and food processing and the services sector (trade, transport and public sector) are concentrated in the region of Dakar (ANSD, 2010; Pison et al., 1997).

Major economic developments over the past decades are summarised in the following section, together with the evolution of Senegalese international migration.

1.3.2 Senegalese migration: historical patterns and socio-economic context

International migration has been a shaping force of Senegalese history since the beginning of the 20th century. Over time, Senegalese migration has diversified with regard to departure regions as well as destination countries, responding to changing economic and political contexts in African and European destinations as well as in Senegal. This section summarizes chronologically the historical evolution of Senegalese international migration from the time of French colonization, over the years following independence in 1960, to the time of closing borders in Europe and re-orientations of migration flows.

From colonisation to independence

The region with the longest labour migration tradition is the Senegal River Valley, where local ethnic groups (Soninké and Halpulaar) reacted to economic distress with temporary migration within the region and to neighbouring countries (Mali, Mauritania) as early as the late 19th century. The French colonialists introduced monetary taxes and established groundnut production as the main economic activity in the area west of the Senegal River Valley. Seasonal internal and trans-border migration started to develop, as inhabitants from the Senegal River Valley moved to work on groundnut plantations, on the railway construction in neighbouring countries as well as to the capital city in response to these changes (Guilmoto, 1998; Traore, 1994). Migration was also initiated through hiring into the French mercantile marine. Moreover, inhabitants from St-Louis, Gorée, Dakar and Rufisque, who were French citizens, were recruited as soldiers into the French army (the so called "tirailleurs"). While some stayed in France, especially after World War One,

others settled in other French colonies on the African continent, such as Côte d'Ivoire, after the end of their service (Blion and Bredeloup, 1997).

In the 1950s, France established recruitment offices in the Senegal River valley and the adjacent region of Tambacounda with the aim of hiring workers for temporary contracts in French industries (Robin et al., 2000). International migration to the North initiated thus directly from rural regions, without a necessary passage through cities. However, Senegalese in France represented initially a small minority compared to recruitments from Spain, Italy, Portugal, as well as Algeria, Morocco and Tunisia, but gained quickly in importance in the decade after Senegal's independence in 1960. Moreover, among the migrants from Sub-Saharan Africa, Senegalese as well as Malians from the Senegal River Valley represented the highest share, with the arrival of Senegalese from other regions being noted only from the end of the 1960s on (Siety, 1967). Actual numbers most probably exceeded those recorded by the authorities, as Senegalese migrants were not necessarily introduced through the National Immigration Office (ONI). Until 1976, when the second bilateral agreement after independence came into force, Senegalese neither required a residence permit nor a tourist visa. The tourist visa exemption was even maintained until 1986. France developed thus into the main migration destination outside of the African continent, facilitated by the common language and the beneficial treatment of ex-colonies.

Migration to other West African countries also increased in the post-war period. Ghana and Côte d'Ivoire were attractive destinations due to the booming coffee and cocoa plantations. Craftsmen and traders started migrating for longer periods to Côte d'Ivoire as well as Cameroun. In the beginning of the 1960s, Gabon became another important destination in the region for Senegalese working in construction, and later on also for skilled migrants whose migration was motivated by the relatively higher salaries (Tall, 2008). Moreover, the opportunities arising from the emerging diamond trade in central Africa enhanced departures towards Congo (Brazzaville) and Zaire (now Democratic Republic of Congo) in the end of the 1960s (Bredeloup, 1993).

Years of closing borders, economic recession and structural adjustment

Despite the expanding migration culture, Senegal remained a net immigration country until the beginning of the 1970s (Figure 1.6). Due to its relative political stability, Senegal was the destination for migrants from Guinea-Conakry and Guinea-Bissau during times of repression and war. Mauritanian and Malian traders had settled in Senegal during colonial

times (Gerdes, 2007). Moreover, work opportunities offered by the groundnut production sectors attracted migrants from other countries in West Africa (Robin et al., 2000). While already noticeable in the previous decades, a decline in the groundnut production led to an expansion of the emigration region from the Senegal River Valley westwards to the groundnut basin as well as to the cities, in particular the capital city Dakar, from the mid-1970s on. Correlates of the general economic instability were prolonged periods of droughts, which started in 1969, soil degradation, slumps in groundnut prices due to the end of French support prices, high population growth and the global economic context of the 1973 oil crisis as well as the following economic recession in the early 1980s (Duruflé, 1988).
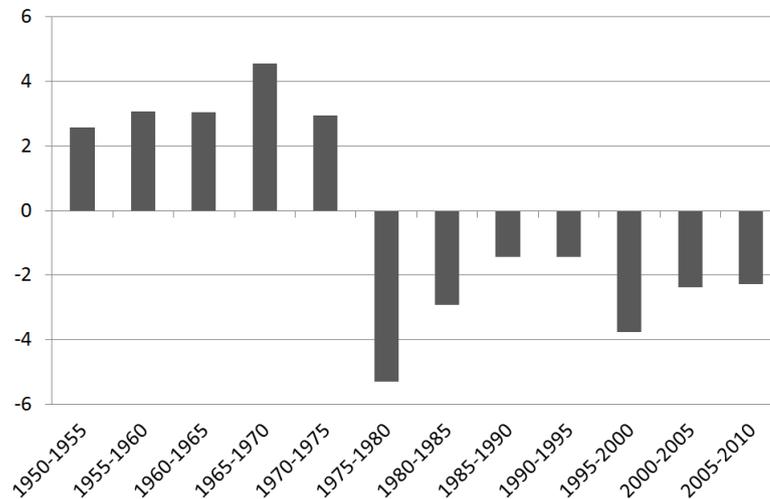
Figure 1.6: *Net migration rates (estimates), 1950-2010*
Source: United Nations, Department of Economic and Social Affairs, Population Division, World Population Prospects: The 2010 Revision, New York, 2011.

As a result, Senegal became a net emigration country at a time when migrant candidates were facing an increasingly difficult environment in both African destination countries and France. Economic growth slowed down in the main destination countries, which was met with immigrant-hostile political reactions. France, which had maintained very favourable policies towards Senegalese in the 1960s on the basis of a bilateral agreement, suspended work immigration in 1973. Policies restricting other channels of immigration, such as student migration, were introduced towards the end of the 1970s, together with policies aiming at increasing return migration (author's collection of legal texts, see Chapter 2). The effect on immigration flows was not immediate, as work migration was, over time, replaced partly by more permanent family migration and partly by Senegalese arriving as tourists. Towards the end of the 1980s, also conditions for family migration started to become more restrictive (with regard to eligibility restrictions, requirements to satisfy by

the sponsor). At the same time, the economic slowdown in African destination countries (Gabon, Côte d'Ivoire, Congo, Zaire and Cameroun) was coupled with increases in nationalism as well as social unrest and conflicts in some of the countries (Blion and Bredeloup, 1997; Ba, 1997; Tall, 2008). Border conflicts between Mauritania and Senegal in 1989 led, moreover, to the expulsion of more than 100.000 Senegalese migrants (Robin et al., 2000). As the number of migration candidates increased and traditional destinations were less accessible, migration became increasingly directed towards destinations outside of Africa and destinations without any colonial or linguistic links, in particular Italy and, from the end of the 1980s on, also Spain and the United States (Ndione and Broekhuis, 2006; Tall, 2008). Senegalese living in border regions maintained, however, their tradition of transborder migration, adjusting to arising opportunities in a more flexible way than it was the case for long-distance migrations (Tall, 2008).

The 1980s and the beginning of the 1990s were marked by the context and consequences of the implementation of a series of structural adjustment programmes (SAPs), aimed at scaling down the public sector and increasing private investment, stabilizing the country's financial situation, and achieving stable growth rates of around 4% (ADB, 2001). The Senegalese government introduced a first economic recovery programme in 1979 to 1985, which was followed by two periods of SAPs financed mainly by the World Bank and the IMF (1987-1988 and 1990-1994). GDP growth rates were very erratic until well into the 1980s, reflecting also the effect of further droughts in 1978 and 1983 (Azam et al., 2007). Fluctuations in GDP growth became less extreme in the second half of the 1980s, but as a consequence of persistently high population growth, GDP per capita growth remained negative throughout almost the entire period of the two SAPs (Figure 1.7). Despite the lack of reliable poverty and employment time series data, analysts of the period tend to point out that especially urban poverty was aggravated by the SAPs (Weissman, 1990; Azam et al., 2007; ADB, 2001). Wage cuts had affected both public and formal private sector employees and thousands of employees in the public sector as well as the private sectors most touched by the import liberalisations had lost their jobs.

Overall, the macroeconomic outcomes of the SAPs were evaluated as unsatisfactory (ADB, 2001). Growth did not stabilise, the public finance situation even deteriorated, and exports were decreasing rather than increasing until 1994 due to the overvaluation of the CFA franc. In addition to the problematic economic situation, the political system was challenged when pupil/student strikes and protests broke out in the election years of 1988 and 1993. Suspected electoral fraud was the trigger, but demands were more broadly targeting improvements in infrastructure and education. Frustration with the hiring freeze
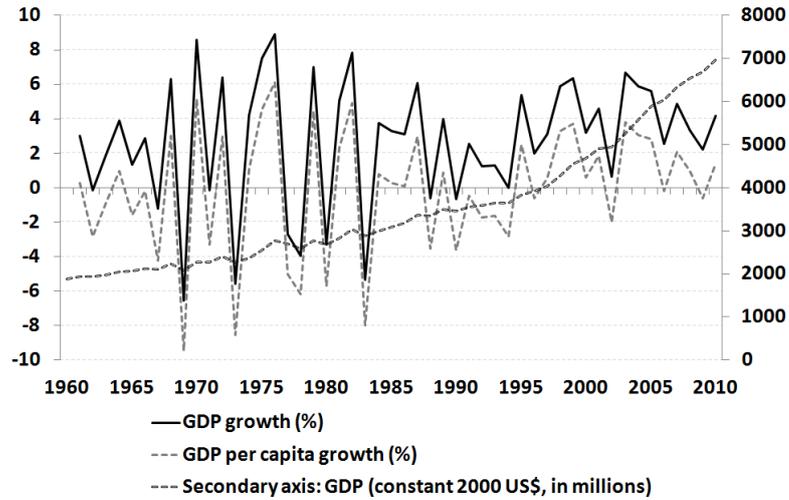
Figure 1.7: *Senegal's economic growth since the 1960s*

Source: World Development Indicators (WDI), The World Bank, 2011.

in the public sector also contributed to the protests. As a result, the government annulled the entire year of studies in 1988 and reacted similarly in 1994. Qualitative studies emphasise the case of students whose education was interrupted and who reacted by migrating, mainly to Italy (Tandian, 2008; Riccio, 2005).
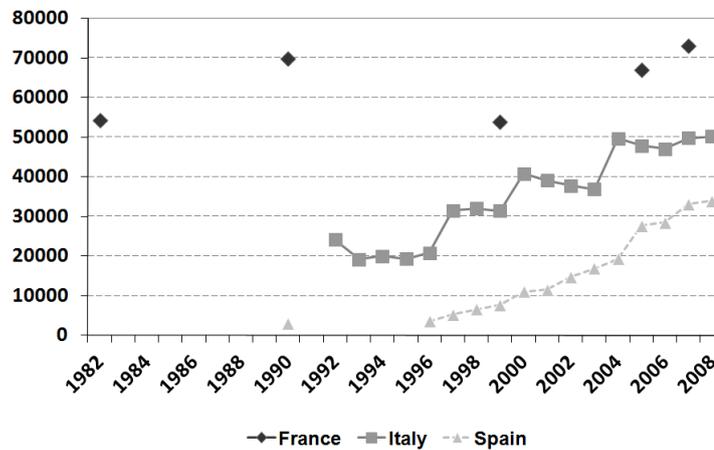
Figure 1.8: *Senegalese migrant stocks in France, Italy and Spain (country of birth)*

Sources: United Nations Global Migration Database (UNGMD): France 1982, 1990; Spain 1990; Institut National de la Statistique et des Etudes Economiques: France 1999, 2005, 2007; Istat: Italy 1992-2008; Ministerio de Trabajo e Inmigracin a partir de datos suministrados por Ministerio del Interior: Spain 1996-2008.

Senegalese migrants were thus responding to the difficult situation in their own country, and in traditional destination countries, by targeting new destination countries. Italy, regarded during the post-war decades as an emigration country and tourist destination, did not develop comprehensive immigration policies until the beginning of the 1990s.

Moreover, it still maintained visa exemptions for short stays when France had already established visa requirements for Senegalese. Both Italy and Spain may also have been perceived as attractive due to the recurrent extraordinary regularisation programs, as well as work opportunities, especially in commerce and industry in Italy and in agriculture, construction and commerce in Spain (Tall, 2008). Figure 1.8 depicts the increase in migrant stocks in Italy and Spain, while stocks in France remained relatively stable, albeit at a higher level.

Also flow data suggest an increasing relevance of Southern Europe as destination (Figure 1.9). Spain has experienced a steep rise in Senegalese immigration inflows during the last decade, while flows into France have been stable. The evolution in Italy seems to be more erratic, which can, however, also be due to the data source used (issues of first residence permits, including short-term ones, which are still valid at the end of the year).
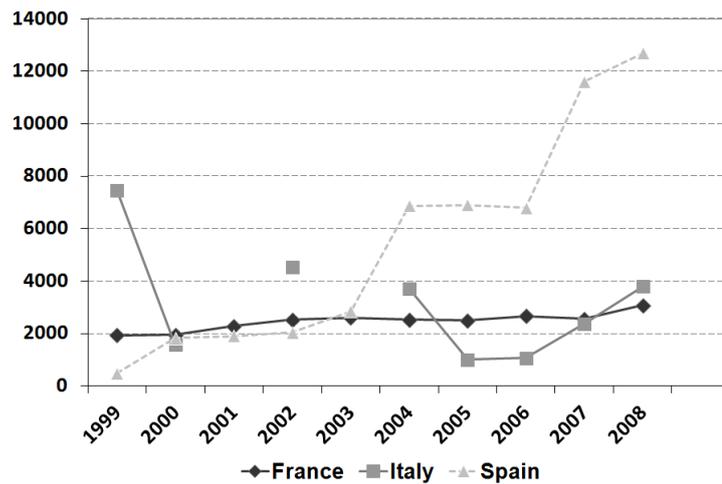
Figure 1.9: *France, Spain and Italy - Inflows of Senegalese nationals (1999 - 2008)*

Source: OECD International Migration Database.

The changing nature of destination countries also enhanced the trend towards a diversification in terms of origin regions and of migration strategies more generally. Migration to Italy, for example, originated predominantly from the regions of Louga, Diourbel, as well as the urban areas in the west of the country (Tall, 2008; Robin et al., 2000). From being predominantly a destination for internal migration and a transit pole, Dakar became increasingly a departure region. Moreover, networks based on religious affiliation, especially to the Mouride brotherhood, gained in importance as compared to migration from the Senegal River Valley, which was mainly based on family and village ties (ibid.).

Post-devaluation years and the 2000s

In view of the poor economic performance of the member countries of the West African Economic and Monetary Union (WAEMU) in the 1980s and the beginning of the 1990s, the common currency was devalued in January 1994 by 50%, bringing the exchange rate of the CFA franc to the French Franc (FF) from 0.02FF to 0.01FF. Analysts generally concur that the devaluation had positive consequences for economic growth as well as (monetary measures of) poverty, especially in the urban sector (Azam et al., 2007; Ndoye et al., 2009; Backiny-Yetna et al., 2010; Mesplé-Somps, 2007). Economic growth rates averaged approximately 5% in the years after the devaluation, and head count poverty rates fell from 67.9% in 1994 to 57.1% in 2001-2002 (Mesplé-Somps, 2007, based on ESAM I and ESAM II statistics). Until 2005, poverty was reduced by another seven percentage points to 50.8% (Ndoye et al., 2009, based on ESPS (poverty measurement survey) statistics), but has stagnated since then according to simulation exercises (Backiny-Yetna et al., 2010). In Dakar, the drop in poverty was even larger (from 56.4% 1994 over 42.0% in 2001 to 32.5% in 2005). Nonetheless, growth was not "pro-poor" in the urban areas, since it affected predominantly those who had already been close to the poverty threshold of approximately 2US$ (PPP) per day, not the poorest segments of the population (Azam et al., 2007; Mesplé-Somps, 2007). Inequality even increased slightly during this period according to Gini index measures. Moreover, employees in transport, construction and the public sector experienced a decrease in real income in the years after the devaluation (Mesplé-Somps, 2007). At the same time, the fall in the real wages of public sector employees freed resources that were channelled into public investment, which was considered to be the main post-devaluation growth factor (Azam et al., 2007).

The positive evolution in absolute monetary measures of poverty did not, however, translate directly into a decrease in perceived poverty. Evidence from the survey on perceived poverty in Senegal (EPPS in 2001) suggests that 85% of the respondents felt that their economic well-being had not changed or even deteriorated over the previous five years (Azam et al., 2007). The level of perceived poverty declined slightly in the following years, but four out of five Senegalese still declared in 2005 that they felt poor in terms of food, housing, health care and income (Abdou Fall and Wodon, 2010). In addition, studies on the labour market entry and residential autonomy of youth in the context of Dakar (Diagne and Lessault, 2007; Diagne, 2005; Antoine and Fall, 2001) suggested that especially the younger generations continued facing difficulties. Unstable and low-paying activities in the informal sector were often the only choice, as employment opportunities in the formal

public and private sectors were rare. The departure from the family home tended to be postponed, as the young had to contribute to the household income for a prolonged period of time. Analysts also point out that the presidency of Abdoulaye Wade, elected in 2000 after 40 years in opposition, has been characterised by a shift towards authoritarianism, interference with democratic institutions, and clientelism (Mbow, 2008).

In this economic and political context, international migration remained an attractive strategy to Senegalese who wanted to improve their living conditions. Despite the European policies of closing borders, the shift towards destination countries outside of Africa became even more evident. While in the period between 1988 and 1992, 58% of Senegalese international migrations were targeting other countries in Africa (author's computations, Enquête sur les Migrations et l'urbanisation au Sénégal (EMUS) 1993), this was the case for 43% in the period 1997 to 2001 (author's calculations, Recensement Général de la Population et de l'Habitat (RGPH III) 2002). With conflicts erupting in traditional destination countries, such as Côte d'Ivoire, in the past decade, this tendency is likely to have intensified.

At the same time, African migration, and in particular undocumented migration, became increasingly prevalent in the media. This type of migration became associated with the images of overloaded boats, so called "pateras", and the images of those boats that sunk trying to reach the Italian and Spanish coasts (Ba, 2007; Ba and Ndiaye, 2008; Tall and Tandian, 2010). An assessment of the extent of undocumented migration is difficult, due to obvious data limitations. Some estimates have been published by the "Senegalese Ministry for Senegalese Abroad", which suggest that the ratio of undocumented to documented migrants overall is around two to one (in Di Bartolomeo et al., 2010). Apprehension and expulsion data collected in the main destination countries can only provide a very incomplete picture of undocumented migration (Table 1.1). Illegal migration to Spain, in particular to the Canary Islands, seems to have peaked in 2006, when over 16,000 Senegalese were apprehended and over 5,000 were expelled (IOM, 2009). The following year, the number decreased to approximately 4,000 apprehensions and 2,800 expulsions, possibly due to stricter entry controls as well as attempts to discourage migrant candidates from taking the dangerous sea route. The number remains, however, high compared to apprehensions and expulsions by France and Italy.

Resources and measures dedicated to prevent undocumented migration have been enhanced in recent years. The part of the budget of FRONTEX (European Agency for the Management of Operational Cooperation at the External Borders of the Member States

Table 1.1: *Apprehensions and expulsions of Senegalese in EU countries, 2006-2007*

	2006		2007	
	Apprehensions	Expulsions	Apprehensions	Expulsions
Spain	16,224	5,357	3,984	2,820
Italy	2,702	164	3,094	147
France	537	251	656	366
Other	312	67	704	74
Total	19,775	5,839	8,483	3,407

Source: CIREFI data cited in IOM (2009)

of the European Countries) dedicated to operational tasks rose from 4.1 million euros in 2005 to 53.3 million euros in 2011 (FRONTEX, 2005, 2011). Moreover, the fight against illegal migration has been integrated into bilateral and multilateral agreements between European countries and African origin countries, including Senegal, and local Senegalese associations aim to inform about the dangers of migrating by sea (Willems, 2008).

However, given the important role that remittance transfers have become to play over the past decades, there is no real incentive to curb migration from the Senegalese point of view. Remittances sent to Senegal have increased sharply since the end of the 1990s and contribute a significant share to the country's GDP (Figure 1.10). The effect of the economic crisis since 2008 seems so far limited. Senegal is now the third Sub-Saharan African recipient of remittances after Nigeria and Kenya in terms of total volume, as well as according to the ratio of remittances to GDP (World Bank, 2011).
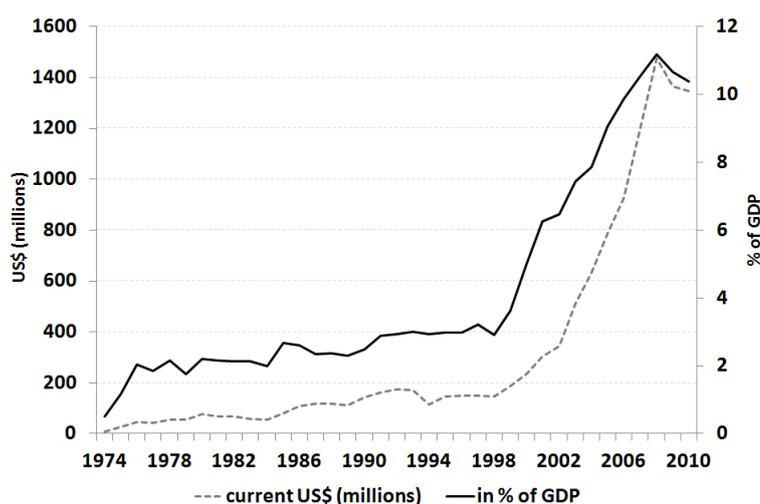
Figure 1.10: *Workers remittances and compensation of employees received from 1974 to 2010 (current US$ and as % of GDP)*

Source: World Development Indicators (WDI), The World Bank, 2011.

Regarding micro-level effects, qualitative and descriptive quantitative studies have emphasised the role played by remittances in securing family livelihoods (Diagne and Diane, 2008; Ndione and Lalou, 2005). Researchers have also highlighted migrants' and return migrants' involvement in investment activities, which seem to have targeted the housing sector rather than the creation of business activities (Tall, 1994, 2008; Fall et al., 2006). In this context, the Senegalese government is increasingly emphasising the potential positive role of Senegalese migrants and returnees in promoting development. Policy measures taken include, among others, the establishment of the "Senegalese Ministry for Senegalese Abroad" in 2003 and the incorporation of the role of the diaspora in the Poverty Reduction Strategy Paper (PRSP) II (World Bank, 2006). Moreover, the Senegalese Housing Bank (BHS) supports the opening of savings accounts for housing investments by migrants, annual housing fairs are organised in major destination countries, and the government aims to promote knowledge transfer through the invitation of Senegalese experts living abroad (Ndione and Broekhuis, 2006; Coslovi and Zarro, 2008). The facilitation of return migration by the Senegalese government has been an issue since the late 1980s, when it established in co-operation with France the "Bureau d'Accueil, d'Orientation et de Suivi" (BAOS) with the aim to support return migration from France. However, few returnees were supported by the programme, due to administrative inefficiency, insufficient funding and migrants' lack of confidence in the institution (Bruzzone et al., 2006; Gerdes, 2007). Further return programmes have been developed in recent years, but outcomes have been mixed. Kabbanji and Flahaux (2010) point out that programmes are generally designed by international agencies and institutions in main destination countries. Consequently, they lack relevant inputs from migrants themselves as well as implementation and follow-up measures in co-operation with the Senegalese authorities.

After having summarized Senegal's migration patterns from an historical perspective, the next section outlines characteristics of current Senegalese migration by providing a profile of migrants abroad, return migrants and non-migrants.

1.3.3 A profile of recent Senegalese migration

Patchy and incoherent data on migrant stocks and flows make it difficult to give a precise account of the actual number of Senegalese migrants and their characteristics. Estimates of migrant stocks are usually based on destination country census data complemented with data from national surveys and population registers and tend to underestimate the migrant stocks due to under-reporting of undocumented migration. Furthermore, countries apply

different definitions of immigrants, some using country of birth and others citizenship criteria. The duration of stay threshold used to distinguish long-term migrants from short-term migrants also varies, as does the frequency of census rounds.

Most recent data published by the World Bank in the "Bilateral Migration matrix 2010" indicate that over 630,000 Senegalese lived abroad in 2010 (4.9% of the population), and suggest thus a considerable increase compared to the estimate of approximately 336,000 for 2000 (World Bank, Global bilateral migration database).[4] The five main destinations in terms of stocks are, in 2010, The Gambia, France, Italy, Mauritania and Spain. However, destination country-specific estimates differ considerably from figures provided by national agencies. Approximately 54,000 Senegalese were counted in the 1999 census in France according to INSEE. The Database on immigrants in OECD countries (DIOC) published by the OECD provides for the same census round (2000) an estimate of 78,000 Senegalese immigrants aged 15 or older in France. Statistics hence need to be interpreted with caution and can only provide a broad indication.

Still, data sources generally concur in the importance of these three European destination countries for Senegalese migrants, as well as the importance of Senegalese migration among Sub-Saharan immigrants in France, Italy and Spain. In all three countries, Senegalese constitute the largest group of migrants from Sub-Saharan Africa (World Bank Bilateral Migration matrix 2010). We use the OECD DIOC database and its extension to non-OECD countries (DIOC-E) to tabulate socio-demographic characteristics for Senegalese aged 15 and older living in the main European destination countries identified in the World Bank Bilateral Migration matrix (France, Italy and Spain). For comparison, available information on two key African (and neighbouring countries), The Gambia and Mali[5], is included, as well as on the origin population in Senegal (Table 1.2).

Senegalese in France, where most Senegalese had arrived more than 10 years prior to the data collection, are characterised by a more equal share of women and men than in Italy and Spain, where male migrants dominate. This difference, which is likely to be due to the longer tradition of family reunification in France, is also reflected in the larger share of inactive population. Moreover, migrants in France are positively selected in terms of education levels, while the educational structure in Spain and Italy is very similar to the one found among the population at origin. Over 40% of Senegalese immigrants in Spain

---

[4]The Global Migrant Origin Database (Migration DRC, University of Sussex) provides for the same census round an estimate of approximately 480,000.

[5]Mali is included as other important neighbouring country destination, as detailed data on Mauritania are not available.

Table 1.2: *Characteristics of Senegalese migrants aged 15 and older in selected European and African destination countries, 2000*

		France	Italy	Spain	Gambia	Mali	Senegal
Gender	% men	56%	88%	84%	55%	51%	48%
Age	15-24	13%	5%	14%	31%	19%	37%
	25-64	83%	94%	86%	65%	73%	57%
	65+	4%	1%	0%	4%	7%	6%
	missing	0%	0%	0%	0%	1%	0%
Education	ISCED 0-1-2	49%	84%	82%	64%	67%	84%
	ISCED 3-4	28%	12%	8%	13%	25%	13%
	ISCED 5-6	23%	4%	7%	1%	5%	3%
	missing	0%	0%	3%	22%	3%	0%
Labour Force Status	Employed	53%	80%	69%	n.a.	54%	50%
	Unemployed	16%	9%	14%	n.a.	1%	5%
	Inactive	31%	11%	17%	n.a.	44%	45%
Duration of stay	<5 years	8%	29%	42%	n.a.	n.a.	§
	5-10 years	10%	26%	16%	n.a.	n.a.	§
	>10 years	58%	43%	39%	n.a.	n.a.	§
	missing	24%	2%	3%	n.a.	n.a.	§
Number of observations		77,979	28,509	10,920	47,827	9,443	5,572,158

Notes: ISCED 0-1-2 - up to lower secondary education; ISCED 3-4 - upper secondary and post secondary non tertiary education; ISCED 5-6 - tertiary education; n.a. not available; §not applicable. Source: *Database on Immigrants in OECD countries (DIOC) and Database on immigrants in OECD countries and non-OECD countries (DIOC-E)*

had lived less than five years in the country, which is in line with the evolution of Senegalese migration destinations over time. Migrants in neighbouring countries, The Gambia and Mali, resemble largely the Senegalese population of non-migrants, though migrants in Mali seem to be slightly older and more educated.

The following section exploits the Senegalese census from 2002, which includes a module on household members who migrated abroad during the five-year period prior to the census. A proxy respondent provides information on the gender of the migrant, age at departure, the relationship with the household head, the destination country, and the main migration motive. Return migrants can be identified through a question on previous residence. In addition to some basic descriptive statistics on the migrant and return migrant population at national level, the data also enable us to examine in how far migration patterns vary regionally, in particular between the region of Dakar and the rest of the country. The understanding of regional variations as well as of the specific role of the capital region is important, as data collection in the context of the MAFE-Senegal survey used in the empirical chapters was limited to the region of Dakar. At the same time, region of origin was not a criterion for selection of migrants interviewed in France, Spain or Italy.

Figures 1.11 and 1.13 illustrate respectively numbers of emigrants and of households with return migrants in each administrative department, and larger circles are associated with

higher numbers. Figures 1.12 and 1.14 show the share of emigrants during the 1997 to 2002 period and the share of households with members who returned from abroad during the same reference period. Darker shadings reflect higher migration intensities, and the thresholds correspond to quintiles of the variables in question. Emigration in the time period before the 2002 census is clearly concentrated in the region of Dakar and, to a lesser extent, the Senegal River Valley. This is the case in both absolute and relative terms. Emigration is also strong in the department of Mbacké (region of Diourbel), where the holy city of Touba is located, as well as in the Casamance region south of The Gambia. In general, the distribution of households with return migrants follows a similar pattern. The role of Dakar in attracting return migrants appears even more prominent than its role as departure region.
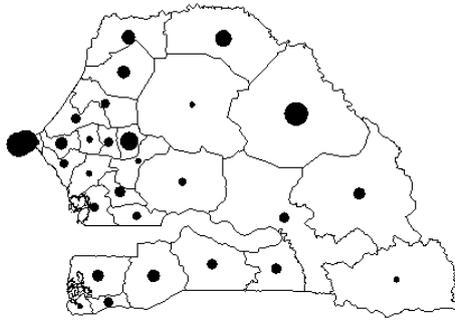
Figure 1.11: *Emigration volume 1997-2002*
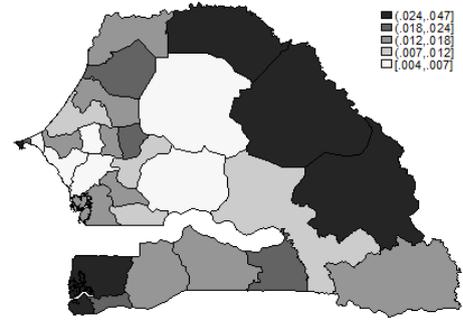
Figure 1.12: *Emigration rate 1997-2002*

Source: author's elaboration based on RGPH III (2002) data
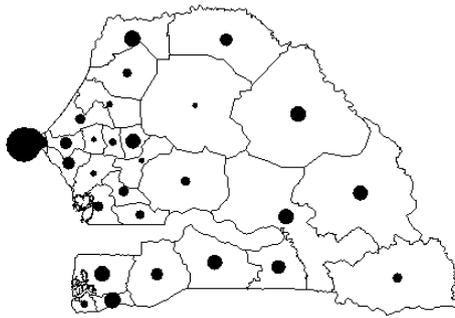
Figure 1.13: *Number of households with returnees (returns between 1997 and 2002)*

Figure 1.14: *Share of households with returnees (returns between 1997 and 2002)*

Source: author's elaboration based on RGPH III (2002) data

Moreover, sorting into destination countries and regions is very heterogeneous across Senegal and reflects geography as well as regional migration history. Table 1.3 lists the three preferred destinations of migrants who left Senegal in the five years prior to the census. Though countries in the North make it into the top three in all regions except for Saint-

Louis, the region of Dakar is the most oriented towards Europe and the United States. Italy attracts migrants mainly from the centre of the country, while migrants to France originate from the traditional emigration region along the Middle and Upper Senegalese River Valley. Border regions also exhibit a high migration to neighbouring countries, in particular The Gambia and, in the case of St. Louis, Mauritania.

Table 1.3: *Top three destination countries for emigration flows in the period 1997-2002*

Region	1st destination	2nd destination	3rd destination	Cum. % of top 3 destinations
Dakar	France (23%)	Italy (23%)	United States (12%)	58%
Diourbel	Italy (49%)	Spain (9%)	Côte d'Ivoire (7%)	65%
Fatick	Gambia (46%)	Italy (11%)	Spain (9%)	66%
Kaolack	Gambia (31%)	Italy (21%)	United States (7%)	59%
Kolda	Gambia (32%)	Spain (16%)	France (9%)	57%
Louga	Italy (46%)	Spain (14%)	France (9%)	69%
Matam	France (22%)	Gabon (16%)	Côte d'Ivoire (15%)	53%
St. Louis	Mauritania (46%)	Côte d'Ivoire (9%)	Gabon (7%)	62%
Tambacounda	France (41%)	Spain (10%)	Gabon (10%)	61%
Thiès	Italy (27%)	France (12%)	Mauritania (8%)	47%
Ziguinchor	Gambia (54%)	France (11%)	Guinea-Bissau (6%)	71%
All	Italy (19%)	France (16%)	Gambia (13%)	48%

Source: *author's elaboration based on RGPH III (2002) data*

The census data also allow us to compare certain characteristics of migrants from the Dakar region with those in the rest of Senegal, as well as by destination region (Table 1.4). Most departures, which can be first or repeat departures, occur around the age of 29, independently of the region of origin or destination. However, migration from Dakar is more female than in the rest of the country, especially towards Europe. The information on the main migration motive suggests that student migration is overrepresented among moves from the Dakar region.

This introductory section provided information about the evolution and current patterns of Senegalese migration. It sets the context for the specific research questions examined in this thesis and outlined in the previous section. At the same time, it stresses the interest of the Senegalese case in research on African migration. The country's long and diverse migration history is characterised by changes in origin regions, destination countries as well as diversity with regard to selection into migration. This heterogeneity will be, to the best possible extent, exploited in the analyses. Moreover, not only do the patterns of Senegalese migration make its case interesting, but so does its volume. While not entirely consistent, available data suggest that international migration affects a large number of individuals and households in Senegal, and that its role in generating remittances is crucial for the

Table 1.4: *Characteristics of migrants who departed between 1997 and 2002, by origin and destination*

		Total	Europe	Africa
Mean age at departure	Dakar	28.8	28.8	28.8
	Not Dakar	28.2	30.3	28.0
Share of male migrants	Dakar	75%	76%	81%
	Not Dakar	84%	90%	84%
Migration motive				
Work	Dakar	68%	69%	76%
	Not Dakar	79%	85%	82%
Studies/apprenticeship	Dakar	18%	20%	11%
	Not Dakar	6%	6%	4%
Family/marriage	Dakar	10%	9%	9%
	Not Dakar	10%	7%	9%
Other	Dakar	4%	2%	4%
	Not Dakar	5%	2%	5%

Source: *author's elaboration based on RGPH III (2002) data*

Senegalese economy (in terms of its contribution to GDP). At the same time, Senegalese represent the largest share of Sub-Saharan African migrants in main European destination countries and influence hence the African-European migration systems and the image of African migration portayed in Europe more broadly.

The remainder of the thesis is structured as follows: the next chapter (Chapter 2 "Description of Data Sources") introduces in detail the Migration between Africa and Europe (MAFE) survey. This survey constitutes the data source used in all three empirical chapters. Moreover, the policy database is described and placed within the context of other attempts at measuring policies in general and immigration policies in particular. Chapters 3, 4 and 5 contain the three main empirical studies outlined above. The chapters were initially drafted in article format, and contain respectively the relevant sections on theoretical and empirical literature, methods, empirical results and discussions as well as concluding remarks. Relevant contextual background is briefly recapitulated when appropriate. The final chapter (Chapter 6) summarizes the main findings, discusses limitations, and suggests further research avenues.

Chapter 2

Description of data sources

This thesis uses the Senegalese part of the Migration between Africa and Europe survey (MAFE-Senegal, 2008), co-ordinated by the French National Demographic Institute (INED) as the main micro data source for the empirical analysis.[1] The first part of this chapter describes the objectives and strengths of the MAFE-survey, placing it in the context of other data sources on migration in general and Senegalese migration in particular. It provides detailed information about survey design, sampling procedures and the development of survey questionnaires, and presents descriptive statistics for the sample. Limitations of the data are discussed and evaluated with regard to the empirical analysis presented in the remainder of the thesis. Given that I was a junior researcher at INED and member of the MAFE team during the time of my thesis, I also summarize my contribution to the implementation of the survey and the preparation of data for analysis.

The second part of the chapter discusses the longitudinal database of immigration policy measures for France, Spain and Italy used in Chapter 3 and constructed as part of this thesis. The use and usefulness of policy indicators to measure policy impact is briefly discussed, before outlining general approaches to constructing immigration policy measures. We describe the data collected on French, Italian and Spanish immigration policies

---

[1] In addition to Senegal, with France, Spain and Italy as destination countries, data were collected using a comparable sampling design and identical questionnaires to interview Congolese in DR Congo, the United Kingdom and Belgium; as well as Ghanaians in Ghana, The Netherlands and the United Kingdom. Since the survey on the Senegalese migration system was implemented in 2008, and surveys in the other countries followed only more recently, this thesis concentrates on migration between Senegal, France, Italy and Spain, and leaves comparative studies for future research. The description of the sampling design in section 2.1.3 also refers to the Senegalese case, though the survey design was closely followed in the MAFE-Ghana and MAFE-Congo surveys.

(ImPol-MAFE(SN) database) and discuss the approach chosen for construction of indicators, emphasising the need for comparability over time and across countries, and explaining the choice of variables and scaling of indicators.

2.1 The Migration between Africa and Europe (MAFE) project

One key objective of the MAFE project, which started in 2007, is to improve survey data availability on Sub-Saharan African international migration.[2] Quantitative research on migration has been dominated by the analysis of the US-Mexico migration system and the conclusions derived from this large body of research may not be transferable to the African context, which is, among others, characterised by a larger diversity in terms of migration destinations. At the same time, public entities and researchers have been emphasising the need for further improvements in terms of quality and characteristics of data on migration (Lucas, 2006; Santo Tomas et al., 2009; Bilsborrow et al., 1997; McKenzie and Mistiaen, 2009), in order to allow for relevant empirical research and to answer the questions on who moves, why do people move, and what are the consequences of migration. For instance, the discussion about changing and increasingly complex patterns of African migration in terms of destination, itineraries, return and circulation would benefit from empirical evidence based on detailed migration histories, collected at origin, but also in several destination countries. Studying the determinants of the various moves at the micro-level to understand selectivity implies knowing the relevant characteristics before the migration takes place. Moreover, when researching the consequences of migration, for example with regard to the role of migration for investment, data are required not only on the migrant household at origin, but also on the behaviour of migrants while abroad, and measured before the event in question takes place. Finally, comparable data are needed to draw conclusions with regard to similarities or disparities in migration behaviour from various African countries and to various destination countries.

2.1.1 Main features of the MAFE survey

The design of the MAFE survey aims to respond to these requirements regarding data content and format (Beauchemin, 2012). It collects rich information about migration-

---

[2]The MAFE project website can be visited at `http://mafeproject.site.ined.fr/en/research/`.

related events and experiences; data are longitudinal and capture past characteristics; data are collected at origin and destination, among non-migrants, return migrants and individuals currently abroad; and the survey design ensures that information is comparable across countries. These features represent thus the main strengths of the MAFE survey and innovations in migration data collection, in particular in the context of Sub-Saharan Africa.

Rich longitudinal data: Most commonly, migration is captured in cross-section household surveys or the population census, and characteristics are either measured at the time of the survey or a specific time point in the past, such as five or ten years prior to the survey. However, to provide answers about determinants or consequences of migration, one needs dated information about characteristics and events. For instance, to study whether migration has an impact on investment, it is essential to know whether an individual has invested before or after migration, and also to control for individual characteristics, household-level factors and contextual factors prior to the outcome of interest, in this case the first investment made. Similarly, possible determinants of migration attempts and departures have to be measured at a time before the event, not only at the time of the survey.

The chosen methodology of the MAFE survey was thus to collect longitudinal data retrospectively, using life-history calendars with annual spells and covering the entire life of the respondent from birth to the survey date. The topics included go beyond the migration history itself, and encompass information on variables that are relevant as control variables or outcomes of interest in relation to migration, for instance family formation, education and employment, asset ownership, migrant networks, etc. The details of the questionnaire content are discussed in section 2.1.4. Such data are ideal for survival analysis, among demographers commonly called event-history analysis, where the probability of an event occurring is modelled conditional on not having experienced the event up to time interval t, and controlling for characteristics that vary over time. The data also allow for the modelling of repeated events, for instance repeated migrations, and thus more complex migratory behaviours than single unidirectional moves. Moreover, one can extract cross-sections from the data, in particular at the time of the survey, and use information from the past life-histories to construct control variables and exclusion restrictions.

A transnational, multi-country sample: Data collected only at the place of origin or at the destination are not sufficient to study the impact of migration (Beauchemin and González Ferrer, 2011; Bilsborrow et al., 1997; Massey, 1987). On the one hand, surveys

carried out only in sending countries tend to collect poor information on the migrants themselves, either through proxy respondents (since migrants are absent by definition) or from a potentially selective sample of those who use to return at particular times of the year. In either case, the information on migration is unlikely to provide an accurate or representative picture of the migration experience. On the other hand, surveys carried out in receiving countries can collect information on the current migrants' behaviour but they do not allow for a comparison of migrants with non-migrants. To capture the three migrant statuses, non-migrants, return migrants and current migrants, the MAFE survey was conducted both at origin and at destination. The sampling at destination also helps to overcome partly the problem that only survivors are included in retrospective surveys. While people who died cannot be captured, people who are not found at origin because they migrated are in principle included in the overall sample.[3] Moreover, in order to understand the role of the destination country context and to examine changes in migration patterns, one single destination country sample is not sufficient.

Therefore, the MAFE survey collected data on "migration systems", with at least two countries in Europe per African country in order to capture differences between "old" and "new" destination choices. For Senegalese migration, data were thus collected in Senegal, where non-migrants and return migrants were interviewed, in France, the historical destination country with colonial links, and in Italy and Spain, two more recent European destination countries for Senegalese.

Identical questionnaires administered to non-migrants, return migrants and migrants in various destination countries: In order to allow for analyses on the pooled sample of non-migrants and return migrants in Senegal as well as Senegalese migrants in France, Italy or Spain at the time of the survey, the MAFE survey uses the same questionnaires for all surveyed populations. Special care was taken when translating the questions from French into Spanish and Italian. Furthermore, the nature of the biographic questionnaire requires data comparability not only across different populations or countries at the time of the survey, but also in the past (Beauchemin, 2012). Concepts

---

[3]The availability of destination-country data also represents a possibility to tackle the potential problem of "whole households migrating" often discussed in the context of origin-country cross-section surveys. However, the Senegalese family and household structure with extended families living together and the fact that full family reunification is not very common among Senegalese in France, Italy and Spain (Baizan et al., 2011). The usual problem of sample selection due to deaths is relevant in the specific migration context we are analysing, as those who died trying to reach Europe by boat are not captured in the individual data. Data on fatalities are hardly available, but Carling (2007) estimates, based on media reports and Spanish apprehension data, that approximately 12 to 15 out of 1000 Africans who leave their country towards Spain perish on the way/at the border. The analysis in this thesis cannot take account of migrant fatalities.

captured by the questions thus have to be relevant and understandable independently of the current location of the respondent, the language of the questionnaire, and the time point in the respondent's life. The questionnaires were developed over a period of several years, with constant inputs from partner institutions in all countries, and a series of pilot surveys were conducted in order to test the questionnaire in Senegal, France, Italy and Spain.

MAFE thus provides data sets that are comparable across countries, and provide a rich amount of dated information on non-migrants, returnees, as well as migrants in several destination countries. While not used in this thesis, the surveys on Congolese and Ghanaians extend the comparability to several origin countries.

2.1.2 Alternative migration data sources

The features of the MAFE survey outlined above represent an advancement on alternative data sources on Senegalese migration. At the same time, the survey has been designed drawing on previous experiences with migration data collection, in Senegal and elsewhere. This section provides an overview of a series of data sources, pointing out their relevance for the MAFE survey as well as their limitations, before entering into a more detailed discussion of the MAFE sampling and questionnaire design in the sections 2.1.3 and 2.1.4.

Population censuses that contain a migrant module represent an alternative source of micro-level migration data. Information about international migration is generally provided by a proxy-respondent, measured at one point in time and covering only a limited set of variables. The Senegalese population census from 2002 introduced for the first time questions regarding household members who migrated abroad in the five year time span prior to the census. The questions inquire about the sex of the migrant, age at departure, the relationship to the household head, the destination country and the main migration motive. Migrations dating further back and other moving patterns such as circulation cannot be analysed, as only one departure is captured. While the inclusion of a migrant module in the census is a very valuable step towards enhancing migration data collection in general, the information provided is best used for summary statistics and proves insufficient when decision processes and the relationship between migration and other events in life are at the heart of the research question. Also general purpose household surveys, such as Living Standard Measurement Surveys (LSMS) developed by the World Bank, include increasingly a set of questions on international migration. Senegal has not implemented the

LSMS, but the second "Senegalese Household Survey" (ESAM II in 2001/2002) captures age, sex, years since departure, the general destination region, as well as the migration motive of household members who migrated within five years prior to the survey. The information does not go beyond the questions contained in the census. However, such data can be particularly useful to answer questions on characteristics of households with and without international migrants at the time of the survey, without necessarily trying to understand behaviour from the migrant's perspective.

In addition to the census and the Senegalese household survey, several attempts have been made in the past to collect more detailed and often longitudinal information on migration, and survey designs have provided inspiration for the development of the MAFE survey. The first data collection efforts targeted the Senegal River Valley, the traditional departure region. Survey data on internal and trans-border migration from selected villages have been collected as early as the mid-1970s in the context of research conducted by the Office de la Recherche Scientifique et Technique d'Outre-Mer (ORSTOM) (Delaunay, 1984). The questionnaires mostly focused on characteristics of migrants at the time of the survey, but a retrospective module on past mobility was included for a sub-sample of respondents. Data collection on migration from the Senegal River Valley continued in the beginning of the 1980s, when a survey project coordinated by the OECD surveyed villages in the region as well as migrants in France (Condé and Diagne, 1986). This survey respected thus one crucial requirement for understanding migration behaviour, the need for comparable data in both origin and destination countries. The MAFE surveys represent a continuation of this approach, accounting for changes in departure regions and destination countries since the 1980s. One decade later, Diouf and Guilmoto (1994) carried out surveys in the region of Podor in the Middle Senegal River Valley, which focused on the relationship between migration experiences and the evolution of economic activities, and included both household and individual-level questionnaires.

In 1993, Senegalese migration data at the national level were collected in the framework of the surveys on Migration and Urbanization in West Africa (L'enquête sur les migrations et l'Urbanisation au Sénégal (EMUS); Réseau migration et urbanisation en Afrique de l'Ouest (REMUAO)). This survey also took a five-year period as reference period to define migration. Nonetheless, a strength of the REMUAO project was the comparative survey design, as surveys were implemented in eight West African countries, some of them being both emigration and immigration countries. The data focused on the links between (internal) migration and urbanisation, but provided also evidence on flows and stocks. Moreover, some dated information on the respondents' residential and migration history

and characteristics of the migration such as financing and decision-making processes were recorded (Bocquier, 1998; DPS, 1995, national survey report).

Moreover, the MAFE research design and the sampling strategies draw on experiences from the project "Push and Pull Factors of International Migration", a large Eurostat-funded project implemented in 1996-1997 collecting data from five selected countries in West Africa, including Senegal, and the Mediterranean region and two countries in Europe (Schoorl et al., 2000). In response to the diversification of departure regions described in the introductory chapter, the survey targeted the cities of Dakar/Pikine and Touba instead of the already relatively well-researched rural areas in the Senegal River Valley. The survey was similar to MAFE in some respects, as it included both origin and destination countries, though Senegalese migrants were only interviewed in Spain. On the other hand, it focused predominantly on the determinants of departure from Africa and did not cover other topics such as return and circulation, or consequences of migration. Moreover, the decision was made to limit retrospective information to the ten years prior to the survey instead of collecting full life-histories. A smaller-scale survey using similar instruments was conducted in 1997 in the town of Kaolack in the Peanut Basin (Ndione, 2009).

Most recently and after the completion of MAFE-Senegal, two more migration surveys were conducted. The "Migration and Development in Senegal" (MIDDAS) project was initiated by the French research team DIAL (Développement, Institutions et Mondialisation).[4] The survey collected data in the same countries as MAFE-Senegal (Senegal, France, Italy and Spain), but took a cross-sectional perspective and placed the emphasis on economic variables such as remittances. Moreover, in 2011 the EUMAGINE (Imagining Europe from the Outside) project collected household and individual-level data focusing on perceptions about migration as well as migration aspirations and intentions in four emigration countries, one of them being Senegal.[5] While a comparison of these data sets with MAFE would certainly be very interesting, data were unfortunately unavailable (for public use in the case of MIDDAS, entirely in the case of EUMAGINE) during the time of the thesis.

Considering migration surveys outside of Senegal, the MAFE survey builds first and foremost on the "Mexican Migration Project" (MMP, Massey, 1987). With continuous data collection since 1982, the MMP is a major survey that has been providing numerous insights into patterns, causes and consequences of Mexican migration to the United States.

---

[4] http://www.dial.prd.fr/dial_enquetes/dial_enquetes_middas.htm(last accessed on 02/04/2012).
[5] http://www.eumagine.org/(last accessed on 22/06/2012).

The survey design was later used for surveys in several Latin American countries in the framework of the Latin American Migration Project (LAMP), also with a focus on the United States as destination country. In MAFE, aspects of questionnaire design and sampling were adapted to ensure its applicability to African migration. The initial transnational sampling design of MAFE, described in the following section, was inspired by the way Mexicans in the United States were sampled in the MMP. Moreover, the ethnosurvey approach used in the MMP, which implies a semi-structured interview format, was combined with experiences with structured biographic surveys in Europe and in Africa when designing the MAFE project questionnaires (GRAB, 1999; Poirier et al., 2001). Examples of biographic surveys that informed the MAFE survey design are the "Biographies et Entourage" (year 2000) and "Triple biographie" (year 1981) in France, the first providing insights into ways to incorporate networks in the biographic survey, the latter in terms of the diversity of life histories covered (migration, professional, family etc.). Experiences with biographic surveys in the African context dealing with topics other than international migration also influenced the design of the biographic questionnaire. These include the 1989 survey on urban integration and transformation of family behaviour in Dakar (Antoine et al., 1995) and the subsequent surveys on this topic conducted in various African cities (Bamako, 1992; Abidjan, 1996; Yaoundé, 1996; Antananarivo, 1998; Lomé, 2000; Nairobi, 2001; Dakar, 2001) as well as in Burkina Faso (2001) and Mali (2006) (Antoine et al., 2007).

2.1.3 MAFE survey sampling design

The survey in the origin country consists of a household survey and an individual survey, while the destination country survey is limited to individuals.[6]

Senegal

For cost reasons, the sample in Senegal was limited to the region of Dakar with its four administrative departments of Dakar, Pikine, Gudiawaye and Rufisque. The region accounts for approximately a quarter of the national population. Moreover, the region of Dakar constitutes a major departure region (26% of all departures in the five years preceding the population census in 2002). The three-stage probabilistic sampling design oversampled households with migration experience. In a first stage, National Census data from

---

[6]A more detailed description of the MAFE sampling design can be found in Beauchemin et al. (2010).

2002 was used as a sampling frame to sample census districts as primary sampling units. Census districts were divided into 10 strata of equal size based on the migration prevalence (number of households with at least one migrant) in the district. Six districts were randomly drawn out of each stratum using probability proportional to size sampling, and a micro-census was conducted in the 60 sampled districts to update the list of households for the second stage of the sampling. Within the sampled districts, households were further stratified into two strata, migrant households and non-migrant households, based on information collected during the micro-census. 22 households (11 in each stratum) were randomly sampled in each selected census district for the household survey. Thus, the total number of households sampled was 1320. During fieldwork for the household survey, which took place in spring 2008, selected households which could not be reached were not replaced, as this could have biased the sample. The response rate was satisfactory, as 1143 household questionnaires were completed (87%). The non-response was due to refusals (11%) and the fact that the dwelling was empty.

Individuals eligible to be included in the household grid comprised all household members (defined as individuals who have lived for at least six months in the household, or have the intention of living there for at least six months). In addition to those already included as household members, all other children of the household head were recorded, whether alive or deceased, and with residence in Senegal but pertaining to a different household or abroad. Current migrants were also included in the grid if they were either spouses of a household member or relatives of the household head or of the head's spouse. The definition of a "household migrant" is thus relatively large, mirroring the extended households still typical for Senegal (Riccio, 2008).

Finally, individuals were sampled within households for the individual survey, which took place one month later. At most two return migrants per household and two spouses of current migrants identified in the household survey were sampled for the individual survey (randomly), and in addition one non-migrant per household was sampled randomly. The non-response rate was slightly higher, as 1338 individuals were sampled and eligible and 1062 interviews were completed (response rate of 79%). The non-response (21%) was predominantly caused by the interviewers not being able to join the respondent after repeated contact attempts. The Senegalese sample is representative of the Dakar region, and inference to the population characteristics is thus only valid at the regional and not at the national level. The sampling design implies at the same time that households and individuals with links to international migration are overrepresented. At least when presenting descriptive statistics, sampling weights need to be applied to allow for an analysis

of statistics that are representative of the region.

European destination countries

Data collected both at origin and destination provides rich information to analyse simultaneously the behaviour of current migrants, returnees and non-migrants. In this regard, the MAFE project offers a dataset that is similar to the MMP, LAMP or Push-Pull projects (Massey, 1987; Groenewold and Bilsborrow, 2008). However, while these projects focus predominantly on one destination country for each origin group, the MAFE project includes several destination countries in order to capture more varied migrant characteristics and selection patterns. Having data for several destination countries is particularly important for origin groups with diverse migration destination patterns, such as the Senegalese. In order to be representative of the entire origin community scattered around the world, the ideal survey should cover all countries in which Senegalese people live. Obviously, this is not feasible. For cost and logistic reasons, the sample at destination is thus limited to three countries in Europe, France, Italy and Spain. These countries account for 42% of the Senegalese people who had migrated from Senegal (and 54% from the region of Dakar) according to the population census from 2002.[7]

Migrants at destination, especially irregular migrants, are a difficult to reach population. Except for countries with population registers that include irregular migrants, such as Spain, a sampling frame is often not available. The snowballing method, whereby initial respondents provide contacts of further potential interviewees, constitutes a common sampling approach under such conditions. However, resulting samples do not comply with probabilistic requirements and are hence not necessarily representative of the target population. A method aiming to improve randomness in a sample built through network contacts is "respondent driven sampling" (Heckathorn, 1997). Differently from the snowball method, the resulting sample is weighted ex-post to account for the non-random sampling. Moreover, an incentive structure is provided to achieve inclusion of less cooperative individuals, and the referral process is repeated numerous times to achieve final samples that are independent of the initial seed sample. In practice, this method is quite costly and difficult to implement, and has shown mixed results in the context of immigrant samples

---

[7]Source: Senegalese Census, 2002. Figures computed by the author: this figure takes into account the individuals who were declared by the Senegalese households as having migrating out of Senegal within the 5 years preceding the Census. In total, 176 095 persons have left the country to go to various destinations: 43% to other countries in Africa, 42% to France, Spain and Italy, 15% to other countries (including 7% to the United States).

(Beauchemin and González Ferrer, 2011). A third method used for sampling migrants is the intercept point survey, whereby migrants are sampled in pre-specified locations such as cultural centres and migrant associations and at pre-specified time points, attempting to create a systematic sample (McKenzie and Mistiaen, 2009). This sampling method has been applied, for instance, by the Push-Pull survey in Italy (Groenewold and Bilsborrow, 2008). The sampling becomes even more challenging if the aim is to match origin and destination respondents, as initially foreseen for the MAFE-Senegal survey. According to the discussion presented in Beauchemin and González Ferrer (2011), previous transnational surveys have therefore mainly employed the snowballing approach. Surveys either started interviewing migrants at destination, collecting information about households in the origin country (e.g. OECD survey with migrants in the Senegal River Valley), or interviewed first in the origin country and attempted to locate migrants abroad based on information provided by the household (e.g. MMP). The MAFE survey design uses the latter approach, tracking down migrants in Europe whose contact details were obtained during the household survey in Senegal, to constitute a part of the migrant sample. The theoretical advantage of this approach is that it is a relatively cost-efficient way to allow for a representative origin sample. However, the matching approach was not very successful in the case of the MAFE-Senegal survey. Only 6% of the final European migrant sample is comprised of individuals who can be matched to origin households interviewed in Senegal. As explained in Beauchemin and González Ferrer (2011), this poor result is due to a combination of factors. Few contacts were provided by households in the first place. Moreover, a subset of contacts could not be used because the person could not be traced (i.e., individuals had moved, phone number did not exist, or phone calls were left unanswered). Finally, among those who could be identified and traced not all were interviewed due to problems of non-eligibility (age, regional criteria, etc.) or refusal. The share of the migrants sampled through contacts was thus smaller than foreseen.

Complementary sampling strategies were applied to achieve the set sample of 200 migrants per country, without imposing links to households interviewed in Senegal. No sampling frames to allow for random sampling of first-generation Senegalese migrants, including undocumented migrants, were available for France and Italy. In those two countries, respondents were sampled through varied non-probabilistic methods, such as snowball sampling, intercept points, and contacts obtained from migrant associations in order to fill pre-established quotas by age, gender and socio-professional category. The municipal register in Spain (padrón) offered a national sampling frame from which documented

and undocumented migrants could be randomly sampled (stratifying by gender and age).[8] Sampling was limited to selected regions and provinces in order to reduce survey costs, allowing at the same time for a sample covering the majority of Senegalese in the country (Beauchemin and González Ferrer, 2011). In France and Italy, the selected regions included approximately two thirds of the Senegalese-born population, in Spain approximately three quarters, according to information from census and register data. For all countries, including Senegal, the eligibility criteria for the individual questionnaire established that individuals had to be between 25 and 75 years of age in order to have long enough life histories, be born in Senegal to exclude second generation in Europe, and be of present or past Senegalese nationality to exclude immigrants in Senegal. In Europe, another criterion was added to exclude 1.5 generation[9] migrants who are often "passive" migrants, and to insure more homogeneity within the samples: migrants had to have emigrated out of Africa at age 18 or over, for a duration of at least one year.

Table 2.1 summarizes the final samples obtained in Senegal and the three European destination countries. The numbers show the oversampling of elderly and female migrants in European countries.

Table 2.1: *MAFE-Senegal sample description*

	Senegal	France	Italy	Spain
Households in HH survey	1,141	–	–	–
Individuals in HH survey	12,350	–	–	–
(excluding immigrants, non-Senegalese and deceased[#])	11,589			
Migrants	1,071	–	–	–
Returnees	289	–	–	–
Non-migrants	10,229	–	–	–
Individuals in individual survey	1,062	201	205	200
Migrants	–	201	205	200
Returnees	191	–	–	–
Spouses of migrants	101	–	–	–
Non-migrants	770	–	–	–
% men	44%	54%	61%	49%
% 25-40 years	54%	49%	60%	47%
% 41-75 years	46%	51%	40%	53%

Notes: [#] Refers to sample used for statistics comparing characteristics of individuals at the time of survey; deceased are included for some statistics referring to first migration/first return. Source: *MAFE-Senegal household and individual surveys (2008)*

---

[8]For a detailed presentation of the Padrón, see Ródenas Calatayud and Martí Sempere (2009).

[9]"1.5 generation" migrants are individuals who migrate as children or in their early teens with family members, and are thus in between the "first generation" of adult migrants and the "second generation" of children of migrants born in the destination country.

2.1.4 Questionnaires

Household questionnaire

The household head, or in the head's absence another knowledgeable household member, responded to the household questionnaire in Senegal. This means that the information about other individuals is provided by a proxy respondent, who may not know or not remember details such as exact dates, and the data must therefore be treated with caution.[10] The household questionnaire collects socio-demographic data (education, occupation, religion, ethnicity, etc.) on all individuals as of the time of the interview. Moreover, it records specific information on current and past migrations. More specifically, return migrants are identified through questions about the first migration experience of more than one year, and a question about the first return, again lasting more than one year. In addition, the years of first departure and first return, as well as the first country of destination are recorded. Furthermore, one can identify current migrants and know in which country they reside. One should note that the first destination indicated in the case of returnees may not always correspond to the country from where the return originated, if the migration consisted of several longer stays in different countries. Several questions provide information about linkages between household members and current migrants in terms of correspondence, visits, and transfers. Finally, data on housing characteristics and ownership of durable assets at the time of the survey are collected.

Biographic questionnaire

The biographic survey, which is the primary data source used in this thesis, was conducted with the help of a special questionnaire. The questionnaire is designed to enhance the recall effort by the respondent, who needs to retrace his/her entire life, as well as the task of the interviewer, who has to verify during the interview that the information provided by the respondent is coherent. It consists of two parts: (i) a biographic event grid (called AGEVEN, "Age + Event"; Antoine et al., 1987), where the interviewer records in calendar format what happens in the respondent's life (events) and when it happens (by year, age of respondent); and (ii) the main questionnaire, which contains a set of open guiding questions to fill in the AGEVEN file as well as modules with structured and mainly closed-format questions. These allow for a more detailed exploration of the events and life periods recorded in the grid.

---

[10]The problems associated with proxy response are further examined in section 2.1.5.

The biographic questionnaire covers traditional life-histories, in particular the respondent's family history (children and relationships); residential history (all places where the respondent lived for at least one year); education and occupational history; and the history of investments into land, housing or businesses. Moreover, several modules are included to provide information about migration-related events in the respondent's life, namely international migration attempts, international migration and return migration experiences. The latter two are identified in the AGEVEN grid by means of the residential history. All these themes are covered both in the AGEVEN grid and the questionnaire modules. In addition, timing and destination country of migrations of the personal network; transfers sent; short stays abroad; citizenship changes; asylum applications; residence and work permits; short returns to the country of origin and periods of membership in migrant associations are recorded in the AGEVEN grid. The family histories are recorded in the AGEVEN grid relatively early in the interview. Since these are events that the interviewee is usually better able to remember, other dates can be determined with reference to the already established events. For example, when establishing the history of migrations within the personal network, the interviewer can use an event such as the birth of the respondent's son to ascertain whether the cousin migrated in the year after. Most histories are recorded at annual intervals. Exceptions are short stays abroad (visits, transit, stays with intention to settle), short returns to Senegal (visits, stays with intention to settle) and migration attempts.[11]

2.1.5   The potential limitations of the MAFE survey data

While the biographic MAFE survey provides extremely rich data on demographic events in general and migration-related aspects in particular, its sample and questionnaire design also bring about a number of limitations. This section discusses how far these limitations may affect the interpretation of results from the empirical analyses.

Sample "mismatches"

The sampling design of the individual survey, which does not match migrants abroad with households at the origin, may induce sample selection biases in some empirical analyses.

First, no information is available on the behaviour of Senegalese residing, at the time of the survey, in other destination countries, in particular in the West African region or

---

[11]All questionnaires can be found at `http://mafeproject.site.ined.fr/en/methodo/methodo/`.

the United States, which is becoming an increasingly important destination country. The retrospective survey provides, however, information about past migration experiences in countries other than France, Spain and Italy. These migration experiences are recorded for migrants interviewed in Europe, who previously lived in other countries, and for returnees sampled in the region of Dakar, who may have lived anywhere in the world. In particular, 9% of the European sample had lived in Africa (outside of Senegal) for one year or more and 32% of return migrants interviewed in the region of Dakar had spent at least one year in Europe, while the majority of return migrants (62%) have migrated only within Africa. Although the composition of the Senegalese sample is representative of return migrant experiences in the region of Dakar, and reflects at the same time the preference of current migrants from Dakar for European countries (Chapter 1), this difference in the percentages shows that there is a sort of "sample mismatch" between the migrants interviewed in Europe and the return migrants interviewed in Senegal, if one wanted to compare the two groups. The former have almost no experience of migration in Africa, while the latter came mainly back from African countries.

Moreover, the more one approaches the survey time, the more the composition is biased towards the three European destinations, since migration experiences elsewhere are in the past, both for individuals surveyed back in Dakar and individuals surveyed in Europe. The short description of the profile of migrants in African and European countries in Chapter 1 suggests that sorting into destination countries reflects to some extent differences in observable migrant characteristics, such as gender or education, though this is true for heterogeneity between European and African countries as well as across European countries. Current migrants in Africa would thus represent a more appropriate comparison group to return migrants when comparing across groups. The within-variation for individuals who were abroad and then returned constitutes, however, a viable source of information on changes in the migration-cycle. The fact that recent migrants in other African countries are not represented in the data should, however, be borne in mind when merging the origin and destination samples.

A second "sample mismatch" is due to the restriction of the Senegalese sample to the region of Dakar, while 35% of current migrants interviewed in Europe have never lived in Dakar for at least one year. These migrants are over-represented in Italy and in the Mouride brotherhood, have at the average lower levels of formal education, and have a slightly lower share of female migrants. However, approximately 50% of non-migrants and returnees interviewed in the Dakar region were born in other parts of the country, and may not represent a "typical Dakarois" either. Among return migrants, 36% had also never

lived in Dakar before their first migration. Moreover, on the subjective question "Is there a place that you would consider to be your village or your town of origin in Senegal?", a place that can thus differ from the place of birth, 37% of the migrants interviewed in Europe reported Dakar or its surrounding towns in the region, while this is the case for only 24% of non-migrants and return migrants respectively, despite the fact that they were residing in the region of Dakar at the time of interview. Fewer non-migrants and return migrants interviewed in the Dakar region perceive themselves as originating from Dakar than migrants interviewed in Europe. These statistics suggest that the consequences from this "mismatch" regarding origin regions may be less important for the analysis than expected.

The lack of total matching between origin and destination samples has to be taken into account when interpreting results from MAFE individual data analysis, in particular when comparing return migrants and current migrants at the time of the survey. The relatively small sample size prevents one from using broad-brush solutions such as dropping all returnees who had migrated only within Africa from the analysis. However, sample designs matching households at origin and migrants at destination may induce different types of statistical noise. Findings by Beauchemin and González Ferrer (2011) indicate, for instance, that migrants selected through contacts at origin tend to be more connected to the origin household than the average migrant, and that they are more likely to come from less wealthy households and from households whose household heads had been migrants themselves.

An approach to overcome the first type of mismatch would be to use the MAFE household survey instead of the individual data, as it contains proxy information about current migrants independently of their current location. However, we prefer the use of the individual data in the main empirical chapters for several reasons. Firstly, the responses in the household survey refer only to individual characteristics at the time of the survey, not to characteristics at the time of migration or other events analysed, such as investment. The main advantage of having access to longitudinal data would thus not be exploited. Secondly, responses are provided by a proxy respondent, a potential source of measurement error. A rough estimate of the response errors induced by proxy respondent answers is provided in Table 2.2. We compare information provided in the household survey with information provided in the individual survey on variables that are common to the two surveys: year of birth, place of birth, years of education, labour market status, occupation, year of first departure, year of first return. Since household heads commonly answer the household survey we exclude them to retain only proxy respondent information from

Table 2.2: *Discrepancies between household survey and individual survey*

Variables		% concordant information household survey – individual survey	N
Year of birth			675
	exact	47%	
	+/- 1 year	68%	
Place of birth (department)		67%	675
Years of education			675
	exact	42%	
	+/- 1 year	54%	
Labour market status		65%	675
(student; working; unemployed; homemaker; retired; other inactive)			
Occupation status		44%	410
(manager; skilled employee; unskilled employee; employer; self-employed; intern; family help)			
Year of first departure			94
	exact	21%	
	+/- 1 year	27%	
Year of first return			94
	exact	14%	
	+/- 1 year	23%	

Source: *MAFE-Senegal household and individual surveys (2008)*

the household survey. The percentage of concordant information is presented, counting as discrepancy both differing responses and non-responses by the proxy respondent.

The concordance rates are low, especially when dates in the past have to be recalled, which may be more prone to recall bias by proxy respondents than by the individual concerned, at least with regard to factual information. This result provides an argument in favour of using the individual survey data for most empirical analysis, even if it is hampered by the sample mismatch problem discussed. It suggests, at the same time, that analysis using origin country surveys relying on proxy respondents for information about household members abroad tend to be flawed due to misreporting.

Pros and cons of retrospective data

Longitudinal data can be collected in a prospective manner through panel studies, or retrospectively by asking respondents to report past events, covering often several decades of life experiences. Panel surveys depart from a representative sample and may lose representativeness due to attrition. Whether attrition is random or not can be determined to some extent since initial characteristics of individuals who dropped out of the panel are known.

However, if one wanted to cover 40, 50 years with a panel, the resulting sample would not reflect the current population, unless samples are replenished to reflect changes in the population structure. Retrospective surveys, on the other hand, can draw a sample that is representative of the current population, but this representativeness may not hold for the past recorded through retrospective questions, since only "survivors" can be sampled. The objective is thus to understand the current population's trajectories rather than characteristics of past populations. Moreover, retrospective data at small time intervals offer a more exhaustive recount of changes in characteristics over time than panel data, especially if panel inter-wave periods are long and changes between waves are not captured through additional retrospective questions. Finally, panels are costly and difficult to maintain, especially when the population of interest are international migrants and attrition is likely to be high and non-random.[12]

However, given that respondents were, on average, 40 years old when responding to the survey, the memory effort required to answer to the retrospective survey is without any doubt considerable. Erroneous answers can imply that an event is not reported at all, misreported or wrongly dated, thus inducing a measurement error. Some experiences may be difficult to be dated, if they are recalled as a process rather than as an event, such as separation from a partner, or the start of a migration attempt. Moreover, the questionnaire modules inquire about a whole set of aspects for each of the life episodes in question. For instance, regarding the housing history the respondent does not only have to remember when a move took place and to which location, but also characteristics of the dwelling, household composition at the time of the move, and the household's absolute and relative subjective economic well-being, and this for each dwelling in which the respondent lived for at least one year. Even if the questionnaire format is designed to facilitate the remembrance process by cross-referencing across different life histories, it is likely that recall is a problem. Detailed questions on income sources and expenditures that are standard, for instance, in cross-section household surveys are therefore not included in the questionnaire since it is unlikely that respondents are able to remember and report correct amounts. In addition to bias due to a faulty memory, past events and states may be distorted consciously or unconsciously if the respondent tries to make the past consistent with present choices and behaviour, as pointed out by Eckstein and Shachar (2007) for the case of voting behaviour. The same applies to questions about values, opinions, or

---

[12]Survey projects that were to some extent able to trace migrants over time include the Kagera Health and Development Survey (Tanzania; internal migrants and small number of migrants to Uganda), the Nang Rong Project (Thailand; traces internal migrants to 4 urban destinations), and the Mexican Family Life Survey (Mexico-US migration).

information about risk aversion. Despite their relevance for migration processes, these are question types that cannot be included in retrospective questionnaires.

The extent of the memory bias cannot be assessed for the MAFE data set, as one would need prospective data as well as repeated retrospective histories to be able to compare how far memory diverges from reality. Previous research with access to both panel or register data and retrospective data has attempted to provide estimates of memory bias. The extent of the bias seems to be related to the variable measured. Unemployment episodes, for instance, tend to be under-reported retrospectively, even if the recall period is very short. Horvath (1982) reports that under-reporting occurred even if the reference interval was as short as one month. More recently, Jürges (2007) examines memory bias in unemployment reporting in the German Socio-Economic Panel, and finds that 13% of unemployment spells experienced were not reported when asked one year later. With regard to family histories, authors generally conclude that memory bias is less of a problem, since births and marriages are rare events and easier to remember (Auriat, 1996; Poulain et al., 1992; Peters, 1988), and they are hence chosen as starting points in the MAFE questionnaire. Family events also seem to be better remembered by women than by men (Poulain et al., 1992). More problematic are residential histories, which provide the main variable of interest in the study of international migration, especially when the exact date rather than the order of events is important (Auriat, 1996; Poulain et al., 1992). Still, international moves are again more likely to represent exceptional events and be better remembered than short-distance moves. Moreover, Courgeau (1991) compares results from non-parametric and parametric analysis of residential duration data and concludes that the discrepancies observed in descriptive data from retrospective histories and register data do not translate into very different results from multivariate analysis.

While retrospective data involve most definitely some bias due to recall error, the effects in the context of regression analysis may not be that important. In addition, some data are better than no data. As Butz (1981) pointed out in an early assessment of retrospective data quality: *"a retrospective survey is always a substitute for a vital registration system, a history of censuses, or several cross-sectional surveys. 'How good a substitute, considering the purpose?' is the question. 'Far from perfect, but inexpensive and good enough,' may be the answer."*

Biographic data imposes individual perspective rather than household or community perspective

The last limitation regards the trade-off between richness of individual histories and information about other units of analysis such as the household in biographic surveys. Biographic surveys trace by definition the life of the respondent. Information about the household, for instance, can only be captured to some extent. For instance, household composition or household wealth may be recorded at events in the respondent's life, such as residential moves, but not at as fine time intervals as for the respondent himself. Moreover, considering the recall effort involved in establishing one's own life histories, it is clear that events related to other household members are even more difficult to remember. Questions regarding other family members or friends included in the MAFE questionnaire inquire, for instance, about international migration experiences of nuclear and the extended family and friends; socio-demographic characteristics of spouses at the start of the relationship; characteristics of the household at the beginning of each residential episode (household composition, type of housing, financial situation of the household); and the role of family members and friends in organising a migration or return. Also village or community-level characteristics in which individuals lived in the past and that may have evolved since then are difficult to recall in retrospective questionnaires.[13] Consequently, while family- or household-related variables can be integrated into the analysis, the emphasis lies on the individual behaviour and the individual is usually the unit of analysis. Hypotheses of migration literature relating to the household as unit of analysis as well as to the role of community level-characteristics, as proposed in particular by the New Economics of Labour Migration literature (Stark, 1991), are thus difficult to test.

Concluding the section on the MAFE survey, it is important to emphasise once more the innovative characteristics and richness of the data set. While the limitations discussed above are important and should be borne in mind when using the MAFE data for empirical analysis, the survey represents a step towards filling the gap on African migration data. It uses a methodology which is at the same time cost-efficient and appropriate for a large number of research questions in migration research, as it provides multi-topic and multi-site longitudinal data on non-migrants, migrants and return migrants.

---

[13]A noticeable exception is the retrospective community survey conducted in 2002 in Burkina Faso (Schoumaker et al., 2006), which collected community histories in a large share of communities reported by individuals in the earlier biographic survey Migration Dynamics, Urban Integration and Environment Survey of Burkina Faso (EMIUB in 2000).

2.1.6 My involvement in the MAFE survey

Thanks to a Marie Curie Research Training Network fellowship for Early-Stage Researchers, I was hired by INED to participate in the MAFE project and to exploit the data (primarily MAFE-Senegal). This position gave me the opportunity to be involved in all stages of the survey project: from the questionnaire development, over fieldwork in Senegal to follow-up activities and data preparation of MAFE-Senegal data. I have therefore developed a thorough knowledge of the data. Shortly after my arrival at INED, I was able to provide inputs to the questionnaires in the final stages of questionnaire development. I then checked questionnaire translations from French into Spanish and Italian to make sure that concepts were adequately conveyed in all three languages, and translated myself the questionnaires into English in preparation of the surveys conducted in 2009 in the UK, the Netherlands and Ghana. I furthermore participated in the tests of data entry masks used for the individual survey in Senegal in order to detect problems with instructions for data entry agents, routing, entry value validation, logical consistency and loops in event history grids. At the time of data collection in Senegal, I spent over a month in Dakar to prepare the sampling of individuals based on the household data collected, preparing the files with the variables reflecting eligibility. During the stay in Senegal, my tasks also involved the training of questionnaire proof-readers and their supervision during the first week of data collection. Furthermore, I was responsible for the cleaning and preparation of household and biographic data in co-operation with INED's statistical service, programming for instance routing checks and coherence tests, as well as aggregate variables for the household data. In the context of the extension of MAFE to the Ghanaian and Congolese migration systems I participated as a trainer in interviewer trainings in the UK. Other tasks within the MAFE team included the co-ordination of a working group on the use of sampling weights in event-history data in general and MAFE data analysis in particular, as well as the drafting of a note on practices with regard to weighting. I also performed the first recoding of MAFE occupation codes into the International Standard Classification of Occupations (ISCO) and the coding of prestige and socio-economic status scores together with colleagues from the Spanish partner institution.

2.2 The role of immigration policies in empirical research: debate and measures

The following chapter (Chapter 3) examines whether determinants of migration attempts differ from the determinants of the actual moves from Senegal to Europe. In addition to individual- and household-level factors, the analysis also examines the role of contextual factors. In particular, the objective is to understand in how far immigration policies in the destination countries, defined here as policies that target the entry conditions rather than the integration conditions of foreigners, affect both the attempt and the actual migration. At the time of writing, no immigration policy database existed that would cover immigration policies targeting Senegalese in France, Spain and Italy over the past 40 years and allow for a quantification of levels and changes. In collaboration with Amparo González Ferrer from the Spanish National Research Council[14], we decided therefore to develop such a database ourselves, as well as approaches to transforming qualitative legal texts into quantitative indicators. The following sections discuss the challenges of including policy measures in empirical research, present existing approaches to measuring immigration policies, and explain the methodology employed to construct the database used in the context of this thesis.

2.2.1 Are immigration policies of importance in empirical research?

According to the traditional microeconomic neoclassical model of migration, individuals decide to migrate based on rational cost-benefit calculations. Immigration policies aim to affect expected financial and emotional costs attached to migration, for instance by changing the amount of time and money involved in obtaining required documentation, making decisions about visa approval more or less arbitrary, closing entry channels, or keeping families separated over time. At the same time, expected returns to migration may be influenced through changes in labour market access, and softening or toughening of the potential consequences of apprehension in case of illegal migration (Cornelius and Rosenblum, 2005). Given that, at least at the aggregate level, income gaps remain very large between sending and receiving countries, restrictive policies seem to be the obvious

---

[14]The conception of the database in terms of variables and indicator thresholds was carried out by Cora Mezger Kveder and Amparo González Ferrer; Cora Mezger Kveder was responsible for data collection and coding of French policies, Amparo González Ferrer of Spanish policies and the work on Italy was a collaborative effort. We thank Elisabeth Kraus for providing research assistance in searching for Italian legal texts.

candidate in explaining why volumes of migration are not much larger than they are.

"If Africans are as responsive to migration fundamentals as Europeans were a century ago [...], then large outflows should be taking place now and larger ones should be expected in the future. Presumably, it is the presence of restrictions on immigration in high-wage OECD countries that has stemmed much, but certainly not all, of this potential flow."
(Hatton and Williamson, 2003)

In addition to its potential effect on volumes of migration, immigration policies can aim to induce shifts in the composition of immigration, for instance by skill level, motive of migration or length of stay, by increasing costs and lowering benefits to certain immigrants only (Boeri et al., 2002). Next to policies affecting numbers of migrants and how they are selected, policy decisions are made regarding the rights of migrants once they are in the country (Ruhs, 2008), and trade-offs may arise between granting more extensive rights to immigrants and accepting larger inflows (Ruhs and Martin, 2008).

However, the causal link between policies, on the one hand, and measurable outcomes in terms of migration decision-making, on the other, seems less direct than in the case of other contextual factors, and hence more difficult to assess through empirical research (see Czaika and de Haas, 2011 or Cornelius and Rosenblum, 2005 for more detailed reviews).

First of all, the dominant policy discourse in a destination country may not translate into actual policies, and policies may not be enforced. Political economy models of migration suggest that gaps may result from economic needs that do not reflect the opinions of the median voter, largely in favour of decreasing immigration across destination countries (Facchini et al., 2011; Facchini and Testa, 2010). For instance, Hanson and Spilimbergo (2001) find that US border enforcement weakens when labour demand increases in sectors that use the type of labour provided by undocumented migration. Fasani (2009) obtains similar results for the case of Italy, examining the effect of labour demand on deportations. Opposing interests may also be reflected in the policies themselves, introducing for instance *"can be"* formulations instead of giving clear *"must"* indications. Another reason may be the time lag between legislative and regulative texts, allowing for time periods without clear implementation procedures and opening up possibilities for discretionary decisions. At the same time, large time spans may separate one legislative change from the following one, in which case administrative instructions tend to be used to fill the legislative void, as it was the case in Italy between the 1930s and 1986. The lack of legislation again favours discretionary practices. Several authors such as Sassen (1999) and Czaika and de Haas (2011) also note that national policies, especially in Europe, are more and more curtailed

by supranational institutions, limiting the freedom of action of national governments to follow up on their own discourse, though this view has been challenged by other authors. For instance, Koopmans et al. (2012) observed divergence rather than convergence in policies concerning immigrant rights in 10 European countries over the period 1980 to 2008.

Secondly, policies that are enforced may not matter as much for individual decision-making as destination country governments would like to think (Cornelius and Tsuda, 2004; Cornelius and Rosenblum, 2005). Potential migrants may not be aware of policy changes at destination, in which case no effect would be noted when examining migration intentions or attempts prior to departure (Cornelius and Salehyan, 2007). Alternatively, migrants may adjust their decision-making behaviour according to policy discourse rather than actual policies, if discourse is communicated through migrant networks or media in the origin countries. Moreover, other types of policies may be dominating the migration decision-making process, or may perform the same function as policies targeting specifically immigration (i.e. functionally equivalent policies). One such example is the role of the labour market situation at destination, again influenced by a different set of policies, making it difficult to isolate the efficacy of immigration policies (Czaika and de Haas, 2011). Some policies that intend to curb immigration volumes may do so through measures targeting the conditions of stay at destination, regulating in this way the expected returns to migration. However, the decision to migrate may not be affected by such policies if potential migrants have a rather short time horizon, valuing the possibility to enter the country more than the subsequent stability of stay. Relevant empirical studies focus predominantly on the effect of policies on undocumented migration from Mexico to the US. Results vary, as Espenshade and Acevedo (1995) and Angelucci (2012) found a positive effect of increased border control, which was not confirmed by other authors, though using different measures of policies as well as econometric approaches (e.g. Massey and Espinosa, 1997; Cornelius and Salehyan, 2007).

Thirdly, assume that policies indeed affect certain types of potential migrants. However, adjustments in migration behaviour in response to policies hamper the understanding of the impact unless data are available to employ more disaggregated definitions of the dependent variable (Czaika and de Haas, 2011). For instance, shifts between legal and illegal migration are difficult to detect given that few destination countries collect data on illegal migrants, and origin country surveys rarely contain information about the legal status of household members abroad. Migrant policies may also be successful in affecting specific legal categories of migrants (work, family, study etc.), and migrant candidates

may respond by switching categories. Furthermore, migrants may adjust through sorting into different destination countries rather than not migrating at all, and data on various destination countries and their respective policies are needed to examine this case (Bertoli et al., 2011; Grogger and Hanson, 2011; Collyer, 2005). Adjustments through changes in the timing of migration may also constitute a response to migration policies, which would only be detected if the "correct" number of lags is used. Finally, a fine measure of immigration policies as well as migrant characteristics would be required to establish whether policies targeting the skill-composition of immigration are successful (Grogger and Hanson, 2011).

Studying the impact of immigration policies is thus challenging from a conceptual point of view. Further challenges are posed by the operationalisation of the immigration policy variables.

2.2.2 Approaches to measuring immigration policies

Approaches to measuring immigration policy used in previous research can be broadly divided into two types: approaches based on the analysis of legal texts and approaches using policy "outcome" measures (e.g. number of student visas issued) which aim to reflect the level of enforcement.

Legal Texts

The disadvantages of using legal texts as a basis for indicators have been outlined above. It is likely that there are considerable gaps between the legal text and the actual impact of the policy on migrant decision-making. Nonetheless, important advantages are that legal texts are to a higher degree comparable across countries than outcome indicators, and that a considerable share of legal texts is accessible to the public. Moreover, even if not fully enforced, they should still convey the orientation of the government towards immigration, especially if regulatory texts are taken into account. Several studies and research projects have thus based their analysis on indicators derived from legal texts.

Mayda and Patel (2004) collected information about key laws in 14 OECD countries between 1980 and 2000. For France, only 25 texts are identified for this period, including European Union treaties and extraordinary regularisations. No detail about the content of the law is provided. The year in which the law was passed is then coded rather subjectively

as minus one if the policy became more restrictive, zero if there was no change or plus one if the law became less restrictive. Weaknesses of this approach are that only the overall change is considered, without distinction by different ways of entry (family reunification, work etc.), and the fact that in one and the same law some groups may experience an increase in restrictions while the opposite is true for other groups. Moreover, levels of policy restrictiveness are not directly comparable across countries, as only the change is considered. This may be sufficient in a panel data analysis as proposed in Mayda (2008), when within-country changes are investigated, but does not allow for an analysis taking account of differences between potential destination countries. Spain and Italy are not covered in the analysis.

Ortega and Peri (2009) build on the Mayda and Patel database, update for years until 2005 and create three indicators using the same general approach as Mayda and Patel (2004) on entry, entry and/or stay and asylum. The authors also provide some more information about the criteria for coding a law as more or less restrictive. In particular they code as less restrictive in terms of entry laws that "(i) lower requirements, fees or documents for entry and to obtain residence or work permits or (ii) introduce the possibility or increase the number of temporary permits." A law is coded as increasing restrictiveness in terms of entry if "(i) it introduces or decreases quotas for entry, and (ii) increases requirements, fees or documents for entry and to obtain residence or work permits".

To update and complement the list provided by Mayda and Patel (2004), Ortega and Peri (2009) also reverted to the "Social Reforms Database" collected by the Fondazione Rodolfo De Benedetti (fRDB). It collected data on changes in migration policy from 1990 to 2005, including for Italy and Spain. The description of changes introduced by laws is slightly more detailed, providing information about two to four changes deemed most important by the researchers. According to the description on the website, it appears that more recently a simple index has been constructed on the basis of six variables: the number of admission requirements, duration of first stay, number of stay requirements, number of years of residence required to apply for a permanent residence permit, single permit or separate work and residence permit, and existence of quotas. The resulting index varies from 0 (least restrictive) to 6 (most restrictive).

Several large-scale projects have been initiated to produce more comprehensive comparable and time-varying measures of immigration policy based on legal texts, borrowing from previous research in the areas of immigrant integration and citizenship. The "In-

ternational Migration Policy and Law Analysis" (IMPALA)[15] database project has been started by Harvard University, the University of Luxembourg, the University of Amsterdam, the London School of Economics, and the University of Sydney. The database should cover policies of entry, stay and integration of all immigrant categories, including asylum and acquisition of citizenship, in over 25 countries and for the period 1960 to 2010. This will definitely be an invaluable resource. Unfortunately, it is not yet available, and not much information has been published to date regarding the choice of indicators, the coding and weighting methodology. A very similar project called "Immigration policies in the Western world: New indicators, causes and effects"[16] has been initiated by the Wissenschaftszentrum Berlin für Sozialforschung (WZB). This project should provide data by 2016 and aims to construct quantitative measures of immigration policy for 27 OECD countries, using legal texts as the main source and using at least partially a similar methodology as the Migrant Integration Policy Index (MIPEX, see below). In addition to the policy database, the WZB project also aims to investigate the "black box" between policy formulation and enforcement through qualitative interviews with bureaucrats in charge of implementing specific policies.

MIPEX focuses on policies relating to integration rather than immigration, and has been published for the third time in 2011, after 2004 and 2007. Data for policies before 2004 or changes between years are not available. The methodology consists in scoring national policies on circa 150 indicators according to cross-nationally comparable thresholds established by three possible categories, from least to most equal treatment with regard to natives. While the definition of thresholds remains to some extend subjective (the most equal treatment is geared to the European Union Directives), the coding of policies is relatively objective once the thresholds are defined. Without differential weighting, indicator scores are then averaged within policy dimensions, which are again averaged until providing one single figure per country.

A third project, the "Labour migration policy index" produced by Oxford Analytica for the International Organization for Migration (Oxford Analytica, 2008), is also based on the analysis of legal texts. It captures administrative mechanisms (e.g. visa processing time, visa costs), entry mechanisms (e.g. existence of quotas, national employment clauses), work permit entitlements (e.g. duration of stay, possibilities for family reunification) and

---

[15]Some information about the IMPALA project can be found at `http://projects.iq.harvard.edu/impala/` (last accessed on 20/03/2012).

[16]Some information about the WZP project on immigration policies can be found at: `http://www.wzb.eu/en/research/civil-society-conflicts-and-democracy/migration-and-integration/projects/immigration-policies-in-the-` (last accessed on 20/03/2012).

employment and social rights (e.g. equal conditions of pay, access to social security), distinguishing in addition between countries with temporary and permanent as well as skilled and unskilled migration programmes. Most indicators are based on policy-texts, but some aim to capture policy implementation, measuring for instance how clearly information on entry requirements is communicated on official government websites; or using actual visa costs in addition to visa requirements. In total, 13 indicators are included in four sub-indices, which, so far, are only available for one time point (2006/2007).

Lastly, a mix between legal texts and "expert knowledge" has been used by the UNDP to assess policies on admission, integration, and efforts to enforce policies (Klugman and Medalho Pereira, 2009). A questionnaire using predominantly multiple choice questions was completed by experts from the International Organization for Migration (IOM) and responses were afterwards validated through the analysis of a variety of sources, including laws but also press articles, academic publications, or information provided by NGOs. While some questions ask about policies, others are more general and subjective such as "how frequently do immigration officials and other law enforcement authorities ask for bribes from migrants when dealing with their immigration status?".

Approaches to measuring immigration policies based on the legal texts themselves have thus greatly varied with regard to subjectivity of coding, comparability across countries, longitudinal coverage, refinement of indicators, and aggregation procedures.

Policy outcomes

Some researchers have favoured the use of outcome measures instead of legal texts in order to overcome to some extent gaps between formulated policies and enforcement, and subjective coding by the researcher. Researchers also argue that outcome variables allow for a better comparability across destination countries, as measures using legal texts have mainly studied within-country variations and only the work-in-progress projects are extending to cross-national comparisons. Such variables either apply to specific policies or try to measure the overall immigration policy effect, using data on actual or estimated migration flows or stocks.

Massey and Espinosa (1997), for instance, introduce in their seminal paper on determinants of Mexican documented and undocumented migration to the United States a variable measuring the availability of visas and hence cost of migration. The measure of visa availability is constructed by taking the ratio of annual legal Mexican immigration volume

to the sum of legal immigration and estimated gross illegal entries (estimates are explained in Massey and Singer, 1995). The underlying assumption is that immigration policies restricting the number of legal entries cause a shift towards illegal migration. Illegal entries are estimated based on information about the probability of apprehension along the southern US border.

Offering a similar reasoning, Bertoli et al. (2011) examine the role of destination country immigration policies in determining the destination choice (United States or Spain) of emigrants from Ecuador. The authors construct a measure of the risk of illegal migration as the ratio between the number of deportations and an estimate of illegal migration plus deportations in the time period 1999 to 2005. The results suggest that the lower risk of migrating to Spain engendered by laxer immigration policies explains to a large extent why Ecuadorians chose to migrate to Spain instead of the US, despite higher expected income gains in the latter destination country.

In Money (1999), the immigration control measure is the dependent variable, and is once again constructed from aggregate migration data. The indicator is computed as total immigration as a proportion of total population in each destination country, and the author assumes hence that an increase in the proportion of immigrants constitutes a very good proxy for less strict immigration control.

Instead of using a single indicator, the migration component in the "Commitment to Development Index (CDI)" developed by the Center for Global Development (Roodman, 2010) is constructed as a weighted average of several indicators. Similarly to the other proposed measures, migration flow data are at the core of the indicators, namely the ratio between gross immigrant flows from developing countries and receiving country population; the change in the stock of unskilled immigrants from developing countries; and, included with a lower weight, the share of students from developing countries among the foreign student population.[17]

The approach based on migration volume measures assumes that actual or estimated migration volumes are a good proxy of immigration policies, at least at the level of policy enforcement. Such indicators seem problematic, especially when used as dependent variable as in Money (1999) or to create country rankings as in the CDI, where other factors influencing migration volumes are not necessarily controlled for. Money (1999) acknowledges that the chosen indicator may also capture origin country push-factors in addition

---

[17]The CDI also considers one policy input variable, an indicator whether foreign students pay higher tuition fees than nationals.

to immigration policy but argues that in the post World War II period supply of migrants is unlimited and depends thus predominantly on pull-factors, meaning immigration policy. This exclusion of the origin country conditions as well as the lack of discussion of other pull-factors, above all of economic nature, seems questionable. Boussichas and Goujon (2010) go a step further and use a residual approach to separate changes in migration flows due to changes in policies from changes due to other factors. A gravity-model of migration is estimated by regressing legal migration flows to 21 OECD countries between 1990 and 2006 on a standard set of variables, including GDP per capita in origin and destination countries, the unemployment rate, geographical distance, language at destination, a trade openness measure, and migrant stock at destination. The authors argue that the residuals reflect the annual effect of overall migration policy, covering both entry and integration elements. Indeed, some countries are considerably differently ranked than when using uncorrected migration volumes, such as Spain, Italy, or Finland, ranked as less restrictive, or Switzerland, the US and the Netherlands, ranked as more restrictive.

The residual approach should be more successful in controlling for the role of non-policy determinants of migration, but relies on the correct specification of the regression model in terms of included regressors and functional form. Other proposed variables are also computed based on estimates of migration flows or stocks, and the construction may thus not be necessarily entirely objective either. On the other hand, if data are available, the construction of indicators is considerable faster and less resource-intensive than the construction of policy measures based on legal texts. However, another limitation is that policy exceptions for specific groups on the basis of bilateral agreements are difficult to account for when using aggregate data. Finally, it appears difficult to gain a more detailed understanding of which policies out of a policy mix matter when aggregate migration outcomes are used. The variables, with the exception of more specific ones such as the apprehension probability, seem rather to function as control variables than as explanatory variables of interest.

Examples for more specific policy outcome measures can predominantly be found in the research on undocumented migration flows. Authors have been using, for instance, the US border patrol office hours devoted to apprehension or Congressional capital appropriations for enforcement purposes (e.g. Espenshade, 1995; Angelucci, 2012).

Year dummy variables

The last observation applies as well to the inclusion of year dummies to control for policy effects. Under the assumption that no other determinants are omitted, the dummy variables should capture the policy effects. Vogler and Rotte (2000) examine the determinants of migration from African and Asian countries to Germany, and include three year dummies for 1987, 1991 and 1993, the years in which major immigration laws were passed. The estimated coefficients show the expected sign, with negative effects for 1987 and 1993 and a positive effect for 1991. Massey and Espinosa (1997) also include in their analysis of determinants of migration a variable for years in which employers in the US who hired illegal workers were sanctioned, a measure that reduces the employment probability and hence the expected returns to migration. The estimated coefficient is positive, not negative as could have been expected. The authors suggest as possible explanation the contradictory policy choices of the US government, as the introduction of employer sanctions was accompanied by a large-scale amnesty. The positive effect of the amnesty, controlled for by a variable indicating whether someone in the respondent's household was legalised under the programme (Immigration Reform and Control Act, IRCA), may be dominating the potentially negative impact of employer sanctions. This result provides support for the need of a better understanding of which policies out of a policy mix matter when aggregate migration outcomes are examined. The IRCA amnesty was also considered in form of year dummies by other authors investigating Mexican undocumented migration (e.g. Orrenius and Zavodny, 2005; Donato et al., 1992).

2.2.3 The ImPol-MAFE(SN) dataset and construction of policy indicators

The presented data sources are not entirely adequate for analysis within the context of the MAFE analyses, as time coverage and the detail of the measures are usually limited and measures are, if at all, comparable only within countries and not across countries. We decided, therefore, to collect data on immigration policies (the ImPol-MAFE(SN) database) and to construct policy indicators based on these.

Legal texts

We chose the legal-text approach to construct policy indicators of policies on immigration to France, Italy and Spain, taking into account specific treatment of Senegalese through bilateral agreements. While we are aware of the potential gaps between laws, enforcement and outcomes, the quantification of legal texts seems to be the best option in the context of our analysis. Firstly, the time period we attempt to cover, from the 1960s and 1970s to 2008, when the MAFE-survey took place, is considerable. Data on outcomes such as border apprehensions, number of visa refusals, or successful family reunifications are not available for earlier decades, or may not even be relevant if such policies did not exist, and are often incomplete even for recent years. Legal texts, on the other hand, allow for identification of policy constructs that are comparable over time as well as across the three destination countries (France, Italy and Spain).

Furthermore, the specific case of Senegalese migration can be captured through the analysis of bilateral agreements. Applying the general immigration law to the Senegalese study population, for example during periods when visa exemptions were in place, would distort the conditions. Data on outcome measures are, however, often presented in aggregated form. If at all, only the main countries of origin are presented separately. While Senegal today constitutes an important source country for immigration in the three European countries analysed, this was not always the case. Early immigration to France, for instance, was dominated by flows from Southern Europe and North Africa, and data on Sub-Saharan Africans were therefore not made available to the same extent.

Data collection

Still, we attempted to account to some extent for implementation procedures, especially in periods when the legislation was rarely updated. Our sources thus include in addition to decisions at the legislative and regulative levels also administrative instructions, in particular ministerial circulars. These should constitute a guideline for those whose responsibilities include the implementation of the law, such as border administrations or town officials. We concentrated on national policies. European Union directives were considered when, and in the form, ratified by the member country. Moreover, conditions and requirements specific to Senegal on the basis of bilateral agreements were taken into account whenever applicable and to the best of our knowledge. The data collection process was very time-consuming (February 2011 to March 2012), since our aim was to use

original legal texts instead of secondary references. Annex A includes a list of legal texts consulted.

In the case of France, most relevant texts were accessed via the "légifrance" website, where initial as well as consolidated versions of texts published in the Official Journal from years as early as 1945 are available in digital form, including many ministerial circulars. French post-war immigration law builds on the Ordonnance n. 45-2658 from 02/11/1945 on the entry and stay of foreigners in France. It was modified numerous times until being replaced in 2004 by the Code on entry and stay of foreigners and on asylum rights (CESEDA). For selected indicators related to the stay, texts consulted also concern labour law and social security law. Given the colonial history between France and Senegal, moreover, it was important to account for bilateral agreements regarding conditions for entry and stay. Additional sources were the "Groupe d'information et de soutien des immigrés (gisti)", the "Centre d'information et d'études sur les migrations internationales (CIEMI)", and the association CIMADE. A series of ministerial circulars and relevant secondary sources concerning the condition of entry for studies and the access of foreign students to the labour market in the 1970s and 1980s were provided to us by Serge Slama, lecturer of public law (Université Paris Ouest Nanterre and Université d'Evry) and expert on this topic.

The access to Italian policy documents was less straightforward, mainly due to the fact that no adequate immigration legislation existed in Italy before the 1990s. Having been a country characterised by strong net emigration in the decades after the Second World War, the legislative framework was very slow to adapt to increases in immigration and the transition to net immigration in the 1970s. The relevant laws dated from fascist times, and were mainly concerned with public security (Testo unico delle norme di pubblica sicurezza, r.d. n.773 of 18/06/1931; with regulations in r.d. 635 of 06/05/1940). While the need for an overhaul and extension of policies became evident early on, no law on immigration was passed until 1986 (Legge n. 943 of 30/12/1986). Even this law was very limited in scope, as it only concerned workers, and focused in addition on the regularisation of foreigners already present in Italy. During the almost five decades between the two laws, Italian norms on entry were defined in a series of administrative circulars. This practice was widely criticised (e.g. Ricci, 1986; Calamia, 1980), as such documents should only explain the implementation of a law. They should not extend the law by defining new norms, as it occurred in the Italian case. Moreover, the circulars were, until recently, considered to be internal documents and as such not easily accessible by the public. This was in particular the case for the so called "circolari riservate", which were the most important

and comprehensive texts with regard to the norms on entry and stay of foreigners in Italy. Visits to the libraries of the Ministry of Foreign Affairs, the Ministry of Labour as well as of the Chamber of Deputies and the Senate in Rome were necessary in order to access at least the most important texts. Of particular assistance was the book by Nascimbene (1988), which is out of print and available only in few libraries, as the author reproduced selected texts from the 1960s to 1980s in the Annex. During the visit to Rome, we also met with Sergio Briguglio, who maintains a comprehensive archive of documents on Italian immigration policy since the mid 1990s[18], to discuss the sources and interpretation of more recent legislative texts. We were also able to access more recent legal texts via websites of various public institutions (Italian parliament, Official Journal, Ministries of Foreign Affairs and the Interior, Chamber of Deputies/Senate), universities (infoleges) and civil society associations.

In the case of Spain, the collection of information was more straightforward in comparison to the other two countries, for two reasons. On the one hand, Senegalese nationals have not had a differentiated treatment via bilateral agreements, like in the French case, as we were able to confirm through contacts with key informants working at the Spanish Immigration Department.[19] On the other hand, the more recent legislation (both laws and regulations) passed since the first Foreigners' Law (Ley de Extrajería) was approved in 1986, are widely known and easy to access in the Official Journal (Boletín Oficial del Estado). In addition, the online dataset "iberlex" provides, apart from a digital copy of the texts, a detailed legal analysis of all national, regional and EU norms published in Official Journals since 1960, 1980 and 1952, respectively. "Iberlex" also gives the exact legal reference of norms passed prior to these dates, if they were modified or derogated by more recent norms included in the dataset. Accordingly, some paper copies of the relevant texts were obtained from Law School libraries. By following this procedure, we were able to retrieve the texts of relevant laws and decrees over the entire period of interest; in addition, some ministerial circulars were also located through this procedure. The section of the REICAZ (Real e Ilustre Colegio de Abogados de Zaragoza) website devoted to legislation on immigration in Spain and the website "migrarconderechos" sponsored by the University of León, were also systematically consulted to fill in some gaps and improve our understanding of the practical implications of norms for the entry of foreigners into the country.

---

[18]For more information, see `http://www.stranieriinitalia.it/briguglio/immigrazione-e-asilo/`, last visited on 02/04/2012.

[19]A recent exception is the bilateral readmission agreement that was signed in 2006 and came into force in 2009.

Finally, relevant secondary sources (including academic articles and parliamentary debates and reports) that explain how courts and administrative authorities have interpreted and implemented these various norms at different periods over the covered time were also systematically consulted.

Selection of indicators to include in database

The database remains work in progress and will be subsequently expanded. So far, the selection of indicators was primarily conditioned by the research questions we wanted to answer, related in particular to determinants of attempting international departure rather than integration at destination (see Annex B for the list of indicators). We used the main legal channels of entry as criteria to guide the general construction of the database: entry for short stays; family reunification/marriage with a national; studies; and work. Moreover, we consider undocumented migration as an alternative strategy to the four legal channels mentioned. Asylum as separate channel was not considered, due to its limited relevance in the case of Senegalese migration.

For each broad policy area, we identified subgroups of indicators reflecting the conditions of entry. For legal entry channels these relate to the stipulated requirements. For short stays, requirements are defined in terms of documents (passport, visa), economic resources, proof of adequate housing and health insurance, as well as some characteristics attached to these requirements. We consider, for instance, whether the proof of economic resources can be substituted through other means, in particular through invitations provided from nationals or foreign residents in the country. In order to account to some extent for the discretion in visa procedures, an indicator reflecting the need for motivation of visa refusals is included in the database.

Similar types of indicators are considered for entry through family reunification (economic resources, housing requirements). Moreover, family reunification is conditioned by the norms on the sponsor's residence duration and proofs of integration in the host country. A second set of indicators regarding family reunification reflect eligibility criteria, a third the conditions after arrival in terms of the type of permit, access to the labour market and consequences of being separated from the sponsoring spouse. These last indicators go at first sight beyond the notion of "entry". However, family reunification has been considered in the political discourse as means of access to a different status, in particular work, and the indicators attempt to account for policy responses to this possibility. Similarly, we

collect information on policies regulating residence permits through marriage to a national.

Policies affecting salaried work immigration are captured, for the time being, by a single indicator. It reflects the entry mechanism for work, accounting for the existence of a complete stop in work immigration, national employment clauses, and quotas. Quotas are only considered as such for years in which they did not represent de facto regularisations, as was the case in Italy in the beginning of the 1990s.

The indicators capturing policies on student migration include, as in the cases of short stays and family reunification, entry requirements (admission procedure, economic resources, health insurance). The possibility of gaining work experience during studies and of transitioning to a work permit after the study period are also examined. For undocumented migration, we selected indicators which reflect the immediate consequences of having entered/stayed without appropriate documentation, in terms of the period of temporary retention, the existence of readmission agreements, and, on the other hand, possibilities to transit to the documented status through permanent or extraordinary regularisation programmes or mechanisms.

As said above, this selection reflects the decision to focus in this version of the database on indicators primarily related to entry. A range of indicators first included in the list, such as access to the welfare state for short- and long-term permit holders, political rights, access to citizenship, requirements for accessing long-term or permanent permits and grounds for withdrawal of such residence permits were thus excluded for the time being.

All indicators included should be valid across time and for all three countries. To ensure validity of indicators and thresholds over the 40 years, we had to distinguish changes in policies reflecting cultural and societal changes in general from changes in policies directed at affecting immigration. To give one example, indicators for eligibility of cohabitating partners for family reunification may be important nowadays, but the absence of this criterion from the laws in the 1960s and 1970s is likely to reflect the low importance of cohabitation at that time rather than a restrictive policy. We therefore tried to choose indicators which were relevant over most of the period analysed, an exercise which required an exhaustive analysis of all policies over the past 40 years. A second challenge is the fact that France, Spain and Italy experienced very different immigration patterns, and the choice of variables thus reflects the common denominator of immigration policy across the three countries.

Moreover, the level of detail in the list of indicators represents an attempt to capture

diverse and sometimes contrasting evolutions in policies, which do not become evident in an overall evaluation of a new law as in Ortega and Peri (2009). In one and the same law, there may be elements restricting, for instance, the entry for short stays, while introducing regularisations or creating more favourable conditions for family reunification. An example for this case is the administrative circular by the Italian ministry of labour in 1982 (14194/IR/A; 02/03/1982), which stopped labour immigration by prohibiting the provision of work authorisations to non-European Community foreigners still abroad, but implemented at the same time a regularisation programme for those already in the country.

We would like to emphasise that the current version of the database, with approximately 40 indicators, is still limited in scope, and that certain variables are going to be added in the future. In particular, work immigration is so far treated in a rather simplistic way, not accounting for seasonal work or self-employment. Also policies addressing specifically the skill-composition of immigration are not included. Policies regarding specific occupations could be identified for certain years and countries, but not for the entire time period considered. Moreover, the block of variables on undocumented migration will be expanded to account for expulsion procedures as well as employer sanctions.

Categorical scaling of indicators: quantification of legal texts

In order to quantify the qualitative information from the legal texts, we define for each indicator an ordinal scale reflecting the restrictiveness of the policy in a given year, with three options: restrictive (-1), neutral (0), and favourable (1). For some variables, only options -1 and 1 are currently defined, since it was not possible to define a neutral category based on the texts. The definition of thresholds enables us not only to capture changes over time for a given country, but also to compare levels across the three countries. An example is provided below with the indicator for economic resource conditions in the context of family reunification policy (Table 2.3).

Table 2.3: *Example of indicator scale*

	-1	0	1
Economic resources requirement, family reunification	At least the level of the minimum social income or specific amount	More open conditions (adequate resources); Flexible way of considering the requirement proven	No requirement

Most indicators with a qualitative underlying concept have more simple "yes/no" thresholds, often only with two instead of the three levels. Similarly to the selection of indicators

to include in the database, the definition of thresholds was an iterative process. Starting usually with a definition which was meaningful for a specific country at a specific point in time, we adjusted the scales subsequently to capture all policy options in place at any time during the period considered, in any of the three countries. Some of the thresholds had to be simplified in this process, while more policy options had to be added to others. For selected indicators we have also taken into account definitions proposed by the MIPEX project (Migrant Integration Policy Index) described above. The limitation to three categories sometimes restricts the extent to which variation can be measured. However, more detailed scales are difficult to assign over the entire period we are considering, as the complexity of policies generally increased over time.

Even with the current, more broadly defined categories, challenges remain. The definitions of thresholds which will be translated into changes in the coding of quantitative variables remain subjective decisions. However, levels and changes should still be captured if applied consistently over time and across countries. As explained above, we tried to identify indicators which are valid for most of the time from the 1970s to 2008. Nonetheless, some years remain for which no information on a specific indicators is contained in the texts which we were able to access, for instance, on the consequences of separation from the sponsoring spouse on permit status for years before 1998 in Italy. The most likely case is that no specific policy existed, and the question is thus how to account for discretion in decisions. We have tried to reduce the likelihood of the second possibility, incomplete information from our side, through exchanges with experts and the analysis of secondary sources on the topics. For now, we identify such missing information with a specific code (NEE, not explicitly established). The scaling of indicators in the database is summarised in Annex B.

Preparation for use of policy data in analysis

The database can be used as a source of contextual information, or to construct quantitative variables for descriptive or multivariate analysis. The selection of indicators to aggregate and the method of aggregation should be adjusted depending on the research objectives of the analysis in question, as the underlying concept may differ (OECD, 2008). Simple aggregation, for instance, would imply that policy indicators which score as very restrictive can be offset by other policy indicators which are more favourable. This compensation effect must be consistent with the research hypothesis. To give an example, if one argues that potential migrants are not able to adjust behaviour by switching legal

categories of entry, a single aggregate variable may not be the best choice.

Subgroups of indicators are, however, aggregated in the subsequent analysis. Aggregation methods and the weighting of individual indicators have been assessed by the literature on composite indicators using quantitative data. According to the handbook published by the OECD (2008), most composite indicators apply the same weight to all indicators by using simple averages. We suggest the same approach in this application. Still, aggregation may imply implicit weighting, if the aggregation is implemented in steps, first within subgroups of indicators and then across indicators, an effect one should be aware of when constructing variables for analysis. The problem of missing data mentioned above also influences indirectly the weight attached to individual indicators, as the number of indicators effectively considered changes over time, and hence the denominator.

Methodological limitations and plans for future development

The current version of the ImPol-MAFE(SN) database and the scaling procedure employed represents work in progress and leaves room for further development in the future. Regarding the data collection, a more complete access to administrative circulars, as well as a better understanding of ways in which each Member State has translated the EU directives for more recent years into national legislation, would be desirable. A possibility would be to mix to some extent legal texts or inputs and output measures. One variable we had in mind in particular is changes in border control, through measures of allocated budget and number of border patrol stations. In addition to being questionable from a methodological point of view, lack of data regarding the former and important differences between Spain and Italy, on the one hand, and France, on the other, have so far stopped us from pursuing this option further. Moreover, the choice of indicators to be included in the database has been guided by an evaluation of policies affecting entry, and hence focused more on the cost side of the migration cost-benefit evaluation. Indicators relating to the conditions of migrants' stay and rights in the destination country should be included to capture better the expected returns to migration in analyses of determinants of departure, as well as for analysis of integration at destination and return. The MIPEX database provides information on this dimension for recent years. The work of extending indicators for the three countries backwards in time is beyond the scope of this thesis. Remaining threats to validity of indicators over time and across countries, as well as the question of how to deal best with years in which no policy addressed a specific aspect have to be borne in mind in the interpretation of the results that use these measures. The evolution

of immigration policies in France, Spain and Italy over the past decades is discussed in Chapter 3.

Chapter 3

Migration attempts - who tries, who succeeds, who fails? Evidence from Senegal

3.1 Introduction, research objective and context

Over the past decade, migration from Sub-Saharan Africa has become a central topic in European public and policy debate. Perceived as predominantly irregular, and portrayed within the media by the image of "pateras" arriving at Europe's Southern borders, Sub-Saharan African migration is "a problem" to be tackled by both destination countries and origin countries (de Haas, 2008). Consequently, a series of agreements between the EU and the main African origin and transit countries as well as bilateral agreements have been concluded with the aim to limit inflows. At the same time, empirical evidence, for instance on the French experience, suggests that migrants from Sub-Saharan Africa constitute a minority within the immigrant population (Lessault and Beauchemin, 2009). Is this paradox due to the effect of political and financial barriers to international moves building up "pools of migrant candidates" in the origin and transit countries, only waiting for the next opportunity to cross to Europe?

In this context, the analysis of the process of migration distinguishing between the decision to migrate and actual migration is of increasing interest. To improve migration policy formation, one needs not only a better understanding of the motives and characteristics

of migrants found at destination, but also of migrant candidates remaining at origin and of the factors determining whether they do or do not carry out the move. However, the existing empirical literature is to a large extent restricted to either realised migrations or stated intentions by individuals still remaining in the country of origin when surveyed. The aim of this paper is to investigate the two processes - migration decision and actual migration - jointly. We analyse the case of Senegalese migration "candidates" and their actual move to the three main European destination countries, France, Italy, and Spain. To operationalise the migration decision-making before departure, we use information about migration "attempts" contained in the MAFE-questionnaire. Attempts, as defined in this analysis, reflect the stated intention but require in addition that the individual has already taken some concrete steps towards migrating, thus adding some objectivity to the measure of "migration intention". Given this definition, the specific research objective is to examine if and how migration push- and pull factors at individual, family and context-levels (economic conditions and immigration policy) affect the attempt to migrate to France, Italy and Spain, the successful realisation of the attempt, or both processes.

We recap briefly the main characteristics of Senegalese migration history outlined in the introductory chapter (Chapter 1), to underline the interest in analysing France, Spain and Italy as targeted and actual destination countries. Senegal has a long, dynamic migration history and migration plays an important role in Senegalese society. According to the Global Migrant Origin database (Migration DRC, University of Sussex), approximately 480,000 Senegalese were abroad in 2002, thus representing around five per cent of the population at the time of the census in 2001/2002. Although the share of individuals engaged in migration appears to be relatively low and has been rather stable over recent decades, migration affects a large proportion of Senegalese households. According to the MAFE-Senegal household data[1], one out of two households in the Dakar region has at least one family member living abroad or a returnee among household members.

Early Senegalese migration targeted mainly neighbouring countries as well as the colonial power France, which hired Senegalese into its army during the Second World War, and had an active recruitment policy in place after Senegal became independent (Guilmoto, 1998; Traore, 1994). However, in the context of the 1973 oil shock, France stopped its active recruitment policy. Migration to the traditional African destination countries was also hampered by increasing political instability (Robin et al., 2000). At the same time,

---

[1] As described in Chapter 2 on data sources, the definition of migrants adopted in the household survey is based on the extended family view of the household. The share of households with migrants represents thus an upper bound estimate.

a period of economic crisis and increasing poverty started in Senegal, following several droughts and a decline in the groundnut sector in the 1970s and the implementation of structural adjustment programmes in the 1980s (Tall, 2002). As traditional destinations were less accessible, migration destinations diversified. Migration became increasingly directed towards countries outside of West and Central Africa as well as countries without any colonial or linguistic links, in particular Italy, Spain and the United States (Ndione and Broekhuis, 2006).
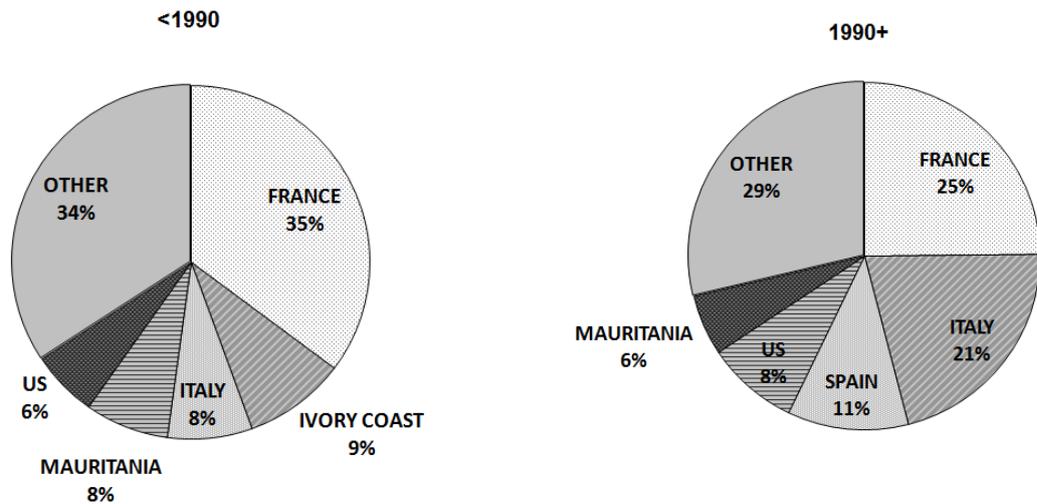
Figure 3.1: *Primary destinations of first migrations according to year of departure, Senegalese with households in Dakar in 2008*

Source: author's elaboration; MAFE-Senegal survey (2008) Household data (weighted by sampling weights); differences are statistically significant at 1%

Figure 3.1, which shows the destination countries of first migrations of Senegalese with households in Dakar, illustrates this trend. Spain appears as a new destination country in the chart depicting departures after 1990 and Italy increases in importance. Côte d'Ivoire, a traditional destination for Senegalese, plays no major role in more recent migrations. A similar picture results from examining migrant stocks in France, Italy and Spain. Senegalese migrant stocks in Italy and Spain have followed a clear upward trend since the end of the 1980s/beginning of 1990s, levelling off in the most recent years. Stocks in France have been fluctuating at a higher level of around 60 000 over the past 25 years, with a slight upward trend over the past few years (Figure 3.2).

As a consequence of the changing migration destinations, France, Italy and Spain attracted together 42% of overall Senegalese migrant flows over the period 1997 to 2002 and 54% of flows from Dakar according to the population census from 2002 (author's computa-
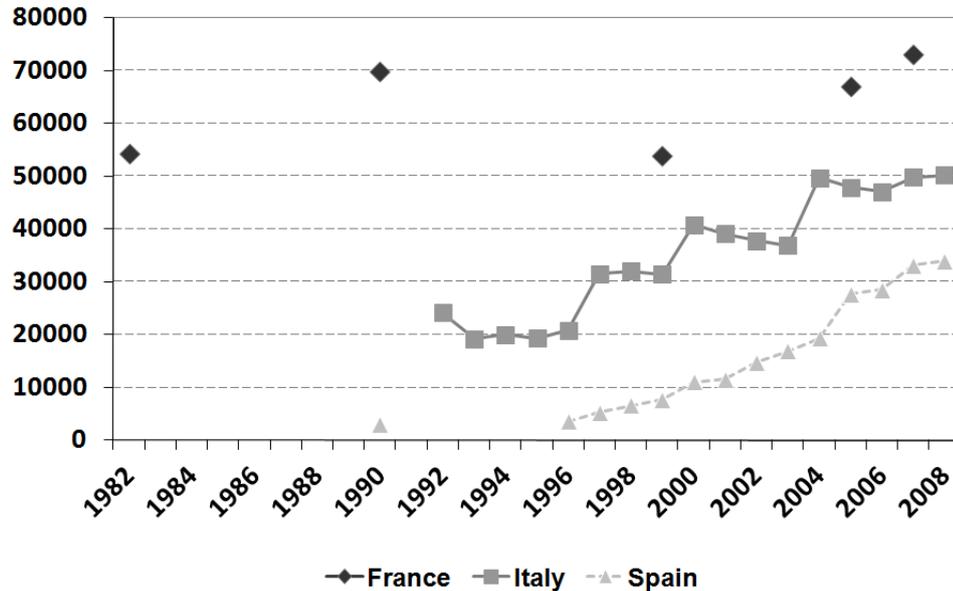
Figure 3.2: *Senegalese migrant stocks in France, Italy and Spain (country of birth)*
Sources: United Nations Global Migration Database (UNGMD): France 1982, 1990; Spain 1990; Institut National de la Statistique et des Etudes Economiques: France 1999, 2005, 2007; Istat: Italy 1992-2008; Ministerio de Trabajo e Inmigración a partir de datos suministrados por Ministerio del Interior: Spain 1996-2008.

tion). While the share of Senegalese population abroad has remained relatively stable, the destination composition has changed, increasing overall the role of Europe as compared to African destination countries. But what about those who attempt to migrate but do not reach Europe? This outcome can be due to a "failure" of the migration project, for instance, because they were not able to obtain a visa or sufficient economic resources. It could also be the case that preferences have changed and the migration project is revised. According to the MAFE-Senegal biographic survey 59% of those "unsuccessful" attempts, as we label these attempts in this study, were directed towards France, Italy and Spain, which take the 1st, 2nd and 4th ranks among countries quoted (3rd is the US). Therefore, these three countries seem to capture a considerable share of unsuccessful migration attempts as well as actual migration, even if the role of the US as envisaged destination indicates that migration destinations are likely to further shift and diversify.

Given this context, this chapter aims to investigate Senegalese international migration attempts, which include both attempts which lead to migration and unsuccessful attempts, and realised departures jointly. More specifically, the research objective is to examine whether determinants of migration attempts differ from determinants of actual migration from Senegal to the three main European destinations for Senegalese migrants, France, Spain and Italy, conditional on making an attempt. Processes examined include, for

instance, the role of migrant networks in providing an incentive to attempt migration versus their role in realizing the migration, and the effect of period-specific political and economic conditions in the origin country and at destination. The conceptual framework in the following section explains in more detail what our hypotheses are with regard to the role of "migration determinants" at the various stages in the migration process: (vague) intention, attempt as defined in our analysis, and actual migration. First, however, follows a review of the relevant theoretical and empirical literature.

3.2 Conceptual framework and empirical literature

Disciplines that have developed micro-level theories of migration have incorporated the decision-process preceding the act of moving differently. Neoclassical microeconomic theory of migration explains the migration decision of rational subjects in terms of a cost-benefit analysis, whereby discounted expected income in the origin country is compared to discounted expected income in the destination country, adjusted for the financial or psychological costs attached to migration. The variables in question depend on the formation of expectations, on the treatment of the discount factor (e.g. taking into account the degree of risk aversion) and the modelling of migration costs, which, if they are sufficiently high, may impede migration. The expectation formation has been approached in different ways depending on the model proposed, as summarized by O'Connell (1997).[2] In Sjaastad's (1962) human capital model of migration, it is left open how expectations are formed. Todaro (1969) introduces uncertainty about current income at destination by weighing foreign income by the probability of unemployment. Search models, on the other hand, emphasize that prospective migrants may "try their luck". Individuals would migrate on a speculative basis in order to obtain more information about destination characteristics that are only observable once the migrant arrives at destination (Molho, 1986). All those models assume, however, that the migration decision is followed by actual migration (revealed preferences). Given the information available and given the perceived costs and benefits, the individual moves if the expected returns from migration exceed the expected costs, and may several times re-evaluate this decision until the moment of leaving (Da Vanzo, 1981). These re-evaluations are seen as implicit in the process of information gathering. As a consequence, there is no conceptualisation of temporal "stages"

---

[2]This discussion of the theoretical framework focuses on models which centre on the individual as decision-maker. However, incorporating household utility from migration as proposed by the New Economics of Labour Migration still requires defining how expectations are formed and to which extent migration and the decision to migrate can diverge.

of migration decision-making before the actual departure.

However, the migration decision may not lead to actual migration in case of uncertainty regarding future conditions at home and abroad, as prospective migrants may apply a "wait and see" strategy and delay departure (Burda, 1993; Burda et al., 1998). A "wait-and-see" strategy or simply the time needed in order to raise funds for migration, apply for documents etc. may induce a time-lag between the decision to migrate and the realization of the migration project. Under such conditions, micro-, meso- and macro-level conditions at home and abroad (employment status, marital status, position in the household, opportunities at destination, immigration policies etc.) may change or be re-evaluated and migration may not be utility-maximising. Mayr and Peri (2004) note e.g.: *"[. . .] we summarize international mobility (from the poorer country) with a probability of emigrating, for people who would like to do so. Such uncertainty captures the fact that due to restrictions, immigration regulations and quotas, people who choose to migrate and thus select themselves into the "line" of potential emigrants, often do not succeed and therefore remain in the country."*[3] The move may also not be carried out if fixed costs attached to the move were wrongly evaluated at the time of taking the migration decision and the move cannot take place.

In addition, migration costs can be treated as an endogenous variable, if access to migrant networks abroad lowers the financial and opportunity costs through the provision of information about travel, housing and job opportunities and the psychological costs by helping new migrants to adapt to the foreign culture and language (Carrington et al., 1996). Access to migrant networks also impacts on expectation formation as individuals may face less uncertainty, narrowing the gap between the decision to migrate and actual migration. However, migrants in the personal network may also induce unrealistic expectations about utility from moving abroad, as in the case of returning migrants presenting a too positive portrait of their migration experience. In this case, access to networks may primarily stimulate the decision to leave as well.

The conceptualisation and analysis of stages underlying the migration decision-making and preceding the departure have been, moreover, emphasized in the field of social psychology since the mid 20th century. Fawcett (1985) provides a review of these early theories, emphasising Rossi's (1955) work. He not only distinguishes the decision and departure, but inclinations, intentions and the movement itself. Other typologies differentiate in an even more detailed way between a "desire to move, consideration of movement, and the

---

[3]This view is also at the heart of the beneficial brain drain literature (see, for instance, Stark, 2004).

expectation that movement will occur" (Goldsmith and Beegle (1962) in Fawcett (1985)). These typologies suggest that the term "migration intention" generally employed in the theoretical and empirical literature can cover concepts ranging from a very vague stated wish to leave to a concrete plan. While we employ for now the terminology used in the relevant literature, a distinction between intention and attempt will be made subsequently for the present analysis.

Since the beginning of the 1980s, studies analysing migration behaviour have been drawing increasingly on the "theory of reasoned action" and its extension, the "theory of planned behaviour" (Ajzen and Fishbein, 1980; Ajzen, 1985). It considers intentions as the main determinant of behaviour. Intentions are themselves determined by social norms and values, and the expectation that one is able to act on the intention. Adapted to migration, De Jong and Fawcett (1981) and De Jong (1999, 2000) argue that individual, household and community characteristics impact migration intentions and behaviour only through their effect on expectations about the outcome. In addition, intentions and behaviour are affected by a series of facilitating and constraining factors at the individual, family and institutional level. Most empirical studies using stated migration intentions as predictors of actual migration behaviour refer to this theory to justify a modelling approach based on intentions rather than observed migration behaviour. Manski (1990) argues, however, that intention data performs rather poorly in predicting actual behaviour, as behaviour may be affected by unforeseen events occurring after the survey. While the theoretical model includes the effect of constraints and facilitators on actual migration behaviour, and thus allows to some extent for divergence between migration intentions and behaviour, surveys rarely collect data on intentions as well as realisations in order to allow for an evaluation of the predictive power of stated intentions on behaviour.

There is a variety of studies analysing the stages before actual migration. As noted before, a considerable amount of empirical literature has used intentions or 'willingness to move' data as proxy of migration to study factors determining migration, relying on the "theory of reasoned action" (e.g., Burda et al., 1998; Papapanagos and Sanfey, 2001; Drinkwater, 2003b,a; van Dalen et al., 2005). The only previous study on Senegal is by van Dalen et al. (2005), who use data from the Push-Pull survey carried out in Senegal, Egypt, Morocco and Ghana in 1997-98. The survey contained a question about migration intentions, with the answer categories "no intention to migrate", "yes, but unsure when", "yes, but in a year or later", "yes, within a year", as well as a question about measures taken to emigrate. The latter variable reflects migration attempts, as defined for this analysis, but has only been exploited descriptively. The survey does not contain information about

the outcome of the intention and attempt, i.e. whether the respondent migrated or not. While a large share of the Senegalese interviewees stated that they intended to migrate (38%, grouping affirmative categories), only 2% had taken actual steps to realise their intention. The authors model migration intentions in an ordered probit model, using the intention question that indicates the intended departure period as outcome. According to the authors, the ordered outcome reflects an increasing probability of actual migrating. The findings for Senegal suggest that the typical migrant candidate is young, male and single, thinks that it is generally not up to fate what happens in one's life, and comes from a region that is more developed and has a longer migration history. Moreover, optimism with regard to expected income gains and the ease of job search abroad appear to be the main factors driving migration intentions. Migration networks in the form of current or return migrants connected to the household have no significant effect on migration intentions. According to the authors, this surprising finding may be due to differential effects of networks on intentions and actual migration or due to the way the variable on network ties is constructed. Moreover, the authors mention the possibility that the role of community migration culture may be more important than household ties in triggering intentions to migrate.

Litchfield and Reilly (2009) distinguish migration intentions and attempts in Albania by the firmness of the migration plan, or the stage in which individuals are in their decision-process. Migration intentions are identified from the question "has individual X ever considered moving abroad, even temporarily", while attempts are defined based on the question "has individual X ever tried to move and failed". The intention thus reflects stated preferences, while the attempt should involve some kind of observable action towards migrating. This question is posed conditionally on having considered migration. The results from a sample selection bivariate probit model estimating jointly determinants of intentions and attempts indicate that there is no selectivity bias in attempting migration. Moreover, age, labour force status and regional controls had similar effects on both intentions and attempts.

However, previous research rarely connects intentions/attempts with actual migration behaviour, covering individuals who do not intend to migrate, those who intend to migrate, and those who do migrate. Examples for such analyses can primarily be found in the contexts of residential mobility and internal migration. In most cases, intentions are recorded in a first survey round, and the same households are re-interviewed after a certain period of time, which can vary from a few months to several years depending on the survey. The migration realisation is identified simply by the absence of the person in the

housing unit (Lu, 1999), by proxy respondents listing absent household members, or by the individuals themselves if they migrated and returned between the two rounds (e.g., Sly and Wrigley, 1985 (Kenya); Fuller et al., 1985 (Thailand); Gardner et al., 1985(Philippines); De Jong, 2000 (Thailand)). Four groups of individuals can be distinguished: individuals whose behaviour is "consistent", (i) because they do not intend to move and they do not move; (ii) or because they do intend to move and do move; and individuals whose behaviour is "inconsistent", (iii) because they do not move, although they intended to do so; (iv) or because they are observed to move while no such intention was recorded previously.

While those who state a moving intention are in general also more likely to be among those who actually move, a significant group shows "inconsistent" behaviour, not acting upon the intention. In the case of the study on the Philippines, for instance, 56% of those who intended to move had not moved when interviewed two years later, and 12% had actually moved of those who declared no migration intention (Gardner et al., 1985). The latter group is therefore relatively small, especially considering that the two years between rounds should leave time enough to develop intentions to move and act upon them. Studies analyse very different types of mobility, from residential mobility, over short term visits to another village, to long-term internal migration. Moreover, the definition of "migration intention" varies as well across studies. The correlates of intentions and actual migration behaviour are therefore difficult to compare.

Analysing intentions/attempts as well as actual migration behaviour in the context of long-distance international migration is rather challenging and empirical evidence remains scarce. One exception is the study by van Dalen and Henkens (2008), who use data from a survey capturing migration intentions in the Netherlands, as well as a tracer survey two years later to ascertain to what extent migration intentions were realised. The probability of belonging to the group of "movers", "dreamers", or "stayers" was estimated using a multinomial logit model. The findings suggest that intentions are an important but far from perfect predictor of migration (approximately 25% of those who intended migration moved), that characteristics of the "movers" and "dreamers" do not differ significantly, and the same factors determine intentions and actual migration. To the author's knowledge, no comparable study exists for a least developed country context. Moreover, McKenzie et al. (2007) present a study of migration attempts of Tongans to New Zealand. The authors take advantage of the fact that migration is regulated by means of a lottery, providing a natural experiment setting. Lottery applicants (those "attempting" migration) are asked about their expectations with regard to income and the probability of employment at

destination. Expectations can be compared to actual income and employment of lottery winners in New Zealand. The findings suggest that applicants underestimate both variables, possibly because they place more weight on negative experiences of migrants they know. Furthermore, comparing income expectations of individuals who did not apply to the lottery with those who did, it appears that people act according to their expectation, as having higher expectations makes you more likely to apply for the lottery. The focus is, however, on the successful and unsuccessful lottery applicants.[4]

Most previous empirical research is thus "lacking" one subsample when analysing the determinants of migration. Studies focusing exclusively on migrants abroad may miss out part of the process linking migration decisions and actual migration, as individuals who attempt and do not migrate and individuals who never attempt to migrate are grouped together as non-migrants. On the other hand, studies using migration intentions as proxy for actual migration behaviour cannot take account of potential disparities between those two processes. An analysis of determinants of attempts as well as of realised migration may therefore contribute to the understanding of migration decision processes.

Using the existing literature on migration decision-making as a starting point, we develop the conceptual model underlying our analysis. The discussion of the framework as well as the extent of an empirical test follows the illustration in Figure 3.3.

Outcome variables are depicted as rectangular boxes. Actual migration is conditional on attempting migration, which in turn is conditional on having the intention to migrate. Differently from the literature using the Theory of Planned Behaviour concept, we define intentions as the relatively vague wish to migrate (DaVanzo, 1981), without yet having evaluated the expected utility of migrating against staying by different destination countries. We introduce migration attempts as an intermediate step in the conceptual framework of the migration process. In contrast to the migration intention, attempts imply an objective action towards the aim of migrating. Moreover, we incorporate the time dimension in this theoretical framework by defining a time span $t1$ lasting from "age x" to the formation of a migration intention, a time $t2$ between the first intention and the start of the attempt, and a time span $t3$ between the start of the attempt and the departure. Variables thus not only affect intentions, attempts (and attempts' characteristics), and migration, but also their timing. Disparities between intentions and actual migration behaviour arise if individuals do not follow up on their intentions with an attempt (arrow

---

[4]Earlier examples are the studies by Gardner et al (1985) and De Jong et al. (1985) which examine discrepancies between migration intentions and behaviour in the Philippine case. While the focus lies on internal migration, a subsample of Philippinos who migrated to Hawaii is traced and re-interviewed.

going off from intention outcome), or on an attempt with actual migration (arrow going off from the attempt outcome). However, we do not consider "surprise migrants" in this framework (i.e., individuals who migrated although they never intended and attempted to do so). While this group is discussed in the internal migration literature summarized above, it does not seem to be very pertinent in the case of international long-distance and longer-term migration. It seems reasonable to assume that individuals must intend to migrate if they attempt to, and that they must have attempted if they are observed to migrate. An exception would be a migrant who did not at all participate in the migration decision, such as very small children, but this case is not considered here.
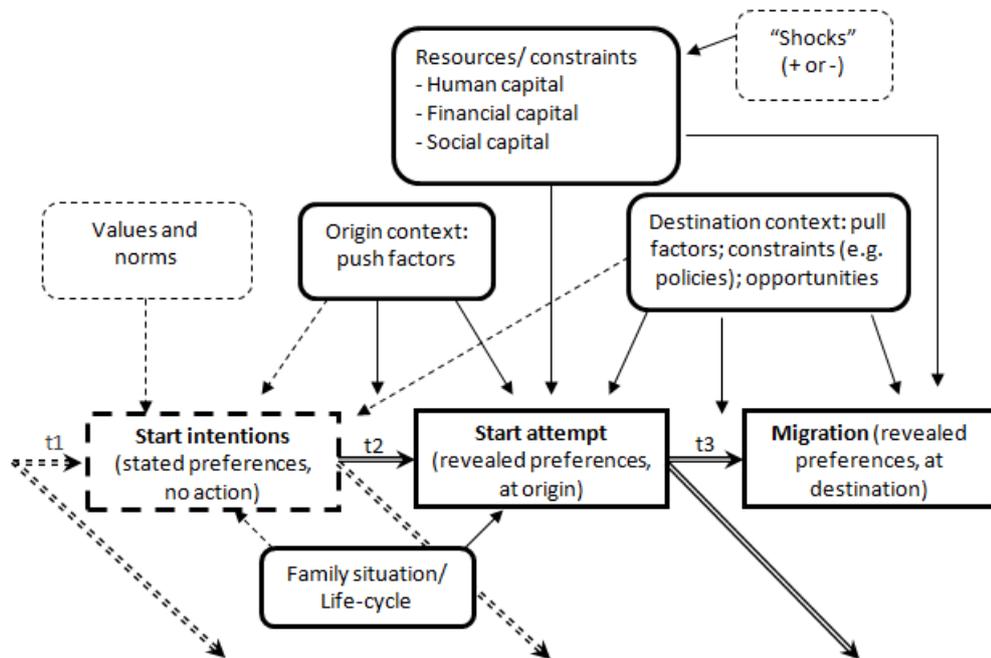
Figure 3.3: *Conceptual framework of the migration decision-making process*
Sources: Author's elaboration

Factors that influence the migration decision-making process are depicted in rounded boxes. Intentions are considered to be determined primarily by values and norms with regard to migration as proposed by the Theory of Planned Behaviour (De Jong, 2000), as well as by life cycle factors and the context at origin, all of which may trigger or constrain the wish to leave. We assume that individuals evaluate costs and benefits to a large extent already at the moment of initiating an attempt. Variables which are usually included as "determinants of migration" should therefore primarily come into play at this stage. However, individuals may receive new information which makes them re-evaluate their decision after the start of the attempt. Moreover, personal, household, and contextual factors may change after the start of the attempt, causing the attempt to be

either abandoned or prolonged in time.

Human capital, financial capital and information are expected to affect migration attempts through their role in increasing the expected returns to migration or by reducing the expected costs. According to the human capital theory of migration, individuals would move abroad if their human capital was better rewarded abroad than at home (Sjaastad, 1962). Whether there is a positive or a negative relationship between human capital and the attempts probability is expected to depend on the relative returns to skills and education at destination and origin (Borjas, 1989). The better educated may be more efficient in organising the migration, which would suggest a positive effect of human capital on the migration outcome (Chiswick, 1999). As generally stipulated by the human capital theory of migration, we expect a negative effect of age on migration attempts as well as on migration, as older individuals have a shorter time period to reap the returns from their investment in migration (Da Vanzo, 1981). Another type of human capital arises from having already experienced migration (Massey and Espinosa, 1997, "migration-specific human capital"). Having already engaged in certain behaviours is also regarded by the Theory of Planned Behaviour as a key facilitator of intentions as well as the realisation of intentions (De Jong, 2000). Previous migration would reduce information costs and uncertainty, and may also reflect unobservable characteristics such as risk aversion or motivation.

Migration theory usually suggests an "inverse-U"-shaped relationship between financial resources and the propensity to migrate if migration costs are relatively high (McKenzie and Rapoport, 2007). Once one distinguishes between different stages in the process, one may be able to identify a differential effect of resources. Individual and household financial resources and their stability should affect attempts negatively if one stipulates that poverty drives the wish for a better life abroad, and that costs are not yet fully evaluated at that stage. The realisation of the migration attempt, on the other hand, is only possible if sufficient resources are available to face migration costs. Fixed costs can place international long-distance migration out of reach for poor individuals. For legal migration, these involve for instance costs related to obtaining a passport (McKenzie, 2007), visa or other documents, and the transport to the destination country. Illegal migration can also be very costly. Senegalese migrants who rely on alien smugglers, so called "passeurs", have to pay 700 € to 1,500 € for the trip, depending on the route taken (Bekkar-Lacoste and Fall, 2006; Ba, 2007; Ba and Ndiaye, 2008). The effect of financial resources may therefore differ between the two processes.

The social capital embedded in migrant networks is also expected to affect the process of migration decision-making. A large body of theoretical and empirical literature investigates the role of migrant networks in stimulating further migration, and while the focus is mainly on migration as the outcome, one can infer from the various channels through which migrant networks function differential effects depending on the stage of the migration decision process (Boyd, 1989; Fawcett, 1989; Massey, 1990; Epstein and Gang, 2006). Migrant networks abroad could influence the initial "wish to migrate" by giving either a positive or negative example. Networks in the envisaged destination region or country may further solidify the migration plan by providing information about the migration process and the situation at destination. Migration costs are hence lowered indirectly through the access to additional information. It may also be the case that network members contribute directly to financing the migration or to lower the costs by providing documents such as "housing certificates" to the administration at destination, helping to bring the migration attempt to a successful conclusion. Moreover, migration networks may raise expected returns to migration if individuals at origin perceive that they will receive support in smoothing their integration, above all in finding a job.

The access to resources, in particular to financial and migrant social capital, can be affected by unexpected "shocks". Income sources can be gained or lost, and network members may change location. These changes will in turn affect the migration-decision process of the individual.

The family situation and life-cycle factors such as marital status and children represent further facilitators or constraints to migration. While these variables are standard controls in migration research, the prediction of the direction of the effect is not straight forward. Singles and childless individuals are generally seen as more mobile than married individuals and individuals with children (Mincer, 1978). Moving with the family is costly in financial terms and leaving family behind represents an emotional cost. However, this relationship has been hypothesized to differ for women and men, and to vary depending on the age of children (e.g. Kanaiaupuni, 2000; Cerrutti and Massey, 2001; De Jong, 2000; Stier and Tienda, 1992). At the same time, effects are likely to vary depending on the destination country and depending on whether the migration strategy for married individuals is to migrate as a whole family (though this is an exception in the case of Senegalese migration), to pursue family reunification later on, or to migrate alone with the intention to return. Marriage may constitute an impediment for women more than men, unless the marriage variable was capturing the fact that women are following their husband abroad. Similarly, women as traditional care-takers of small children may be limited in their possibilities to

migrate, while the opposite may be the case for men, who must migrate in order to provide for the growing family. More children may, on the other hand, also represent a constraint on resources necessary to finance migration, especially if the fixed costs of migration are high.

The migration decision-making process is also impacted by the economic and political context at origin and at destination (Massey and Espinosa, 1997; Parrado and Cerrutti, 2003; Schoumaker et al., 2009; Beauchemin and Schoumaker, 2005).[5] The main macroeconomic variable triggering migration according to the neoclassic migration theory is the income gap between destination and origin country. Moreover, employment conditions, in particular the probability of unemployment, are integrated in the evaluation of the expected gains from migrating. Other macroeconomic factors at origin, such as inflation, may influence the evaluation of migration costs as well as the uncertainty with regard to evolutions of real income at origin. According to the new economics of labour migration literature, which posits that access to credit in contexts of imperfect credit markets as well as risk diversification are key migration motives, economic and infrastructure conditions in origin communities should also play a role in triggering migration attempts. Finally, as already discussed in Chapter 2, destination countries try to "manage" migration through immigration policies. These may affect both attempts and realisations through their impact on costs of migration as well as expected returns.

Conditions in the origin country are expected to mainly influence the intentions and attempts stages, rather than the outcome of the attempt once an individual has taken the decision to attempt migration. The context at destination, on the other hand, is likely to already influence the attempt stage. They may, though to a lesser degree, also influence the formation of a first intention to migrate. While the inclusion of contextual variables is standard in macro-level studies of determinants of migration, evidence on the effect of context at both origin and destination on migration decisions at the micro-level remain scarce. With regard to differences in contexts across geographical areas, DaVanzo (1981) notes that "[...] *the neglect of areal characteristics is one of the most serious shortcomings of empirical analysis of migration using microdata. It is ironic that the move from aggregate to microdata, we have gone from an over-emphasis on areal characteristics to an under-emphasis.*" Once a time dimension is introduced, the same applies to time-variations in context variables.

---

[5]Political conflicts and wars as a trigger of migration are beyond the scope of this paper. The contextual variables focus thus on economic factors as well policy factors related to economic and family migration.

Given data limitations, our analysis cannot encompass all elements of the conceptual framework. Links which are not explicitly considered in this analysis are shown in dashed boxes or arrows. Intentions data are not contained in our data source, nor are subjective concepts such as values and norms. We limit the analysis therefore to the more "objective" stages attempts and actual migration. The exclusion of the intention stage in our analysis implies that the variables affecting attempts through their impact on intentions (e.g. life cycle factors) are captured in a reduced-form. Shocks are captured through variations in the explanatory variables. However, some of this heterogeneity may be captured through the analysis method proposed and discussed below. Moreover, by omitting intentions, we conflate individuals who do not act upon their migration intention with individuals who never considered migration. The conflation of the two sub-samples may be more problematic if we assumed that individuals evaluated their utility from migrating already at the intention stage.

The following section will explain the empirical measures of the dependent variables. Section 3.4 outlines the methods, and the construction of indicators for determinants of attempts and migrations are discussed in section 3.5.

3.3 Analysis sample and construction of dependent variables

The analyses performed in this paper use the biographic survey data collected in the framework of the MAFE-Senegal project. Origin and destination samples with information on Senegalese migrants in Italy, Spain and France at the time of the survey are combined.

The biographic questionnaire contains a specific module on failed migration attempts. The analysis is based on the responses to the question "have you already taken concrete steps to leave and settle in a different country, without, however, having so far been successful in getting there?" If yes, additional questions inquire about the year in which the attempts started; if the plan was abandoned, and if yes, in which year and why; motives for attempted departure and the choice of destination; and the precise nature of measures taken (e.g. application for documents, scholarships, to start saving). Moreover, a questionnaire module on realised migrations lasting at least one year contains an identical question about the measures taken and the year in which the attempt started. It is therefore possible to identify (i) individuals who have never attempted migration; (ii) individuals who are

attempting to migrate but have not yet managed to migrate as of the time of the survey; (iii) individuals who attempted migration in the past but abandoned the attempt; and (iv) individuals who attempted and actually migrated. It is further possible to determine the duration of the migration attempt, which can end with migration (iv), or with censoring at the end of the attempt (iii) or on the date of the survey (ii). We treat sub-samples (ii) and (iii) in this analysis jointly as "unsuccessful attempts".

We concentrate on France, Italy and Spain as targeted and actual destination countries. We thus reduce the sample of realised migration attempts to individuals who stayed for at least one year in one of the three countries. Similarly, since the question about attempts relates to specific countries one can further select those with failed migration attempts to the destinations France, Italy or Spain. The restriction of the analysis to those three countries appears justified given their predominant role in Senegalese migration. The possibility to assign specific destination countries to both unsuccessful and successful attempts allows for an analysis of the role of the economic and political context at the destination in addition to individual and household-level factors, one of the key research objectives of this paper.

To improve the comparability of the subsamples, we thus censor spells of individuals who had unsuccessful or successful migration attempts to a developed country other than France, Spain and Italy, even if they subsequently attempted to migrate or migrated to one of these three countries. For instance, individuals who migrated first to the United States, returned and attempted five years later migration to France and failed would be censored in the year they migrated to the United States. In other words, we consider that once they have migrated to the United States, they leave the set of individuals at risk of migrating from Senegal/Africa to France, Spain or Italy. Spells of individuals who migrated to another country in Africa remain, however, in the sample during and after migration, as they remain at risk of experiencing a migration from Senegal/Africa to France, Spain or Italy. Their migration experience will be controlled for in the empirical analyses. Table 3.1 summarizes the sample used in the analysis, and indicates the observed outcomes.

The number of individuals indicated in Table 3.1 can only provide information about the characteristics of the sample used in the analysis. No inference to population proportions of migrants and attempters can be drawn given the use of both destination country and origin country data.

The open response questions provide some insights regarding the reasons for the failure

Table 3.1: *Description of sample used in analysis (in 2008 or at time of censoring)*

	Outcome: Attempt	Outcome: Migration
Non-attempters (to France, Italy, Spain) (n= 925)	No (= 0)	not applicable
unsuccessful attempters (n=102)		
24 attempts ongoing; 78 stopped at time of survey	Yes (= 1)	No (= 0)
36 to France, 31 to Italy, 35 to Spain		
Successful attempters (n= 641)	Yes (= 1)	Yes (= 1)
256 to France, 196 to Italy, 189 to Spain		

Notes: This is the complete analysis sample. The number of observations on successful attempters is reduced when including contextual variables in the analysis which are not available for years in the 1960s and early 1970s. This is particularly the case for Spanish unemployment data during the last years of the Franco regime, and early immigration policy data for Italy and Spain. *Source: MAFE-Senegal survey (2008)*

or abandonment of the attempt as perceived by the respondents. The provided responses have been re-coded into six response categories (Table 3.2).

Table 3.2: *Attempters' responses to question about reasons for not migrating*

Main reason for failure/end of attempt	%
Administrative reasons	52
Family/personal reasons	4
Financial reasons	13
Problems with intermediaries	10
Change of project	5
Other (god's will)/Don't know	16
Total	100

Notes: The descriptive statistics are weighted to take account of the multi-stage sampling in Senegal and the stratification in European countries. *Source: MAFE-Senegal survey (2008)*

More than half of the concerned respondents report administrative factors (problems with official or false documents or lengthy procedures) as main reasons for the lack of success, suggesting that immigration policies represent one of the main constraints to completing the emigration project. Financial reasons and problems with intermediaries (lack of support from family or network, deceived by a "passeur" or other intermediary etc.) as well as the reference to "God's will" are other factors highlighted by respondents. Family-related factors and a change of project are not among the main reasons recorded.

3.4 Methods

Left with a set-up which involves the two outcomes migration attempt and actual migration as depicted in Table 3.1, we observe the following: individuals either attempt migration to one of the three selected destinations or not, and among those who attempt migration, some realise the attempt and leave for France, Spain or Italy, while others stay in Senegal.

We exploit the time-varying data to incorporate the time dimension described in the conceptual framework. We model the attempts equation as a transition to a first[6] migration attempt to France, Italy or Spain using event-history methods, rather than considering it as an indicator function.[7] Given that the questionnaire measures duration in years, observed survival times are grouped, and a discrete-time approach therefore appears to be most appropriate. The analysis requires the reorganisation of data into spells at risks. Since we do not model the intentions stage separately, individuals become at risk of attempting migration at age ten and are followed up to the year they attempt to migrate to France, Italy or Spain.[8] Non-attempters are censored at the survey date. Based on this discrete data structure, the discrete-time hazard for interval t is the probability of attempting migration during interval t, given that no attempt has occurred in a previous interval:

$$h_{1it} = prob\left(y_{it} = 1 | y_{is} = 0, s < t\right) \tag{3.1}$$

This corresponds to the response probability for a binary dependent variable, and the discrete-time duration model can hence be estimated using any binary dependent variable regression model (Allison, 1982; Jenkins, 1995; Sueyoshi, 1995), and including a time measure for duration dependence.[9]

In concordance with the conceptual framework, the time dimension should also be incorporated in the migration equation, as *time to departure* to France, Italy or Spain. The

---

[6]Given the research question of this paper, repeated migrations are not considered. Repeated periods of unsuccessful attempts to the same country could be of interest, and would have to be adequately accounted for in a repeated events framework. However, this case applies to only four individuals in the data. The limitation to the first attempt and the first migration seems therefore appropriate.

[7]An indicator function approach was discarded not only for conceptual but also for methodological reasons. Measuring characteristics at the time of the survey for individuals who never attempted to migrate would have several disadvantages. Firstly, individuals who have not yet attempted migration will be recorded as systematically older than individuals who attempted migration, influencing not only age measures but also other variables correlated with age such as marital status, the number of children or household composition. Secondly, contextual variables that are only varying across time cannot be included as covariates, since there would be no variation for the sub-sample of non-attempters. Thirdly, a more general problem with the cross-section approach is that individuals who are observed as non-attempters by the time of the survey may still be at risk of attempting migration in the future.

[8]Age ten is chosen in order to avoid dropping from the analysis several attempts and migrations happening around age fourteen. In the context of Senegalese migrations, independent migrations are not unusual at this age.

[9]Link functions commonly used are complementary log-log, logistic, or probit functions. Estimates from cloglog and logistic models are usually almost identical, since the logistic model converges to a cloglog model at the bottom tail of the distribution, and the probability of attempting migration during interval t is rather small. Using a probit model instead may give different predicted probabilities, as logit and probit functions move apart in the tails (Sueyoshi, 1995; Jenkins, 1995).

effect of time-varying covariates could be better taken into account, and ongoing attempts could be considered as censored rather than "unsuccessful". The time origin would then be defined as the start of the attempt and the discrete-time hazard for interval t would be the probability of migrating to France, Italy or Spain during interval t, given that no migration has occurred in a previous interval. However, data have been collected in annual spells, a very coarse time unit in the context of this analysis. This results in the attempts duration, as observed in the data, showing little variation, with most attempts lasting at the average less than three years and including many spells of less than one year ("zero" durations). Moreover, all but 24 attempts are not right-censored, since individuals either migrated or abandoned the attempt. Specifying the migration equation as a simple binary outcome thus seems acceptable.

The processes of attempt (3.2) and migration (3.3) can be formally described as follows (see, e.g., Litchfield and Reilly, 2009), including the baseline hazard and the appropriate time-subscripts:

$$y_{1ti}^* = \alpha t + x_{1ti}'\beta + \varepsilon_{1ti} \tag{3.2}$$

$$y_{2i}^* = x_{2i}'\gamma + \varepsilon_{2i} \tag{3.3}$$

where y_{1ti}^* is the latent propensity to attempt migration in interval t, conditional on not having attempted migration previously, y_{2i}^* is the latent propensity to migrate and the dependent variables are related to observable binary outcomes by the rule:

$y_{1ti} = 1$ if $y_{1ti}^* > 0$; one observes that the individual attempts migration

$y_{1ti} = 0$ if $y_{1ti}^* \leq 0$; one observes no migration attempt

$y_{2i} = 1$ if $y_{2i}^* > 0$; one observes that the individual migrates

$y_{2i} = 0$ if $y_{2i}^* \leq 0$; one observes no migration

This equation structure suggests the use of a bivariate probit model, where the error terms ε_{1ti} and ε_{2i} are distributed as bivariate normal with means zero, variances one, and correlation coefficient ρ. However, the migration outcome y_{2i} is only observed conditional on attempting migration ($y_{1ti} = 1$). This is a case of a censored bivariate model described by Meng and Schmidt (1985), in which the sample on which the migration equation is estimated constitutes a subset of the initial sample. If the correlation term is different from zero, migrants would constitute a self-selected sample and the estimation of the mi-

gration equation (3.3) would suffer from a selectivity-bias if estimated separately. Meng and Schmidt (1985) recommend therefore joint estimation by full information maximum likelihood (FIML) methods with respect to the coefficient vectors α, β and γ as well as the correlation coefficient ρ. Given the possibility of selection, the vector of observable characteristics x_{1ti} in the attempts equation (3.2) must contain variables which are excluded from x_{2i} in the migration equation (3.3) in order to achieve identification of the model.

We thus estimate the processes of attempt and migration jointly using a bivariate probit model with sample selection with the attempts equation specified as discrete-time duration model by reorganising the data into person-year format. The migration outcome is not only missing for the group of non-attempters, but also for attempters in all person-years except for the last one. Explanatory variables x_{1it} are measured time-varying at annual intervals. Characteristics x_{2i} are measured in the last year of the attempt.

There are three components to the likelihood function, capturing migration, unsuccessful attempters, and in the third term person-years without attempt (of both non-attempters and attempters before the year in which the attempt occurs):

$$L\left(\alpha,\beta,\gamma,\rho;t,x_{1ti},x_{2i}\right) = \prod_{y_{1t}=1,y_2=1} F\left(\alpha t, x'_{1ti}\beta, x'_{2i}\gamma; \rho\right) \prod_{y_{1t}=1,y_2=0} F\left(\alpha t, x'_{1ti}\beta, -x'_{2i}\gamma; -\rho\right)$$

$$\tag{3.4}$$

$$\prod_{y_{1t}=0} \left[1 - \Phi\left(\alpha t, x'_{1ti}\beta\right)\right]$$

The choice and construction of individual, family, and contextual variables contained in vectors x_{1ti} and x_{2i}, as well as exclusion restrictions are discussed in the following section.

3.5 Construction of explanatory variables

3.5.1 Individual and family variables

Individual and family-level covariates are constructed from the individual biographic data. Time variations in characteristics are captured at a yearly basis. Moreover, to ensure the correct time sequence in events, we lag most explanatory variables by one year in the duration model. Measures of resources, family situation and attempts characteristics are

summarized in Table 3.3. The descriptive statistics contained in the table are discussed in section 3.6 on empirical findings.

Education as a proxy of human capital is measured in years of formal education in the migration equation, and in three categories (no schooling, primary, secondary or higher) in the attempts equation.[10] Since we are analysing the first attempt (and migration) to France, Italy or Spain, we cannot construct a variable measuring directly comparable previous migration experience. We use as control variable a dummy variable measuring whether the individual had already gained previous international migration experience in Africa. However, Senegalese appear to select differently into migration to Africa and to Europe, for instance by gender and with regard to the role of education (Flahaux et al., 2010). In this context, previous migration experience in Africa may suggest an alternative migration strategy, rather than an accumulation of "migration capital" relevant and useful for reaching France, Italy or Spain. Having spent time in other African countries is, on the other hand, also consistent with a migration strategy which uses transit stays in African countries on the way to the envisaged destination in Europe. In this case, at least the attempt should be positively related to previous stays in Africa. Moreover, age enters the duration model recoded into a categorical variable measuring "time since age 10" in three categories, namely less than 16 years/below age 26, 16 to 25 years/between age 26 and 35 and more than 25 years/35 and older. The time dependency is assumed to be of piecewise constant form, and the thresholds are chosen to reflect the mean age at attempt (age 26) and to have at the same time sufficient observations in all cells (age 35). Age is entered as continuous variable in the migration equation.

Self-reported occupational status of the individual (wage-employed, self-employed or employer[11], out of the labour market), reflects partly the access to and the stability of financial resources that may facilitate the realisation of the move. Yet, the variable may also capture to some extent the opportunity cost of moving. Moreover, we include a subjective measure of household-level wealth, which ranges from having more than sufficient resources to purchase basic goods to insufficient resources. If migration costs are not fully evaluated at the attempts stage, the expected effect is that those who perceive themselves

---

[10]Starting with a variable with multiple categories, we introduce the most parsimonious measure of a variable whenever possible in order to save degrees of freedom; hence the different specifications of education and time/age in attempts and migration equations.

[11]Employers and self-employed are grouped together, since very few individuals in the sample declare to be employers (42 overall, among which 15 migrate, and none of them is an unsuccessful attempter). Moreover, the open ended question which provides some more information about the type of activity performed suggests that the type of task performed by self-declared employers is often similar to the activities of self-employed.

as relatively poor will be more likely to attempt migration, but may not be able to actually migrate.

The location and composition of the respondent's social network is recorded by the questionnaire in a "migration network" history, and allows us to construct variables indicating access to a migrant network at any time during the respondent's life. Migrations of network members are only captured if they lasted for at least one year. Since family structures in Senegal are characterised by large and extended families and households, a relatively broad definition of "migrant network" has been adopted, including friends and other relatives in addition to members of the nuclear family. In the attempts equation, we measure networks as the number of relatives, kin or friends in France, Italy or Spain. A variable which is more specific to the individual's attempt can be constructed in case of the migration equation. Depending on whether the envisaged destination is France, Italy, or Spain, a single variable is defined measuring whether a network is present at the destination in question; not at destination but elsewhere abroad; or not at all. This approach to incorporating individual-specific destination information in the variable allows to save degrees of freedom, and is the only feasible option given the data at hand. However, one should bear in mind that it effectively constrains the coefficient across the three destinations to be the same. The same comment applies to contextual destination-specific variables discussed below.

A network going beyond the family and friendship ties is the religious one. In Senegal, most Muslims are affiliated to one of four Sufi brotherhoods, namely the mouride, tidiane, khadre and layène. While traditionally coming from an agricultural background, Mourides have increasingly moved into trade activities over the past half century (Riccio, 2001; Babou, 2002). The internationalisation of Mouride trading networks, together with strong ties between the Mouride spiritual leaders (marabouts) and their disciples (talibé) on the one hand, and solidarity among Mourides on the other hand, have been identified as another source of migrant social capital specific to the Senegalese case (ibid.). We include a variable which controls for affiliation to the Mouride brotherhood. In contrast to the migrant social networks composed of relatives and friends, we expect the affiliation to the Mouride community to affect mainly the migration realisation, by lowering the costs of moving.

The family situation related to the life cycle is captured through variables on the number of children aged between zero and twelve years and the individual's partnership status. Moreover, we include a variable which equals one if at least one brother lived in the

household in year $t - 1$. Having a brother in the household can free the individual from the "responsibility" of staying at home since at least one other breadwinner is present, making an attempt more probable.

For those individuals who make an attempt, we can further identify the main motivation of the attempt. The variable is constructed by coding the responses to an open question on migration motives. Starting with a relatively detailed codification, codes have been regrouped first to the categories "studies"; "work/better economic conditions"; "family"; "adventure"; "opportunity"; "health"; and "other". Given the relatively small sample size, we use a simple binary indicator in the analysis, which is equal to one if "work/better economic conditions" was given as motivation. If several motives were contained in the open response, we used the first one reported, under the assumption that the first motive coming to mind is of particular importance to the respondent.

Furthermore, a multiple response question inquiring about the type of steps the individual has undertaken towards the realisation of the migration attempt is recoded into a binary variable. We distinguish between efforts to obtain "papers" (having applied for or obtained papers) and other measures taken, for instance having started to accumulate savings, application for university admission or for a scholarship etc. "Papers" can include a visa application, which involves a long and costly process (CIMADE, 2010; Zampagni, 2011), but also passports, proofs of bank accounts or health certificates. This variable is problematic, since policies regarding documentation have been changing over the time period considered. At the same time, these characteristics should control to some extent for the effort involved in preparing the migration attempt.

Table 3.3: *Descriptive individual and family statistics of non-attempters versus attempters; and of successful versus failed attempters*

	Measurement	Non-attempters (1)	Attempters (2)	Unsuccessful attempters (2a)	Successful attempters (2b)
		Proportion/ mean; C.I.	Proportion/ mean; C.I.	Proportion/ mean; C.I.	Proportion/ mean; C.I.
Gender	1=Female, 0=male	0.58	0.25	0.19	0.29
		(0.53, 0.63)	(0.21, 0.31)	(0.11, 0.31)	(0.24, 0.34)
Age	#Age in years	40.25	26.75	30.47	27.19
		(38.97, 41.54)	(26.05, 27.45)	(28.43, 32.52)	(26.60, 27.78)
Human capital					
Formal education	1=No schooling	0.26	0.11	0.12	0.11
		(0.22, 0.30)	(0.08, 0.16)	(0.05, 0.27)	(0.08, 0.14)
	2=Primary	0.43	0.37	0.47	0.30

Continued on next page

	Measurement	Non-attempters (1)	Attempters (2)	Unsuccessful attempters (2a)	Successful attempters (2b)
		Proportion/ mean; C.I.	Proportion/ mean; C.I.	Proportion/ mean; C.I.	Proportion/ mean; C.I.
		(0.38, 0.48)	(0.31, 0.44)	(0.33, 0.61)	(0.25, 0.35)
	3=Secondary and more	0.31	0.52	0.42	0.59
		(0.27, 0.36)	(0.45, 0.58)	(0.29, 0.55)	(0.54, 0.64)
	#Years of formal education	6.15	8.15	7.53	8.69
		(5.66, 6.65)	(7.58, 8.72)	(6.25, 8.80)	(8.20, 9.18)
Any migration experience in Africa	1=Yes, 0=No	0.08	0.12	0.19	0.10
		(0.06, 0.11)	(0.09, 0.16)	(0.11, 0.30)	(0.07, 0.13)
Financial resources/stability					
Household subjective resources	1=More than sufficient resources	0.08	0.14	0.12	0.15
		(0.06, 0.11)	(0.10, 0.18)	(0.06, 0.23)	(0.11, 0.20)
	2=Sufficient HH resources	0.50	0.50	0.46	0.54
		(0.45, 0.55)	(0.44, 0.56)	(0.33, 0.60)	(0.48, 0.59)
	3=Just sufficient HH resources	0.30	0.27	0.29	0.25
		(0.26, 0.35)	(0.22, 0.33)	(0.18, 0.43)	(0.20, 0.30)
	4=Insufficient HH resources	0.11	0.09	0.14	0.07
		(0.08, 0.15)	(0.06, 0.15)	(0.06, 0.28)	(0.05, 0.10)
Occupation status	1=Wage-employed	0.24	0.36	0.50	0.32
		(0.20, 0.28)	(0.30, 0.43)	(0.36, 0.63)	(0.27, 0.38)
	2=Self-employed/employer	0.31	0.22	0.31	0.20
		(0.27, 0.36)	(0.18, 0.28)	(0.20, 0.44)	(0.16, 0.24)
	3=No income earner	0.45	0.42	0.19	0.48
		(0.40, 0.50)	(0.36, 0.48)	(0.11, 0.31)	(0.42, 0.53)
Social capital					
Migrant social capital	# Size of migrant network in F, I, ES	0.87	1.15	0.77	1.21
		(0.76, 0.99)	(1.01, 1.29)	(0.51, 1.03)	(1.09, 1.34)
	1=No network	§	§	0.48	0.30
				(0.34, 0.61)	(0.25, 0.35)
	2=Network, not at destination	§	§	0.24	0.09
				(0.14, 0.37)	(0.06, 0.12)
	3=Network in destination country	§	§	0.29	0.61
				(0.18, 0.43)	(0.56, 0.66)
Religion	1=Mouride, 0=other	0.32	0.33	0.30	0.35
		(0.27, 0.36)	(0.28, 0.39)	(0.20, 0.43)	(0.30, 0.41)
Family situation/life-cycle					
Marital status	1=married/in union	0.65	0.40	0.53	0.48
	0=Single	(0.60, 0.70)	(0.34, 0.46)	(0.39, 0.66)	(0.43, 0.53)
Dependent children	#Number of children 0-12	1.21	0.61	0.80	0.64
		(1.06, 1.35)	(0.48, 0.73)	(0.49, 1.10)	(0.53, 0.75)
"Role/Responsibility in household"	1=Brother in HH	0.37	0.51	0.49	0.52
	0=no brother in HH	(0.33, 0.42)	(0.45, 0.57)	(0.36, 0.63)	(0.47, 0.57)
Attempt characteristics					
Attempt motive	1=Work; improved economic conditions	§	§	0.78	0.57
	0=Other			(0.63, 0.89)	(0.51, 0.62)

	Measurement	Non-attempters (1)	Attempters (2)	Unsuccessful attempters (2a)	Successful attempters (2b)
		Proportion/ mean; C.I.	Proportion/ mean; C.I.	Proportion/ mean; C.I.	Proportion/ mean; C.I.
Attempt effort	1=Applied for/obtained some papers	§	§	0.33	0.61
	0=Other			(0.21, 0.47)	(0.55, 0.66)
N=		925	743	102	641

Source: MAFE-Senegal survey (2008)

Notes: The statistics refer to: (1) characteristics of non-attempters measured at time of censoring (in year before survey/at migration to other developed countries); (2) characteristics of attempters measured in year before attempt; (2a) characteristics of successful attempters measured in year before migration; (2b) characteristics of failed attempters measured in last year of attempt; given these different measures in time, (2) does not have to fall between (2a) and (2b).

\#   indicates a numerical variable (mean), all others are categorical (proportions);

§   indicates that the variable is not applicable to this outcome;

CI: Confidence interval at 95% in parentheses

The descriptive statistics are weighted to take account of the multi-stage sampling in Senegal and the stratification in European countries.

3.5.2   Context variables at origin and at destination

We include several variables to explore the role of constraints and opportunities on triggering an attempt and bringing it to conclusion arising from the economic and political context at origin and at destination. Income differentials between destination and origin countries are, according to the neoclassical migration theory, the main determinant of migration. The GDP per capita ratio (2000 US$, WDI 2011) between the three destination countries and Senegal followed a clear upward trend since the 1960s until the beginning of the 21st century, and stabilised at a high level in recent years (see Figure 3.4, primary axis). Given this persistent upward trend, a variable measuring the change in the ratio seems to be more appropriate to capture variations in economic incentives to Senegalese over the time period we are observing. We use, therefore, the first difference in the GDP per capita ratio (Figure 3.4, secondary axis), which reflects whether the gap grows or contracts in a given year.

Since individuals who do not attempt migration are included in the attempts equation, the variable cannot be constructed with destination country-specific values. We use averages of contextual variables across the three countries in the attempts equation. This approach also seems sensible from a conceptual point of view, as individuals may consider the situation in Europe more broadly when considering attempting migration. Moreover, the evaluation of economic incentives may take account of a longer evolution and may not
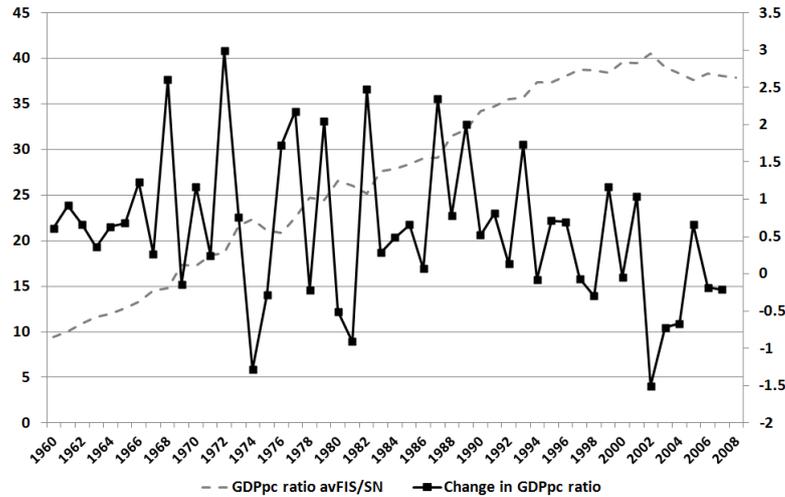
Figure 3.4: *Evolution of destination/origin GDP per capita ratio and its first difference*
Source: World Development Indicators (WDI), The World Bank, 2011.

immediately trigger an attempt. We include therefore a two-year moving average of the variable. Migration, on the other hand, may be prompted by more short-term changes in economic incentives. The variable used is the first difference of the GDP per capita ratio, and the change in the France-Senegal ratio is used if the envisaged destination is France, the Spain-Senegal ratio in case of Spain, and the Italy-Senegal ratio in case of Italy.

We include the rate of inflation in Senegal (GDP deflator, annual %; WDI 2011) as origin-specific context variable. According to Massey and Espinosa (1997), high inflation will lead to a downward evaluation of expected real income at origin, raising the probability of migrating. However, since inflation also picks up the constraints to financing a migration to Europe, the relationship could also be negative, similar to the authors' empirical findings on the Mexico-US migration case. While we noted in the discussion of the conceptual framework the role of origin-community characteristics, we are not including any such variables in the analysis. Disaggregated longitudinal data on Senegalese communities is generally unavailable. Moreover, the Senegalese sample (in 2008) is restricted to the region of Dakar, a highly urbanised area, making the definition of "communities" rather problematic (Fussell and Massey, 2004).

First differences in unemployment rates at destination are included to account for the disincentives arising from tightening labour markets (ILO-LABORSTA). As before, we suggest that it is the size of the change rather than the level of unemployment that will be perceived by Senegalese and discourage both attempts and actual migration. This is especially the case if immigrants are the first affected by changes in the labour market, which

seems plausible in the case of the countries we are analysing. Since the unemployment series for Spain only starts in 1973, the earliest person-year observations in the dataset are dropped when including this variable. However, due to the limited number of events in early years, in particular unsuccessful migration attempts (only one before 1973), this decisions seems reasonable. As in the case of the GDP per capita ratio, we construct a variable based on the average in the three countries for the attempts equation, and a destination-specific variable for the migration equation.

The last set of contextual variables of specific interest to our analysis comprise variables measuring immigration policies in the three destination countries. As explained in Chapter 2 on data sources, we have constructed policy indicators based on legal texts at legislative, regulative and administrative levels (laws, decrees, administrative circulars and instructions), with the objective to ensure comparability across countries and over time. To briefly recapitulate, the approach consisted of (i) defining the main policy constructs in terms of entry or admission policies; (ii) establishing a list of indicators reflecting different dimensions of conditions of entry (ca. 40 indicators), and (iii) defining for each indicator scales or thresholds which would then allow us to (iv) score a given policy in a given year as restrictive (-1), neutral (0), or favourable (1). The definition of indicators and thresholds is based on an overview of the policies in each policy area over the past 40 years.

In the current analysis, we use a subset of 24 indicators, aggregated into four variables:

- Variable 1: Short stay entry policy:

  - Subset 1: Tourist visa exemptions; motivation of visa refusals

  - Subset 2: Requirements: economic resources requirements; housing requirements; health insurance requirements

- Variable 2: Immigration policy concerning illegal entry/residence:

  - Subset 1: Readmission agreements signed/in force with Senegal; readmission agreements signed/in force with main transit countries; maximum duration of stay in administrative retention centres

  - Subset 2: Extraordinary regularisation (application process ongoing); permanent regularisation

- Variable 3: Family reunification policy

  - Subset 1: Legal protection of family reunification

- – Subset 2: Requirements: Duration of residence requirement; economic resources requirements; housing requirements

  – Subset 3: Eligibility: eligibility for family members in the ascending line; prohibition in case of polygamy; sequential reunification possible

- Variable 4: Work immigration policy

  – Subset 1: Restrictions to work immigration (-1: national employment clause; 0: list of occupations, true quotas[12], or authorisation necessary previous to entry; 1: more open conditions).

The first version of the work immigration policy variable is based on a single indicator and takes only values 0 and -1. We considered a a second version of this variable, which has as second subset indicators on the access to the labour market of immigrants who entered the country through family reunification procedures or as students.

  – Subset 2: access to the labour market for family members and students (during studies; after studies)

The aggregation is made by first averaging indicators within each subset, and then across subsets, generating variables which vary between -1 and 1. No further weights are applied in the process. Nonetheless, there is an implicit weighting given the varying number of indicators in each subset, and other aggregation methods should be explored in the future to test for the role of the implicit weights. Still, given the conceptual coherence of each subset, the current procedure seems appropriate.

Another question is whether these variables capture exhaustively the policies relevant to migration decision-making. Due to the problems in accessing legal texts as well as the lack of norms on certain topics in the 1960s and 1970s, several "entry" channels are not reflected in the current definition of the variables, in particular student migration[13] and automatic acquisition of residence permits through marriage to a national or by being parent of a national minor child. The latter variable is, however, also less meaningful in countries where citizenship law is mainly governed by the ius sanguinis - Spain and Italy. Similarly, Senegalese student migration is negligible for Italy and Spain. Other indicators

---

[12] "True quotas" are defined in contrast to concealed regularisations, which would refer to years in which quotas are exhausted by individuals who are already in the country, not allowing for any new entries. This indicator takes, to some extent, the implementation characteristics into account.

[13] Information on requirements for entry of students in Spain is only available since the real decreto from 1986.

in the data set which are not taken into account in the four variables above provide more detail on each channel, but are often conditional on the value of the higher-level indicator, which may make the final coding more inscrutable. Further refinements may be made in future versions to account for these sub-indicators and to allow for more variation.

Moreover, the choice of indicators to be included in the database has been guided by an evaluation of policies affecting entry, and hence the cost side of the migration cost-benefit evaluation. If potential Senegalese migrants have a long time horizon, indicators related to illegal and legal stay should also be taken into account, since they provide information about the expected stability once in the country and consequently on the expected returns to migration. The assumption would be, however, that potential migrants in the origin country are in the position to evaluate the likeliness of changes in immigration policies that do not directly relate to the first hurdle to overcome, and that relate to a situation even further in the future. This work goes, moreover, beyond what it feasible in the framework of this thesis.

Lastly, the current version of the variables contains information for France starting from 1964, but only from 1970 for Italy and 1974 for Spain. As with the unemployment variable, several successful migrants who migrated before 1974 will be dropped from the analysis when policy variables are included in the estimation.

Figures 3.5 to 3.9 plot the evolution of the four policy variables in France, Spain and Italy. Higher and positive scores on the y-axis reflect less restrictive policies, lower and negative scores reflect more restrictive policies.
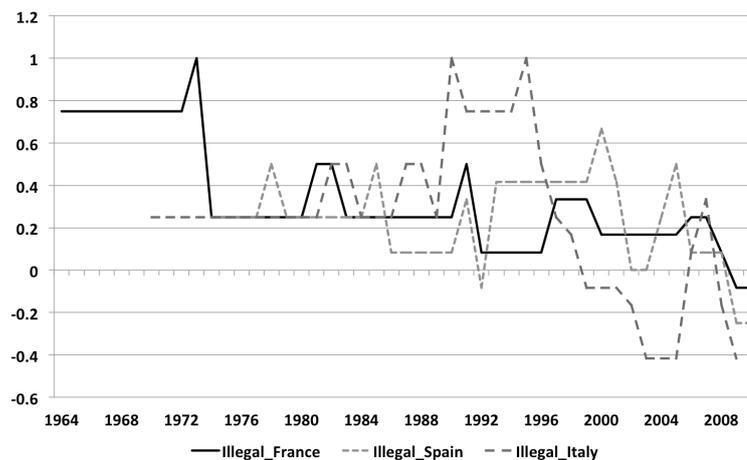
Figure 3.5: *Immigration policy concerning illegal entry/residence*
Source: ImPol-MAFE(SN) database, author's data collection and computation.

In all three countries, one can observe a tendency towards stricter policies with regard to illegal immigration over time (Figure 3.5). Still, there is considerable variation due to the different timing and extent of policies. Upward changes capture both extraordinary (one-off for a large group and with previously set application period) and permanent regularisation (ongoing, based on individual eligibility) procedures. France had its major extraordinary regularisation programmes in 1981/1982 and (with more targeted groups) in 1997/1998, and smaller ones in 1991 and 2006. A first extraordinary regularisation took place in 1973. At the same time, the previous habit of regularising immigrants on an individual basis once they were in France ("régularisation sur place") was definitely made impossible. Spain (seven) and Italy (seven) passed considerably more large-scale extraordinary regularisations than France in the period considered.[14] France and Spain have also been implementing permanent regularisation mechanisms at individual level, which have experienced variations regarding eligibility over time. Italy does not have such a mechanism. However, in certain years the flow decrees, which should specify quotas for entry, were effectively used to regularise immigrants who were already in the country. Only France and Spain signed readmission agreements with Senegal, which were signed in 2006 and entered into force after the end of the observation period in 2009. In France, readmission agreements (with transit countries) were passed slightly later than in Spain and Italy. Moreover, while policies regarding retention centres have been started earlier (in the beginning of the 1980s), they have been less restrictive in terms of the maximum number of days illegal migrants can be detained (e.g. 32 days in France, 60 days in Spain, and 180 days in Italy in 2009).

The variable reflecting policies on entry for short stays shows a clear downward pattern with less variation (Figure 3.6). Starting from a very open regime, reflected in visa exemptions for Senegalese in France (until 1986) and Italy (from 1966 until 1990), entry became increasingly difficult. Bit by bit, additional restrictions in terms of proof of housing, economic resources, and health insurance requirements were introduced. The legislation regarding the non-motivation of visa refusals, which adds additional discretion to decisions taken by the destination country's administration, also differs across the three countries, with a "no-motivation" rule in Spain for almost all years, and more variation for Italy and France.

Family reunification policies show larger variability over time (Figure 3.7). The introduction of the right to family reunification in national law represented a positive change

---

[14]The distinction by number of (regularised) applicants and targeted groups is not reflected in the current version of the indicators, but could be integrated in future analyses.
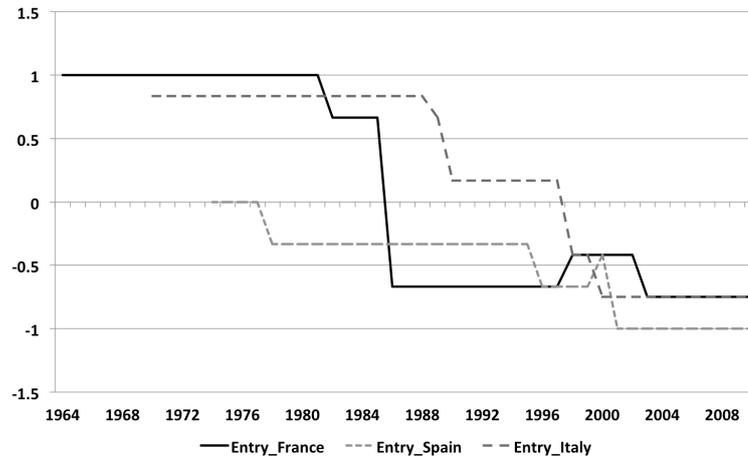
Figure 3.6: *Short stay entry variable*

Source: ImPol-MAFE(SN) database, author's data collection and computation.
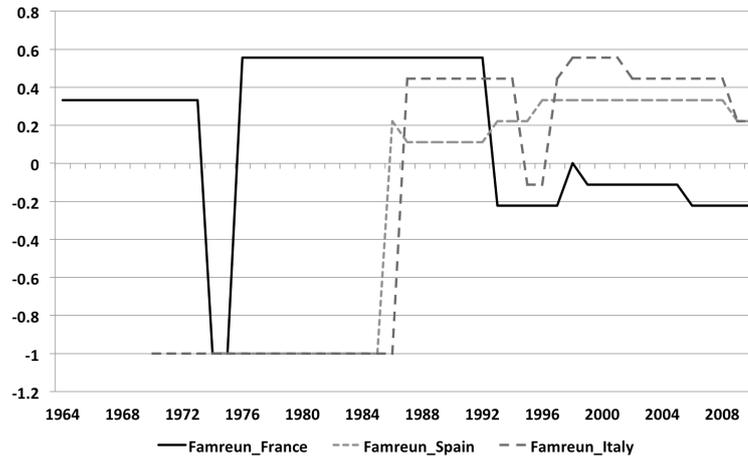
Figure 3.7: *Family reunification policy variable*

Source: ImPol-MAFE(SN) database, author's data collection and computation.

with regard to the years of no legal protection and limited possibilities of migrating as family member (in 1976 in France, 1986 in Italy and 1996 in Spain). The sharp fall in the 1970s in France is due to a temporary halt to family immigration. Spain and Italy have maintained more favourable eligibility criteria than France, for instance with regard to possibilities to sponsor relatives in the ascending line or bring family members at several instances rather than at once, which pushes their curves upwards. Also, requirements in terms of duration of stay of the sponsor are overall less restrictive in Italy than in Spain and France. In contrast, other requirements regarding economic resources and availability of housing compensate for this effect on the indicator variable.

As said above, the first version of the work immigration policy variable is quite poor in
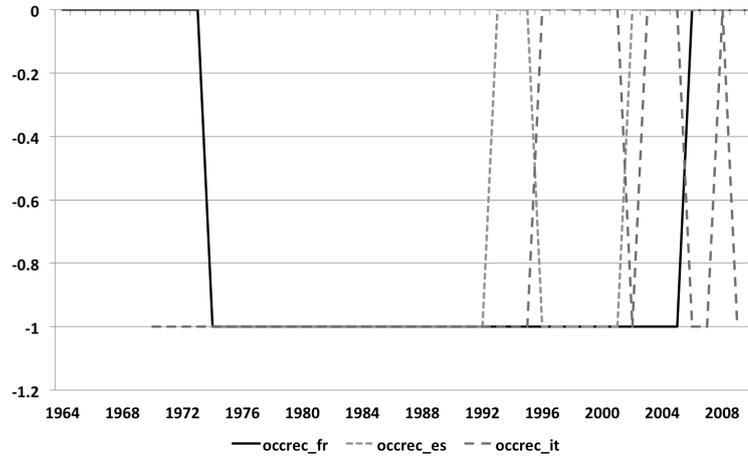
Figure 3.8: *Work immigration policy (version 1)*
Source: ImPol-MAFE(SN) database, author's data collection and computation.

terms of variation across countries and over time (Figure 3.8). The variation from -1 to 0 depicted for Spain and Italy reflect the years in which true quotas were established. France is characterised during most of the period by a policy accounting strictly for the national employment situation. Only more recently, a number of specific occupations have been excluded from this general treatment. A second version of the variable also incorporates information about the access of family members and students to the labour market, as well as on the possibility to change the status from student to worker (Figure 3.9).
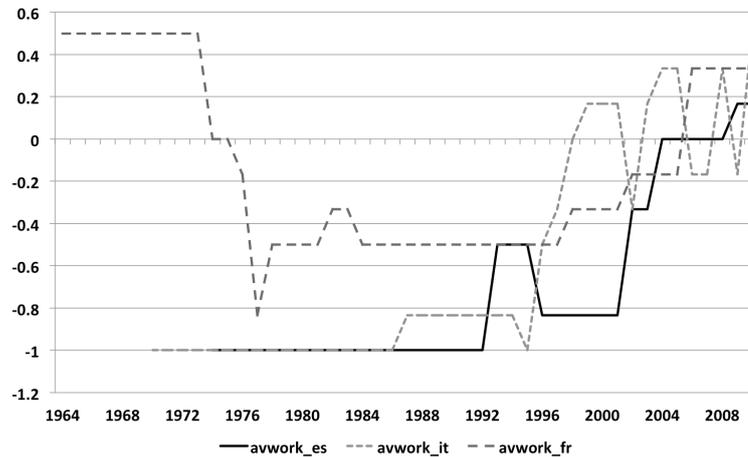
Figure 3.9: *Work immigration policy (version 2)*
Source: ImPol-MAFE(SN) database, author's data collection and computation.

The work immigration variable now shows considerably more variation, and, surprisingly, a positive tendency towards the end of the observation period. Work during studies was particularly restricted in all three countries in the mid-1980s to the mid/end-1990s, and

policies became more favourable afterwards. Similarly, all three countries lived through periods when transition from a student permit to a work permit was prohibited. Although recently countries have again tried to limit these policies (such as France in 2011 with the circulaire Guéant, 31 May 2011), there were periods when status change was, at least for certain groups, possible. The construction of this variable illustrates the challenges in selecting the appropriate policy indicators and how much the aggregate variable can vary. Integrating, for instance, also policies concerning seasonal work would further affect the evolution of the aggregate variable.[15]

3.5.3 Exclusion restrictions

As noted in the methods section, we need to define exclusion restrictions in order to identify the selection effects. Instrument relevance and orthogonality require that variables are strong predictors of attempting migration, but do not influence on their own the realisation of the migration attempt. We argue that origin context should influence the start of an attempt, but, conditional on being in the group of the attempters, should not have any impact on the success of the attempt. The inflation variable is thus included in the attempts equation, and excluded from the migration equation. Moreover, the fact that a brother is living in the household should enable the individual to start an attempt, but is not expected to have any effect on the realisation of the attempt, once household-level wealth is controlled for. A third variable excluded from the migration equation is the number of children. We posit again that once one decides to attempt migration, the number of dependants should no longer matter. The individual possesses full information about responsibilities as well as resource constraints attached to the children, and it is unlikely that there are re-evaluations. However, this choice could be criticised based on

---

[15]The policy variables could be subject to endogeneity bias, if policies were a reaction to the specific migration outcomes analysed. While one cannot rule it out, a high degree of endogeneity seems unlikely in this case. Firstly, in terms of the common policy regime in France, Spain and Italy, Senegalese migrants (and Sub-Saharan African migrants in general) represented a minority of the immigrant population. According to the World Bank bilateral estimates of migrant stocks in 2010, Senegalese represented 2.5% of non-EU immigrant population in Italy, 1.1% in Spain and 2.1% in France, which suggests that general immigration policy may not have been shaped by the evolution of those flows. However, bilateral agreements, which are also incorporated in the indicators, are clearly linked to Senegal. In this case, one could argue that the timing, at least of the most important ones, was exogenous to Senegalese migration flows. The 1964 agreement between France and Senegal, for instance, was a necessity after the country became independent. Not only Senegal was targeted with a bilateral agreement, but also other ex-colonies. The timing of the end of the visa exemptions in 1986 was a response to a series of terrorist attacks during that year. Italy ended the preferential treatment in response to its accession to the convention implementing the Schengen agreement in 1990. Other aspects related to timing may help to reduce the degree of endogeneity, as certain changes were linked to changes in the government and several bilateral agreements, such as the 1995 one with France, only entered into force several years later (in 2002).

several grounds. As noted in the conceptual part, the effect on attempts may be gender-dependent. Moreover, if durations from the start of an attempt to the migration were relatively long, the birth of another child may well influence migration. More importantly, individuals who attempt migration may decide, in anticipation of the migration, not to have children, making this variable endogenous. Given the short durations of attempts in our data, this does not seem to be a major problem to the analysis. However, we acknowledge that the choice of exclusion restrictions should be further explored. We investigate the validity of the exclusion restrictions empirically by including the three variables in a probit model for the migration outcome. This approach is a crude one, but the only feasible option. Based on Wald tests, estimates are individually and jointly statistically insignificant. In the attempts equation, the coefficients are found to be individually and jointly significant.[16]

3.6 Empirical findings

Before commenting on the findings from the selection model, we will briefly point to some descriptive results. Table 3.3 presents statistics of individual, family and attempt characteristics for non-attempters and attempters (columns 1 and 2), and after further dividing attempters into the two groups of successful and unsuccessful attempts (columns 2a and 2b).

Women are underrepresented among attempters. This reflects, despite the recent trend towards a larger involvement of women in migration, a migration pattern which is largely male-dominated. In contrast, one cannot observe an advantage of men in concluding the attempt with migration. The better educated are overrepresented among attempters in general, as well as successful attempters. Furthermore, wage-employed represent a relatively large share of attempters, but a relatively higher percentage of those who do not have an income-generating job do migrate among those who attempt migration. This result is rather surprising if one accepts that resource constraints may prevent this group from realising the attempt. A possible explanation may be that they are more flexible since they have no labour market ties. Another reason may be that individuals tend to drop out of the labour market during an attempt in preparation of migration, as proposed

---

[16]The chi-square value for the joint significance of exclusion restrictions in the migration equation (probit) is $\chi^2(3) = 1.61$ ($prob > \chi^2 = 0.6567$) in the version without policy variables, and $\chi^2(3) = 1.86$ ($prob > \chi^2 = 0.6011$) in the version with policy variables; and in the attempts equation (probit) without policy variables, the corresponding values are $\chi^2(3) = 43.06$ ($prob > \chi^2 = 0.0000$), and when including the policy variables the chi-square test value is $\chi^2(3) = 31.83$ ($prob > \chi^2 = 0.0000$).

by Fan and Stark (2007). The descriptive statistics on the migration network suggest a strong link between both processes and the availability of migrant social capital, especially if it is specific to the envisaged country of destination. With regard to the role of attempts characteristics, it appears that individuals attempting to migrate to find a better job are less successful in realising their attempt, while steps towards obtaining documents helps in accomplishing migration.

We now turn to the results of the multivariate model. Table 3.4 presents the coefficient estimates for the restricted model without policy variables (two separate models for attempts and migration) in the left two columns (a), and for the unrestricted model without policy variables (joint estimation of attempt and migration equation) in the right two columns (b).

The estimated correlation between the two processes is 0.50. The likelihood ratio test indicates a statistically significant positive selection bias, meaning that unobservable characteristics that increase the likelihood of attempting migration also enhance the chances of migration. We comment therefore on the results of the unrestricted model. However, coefficient estimates are in fact relatively similar with respect to sign and size in both restricted and unrestricted models.

Senegalese women have a lower propensity to attempt migration to France, Italy or Spain than Senegalese men. However, once they do start an attempt, women are equally likely to carry the attempt through and leave Senegal. This facility may be due to different migration strategies, with women mainly opting for family reunifications that pose fewer barriers than economic migration. When re-estimating the model excluding individuals who declared that their attempt was primarily motivated by family reasons, estimates for gender were not significantly different (not shown in the results table, results available from the author).

Age, which is reflected in the time variable in the discrete-time attempts equation, has the expected inverse-U shaped form. Individuals aged between 25 and 35 are most likely to start an attempt. Moreover, older individuals also seem to be more likely to fail, or to abandon their attempt than younger attempters.

The results on education suggest that individuals with at least some secondary education are more likely to undertake steps towards migrating to France, Spain or Italy than those without any formal education. Educated individuals in Senegal may not find a job according to their skill level, and accept less-skilled jobs abroad as the expected return

from migration in absolute terms is still positive. However, education does not appear to influence the likelihood of actually migrating. Individuals who have gained migration experience in Africa are more likely to attempt migration, but this experience does not seem to contribute to the realisation of the attempt. Indeed, they are more likely to fail in their attempts than individuals who try to migrate directly to France, Italy or Spain.

The financial situation of the household does indeed seem to constitute a push-factor for migration attempts. Individuals who perceived the level of household resources as just sufficient or even insufficient are more likely to start a migration attempt than those who are better off. However, rather than the poorest it is the group of "relatively well-off" that tends to bring the migration attempt to conclusion. Migration costs may not be fully evaluated before starting an attempt and resource constraints which become apparent in the process may prevent the poorest from going abroad. With regard to the role of occupational status, we observe that the association found in the descriptive statistics persists. Individuals without income-generating work are less likely to attempt migration than wage-employed, but the status is positively related to actual migration. As noted before, this result is hard to reconcile with the hypothesis that resource constraints may prevent individuals from realising the attempt. If the effect of resource constraints is controlled for by the subjective household wealth measure, the occupation status may capture either the pre-migration labour market drop outs suggested by Fan and Stark (2007) or the flexibility of the individual in leaving the country, thus the opportunity cost of having a job. In this context, the negative coefficient on self-employment as compared to wage-employment in the migration equation may suggest that self-employed are more tied to Senegal due to the business they own. However, given that the majority of business activities in Senegal are small-scale, do not rely on employees or high capital investments and may therefore be easier to "close down", this interpretation is not entirely convincing and has to be further explored.

As in most studies of migration determinants, we find that migrant social capital plays an important role in the migration decision process. In addition, our results reveal that there is a "double" network effect. A larger network in the three examined destination countries stimulates the start of an attempt to one of those countries. Moreover, those who have a network at destination are more likely to depart from Senegal, than individuals without any migrant network. Having a migrant network but not in the envisaged country of destination has a negative effect on the realisation of the attempt, compared to not having any network. Destination-specific migrant social capital is crucial in making the attempt succeed. Also the affiliation to the Mouride religious brotherhood affects positively both

the decision to start an attempt and the migration itself.

Table 3.4: *Coefficient estimates for attempting migration and migrating – Individual, family and economic context variables*

VARIABLES	(a) Separate estimation (without policies)		(b) Joint estimation (without policies)	
	Attempt	Migrate	Attempt	Migrate
Female (ref. male)	-0.087*	0.319	-0.091**	0.216
	(0.045)	(0.214)	(0.045)	(0.196)
Time 16-25 years (ref. <=15 years)	0.246***	§	0.241***	§
	(0.043)	§	(0.043)	§
Time >25 years (ref. <=15 years)	-0.140**	§	-0.150**	§
	(0.060)	§	(0.060)	§
Age		-0.019*		-0.021*
		(0.012)		(0.011)
Human capital				
Primary education (ref. no formal schooling)	0.044	§	0.053	§
	(0.052)	§	(0.052)	§
Secondary education + (ref. no formal schooling)	0.374***	§	0.375***	§
	(0.052)	§	(0.052)	§
Years of formal education	§	0.000	§	0.014
	§	(0.015)	§	(0.014)
Mig experience in Africa (ref. none)	0.143**	-0.389**	0.137**	-0.308*
	(0.057)	(0.198)	(0.058)	(0.183)
Financial resources/stability				
Sufficient HH resources (ref. more than sufficient)	0.113**	0.360*	0.112**	0.373*
	(0.052)	(0.213)	(0.052)	(0.192)
Just sufficient HH resources (ref. more than sufficient)	0.199***	0.259	0.195***	0.286
	(0.058)	(0.230)	(0.058)	(0.206)
Insufficient HH resources (ref. more than sufficient)	0.187**	0.075	0.182**	0.096
	(0.075)	(0.287)	(0.075)	(0.258)
Self-employed (ref. wage-employed)	-0.010	-0.306*	-0.011	-0.255*
	(0.049)	(0.170)	(0.049)	(0.154)
No income earner (ref. wage-employed)	-0.125***	0.422**	-0.121***	0.312*
	(0.043)	(0.178)	(0.043)	(0.167)
Social capital				
Size of network in FIS	0.186***	§	0.187***	§
	(0.012)	§	(0.012)	§
Network, not at destination (ref. no network)	§	-0.512***	§	-0.397**
	§	(0.195)	§	(0.182)
Network in destination country (ref. no network)	§	0.352**	§	0.439***
	§	(0.160)	§	(0.144)
Mouride religion (ref. Other)	0.097***	0.216	0.096***	0.255*
	(0.034)	(0.144)	(0.034)	(0.131)

Continued on next page

VARIABLES	(a) Separate estimation (without policies)		(b) Joint estimation (without policies)	
	Attempt	Migrate	Attempt	Migrate
Family situation/life-cycle				
Married/in union	0.190***	0.288	0.178***	0.271*
	(0.052)	(0.180)	(0.052)	(0.161)
Married/in union*Female	-0.133**	-0.462	-0.122*	-0.399
	(0.067)	(0.314)	(0.067)	(0.282)
Number of children 0-12	-0.064***	-	-0.066***	-
	(0.016)	-	(0.016)	-
Brother lives in household	0.092***	-	0.088**	-
	(0.035)	-	(0.035)	-
Attempt characteristics				
Attempt motive work/better life (ref. other motive)	-	-0.513***	-	-0.431***
	-	(0.171)	-	(0.159)
Applied for/obtained papers (ref. other action)	-	0.742***	-	0.668***
	-	(0.146)	-	(0.146)
Origin and destination context				
Inflation rate SN	-0.013***	-	-0.013***	-
	(0.003)	-	(0.003)	-
2-year average change in ratio GDPpc FIS/SN	-0.045*	§	-0.047*	§
	(0.025)	§	(0.025)	§
Change ratio GDP pc destination/SN	§	0.246***	§	0.220***
	§	(0.072)	§	(0.069)
Change unemployment rate (mean FIS)	-0.126***	§	-0.131***	§
	(0.020)	§	(0.020)	§
Change unemployment rate (destination country)	§	-0.147***	§	-0.153***
	§	(0.055)	§	(0.050)
Constant	-2.469***	0.916**	-2.461***	-0.445
	(0.089)	(0.452)	(0.089)	(0.645)
Observations	38,219	726	38,218	724
ρ			0.504***	
χ^2 LR-test			5.617	
Log-likelihood	-3,202	-212	-3,408	

Source: MAFE-Senegal survey (2008)

Notes: FIS = France, Italy, Spain; Standard errors reported in brackets; ***, **, * denotes statistical significance at 1%, 5% and 10%

§   indicates that the definition of a variable is not applicable in estimation (different versions of the same variable in the two equations);

-   indicates that the variable is excluded from this estimation (exclusion restrictions; attempts characteristics).

To account for possible gender-specific effects of marital status, we include an interaction term between gender and marital status. Being in a partnership increases the likelihood of starting an attempt and, at marginal statistical significance, realising the attempt for

men. This finding goes against evidence, for instance by van Dalen et al. (2005) on the determinants of migration intentions in Senegal, that being single and therefore "without ties" increases the chances of migrating. However, also van Dalen et al. (2005) find that this negative effect of being in a partnership is mainly present for women, who may be more bound by family norms and less able to take the decision to attempt migration once they are married. This result suggests at the same time that the effect of family reunification on women's propensities to attempt migration and to migrate is not captured indirectly by the marital status variable, in which case we would expect a positive coefficient for women.

Having more dependent children lowers the propensity of starting a migration attempt.[17] We do not find the positive effect of children on male "breadwinners" as suggested by Kanaiaupuni (2000) for Mexico. However, the results must be seen in the context of a very specific migration flow - the one to Europe. The breadwinner effect may be present for internal migration or migration to other countries in Africa, which allows for more flexibility in leaving and circulating and is less costly. In the case of migration to Europe, the number of children may constitute a constraint on resources, and a tie to the home country. As expected, the presence of a brother in the household increases the chances of starting a migration attempt to France, Italy or Spain.

We now turn to the role of migration attempt characteristics for the success or failure of the attempt. Individuals who declare that their attempt was motivated by the search for a better job or a better economic situation were less likely to migrate than individuals who started the attempt due to other reasons, such as studies or reunification with family members. An explanation may be that those with other motives than work had a firmer migration plan. This result holds while we control for the type of effort individuals made during the attempt. Not surprisingly, an effort to obtain documents is found to be positively correlated to succeeding in migrating.

The last block of variables captures some aspects of the context at origin and destination. With increasing inflation, individuals are less likely to attempt migration. The effect is similar to findings by Massey and Espinosa (1997) for the case of Mexico-US migration, with resource constraints outweighing the push-effect of inflation on expected returns from migrating. Changes in the destination-origin GDP per capita ratio appear to affect predominantly migration and to a lesser extent the start of an attempt. A widening of the

---

[17]We tested for interactions between gender and the number of children, as the theoretical discussion suggested differing effects of children for men and women. Since the interaction effect was never statistically significant, we dropped it from the specification presented in Table 3.4.

gap in a given year makes migration more likely, though the opposite appears to be the case for the start of a migration attempt. Moreover, employment conditions at destination seem to be taken into account when evaluating the benefits from migration before even starting an attempt, as well as at the moment of migration. A positive change in the unemployment rate at destination from the previous year to the current year discourages the start of the attempt, as well as departure to the envisaged destination country.

In the next stage we include the policy variables, first one by one (Table 3.5, columns c-g) and then all four policy variables, using version 1 of the work immigration policy indicator (column h). For space and readability considerations we present only the coefficient estimates on the contextual variables and summarize the changes in other coefficient estimates after introducing policy variables (other estimates are available from the author). Four individual and family-level estimates are marginally affected by the introduction of the policy variables, as their p-values drop below or increase slightly above the usual thresholds in some of the specifications of the migration equation. The marital status main effect becomes statistically insignificant when introducing illegal migration, short stay or work policy indicators; the self-employment and age coefficient estimates become statistically insignificant when introducing illegal migration or short stay indicators, though the latter increases in statistical significance (to 5%) when family policies are controlled for; the coefficient estimate for Mouride religion decreases and its statistical significance is lowered when introducing controls for short stay, family or work policies. The attempt equation, which is estimated on a larger number of observations, is not affected in terms of these variables. The largest change can be observed in the GDP per capital ratio variable, which becomes statistically insignificant in both equations in the specification with all four policy variables, and in the attempt equation when the illegal immigration policy or the short stay policy indicators are introduced.

With respect to the policy variables, we observe the following results. On the one hand, more open illegal immigration policies and short entry policies in the target destination country appear to facilitate migration to the chosen destination country. The estimates in the attempts equation are, on the other hand, less intuitive, as they suggest a negative relationship between the average level of openness in terms of policies targeting illegal immigration and the likelihood of attempting migration.

Table 3.5: *Coefficient estimates for attempting migration and migrating – policy variables*

VARIABLES	(c) Joint estimation Illegal immigration		(d) Joint estimation Entry short stays		(e) Joint estimation Family reunification		(f) Joint estimation Work (version 1)		(g) Joint estimation Work (version 2)		(h) Joint estimation (all policies)	
	Attempt	Migrate	Attempt	Migrate	Attempt	Migrate	Attempt	Migrate	Attempt	Migrate	Attempt	Migrate
					ALL CONTROL VARIABLES INCLUDED							
Origin and destination context												
Inflation rate SN	-0.011***	-	-0.011***	-	-0.011***	-	-0.013***	-	-0.013***	-	-0.010***	-
	(0.003)		(0.003)		(0.003)		(0.003)		(0.003)		(0.004)	
2-year average change in ratio	-0.004	§	-0.020	§	-0.050**	§	-0.058**	§	-0.052*	§	-0.003	§
GDP pc (mean FIS)/SN	(0.030)		(0.029)		(0.025)		(0.030)		(0.031)		(0.039)	
Change ratio GDP pc	§	0.153**	§	0.156**	§	0.215***	§	0.210***	§	0.165**	§	0.122
destination/SN		(0.073)		(0.077)		(0.069)		(0.071)		(0.072)		(0.081)
Change unemployment rate	-0.123***	§	-0.114***	§	-0.120***	§	-0.136***	§	-0.131***	§	-0.124***	§
(mean FIS)	(0.020)		(0.021)		(0.021)		(0.021)		(0.021)		(0.022)	
Change unemployment rate	§	-0.138***	§	-0.190***	§	-0.147***	§	-0.145***	§	-0.140**	§	-0.155**
(destination country)		(0.053)		(0.055)		(0.050)		(0.052)		(0.058)		(0.060)
Illegal migration policy	-0.337**	§	§	§	§	§	§	§	§	§	-0.265*	§
(mean FIS)	(0.141)										(0.149)	
Illegal migration policy	§	0.824***	§	§	§	§	§	§	§	§	§	0.657*
(at destination)		(0.296)										(0.345)
Short stay entry policy	§	§	-0.081	§	§	§	§	§	§	§	-0.136	§
(mean FIS)			(0.050)								(0.102)	
Short stay entry policy	§	§	§	0.714***	§	§	§	§	§	§	§	0.723***
(at destination)				(0.197)								(0.222)
Family reun. Policy	§	§	§	§	0.088	§	§	§	§	§	-0.065	§
(mean FIS)					(0.068)						(0.124)	
Family reun. Policy	§	§	§	§	§	0.096	§	§	§	§	§	0.366*

VARIABLES	(c) Joint estimation Illegal immigration		(d) Joint estimation Entry short stays		(e) Joint estimation Family reunification		(f) Joint estimation Work (version 1)		(g) Joint estimation Work (version 2)		(h) Joint estimation (all policies)	
	Attempt	Migrate	Attempt	Migrate	Attempt	Migrate	Attempt	Migrate	Attempt	Migrate	Attempt	Migrate
(at destination)								§		§		
						(0.163)						(0.222)
Work imm. Policy (mean FIS) version 1& 2	§	§	§	§	§	§	-0.072	§	-0.036	§	-0.177	§
							(0.093)		(0.078)		(0.111)	
Work imm. Policy (at destination) version 1& 2	§	§	§	§	§	§	§	-0.141	§	-0.714***	§	0.088
								(0.145)		(0.206)		(0.183)
Constant	-2.393***	-0.459	-2.483***	0.171	-2.461***	-0.538	-2.516***	-0.443	-2.485***	-0.066	-2.567***	0.203
	(0.093)	(0.680)	(0.089)	(0.799)	(0.088)	(0.630)	(0.112)	(0.670)	(0.096)	(0.771)	(0.136)	(0.823)
Observations	38,218	724	38,218	724	38,218	724	38,218	724	38,218	724	38,218	724
ρ	0.430*		0.291		0.535**		0.453**		0.268		0.264	
χ^2 LR-test	3.558		1.314		6.391		4.007		1.146		0.998	
Log-likelihood	-3,400		-3,396		-3,407		-3,407		-3,400		-3,390	

Source: MAFE-Senegal survey (2008)

Notes: FIS=France, Italy, Spain; Standard errors reported in brackets; ***, **, * denotes statistical significance at 1%, 5% and 10%

§ indicates that the definition of a variable is not applicable in estimation (different versions of the same variable in the two equations);

- indicates that the variable is excluded from this estimation (exclusion restrictions; attempts characteristics).

While the coefficient estimates are slightly smaller, findings from the estimation with only one variable and all policy variables are consistent. The results are similar in nature to those obtained by Massey and Espinosa (1997) for Mexican illegal migration to the US. The authors suggest that migrants may react by trying even more to migrate when policies are getting more restrictive, in anticipation of even stricter policies in the future. It would be interesting to analyse in future analysis the effects of policies on shifts between documented and undocumented migration. The similar outcome is to some extent comforting, but the relationship may also be driven by the strong negative correlation between some policy variables and time.

We do not capture any effect of policies regulating short entry, family reunification and work on the start of a migration attempt, what suggests that policy conditions may not be fully evaluated at the moment of starting the attempt. At the same time, the second version of the work immigration policy indicator (column g) illustrates the difficulty of constructing and introducing aggregate quantitative indicators based on legal texts in empirical analysis. The coefficient in the migration equation, which is statistically insignificant in version 1 of the variable, now turns negative. This finding is at first sight counterintuitive, as more open work policies should induce less migration. Since the policies considered in the construction of the variable concern targeted groups, such as students with master or doctoral degree, it may not capture policies which are of relevance to the migration flows we are analysing.

The correlation coefficient ρ drops in most specifications when including the policy variables and becomes statistically insignificant in the cases of short stay policies, the second version of the work immigration policy indicator, and the specification with all four variables. We have to further examine whether this change is due to problems of identification, or whether the fact of better accounting of the context plays a role in attenuating the magnitude of the correlation coefficient.

3.7 Discussion and Conclusions

The determinants of migration have largely been analysed by comparing migrants at destination with those who stay in their country of birth. But what about those who attempt migration but do not succeed - are they similar to the successful attempters but just "less lucky"? Or do they differ with regard to individual characteristics, the way they organise their move, and the economic and political conditions they face when attempting migra-

tion? Moreover, do "migration determinants" identified in the literature affect mainly the decision to attempt migration, or are they the driving force behind the actual move?

According to our results, more educated Senegalese males who perceive that their household is in financial difficulties, have some previous international migration experience and network connections in the destination area, are more likely to attempt a move to Europe. However, once the decision-making process is taken into account, the individual determinants of actually moving do not completely fit with the conventional wisdom. On the one hand, no gender differences are observed in the likelihood of successfully carrying out the migration plan. Moreover, years of education are not a significant predictor of moving, conditional on having attempted migration. On the other hand, both material resources in the attempter's household and personal links to other migrants in the country of destination improve the migrants' chances of success. In this regard, it seems important to highlight that only country-specific migrant social capital and previous migration experiences turn out to be helpful in the realization of the move. In fact, migrant networks elsewhere, as well as previous migration experience to other African countries significantly reduce the chances to actually leave.

Finally, the role of contextual variables also seems to vary throughout the process leading to an international move. Widening gaps between origin and destination economic conditions increase the likelihood of migrating but do not seem to trigger more migration attempts. Moreover, immigration policies seem to succeed in impeding migration among those who attempt to migrate, but have a perverse effect (illegal immigration policies) or no effect on the likelihood of attempting migration.

The construction of the immigration policy measures, while needing further refinement, represents an important contribution of the work undertaken in this thesis. Future research will involve examining the results through different specifications of the immigration policy variables, both in terms of indicators included and approaches to aggregation. Information on policies in the earlier decades examined is not only more difficult to find, but immigration policy was also less complex than it is now. Identifying indicators which are valid over the time period remains a challenge.

Moreover, the policy effect may depend on the composition of actually chosen migration strategies in the sample, in particular undocumented entry, tourism (and possibly overstaying a tourist visa), work, study, or family reunification, as well as the possibility of switching between different "legal" or "illegal" channels.[18] Further research could

---

[18]The MAFE survey contains annual information on the legal status of migrants, distinguishing between

investigate the role of immigration policies on such specific outcomes, as opposed to the all-encompassing "attempt" and "migration" outcomes examined in this chapter. Also the destination country-specific policy situation could only be incorporated in a limited way in the present analysis. Average values used in the attempts equation may hide important differences across the three destination countries, both in terms of actual restrictiveness and the level of enforcement. Moreover, by way of constructing the variables, the coefficient estimates are constrained to be the same across the three countries. This restriction may also not be appropriate. The Italian immigration policy was particularly characterized by lack of enforcement, and outcomes would have to be multinomial instead of binary to give insight into possible differences by country. Given the limited sample size the trade-off would be between a more detailed outcome variable by migration channel or destination and the distinction between attempts and migration that could no longer be investigated.

different residence and work statuses and registering status changes over time, and would hence in principle allow for this kind of analysis.

Chapter 4

The role of international migration experience for investment at origin: The case of Senegal

4.1   Introduction and objectives

The role that international migrants can play in promoting development in their home countries has been at the core of migration research over the past four decades. An initial period of developmental optimism in the 1960s was followed by widespread scepticism in the 1970s and 1980s. This assessment was based on the view that migrants' savings and remittances were largely spent on daily consumption, ceremonies and non-productive assets such as houses, instead of being invested in productive and employment-generating businesses which would contribute to wider economic development (de Haas, 2010). With remittance transfers on the rise, the 1990s and 2000s have seen a revival of the interest in impacts of migration. Moreover, theoretical advances as well as new empirical approaches to the analysis of the impact of migration on investment shed a new light on the migration-investment relationship. The New Economic of Labour Migration literature emphasized how migration may loosen capital constraints in countries characterised by lack of resources and imperfect markets, and contribute in this way to productive investments (Taylor et al., 1996). Consequently, empirical analysis should take into account both broader and longer-term effects of the migration experience than those captured by surveys inquiring about

remittance use (de Haas, 2010; McKenzie and Sasin, 2007). Moreover, assets regarded generally as "unproductive", in particular housing, have experienced some rehabilitation. Households may use the dwelling for business purposes, to improve family well-being, and to set free resources for other investments. Housing rented out can generate income, and housing construction activities may also induce spillover effects through employment creation (Robin, 1996; de Haas, 2010).

However, the long-lasting scepticism with regard to the individual disposition of migrants and migrant families to invest productively has influenced the policy discourse at international, regional as well as national levels. Migrants are regarded as potential agents of development, but policies would need to be put in place in order to manage the way gains from migration are channelled into those asset types regarded as most beneficial for economic development. On the one hand, destination countries, in particular in Europe, have designed bilateral "co-development" policies which foresee that international migrants contribute to the economic and social development of their origin countries, in the sense that reduced immigration will be a corollary of improved economic conditions in the home countries (Kabbanji, 2010). On the other hand, sending regions such as the Economic Community of West African States (ECOWAS), as well as national governments in origin countries, explicitly call on their migrants to be actors in development and have started to develop schemes aimed at facilitating migrant investments in their origin country (ECOWAS, 2008; IOM, 2005).

Despite the high interest of policy-makers and the considerable amount of research produced over the past decades, there remain gaps in the empirical literature. The focus is placed largely on remittance-receiving households or return migrant households at origin, and empirical studies comparing the individual investment behaviour of non-migrants, current migrants, and return migrants are relatively scarce. The role of migration experience for entrepreneurship, for instance, has predominantly been studied in the context of return migration. The acquisition of real estate as an alternative target also remains relatively unexplored in quantitative studies. Moreover, studies examining the role of migration experience in facilitating investment in the Sub-Saharan African context are rare.

In this chapter we attempt to contribute to filling these gaps by studying migration-investment links in the context of migration from Senegal. Using longitudinal retrospective data on migrants, returnees and non-migrants we explore the role of international migration experience on investments in real estate (construction land and housing) and businesses. Do current migrants and return migrants exhibit different behaviour, com-

pared to non-migrants, regarding their investment choices? Do they tend to invest in economic "productive" activities rather than in housing, as advocated by policy-makers at origin and destination? Or do they, on the contrary, acquire predominantly real estate assets, as qualitative evidence on Senegal suggests (Tall, 1994)?

More specifically, three research hypotheses are investigated:

1. Personal international migration experience has a direct positive effect on asset acquisition: living abroad or being back in the origin country is expected to increase the odds of investing due to financial resources or human and social capital acquired abroad;

2. In addition to its direct effect, international migration has an equalizing effect: migration facilitates a process of upward mobility for groups who are commonly disadvantaged in their access to asset ownership in Senegal. Migration experience is specifically expected to close the gender gap in asset ownership if access to capital and know-how is more equal abroad than at home;

3. International migration has an indirect effect on the investments of those left-behind: non-migrants who have migrants in their social network may receive remittances or benefit from know-how transfers and be thus more likely to invest than those without a network.

For each of these three general hypotheses, it will be further assessed whether there are differences with regard to the timing of investment (while abroad, after returning to Senegal), and whether the effects of international migration experience and migrant networks vary by the type of asset, distinguishing between real estate (construction land and housing) and business activities.

The following section provides a brief description of the Senegalese real estate market and business conditions to set the context for the analysis. Section 3 summarizes the theoretical and empirical literature on migration-investment links, and provides the rationale for the research hypotheses outlined above. Section 4 discusses data and methods applied in the analysis. Sections 5 and 6 present the descriptive and multivariate results, and section 7 concludes.

4.2 The housing market and conditions for entrepreneurship in Senegal

The role migration experience can play in the acquisition of construction land, dwelling units or the start of business activities depends on the context of the housing market and the characteristics of self-employment or entrepreneurship in the country of origin. This section highlights the main characteristics of both investment targets (real estate and business activities), in particular the high level of informality in both areas, in the context of the Dakar region. While there is qualitative evidence that migrants have also been targeting other towns, such as Touba, or smaller towns in the Louga region (Tall, 1994), the geographical focus seems justified given that assets analysed in the empirical part of this chapter are predominantly located in the region of Dakar (74 per cent).

4.2.1 Evolution of the housing sector in Dakar

Dakar has experienced a rapid population growth since the country's independence in 1960. The current population is estimated at approximately 2.5 million (ANSD, 2009). While the annual growth rate, which reached 4% during the 1980s when rural-urban migration was particularly pronounced, has slowed down over the past decade (Lessault et al., 2010), around 7,000 additional dwellings per year are still needed to satisfy the increase in demand (Diagne and Lessault, 2007). Given its geographical location as a peninsula in the Atlantic Ocean, the expansion of Dakar is, however, largely limited to the areas in the northern outskirts and the periphery of Dakar, an area with limited access to public transport, and infrastructure such as electricity and water. The second type of expansion consists of adding floors to existing buildings, so called "vertical growth".

The institutional response to the increasing demand for housing has been evolving over the past decades (Diagne and Lessault, 2007). Until the structural adjustment programmes in the 1980s, the state was the main actor on the formal housing market. However, policies mainly targeted the middle class and not the poorest inhabitants, who did not satisfy the solvency criteria. The involvement of private actors has progressively been stimulated, with the intention of reaching a larger share of the population. In 1979, the "Banque de l'Habitat du Sénégal" (BHS) was founded, taking over responsibilities from state institutions (SICAP and SN HLM)[1], in particular in terms of mortgage finance.

---

[1]Société Immobilière du Cap-Vert and Office des Habitats à Loyer Modéré

Nonetheless, only a minority benefited from these offers, since the banking sector was and still is inaccessible to the vast majority.[2] The real estate sector was further privatised in the context of structural adjustment programmes implemented in the 1980s. However, the selection criteria established once again excluded a large part of the population.

As a result, houses are typically being constructed by the households themselves. Apart from often representing the only option to access housing, the construction becomes considerably less costly. Officially, private housing constructions are regulated by the law. Land owners need to obtain a property title from state authorities, which is only given if the construction plans comply with planning regulations. However, only two per cent of property owners, mainly French and Lebanese as well as migrants, have an official property title (Tall, 2009). According to Tall (2009), most owners hold provisional titles which are regarded by the owners as long-term, based on surface rights ("droit de superficie") and occupancy authorisations dating from colonial and early post-colonial times ("l'autorisation d'occuper"). Irregular occupants also "invent" titles based on acts of sale stamped by the police, and the "registration certificate", abolished in the 1950s but still sometimes used in sales transactions. In addition, one out of five respondents in the survey data collected by Tall (2009) did not possess any kind of title.

The informal character of the housing sector does not allow for a comprehensive analysis of the evolution of real estate prices. Data on housing which has been registered with the "Direction Générale des Impôts et des Domaines"[3] reveal a sharp increase in prices over the last decade in the area of Dakar (Figure 4.1, Diane and Fall, 2008).[4] While excess demand is regarded as the main driver of the surge, prices may have also been affected by market imperfections such as information asymmetries, and by speculation. Three phases can be distinguished in the sales price index. The price index remained flat until the mid 1980s (phase 1), increased slowly between mid-80s and 2000 (phase 2), and has been experiencing a sharp rise since 2000 (phase 3). This average hides the fact that the start of the rise in prices differed across districts in Dakar. The increase could first be noted in the centre, moved then towards the "Grand Dakar" neighbourhood (second half the 1980s) and finally to the urban hinterland (since 2000).

One of the measures used in the relevant literature to capture the fundamental value of

---

[2]Access to and use of banking services stagnates at around 5% (ca. one account per 100,000 inhabitants) although competition in the banking sector has been on the increase (17 banks in Dakar region in 2007; MEFSN, 2010).

[3]Author's translation: Directorate-General of Tax and Real Estate Property

[4]Diane and Fall (2008) use the repeat-sales method to construct price indices to trace the evolution of rental and sales prices in the area of Dakar.
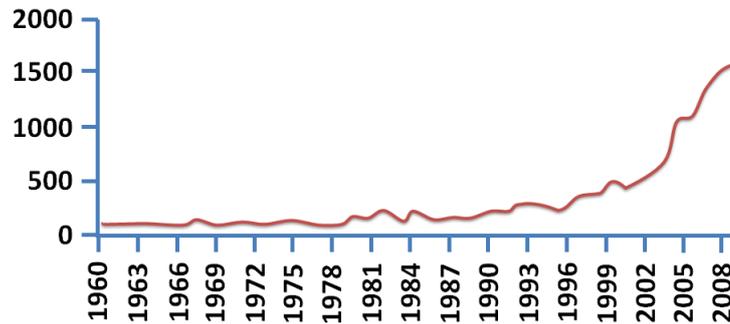
Figure 4.1: *Sales price index in Dakar deflated by harmonised index of consumer prices (base year=1960), in Diane and Fall (2008)*
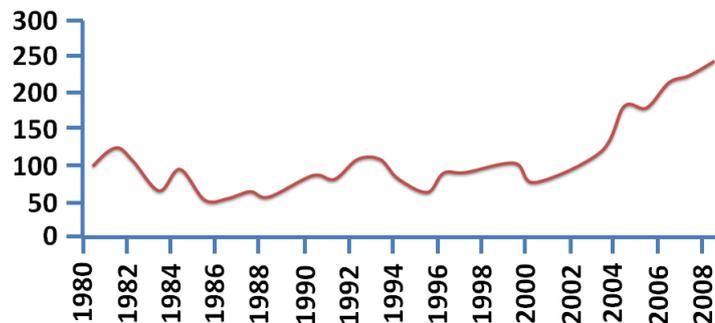
Figure 4.2: *Ratio sales prices/rental prices in Dakar (base year=1980), in Diane and Fall (2008)*

housing prices is the ratio between sales prices and rents, under the assumption that the sales price of a house reflects the income stream it could generate in terms of rents (Krainer and Wei, 2004). The ratio is relatively constant until the beginning of the 2000s, indicating that rents have been increasing at a similar rate as sales prices during the second phase identified above (Figure 4.2).

One possible reason for the increase in rental prices during this period is the deregulation of the housing market with the abolition of SICAP and SN HLM, resulting in a contraction of rental housing supply and the elimination of relatively low and fixed rents for lower-income earners. However, since the year 2000, rents have been rising at a lower rate than real estate. Following the method proposed by Hall et al. (1999), Diane and Fall (2008) examine the evolution in the price-rent ratio applying Markov-switching unit root tests. According to the authors, the findings suggest that the deviation is indicative of the presence of a rational speculative bubble in the real estate market since 2002.[5]

---

[5]One should be cautious regarding this interpretation, given that large and long-lasting deviations from the price-rent ratio as a measure of speculative bubbles have been criticised in the literature. Other sources of variation, expected future growth in rents and expected future discount factors could be dominating the

Access to housing appears thus increasingly difficult and costly, at least for the average inhabitant. In the context of a deregulated housing market and a continuous rise in housing prices, international migrants and returnees with savings from migration are considered to be a "new actor" on the housing market. According to the qualitative literature on this subject (Tall, 1994), this is particularly the case since the devaluation of the Franc CFA in 1994, which had enhanced migrant purchasing power back in Senegal. While migrants seem to be filling the gap left after the withdrawal of the state from the housing market, they are also regarded as contributing to real estate speculation. Empirical evidence for links between migration and housing investments is further discussed in the literature review (Section 3).

4.2.2 Doing business in Senegal

As in most developing countries, the notion of "business" implies very diverse types of activities, ranging from "involuntary" self-employment in the informal sector, also regarded as "disguised unemployment" (Earle and Sakova, 2000), to productive and job-creating enterprises, which can be operating in the formal and, to a lesser extent, the informal sector.

Statistics on the informal sector vary depending on the definitions used. Considering the coverage by the formal welfare system as a definition of the formal sector, 95% of the active labour force in the Dakar region is working in the informal sector (World Bank, 2007). The share of formal workers reaches one third if one uses as a definition "belonging to a company included in the company register" or "having a written contract". This high level of informality of the labour market has been intensifying since the mid-1990s, since job growth between 1995 and 2004 took place almost exclusively in the informal sector[6], in particular through the expansion of trade activities (national accounts data; World Bank, 2007). The average business in the informal sector in Dakar employs only 1.7 workers (1-2-3 Phase 2 survey report; DPS, 2004a), indicating that a large majority of activities correspond to self-employment (72%). The overall shares of self-employed and family help among the active working population in Senegal mirror this statistic, with

observed effect (Campbell and Shiller, 1988; Krainer and Wei, 2004).

[6]In this case the informal sector is defined as units of production that have no NINEA (National enterprise and association identification number) or a taxpayer number, or, in the case of employers and of self-employed, workers, who do not keep their accounts (World Bank, 2007, p.26). Varying definitions are used in the secondary data sources cited in the World Bank study: the 1-2-3 survey, national accounts data, and census data.

51.4% declared as self-employed, 19.1% as family help and 1.2% as employers[7] according to the 2002 census (ANSD, 2008). Informal sector activities are concentrated in the trade sector (46.5%); and working conditions are in general precarious, since less than a fifth perform their activities on business premises, while the remainder divides itself between individuals working from home and those working "on the street" (DPS, 2004a).

In informal firms, the capital per worker is 47 times lower than in formal ones, and average schooling is less than three years compared to over nine in formal firms (Echevin and Murtin, 2009). Due to this discrepancy, productivity levels in terms of output per hour worked are on average about seven times higher in the formal than in the informal sector. However, this average figure masks a duality within the informal sector. The large majority of informal workers has low levels of income (at a median value of 34,000 FCFA[8] per month) reflecting low productivity levels. A second group of informal workers reaches income levels which are equivalent or even higher than those in the formal sector (over 200,000 FCFA). For this group, participating in the informal sector does not constitute a "last resort" choice, but is the result of a rational decision. The results of the 1-2-3 survey (DPS, 2004a) support the notion of business set-ups in the informal sector as a voluntary choice for part of the surveyed owners. Around a third of them declare that they favour the informal sector for being self-employed, regard it as the best way of accessing the labour market, and believe that the potential incomes are higher than those they could achieve in the formal sector (DPS, 2004a). Advantages of the informal sector include, for instance, lower bureaucratic hurdles and lower fiscal burdens in starting and running a business (World Bank, 2007).

The findings of the World Bank investment climate survey targeting formal firms, as well as a survey of informal firms carried out in the context of the World Development Report 2004 (World Bank, 2005) provide insights into the main constraints to starting and running businesses in Senegal as perceived by the business owners. Two thirds of the surveyed formal enterprises declare that access to finance is a major problem. Since credits are given to a small number of large enterprises, four out of five small and medium-sized formal companies use internal finance for investment and cannot rely on bank credits. High taxes and an opaque tax system are second on the list, encouraging corruption and putting smaller firms at a disadvantage. While informal firms are less concerned by taxes or regulations, they are facing even larger constraints in terms of access to finance, as they

---

[7]The share of employers is low compared to other countries in Sub-Saharan Africa, such as Ghana (4.5% according to the 5th Ghana Living Standards Survey (GSS, 2008)).

[8]34,000 FCFA = 51 Euro in 2007

are excluded from the formal credit market and rely on personal savings as well as loans from family members and friends. Infrastructure is another major obstacle for both formal and informal sectors, in particular the recurrent power outages. Formal firms also declare that they perceive the pressure of competition by informal firms as a severe constraint. Interestingly, informal firms report very high levels of competition within the informal sector, but only 7% declare they are competing against formal sector businesses. Other obstacles emphasised by informal firms are problems in acquiring land on which to carry out the business as well as lack of market access and insufficient transport infrastructure. Entrepreneurs in the formal sector report, moreover, that they spend approximately 60% of their time on dealing with often incoherent labour, fiscal, environmental or financial regulations, as well as on meetings with public officers.

Business conditions are thus unfavourable both in the formal and the informal markets. Under the condition that sufficient financial capital is available, for instance in the form of savings from migration, setting up a business in the informal sector appears to be more accessible due to lower barriers in terms of taxes and regulations. However, for the larger part of the informal sector, the value of informal business activities concerns their role in providing incomes to individuals rather than in creating sustainable enterprises.

4.3 Migration and investment: A review of the literature and the contribution of this study

4.3.1 Theoretical framework

The early neoclassical migration literature does not provide a theoretical framework for studying the effect of migration on investments at origin (Harris and Todaro, 1970; Taylor, 1999; Rapoport and Docquier, 2005). Since migration is considered to be motivated primarily by individual life-time income maximisation objectives, and to take place in a context of perfect credit and insurance markets, there is no reason why individuals should return to the origin country to invest or send remittances and other types of transfers home. Investment in the neoclassical context would only be envisaged if returns to investments in the home country exceeded those in other countries, contributing thus to an increase in life-time earnings.

The discussion of the migration-investment link effectively emerged within the framework

of the New Economics of Labour Migration (NELM) literature (e.g. Stark and Bloom, 1985; Stark, 1991). The NELM literature shifts the focus from the individual to households or groups as the unit of analysis. It furthermore introduces market imperfections and failures in the analysis of departure, of determinants and consequences of remittance transfers and of return migration. In general terms, migration can impact investment through its influence on financial, human and social capital constraints. While gains from migration accrue in the first place to current migrants and return migrants, gains may be shared with non-migrant household members if the household is considered to be the unit of analysis. Non-migrants may thus benefit from material or immaterial resources in the form of remittances or repatriated savings (financial capital), know-how (human capital) or business contacts (social capital).

Financial and risk constraints

Imperfect credit markets

One important contribution of the NELM theoretical literature consists in the introduction of imperfect markets to migration theory. If credit markets are absent or imperfect, migration may represent a strategy for the individual or household to obtain informal credit in the form of remittances or savings to finance a minimum investment or, if the banking sector is to some extent developed, to serve as collateral (Katz and Stark, 1986). This type of investment can be productive in the case of a business activity, but can also serve to acquire expensive assets, such as housing and land.

Mesnard (2004) proposes a theoretical model investigating the role of credit constraints at the origin for investment decisions of migrants at the moment of returning to their home country. Credit constraints and investment thresholds are introduced in a life-cycle maximisation model of temporary migration, in which individuals decide simultaneously on migration duration and on the type of occupation they want to take up after returning to the origin country. According to the model predictions, migration duration is determined by the time needed to reach a specific savings target if migrants aim to start a business after their return. Migration duration is longer and the probability of investment decreases, for instance, if the sunk cost of the investment is estimated to be relatively high. On the other hand, migration duration may be shortened if foreign wages rise and savings can be accumulated more rapidly. However, the model is built on the assumption that the average earnings from self-employment after return exceed those from wage-employment

both at origin and abroad. Given the rather small-scale and low-productivity nature of the majority of business activities in a developing country such as Senegal, this assumption may not be appropriate. Yang (2008) links the question about the role of migration for investment to the broader literature investigating how households in developing countries respond to unexpected and short-term shocks to the household income when credit markets are imperfect. He proposes that positive income shocks through increased remittance transfers after changes in exchange rates stimulate investments into productive assets in the context of incomplete access to credit. Business assets can represent both an income source and a savings mechanism, and may be sold if the household faces negative income shocks.

With regard to housing investments in the context of imperfect credit markets, Osili (2004) suggests that migrant investments in housing in the origin community, though not always directly productive, can serve as a signalling device with regard to the wealth of the migrant as well as the household at origin. If a housing investment signals credibly that the migrant is in the position to act as guarantor for projects of household members, it may indirectly affect other types of investment by improving the family's social standing and its access to formal credit markets in the origin country.

Specific groups in the origin country may be particularly constrained in their access to asset ownership, such as women. The concept of the gender asset gap has been brought forward in the development literature, emphasising that control over assets is a determinant of bargaining power within the household, and that reducing gender inequality in access to assets contributes to escaping from poverty and reducing vulnerability to shocks (Birdsall and Londoño, 1997; Doss et al., 2008; Deere and Doss, 2006). While women's access to assets via inheritances and bequests tends to be limited due to laws or societal norms, also the purchase of assets may be more restricted for women than men. Women's ability to accumulate wealth is constrained if they do not participate equally in the labour market, if household income is pooled and if there are norms or laws in place which constrain access to credit markets even more for women than for men. Gaining as a woman international migration experience may contribute to relaxing at least part of those constraints, by providing a more equal access to foreign earnings and by enhancing female migrant bargaining power in the household and the community. More generally, international migration may help to flatten social hierarchies and ease access to asset ownership for members of traditionally disadvantaged social groups, as observed for the population of the Senegal River valley (Sall, 2004).

Imperfect insurance markets

In addition to its role in overcoming credit constraints, the NELM literature further proposes that migration can serve as a co-insurance and risk diversification mechanism if insurance markets at the origin are imperfect. If incomes of the migrant and non-migrant household members are pooled, migration may allow for riskier and more profitable investments at the origin, and may finally allow for the return of the migrant (Stark, 1991). While this idea has been developed in the context of agricultural production, the concept could be transferred to other types of investments, such as the opening of a new business by the remaining household members. Also the investment in housing assets which generate income from rents can contribute to further risk diversification of income sources at origin. A potential negative corollary of the insurance function of migration is that, in the case of information asymmetries between the migrant and his or her household, remittances may encourage moral hazard by family members at home. Moral hazard would imply that non-migrant household members keep their work effort below optimal levels, leading to negative effects on productive investment (see, e.g., Azam and Gubert, 2006; Chami et al., 2003).[9] In this context, housing assets constitute a less risky investment from a distance, as they do not require the same monitoring effort as business activities.

Human capital constraints

While the main gain of migration relates to financial capital, the return migration and brain gain literature stipulates that migration may also help overcome human capital constraints. The possibility of obtaining a premium on new knowledge and know-how acquired abroad once back in the origin country has been identified as a possible determinant of return migration (e.g. Dustmann, 2000; Kilic et al., 2007). Student migrations are one example, but know-how and experience accumulated in the work place can also trigger return and investment if, for instance, the knowledge of a certain industry increases earnings at destination only slightly, but are highly valued in the home country. Human capital accumulated abroad, which achieves higher relative returns in self-employment at home than in other occupations or abroad, will provide migrants with an incentive to invest at home. Dos Santos and Postel-Vinay (2003) propose, moreover, that if transferred back home, some knowledge and know-how will be diffused, improving the conditions for investment even for individuals who did not migrate themselves. However, migration may also have

---

[9]The implicit insurance contract between migrants and family members at origin not only insures non-migrants in the case of a shock, but also migrants, in particular at the beginning of their stay abroad (Mazzucato, 2009).

limited or even negative effects on human capital, and reduce the capability of migrants to invest. This is the case of a "brain-waste" situation, in which the skill-level of a migrant's occupation at destination remains below the level of education, skills and capacity (e.g. Mattoo et al., 2008). Being away from home may also lead to a knowledge loss with regard to business practices and regulations, especially if social capital maintained in the home country is weak. However, if an uninterrupted work experience and strong social networks in the origin country are more important for wage-employment than for self-employment (Muschkin, 1993), returnees may still choose to start a business as it represents the option with the lowest entry-barriers.

Social capital constraints

Migrants and returnees may see their social capital weakened due to the prolonged separation from social networks at origin. This loss may partly offset the gains in terms of financial or human capital through foreign work experience. Wahba and Zenou (2009) formalise this disruptive effect of migration in a theoretical model, which predicts that returnees may be less likely to become entrepreneurs if they have weaker ties (friends, acquaintances) at home than non-migrants and do not access a high-quality social network through their strong ties (family). On the other hand, returnees may be able to take advantage of ties maintained with the destination country, for instance in starting and sustaining an import-export oriented business activity (Cassarino, 2004).

Timing of investment and "direct" versus "indirect" effects

Are investments made from abroad or by returnees? The literature on credit constraints and business formation places an emphasis on return migrants who invest their repatriated savings. They are in a better position to manage and oversee the business than a migrant abroad, who needs to put in charge a trustworthy family member or friend. Similarly, the literature on human capital gains stresses the link to return migration, especially in the context of business investments. Housing investments, on the other hand, are less dependent on the location of the individual with migration experience. The literature highlighting the role of investment in housing to provide shelter to the family and for the migrant to maintain a symbolic presence while being abroad indicates that investment in housing tends to occur while being abroad. Housing investments that are generating rents can occur both before and after returning to the origin country.

Investments may furthermore be made by the individual who gained migration experience, or by the migrant's social network at origin. If one thinks of migration as a household decision, with the gains from migration shared within the household, there is no a priori indication whether assets are acquired by the migrant/returnee (*direct effect*) or whether the gains from migration are transferred to relatives in the origin country and invested by a non-migrant (*indirect effect*). In more general terms, the question whether the migration of household members affects positively the investment of non-migrants can be placed in the framework of the remittance literature. Anchored primarily in the New Economics of Labour Migration theories (e.g. Stark, 1995; Hoddinott, 1994), this body of literature explores motives for and uses of transfers back home (see, for instance, Rapoport and Docquier 2005 for a review of the theoretical and empirical literature; Ruiz and Vargas-Silva 2009 for a review of the empirical literature).

Altruism or emotional ties towards family members at origin can motivate remittance transfers if the migrant derives utility not only from the own consumption, but also from the well-being of relatives. In addition to demands coming from the origin household (e.g. Blanchard, 2008), social networks at destination may exert further social pressure on migrants to redistribute a larger share of their incomes, hampering individual aspirations, such as investment in businesses (Platteau, 2006). Other motives for remitting include implicit contractual arrangements, in particular involving the payback of the migration costs pre-financed by the household (Rapoport and Docquier, 2005). Remittances may furthermore be "exchanged" against future inheritances or constitute the "payment" for services performed by the network at origin while the migrant is abroad, for instance caring for the migrant's children. The role of contractual agreements is also highlighted by the literature on "African solidarity" . The notion of "African solidarity " has been developed in sociological and anthropological studies and focuses on the role of solidarity among members of extended families in African societies (e.g. Marie, 1997; Vidal, 1994; Calvès and Marcoux, 2007). Solidarity is described as a social norm and insurance mechanism, which stands in contrast to the Western value system centred to a larger extent upon the individual. Rather than purely altruistic behaviour, solidarity refers thus to a contractual and exchange-based behaviour in a context framed by cultural norms and social pressures (Vidal, 1991). The literature on African solidarity discusses the evolution of societies based on solidarity norms in the context of economic, political, demographic and social changes and points out a trend towards a stronger focus on the interests of the individual instead of the extended family as well as towards the emergence of new forms of solidarity. New forms could imply, for instance, solidarity directed more towards friends than relatives, or

sustained support of the young by the old due to precarious living conditions among the younger generation (Dimé, 2007). These changes in the solidarity patterns are likely to induce more individualistic investment behaviours, especially in the urban context.

4.3.2 Insights from the empirical literature

As the relevant quantitative literature on Senegal is scarce, empirical studies from other geographical contexts are first reviewed, followed by a summary of primarily qualitative evidence on the involvement of Senegalese migrants and returnees in business formation and housing investments.

Review of quantitative empirical studies

The relevant quantitative empirical literature uses predominantly cross-sectional data to study direct effects of migration experience on the migrant's or returnee's behaviour, as well as indirect effects on households at the origin. From the migrant's or returnee's perspective, studies focus on the determinants of remittance and spending patterns (*during the stay abroad*), the odds of investing in assets (*before and after return*) and the effect on entrepreneurship at the origin using information on occupational status (*after the return*). Other studies take the perspective of the household at origin and compare households with and without migrants, or with and without remittance receipts, to examine remittance use, differentials in household expenditures, as well as the odds of business formation.

Migration experience effect on investments by migrants and returnees

A large body of empirical literature concentrates on the question whether returnees are more likely to become entrepreneurs than individuals without migration experience. The general consensus from descriptive and multivariate analyses is that return migrants have higher odds of starting a business (McCormick and Wahba, 2001) (Mesnard, 2004; Ilahi, 1999; Wahba and Zenou, 2009; Kilic et al., 2007). Migration experience thus appears to contribute to the accumulation of financial and human capital which can be employed in an entrepreneurial activity after return to the origin country. Other studies focus on the return migrants to examine which migration characteristics stimulate entrepreneurship and help discern further the role of financial, human and social capital. Mesnard (2004) tests the hypothesis that savings from migration increase the chances of business start-ups by Tunisian returnees in the context of credit market imperfections. The results indicate

an inverse-U shaped effect of savings on the probability of entrepreneurship, which corresponds to a model of entrepreneurship with liquidity constraints and decreasing returns to capital. Regarding the hypothesis that know-how accumulated abroad stimulates productive investment, Ilahi (1999) finds for Pakistan that having acquired skilled professional experience abroad reduces the probability of urban self-employment after return. Previous experience in self-employment increases the chances of starting a business, whether this experience was gained before migration (Ilahi, 1999) or during the stay abroad (Tani and Mahuteau, 2008, on return to the Maghreb). Black and Castaldo (2009) examine return migrants' involvement in entrepreneurship in Ghana and Côte d'Ivoire and find that not only foreign work experience and hence know-how (human capital) but also networks and contacts gained abroad (social capital) have a positive effect on investing in businesses. All four papers study entrepreneurial activities of returnees using exclusively data on return migrants, and do thus not provide a comparison with non-migrants or current migrants as counterfactual.

The Massey and Parrado (1998) study on Mexico is closest to the research proposed in this chapter. The authors use spells at risk data to estimate the hazard of business formation in Mexican communities. Using data from the Mexican migration project (MMP) on household heads with and without migration experience, they are able to identify all three types of migrant statuses. Individuals with migration experience are captured through a variable on cumulative years abroad. Moreover, a dummy variable controls for the household head being a current migrant in spell $t - 1$. The results do not support the hypothesis that migration experience stimulates investment. Current migrants are even less likely to become entrepreneurs than household heads back in Mexico, indicating that migration has a disruptive effect and that businesses are difficult to manage from abroad. Moreover, the effect of the cumulative number of years spent abroad, a variable which could proxy the effect of experience gained during migration as well as capital accumulation, is found to be statistically insignificant.

The evidence on the direct effect of migration experience on housing investments is relatively scarce. Osili (2004) uses a matched data set on Nigerian migrants in the US and their households in Nigeria to analyse determinants of investing in a dwelling. While migrant as well as non-migrant data are collected, the investment event is studied from the migrant's perspective, and is modelled as a function of individual, family and home town characteristics. The results support the theoretical motivations regarding the importance of securing membership in the household and home community, as older migrants, who may be closer to a possible return, are more likely to invest. In addition to the

probability model with the binary outcomes investment and no investment, the author examines the time to investment in a duration model framework. The findings suggest a positive relation between migration duration and the hazard to invest, and highlight the role of the macroeconomic context (changes in the exchange rate and the real interest rate) for housing investments. However, no comparison is made with housing investments by individuals without migration experience or back in Nigeria after a stay abroad. Another example is the analysis by Durand et al. (1996), which examines for Mexicans with migration experience in the United States the factors determining whether savings from migration were invested in housing or production rather than consumption, conditional on having saved and/or remitted. Housing is defined as construction, purchase or repair of a home. Migrants are more likely to invest in housing than in consumption if they are well educated, if they live permanently in the U.S. and if they were accompanied by their spouse, indicating that also longer-term migrants maintain ties to their origin country.

Migrant network effect on investments by individuals and households at origin

Household survey evidence on remittance use, based on questions asking households on what money received from migrants has been spent, generally suggests that only a small share is dedicated to productive investment (see, for instance, the review by Taylor et al., 1996; de Haas, 2010). While remittance use questions are still included in surveys, the approach has incurred strong criticisms. Firstly, the period over which remittance use is recorded differs by survey. More importantly, money is fungible and remittances are difficult to separate from other income sources, if they are not earmarked by the migrant for a specific use. If the questionnaire is answered by the household head only, remittance receipts by other household members may be underreported. This is particularly problematic in the extended families typical for Sub-Saharan Africa, where income is not necessarily pooled within the household (Duflo and Udry, 2004, for the case of Ivorian households). Moreover, remittances may affect investment through loosened capital constraints or insurance provisions as suggested by the NELM, and descriptive results cannot take account of the possible endogeneity of remittances (Taylor, 1999; McKenzie and Sasin, 2007).

Consequently, other empirical approaches have been proposed to advance on the remittance-use studies. Several included remittance or migrant network indicators into longitudinal or cross-sectional models of business investments. Massey and Parrado (1998) include indicators for remittance receipts in year t as well as cumulative remittances both at household and community level in the event-history analysis of business formation. While

the amount of remittances received in a given year does not affect business investments, cumulative remittances are found to have a positive effect. Amuedo-Dorantes and Pozo (2006) study for the Dominican Republic the effect of remittances on the probability of household business ownership in a system of simultaneous probit models, in order to take account of the possible simultaneity between remittances and business ownership. Their results suggest that households receiving remittances have a lower probability of owning a business, but households owning a business are more likely to attract remittances. Yang (2008) aims to deal with the potential endogeneity of remittance receipts. Exploiting as a natural experiment the differential effects of the Asian financial crisis in 1997 on countries' exchange rates and thus migrant incomes, he tests the role of remittance receipt on household involvement in entrepreneurial activities. The results indicate a positive effect on entry into a new activity. Moreover, the effect is restricted to a limited number of activities, in particular transportation and communication services as well as manufacturing, entrepreneurial activities which are more credit-constrained than, for instance, retail trade.

A third type of study examines differences in marginal spending patterns between migrant and non-migrant households by estimating a system of household demand equations and adding remittances as an explanatory variable. Controlling for the potential endogeneity of remittance receipt, Adams and Cuecuecha (2010) apply this method in the context of Guatemala and finds that households receiving remittances spend, at the margin, less on food and more on housing and education. Since gains from migration may extend beyond remittances, several authors investigate the overall effect of migration rather than the specific effect of remittance flows to avoid omitted variable bias (McKenzie and Sasin, 2007; Kilic et al., 2007). Taylor and Mora (2006) thus use an indicator for migrants in the household instead of remittances. Moreover, Mexican migrants in the U.S. are instrumented with the presence of migration networks 12 years prior to the measurement of expenditures, as migration may be endogenous if unobserved factors that explain households' selection into migration also affect expenditure patterns. Their results indicate that households with international migrants spend at the margin more on investments (e.g. farm machinery), consumer durables and health than otherwise similar households without international migrants.

All in all, the quantitative empirical literature leaves us with rather conflicting results on the impact of migration on different types of investment. Results highlight that even if the major share of migrant savings is spent on consumption and housing, migrant savings and remittances appear to increase significantly the odds of productive investment and change

marginal expenditure shares towards less consumption and more investment, even more so if economic conditions at the origin are more favourable. Moreover, return migrants are found to be more likely to become entrepreneurs, a result which is generally interpreted in terms of the role played by migration in overcoming credit constraints. Being currently a migrant, on the other hand, appears to lower the odds of investment in business activities.

Evidence from Senegal

As state-regulated housing plans have failed to satisfy the rising demand for housing in urban areas, research has emphasized the role of migrants in the development of the Senegalese housing sector. According to Tall (1994, 2002, 2009), housing constitutes the main investment target for Senegalese migrants and is to a large extent financed through savings accumulated abroad. It is considered to be a relatively safe investment and faces fewer bureaucratic hurdles than business investment. The investments tend to target medium-sized and larger cities (Dakar, Touba, and Thiés) even if migrants originated from elsewhere. Housing construction can induce internal migrations by family members from villages to the town or city where the dwelling is constructed if housing is intended to house family members.

However, migrants also contribute to the urbanisation of predominantly rural areas, especially in the Senegal River Valley region bordering Mauritania and Mali. In the Dakar region, migrants invest primarily in the periphery of the capital city, and contribute in this way to revitalising districts previously neglected in urban planning (Tall, 2009; Sinatti, 2009). According to a small-sample survey by the ADB (2007)[10], Senegalese migrants save in the first place for investments in both family and individual housing, once daily consumption needs and health expenditures of the origin household are satisfied. The descriptive results also indicate that migrants do not necessarily use family members as intermediaries for their investment project, but increasingly rely on banks, which target migrants abroad and offer specific saving accounts, as well as friends at origin. Housing assets are also described as a guarantee accepted by banks (Tall, 2002), supporting the hypothesis formulated by Osili (2004). The motives of housing investments are varied and support the theoretical hypotheses outlined above: investments occur in the context of an intended return, but migrants also invest while abroad to obtain income from rents or house family members (Tall, 2009). It is also common that a two-storey house is built

---

[10]The survey covered the areas Dakar, Touba the Senegal River Valley, and ca. 400 households were interviewed. In addition, migrants in France were interviewed, but the exact number of respondents is not provided by the report.

in order to rent out one floor and house family members in the remaining rooms, or to anticipate the use as a room for a business activity (Robin, 1996). Moreover, the ownership of a dwelling is considered to be a sign of social status and success, which facilitates both maintaining social ties while abroad and reintegration after return. Overall, the qualitative and descriptive studies portray the migrant as the investor, rather than the non-migrant family.

Concerning the capacity of Senegalese migrants to undertake and develop business investments, most authors share a rather pessimistic view. According to remittance use questions contained in the DEmIS survey conducted in Dakar and Touba in 1997/1998, approximately three per cent of remittances are reported to be invested productively (Ndione and Lalou, 2005). Several qualitative studies discuss the reasons for this lack of engagement in productive activities. Firstly, migrants appear to be unable to accumulate sufficient savings while abroad (Bruzzone et al., 2006; Fall et al., 2006). While expenditures at destination are kept at a minimum-level, income levels are generally too low to allow for savings in addition to remittance transfers. Secondly, migrants and their contacts at origin seem to lack the necessary human capital to start and develop a productive venture (Fall et al., 2006). Even if migration leads to gains in know-how, the employment experience acquired abroad would not be easily transferable, as entry into the formal sector is restricted and leaves as an option the reinsertion in the already saturated informal trading or service sector (Tall, 2002). Moreover, migrants seem to pursue individual rather than joint projects, exacerbating financial and human capital constraints (Sakho, 2006; Fall et al., 2006; Cissé et al., 2006). The lack of a trustworthy and motivated social network at home constitutes a further obstacle to investment (Bruzzone et al., 2006; Fall et al., 2006).

These observations suggest that migration may have a weak indirect effect. If the migrant is otherwise in the position to invest, this lack of trust tends to delay investments until after the return. The legal status of a migrant also appears to play a role, as documented migrants have better possibilities to circulate and to make use of their migration experience in building up businesses involving "transnational" activities, such as import-export businesses (Riccio, 2001). In addition, disposing of the starting capital is often not synonymous with a successful investment, making re-migration abroad necessary to keep business projects going (Fall et al., 2006; Sinatti, 2011). Another factor influencing investment (in both housing and businesses) is the location of the family. If the reunification of the family in the destination country weakens ties to the origin, incentives to invest at home may be reduced (Fall et al., 2006). As family reunification procedures are complex, cultural habits

such as polygamy are usually not accepted, and the maintenance of a family in Europe costly, migrants tend to follow a strategy whereby the family is segmented. Partners and children remain, therefore, often in Senegal (Beauchemin et al., 2011). Cissé et al. (2006) present a slightly more positive picture of the Senegalese migrant investment capacity, based on interviews with 19 migrants who started a business in the Dakar region. Most of the entrepreneurs interviewed benefited from training received in Europe and managed to stay in touch with other migrants. Nevertheless, the factor identified as key determinant of a successful business creation is personal or family members' previous entrepreneurial experience.

4.3.3   Contribution to the literature and research hypotheses

Research integrating non-migrants, current migrants and return migrants in the analysis, allowing for a joint assessment of the direct effects of migration, whatever the location of the migrant, and the indirect effects of migration experience on non-migrants, is limited. Most studies either concentrate on a single perspective (only non-migrants, returnees, or current migrants) or compare two groups (primarily return migrants and non-migrants). The lack of evidence may be explained by a lack of data, as surveys are generally implemented either at origin or at destination. Similarly, the timing of investment has not been sufficiently studied, as migrants and returnees are rarely analysed together. The timing of investments may, however, be important if investment is linked to the migration or return motive, if investment follows a "basic needs" ladder, placing housing before productive investment, or if different investment types are interdependent. In addition, the literature on the role of migrant networks does not differentiate by the characteristics of the network. The composition (strong and weak ties) and location of the network have been found to be important in explaining migration as well as economic integration at destination (e.g. Davis et al., 2002; Garip, 2008; Toma, 2011). A similar rationale is likely to apply to the role of networks for investments. Another limitation is that research has so far focused primarily on business investments, which are of special interest given their potential "productive" nature. However, studies of the role of migration for investment should extend to "alternative" assets. These are other assets which require relatively lumpy investments, in particular housing/land investments, which appear to be a privileged investment target, at least for Senegalese migrants. Furthermore, previous analyses of the migration-investment link have mainly relied on cross-sectional analyses (except the studies using data from the Mexican Migration Project).

This chapter presents analyses which compare the investment behaviour of non-migrants, migrants and returnees, use retrospective information for longitudinal analyses and exploit detailed information on the nature of migrant networks to assess whether network composition matters. In line with policy concerns, the theoretical framework and findings from the existing empirical evidence, the aim of this paper is to test the following hypotheses:

H1. Individual migration experience stimulates personal investments in Senegal, as it contributes to overcoming credit constraints, and can help in accumulating know-how and social capital.

- **H1A.** The effect of individual migration experience varies depending on the type of asset and the location of the individual (still abroad or back in Senegal). Current migrants are expected to exhibit relatively higher propensities to invest in the real estate sector (land/housing), returnees in entrepreneurial activities.

H2. In addition to having a direct effect through its role in overcoming capital constraints, migration experience can attenuate or offset the effect of other individual characteristics (fixed or determined early in life) on the access to asset ownership, such as gender and education. We also test whether the compensating effect varies by the type of asset (H2A), but have no a priori hypothesis regarding the outcome.

H3. There is an indirect effect of international migration since a share of the material and non-material gains from migration is transferred to non-migrant relatives. Non-migrants with access to a migrant network are more likely to invest than non-migrants without any migrant network.

- **H3A.** The indirect effect of migration varies according to the characteristics of the migrant network. Transfers in terms of contractual arrangements may represent a stronger obligation for migrants with strong ties to the non-migrants (children, siblings). Also the location of the network (Europe/North, Africa, or returned to Senegal) may have a differential impact given varying degrees of access to resources and control over investments. Networks with at least one female (return) migrant are distinguished from all-male networks to test whether women are more altruistic and hence more likely to contribute to investment projects of kin at home. Finally, we test whether, as suggested by Massey and Parrado (1998) with respect to the role of cumulative remittances, the stability of migrant networks over time matters more than the existence of networks in a given year.

- **H3B.** We will further test whether the indirect effect of migration varies by the type of asset. According to the evidence from remittance use data, non-migrants may benefit from migrant networks in accessing housing ownership rather than setting up a business activity (Ndione and Lalou, 2005).

The following section describes the data and the econometric methodology exploited to test these hypotheses.

4.4 Data and methods

The analyses performed in this chapter use the biographic data from the MAFE-Senegal project described in Chapter 2, relying in particular on the questionnaire modules about ownership of land, housing and business assets, and the questionnaire modules on the respondent's housing and migration histories. All subsamples of the MAFE-Senegal survey are employed, including retrospective data on non-migrants and return migrants collected in Senegal, and on individuals living abroad at the time of the survey collected in France, Spain and Italy. This section discusses the potential consequences of the "sample mismatches" between European and Senegalese subsamples evoked in Chapter 2 for the analysis proposed in this chapter. Moreover, empirical methods are presented and discussed, as well as the definition and construction of dependent and explanatory variables from the retrospective life-history data.

4.4.1 Consequences of sample mismatches

A limitation of the MAFE data are the "sample mismatches" (i) between returnees, who had mainly migrated within Africa, and the migrant sample, with individuals who have all migrated to Europe; and (ii) between returnees, who all live in the Dakar region at the time of the survey, and the migrants sampled in Europe, who partly originate from other regions in Senegal. What are the consequences of these mismatches for this analysis? There is very little information on the potential differences in investment behaviour between migrants who have lived at least one year in Europe and those who have not. Some studies conducted in other African contexts (Burkina Faso, South Africa, Morocco) suggest that migrants who stay in Africa may invest less than those who move to Europe: their earnings at destination are in general lower; and they tend to originate from less wealthy households for which reason their migration could be primarily seen as a way to ensure

the livelihood security of the origin family rather than as a way to accumulate capital to promote investments (Bakewell, 2009). The absence in the sample of those migrants living in other African countries could thus lead to an overestimation of the effect of migration on investment in our analyses if this behaviour was equally valid for Senegalese migrants. There is no clear evidence from the literature on which to draw regarding the behaviour differentials between individuals who have lived at least one year in the region of the capital city Dakar and other migrants. However, Dakar is generally regarded as an important investment target (even for individuals who originate from other regions), and also shows some specificities with regard to the destination choice of international migrants (see Chapter 1).

When interpreting the results, one must thus keep in mind that the groups of current migrants and of return migrants are not strictly comparable. Despite this limitation, we attempt to capture to some extent the effect from selective migration to different destination regions by distinguishing in the analyses the migration status by destination, with migration in Africa/outside of Africa for individuals abroad in a given year and migration experience only in Africa/beyond the African continent for return migrants. The "out of Africa" categories include predominantly migrations to Europe, and few spells in North America and the Middle East. The trade-off of the finer distinction comes in the form of smaller cell frequencies. Bearing in mind the various selection biases we mentioned, it is clear that our results will not provide a robust estimation of the impact of personal migration on investment and that caution is required in the interpretation of the results. The question of the indirect effect of migration on investment (i.e. the fact that migrants or returnees could encourage non-migrants in the Dakar region to invest), is not affected by the sampling issues discussed, as non-migrants are included in the sample whatever the location of the network.

4.4.2   Sample used for descriptive statistics: a cross-section perspective

The first analyses interrogate descriptive statistics to assess the associations between (1) the individual's migrant status (non-migrant, current migrant, return migrant with migration experience exclusively in Africa, return migrant with at least one year of migration experience outside Africa) and asset ownership in Senegal (in construction land, housing and businesses) and (2) non-migrant access to a migrant network and asset ownership at the time of the survey (in 2008). Since our research question concerns personal investments at origin, the descriptive analysis is performed on a subsample including:

(i) individuals owning in 2008 at least one asset in Senegal they acquired personally; (ii) individuals who never owned any asset. Some surveyed individuals are thus excluded from the dataset used for descriptive statistics in order to make the reference category of "non-investors" more homogeneous and to reflect the focus on investment in the country of origin. Excluded respondents are those who inherited assets, but did not invest themselves; those who invested abroad but not in Senegal; and those who only owned assets in the past, but not at the time of the survey. Table 4.1 shows the resulting sample of 1,458 individuals, with 520 migrants in Europe, and 172 return migrants and 763 non-migrants in Senegal.

Table 4.1: *Sample characteristics (descriptive analysis)*

	Europe			Senegal			Total
	Spain	France	Italy	Return migrant (1 year+ outside AF)	Return migrant (only AF)	Non-migrant	
No asset	107	89	138	25	72	641	1072
At least 1 asset in SN & not inherited in 2008	55	82	49	44	31	122	383
Total	162	171	187	69	103	763	1455

Notes: AF=Africa; SN=Senegal; Source: *MAFE-Senegal survey (2008)*

All descriptive statistics in section 4.5 are adjusted for the respective sampling design. Sampling weights are applied in the case of the Senegalese sample, while the weighting represents an adjustment for the over-representation of certain population groups (in particular female and elderly migrants) in the European quota samples.

4.4.3   Discrete-time event-history models: a longitudinal perspective

To take into account the timing between migration and investment and provide an assessment of the effects of migrant status and migrant networks on individual investment decisions controlling for other characteristics, we estimate a series of binary discrete-time duration models.

The person-year datasets are constructed from the retrospective histories, and individuals are followed from age 18 to the date of their first investment or the survey date, whatever date occurs first. The definition of the dependent variable (which is equal to zero in all years in which no investment occurs, and equal to one in the year of the first investment) follows the same criteria set out in the descriptive analysis (i.e., ownership of inherited

assets and assets abroad are not considered as events). However, all individuals are considered to be "at risk of a first investment" and their person-years are included in the analysis, even if they already own an inherited asset or an asset abroad. We concentrate on the first investment because our research question concerns the distinction between investing and not investing rather than the timing of subsequent investments. Moreover, relatively few individuals are repeat investors, and not all model specifications would be feasible in view of these data limitations.

Given the discrete data structure, the discrete-time hazard for interval t is the probability of investing during interval t, given that no investment has occurred in a previous interval. As this corresponds to the response probability for a binary dependent variable, a straightforward estimation approach proposed by Allison (1982) is to use a logit model, specified as:

$$log \left(\frac{p_{it}^a}{1 - p_{it}^a} \right) = \alpha(t) + \beta^a M_{it-1} + \gamma^a NET_{it-1} + X'_{it-1}\delta^a \qquad (4.1)$$

where p_{it}^a is the conditional probability that an individual i invests in asset a during period t, given that the event has not occurred up to the end of period $t - 1$. This specification of a discrete-time duration model is also referred to as a proportional odds model. The variable M_{it-1} indicates the individual's migrant status (migrant, non-migrant or returnee) in year $t - 1$, and NET_{it-1} captures the existence of a migrant network in any spell at risk. The baseline hazard is represented by $\alpha(t)$ and X'_{it-1} is a vector of both time-invariant and time-varying individual and family-level covariates, explained in more detail in section 4.4.5. The time-varying variables, including migrant status, are lagged by one year to ensure that characteristics are measured prior to the investment event. If two events occur in the same year, the sequencing is not observable in the data, since information is collected at yearly frequencies. While the establishment of a time order of changes in covariates and the first investment strengthens a causal interpretation of the results, individuals may take decisions based on expectations about future events well in advance, in which case timing does not ensure causality.[11]

We start by estimating a model which groups all asset types and only distinguishes between investing and not investing as outcomes in order to test our first hypothesis on the role of personal migration experience (Model 1). In a second step, separate models for first investment in construction land or housing and businesses are estimated to examine whether the effect of migration experience differs by the type of asset (Models 2a and

[11]The regression models are estimated without sampling weights.

2b). In a third step, we estimate two separate sets of models in order to explore if covariate effects vary depending on the migrant status at the time of investment (any type of investment). One series of models contains only non-migrant person-year spells before the observation period ends, either because the individual invests or because of censoring at the time of the survey or at first departure. The discrete-time duration model is re-estimated with different migrant network variables (Models 3a to 3e). The other series contain migration and return spells of individuals who spent years abroad after the age of 18 and before investing, starting the year they left Senegal and ending with the year of investment or the survey year (Model 4).

After separating non-migrant from migrant spells we have for non-migrants spells:

$$log \left(\frac{p_{it}^{NM}}{1 - p_{it}^{NM}} \right) = \alpha(t)^{NM} + \gamma^{NM} NET_{it-1}^{NM} + X_{it-1}'^{NM} \delta^{NM} \tag{4.2}$$

For migrant and return migrant spells, the duration model is specified as:

$$log \left(\frac{p_{it}^{M}}{1 - p_{it}^{M}} \right) = \alpha(t)^{M} + \gamma^{M} NET_{it-1}^{M} + X_{it-1}'^{M} \delta^{M} + Z_{it-1}'^{M} \eta^{M} \tag{4.3}$$

where $\alpha(t)^{M}$ is the baseline hazard for migrants, with time origin at the first departure, and $Z_{it-1}'^{M}$ represents a vector of migration-specific control variables.

The separate models allow us to examine whether, and by how much, the effect of covariates on investments depends on the individual's migration experience. They provide insights into the role of migration in compensating for differential access to assets due to individual characteristics such as gender or educational attainment. They also provide refined results on the impact of migrant networks on investment propensity of non-migrants by exploring various definitions of the network variable. Separate models for migrant and return migrants spells give further insights into the role of migration-specific characteristics, such as the destination region, the legal status, the fact of sending remittances or paying short visits to the origin country. Finally, the two last cases (Models 5 and 6) assess whether migrants and non-migrants exhibit differential behaviour depending on the asset type.

Table 4.2 provides a summary of the model specifications and corresponding hypotheses.

Table 4.2: *Model characteristics*

	Model 1	Models 2a, 2b	Models 3a, 3b, 3c, 3d, 3e	Model 4	Model 5a, 5b	Model 6a, 6b
Tested hypothesis/ research question	**H1:** There is a direct effect of migration on investment	**H1A:** The direct effect of migration varies according to the type of asset and the location (current migrant, returnee)	**H2:** Migration experience compensates for certain social disadvantages **H3:** There is a network effect on non-migrants investments **H3A:** The network effect depends on the network characteristics		**H2A:** The equalizing effect varies according to the type of asset **H3B:** The network effect on non-migrants investments varies according to the type of asset	
Event studied	Time of first personal investment into any type of asset (land/housing or business)	Time of first personal investment into real estate(Model 2a), or a business activity (Model 2b)	Time of first personal investment into any type of asset		Time of first personal investment into real estate (Models a), or a business activity (Models b)	
Population (migrant status in year t)	• Non-migrant spells • Migrant spells • Return migrant spells		• Non-migrant spells	• Migrant spells • Return migrant spells	• Non-migrant spells	• Migrant spells • Return migrant spells
Left truncation (time origin)	Each individual enters the risk set at age 18			Each individual enters the risk set • at the date of migration, • at age 18 if first departure took place before the age of 18	Each individual enters the risk set at age 18	Each individual enters the risk set • at the date of migration • at age 18 if first departure took place before the age of 18
Right censoring	Each individual leaves the risk set: • at first investment (event under study) • In 2008 (survey date)	Each individual leaves the risk set: • at first investment in land or housing (Model 2a), a business activity (Model 2b) (event under study) • In 2008 (survey date)	Each individual leaves the risk set: • at first investment (event under study) • at first departure abroad • In 2008 (survey date)	Each individual leaves the risk set: • at first investment (event under study) • In 2008 (survey date)	Each individual leaves the risk set: • at first investment (event under study) • at first departure abroad • In 2008 (survey date)	Each individual leaves the risk set: • at first investment in land or housing (Models a), a business activity (Models b) • In 2008 (survey date)
Covariates	• Migrant status • Migrant network • Time, individual, family, period variables	• Migrant status • Migrant network- Time, individual, family, period variables- Previous investment	• Migrant network (various) • Time, individual, family, period variables	• Migrant network • Time, individual, family, period variables • Migration characteristics	• Migrant network • Time, individual, family, period variables • Previous investment	• Migrant network • Time, individual, family, period variables • Migration characteristics • Previous investment

4.4.4 Robustness checks

The robustness of the results is checked by modifying the discrete-time duration model specification in order to account for unobserved heterogeneity, long-term survivors and correlations between time to acquisition of land/housing and time to investment in a business activity. Given the sample size, these checks cannot be performed at the disaggregated level by asset type and migration status. Thus, the analyses pool either all assets or all spells.

Unobserved heterogeneity

In order to control for unobserved heterogeneity across individuals, the models are estimated including individual random effects (u_i), which are assumed to vary across individuals but remain constant over time, and to follow a normal distribution with zero mean and finite variance σ^2.

$$\log\left(\frac{p_{it}^a}{1-p_{it}^a}\right) = \alpha(t) + \beta^a M_{it-1} + \gamma^a NET_{it-1} + X'_{it-1}\delta^a + u_i \tag{4.4}$$

The main implication of unobserved heterogeneity, when ignored, is that the degree of negative duration dependence in the baseline hazard will be overestimated, while the degree of positive duration dependence will be underestimated. There is therefore a selection effect at work. In case of a negative duration dependence between time and first investment, individuals with unobserved characteristics which increase the investment hazard (higher u_i) will leave the risk set sooner, changing the composition of the risk set to contain more and more individuals with lower hazard rates. Moreover, the presence of unobserved heterogeneity attenuates the proportionate effect of covariates. This means that a positive (negative) coefficient estimate derived from the model without unobserved heterogeneity will underestimate (overestimate) the "true" estimate (Jenkins, 2005; Steele, 2005).

Accounting for those who will never invest

The discrete-time duration model estimated so far assumes that all individuals are at risk of investing, and have thus an investment probability greater than zero. However, this may not be the case. For business investments in particular, one can argue that some individuals are too risk averse, or have characteristics which enable them to find a wage-employed job without ever being in need of becoming self-employed. Similarly, there could

be individuals who rent an apartment in Dakar, rather than becoming an owner. If there is a fraction of the population which will never experience the event, "split-population" models or "mover-stayer" models are more appropriate. In this robustness check, we estimate the proportion of never-investors jointly with the parameter estimates of the hazard rate for the population at risk. We use the "spsurv" Stata command written by Jenkins (2001), but change the syntax for the discrete-time duration model to follow a logistic instead of a complementary log-log link function in order to use the same link function in all model specifications.

More specifically, let F be an indicator where $F = 1$ means that an individual will eventually invest, and $F = 0$ that investment never happens.

If the probability of never investing $prob(F = 0)$ is equal to δ, and $prob(F = 1)$ is equal to $(1 - \delta)$, the log-likelihood contribution for individual i with a survival time of t is:

$$\ln L = d_i \ln\left[(1 - \delta)(h_{it} S_{it-1})\right] + (1 - d_i) \ln[\delta + (1 - \delta) S_{it}] \tag{4.5}$$

where d_i is a censoring indicator so that $d_i = 1$ if an event is observed for individual i, $d_i = 0$ otherwise, and the discrete-time survivor function for survival to the end of period t is equal to:

$$S_{it} = \prod_{j=1}^{t}(1 - h_{ij}) \tag{4.6}$$

The probability of never investing δ is thus assumed to be fixed and common to all individuals. It corresponds therefore to estimating δ as a function of a constant α:

$$\delta = \frac{1}{[1 + \exp(-\alpha)]} \tag{4.7}$$

Theoretically, the probability of never investing could vary across individuals, and one could include individual characteristics when modelling this probability, by replacing (4.7) with:

$$\delta = \frac{1}{[1 + \exp(-\alpha - \beta' X_{it-1})]} \tag{4.8}$$

However, this type of model is difficult to fit and we set therefore the probability to be fixed. If $\delta = 0$, tested using a likelihood ratio boundary-value test (Gutierrez. et al., 2001), the split population model collapses to the standard discrete-time hazard model described in equation (4.1). Results for the pooled model as well as for land or dwelling and business investments are discussed.

Dependence between time to investment in real estate and in business activities

A third robustness check consists in estimating the discrete-time duration models for investment in real estate and investment in businesses jointly. The two processes could be correlated, if, for instance, unobserved characteristics influence both the hazard of acquiring a construction land or housing and the hazard of investing in a business activity in any given period t. We estimate therefore the two processes jointly as bivariate discrete-time duration models (Lillard, 1993; Steele, 2005, 2008; Upchurch et al., 2002).

The discrete-time duration models for investments in land or dwellings and businesses are written as[12]:

$$\log\left(\frac{p_{it}^{LD}}{1 - p_{it}^{LD}}\right) = \alpha(t)^{LD} + \beta^{LD}M_{it-1} + \gamma^{LD}NET_{it-1} + X'_{it-1}\delta^{LD} + \eta_i \qquad (4.9\text{a})$$

$$\log\left(\frac{p_{it}^{B}}{1 - p_{it}^{B}}\right) = \alpha(t)^{B} + \beta^{B}M_{it-1} + \gamma^{B}NET_{it-1} + X'_{it-1}\delta^{B} + \varepsilon_i \qquad (4.9\text{b})$$

Where the individual random terms are assumed to follow a joint bivariate normal distribution:

$\begin{pmatrix}\eta_i \\ \varepsilon_i\end{pmatrix}$ $N(0, \Omega)$ and the random effect covariance is denoted by $\sigma^{\eta\varepsilon}$.

The model estimation was implemented using the software SABRE 6.0 (Software for the Analysis of Recurrent Events). In practical terms, Model (4.9) is estimated by stacking the bivariate reponses $(y_{it}^{LD}, y_{it}^{B})$ for each interval t in a single response vector y and interacting an indicator for each response with the corresponding covariates. The model is identified either through covariate exclusion restrictions or through the presence of individuals with repeated events and variation in covariate values, under the assumption that the cross-equation correlation is due to unobserved characteristics which do not vary over time, and that all changes over time are captured by observed time-varying covariates (Lillard et al., 1995). Since no adequate covariate exclusion restrictions could be obtained we estimate this model using the repeated investment events observed in the data, which is possible given that we pool non-migrant and migrant spells. The estimates are therefore not directly comparable to those of the remaining models which concentrate on the first event. To allow for a test of the correlation, we provide the corresponding estimates for

---

[12]The model for investment in businesses only contains the indicator for previous dwellings, not for previous land owned, as no convergence was achieved when including both variables.

repeated investments in land/housing and businesses when the correlation is assumed to be zero.

4.4.5 Construction of variables

The outcome variable, the first investment into an asset, is constructed based on yearly retrospective information on assets owned by the respondent, at the time of the survey or in the past. Types of assets captured are land (agricultural and for construction purposes), dwellings (traditional house, single-storey house, multi-storey house, apartment, apartment block), and business activities (including individuals who own the business premises and those who own a business/venture without walls).[13] We merge the information on construction land and dwellings, to obtain information about the first investment in real estate. The event occurs if land, or a dwelling, or both are acquired, whatever happens first. The data do not allow us to enter into more detail with regard to additional capital investments such as repairs, in the case of housing assets, or the size or productivity of business activities.

The retrospective housing and migration histories enable us to identify individuals as non-migrants, current migrants and return migrants in a given year. To be classified as migration, the stay abroad must have lasted for at least one year. Similarly, to be counted as a return migrant, the individual must have spent at least one year back in Senegal after an international migration experience. We further distinguish between migration experiences in Africa and outside of Africa, based on the location in any given year for current migrants and on the fact of having spent at least one year outside of Africa for return spells.

Moreover, the migrations and returns of the respondent's social network are recorded in a "migration network" history if stays lasted at least one year. Since family structures in Senegal are characterised by extended families and households, a relatively broad definition of "migrant network" has been adopted. Apart from the close family (partner, children, parents, and siblings), other relatives as well as close friends are recorded, under the condition that these would have provided a significant support to the respondent in case of migration. The broad migrant network variable includes therefore close family and extended family members, be they current migrants or return migrants. We examine the role of network composition by using more specific variables distinguishing the rela-

---

[13]Business activities are described in more detail in an open question. An extract from the answers can be found in Annex C.

tionship link between the interviewee and the migrants of his/her network, the location of the migrants, the presence of women in the network, and the average number of years spent abroad by network members. Transfers in terms of contractual arrangements may represent a stronger obligation for migrants with strong ties to the non-migrant (children, siblings). If migration is a household-level decision, older children migrate to provide additional income and/or minimize income risk for the household remaining at origin, in particular parents and younger siblings. Also the location of the network (Europe/North, Africa, or returned to Senegal) may have a differential impact. On the one hand, migrants in Europe could have access to more resources, transfer more, and hence may have a stronger association with investment than migrants in Africa. On the other hand, return migrants in the network may have repatriated their savings and, being at home, they are more accessible and less exposed to potential moral hazards (given their presence, they may keep a certain control over the way savings from migration are invested by their kin). Networks with at least one female (return) migrant are distinguished from all-male networks, given that the literature increasingly takes a gendered perspective, analysing, for example, if women are more altruistic and hence more likely to contribute to investment projects of kin at home. Finally, a variable measuring the average number of years spent abroad by migrant network members (up to 5 years, more than 5 years) provides a cumulative measure of migration experience. As findings by Massey and Parrado (1998) suggest, the cumulative experience of migrant networks may play a more important role for non-migrant investment behaviour than the existence of networks in a given year.

Control variables common to non-migrant and migrant spells comprise individual characteristics, family factors, information about previous asset ownership, and contextual factors. Individual variables capture the role of gender, the effects of secondary or higher education, occupational status (work or no work), and income stability.[14] Family factors measure the number of children aged less than 16, as well as the marital status. The marital status variable distinguishes, on the one hand, singles from individuals in a partnership. For the latter, we further differentiate those who live in the same country as their partner and those who live in different countries. For non-migrants in year t, this variable captures thus a specific type of migrant network effect. To control for existing wealth, we also include controls for previously owned assets. In Models 1, 3, and 4, which have as outcome variable the first investment into any type of asset, a dummy for previous inheritances is used as a covariate. When modelling the first investment in real estate (Model 2a, 5a, 6a),

---

[14]Variables with more detailed categories on educational attainment, occupational status and income stability have been used in earlier versions, and have been collapsed after differences across categories have been tested to be statistically insignificant.

a dummy for previous investment in a business activity is included, and dummy variables for land and dwelling ownership are used to explain first investment in a business activity (Model 2b, 5b, 6b). To account for period effects, a categorical variable for the respective time period (before 1980 (reference), 1980-1994, 1995-1999, after 2000) is also included. A problem attached to the retrospective nature of the data is that, by definition, there are fewer investments recorded for earlier periods than for later periods, since there are relatively few older respondents. The first investment in the data set occurred in 1960, the last one in 2008.

Several migration-specific variables are added when estimation is restricted to migration and return spells (Models 4, 6a, 6b) to capture the migration strategy, conditions during the stay abroad, and links to the home country. For return spells, the variables take the values of the last migration episode. A categorical variable controls again for the destination region (North/Africa) and captures whether the individual is currently abroad or back in Senegal. We recode open answers on the self-reported motive of the first departure from Senegal to distinguish individuals who left to work or improve economic conditions from other migration motives (predominantly family reasons and study). An indicator variable which is equal to one if the individual travelled alone when leaving Senegal captures the conditions of the move. Annual information on residence permits is used to construct a variable indicating whether the individual was documented or not in a given year. Documentation may facilitate capital accumulation. A dummy variable specifying whether an individual has ever sent remittances to Senegal is also included. Remittance transfers can be regarded as a control for savings from migration (Gubert and Nordman, 2008), but may also reflect the dependency of the origin household on remittances, making the migrants' savings dwindle away (Fall et al., 2006). The effect on investment is thus ambiguous.[15] A similar dummy measuring past or present membership in migrant associations captures to some extent the links maintained to the origin country, the willingness (and social pressure) to support development in Senegal, as well as migration-specific social capital (Black and Castaldo, 2009; Mooney, 2003). We also include an indicator for short visits to Senegal, as those can facilitate investments at home. This variable is coded as one in the year the visit takes place but also in all subsequent years.

---

[15]Both the fact of sending remittances and inheritances are thus included as control variables. However, the analysis does not investigate the bequest motive of sending remittances pointed out in the theoretical discussion. Data on remittances in the MAFE survey are limited to a simple life-history calendar grid, and one neither knows the recipient of the transfer nor its amount or frequency. A cross-tabulation between the variable "ever sent remittances to Senegal" and having received an asset as inheritance on the sub-sample of individuals with migration experience suggests that there is no association between the two variables.

In the pooled specification (Models 1, 2) as well as the one using non-migrant spells only (Models 3, 5), the life-cycle effect of age is contained in the baseline hazard, which is introduced as a second-order polynomial. For the specification restricted to migrant and return spells (Models 4, 6), the baseline hazard captures the time since first departure as piecewise constant through dummy variables. Age is included in addition to the baseline hazard. Most variables are constructed as varying over time (e.g. migrant status, networks, occupation, income stability etc.). Variables which are time-invariant are fixed individual characteristics, such as gender and place of birth, or are considered to be fixed at age 18, such as education. However, for the descriptive analysis presented in section 4.5, all characteristics are measured as of the time of the survey (year 2008). The descriptive findings provide a "cross-section" perspective and a reference point for subsequent longitudinal analyses.

4.4.6 Potential endogeneity bias

As highlighted in the literature review, both the migrant status and the migrant network variables are potentially endogenous to the investment outcome. Unobservable characteristics may drive both the individual and household migration decisions (whether to migrate, timing and destination choice) and investment, giving rise to omitted variable bias. Moreover, (anticipated) investment may trigger migration or return decisions, leading to problems of reverse causality. Endogenous time-varying variables can be accounted for in discrete-time event-history analysis by jointly estimating equations for the outcome of interest and the endogenous process, in our case migration (called "multi-process model" in the event-history terminology, e.g. Angeles et al., 1998; Steele, 2005). However, the estimation of multi-process models is demanding on the data, and is not feasible in this study given the relatively small sample of individuals. The migrant status variable has five categories and transitions can occur from non-migrant status to migrant status in Africa or Europe, from migrant status to return migrant status, and from return migrant status (Africa and Europe) to migrant status (Africa and Europe), all of which would need separate estimation and specific instrumentation. Moreover, for some of these transitions none or only few repeated events are observed, posing an additional challenge to identification. The migrant network variable (in its simplest definition as indicator variable for having a network) would require one additional equation. The problem of endogeneity is therefore not addressed in the present analysis, a limitation which should be kept in mind when interpreting the results. While not eliminating it, the nature of the data and the econometric

approach adopted may reduce the bias from endogeneity in comparison to cross-section analyses without proper instrumentation. The rich time-varying data may capture individual heterogeneity which remains unobserved in cross-section data. Moreover, while lagging explanatory variables cannot avoid reverse causality in case of decisions taken in anticipation of the outcome, it can diminish the problem when decisions are spaced in time.

4.5 Descriptive Analysis

4.5.1 Asset characteristics

Table 4.3 summarises characteristics of assets reported by the respondents, and provides insights into the consequences of sampling characteristics and of the criteria defined for inclusion of assets in the analysis. Only a relatively small share of assets is located abroad and hence not considered as event in the analysis. However, more assets are excluded because they were not acquired by the respondent, as approximately one out of three assets represents an inheritance. Assets which were acquired in Senegal are to a large extent still owned at the moment of the survey.

While the Senegalese sample includes only individuals residing in the region of Dakar, migrants interviewed in Europe can originate from anywhere in Senegal. This difference is reflected in the location of the assets. While almost 90 per cent of assets owned by respondents in the Senegalese sample are located in the region of Dakar, this is the case for only 60 per cent of assets owned by migrants interviewed in Europe. However, respondents of both samples tend to invest in locations other than the place of birth. Assets are to a large extent financed through personal savings. Bank loans as well as informal finance through "tontines" or loans from relatives or friends play only a minor role.

4.5.2 Is there an association between personal migratory experience and investment?

A comparison of the overall asset ownership rates of current migrants, return migrants and non-migrants at the time of the survey suggests a positive association between personal

---

[16]A "tontine" is an informal savings and credit association. Each member contributes regularly a fixed amount, and the sum is paid out to members following a rotation system (Balkenhol and Gueye, 1994).

Table 4.3: *Asset characteristics*

	Overall		Europe samples		Senegal sample	
Total number of assets reported N=	**1028**		**493**		**538**	
% of assets abroad	5%	(94)	16%	(85)	2%	(9)
% of assets inherited	32%	(287)	24%	(115)	34%	(172)
Assets in Senegal and not inherited N=	**657**		**300**		**357**	
% assets not owned anymore in 2008	15%	(96)	10%	(33)	16%	(63)
Located in the region of:						
Dakar	81%	(479)	60%	(168)	89%	(311)
Diourbel, Kaolack, Louga, Fatick, Thies (peanut basin, "petite côte")	12%	(106)	23%	(71)	8%	(35)
Kolda , Ziguinchor (South - Casamance)	2%	(33)	6%	(28)	1%	(5)
Matam, Tamba (Middle, Upper Senegal River Valley)	2%	(16)	5%	(13)	0.5%	(3)
Saint Louis	2%	(16)	5%	(14)	1%	(2)
Missing	1%	(7)	1%	(6)	0.5%	(1)
Asset in location of birth	31%	(253)	45%	(142)	26%	(111)
Financing of asset (multiple response question)						
Personal savings	78%	(546)	90%	(259)	74%	(287)
Bank loan	9%	(58)	11%	(34)	9%	(24)
"Tontine" [16]	3%	(23)	3%	(10)	4%	(13)
Loan from family or friends	3%	(33)	7%	(22)	2%	(11)

Notes: Individuals can report several assets; relative frequencies are weighted by sampling weights, while absolute frequencies are reported unweighted. *Source: MAFE-Senegal survey (2008)*

migration experience and access to property in Senegal, as long as migration experience was acquired outside of Africa (Table 4.4). While less than one out of five non-migrants declares ownership of at least one asset in Senegal in 2008, this share increases to 41% for individuals living abroad in 2008. Return migrants who spent one year or longer in a non-African country record the highest asset ownership rates: they may have invested while abroad, similar to the current migrants, but have seized further investment opportunities after their return. Return migrants who have migrated to other countries on the African continent, however, are no different from non-migrants regarding their asset ownership. This suggests that there may be indeed an initial selection by destination, and that international migration experience in other African countries does not stimulate personal investments into the assets examined.

The association between migration experience and asset ownership is likely to vary depending on the type of asset, (e.g. due to differences in monitoring costs). Nonetheless, one observes no differences with respect to individuals without migration experience for the group of returnees from other African countries, independently of the type of asset (construction land, housing and businesses). While the returnees' property rate is slightly

Table 4.4: *Asset ownership rates by migrant status, in 2008*

	Current migrant (Europe)	Return migrant (1 year+ outside AF)	Return migrant (only AF)	Non-migrant	Total
At least one asset	0.41	0.71	0.19	0.17	0.22
	[0.36, 0.46]	[0.56, 0.83]	[0.11, 0.29]	[0.13, 0.22]	
Construction land	0.19	0.33	0.04	0.07	0.09
	[0.16, 0.24]	[0.20, 0.49]	[0.02, 0.09]	[0.05, 0.11]	
House	0.26	0.52	0.09	0.06	0.1
	[0.22, 0.31]	[0.36, 0.68]	[0.04, 0.17]	[0.03, 0.09]	
Business	0.05	0.19	0.09	0.05	0.06
	[0.03, 0.07]	[0.10, 0.33]	[0.05, 0.16]	[0.03, 0.08]	

Notes: AF=Africa; 95% confidence intervals for proportions in brackets. *Source: MAFE-Senegal survey (2008)*

higher for housing and businesses, and slightly lower for construction land, these differences are not statistically significant. Current migrants and return migrants who migrated out of Africa, on the contrary, seem to have an advantage with respect to non-migrants. The difference is largest in the case of housing and construction land and remains only present for the group of return migrants if the asset is a business activity. Migrants thus seem to have a clear preference for investments in the real estate sector, a phenomenon which has been highlighted within the existing literature (Tall, 1994, 2002).

With regard to businesses, the advantage of migration is less clear-cut. While asset ownership rates of non-migrants and current migrants are identical (5 per cent), the proportion of those return migrants who lived in non-African countries and own a business is four times as large (19 per cent). However, the relatively low presence of returnees from Africa in business activities is surprising, if one starts from the premise that entrepreneurial activities in the context of the Dakar region are to a large extent located in the informal low-productivity sector (as suggested by discussion in section 4.2.2). These descriptive statistics suggest rather that migration does indeed lead to capital accumulation which facilitates business investment after return. More detailed analyses on the type of business, the characteristics of business owners, and the timing of the investments would be needed to clarify the relationship between starting and maintaining a business, staying abroad and returning.

4.5.3 Access to migrant networks and investments by non-migrants

Do non-migrants, who have links to a network of relatives and friends with migration experience, invest more than non-migrants without any migrant network? A first attempt

to address this question consists in comparing the asset ownership status of non-migrants with and without migrant networks, keeping in mind that the association may work in both directions: having a network may influence the investment behaviour if financial support or know-how is provided, but wealth in the form of asset ownership can also finance the migration of network members. Moreover, one should take into consideration that our definition of "migrant network" is relatively broad. In fact, the large majority of interviewees report having a network of relatives or friends with migration experience, either abroad or back in Senegal, while only 28 per cent of non-migrants have no migrant network of any kind in 2008.

The first descriptive results indicate that there is no statistically significant association between non-migrants' ownership status and their link to a network of migrants and return migrants, those with a migrant network exhibiting a rate of 17%, while it is 18% for those without a network (Table 4.5).

Table 4.5: *Asset ownership rates of non-migrants by migrant network type*

		Any asset
Broad network definition	No network	0.18
		[0.09, 0.27]
	At least one network member	0.17
		[0.12, 0.22]
If some network:		
Relationship link	Children/ siblings	0.18
		[0.12, 0.24]
	Other relationship	0.15
		[0.07, 0.23]
Location of network		
>= 1 returnee in Senegal	Yes	0.17
		[0.08, 0.26]
	No	0.17
		[0.11, 0.23]
>= 1 in Europe	Yes	0.17
		[0.12, 0.23]
	No	0.15
		[0.06, 0.25]
>= 1 elsewhere in Africa	Yes	0.17
		[0.07, 0.27]
	No	0.17
		[0.11, 0.23]
Women in network	At least one woman	0.13
		[0.07, 0.18]
	Only men	0.19
		[0.12, 0.25]
Average cumulative	<= 5 years	0.15
		[0.06, 0.24]
Experience	> 5 years	0.17
		[0.11, 0.23]

Notes: N=763; Sample too small in 2008 to distinguish both by asset type and network type. 95% confidence intervals for proportions in brackets; no differences in mean proportions are statistically significant at 10%.
Source: MAFE-Senegal survey (2008)

Moreover, non-migrants with and without migrant networks remain very similar with regard to their ownership status, whatever the characteristics of the migrant network. For the case of female migrant networks one observes an even lower asset ownership rate for those with women in the network. However, this seems to be due to the fact that female non-migrants are over-represented among those with a female network (58% are women), and non-migrant women are less likely to own an asset than men (9% of non-migrant women own an asset versus 30% of men). Moreover, the six-percentage-point difference in rates observed is not statistically significant.

Overall, these summary descriptive results indicate that individuals with personal migration experience in 2008 are more likely to own assets than non-migrants. On the other hand, access to migrant networks does not seem to be associated with asset ownership. The purpose of the next section is to refine the understanding of the migration-investment relationship by discussing the findings from several discrete-time event-history models.

4.6   Evidence on the migration-investment relationship from discrete-time event-history models

4.6.1   First investment into an asset: the effects of migration and other personal characteristics

Is there a direct effect of personal migration on investment?

The first set of models produces results on the personal experience of migration on investment (Table 6). In Model 1, all asset types are grouped to test for our first general hypothesis according to which migration has a direct effect on the odds to invest in any type of asset. Separate models (2a and 2b) are then estimated for each type of asset (real estate and business activities) in order to test the hypothesis according to which the effect of personal migration experience varies depending on the type of asset.

The positive effect of personal migration experience investing in any type of asset (Model 1) is large and significant for all but the group of current migrants in Africa. Individuals who migrate to another country in Africa seem to delay the investment until after return, as individuals who returned from African destinations are more likely to invest for the first time than non-migrants.

However, the impact of migration experience differs depending on the asset type (Models 2a and 2b).[17] Being a current migrant in the North matters for a first investment in real estate but has no effect on business investments, while being a current migrant in another African country does not improve investment chances relative to non-migrants, whatever the type of asset considered. Moreover, return migrants with experience in the North have also a higher propensity to invest in housing than non-migrants. With regard to business investments, the coefficient on returnees who gained some migration experience outside of Africa is not statistically significant. They are not more likely to become entrepreneurs than non-migrants, which contrasts with the findings from the descriptive statistics. Returnees who lived in other African countries are the only group more likely to start a business activity than non-migrants. After controlling for other characteristics, it seems that migration experience in Africa matters most for the type of business activities started after return. According to the list of open answers provided in Annex C, these are mainly located in the informal trading sectors. These first results suggest that preference for certain asset types is only partly determined by the stage in the migration cycle - still abroad or already back at origin - and more strongly correlated with the destination region in which migration experience was accumulated.

Taken together, these findings confirm the first hypothesis that personal migration experience stimulates investment in the origin country. They also provide some evidence with respect to the selectivity of migration effects by destination region. Moreover, they give quantitative support to the largely qualitative literature studying the role of international migration in the Senegalese housing sector (e.g. Tall, 1994), and, for the case of international migration within the African continent, to the literature on the propensity of return migrants to take up business activities after their return (e.g. McCormick and Wahba, 2001; Mesnard, 2004; Ilahi, 1999). The type of business and the motives for becoming an entrepreneur need to be studied in more detail to determine whether the positive effect indicates that migration helps to overcome credit constraints in the origin country or whether the business activities are more a "survival strategy" when other occupations are not accessible.

---

[17]No statistical tests on differences in coefficient estimates in models 2a and 2b have been carried out, since models are estimated separately, include overlapping observations of individuals purchasing both types of assets, and are of unequal panel length. The comparison of migrant status effects across models should hence be treated with caution.

Table 4.6: *Pooled non-migrant and migrant spells: First investment into an asset in year t (coefficient estimates, standard errors in parentheses)*

Event: First investment in year t in...	Model 1 ...any type of asset		Model 2a ...land or housing		Model 2b ...business	
	coef.	SE	coef.	SE	coef.	SE
Time (since age 18)	0.068***	(0.024)	0.069**	(0.028)	0.046	(0.039)
Time squared (since age 18)	-0.002***	(0.0005)	-0.001**	(0.0006)	-0.002*	(0.0009)
Non-migrant (t-1)	(ref)		(ref)		(ref)	
Current migrant outside Africa	0.554***	(0.135)	0.881***	(0.150)	-1.308	(0.280)
Current migrant in Africa	0.027	(0.325)	0.029	(0.380)	-1.223	(0.611)
Returnee at least 1 yr outside Africa	0.693***	(0.235)	0.851***	(0.246)	0.309	(0.426)
Returnee, only spells in Africa	0.514**	(0.224)	0.272	(0.288)	0.719**	(0.319)
No migrant network (t-1)	(ref)		(ref)		(ref)	
Any type of migrant network	0.143	(0.119)	0.103	(0.136)	-1.109	(0.203)
Male	(ref)		(ref)		(ref)	
Female	-0.548***	(0.124)	-0.501***	(0.141)	-0.656***	(0.223)
Not household head (t-1)	(ref)		(ref)		(ref)	
Household head	0.310**	(0.121)	0.344***	(0.133)	0.178	(0.230)
Works (t-1)	(ref)		(ref)		(ref)	
Inactive/No income earner	-0.705***	(0.138)	-0.966***	(0.171)	-1.011	(0.224)
No/primary education	(ref)		(ref)		(ref)	
Secondary education or higher	0.375***	(0.106)	0.482***	(0.120)	-1.024	(0.190)
Sufficient resources (t-1)	(ref)		(ref)		(ref)	
Insufficient/unstable resources	-0.373***	(0.132)	-0.415***	(0.149)	-1.374	(0.239)
Number of children 0-16 (t-1)	0.081***	(0.031)	0.063*	(0.034)	0.087*	(0.051)
Single (t-1)	(ref)		(ref)		(ref)	
Partnership and same country	0.199	(0.135)	0.325**	(0.154)	-1.046	(0.242)
Partnership and different countries	0.431***	(0.166)	0.558***	(0.183)	0.223	(0.318)
No inheritance (t-1)	(ref)		(ref)		(ref)	
Owns inherited asset	-1.270	(0.184)	-1.281	(0.199)	-1.144	(0.337)
No land owned (t-1)	§		§		(ref)	
Owns acquired land	§		§		0.625**	(0.300)
No dwelling owned (t-1)	§		§		(ref)	
Owns acquired dwelling	§		§		0.329	(0.306)
No business owned (t-1)	§		(ref)		§	
Owns acquired business	§		0.397*	(0.239)	§	
Period before 1980	(ref)		(ref)		(ref)	
1980-1994	-1.316	(0.193)	-0.571***	(0.206)	0.957*	(0.535)
1995-1999	-1.289	(0.212)	-0.605***	(0.228)	1.377**	(0.547)
after 2000	-1.033	(0.195)	-0.505**	(0.211)	1.655***	(0.534)
Constant	-5.023***	(0.256)	-5.227***	(0.289)	-6.973***	(0.592)
Observations	32,328		33,138		36,125	
Log-likelihood	-2,048		-1,677		-807.5	
χ^2	344.1		391.5		64.59	

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; (ref) indicates the reference category; "§" indicates that the variable is not included in the estimation; *Source: MAFE-Senegal survey (2008)*

Inequalities in the access to asset ownership

Access to asset ownership is not only dependent on the migratory experience of the individuals (Table 4.6). The time variables indicate that the probability of investing increases first with time, reaches a maximum around 40 years and decreases thereafter. The distinction by asset type suggests that this time dependence is only observed for land or housing investments, and that the transition rate to business investments is time invariant. Women have a clear disadvantage in accessing both housing and business assets. Household heads need to provide housing for the family and are more likely to invest in construction land or a dwelling compared to other household members, but are not more likely to invest in a business activity. Not surprisingly, the socio-economic position also plays an important role in access to housing property. Being inactive or not earning any income (family helps) reduces the probability of a first investment in land or housing. Similarly, when a person experiences a period of income instability or lacks the financial resources to ensure day-to-day living expenses, the probability of investing in real estate drops compared to a situation in which the individual has sufficient financial resources to manage daily life. Human capital matters as well, as having at least secondary education increases the investment probability. However, these three variables have no effect on investment in businesses. This suggests that the average business does not require a large amount of financial capital and that activities are low-skilled. The migration experience in Africa would represent a way to acquire the initial capital, whatever the initial skills of the migrants. The fact of having inherited an asset, which can be seen as a wealth attribute, does not have a significant effect on asset acquisitions. The results by type of asset suggest, however, that there is a cumulative process of acquisition. Owning construction land raises the probability of investment into businesses, and conversely. The number of children seems to have a positive effect, which could reflect the need to construct housing when the family is large, and the availability of family workers in the case of business investments. However, the effect is only marginally significant. Being married increases the likelihood of investing in housing, in particular if the respondent and partner live in different countries. This effect will be further investigated after separating spells by migrant status. The coefficients on period effects indicate that housing investments became less accessible over time while business investments exhibit the opposite pattern, which corresponds to the evolution of the real estate market and the business conditions at origin.

4.6.2 Migrants vs. non-migrants: how do they differ in their access to asset ownership?

We now split the person-year sample into non-migrant spells on the one hand, and migrant (abroad or returned) spells on the other hand. We first investigate if the presence of a migrant network affects non-migrants' investment behaviour.

Is there a network effect of international migration on non-migrants' first investment?

Having a migrant network has no effect on the first investment when migrants and non-migrants are pooled together, whatever the type of asset considered (Table 4.6). This is also true when limiting the estimation to non-migrant spells (Table 4.7, Model 3a). However, both results are obtained using the most comprehensive definition of a migrant network (having at least one migrant in one's social circle at any point in time, friends and relatives included). Network effects may perform differently according to who is considered as a member of the network. Beyond the broad definition of the migrant network, other models explore the potential effect of more specific migrant networks. We distinguish between having children or siblings with migration experience versus other family members and friends; take account of the network location; investigate whether networks with female migrants have a different effect on first investment than all-male networks; and examine the role of cumulative migration experience of network members (Table 4.7, Models 3b-e).

None of the coefficient estimates is significantly different from zero. It thus seems that there is no significant network effect of migration, whatever the specification of the network variable.

This finding is also not qualified by the result of the marital status variable (Table 4.8): non-migrants having a partner abroad are not more likely to invest. Rather than an indirect effect of migration on non-migrants' investments, there seems to be a positive effect of being in a partnership versus being single, regardless of the location of the partner. The hypothesis that migration may affect non-migrant investment behaviour, for example via transfers of material resources or know-how, is thus not supported by the data, at least when all assets are pooled together.

Table 4.9 presents the corresponding results after distinguishing by asset type. This re-

Table 4.7: *Role of migrant networks for non-migrant spells for first investment into an asset in year t from discrete-time event-history analyses (coefficient estimates, with standard errors in parentheses)*

Migrant network (in $t-1$)	(Model 3a) Any type	(3b) Relation- ship link	(3c) Network location	(3d) Women	(3e) Cumulative years
No migrant network ($t-1$)	*(ref)*	*(ref)*	*(ref)*	*(ref)*	*(ref)*
Migrant network	0.147 (0.162)	§	§	§	§
Children or siblings	§	0.137 (0.183)	§	§	§
Other relationship	§	0.160 (0.199)	§	§	§
Returned to Senegal	§	§	0.124 (0.229)	§	§
EU/North	§	§	0.118 (0.188)	§	§
Africa	§	§	0.218 (0.341)	§	§
EU/North and Africa	§	§	0.321 (0.339)	§	§
At least one woman	§	§	§	0.109 (0.212)	§
No women	§	§	§	0.167 (0.176)	§
<= 5 years abroad at average	§	§	§	§	0.160 (0.203)
> 5 years abroad at average	§	§	§	§	0.148 (0.181)
Control variables		**Yes (Table 4.8)**			

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; (ref) indicates the reference category; "§" indicates that the variable is not included in the estimation; *Source: MAFE-Senegal survey (2008)*

finement does not change the broad finding: non-migrants are not more likely to invest when they have international migrants or returnees in their social circle. Results regarding the marital status and the location of the partner are also similar to the previous ones. At first glance, non-migrants with a partner abroad seem to be more likely to invest in land or housing than those whose partner is in Senegal. However, the differences between the estimated coefficient values are not statistically significant. This implies that being in a partnership is what matters most. The results concerning migrant-spells, on the contrary, suggest differential behaviour depending on the location of the spouse: those who live in a different country than their spouse are more likely to invest in real estate than singles or individuals who moved with their spouse. In order to provide the family in Senegal with construction plots or housing, migrants appear to prefer to acquire for themselves real estate, rather than transferring funds that would be invested by the spouse at origin.

Table 4.8: *Separate non-migrant and migrant spells: first investment into an asset in year t (coefficient estimates, standard errors in parentheses)*

	Any type of asset			
	Model 3a		Model 4	
	Non-migrant spells		Migrant spells	
	coef.	SE	coef	SE
Non-migrant spells: Time since 18 Migrant/return: Age	0.096***	(0.0305)	0.034	(0.078)
Non-migrant spells: Time since 18 squared Migrant/return: Age squared	-0.002**	(0.0007)	-0.0007	(0.001)
No migrant network $(t-1)$	(ref)		(ref)	
Migrant network	0.147	(0.162)	0.020	(0.211)
Male	(ref)		(ref)	
Female	-0.835***	(0.178)	-0.118	(0.200)
Not household head $(t-1)$	(ref)		(ref)	
Household head	0.470***	(0.177)	0.158	(0.167)
Works $(t-1)$	(ref)		(ref)	
Inactive/No income earner	-0.515***	(0.179)	-0.620**	(0.249)
No/primary education	(ref)		(ref)	
Secondary education or higher	0.612***	(0.154)	0.180	(0.159)
Sufficient resources (t-1)	(ref)		(ref)	
Insufficient/unstable resources	-0.255	(0.197)	-0.433**	(0.189)
Number of children 0-16 $(t-1)$	0.025	(0.034)	0.128**	(0.051)
Single $(t-1)$	(ref)		(ref)	
Partnership and same country	0.395**	(0.187)	-0.039	(0.211)
Partnership and different countries	0.587	(0.364)	0.383*	(0.213)
No inheritance owned $(t-1)$	(ref)		(ref)	
Owns inherited asset	-0.476	(0.308)	-0.111	(0.235)
Period before 1980	(ref)		(ref)	
1980-1994	-0.414*	(0.251)	-0.203	(0.358)
1995-1999	-0.298	(0.280)	-0.224	(0.377)
after 2000	-0.101	(0.258)	0.153	(0.357)
Constant	-5.500***	(0.331)	-5.667***	(1.439)
Migration-specific controls	**No**		**Yes**	
Observations	23468		8686	
Log-likelihood	-1041		-891	
χ^2	164.2		136.5	

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; (ref) indicates the reference category; "§" indicates that the variable is not included in the estimation; *Source: MAFE-Senegal survey (2008)*

Does migration have an equalizing effect?

When migrants and non-migrants are pooled together, we reported that females are disadvantaged in their access to asset ownership (Table 4.6). This result needs to be qualified after splitting the person-year sample. Table 4.8 presents the result when the two asset types are pooled, and Table 4.9 distinguishes by asset type.[18] While still being true for non-migrant spells, the coefficient on gender is not significantly different from zero for migrant spells (Table 4.8). This is mainly attributable to the better access of female migrants to real estate investments (Table 4.9). The estimated coefficient for the first business investment remains negative and relatively large for migrant spells, although it is not statistically significant.

Similarly, at the average, individuals with a low level of education appear to be less likely to invest (Table 4.6). According to the estimates in Table 4.8, having higher education (secondary and tertiary levels) only matters for non-migrant spells. International migration seems to be a way to compensate for an initial educational handicap. Again, this effect is driven by investments in land or housing (Table 4.9). In contrast, there is no significant effect of education on investments, either for migrants or for individuals without migration experience.

Other variables do not suggest the same compensating effect of migration. In fact, while a period of income instability does not affect non-migrant investments, migrants and returnees with insufficient or unstable resources are disadvantaged when compared to those who possess sufficient resources (Table 4.8, Table 4.9). This difference between the two groups could be explained by migrants and returnees being less embedded in social networks which function as an insurance mechanism and facilitate the absorption of income shocks.

Nonetheless, migrants appear to be slightly less vulnerable to the changing economic and social conditions in Senegal (Table 4.8). The time period has no statistically significant effect on investment for migrants and returnees, although one has to acknowledge that coefficient estimates are sizeable. Non-migrant investment behaviour seems to be affected by the context: in the 1980 to 1994 period, a time of economic and social crisis, the probability of investing for the first time diminished compared to the years before 1980. After splitting by asset type it becomes evident that this result is driven by investments

---

[18]This disaggregated specification has to be interpreted with caution. Due to the small size of subsamples, relatively large coefficient estimates are often not statistically significant.

in land and housing (Table 4.9).

Table 4.9: *Separate models for non-migrant and migrant/return person-periods for first invest-*
ment into land or a dwelling / a business (coefficient estimates, standard errors in
parentheses)

	First investment in land/dwelling				First investment in business			
	Model 5a Non-migrant spells		**Model 5b** Migrant spells		**Model 6a** Non-migrant spells		**Model 6b** Migrant spells	
	coef.	SE	coef.	SE	coef.	SE	coef.	SE
Non-migrant: Time since 18 Migrant/return: Age	0.084**	(0.036)	0.091	(0.086)	0.113**	(0.054)	-0.122	(0.114)
Non-migrants: Time since 18 squared Migrant/return: Age squared	-0.001	(0.0007)	-0.001	(0.001)	-0.003**	(0.001)	0.001	(0.001)
No migrant network $(t-1)$	*(ref)*		*(ref)*		*(ref)*		*(ref)*	
Migrant network	0.016	(0.196)	0.051	(0.227)	0.237	(0.258)	-0.893**	(0.362)
Male	*(ref)*		*(ref)*		*(ref)*		*(ref)*	
Female	-0.911***	(0.221)	-0.077	(0.209)	-0.727***	(0.282)	-0.507	(0.448)
Not household head $(t-1)$	*(ref)*		*(ref)*		*(ref)*		*(ref)*	
Household head	0.430**	(0.209)	0.270	(0.174)	0.529*	(0.300)	-0.226	(0.354)
Works $(t-1)$	*(ref)*		*(ref)*		*(ref)*		*(ref)*	
Inactive/No income earner	-0.955***	(0.239)	-0.554**	(0.270)	0.247	(0.273)	-0.311	(0.483)
No/primary education	*(ref)*		*(ref)*		*(ref)*		*(ref)*	
Secondary education or higher	0.857***	(0.188)	0.272	(0.167)	0.154	(0.250)	-0.493	(0.330)
Sufficient resources $(t-1)$	*(ref)*		*(ref)*		*(ref)*		*(ref)*	
Insufficient/unstable resources	-0.284	(0.239)	-0.388*	(0.199)	-0.472	(0.331)	-0.491	(0.408)
Number of children 0-16 (t-1)	-0.002	(0.047)	0.088	(0.053)	0.082	(0.066)	0.096	(0.086)
Single $(t-1)$	*(ref)*		*(ref)*		*(ref)*		*(ref)*	
Partnership and same country	0.694***	(0.236)	0.033	(0.219)	-0.033	(0.295)	-0.064	(0.470)
Partnership and different countries	1.192***	(0.441)	0.435*	(0.223)	-0.279	(0.585)	0.423	(0.469)
No inheritance $(t-1)$	*(ref)*		*(ref)*		*(ref)*		*(ref)*	
Owns inherited asset	-0.288	(0.342)	-0.279	(0.251)	-0.759	(0.599)	0.262	(0.431)
No land owned $(t-1)$	§		§		*(ref)*		*(ref)*	
Owns acquired land	§		§		0.475	(0.499)	0.701*	(0.420)
No dwelling owned $(t-1)$	§		§		*(ref)*		*(ref)*	
Owns acquired dwelling	§		§		-1.327	(1.036)	1.029***	(0.382)
No business owned $(t-1)$	*(ref)*		*(ref)*		§		§	
Owns acquired business	0.100	(0.433)	0.335	(0.307)	§		§	
Period before 1980	*(ref)*		*(ref)*		*(ref)*		*(ref)*	
1980-1994	-0.706**	(0.279)	-0.383	(0.363)	0.781	(0.626)	0.975	(1.063)
1995-1999	-0.516*	(0.310)	-0.537	(0.387)	1.029	(0.651)	1.642	(1.071)
after 2000	-0.749**	(0.298)	-0.158	(0.363)	1.508**	(0.621)	1.504	(1.063)
Constant	-5.674***	(0.388)	-6.850***	(1.584)	-7.683***	(0.718)	-3.712	(2.380)
Migration-specific controls	**No**		**Yes**		**No**		**Yes**	
Observations	23,972		8,995		24,756		11,159	
Log-likelihood	-746.1		-833.4		-478.4		-271.3	
χ^2	165.10		151.90		51.35		54.42	

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; (ref) indicates the reference category; "§" indicates that the variable is not included in the estimation;
Source: MAFE-Senegal survey (2008)

The difference between migrants and non-migrants might be due to the fact that these
two groups lived in very different economic contexts, the latter being subject to increasing
economic hardship in times associated with structural adjustment programs in Senegal.
Although the former benefited from the devaluation of the CFA franc in 1994, the differ-

ence between the groups for the years following the devaluation is smaller than expected. Results thus do not confirm the observation noted in qualitative studies that the devaluation boosted investments from abroad. Moreover, there seems to be a trend towards more business investment. The apparent attraction for business activities might be explained by a shift in the labour market away from the formal towards the informal sector since the beginning of the structural adjustment programs in the 1980s. This evolution was exacerbated in more recent years, which were characterised by a mismatch between supply and demand in the formal labour market, in particular in the urban context of Dakar (Diagne, 2005).

4.6.3 Do the trip characteristics matter?

We focus next on years after the first departure abroad to investigate the effects of control variables which are specific to the migration experience (Table 4.10). Time since the departure has an inverse U-shaped effect on the first investment. Investment is least likely during the first three years after departure, when migrants are unlikely to have accumulated sufficient capital, and most likely four to nine years after departure. Very long durations may imply a loss of attachment to the origin country and thus lower propensities to invest. The results for the migrant status by location indicate that returnees with migration experience in the North have an advantage, even compared to current migrants in the North. The fact of being a "legal" migrant does not seem to matter for the first investment. Transnational activities in the form of remittance transfers and membership in migrant associations appear to stimulate, rather than to compete with, personal investments. Remittances may constitute a way to channel savings to the origin country, which are, however, invested in construction land or housing rather than business activities. Association membership is, on the other hand, positively associated with both housing and business investments. Members may be able to remain better informed about conditions at origin and build up social capital. Surprisingly, having made visits to Senegal during the stay abroad, a variable which is associated with the links kept with the origin country, is not statistically significant. Finally, individuals who made the trip alone are more likely to invest in housing, possibly because they are pressured to build a house for family members at home.

Table 4.10: *The role of migration-specific characteristics for the first investment (coefficient estimates, standard errors in parentheses)*

	Model 4 ...any type of asset		Model 5b ...land or housing		Model 6b ...business	
	coef.	SE	coef.	SE	coef.	SE
Time since first departure < 4 years	*(ref)*		*(ref)*		*(ref)*	
4-9 years	0.809***	(0.272)	0.707**	(0.281)	1.264*	(0.656)
10-14 years	0.758**	(0.319)	0.782**	(0.326)	0.563	(0.782)
15 years or longer	0.481	(0.349)	0.404	(0.362)	0.370	(0.813)
Current migrant outside Africa $(t-1)$	*(ref)*		*(ref)*		*(ref)*	
Current migrant in Africa	-0.369	(0.351)	-0.578	(0.399)	0.031	(0.682)
Returnee at least 1 yr outside AF	0.532*	(0.284)	0.513*	(0.297)	0.855	(0.552)
Returnee, only spells in AF	-0.129	(0.332)	-0.715*	(0.415)	0.939*	(0.543)
No permit $(t-1)$	*(ref)*		*(ref)*		*(ref)*	
Some type of permit	-0.019	(0.253)	0.149	(0.274)	-0.674	(0.471)
Missing information	0.333	(0.391)	0.346	(0.443)	-0.908	(0.715)
Never remitted $(t-1)$	*(ref)*		*(ref)*		*(ref)*	
Remitted	0.702***	(0.207)	0.792***	(0.223)	0.109	(0.409)
Never member of association $(t-1)$	*(ref)*		*(ref)*		*(ref)*	
Is/was member	0.512***	(0.186)	0.528***	(0.188)	1.013**	(0.391)
Never visited SN $(t-1)$	*(ref)*		*(ref)*		*(ref)*	
Did visit	-0.089	(0.176)	-0.144	(0.182)	-0.078	(0.411)
Migration motive was work	*(ref)*		*(ref)*		*(ref)*	
Other motive	-0.023	(0.171)	0.047	(0.177)	-0.452	(0.364)
Did not travel alone	*(ref)*		*(ref)*		*(ref)*	
Travelled alone	0.450**	(0.180)	0.404**	(0.191)	-0.197	(0.348)
Control variables common with non-migrant spells: see...	**Table 4.8**		**Table 4.9**		**Table 4.9**	
Observations	8,686		8,995		11,159	
Log-likelihood	-891.0		-833.4		-271.3	
χ^2	136.5		151.9		54.4	

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; (ref) indicates the reference category; "§" indicates that the variable is not included in the estimation; *Source: MAFE-Senegal survey (2008)*

4.6.4 Robustness checks

This section reports the results of several robustness checks. Due to the limited number of events, either asset types or non-migrant and migrant/returnee spells must be pooled to obtain convergence in the maximum likelihood estimation of the relevant models.

Adding individual heterogeneity

Table 4.11 depicts the results in the format discussed in Table 4.6 for the model which pools assets and spells, and in Table 4.8 after splitting by spells, once an individual-level random effect has been included. The estimated parameter ρ is significantly different from zero in the case of the pooled model and the migrant spells ($\rho = 0.27$ and 0.33 respectively), but not for non-migrant spells. The introduction of the random effect has the anticipated effects on the model estimates. The positive estimate of the time variable becomes more positive. In the case of the pooled model, the maximum is reached 29 years after the individual becomes at risk (age 47) instead of after 22 years (age 40) in the model without individual heterogeneity. Moreover, the proportional response of the hazard to changes in covariates in the model was attenuated in the model without a random intercept. Nevertheless, the changes in the coefficient estimates are relatively small and do not change the qualitative interpretation of any covariate effect, in particular not the main variables of interest (i.e., the migrant status, the network indicator, as well as education and gender variables).

Table 4.11: *Coefficient estimates for first investment in any asset type with individual random effects (pooled spells; separate models for non-migrant and migrant/return spells)*

Event:	Pooled		Non-mig spells		Migrant/ return spells	
First investment in any type of asset	coef.	SE	coef.	SE	coef.	SE
Pooled/Non-migrant: Time since 18	0.083***	(0.028)	0.106***	(0.037)	0.011	(0.086)
Migrant/return: Age						
Pooled/Non-migrant: Time since 18 squared	-0.001**	(0.001)	-0.002**	(0.001)	0.000	(0.001)
Migrant/return: Age squared						
Non-migrant $(t-1)$	*(ref)*		§		§	
Current migrant outside Africa	0.676***	(0.164)	§		§	
Current migrant in Africa	0.103	(0.360)	§		§	
Returnee at least 1 yr outside Africa	0.971***	(0.324)	§		§	
Returnee, only spells in Africa	0.640**	(0.272)	§		§	
No migrant network $(t-1)$	*(ref)*		*(ref)*		*(ref)*	

Continued on next page

Event:	Pooled		Non-mig spells		Migrant/ return spells	
First investment in any type of asset	coef.	SE	coef.	SE	coef.	SE
Any type of migrant network	0.123	(0.139)	0.134	(0.175)	0.042	(0.262)
Male	*(ref)*		*(ref)*		*(ref)*	
Female	-0.735***	(0.175)	-0.959***	(0.257)	-0.360	(0.260)
Not household head $(t-1)$	*(ref)*		*(ref)*		*(ref)*	
Household head	0.372***	(0.140)	0.517**	(0.204)	0.132	(0.197)
Works $(t-1)$	*(ref)*		*(ref)*		*(ref)*	
Inactive/No income earner	-0.756***	(0.150)	-0.533***	(0.189)	-0.844***	(0.281)
No/primary education	*(ref)*		*(ref)*		*(ref)*	
Secondary education or higher	0.464***	(0.141)	0.685***	(0.198)	0.149	(0.207)
Sufficient resources $(t-1)$	*(ref)*		*(ref)*		*(ref)*	
Insufficient/unstable resources	-0.415***	(0.153)	-0.277	(0.214)	-0.547**	(0.236)
Number of children 0-16 $(t-1)$	0.097***	(0.036)	0.033	(0.044)	0.152**	(0.066)
Single $(t-1)$	*(ref)*		*(ref)*		*(ref)*	
Partnership and same country	0.209	(0.147)	0.387**	(0.195)	-0.038	(0.241)
Partnership and different countries	0.505***	(0.188)	0.630	(0.387)	0.519**	(0.249)
No inheritance $(t-1)$	*(ref)*		*(ref)*		*(ref)*	
Owns inherited asset	-0.379*	(0.226)	-0.559	(0.350)	-0.180	(0.300)
Period before 1980	*(ref)*		*(ref)*		*(ref)*	
1980-1994	-0.297	(0.216)	-0.442*	(0.268)	-0.264	(0.420)
1995-1999	-0.282	(0.240)	-0.345	(0.304)	-0.184	(0.447)
after 2000	0.009	(0.231)	-0.137	(0.284)	0.296	(0.442)
Time since first departure < 4 years	§		§		*(ref)*	
4-9 years	§		§		1.038***	(0.326)
10-14 years	§		§		1.157***	(0.425)
15 years or longer	§		§		0.972**	(0.484)
Current migrant outside Africa	§		§		*(ref)*	
Current migrant in Africa	§		§		-0.404	(0.417)
Returnee at least 1 yr outside Africa	§		§		0.756**	(0.372)
Returnee, only spells in Africa	§		§		-0.111	(0.398)
No permit $(t-1)$	§		§		*(ref)*	
Some type of permit	§		§		-0.126	(0.299)
Missing information	§		§		0.461	(0.475)
Never remitted $(t-1)$	§		§		*(ref)*	
Remitted	§		§		0.897***	(0.274)
Never member of association $(t-1)$	§		§		*(ref)*	
Is/was member	§		§		0.729***	(0.261)
No visits to SN $(t-1)$	§		§		*(ref)*	
Did visit	§		§		-0.024	(0.217)
Motive of migration was Work	§		§		*(ref)*	
Other motive	§		§		0.028	(0.230)
Did not travel alone	§		§		*(ref)*	
Travelled alone	§		§		0.595**	(0.242)
Constant	-5.683***	(0.480)	-5.875***	(0.651)	-6.425***	(1.751)

Continued on next page

4.6. Evidence on the migration-investment relationship from discrete-time event-history models

Event:	Pooled		Non-mig spells		Migrant/ return spells	
First investment in any type of asset	coef.	SE	coef.	SE	coef.	SE
Observations	32,328		23,468		8,686	
Log-likelihood	-2,045		-1,041		-888	
χ^2	127.7		66.1		59.1	
σ_u	1.090		0.850		1.270	
ρ	0.265		0.183		0.330	
LR-Test $\rho = 0$	5.620***		0.632		5.360**	

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; (ref) indicates the reference category; "§" indicates that the variable is not included in the estimation; *Source: MAFE-Senegal survey (2008)*

Accounting for long-term survivors

We next investigate whether and how results change once one accounts for a potential share of "long-term survivors", individuals who are not at risk of investing, using split-population models. The estimated proportion of "never-investors" is statistically different from zero in all three models (pooled assets, land/housing, and business activities, Table 4.12). However, while approximately one out of five individuals never invests in construction land or housing, the share goes up to 80 per cent in the case of business investments. In general, the effect on other statistically significant coefficient estimates is that positive coefficients become more positive and negative ones more negative, or that estimates remain more or less stable, similar to the effects of introducing heterogeneity through an individual random effect. A consequence of this "intensification" effect is that owning an inherited asset becomes significant for the first time, with the negative coefficient indicating that there may be a disincentive to invest if an inherited asset is already owned. An exception is the variable controlling for the period, as the negative effects of more recent periods on housing investments become slightly less negative, and the positive effect of the same periods on business investments becomes less positive. Furthermore, while the positive estimate on the linear time variable is smaller than in the model which does not account for non-investors (any asset, land/housing), the squared term is also less negative. As a result, the maximum is reached only at a later time, 29 years after becoming at risk (age 46), similarly to what has been observed in the random effects model.

Table 4.12: *Split-population models for the first investment in any kind of asset, land/housing, and business activities (*pooled spells*)*

First investment in...	SPM ...any type of asset		SPM ...land or housing		SPM ...business	
Event:	coef.	SE	coef.	SE	coef.	SE
Time (since age 18)	0.059**	(0.025)	0.063**	(0.028)	0.052	(0.044)
Time squared (since age 18)	-0.001*	(0.001)	-0.001*	(0.001)	-0.001	(0.001)
Non-migrant $(t-1)$	*(ref)*		*(ref)*		*(ref)*	
Current migrant outside Africa	0.629***	(0.145)	0.967***	(0.160)	-0.493	(0.346)
Current migrant in Africa	0.144	(0.349)	0.114	(0.406)	0.001	(0.670)
Returnee at least 1 yr outside Africa	0.879***	(0.288)	1.022***	(0.293)	-0.541	(0.627)
Returnee, only spells in Africa	0.647**	(0.262)	0.286	(0.305)	1.092**	(0.454)
No migrant network $(t-1)$	*(ref)*		*(ref)*		*(ref)*	
Any type of migrant network	0.110	(0.130)	0.094	(0.145)	0.002	(0.245)
Male	*(ref)*		*(ref)*		*(ref)*	
Female	-0.660***	(0.139)	-0.585***	(0.154)	-1.092***	(0.296)
Not household head $(t-1)$	*(ref)*		*(ref)*		*(ref)*	
Household head	0.343***	(0.129)	0.345**	(0.140)	0.176	(0.270)
Works $(t-1)$	*(ref)*		*(ref)*		*(ref)*	
Inactive/No income earner	-0.735***	(0.141)	-0.978***	(0.173)	-0.006	(0.258)
No/primary education	*(ref)*		*(ref)*		*(ref)*	
Secondary education or higher	0.417***	(0.122)	0.544***	(0.134)	-0.091	(0.262)
Sufficient resources $(t-1)$	*(ref)*		*(ref)*		*(ref)*	
Insufficient/unstable resources	-0.370**	(0.147)	-0.422***	(0.161)	-0.521*	(0.295)
Number of children 0-16 $(t-1)$	0.088***	(0.033)	0.068*	(0.036)	0.084	(0.054)
Marital status single $(t-1)$	*(ref)*		*(ref)*		*(ref)*	
Partnership and same country	0.219	(0.141)	0.346**	(0.159)	0.021	(0.270)
Partnership and different countries	0.511***	(0.180)	0.605***	(0.194)	0.247	(0.507)
No inheritance $(t-1)$	*(ref)*		*(ref)*		*(ref)*	
Owns inherited asset	-0.398*	(0.208)	-0.365*	(0.219)	0.134	(0.510)
No land owned $(t-1)$	§		§		*(ref)*	
Owns acquired land	§		§		0.895**	(0.397)
No dwelling owned $(t-1)$	§		§		*(ref)*	
Owns acquired dwelling	§		§		0.979**	(0.443)
No business owned $(t-1)$	§		*(ref)*		§	
Owns acquired business	§		0.406	(0.261)	§	
Period before 1980	*(ref)*		*(ref)*		*(ref)*	
1980-1994	-0.214	(0.201)	-0.450**	(0.213)	0.955*	(0.554)
1995-1999	-0.174	(0.223)	-0.520**	(0.239)	1.323**	(0.575)
after 2000	0.111	(0.217)	-0.414*	(0.230)	1.622***	(0.572)
Constant	-4.792***	(0.274)	-5.070***	(0.302)	-5.293***	(0.656)
Constant -never invest	1.402***	(0.235)	-1.352***	(0.507)	-1.083***	(0.365)
Pr(never invest)	0.253	(0.069)	0.206	(0.083)	0.802	(0.037)
Observations	32,328		33,138		36,125	

Continued on next page

4.6. Evidence on the migration-investment relationship from discrete-time event-history models

Event:	SPM . . . any type of asset		SPM . . . land or housing		SPM . . . business	
First investment in. . .	coef.	SE	coef.	SE	coef.	SE
Log-likelihood	-2,045		-1,675		-802	
χ^2	349.9		395.0		74.1	
LR test Pr(never invest)=0	5.750***		3.360**		9.540***	

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; (ref) indicates the reference category; "§" indicates that the variable is not included in the estimation; *Source: MAFE-Senegal survey (2008)*

Correlation between time to investments in real estate and businesses

The estimated correlation coefficient for the simultaneous discrete-time duration models is positive and statistically significant (Table 4.13). Individuals whose unobserved characteristics make them more likely to invest in land or housing also tend to invest in business activities. Once this positive correlation is accounted for, the estimated coefficients for variables indicating previous asset ownership become insignificant. The joint estimation of the two processes does not affect the interpretation of other covariates. The direction and magnitude of the effects are comparable to those estimated in the single process models. Moreover, the fact of using repeated events instead of the first investment only does not change the conclusions with regard to the main variables of interest (i.e., migrant status, network variable). The main difference lies in the interpretation of the time variable, which is now reset to zero every time an investment occurs. The negative coefficient indicates negative duration dependence, once age is controlled for.

Table 4.13: *Coefficient estimates from simultaneous equation model with outcomes land/housing and business (pooled spells)*

Event: Repeated investment in. . .	Single process land or housing		Single process business		Corr. process land or housing		Corr. process business	
	coef.	SE	coef.	SE	coef.	SE	coef.	SE
Time	-0.058***	(0.012)	-0.130**	(0.053)	-0.062***	(0.012)	-0.142**	(0.062)
Age	0.168***	(0.045)	0.299***	(0.091)	0.170***	(0.044)	0.303***	(0.092)
Age squared	-0.001	(0.001)	-0.002**	(0.001)	-0.001	(0.001)	-0.002*	(0.001)
Non-migrant $(t-1)$	*(ref)*		*(ref)*		*(ref)*		*(ref)*	
Current migrant outside Africa	1.255***	(0.170)	-0.305	(0.334)	1.261***	(0.172)	-0.266	(0.331)
Current migrant in Africa	0.636*	(0.363)	-0.133	(0.661)	0.750**	(0.364)	-0.079	(0.642)
Returnee at least 1 yr outside Africa	0.957***	(0.298)	0.238	(0.557)	0.976***	(0.293)	0.280	(0.547)
Returnee, only spells in Africa	-0.001	(0.351)	1.078**	(0.452)	0.123	(0.393)	1.024**	(0.439)
No migrant network $(t-1)$	*(ref)*		*(ref)*		*(ref)*		*(ref)*	

<div align="right">*Continued on next page*</div>

Event: Repeated	Single process land or housing		Single process business		Corr. process land or housing		Corr. process business	
investment in...	coef.	SE	coef.	SE	coef.	SE	coef.	SE
Any type of migrant network	-0.016	(0.158)	-0.253	(0.274)	-0.043	(0.157)	-0.249	(0.261)
Male	*(ref)*		*(ref)*		*(ref)*		*(ref)*	
Female	-0.832***	(0.188)	-1.001***	(0.330)	-0.846***	(0.185)	-1.031***	(0.329)
Not household head $(t-1)$	*(ref)*		*(ref)*		*(ref)*		*(ref)*	
Household head	0.342**	(0.146)	0.127	(0.270)	0.318**	(0.144)	0.105	(0.263)
Works $(t-1)$	*(ref)*		*(ref)*		*(ref)*		*(ref)*	
Inactive/No income earner	-0.817***	(0.168)	-0.142	(0.267)	-0.816***	(0.166)	-0.097	(0.260)
No/primary education	*(ref)*		*(ref)*		*(ref)*		*(ref)*	
Secondary education or higher	0.697***	(0.162)	0.058	(0.265)	0.679***	(0.160)	0.096	(0.261)
Sufficient resources $(t-1)$	*(ref)*		*(ref)*		*(ref)*		*(ref)*	
Insufficient/unstable resources	-0.580***	(0.179)	-0.402	(0.294)	-0.575***	(0.176)	-0.419	(0.288)
Number of children 0-16 $(t-1)$	0.035	(0.035)	0.099*	(0.056)	0.037	(0.036)	0.105*	(0.058)
Single $(t-1)$	*(ref)*		*(ref)*		*(ref)*		*(ref)*	
Partnership and same country	0.398**	(0.159)	-0.027	(0.276)	0.426**	(0.157)	-0.011	(0.272)
Partnership and different countries	0.664***	(0.192)	0.349	(0.372)	0.646***	(0.193)	0.379	(0.363)
No inheritance $(t-1)$	*(ref)*		*(ref)*		*(ref)*		*(ref)*	
Owns inherited asset	-0.233	(0.232)	-0.237	(0.434)	-0.234	(0.229)	-0.264	(0.422)
No dwelling owned $(t-1)$	§		*(ref)*		§		*(ref)*	
Owns acquired dwelling	§		0.484	(0.381)	§		-0.224	(0.431)
No business owned $(t-1)$	*(ref)*		§		*(ref)*		§	
Owns acquired business	0.496**	(0.252)	§		-0.058	(0.317)	§	
Period before 1980	*(ref)*		*(ref)*		*(ref)*		*(ref)*	
1980-1994	-0.679***	(0.221)	0.913	(0.582)	-0.695***	(0.219)	0.952*	(0.576)
1995-1999	-0.745***	(0.257)	1.441**	(0.613)	-0.751***	(0.254)	1.461**	(0.606)
after 2000	-0.385	(0.253)	1.827***	(0.616)	-0.387	(0.251)	1.845***	(0.612)
Constant	-9.022***	(0.890)	-13.820***	(2.012)	-8.940***	(0.858)	-13.750***	(2.087)
Observations		70,489				70,489		
Cases		1,666				1,666		
Log-likelihood		-2,962				-2,957		
Estimated residual correlation ρ						0.430		
Test $\rho = 0$: LR-Test $LR \sim \chi^2(1)$						9.820***		

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; (ref) indicates the reference category; "§" indicates that the variable is not included in the estimation; *Source: MAFE-Senegal survey (2008)*

4.7 Discussion and Conclusion

Overall, the empirical findings support the hypothesis of a *direct effect* of international migration on investment in the Senegalese context: personal international migration expe-

rience stimulates asset acquisition in the origin country. Moreover, whether an investment is made in real estate assets or a business activity depends on the migrant status (still abroad or returned to Senegal) and on the destination region of the migration (Africa or Europe). To some extent, we observe a specialisation of current migrants in construction land or housing, and of return migrants in business activities. However, the role of the destination region appears to be more important in explaining whether investments are made in housing or businesses than the timing in the migration cycle. Living or having lived in Europe increases the likelihood of investment in land or dwellings, while business owners are predominantly found among returnees who had migrated to other African countries, and not those who lived in Europe. Responses to the open question on business asset characteristics suggest that these are rather small scale and may entail predominantly survival strategies, rather than the outcome of a migration strategy which involves productive investment. More in-depth qualitative analyses, which assess the value and sustainability of the acquired assets, would be a valuable complement. The results also call for further research on the role of the destination region on the propensity to invest in order to understand the relative importance of self-selection into a specific destination region and the destination context during the stay abroad. However, given the variety of processes at play (into migration, into return, each by destination region, and the two types of assets), modelling selection effects jointly with the investment decision is not straightforward.

With regard to the hypothesis regarding the *"equalizing effect"* of migration, the results suggest that moving abroad may be a way to overcome certain social disadvantages. This especially holds from a gender perspective: among non-migrants, women are less likely to invest than men, while there is no gender gap among migrants. Similarly, the *"equalizing effect"* seems to function in relation to education levels. Lower-educated migrants tend to be less disadvantaged regarding access to property than non-migrants with similar education. However, our results also show that migration does not compensate for the family background: migrants originating from modest families do not gain any advantages in terms of investment compared to those with a wealthier background, if one takes inheritances as an indicator.[19] All in all, international migration appears to reduce gender inequalities. Being abroad in a different social context seems to break up encrusted social hierarchies and provide opportunities for capital accumulation and bargaining power to women who are disadvantaged in terms of asset ownership in their origin environment.

[19]We also tested other variables (the socio-economic status of the father, type of housing or subjective well-being of the household during childhood), but suppressed the output since no significant relationship to investment could be established, neither for migrants nor for non-migrants.

Finally, the hypothesis referring to the *indirect effect* of migration on investment is not supported by the data. Non-migrants with access to migrant networks are as likely to invest as non-migrants without any migrant network. This result is robust to varying the specification of the migrant network variable and the type of asset. The analysis suggests that the effect of international migration works primarily at the individual level: migrants invest by themselves, but gains from migration are not used by people from a larger social circle, including close family, to access asset ownership. This result is not consistent with the notion of a strong "African solidarity" in extended social groups and is more in line with the argument that African solidarity norms have been changing towards more individualistic behaviour, especially in urban areas (Vidal, 1994).

However, these observations need to be qualified in view of the limitations of this research. The absence of the indirect effect may also result from the fact that the sample of non-migrants is, at the time of the survey, confined to the region of Dakar. Previous research on Mexico highlights that migrant networks act differently in rural and urban locations (Fussell and Massey, 2004). The same may apply to Senegal, where migration from rural areas has been described as a community matter, regarding both the decision to out-migrate and the benefits of migration (Guilmoto, 1998). Furthermore, migrants' investments may have secondary effects on non-migrants. Even if the migrant is the asset owner, other relatives could well be using the asset (living in the house, working in the business, etc.) and reaping an indirect benefit of migration. The finding that migrants are more likely to construct or purchase a dwelling when their spouse lives in another country suggests that dwellings are used by the family. Migrants may also donate or bequeath assets to non-migrants, who would thus become asset owners without having invested themselves. Indeed, exploratory analysis of MAFE data shows that the percentage of owners who inherited or received the asset from a relative or friend is approximately twice as high among non-migrants as among individuals with migration experience. Finally, a development of the econometric methodology which would account for the potential endogeneity of the migrant network as well as the individual migrant status may provide more optimistic results regarding the indirect effect of migration on non-migrants' investments.

Chapter 5

The role of international migration experience for occupational status: Evidence from Dakar

5.1   Introduction and context

The occupational status of return migrants has increasingly attracted the interest of researchers and policy makers as one of the channels through which migration can impact positively on economic development. Return migrants may have acquired new know-how, skills and ideas, financial capital and social contacts during their stay abroad, all of which could be helpful in setting up a business, finding a job and bringing the new resources to use. However, migration may also have disruptive effects on their labour market reintegration. Financial resources accumulated during the stay abroad may be insufficient to start a business activity; social ties at the origin, which are often crucial in accessing wage-employment, may be weakened; or limited transferable know-how may have been acquired abroad. Besides, depending on the migration and return motives as well as the economic and social context in which the return takes place, returnees may also decide not to participate in the labour market, to retire or to depart again for another stay abroad. A considerable amount of empirical research has investigated the occupational status of returnees, in particular with regard to their involvement in business activities. Country and regional contexts examined include Egypt (Wahba and Zenou, 2009), Albania (Kilic et al.,

2007; Piracha and Vadean, 2010), Moldova (Borodak and Piracha, 2011), Pakistan (Ilahi, 1999), the Maghreb (Mesnard, 2004; Tani and Mahuteau, 2008; Gubert and Nordman, 2008) and Mexico (Lindstrom, 1996).

Despite this growing interest, little evidence exists on return migration and returnees' labour market reinsertion in the context of Sub-Saharan Africa. Moreover, most authors have focused on the role of return migrants in promoting business activities, since entrepreneurship may be seen as a "binding constraint" on economic development (Naudé, 2010). Analysing wage-employment and the fact of being out of the labour force may provide insights into alternative strategies of return migrants, who may have acquired foreign know-how useful in a salaried job rather than in a business activity and, as noted above, may also drop out of the labour market after their return. The objective of the chapter is to assess to what extent the fact of being a return migrant influences occupational status in the region of Dakar in Senegal and to thus contribute a Sub-Saharan African perspective to the growing literature on return migration and occupational status. Do returnees benefit from their migration experience by gaining easier access to the labour market than non-migrants or do they drop out of the income-generating labour force? Are they more involved in entrepreneurial activities than individuals without migration experience, as empirical evidence from other countries suggests? And do returnees achieve occupations that are higher in terms of socio-economic status and prestige than non-migrants? These questions are investigated by means of three different econometric approaches, namely multinomial logistic regressions, decomposition analysis and propensity score matching. Conclusions will thus rely on more than one empirical method. Moreover, this approach provides insights into advantages and disadvantages of the listed methods when working with relatively small samples.

The analysis of determinants of occupational status needs to be placed in the context of the Senegalese labour market, or, more specifically, the labour market conditions in the Dakar region where non-migrants and return migrants examined in the sample reside.[1]

---

[1]Senegalese labour market data are incomplete, contradictory, and tend to be obsolete, since summary statistics are only disseminated several years after data collection. At the national level the main sources are the population census (2002), the Senegalese Household Survey (ESAM II in 2001/2002) and the poverty measurement survey (ESPS in 2005). Moreover, the first phase of the 1-2-3 survey on the labour market in Dakar (in 2002) and the survey on household expenditures in the capital (EDMC in 2008) provide additional information on the Dakar region. Unfortunately, different definitions have been used for key labour market indicators, in particular the threshold for the working-age population, which ranges from six to 15 years, as well as the indicators adopted for unemployment and underemployment. As a consequence, statistics differ considerably even for the year 2001-2002, for which three different data sources are available. The statistics reported in this summary all use age ten as the threshold to define the working-age population.

Despite the rebound of economic growth after the devaluation of the Franc CFA in 1994, Dakar remained characterised by a low economic activity rate of 51% at the start of the new century (1-2-3 survey, DPS, 2004b), accompanied by persistent urban unemployment and underemployment. According to data from the second Senegalese Household survey (ESAM II, DPS, 2004c), half of the unemployed in Senegal reside in the capital city and surrounding region. Moreover, unemployment particularly affects the young as well as the better educated who are not household heads (1-2-3 survey, DPS, 2004b). The situation seems to have improved over recent years. The share of the usually economically active population rose to 54% in 2005 (ESPS, ANSD, 2007) and to 70% in 2008 (EDMC, ANSD, 2010). This development may also reflect an increase in female labour market participation. Moreover, the most recent statistics suggest a drop in unemployment rates to 10% (EDMC, ANSD, 2010).

However, the sustained population growth, which more than doubled the Senegalese population over the past 30 years, is expected to continue exerting pressure on the urban labour market. The demand response to this increase in labour market supply was considerable, as the number of workers in Dakar also doubled over the past decade. Trading activities contributed the largest share of employment growth and the trade sector continues to be the most dynamic one, growing at an annual rate of approximately six per cent (national accounts data, World Bank, 2007). However, job creation occurred primarily in the informal sector[2], where 97% of new jobs were generated between 1995 and 2004 (national accounts data, World Bank, 2007). The trend towards further informalisation is also reflected in the figures on the distribution of workers across public, private formal and informal sectors. While in 2001/2002 the informal sector provided work for 77% of the working population (1-2-3 survey, DPS, 2004b), its share went up to 83% in 2008 (EDMC, ANSD, 2010). Within the informal sector, self-employment represents around half of all employment among men and an even higher share among female labour market participants. Moreover, businesses in the informal sector are very small. Only one out of five informal sector jobs are in businesses with six to 20 employees, the rest is constituted by workers in microenterprises and self-employment (1-2-3 survey, DPS, 2004b). The large majority in the informal labour market works at very low levels of income (at a median value of 34,000FCFA[3] per month, World Bank, 2007) mirroring low productivity and education levels (3.3 years of education). Nonetheless, some individuals in the

---

[2]The informal sector is defined as (i) all units of production without NINEA (numéro d'identification national des entreprises et des associations) or taxpayer number, (ii) in the case of employers and of self-employed workers, those who do not keep their accounts (World Bank, 2007).

[3]34,000 FCFA = 51 Euro in 2007

informal market reach income levels that are equivalent to or even higher than those in the public sector (World Bank, 2007). For this group, participation in the informal sector may be opportunity-driven rather than survivalist, as they may face lower bureaucratic hurdles and tax burdens than in the formal sector (World Bank, 2007). Overall, though, the public sector remains the most attractive labour market sector in terms of salaries and work conditions, especially for individuals pursuing higher education (1-2-3 survey, DPS, 2004b). Yet, the sector's employment share has decreased steadily since the implementation of structural adjustment programmes in the 1980s (DPS, 2004c). It employs now only 7% of the working population (EDMC, ANSD, 2010). The remaining 10% are working in the private formal sector, which is characterised by a dependent employment ratio of 84% and situates itself in between the informal labour market and the public sector in terms of wage and education characteristics of workers (1-2-3 survey, DPS, 2004b).

Both wage employment and self-employment categories are likely to contain heterogeneous types of activities and attract therefore heterogeneous types of returnees. The activities reported by self-employed non-migrants and return migrants in the context of the MAFE survey (the data source described in Chapter 2) illustrate the breadth, diversity and quality of the type of work performed in self-employment. While, for instance, a large number of individuals report activities in the trade sector, occupations range from street vendors to shop-owners and other wholesale activities. Similarly, one finds tailors who work from home and tailors with a workshop and sales shop, or some electricians who work alone but others having employees. Although constituting a smaller number, there also appear to be examples of highly educated self-employed workers, (e.g., accountants, translators, or doctors).

The next section provides an overview of the theoretical and empirical literature on the role of past migration experience for occupational status. Section 5.3 discusses the data and variables of interest and describes the methods. Findings are presented and discussed in section 5.4 and the final section concludes, examines the limitations of this study, and raises questions for further research.

5.2 A review of the theoretical and empirical literature on occupation and return migration

5.2.1 Theoretical literature

Both the migration literature and the occupational choice literature, in particular the entrepreneurship literature, can provide insights into the way past migration experience can influence occupation outcomes (Démurger and Xu, 2011). Occupational status is generally modelled as a discrete choice with multiple unordered outcomes, where individuals adhere to the status with the highest expected utility, given their individual observable and unobservable characteristics and institutional factors (Schmidt and Strauss, 1975). The question is, when undertaking comparisons with those individuals who never migrated, under what conditions migration experience can be an additional or intervening factor in explaining the occupational outcome.

Self-employment

Factors emphasized by different strands of the entrepreneurship literature as determinants of entrepreneurship include, in addition to preferences, entrepreneurial ability (Kaldor, 1934; Lucas, 1978), the willingness to take risks (Knight, 1921; Kanbur, 1982) (both typically unobserved individual characteristics), as well as liquidity constraints (Evans and Jovanovic, 1989; Blanchflower and Oswald, 1998; Fonseca et al., 2001). Liquidity constraints are considered by most authors to be a binding constraint, and results regarding the positive relationship between wealth and the probability of entrepreneurship support this hypothesis (Evans and Leighton, 1989; Evans and Jovanovic, 1989; Holtz-Eakin et al., 1994; Blanchflower and Oswald, 1998 and Mesnard, 2004 for the specific case of return migrants).

The question of liquidity constraints in the context of imperfect credit markets is furthermore crucial in the New Economics of Labour Migration (NELM) literature (Stark, 1991). NELM broadens the concept of utility-maximization in the migration decision beyond the notion of earnings maximization by including non-monetary aspects, extending from individual to a group utility, and, crucially in the context of developing countries, by accounting for market imperfections at origin. When credit markets are non-existent or imperfect, and start-up capital cannot be borrowed, migration may provide the oppor-

tunity to accumulate sufficient savings for subsequent investment at home (Stark, 1991; Mesnard, 2004; Yang, 2006). Under these conditions, return migrants would be more likely to start a business than comparable non-migrants. Individuals planning to become entrepreneurs may self-select into migration and return, with the consequence of making the return migrant status an endogenous variable. Moreover, the unobserved characteristics identified as factors determining entrepreneurship, such as the level of risk aversion and traits linked to entrepreneurial ability (being alert to opportunities), may also be factors driving selection into migration (Chiswick, 1978; Borjas, 1987; Borjas and Bratsberg, 1996).

Relating the entrepreneurship literature, which has predominantly been developed in the context of industrialised countries (Naudé, 2010), to patterns of migration, return, and occupational status in a developing country framework, can pose some additional challenges. Finer distinctions of the self-employment status would be needed in order to distinguish between "opportunity-driven" entrepreneurship and "survivalist" self-employment activities (Gries and Naudé, 2010), which some authors even classify as "disguised unemployment" (Earle and Sakova, 2000). These are individuals who are not able to find a salaried job, and whose self-employed status is involuntary, similar to the unemployed. According to Gries and Naudé (2010), entrepreneurs "innovate, spot profitable opportunities, and reallocate resources", and are those who make productive contributions to the economy. At the same time, other research set in a developing country context suggests that, even if the average self-employed activity does not create many jobs, welfare gains may be found at the individual level by moving individuals out of poverty (Tamvada, 2010). Furthermore, small self-employment activities may even serve as a stepping stone towards entrepreneurship (Bennett, 2010). Overall, the heterogeneity of self-employed activities discussed in the literature suggests that empirical research should take account of the quality of the activity.

Wage-employment

As in the case of self-employment, individuals become wage-employed if the expected utility of wage-employment exceeds the expected utility of becoming self-employed or staying out of the labour market, depending, among others, on job productivity and human capital (Evans and Jovanovic, 1989). Furthermore, human capital theory of migration stresses that return to the home country may be motivated by the fact that human capital accumulated in the host country, if transferable, may achieve higher relative returns at home

than in the destination country (Dustmann, 2000). Foreign education obtained abroad, for example, could situate the migrant in the middle of the host country distribution, but among the educational elite in the origin country. This human capital premium is a potential determinant of return migration and could at the same time induce returnees to take up wage-employment after their return. Analogous to the role of liquidity constraints for self-employment, migration may also help overcome know-how constraints that are necessary for certain salaried jobs. The effect is enhanced if the fact of having acquired foreign work experience can be used to signal to potential employers that one is more productive or can contribute specific know-how when these characteristics are initially unobservable (Iara, 2006). A factor that speaks against returnees being more successful in accessing waged jobs than non-migrants is that staying abroad tends to involve an interruption of work experience in the origin country and the loss of social networks, which are often crucial in accessing jobs (Muschkin, 1993). As a consequence, relatively high search costs may provide a disincentive to return migrants to attempt entering the waged labour market (Dustmann and Kirchkamp, 2002).

"No income" earner

In static neoclassical migration models, the migration decision is based on a cost-benefit analysis by the potential migrant (Sjaastad, 1962; Harris and Todaro, 1970). Under the assumption of sustained wage differentials, migration is considered to be a permanent event, and the main reason why return migration is observed is attributable to failed migration projects. It is likely that the returnee faces difficulties in the context of a "failed" migration. Insufficient financial, human or social capital is accumulated abroad, and the migration episode interrupts the work experience in the home country. In such a situation, one can expect that returnees remain, at least temporarily, out of the labour market. The status would thus have zero utility, and would constitute a residual category when neither self-employment nor wage-employment is accessible. However, under certain conditions, staying out of the labour market may be a utility-maximising choice. A further reason for return migration noted by the NELM literature is the potentially higher purchasing power of the host country currency in the home country (Stark et al., 1997). Under such conditions, retirement return migration can be a dominant pattern, whereby the migrant with preferences for consumption in the home country returns after the end of the working life in order to spend accumulated savings in the country of origin.

5.2.2 Empirical literature

The empirical literature on the occupational status of return migrants can be divided into two types. Studies either compare return migrants to non-migrants, or the analysis is restricted exclusively to returnees. In the latter case, authors examine the occupational status of return migrants at a given point in time or study the pre- to post-migration occupational mobility as a function of the migration experience and return characteristics (Mesnard, 2004; Mesnard and Ravallion, 2006; Black and Castaldo, 2009; Dustmann and Kirchkamp, 2002; Tani and Mahuteau, 2008; Shima, 2010; McCormick and Wahba, 2001; Ilahi, 1999; Gubert and Nordman, 2008). The following review considers only the first type, as it is closer to the empirical analysis proposed in this chapter. Studies have analysed different combinations of occupational outcomes, in particular the binary outcomes employment versus non-employment and self-employment versus wage-employment, as well as more complete sets of outcomes, including also labour market inactivity.

Muschkin (1993) considers only employment and unemployment as outcomes in her study of the role of return migrant status in Puerto Rico. She finds a negative effect of return migrant status both on obtaining and retaining employment. This effect is amplified in the case of individuals who returned recently (within 15 months prior to the census enumeration) and who spent five or more years in the United States.

The majority of studies focus on the role of past migration experience for entrepreneurship as compared to wage-employment. Evidence from diverse country contexts generally concurs in the view that the proportion of entrepreneurs is higher among return migrants than non-migrants, and points towards the role of capital mobilisation in overcoming credit constraints in the origin country. Wahba and Zenou (2009) define Egyptian entrepreneurs as individuals who are employers or own a non-farm economic unit. Estimating a recursive bivariate probit model in order to account for the potential endogeneity of the return migrant status, they find that returnees are more likely to become entrepreneurs than non-migrants. Moreover, the findings highlight that social networks may also be important in accessing business opportunities. Indeed, networks matter for non-migrants, but not for returnees, suggesting that the migration experience compensates to some extent for the loss of social networks during migration. Démurger and Xu (2011) apply the same econometric approach when analysing the role of past internal migration experience in China on entrepreneurship. Using a definition of entrepreneurship that groups own account workers and employers, the findings suggest a positive impact of the return migrant status. The study by Kilic et al. (2007) considers non-farm business ownership and migration at the

level of the household instead of the individual and examines the Albanian case. Based on data from the 2005 Albanian Living Standards Measurement survey, the authors estimate separate models by country of destination (Greece and Italy), as well as by the decade during which the last migration episode occurred. The explanatory variable of interest is the number of months spent abroad by all household members, and instrumental variable probit models are estimated to account for the variable's potential endogeneity. The empirical findings indicate that the positive effect of return migration is larger for households with returnees who had migrated to Italy, which the authors interpret as the result of Italy offering better job prospects than Greece. Moreover, households with returnees who came back to Albania more recently are not found to differ from non-migrant households. The explanation offered by the authors is that recent return migrants have not yet finished their "migration cycle" and need to experience further migration episodes in order to accumulate sufficient financial or human capital.

The situation of Albanian returnees is also examined by Piracha and Vadean (2010). In contrast to studies summarized above, they distinguish between employers/entrepreneurs on the one hand and own account workers on the other, based on the self-reported occupation of respondents. The results suggest that past migration experience has a positive effect on both statuses, but that the effect is significantly stronger for entrepreneurship. Moreover, similar to the empirical research proposed in this chapter, the authors consider wage-employment and being out of the labour market as alternative occupational statuses. Albanian returnees appear to be less likely to be wage-employed than non-migrants, and slightly less likely to be out of the labour force.

The analysis by De Vreyer et al. (2010) is the only empirical study that includes data on Senegal. Based on the 1-2-3 survey conducted in 2001/2002 in seven major cities in the West African Economic and Monetary Union (WAEMU), including Dakar, the authors investigate the economic returns to migration experience. The emphasis of the study lies on estimating wage premiums for salaried workers and value-added for microenterprises. However, part of the analysis consists of estimating multinomial logit regressions of occupation status, with the following outcomes: public and private sector wage-employed, entrepreneurs, who are defined as having paid or unpaid dependent workers in either the formal or informal sector, and informal workers. In this step, the authors do not account for the potential endogeneity of the return migrant status.[4] The authors use the pooled data set across the seven cities, and it is therefore not possible to single out the situation

[4]The authors account for the potential endogeneity of return migrant status in the wage regressions and the production function.

in Dakar. Overall, return migrants in West Africa are less likely to be wage-employed in the public or private sector than non-migrants. A statistically significant positive effect on being an entrepreneur is found only for individuals who returned from an OECD country, not from other migration destinations.

Previous studies point, therefore, towards a positive relationship between return migrant status and self-employment, which plays a predominant role over wage-employment. Moreover, there is some evidence that, at the average, return migrants succeed in becoming entrepreneurs, not only own account workers. The results with regard to labour participation are somewhat mixed.

5.3 Data and empirical approach

5.3.1 Analysis sample and construction of variables

Similar to the preceding chapters, data from the individual-level biographic MAFE-Senegal survey are used for the analysis. Our research question focuses on the comparison of the occupational status of return migrants and non-migrants by the time of the survey. Therefore, we constrain the data to the Senegalese sub-sample, which is representative of the region of Dakar in 2008, and exclude return migrant episodes from Senegalese living in Europe at the time of the survey from the analysis. Moreover, our research question requires comparing non-migrants and returning migrants at a defined point in time. While a study of occupational transitions over time would certainly be interesting, this type of analysis goes beyond the scope of this study. Therefore, data on the current migration and occupational status are examined instead of complete activity histories, and individual characteristics are predominantly measured in the survey year. Still, selected past characteristics obtained from the retrospective histories are exploited as instrumental variables, as explained in the following section on the empirical methodology. Moreover, retrospective information is used to compute a series of descriptive statistics that illustrate characteristics of return migrants' stay abroad (Table 5.1).

Return migrants are identified based on the questionnaire module recording the housing history, which contains housing episodes lasting at least one year. Returnees, as defined in the analysis, thus lived for at least one year abroad. This definition is relatively restrictive compared to other studies (e.g. one month in Piracha and Vadean, 2010). Shorter stays abroad are also captured in the MAFE survey. However, except for three cases for which

respondents declared that they intended to live abroad, stays of less than one year recorded for the Senegalese sample are comprised of holidays, family visits and short business trips. These types of short stays cannot be equated with the experience of a longer migration with regard to opportunities for accumulation or loss of financial, human and social capital. The threshold of one year thus seems to be adequate in the context of this analysis. Since migrations in the early childhood are likely to follow different patterns than migrations during youth and adulthood, when individuals are more actively involved in the migration decision-making process, we drop observations of return migrants who left Senegal before age 15. An additional reason for the exclusion of these individuals is the need to measure certain characteristics before the first departure. The selected sample consists of 870 non-migrants and 175 return migrants, who are, according to the sampling criteria, aged between 25 and 75 years, born in Senegal and of present or past Senegalese nationality. The minimum age of 25 ensures that the difficult situation of the young on the labour market in Dakar is not considered in the analysis (Diagne, 2005).

Although the empirical analysis proposed in this chapter focuses on the average return migrant, a short discussion of the characteristics of the 175 return migrants analysed can enhance the interpretation of the findings (Table 5.1).

Table 5.1: *Migration experience characteristics of return migrants in the selected sample ($n = 175$)*

Variable	Categories/description	Mean (proportion); not weighted by sampling weights	Mean (proportion); weighted by sampling weights
Lived in	% Europe/North	0.35	0.24
	% only Africa	0.65	0.76
Migration duration	Average number of years spent abroad	6.60	5.80
Age at departure	Average age in years	25.30	25.00
Age at return	Average age in years	31.90	30.40
Period of first departure	Before 1986	0.43	0.35
	1986-1995	0.30	0.33
	1996 or later	0.27	0.32
Period of last return	Before 1986	0.21	0.17
	1986-1995	0.27	0.28
	1996 or later	0.52	0.55
Studied abroad	Yes, at least one (academic) year	0.15	0.10
	No	0.85	0.90
Worked abroad	Yes, at least one year	0.73	0.80
	No	0.27	0.20
Several returns	At least one previous return experience	0.20	0.13
	First return experience	0.80	0.87

Source: *MAFE-Senegal survey (2008)*

The majority of return migrants lived in another country in Africa rather than in Europe. Migration durations are relatively long. This suggests, together with the fact that most return migrants had only experienced one migration episode and return, that circulatory migration with shorter and repeated stays is not very prominent. Returnees moved abroad at a relatively young age, and return at the average when they are 30 years old, thus well before the retirement age. The statistics on the period of first departure and last return suggest that return migrants may have faced rather diverse departure and return contexts. Moreover, less recent returnees in the sample have had more opportunities to re-adjust to the labour market conditions in Dakar than individuals who returned from abroad more recently. A limitation in examining the average return migrant is that this heterogeneity will not be captured. Regarding the occupational status abroad, the retrospective activity histories indicate that only a minority acquired human capital through formal education, and that four out of five return migrants gained foreign work experience.

Having defined the population of interest, we now turn to the occupational outcome measures. The main outcome variable is the self-reported occupational status in 2008, distinguishing between the three broad categories of wage-employed, self-employed and "no income earners". Due to the relatively low number of observations, certain types of occupations have been conflated in one outcome category. The "self-employed" category also contains the few individuals who declared to be employers (17 persons), and the data do not permit the further differentiation of this category in order to account for productivity and size, informality or formality or the sector of the business activity. This is unfortunate, given the theoretical and empirical suggestions regarding the heterogeneity of self-employment activities in a developing country context. Moreover, individuals who work as a family help or intern are grouped together with those who are inactive or unemployed into a group of "no income earners".

To gain at least some insights into the quality of occupations taken up by non-migrants and returnees, we use two internationally standardized continuous occupational rankings, Ganzeboom et al.'s International Socioeconomic Index of Occupations (ISEI) and Treiman's Standard International Occupational Prestige Scale (SIOPS), in parts of the analysis. Ganzeboom and Treiman (1996) highlight that, while socioeconomic index scales and prestige scores are generally found to be correlated, they are based on different concepts and computation methods. On the one hand, the socioeconomic index is computed as a weighted sum of key socioeconomic characteristics, in particular income and education, for individuals in each occupation. Prestige scores, on the other hand, rely on subjective evaluations of the general desirability of occupations that are collected through

general population surveys or by groups of experts. Both measures have initially been developed at national and local levels. Based on a large set of national measures, the internationally standardized measures ISEI and SIOPS have been constructed by Treiman (1977) for the case of prestige scores, and Ganzeboom et al. (1992) for the case of the socioeconomic index. ISEI scores range from 16 (farm-hands; cleaners in offices, restaurants and other establishments) to 90 (judges), the SIOPS scores from 12 (street services such as shoe shiner, car window washer) to 78 (medical doctors; university professors). The standard international scores are used in this analysis since measures specific to Senegal are not available. When interpreting the measures, one should thus bear in mind that they may be less suited to the Sub-Saharan context, since local correlates of status and perceptions about prestige of an occupation may differ from those implied in international measures.[5] For the analysis in this chapter, the SIOPS and ISEI variables were constructed by recoding an open question on job and task descriptions in the survey into ISCO-88[6], and applying, in a second step, the correspondence tables between ISCO-88 and the two international occupational measures provided by Ganzeboom and Treiman (1996). The occupations contained in the data reflect almost the entire breadth proposed by the two measures. The ISEI scores range from 16 to 88 and SIOPS scores from 13 to 78.

The income variable used in the exploratory descriptive analysis refers to revenues from all types of sources, in the last month of a given employment episode.[7] The absolute and relative deprivation variables are subjective well-being measures at household level. Most control variables have been constructed from the individual survey data, using either questions on time invariant characteristics or the information about the ongoing episode in the life histories to define characteristics such as marital status at the time of the survey. A variable measuring household size is constructed matching the individual data to the household survey data and using information about the location of household members contained in the household grid.

---

[5]The data used for the ISEI computation (International Social Survey Programme), for instance, do not include countries in Sub-Saharan Africa except for South Africa.

[6]The open responses had already been coded according to a list of occupational codes developed specifically for the survey. These codes were taken as the basis for the recode into ISCO-88, and the open response was checked and used as a basis in case of inconsistencies.

[7]The income variable may suffer from measurement error due to misreporting and the fact that revenues are reported taking the activity episode as a time limit. Fluctuations in non-work-related income are, therefore, not captured. The amount does not seem unreasonable and is relatively close to the earnings for active individuals only, reported by De Vreyer et al. (2010) based on data from the 1-2-3 survey. However, given the broad definition of the variable, the resulting statistics should be only seen as providing a general indication, and not a precise estimate.

5.3.2 Empirical approach

We employ three different approaches to analyse the effect of return migrant status on occupational status and to validate the robustness of the results.

Multinomial logit regressions and exogeneity test

The first approach uses regression analysis to examine the role of return migrant status on occupational status. Individuals in Dakar can either be wage-employed ($j = 1$), self-employed ($j = 2$), or no income earners ($j = 3$). We note the corresponding utilities by $U_{ij} = x'_i\beta_j + \varepsilon_{ij}$, where x is a vector of socio-demographic individual and family-level variables, including the individual's return migrant status, and β_j is the coefficient vector corresponding to alternative j. The probability of occupational status j is determined by the pairwise comparison of utilities, and the probability of choosing status j is $P(j) = P(U_j > U_k, U_j > U_l)$. If the disturbance terms ε_{ij} are independent and identically distributed and follow a Type I extreme value distribution, the probability of being in occupation category j can be expressed as a multinomial logit model (McFadden, 1973):

$$Prob[y_i = j] = \frac{\exp(x'_i\beta_j)}{\sum\limits_{l=1}^{3}\exp[x'_i\beta_j]}, \quad j = 1, 2, 3 \tag{5.1}$$

The identification of the model's parameters is achieved by normalizing coefficients β_3 of the no income earner category to zero using the *Theil* normalisation. In addition, the assumption of Independence of Irrelevant Alternatives (IIA) is tested using the Small-Hsiao Likelihood-Ratio testing principle.

A challenge in determining the effect of the return migrant status is the potential endogeneity of the variable. Migration behaviour is usually characterized by self-selection, both in terms of observable and unobservable characteristics. If observable, but omitted variables, or if unobserved characteristics, such as motivation, ability or risk aversion, are correlated with the return migrant status as well as with the outcome variable, the estimated effect of return migrant status will be biased. In this analysis, we compare individuals who are back in Senegal after a migration episode with non-migrants. In this process one conflates together three different types of selection processes. Individuals first select into migration and then into return. Moreover, also the returnees present in Dakar in 2008 may constitute a self-selected sample, if, for example, returnees who are unsuccessful in reintegrating

back home, then leave again. However, modelling all three processes is complex and very demanding on the data. The sample sizes, the small number of repeated returns among returnees, and the fact that the European destination sample does not adequately represent the destination choices of returnees who migrated predominantly to other African countries (Table 5.1), renders correction for this triple selection unfeasible. We proceed in a similar fashion to other authors in this literature and consider only the "joint" effects.

We test for the exogeneity of the return migrant status dummy using a control function approach (Rivers and Vuong, 1988 for probit; Smith and Blundell, 1986 for tobit; Imbens and Wooldridge, 2009a for multinomial logit). The first step involves estimating the selection into the return migrant status, using a linear probability model (LPM) of the following form (Angrist, 2001; Cameron and Trivedi, 2005):

$$RM_i = x_i'\gamma + z_i'\delta + v_i \tag{5.2}$$

where RM_i is the return migrant status variable, z_i' is a vector of identifying instruments, x_i are the exogenous variables from the occupational status model, and v_i are the OLS residuals. Linear probability models are inherently heteroskedastic, and we apply the Huber-White variance correction to obtain heteroskedasticity-robust standard errors.[8]

The second step consists of re-estimating the occupational status model, where the residual estimates are included alongside the return migrant variable and the other control variables contained in x_i'. A statistically insignificant coefficient estimate on the included residuals would indicate that the null hypothesis of exogeneity of the return migrant status cannot be rejected. The variables used as instruments must satisfy the conditions of relevance and orthogonality, which together ensure instrument validity. The instruments must be strong predictors of the return migrant status, without influencing occupational status other than through their effect on return migrant status. Given the grouped selection processes we are dealing with, it is difficult to justify the choice of instruments from purely a theoretical perspective. Since the comparison group consists of non-migrants, the main distinctive characteristic of return migrants is that they lived abroad. Therefore, using variables that influence migration seems to be reasonable, and is a choice also exercised by researchers in previous studies comparing return migrants with non-migrants. Table 5.2 summarises

---

[8]In theory, a weighted least squares regression could be used to correct the error variance matrix, as the form of the heteroskedasticity in the linear probability model is known ($\sigma^2 = (1 - P_i)P_i$). However, the construction of the weight requires generating predicted values from the linear probability model ($\hat{P}_i$). In this application, a considerable number of predicted values are negative and the relatively crude approach consisting in imputing a positive value close to zero does not seem satisfactory. We therefore apply the standard Huber-White correction.

studies analysing the effect of return migration on employment-related variables (wage, occupation, entrepreneurship etc.) based on samples including non-migrants as well as return migrants.

Table 5.2: *Instrumental variables and results with regard to selection in the literature*

Instrumented variable	Outcome	Instrument	Significant? If yes - Sign of correlation?	Authors
Geographical /location variables				
Return migrant	Earnings	Size of city where individual lives	2-step No MNL Yes; negative	de Coulon and Piracha (2005)
Return migrant	Earnings	Living in mountainous area	2-step No MNL Yes; negative	de Coulon and Piracha (2005)
Return migrant	Earnings	Lived in capital at age 14	No for men Yes for women; negative	Co et al. (2000)
Years spent abroad by HH members, by destination / time period	Entrepreneurship (household)	Distance residence and border crossings	Yes Negative	Kilic et al. (2007)
Migration networks				
Return migrant	Occupational status	Number of household members abroad (current)	No	Borodak and Piracha (2011)
Return migrant	Earnings	Dummy for kin or friends abroad (current)	Yes for men negative No for women	Radu and Epstein (2007)
Years spent abroad by HH members, by destination / time period	Entrepreneurship (household)	Relatives of HH head or spouse abroad (past)	Yes Negative	Kilic et al. (2007)
Return migrant	Earnings	Migration prevalence rate in the area (current)	Yes for men negative No for women	Radu and Epstein (2007)
Return migrant	Entrepreneurship	Migration prevalence rate in the area (after outcome is measured)	Yes Negative	Wahba and Zenou (2009)
Return migrant	Earnings Annual value-added	Proportion of return migrants in neighbourhood (current)	Yes Negative No	De Vreyer et al. (2010)

Instrumented variable	Outcome	Instrument	Significant? If yes - Sign of correlation?	Authors
Return migrant	Occupational status	Proportion of return migrants in district (past)	No	Piracha and Vadean (2010)
Return migrant	Entrepreneurship	Proportion of migrants and return migrants in village (current)	No	Démurger and Xu (2011)
Demographic/Economic context				
Return migrant	Earnings	Unemployment rate in county of residence at time of graduation	No	Barrett and O'Connell (2001)
			No	(Barrett and Goggin, 2010)
Return migrant	Survival of business activity (binary)	Population growth rate in individuals year of birth	Yes Negative	Marchetta (2011)
Individual and household characteristics				
Return migrant	Earnings	Number of dependents in household	2-step No MNL Yes; negative	de Coulon and Piracha (2005),
Return migrant	Earnings	Religion=Muslim	2-step No MNL Yes; negative	de Coulon and Piracha (2005)
Return migrant	Earnings	Father's occupation when worker was 15	Yes Negative	De Vreyer et al. (2010)
Return migrant	Occupational status	Post-university education	No	Borodak and Piracha (2011)
Return migrant	Occupational status	Separated/ divorced/widowed	No	Borodak and Piracha (2011)
Years spent abroad by HH members by destination / time period	Entrepreneurship (household)	Knowledge of the host country's language (any household member; past)	Yes Negative	Kilic et al. (2007)
Years spent abroad by HH members by destination / time period	Entrepreneurship (household)	Own satellite dish (past)	Yes Negative	Kilic et al. (2007)
Years spent abroad by HH members by destination / time period	Entrepreneurship (household)	Average annual number of household-level shocks until their first migration episode	Yes Negative	Kilic et al. (2007)

The evidence summarized in Table 5.2 reveals that previous studies have found either no

evidence to support endogeneity of the return migrant status, or results pointed towards a negative relationship, at least in terms of entrepreneurship and earnings. In diverse country contexts, and using varying definitions of the entrepreneurship variable, return migrants thus appear to be rather negatively selected with regard to the general population at origin (Borjas and Bratsberg, 1996). Unobservable characteristics that drive migration seem to be negatively related to those influencing occupational outcomes, not positively as suggested particularly by the earlier conceptual discussion on entrepreneurship.

Previous studies have exploited geographical variation, time variation, individual and household characteristics, as well as migrant network variables as instruments for the return migrant status. As emphasised above, all studies choose variables that are related to the selection into migration rather than the selection into migration and return. The third type of selection, re-migration after a return, is rarely mentioned. Following the example of several studies, we use a migrant network variable as an exclusion restriction, under the hypothesis that migrant networks provide an incentive to and facilitate international migration through decreasing migration costs. We thus expect the network variable to be positively correlated with return migrant status. The variable is measured as the number of members of the extended family or friends living in another African country when the respondent was 23 years old. This age corresponds to the median age of first departure in the sample. If the departure happened at or before age 23, we use the network prior to departure. Instead of using current networks, as most other studies do, we use pre-migration characteristics that are less likely to be correlated with occupational status at the time of the survey, for instance through the receipt of remittances from network members abroad. The use of current network characteristics, especially at regional levels, does not appear justifiable, given that return migrants may choose to settle in other areas than their region of origin. The restriction to Africa is related to the migration patterns observed for return migrants, who had predominantly lived in other African countries. The second exclusion restriction we use is a dummy variable that is equal to one if the individual was born in the Senegal River Valley. As discussed in the introductory chapter, this region, located at the border with Mauritania and Mali in the North-East of the country, is the historical Senegalese migration departure region, both towards other African countries and early migration to Europe. This variable should capture, on the one hand, the historical aspect of the migrant network effect, and, on the other hand, reflect the time period during which both migration to and return from Europe faced less barriers. In controlling for ethnicity, the region of birth should not be related to occupational status in 2008. We are aware that at least the network variable could be criticised. If unobserved

characteristics in households are correlated over a longer period of time, influencing at the same time migration behaviour, past migrant networks may also be endogenous. However, since networks in the chosen definition also include the extended family and friends, this problem may be less prominent. Aggregate instruments with geographical variation, such as rainfall, are difficult to use in this analysis due to the restriction of the sample to the region of Dakar. Time-varying aggregate indicators, such as the population growth rate in the birth year suggested by Marchetta (2011) are measured with too much error in the years before 1960, which represent a considerable share of our sample (26%). Relying on data from the MAFE survey to construct instruments therefore seems to be the preferred option.

An additional problem, not emphasized by previous authors, is the fact that variables that are exogenous with respect to the occupational outcome equation, and should thus be included in the first stage estimation, may be themselves endogenous to the return migrant status. Variables measured after migration and return may be affected by these decisions. This may be, for instance, the case for marital status, household head status, household composition, and even age if having migrated and returned makes individuals more likely to be at an advanced stage in their life cycle. The results will be presented including and excluding the potentially endogenous variables. It is acknowledged that both approaches are likely to incorporate some degree of bias.

Decomposition of differentials in occupational status probabilities by return migrant status

The second approach employed is a conventional decomposition of the difference in occupational status between return migrants and non-migrants into a part that can be attributed to differences in observable characteristics (the endowment effect), and into a part that captures the returns to those characteristics (the treatment effect). In the previous section, the inclusion of the dummy variable only allowed for an intercept shift. Now, differences in returns to characteristics are taken into account as well. Decomposition methods have been developed by Oaxaca (1973) and Blinder (1973) for the context of a continuous outcome, and were extended later on to binary outcome variables by Gomulka and Stern (1990) and Fairlie (1999), and to discrete choice and limited dependent variable models more generally by Bauer and Sinning (2008). The application to multinomial outcomes is rarer, due to the fact that the computation of the contribution of individual variables to outcome differentials is difficult, as Bauer and Sinning (2008) note, since conditional

expectations cannot be easily calculated for unordered discrete dependent variables.[9] However, in this simple application the interest is limited to the combined contribution of all variables, which can be computed on the three discrete outcomes, wage-employment, self-employment, and "no income earner", as in the case of binary outcomes. Decomposition methods have traditionally been employed to examine outcome differences across gender. Examples for analysis in the context of migration include Gindling (2009), who decomposes wage gaps between Costa Rican natives and Nicaraguan immigrants in Costa Rica, or Bevelander and Skyt Nielsen (2001) who examine the employment gap between natives and immigrants in Sweden.

The decomposition method requires separate estimation of the occupational status equations by return migrant status. Provided that the separation is justified, the change in sample probabilities of occupational status outcomes j ($j = 1, 2, 3$) due to return migrant status can be decomposed as follows:

$$\bar{P}_j^{RM} - \bar{P}_j^{NM} = \left[\bar{P}_j^{RM} - \bar{P}\left(\hat{\beta}^{NM}, X^{RM}\right)\right] + \left[\bar{P}\left(\hat{\beta}^{NM}, X^{RM}\right) - \bar{P}_j^{NM}\right] \qquad (5.3)$$

where the first term in squared brackets denotes the treatment effect (i.e., the change in the probability of being in occupational status j due to the differences in coefficient estimates) and the second denotes the endowment effect (i.e., the change due to differences in characteristics X between return migrants and non-migrants). In this case, the non-migrant coefficient structure is applied to the return migrant characteristics. Alternatively, one could also use the return migrant coefficient structure applied to the non-migrant characteristics, in which case equation (5.3) can be rewritten as:

$$\bar{P}_j^{RM} - \bar{P}_j^{NM} = \left[\bar{P}_j^{RM} - \bar{P}\left(\hat{\beta}^{RM}, X^{NM}\right)\right] + \left[\bar{P}\left(\hat{\beta}^{RM}, X^{NM}\right) - \bar{P}_j^{NM}\right] \qquad (5.4)$$

where the first term in brackets now denotes the endowment effect and the second one the treatment effect. Since this approach is subject to the standard index number problem, results are sensitive to the coefficient structure applied. Both computational approaches are therefore reported, though bearing in mind that the non-migrant coefficients are likely to be more precisely estimated due to the small sample of return migrants. Bootstrapping techniques (1000 replications) are applied to derive standard errors for the estimated treatment and endowment effects. A small programme was written to implement the non-parametric bootstrap estimation with the bootstrap Stata command. The described decomposition exercise is performed on each resampled dataset i with the following steps:

---

[9]A possible approach has been proposed by Pylypchuk and Selden (2008).

separate estimation of occupational status equations; application of non-migrant (return migrant) coefficient structure to return migrant (non-migrant) characteristics; and computation and collection of statistics (treatment effects; endowment effects; respectively with non-migrant and return-migrant coefficient structure). From the dataset of replicated statistics, standard errors can be calculated for the treatment and endowment effects using the following formula (Stata Press; StataCorp LP, 2009):

$$\hat{se} = \left\{ \frac{1}{k-1} \sum \left(\hat{\theta}_i - \bar{\theta}^2 \right) \right\}^{1/2} \tag{5.5}$$

with k=1000 replications. A seed is specified to allow for future replications of the analysis.

Propensity score matching

The third method used to examine the effect of past migration experience on occupational status is propensity score matching (PSM). Propensity score matching is designed to correct for selection on observables by assigning to each individual in the treatment group (return migrants) one or several individuals in the comparison or control group (non-migrants) who are very similar in terms of pre-treatment characteristics (Rosenbaum and Rubin, 1983). Assuming that the selection bias is solely due to observable characteristics, the remaining differences in outcomes between treatment and comparison groups can be attributed to the treatment, in this case the past migration experience. PSM has been traditionally applied in the context of policy evaluation, but it has become a widely used tool in other fields of applied research. Over the past years, several papers in migration research have used this approach to compare migration outcomes for migrants and natives at destination, or for non-migrants/return migrants or non-migrant households/migrant households at origin. Recent examples include Ham et al. (2011), who estimate the impact of internal migration in the United States on wages; Clement (2011) examines the effect of remittance receipt on household expenditure patterns; and Cox-Edwards and Rodrguez-Oreggia (2009) analyse the role of remittance receipt on the labour market behaviour of those left-behind. The subsequent description and the implementation of the PSM approach follow closely the discussion, notation and recommendations provided in Caliendo and Kopeinig (2008).

Defining the treatment RM_i as equal to one if the individual is a return migrant, and zero otherwise, and the outcome as $Y_i(RM_i)$ for individual i, the treatment effect for an

individual is defined as:

$$\tau_i = Y_i(1) - Y_i(0) \tag{5.6}$$

Since only one of the two outcomes is observed for individual i, this individual-specific treatment effect cannot be estimated. The main treatment effect estimate of interest is therefore the population average treatment effect on the treated (ATT):

$$\tau_{ATT} = E\left[Y(1)|RM=1\right] - E\left[Y(0)|RM=1\right] \tag{5.7}$$

Once again, the second part of the equation, the counterfactual mean outcome for the return migrants, had they not migrated and returned, is not observed. The mean outcome for the non-treated, $E[Y(0)|RM=0]$ can only be used as a counterfactual if $E[Y(0)|RM=1] - E[Y(0)|RM=0]$ (i.e., the self-selection bias from pertaining to the treatment group) is equal to zero. This is unlikely, since untreated individuals may differ from the treated ones with regard to their characteristics. The basic idea of identification through matching is to eliminate this bias by conditioning on a set of observable characteristics X, which are unaffected by the treatment. Under this assumption:

$$Y(0), Y(1) \perp\!\!\!\perp RM|X, \quad \forall X \tag{5.8}$$

this means, outcomes are independent of treatment assignment. This assumption is called the conditional independence assumption. Instead of conditioning exactly on covariates, which becomes difficult with a growing number of variables, Rosenbaum and Rubin (1983) show that the conditional independence assumption equally holds if the matching is done on the balancing score $b(X)$. Most commonly, the propensity score $P(X)$ (i.e., the probability of being in the treatment group given a certain set of characteristics X) is used as a balancing score. A second condition for propensity score matching is that there is sufficient overlap in propensity scores of individuals who are treated and individuals in the comparison group, so that matches can be actually found (common support condition). Provided that these two conditions hold, the PSM estimator of the ATT is defined as:

$$\tau_{ATT}^{PSM} = E_{P(X)|RM=1}\left\{E\left[Y(1)|RM=1, P(X)\right] - E\left[Y(0)|RM=0, P(X)\right]\right\} \tag{5.9}$$

We implement the propensity score matching according to the following steps. The propensity score is estimated using a probit model. The covariates included in the estimation correspond to a large extent to the set of variables used in the previous analyses. Since variables should influence both the treatment and the outcome and should not be influ-

enced by the treatment, we use period of birth as a time constant exogenous variable instead of age, and exclude variables that are potentially affected by the migration experience (marital status, household head status) or are only related to migration, but have no direct effect on occupation (such as the variables used as exclusion restrictions in the exogeneity test described above).

To satisfy the overlap condition, the matching is limited to the common support region by excluding non-migrants whose propensity score estimate falls outside the range of propensity scores estimated for return migrants. Since the sample subject to analysis is relatively small, one can expect differences depending on the matching estimator used. Three matching estimators are employed to test whether the findings are affected by the choice of matching technique, namely nearest neighbour matching, stratification matching and kernel matching. Nearest neighbour matching uses the non-migrants with the closest estimated propensity score as the match. Stratification matching splits the propensity score into strata, and calculates the impact within each interval by taking the mean difference between return migrant and non-migrant outcomes. Finally, kernel matching uses a weighted regression of the counterfactual outcome on an intercept given by the kernel weights, where the weights depend on the distance between each non-migrant observation and each return migrant observation. The matching quality (i.e. the balancing of the distribution of the covariates in the return migrant and treatment groups) is checked using stratification tests (Dehejia and Wahba, 1999) for equality of covariates in each propensity score stratum after stratification matching. The standardised bias of covariates after matching is also considered (Rosenbaum and Rubin, 1985):

$$SB(\text{after matching}) = 100 \times \frac{\left(\overline{X_{RM}^m} - \overline{X_{NM}^m}\right)}{\sqrt{0.5 \times \left(V_{RM}^m(X) + V_{NM}^m(X)\right)}} \tag{5.10}$$

where X_{RM} and X_{NM} are the means of the covariates on matched return migrant and non-migrant samples, and the denominator is the square root of the average of sample variances V_{RM} and V_{NM}. There is no clear indication as to the level of bias after matching that is acceptable for the computation of ATT based on propensity score matching. Caliendo and Kopeinig (2008) suggest that around 5% standardised bias is admissible according to most empirical studies.

The assumption that heterogeneity between treatment and comparison groups, and hence selection bias, arises solely due to observed characteristics may not hold and has given rise to criticisms of standard PSM in the literature (e.g. Smith and Todd, 2001; Ichimura

and Taber, 2001). Variants of the propensity score matching approach developed more recently are designed to account for selection on unobservable characteristics in addition to selection on observables, in particular Difference-in-Difference Matching (Heckman et al., 1998). Due to sample size limitations, in addition to the conceptual problem of defining a comparable initial time point for both non-migrants and return migrants, this approach is not applied in this paper and the validity of this assumption for the analysis hinges on the results of the exogeneity test. Moreover, we examine Rosenbaum bounds (Rosenbaum, 2002) to assess the sensitivity of results with respect to the presence of bias from unobserved characteristics. Bounds analysis cannot reveal whether there are or are not unobserved factors that influence simultaneously return migrant status and occupational status. Instead, the approach simulates how strongly unobserved characteristics must influence the outcome in order to undermine the inference from the matching analysis (Caliendo and Kopeinig, 2008). The probability of return migrant status for individual i with observable characteristics x_i and an unobserved characteristic u_i can be written as:

$$\pi_i = Pr\left(RM_i = 1|x_i\right) = F\left(\beta x_i + \gamma u_i\right) \tag{5.11}$$

where γ reflects the effect of the unobserved characteristic on the return migrant status. Using for this illustration the logistic distribution for link function F, the odds ratio of return migrant status for two individuals with common support and equal distribution of x within a stratum can be written as:

$$\frac{\pi_i\left(1 - \pi_j\right)}{\pi_j\left(1 - \pi_i\right)} = \frac{\exp\left(\beta x_j + \gamma u_j\right)}{\exp\left(\beta x_i + \gamma u_i\right)} = \exp\left[\gamma\left(u_i - u_j\right)\right] \tag{5.12}$$

Bounds analysis explores the impact of varying the value of u (the unobserved component) and γ (its effect on return migration) for cases of positive and negative selection.

Other criticisms of PSM have revolved around the condition of common support and the sensitivity towards the use of different matching approaches that are tackled through tests and the use of more than one matching estimator as discussed above.

We repeat the propensity score matching exercise on the ISEI and SIOPS variables for those who are in the wage-employed or self-employed categories to provide some insights regarding the position of return migrants not only across the three occupational outcomes but also within the occupational ranking. We use the occupational rankings instead of the income variable since the latter is not restricted to income from work, but may also include other income sources such as transfers. Moreover, the income measure is given

only for the last month. If incomes are subject to variation over time, the average income generated by the activity may not be accurately captured.

Propensity score matching is implemented using Stata user-written command packages pscore (Becker and Ichino, 2002); psmatch2 (Leuven and Sianesi, 2003); and mhbounds (Becker and Caliendo, 2007) for Rosenbaum bounds estimation in case of discrete dependent variables.

5.4 Empirical results

5.4.1 Descriptive statistics

Return migrants are found to be overrepresented among the self-employed, are less likely to be out of the labour market or without an income generating job, but do not differ from non-migrants in terms of participation in wage employment activities (Table 5.3). This suggests that return migrants are in general able to enter the labour market after their return to Dakar. The higher proportion of return migrants among the self-employed is in line with evidence from other countries and regions, and may be due to the starting capital and know-how accumulated during the migration. An alternative interpretation is that self-employment after return represents an "easy entry" into the labour market for returnees who do not access salaried employment, but need to work to continue supporting their families. This distinctive pattern does not emerge when comparing returnees and non-migrants with regard to their occupation at age 25, or before departure if the first migration occurred at a younger age. Both groups were at this young age predominantly out of the labour force or working as family help. Among those who worked, returnees and non-migrants divide themselves in similar proportions into wage-employed and self-employed activities. Individuals who later migrated and returned, and those who stayed in Senegal, do not appear to have an a priori preference for specific occupational statuses.

Since the data do not provide any information that would permit dividing the self-employed category by size or productivity of the activity, we use the ISEI and SIOPS scores to obtain some insights into the socio-economic status and prestige of jobs and business activities performed by non-migrants and returnees in the sample. Overall, return migrants appear to perform occupations of higher socio-economic status and prestige. This is the case for both wage-employment and self-employment activities, but the difference between return migrants and non-migrants is more pronounced for those who are wage-employed.

Interestingly, neither index suggests that, overall, wage-employed occupations are higher rated with regard to their socio-economic status and prestige than self-employed activities. This suggests that, on average, the type of activities performed under both occupational statuses are quite similar.

A successful reintegration should also be reflected in the wealth and well-being indicators. According to a measure of total monthly income at the time of the survey, return migrants are, on average, considerably better off than non-migrants. The subjective measure of absolute well-being provides a similar picture. Return migrants report less often than non-migrants that their households possess insufficient or barely sufficient financial resources to provide for basic goods. Interestingly, returnees do not perceive the living conditions of their household as superior to the situation of other households with which they compare themselves. While the share reporting better living conditions is slightly higher in the return migrant group, the same is the case for those reporting worse conditions, and the differences between return migrants and non-migrants are not statistically significant. One possible explanation is that the reference group of returnees is different from that of non-migrants (i.e., higher up the wealth distribution). Moreover, qualitative research on returnees in Dakar suggests that returnees feel obliged to present themselves as particularly "modest" in order to be accepted back in their community after their absence abroad (Flahaux, 2009).

Return migrants also differ from non-migrants with regard to certain socio-demographic characteristics. Return migrants in our sample are, on average, four years older than non-migrants, males are overrepresented, and return migrants are more likely to be household heads. However, return migrants and non-migrants report a very similar profile in terms of educational attainment, ethnicity, marital status, household size, and the occupational background of their fathers. The higher share of men and household heads could be related to the lower percentage of "no income earners" among return migrants. At the same time, the descriptive statistics do not suggest differences in occupational status variables and well-being indicators to be related to differentials in human capital endowments or parental occupation background. Migration experience may indeed play a role on its own, a proposition that is examined in the following sections using regression analysis, decomposition analysis, and propensity score matching.

Table 5.3: *Characteristics of return migrants and non-migrants (weighted by sampling weights)*

Variables	Non-migrants	Return migrants	Pearson statistic †	Mean test
OCCUPATION & WELL-BEING CHARACTERISTICS				
Occupation in 2008			6.40***	
Wage employed	0.28	0.29		n.s.
Self-employed or employer	0.28	0.46		***
No income earner	0.44	0.25		***
Occupations at age 25/before departure			0.40	
Wage employed	0.27	0.22		n.s.
Self-employed or employer	0.18	0.16		n.s.
No income earner	0.55	0.61		n.s.
Occupational scores in 2008				
ISEI score (all)	36.80	41.50		**
ISEI score wage-employed	35.90	42.80		**
ISEI score self-employed/employer	37.10	40.70		*
SIOPS score (all)	33.80	39.00		***
SIOPS score wage-employed	34.00	41.90		***
SIOPS score self-employed/employer	32.90	37.20		*
Average monthly income (€) in 2008	152.00	327.00		***
Absolute subjective deprivation in 2008			3.90**	
Barely sufficient or insufficient resources	0.42	0.30		**
Relative subjective deprivation in 2008			1.10	
Better living conditions	0.18	0.23		n.s.
Similar living conditions	0.66	0.56		n.s.
Worse living conditions	0.16	0.21		n.s.
INDIVIDUAL CHARACTERISTICS				
Age	39.90	44.20		***
Female=1	0.57	0.34	12.40***	***
Years of formal education	6.30	7.10		n.s.
Household head=1	0.17	0.34	10.90***	***
Married/In partnership=1	0.66	0.72	0.67	n.s.
Ethnicity			1.10	
Wolof	0.43	0.39		n.s.
Pular	0.20	0.29		n.s.
Serer	0.16	0.10		n.s.
Other	0.21	0.22		n.s.
Household size	11.00	10.60		n.s.
Father's occupation when respondent was 15			0.97	
Wage employed	0.23	0.22		n.s.
Self-employed/employer	0.48	0.41		n.s.
No income earner; deceased or absent	0.29	0.37		n.s.
Observations $N =$	870	175		

Notes: Since sampling weights have been applied when computing the descriptive statistics, the Pearson chi-squared statistic(†) for independence across categories is corrected for the survey design and converted into an F-statistic. ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels. Source: *MAFE-Senegal survey (2008)*

5.4.2 Exogeneity test and occupational status estimates

We test for exogeneity of the return migrant dummy by adding the residual estimate from the first stage linear probability model with return migrant status as the outcome to the occupational status multinomial logit equation.[10] Table 5.4 presents, on the left-hand side, the estimates obtained when variables that are potentially endogenous to the return migrant status are excluded from the first-stage regression. The complete specification with all explanatory variables from the occupational status model is presented on the right-hand side. A rough test of relevance of the exclusion restrictions is given by the joint statistical significance of the variables in the return migrant equation. The first-stage F-statistic is 8.48 (8.11), and when keeping only the network variable (not included in the table) it increases to 11.47 and 14.16 respectively. Given the "rule of thumb" threshold for weak instruments of an F-test higher than 10 in the case of exact identification, the application may thus to some extent be hampered by weak instruments. The biases associated with weak instruments are highlighted, among others, by Staiger and Stock (1997), and include an incorrect size of confidence intervals and a bias of the estimate in the instrumental variable regression that goes in the same direction as the estimate in the non-instrumented case. However, the potential bias is always a question of degree, not of existence or non-existence, even if the F-statistic was above 10. Imbens and Wooldridge (2009b) also emphasize that the coverage of confidence intervals remains usually relatively good, unless the degree of endogeneity is high and many weak instruments are used.

Since there is no equivalent to the over-identifying restrictions test in the multinomial logit case, we perform an empirical test for the validity of the exclusion restrictions by including the network variable and the Senegal River region of birth variable in the outcome equation. The coefficient estimates are individually and jointly statistically insignificant disregarding the choice of the reference category ($\chi^2 = 3.13, Prob > \chi^2 = 0.5364$). Moreover, in both specifications, the LPM residual's coefficient estimate is statistically insignificant, suggesting that the null hypothesis of exogeneity cannot be rejected. Given the literature discussed above, this finding is not surprising. However, one should treat this result with some caution. Coefficient estimates for the residual are relatively large, and estimates of both specifications may be subject to bias given our inability to determine with certainty the extent of instrument orthogonality.

---

[10]Based on the Small-Hsiao test, the null hypothesis of Independence of Irrelevant Alternatives (IIA) cannot be rejected. Moreover, test results on cross-equation restrictions indicate that we cannot further collapse the outcome categories.

Table 5.4: *Exogeneity test (coefficient estimates with standard errors in parentheses)*

	(1)			(2)		
	LPM	MNL		LPM	MNL	
	Return migrant	Wage emp. versus No income earner	Self-empl. versus No income earner	Return migrant	Wage emp. versus No income earner	Self-empl. versus No income earner
Female	-0.487	-0.851	-0.507	-0.374	-0.878	-0.533
	(0.108)***	(0.469)*	(0.425)	(0.113)***	(0.414)**	(0.384)
Education	-0.090	0.055	-0.022	-0.043	0.057	-0.024
	(0.055)	(0.019)***	(0.017)	(0.054)	(0.019)***	(0.017)
Education*Female	0.156			0.131		
	(0.059)***			(0.057)**		
Ethnicity (ref. Wolof)						
Pular	-0.031	-0.104	-0.061	-0.013	-0.088	-0.071
	(0.031)	(0.275)	(0.215)	(0.030)	(0.276)	(0.216)
Serer	-0.076	0.393	0.083	-0.072	0.349	0.096
	(0.028)***	(0.342)	(0.303)	(0.028)***	(0.343)	(0.304)
Other	-0.035	0.504	-0.140	-0.033	0.490	-0.135
	(0.031)	(0.260)*	(0.247)	(0.030)	(0.260)*	(0.248)
Occupation at age 25/before departure (ref. no income earner)						
Wage employed	-0.097	2.232	0.872	-0.091	2.192	0.878
	(0.028)***	(0.286)***	(0.281)***	(0.028)***	(0.281)***	(0.278)***
Self-employed/employer	-0.097	0.498	2.473	-0.090	0.454	2.483
	(0.028)***	(0.398)	(0.273)***	(0.027)***	(0.396)	(0.272)***
Father's occupation when respondent was 15 (ref. no income earner; deceased/absent)						
Wage employed	-0.056	-0.190	-0.335	-0.047	-0.207	-0.334
	(0.029)*	(0.284)	(0.235)	(0.028)*	(0.282)	(0.233)
Self-employed/employer	-0.029	-0.180	-0.317	-0.010	-0.174	-0.332
	(0.027)	(0.253)	(0.211)	(0.026)	(0.248)	(0.208)
Age	§	0.455	0.365	0.026	0.489	0.340
		(0.070)	(0.053)***	(0.006)***	(0.083)***	(0.063)***
Age squared	§	-0.006	-0.004	0.000	-0.006	-0.004
		(0.001)***	(0.001)***	(0.000)***	(0.001)***	(0.001)
In partnership	§	0.305	0.123	0.037	0.355	0.089
		(0.338)	(0.336)	(0.042)	(0.347)	(0.342)
Female*In partnership	§	-1.642	-0.548	-0.057	-1.717	-0.493
		(0.455)***	(0.422)	(0.050)	(0.470)***	(0.433)
Household head	§	0.303	0.071	0.105	0.437	-0.028
		(0.273)	(0.247)	(0.032)***	(0.327)	(0.289)

Continued on next page

	(1)			(2)		
	LPM	MNL		LPM	MNL	
	Return migrant	Wage emp. versus No income earner	Self-empl. versus No income earner	Return migrant	Wage emp. versus No income earner	Self-empl. versus No income earner
Household size	§	-0.050	0.008	0.008	-0.040	0.000
		(0.020)**	(0.016)	(0.002)***	(0.024)*	(0.020)
Size of migrant network in Africa at age 23/ before migration	0.116 (0.036)***	§	§	0.121 (0.033)***	§	§
Born in Senegal River Valley region	0.148 (0.061)**	§	§	0.097 (0.059)	§	§
Return migrant	†	-0.468	1.277	†	-1.022	1.463
		(1.629)	(1.295)		(1.742)	(1.387)
Residual LPM	†	0.746	-0.773	†	1.306	-0.963
		(1.642)	(1.320)		(1.755)	(1.415)
Constant	0.519	-8.841	-7.801	-0.364	-9.684	-7.084
	(0.105)***	(1.582)***	(1.251)***	(0.159)**	(1.656)***	(1.305)
Observations N=	1,043	1,039		1,040	1,039	
F-statistic (exclusion restrictions)	8.480			8.110		

Notes: Standard errors in parentheses. ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels. § denotes omitted from estimation, and † denotes not applicable. *Source: MAFE-Senegal survey (2008)*

Given the foregoing results with respect to exogeneity, we proceed with the remaining analysis without instrumenting the return migrant dummy variable.

Turning to the sample average marginal effects presented in Table 5.5, one can see that past migration experience increases the probability of being self-employed by seven percentage points. This result is in line with findings from other countries, such as Piracha and Vadean (2010) and Kilic et al. (2007) for Albania, Wahba and Zenou (2009) on Egypt, and Démurger and Xu (2011) on internal return migration in China. According to the target-saving hypothesis in the context of constrained credit markets, return migrants may have benefited from their stay abroad to accumulate sufficient savings to set up a business activity after their return. While we cannot distinguish different activities by their size or productivity, the descriptive statistics on the socio-economic status and prestige suggest that returnees engage in slightly higher ranked activities than non-migrants. This result may not hold once other characteristics are accounted for and will be further investigated in section 5.4.4. Return migrants are found to have an equal chance of accessing wage-

employment as non-migrants.

Table 5.5: *Results of occupational status equation (MNL) (average impact/marginal effects)*

Explanatory variables	Wage employment	Self-employment/ employer	No income earner
Return migrant	-0.001	0.074	-0.073
	(0.031)	(0.038)*	(0.038)*
Female	-0.174	-0.065	0.240
	(0.028)***	(0.031)**	(0.048)**
Education	0.008	-0.007	-0.001
	(0.002)***	(0.002)***	(0.002)
Ethnicity (ref. Wolof)			
Pular	-0.009	-0.003	0.012
	(0.029)	(0.033)	(0.033)
Serer	0.057	-0.027	-0.030
	(0.036)	(0.042)	(0.041)
Other	0.077	-0.058	-0.018
	(0.030)**	(0.035)*	(0.035)
Occupation at age 25/before departure			
(ref. no income earner)			
Wage employed	0.319	-0.040	-0.279
	(0.034)***	(0.035)	(0.035)***
Self-employed/employer	-0.101	0.466	-0.364
	(0.027)***	(0.038)***	(0.034)***
Father's occupation when respondent was 15			
(ref. no income earner; deceased/absent)			
Father Wage employed	0.005	-0.054	0.049
	(0.030)	(0.034)	(0.034)
Self-employed/employer	0.003	-0.049	0.045
	(0.027)	(0.032)	(0.031)
Age/age sq	0.000	0.005	-0.066
	(0.001)	(0.001)***	(0.007)***
In partnership [Female]	-0.054	-0.015	0.069
	(0.026)**	(0.029)	(0.028)**
Household head	0.034	-0.007	-0.027
	(0.030)	(0.035)	(0.034)
Household size	-0.007	0.004	0.002
	(0.002)***	(0.002)*	(0.002)
Observations $N =$		1039	
Pseudo R^2		0.287	
Log-likelihood		-801.46	

Notes: Standard errors in parentheses; ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels. Source: *MAFE-Senegal survey (2008)*

The estimates for the control variables are in accordance with anticipated effects. The results indicate that there is persistence in the occupational status over time. Being in wage-employment, self-employed or without income-generating work at the age of 25 or before the first departure increases considerably the probability of being in the same occupational group at the time of the survey.[11] However, occupational status does not

[11]If unobservable characteristics affect early occupational status as well as current one, this variable may

seem to be transferred across generations. The father's occupational status at the time when the respondent was 15 years old is not a significant predictor of the respondent's occupational status at the time of the survey.

When accounting for both the main effect and the interaction effect with marital status, women are shown to be more likely to be in the "no income earner" category. The co-efficient estimates of the MNL suggest that labour market participation is particularly low for women in a partnership. Average marginal effects on age do not fully capture the non-linear relationship between age and occupational status. We estimate predicted probabilities of being wage-employed, self-employed or "no income earner" at ages varying from 25 to 65. The estimates (not reported here and available from the author) suggest inverse U-shaped relationships with respect to wage-employment and self-employment, while the probability of being without an income-generating job is highest at the youngest and oldest ages in the sample. Age profiles of wage-employed and self-employed are rel-atively similar, and do not suggest that younger people are less risk-averse and hence more likely to be self-employed, while older individuals prefer wage employment. Addi-tional years of formal education increase the probability of being engaged in a waged job, whereas the relationship between education and self-employed status is negative, indicat-ing that the predominant type of business activity does not require high levels of (formal) human capital. The individual's ethnicity does not seem to play an important role for occupational status in Dakar. The only exception is that being in the "Other" category, which groups Mandingue, Diola, Soninké and smaller minorities, makes an individual more likely to be wage employed and less likely to be self-employed compared to being Wolof, the predominant ethnic group in Dakar.[12] Living in a relatively large household decreases the probability of being wage-employed, and increases the chances of engaging in self-employment, one possible explanation for this finding being the availability of unpaid or cheap labour among household members.

The following section exploits the separate estimation of the occupational status equation by return migrant status in conjunction with index number type decomposition methods to examine whether there are migration-experience related differences with regard to the role of other explanatory variables.

be endogenous and coefficient estimates biased. At the same time, omitting this variable would also induce bias. Since no adequate instruments are available to test the exogeneity of this variable, we report the estimated results, but stress the need for interpretational caution.

[12]Religion was not included as additional control variable since it is, in the context of Dakar, strongly related to ethnicity (Muslims from the Mouride brotherhood are overrepresented among the Wolof ethnic group).

5.4.3 Decomposition of differentials in occupational status probabilities by return migrant status

The separation of the estimation by the return migrant status is supported by the Likelihood Ratio Test with a value of $\chi^2(30) = 68.49$ ($p - value = 0.000$).[13] The Chi square values of Wald tests for differences in coefficient estimates across the two groups presented in Table 5.6 show that significant differences can be found with regard to the role of education and ethnicity in the case of the outcome wage employment versus "no income earner" status. For self-employment, differential effects are detected for the role of having been self-employed at age 25, the linear age term and the constant.

We investigate the role of treatment and endowment effects in explaining the differential occupational status probabilities of return migrants further by means of a simple decomposition analysis, using bootstrapping with 1,000 repetitions to obtain standard errors (Table 5.7).

The observed raw differential in return migrants and non-migrants occupational sample proportions, unadjusted for sampling weights, is divided into a part attributed to differences in characteristics, such as age, gender, education etc. (the endowment effect), and a part attributed to differences in the coefficient structure (the treatment effect). The upper section of the table reports the estimates that are obtained when applying the non-migrant coefficients to the return migrant characteristics, while the bottom section applies the return migrant coefficient structure to the non-migrant characteristics. Given the rather imprecise estimation of coefficients for the small return migrant sample, we rely predominantly on the estimates from the first specification.

Both specifications suggest that differentials in terms of engagement in self-employment are mainly due to "treatment" effects, and the estimates (0.078 and 0.066, though the latter is not statistically significant) are close to the impact effect reported for the intercept shift in Table 5.5. Endowment effects are also positive, but smaller and not statistically significant. The migration experience itself seems to explain the fact that return migrants are over-represented among the self-employed, while differentials in the observed characteristics are less important. In the case of wage employment, the endowment effect dominates. However, as with the category of the "no income earners", we detect larger differences in estimates depending on the choice of the coefficient structure. For the latter category, the

---

[13]The coefficient estimates of the separate MNL estimations can be found in Annex D. The return migrant estimates are relatively poorly determined, which motivates the preference for the use of non-migrant estimates in the index number decomposition described in this section.

Table 5.6: *Wald tests for differences in non-migrant - return migrant MNL coefficients (χ^2 values; p-values in brackets)*

	Wage-employed versus "no income earner"	Self-employed versus "no income earner"
Female	0.57	0.05
	(0.450)	(0.831)
Education	5.12**	1.82
	(0.024)	(0.178)
Ethnicity: Pular	0.75	1.43
	(0.386)	(0.232)
Ethnicity: Serer	8.06***	2.09
	(0.004)	(0.148)
Ethnicity: Other	0.00	0.02
	(0.955)	(0.892)
Previous status: Wage employed	1.93	0.06
	(0.165)	(0.801)
Previous status: Self-employed/employer	0.36	13.71***
	(0.548)	(0.000)
Father wage employed when respondent was 15	1.30	2.01
	(0.254)	(0.156)
Father self-empl./employer when respondent was 15	0.60	1.20
	(0.440)	(0.273)
Age	1.29	4.09**
	(0.256)	(0.043)
Age squared	1.03	2.22
	(0.311)	(0.137)
In partnership	0.04	0.14
	(0.848)	(0.711)
Female * In partnership	0.55	1.01
	(0.457)	(0.315)
Household head	1.21	1.52
	(0.272)	(0.217)
Household size	1.55	0.90
	(0.213)	(0.344)
Constant	0.70	7.51***
	(0.403)	(0.006)

Notes: Wald tests are distributed $\sim \chi^2(1)$ and computed as $(db)' V^{-1}(db)$ where db is the difference in coefficients between the two equations and V is the sum of the two variance-covariance matrices V_{NM} and V_{RM}; ***, **, * denote statistical significance at the 1%,5% and 10% level respectively; the prob-values for the tests are reported in parentheses. Source: *MAFE-Senegal survey (2008)*

Table 5.7: *Estimated treatment and endowment effects (standard errors in parentheses)*

	Raw Differential	Treatment Effect	Endowment Effect
Non-migrant coefficient structure			
Wage-employment	0.0313	0.0003	0.0310
		(0.0392)	(0.0294)
Self-employment	0.1070	0.0780	0.0290
		(0.0435)*	(0.0268)
No income earner	-0.1383	-0.0842	-0.0540
		(0.0436)*	(0.0340)
Return-migrant coefficient structure			
Wage-employment	0.0313	-0.0451	0.0764
		(0.0414)	(0.0383)**
Self-employment	0.1070	0.0660	0.0410
		(0.0571)	(0.0500)
No income earner	-0.1383	-0.0191	-0.1191
		(0.0614)	(0.0524)**

Notes: Bootstrapped standard errors in parentheses (1000 repetitions); ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels. Source: *MAFE-Senegal survey (2008)*

treatment effect seems to be more important than the endowment effect when applying the more precisely estimated non-migrant coefficients to return migrant characteristics, while the endowment effect seems to dominate when using the return-migrant parameter structure.

5.4.4 Average treatment effects on the treated after propensity score matching

A further robustness check of the role of return migrant status for occupational status in Dakar uses propensity score matching techniques to estimate the treatment effect on the treated. The propensity score is estimated using a probit model that includes variables that could simultaneously influence the return migrant status and the occupational outcome, and are unaffected by the fact that the individual has prior migration experience (Table 5.8).

A requirement of propensity score matching is that there is sufficient overlap of propensity scores estimated for non-migrants and return migrants. This "common support" condition can be inspected visually by plotting the propensity score distribution of the two groups against each other. As depicted in Figure 5.1, the non-migrants distribution is clearly skewed towards lower propensity scores, while the return migrants' scores do not show such a clear pattern. The fact that very high propensity scores are absent for both groups

Table 5.8: *Propensity score estimation (Probit)*

Variables	
Sex	-2.135
	(0.429)***
Education	-0.174
	(0.169)
Sex * Education	0.717
	(0.237)***
Ethnicity (ref. Wolof)	
Pular	0.132
	(0.129)
Serer	-0.476
	(0.196)**
Other	-0.105
	(0.136)
Period of birth (ref. 1932-1955)	
1956-1970	-0.130
	(0.135)
1971-1984	-0.884
	(0.141)***
Occupation at age 25/before departure	
(ref. no income earner)	
Wage employed	-0.455
	(0.132)***
Self-employed/employer	-0.441
	(0.147)***
Father's occupation when respondent was 15	
(ref. no income earner; deceased/absent)	
Wage employed	-0.117
	(0.136)
Self-employed/employer	-0.063
	(0.124)
Constant	0.447
	(0.314)
Observations	1043
Pseudo R^2	0.1716

Notes: Standard errors in parentheses; ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels. Source: *MAFE-Senegal survey (2008)*

suggests that none of the variables included comes close to being a "perfect predictor". At the same time, the common support region is quite large. Deleting all observations of non-migrants whose propensity score is smaller than the minimum or larger than the maximum of the return migrant group leaves us with the interval $[0.01593484, 0.65770509]$ for analysis, including 810 non-migrants and 175 return migrants.
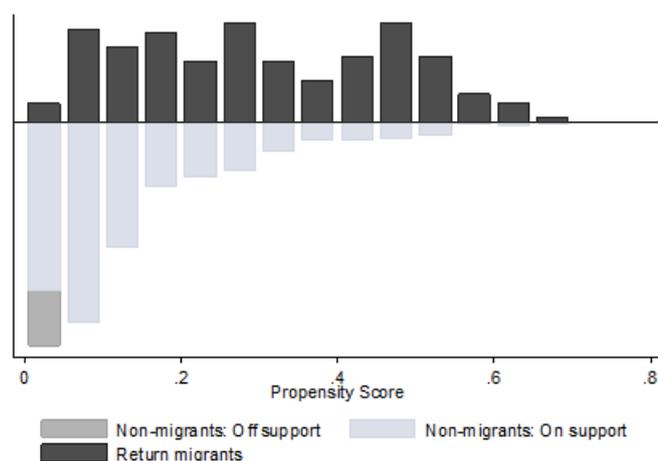
Figure 5.1: *Estimated propensity scores for untreated (non-migrants) and treated (return migrants)*

Source: MAFE-Senegal survey (2008).

Moreover, stratification tests after stratification matching (Dehejia and Wahba, 1999) as well as t-tests after nearest neighbour matching (Rosenbaum and Rubin, 1985) reveal that the distribution of relevant variables in both groups is balanced. The latter are reported in Table 5.9, and t-statistics on all variables indicate that differences between groups are no longer statistically significant. Also, the table includes the before- and after-matching standardised bias estimates as an additional indicator of balancing. Most of the remaining bias is around 5% or lower.[14]

The average treatment effects on the treated using three different matching estimators, (viz. nearest neighbour matching, stratification matching, and kernel matching) are now discussed (see Table 5.10). All three matching methods provide evidence for a positive and significant ATT for self-employment, which ranges between 0.125 (kernel matching) and 0.154 (nearest neighbour matching). The results support the previous findings from regression and decomposition analyses in terms of the direction of the effect. The treatment effect size estimate is larger than found for the previous two approaches. The effect on

---

[14]Sampling weights are applied in case of descriptive analysis, but not in multivariate analysis. For this reason, reported sample proportions can differ between the two sections.

Table 5.9: *Balancing test results after nearest neighbour matching*

Variables		Mean				t-test	
		Treated	Control	% Bias	% Red. Bias	t-statistic	p
Sex	Unmatched	0.286	0.618	-70.8		-8.35	0.000
	Matched	0.286	0.303	-3.6	94.8	-0.35	0.726
Education	Unmatched	1.743	1.692	11.3		1.34	0.181
	Matched	1.743	1.766	-5.1	55.0	-0.50	0.621
Sex * Education	Unmatched	0.497	0.999	-59.1		-7.00	0.000
	Matched	0.497	0.526	-3.4	94.3	-0.32	0.747
Ethnicity (ref. Wolof)							
Pular	Unmatched	0.240	0.208	7.8		0.95	0.340
	Matched	0.240	0.251	-2.7	64.7	-0.25	0.805
Serer	Unmatched	0.057	0.135	-26.6		-2.88	0.004
	Matched	0.057	0.040	5.9	78.0	0.74	0.457
Other	Unmatched	0.200	0.195	1.3		0.15	0.877
	Matched	0.200	0.183	4.3	237.8	0.41	0.685
Period of birth (ref. 1932-1955)							
1956-1970	Unmatched	0.451	0.300	31.6		3.93	0.000
	Matched	0.451	0.457	-1.2	96.2	-0.11	0.915
1971-1984	Unmatched	0.229	0.539	-67.2		-7.69	0.000
	Matched	0.229	0.234	-1.2	98.2	-0.13	0.900
Occupation at age 25/before departure (ref. no income earner)							
Wage employed	Unmatched	0.211	0.242	-7.3		-0.87	0.383
	Matched	0.211	0.183	6.8	7.2	0.67	0.503
Self-employed/employer	Unmatched	0.154	0.197	-11.3		-1.32	0.187
	Matched	0.154	0.149	1.5	86.7	0.15	0.882
Father's occupation when respondent was 15 (ref. no income earner; deceased/absent)							
Wage employed	Unmatched	0.211	0.257	-10.8		-1.28	0.202
	Matched	0.211	0.211	0.0	100.0	0.00	1.000
Self-employed/employer	Unmatched	0.400	0.427	-5.4		-0.65	0.514
	Matched	0.400	0.411	-2.3	57.3	-0.22	0.828

Source: *MAFE-Senegal survey (2008)*

wage-employment turns negative, but is not found to be statistically significant. Finally, the negative effect of return migrant status pertaining to the "no income earner" category appears to be confirmed as well, although the effect is only statistically significant when employing stratification or kernel matching.

Given the results from the exogeneity test, the propensity score matching has been implemented without taking account of potential biases due to differences in unobservable characteristics. Still, we are aware that the conclusion with regard to exogeneity may not be very robust in this application and, in this case, the examination of Rosenbaum bounds (estimated following nearest neighbour matching) can provide some insights into the potential impact of unobserved characteristics on inference about treatment effects.

Table 5.10: *Average treatment effects on the treated (ATT) with outcome occupational status, using different matching methods*

Matching method	Outcome	Number treated	Number controls	ATT	Std. Err.	t-statistic
Nearest neighbour	Wage-employment	175	410[c]	-0.073	0.054[a]	-1.348
					0.048[b]	-1.520
Kernel	Wage-employment	175	810	-0.041	0.042[a]	-0.964
Stratification	Wage-employment	175	810	-0.045	0.044[a]	-1.029
					0.043[b]	-1.050
Nearest neighbour	Self-employment	175	410[c]	0.154	0.058[a]	2.663
					0.051[b]	3.050
Kernel	Self-employment	175	810	0.125	0.045[a]	2.781
Stratification	Self-employment	175	810	0.129	0.043[a]	2.967
					0.044[b]	2.922
Nearest neighbour	No income earner	175	410[c]	-0.081	0.050[a]	-1.637
					0.052[b]	-1.550
Kernel	No income earner	175	810	-0.084	0.040[a]	-2.087
Stratification	No income earner	175	810	-0.084	0.043[a]	-1.941
					0.043[b]	-1.937

Notes:

a: Bootstrapped standard errors; 1000 repetitions.

b: Analytical standard errors.

c: The number of controls exceeds the number of treated in nearest neighbour matching due to tied (i.e. identical) propensity scores; the average outcome is therefore taken as outcome for the matched controls.

Source: *MAFE-Senegal survey (2008)*

Under the assumption of no hidden bias (Gamma = odds of differential assignment due to unobserved factors = 1), the test statistic gives a similar result to those discussed above after nearest neighbour matching (see Table 5.11). There is a significant treatment effect only in the case of self-employment. The question is whether we expect positive or negative unobserved selection. In the first case, unobserved characteristics that influence return migrant status positively are also positively related to taking up self-employment, and treatment effects would be overestimated. A negative selection would imply that the treatment effect was underestimated. As discussed in the literature review section, one could expect a positive selection if the migration decision is considered to be the main selection behaviour of return migrants compared to non-migrants, and unobserved factors such as motivation and lack of risk aversion enhance probabilities to migrate as well as to become self-employed. However, empirical evidence shows the opposite. Studies have either found no evidence for selection (Piracha and Vadean, 2010; Démurger and Xu, 2011) or a negative relationship (Wahba and Zenou, 2009; Kilic et al., 2007). Since the "return migrant" status analysed encompasses several subsequent self-selections (the out-migration, the return, and the decision not to re-depart for at least one year), the grouped effect is hard to interpret, especially without being able to further distinguish

by migration destination and the periods of departure and return. In case of negative selection, the bounds indicate that the true treatment effect increases steadily with a raising value of Gamma, the odds ratio of differential assignment to the "treatment" return migration between treatment and control groups. This is the more likely assumption given the evidence from the empirical literature. However, if we believe that the relationship is in fact positive, the estimated treatment effect would be statistically insignificant at a value of Gamma=1.5, this means that individuals with the same x-vector would differ in their odds of being a return migrant by a factor of 1.5 due to unobserved characteristics. At Gamma=2.5, which would reflect extreme levels of unobserved heterogeneity, the treatment effect would become once again significant, but return migration now influences self-employment negatively. The non-significant effect of return migrant status on wage employment would turn significant and negative at relatively low levels of Gamma (=1.5) in case of a positive relationship between the two processes.

Table 5.11: *Rosenbaum bounds for ATT in the presence of unobserved heterogeneity*

	Gamma	Q_mh+	Q_mh−	p_mh+	p_mh−
	1.0	0.724	0.724	0.234	0.234
	1.5	2.202	0.462	0.013	0.321
Wage-employment	2.0	3.275	1.506	0.000	0.065
	2.5	4.132	2.323	0.000	0.010
	3.0	4.854	2.998	0.000	0.001
	1.0	1.581	1.581	0.057	0.057
	1.5	0.083	3.109	0.467	0.001
Self-employment	2.0	0.703	4.215	0.241	0.000
	2.5	1.526	5.091	0.063	0.000
	3.0	2.205	5.821	0.014	0.000
	1.0	0.806	0.806	0.210	0.210
	1.5	2.295	0.393	0.011	0.347
No income earner	2.0	3.377	1.444	0.000	0.074
	2.5	4.242	2.266	0.000	0.012
	3.0	4.970	2.944	0.000	0.002

Notes:

Gamma : Odds of differential assignment due to unobserved factors.

Q_mh+ : Mantel-Haenszel statistic (assumption: overestimation of treatment effect).

Q_mh− : Mantel-Haenszel statistic (assumption: underestimation of treatment effect).

p_mh+ : Significance level (assumption: overestimation of treatment effect).

p_mh− : Significance level (assumption: underestimation of treatment effect).

Source: *MAFE-Senegal survey (2008)*

Lastly, the propensity score matching exercise is repeated using the ISEI and SIOPS scores as outcome variables (Table 5.12).[15] When pooling wage-employed and self-employed

---

[15]We restrict the study of the ISEI and SIOPS scores in this chapter to descriptive analysis and propensity score matching. The return migrant sample becomes even smaller (n=124), as inactive individuals are

in the analysis, the ATT estimates confirm the first descriptive findings indicating that return migrants achieve higher socio-economic status and higher prestige occupations. The migration experience seems to improve slightly their status in the Dakar labour market. One has to bear in mind that a four-point increase on the ISEI scale is not a very big jump, and could mean a move from working as a carpet weaver to being a basket weaver or brush maker. The real consequences of such a difference in status may therefore not always be intuitive.

Table 5.12: *Average treatment effects on the treated (ATT) with outcomes ISEI and SIOPS, pooled and by occupational status, using different matching methods*

Matching method	Outcome	Number treated	Number controls	ATT	Std. Err. (bootstrap)[a]	t-statistic
Pooled wage- and self-employed						
Nearest neighbour	ISEI	124	175	5.682	2.286	2.486
Kernel	ISEI	124	411	3.768	1.725	2.184
Stratification	ISEI	124	448	4.314	1.692	2.550
Nearest neighbour	SIOPS	124	175	5.089	2.019	2.520
Kernel	SIOPS	124	411	3.385	1.491	2.271
Stratification	SIOPS	124	448	3.677	1.561	2.355
Wage-employed						
Nearest neighbour	ISEI	50	73	8.901	4.387	2.029
Kernel	ISEI	50	157	5.711	3.017	1.893
Stratification	ISEI	50	169	6.981	3.075	2.270
Nearest neighbour	SIOPS	50	73	8.871	3.712	2.390
Kernel	SIOPS	50	157	6.620	2.894	2.288
Stratification	SIOPS	50	169	7.253	2.755	2.633
Self-employed						
Nearest neighbour	ISEI	74	67	0.134	3.145	0.043
Kernel	ISEI	74	209	1.486	2.437	0.610
Stratification	ISEI	74	247	3.136	2.061	1.522
Nearest neighbour	SIOPS	74	67	-1.091	2.691	-0.406
Kernel	SIOPS	74	209	0.107	2.254	0.047
Stratification	SIOPS	74	247	1.454	1.749	0.831

Notes: a - Bootstrapped standard errors; 1000 repetitions; Source: *MAFE-Senegal survey (2008)*

Moreover, the positive treatment effect may not be the same whether someone is wage-employed or self-employed. Repeating the analysis on the corresponding subsamples reveals that this effect is observed for the wage-employed, but not for the self-employed. In light of the results discussed above, it appears that return migrants in Dakar have no better chances than non-migrants of becoming wage-employed, but if they do obtain a waged job, it tends to be slightly higher ranked in terms of socio-economic status and prestige

---

excluded, which is particularly problematic for the regression and decomposition analyses. Moreover, the scores would require a different instrumentation strategy to perform the exogeneity test than the occupational status variable, a challenge which cannot be addressed in the scope of this thesis.

than wage jobs of otherwise similar non-migrants. This result is in line with research on the wage premium to return migration in Sub-Saharan Africa (De Vreyer et al., 2010) and elsewhere (e.g. Co et al., 2000; Barrett and Goggin, 2010; de Coulon and Piracha, 2005). Return migrants may signal an experience gain to employers once back home. By contrast, return migrants are, at the average, more likely to become self-employed than non-migrants, but they cannot use their migration experience to engage in activities that are ranked more highly in terms of socio-economic status and prestige than those performed by non-migrants.

While the propensity score matching exercise is in line with the marginal effect estimates and treatment effects from the decomposition analysis in terms of the direction and statistical significance of the effect of return migrant status, the magnitude tends to be considerable larger. There are several limitations to the propensity score matching in this application. Firstly, propensity scores do not cover the entire range from zero to one, indicating that "good" predictors of return migrant status are missing. The specification could not be improved, since instruments such as the network variables should not be included as predictors (Bhattacharya and Vogt, 2007). Moreover, "too good" predictors will reduce the common support area. A second, and related, limitation is the relatively high number of identical propensity scores. These tend to inflate the estimate, especially in the case of nearest neighbour matching. Inclusion of continuous variables could theoretically improve the estimation of the propensity score, but no appropriate variables could be identified.[16]

5.5   Discussion and Conclusions

We analysed the role of past migration experience for occupational status in Dakar, using three different methodological approaches. The main result obtained, a positive effect on self-employment of approximately seven percentage points, conforms to findings in previous studies for other countries outside the region of Sub-Saharan Africa. The relationship thus appears to be very robust to diverse country contexts. However, when using variables on the hierarchical socio-economic status or prestige position of the occupation performed, the overall positive effect of return migration is confined solely to wage-employed activities.

---

[16]Education in years is not necessarily determined at the time of migration. We are more confident that the binary indicator, which distinguishes between individuals without and with at least some formal education, is determined previous to migration at age 15 or older. Several tests have been made, with poorer results in terms of the common support area, but reducing the number of identical propensity scores. The ATT estimate for self-employment was lowered, but not to the level of seven percentage points previously found using regression and decomposition analysis.

The quality of self-employed activities of return migrants resembles the one performed by non-migrants.

This result, together with evidence from the literature, points out that further research on a larger sample would be needed to improve the understanding of the nature of heterogeneity in the outcome variable as well as the explanatory variable of interest, the return migrant status. Distinctions on the basis of productivity, size, and the formality or informality of the self-employment activity could provide insights into the selection of return migrants into different types of self-employment. Also, the result on wage-employment, which suggests that returnees are able to signal to employers that they have acquired valuable skills, would be worth exploring. This could be achieved with a finer categorisation of wage-employed statuses or an analysis on a continuous variable, such as the ISEI score, that takes account of the distributional effect and not only the average effect. Moreover, techniques other than the propensity score matching approach should be used to test the robustness of this result, as the estimates for occupational outcomes suggest that propensity score matching tends to overestimate average treatment effects.

Moreover, differential migration and return experiences have not been taken into account in the present analysis, since the focus was on a comparison with respect to the non-migrant group. Research focusing on returnees has highlighted the role of factors such as the destination country, the amount of savings accumulated, the type of activity performed abroad, links maintained to the home country, the return motive, controls for the intention to leave again, and information about the period of departure and return, as well as the time passed since return (e.g. Gubert and Nordman, 2008; Black and Castaldo, 2009; Mesnard, 2004). These are aspects that should be taken into account in order to achieve some understanding of the heterogeneity within the return migrant population. Another limitation of this study is that it is not possible to perform separate analysis for men and women, due to the small number of return migrants in the sample.

Also from a methodological point of view it would be desirable to extend the analysis further. Grouping the triple selection into migration, return, and no immediate re-departure is likely to conceal contrasting selection processes, making it difficult to interpret the joint effect. Disentangling the selection processes would thus be an important step but is constrained in the current context given data limitations.

Chapter 6

Concluding remarks

The overall aim of this thesis was to contribute new evidence on patterns, determinants and consequences of international migration from Sub-Saharan Africa, a region which remains still relatively little explored in the empirical migration literature. The biographic MAFE-Senegal survey data, collected in 2008 in Senegal, France, Italy and Spain, provided a recent and innovative data source for this purpose. Notably, it allowed for an analysis which encompassed the origin as well as the destination-country perspective, and which examined migration phenomena in a longitudinal manner. The contribution is, therefore, not only of substantive nature, but also a methodological one. The use of event-history analysis techniques was instrumental in this regard. Moreover, information on past characteristics was exploited to overcome challenges to cross-section analysis, such as for the construction of exclusion restrictions. Where possible and adequate, the focus on decision-making processes over the individual's life-time was complemented with analysis of contextual factors. This is, in particular, the case of the collection of immigration policy data and the analysis of the role of policy for the migration decision-making of Senegalese.

The following section briefly summarises the main findings and contributions to the relevant literature. Lastly, directions for future research are pointed out in section 6.2.

6.1 Summary of findings

6.1.1 Disentangling migration decision-making: Individual, family, and contextual-level migration determinants of migration attempts and actual migration

In Chapter 3 we investigated the following research question: *Which individual, family or contextual factors explain why Senegalese decide to attempt migration to Europe, and are the same factors determining whether the migration actually happens?*

The motivation underlying this research was three-fold. Micro-level research commonly reverts to either observed migration behaviour or to the statement of individuals about future migration plans (intentions/attempts) to study determinants of international migration. In both cases, selection processes are not fully comprehended. In the former case, individuals who so far never considered migration are combined with individuals who attempted migration, but finally stayed in the origin country. In the latter case, information on attempts is used as proxy for actual migration. The distinction between the two processes is therefore of interest from a conceptual point of view. At the same time, the decision-process set-up needs to be reflected in the choice of the empirical methodology. The second motivation is thus to develop an adequate empirical strategy to analyse migration attempts and realisations. Thirdly, the question whether attempts and actual migration follow the same patterns has considerable policy relevance, as European immigration policies on admission to the country target individuals who are still in the origin country and may attempt migration and not only the selected group of individuals that has already arrived in the host country.

We build on and enhance the literature on the relationship between intentions and realisations initiated in the 1980s in the context of residential mobility (e.g., Sly and Wrigley, 1985; Fuller et al., 1985; Gardner et al., 1985; De Jong, 2000) as well as first follow-up papers on international migration (e.g., van Dalen and Henkens, 2008). The main contributions of this analysis to the literature mirror its motivations in terms of (i) conceptual and (ii) empirical innovations and (iii) relevance to immigration policy-making.

Conceptual framework: We set up a conceptual framework which accounts for the role of individual, family and contextual-level factors. The first conceptual innovation consists of the incorporation of the country-specific migration attempt as outcome of interest prior to departure, which is more easily measurable than stated intentions. Secondly, we integrate

the time dimension in the decision-making process, underlining the interpretation of right-censoring for individuals who have - so far - not attempted to migrate. Thirdly, we investigate the migration outcome conditional on having carried out an attempt, and not, as is usually done in previous research, as an independent outcome.

Empirical analysis: The conceptual framework was applied to the data by examining the two stages in the migration decision-making process - attempts and departure to Spain, France or Italy - jointly, using a bivariate probit model with selection. The time dimension was incorporated by exploiting the longitudinal nature of the data and specifying the first stage as "time to first migration attempt" discrete-time event history model, with person-years as unit of analysis and time-varying covariates. The use of an otherwise standard econometric model in this way is innovative.

Policy relevance: In addition to individual- and family-level factors as well as variables reflecting the economic context, indicators for immigration policies in France, Italy and Spain are constructed based on the immigration policy database collected in the framework of this thesis. We distinguish several entry channels: short stays, family reunification, and work immigration, as well as aspects of undocumented migration. Policies may affect the incentive to attempt migration, influence whether an attempt is successful or not, or have no effect on the micro-level outcomes of interest. If and at what stage immigration policies matter is clearly relevant in the context of the policy debate in Europe. Selection patterns in terms of individual characteristics prior to migration are also of interest from a policy perspective, given that policies increasingly aim to generate selective migration flows. The analysis contributes thus to a better understanding of the role of immigration policies in individual migration decisions, a topic with limited coverage in the empirical literature.

In brief, the empirical findings suggested the following elements of response to the research question:

- Individual- and family-level factors commonly identified in the migration literature (e.g. gender, education, marital status, or children) were found to affect the *decision to attempt* migration in the anticipated way. However, they appeared to have *no effect* on whether the attempt concludes with a *migration* or not.

- Some factors have *opposite effects*, depending on whether attempts or the actual migration is examined. This is the case for the role of previous migration experience in another African country, which triggers attempts, but is negatively correlated with the migration itself. Furthermore, relative to wage-employed, non-income earners are

less inclined to attempt migration, but more likely to leave if they do so.

- Access to migrant networks is crucial in *both stages*: they provide an incentive to attempt migration and facilitate the move abroad - but only if network members live in the envisaged destination country. Moreover, not only networks based on family and friendship links are important, but also the individual's religious affiliation.

- The economic context at destination influences the likelihood of *actually departing* from Senegal, and to a lesser extent also the attempt. Furthermore, immigration policies seem to succeed in *impeding migration* among those who attempt to migrate, but have a *perverse effect* (illegal immigration policies) or *no effect* on the likelihood of *attempting migration*.

- Unobserved characteristics which are positively linked to attempting migration affect the successful outcome of the attempt in the same direction.

The differentiation between the decision to attempt migration and the actual migration, conditional on being among the attempters, provides thus new and interesting insights into the timing and direction of selection processes in terms of observable characteristics, which are not captured when only migration realisations or only intentions are examined.

6.1.2 Examining the role of personal or network international migration experience for investments at origin

The analysis in Chapter 4 addressed the following research question: *To what extent do international migration experience and access to migrant networks affect personal acquisitions of real estate assets (land and housing) and investment in business activities in the origin country?*

The image of the migrant as "agent of development" in the origin country is at the core of "co-development" policies that have been implemented as part of bilateral agreements between European and African countries during the past decade. At the same time, the economic consequences of international migration constituted an important research topic since the 1980s. However, the relevant quantitative literature has predominantly focused on the role of migration experience in the household or of remittances on business formation (see, among others, Mesnard, 2004; Ilahi, 1999; Wahba and Zenou, 2009; Kilic et al., 2007; Amuedo-Dorantes and Pozo, 2006). Research investigating the Sub-Saharan African context has been scarce.

The contribution of this study consisted of enhancing the relevant empirical literature with regard to three aspects. Firstly, we considered the entire migration cycle and therefore the timing of different types of investments. Exploiting the life-history data from the MAFE survey, as well as the fact that data were collected in origin as well as destination countries, the analysis compared non-migrants, migrants as well as return migrants, whereby the same individual could pass through different migrant statuses during his or her lifetime. The differentiation by the destination region (Europe or Africa) provided further nuances to the analysis. Secondly, the study investigated the role of construction land and housing as alternative investment assets. Highlighted by the qualitative literature on Senegalese migration as the most visible area of migrant involvement (Tall, 2009), the analysis contributed quantitative evidence on the propensity of migrants and return migrants to target this sector. Thirdly, previous studies examining the role of being a "migrant household" on non-migrant investment behaviour have largely relied on either remittance receipts or a "migrants in the household" indicator. We were able to distinguish the relationship type, gender, location and "seniority" of migrants in the personal network and could therefore examine whether the composition of migrant networks had differential effects on the investment behaviour of non-migrants.

What are the main results? Overall, we found that:

- Individuals who live or lived abroad have significantly higher chances to invest in assets back in Senegal than non-migrants. Conversely, non-migrants do not benefit from having migrants in their personal network, independently of the network composition. However, the analysis distinguishing by migrant status, destination region and asset type provided a more nuanced picture of the role of personal migration experience:

- Housing investments are predominantly made while still in a country outside of Africa. Returnees, who had lived in other countries in Africa, were found to be more likely to invest in business activities than non-migrants or other migrant groups. The destination region effect remained even after controlling for a series of factors related to the migration experience itself, such as the time spent abroad, legal status, migration motive or remittance behaviour.

- Moreover, personal international migration experience appears to attenuate the role of characteristics otherwise negatively associated with access to asset ownership. In particular, women who migrated are not disadvantaged as compared to male

migrants, whereas non-migrant women are less likely to invest than non-migrant men.

6.1.3 Return migrants in the origin country labour market

The aim of the third empirical study was to respond to the following research question: *In how far does past migration experience affect the occupational status of Senegalese in the labour market context of the Dakar region?*

This study contributed to the existing body of literature on economic outcomes of return migration, which has been placing emphasis on the role of past migration experience for business start-ups in origin countries. Evidence on the situation of return migrants in Sub-Saharan African countries was scarce and the thesis research aimed to fill this gap. Moreover, it considered wage-employment and the fact of not earning any income from work as alternative statuses. In a more exploratory way, we examined the role of return migrant status for socio-economic status and prestige of the occupation performed. Furthermore, the research contributed to the literature from a methodological point of view by applying three different econometric approaches to study the relationship between return migrant status and occupational status. In this way, the robustness of results could be explored, which was particularly important in light of the small number of return migrants in the analysed sample.

Independently of the econometric approach applied, we obtained the same result:

- Return migrants were found to be more prone to self-employment than individuals without international migration experience.

This finding is in line with the findings from empirical studies examining the relationship between return migration and entrepreneurship or self-employment in a wide range of countries in the world.

At the same time, the exploratory analysis using the socio-economic index of occupational status and prestige index measures as outcomes of interest suggested that self-employed return migrants perform similar types of activities as non-migrants. A possible interpretation is that gains from migration are limited or not transferable, and that self-employed activities represent more often a choice of last resort than an achievement after the return to the home country.

6.2 Directions for future research

The thesis researched three aspects of international migration from Senegal and contributed to the development of immigration policy data and indicators. Given the questions I chose to address in this thesis, several methodological and topical issues could not be fully tackled. Moreover, each answer presented above in the discussion of findings engendered at the same time new questions. In the following paragraphs, we point out several possibilities for further research.

6.2.1 Limits to causal analysis

Causal analysis in micro-econometric migration research is persistently hampered by problems of endogeneity. Unobservable factors driving decisions to migrate, return, re-migrate or attempt migration are, at least theoretically, also likely to influence outcomes of interest such as investment behaviour or occupational attainment. Furthermore, educational decisions, childbearing and union formation, variables which are typically included as controls in regression analysis, may be jointly determined with migration. Reverse causality, another source of endogeneity bias, may also be present, as one can argue that decisions related to migration are taken with some anticipation. The causal ordering of migration decisions and other events, such as investments or marital transitions, may therefore deviate from the temporal ordering of events. In addition, certain analyses may be subject to sample selection biases, since, for instance, return migrants who were not able to find employment and re-migrated are not captured in the sample.

The use of life-history data can attenuate some of the aforementioned problems to a certain degree, by providing rich individual data capturing characteristics which may otherwise be omitted, and by establishing an ordering of observable events in time (within the limits of annual measurements and memory bias afflicting retrospective surveys). However, as pointed out in the respective chapters, endogeneity arising from reverse causality as described above or from characteristics that remain unobserved in the available data remains a challenge. Through the review of the literature and empirical explorations during the thesis research, several options for pursuing questions of causality further could be identified. One potential entry point, for instance in the case of investment decisions, are multi-process models for simultaneous event-histories, identified either through repeated events or adequate instruments. The approach taken in Chapter 5, extracting a cross-section and using retrospective information to construct instruments, may be a second

avenue to extend to other topics, though at the cost of renouncing the richness of time-varying data. Both approaches were not viable given the sample used and the way research questions addressed in this thesis were formulated. Whether these methods can be applied to related but simplified questions could be examined in a new project in the future.

6.2.2 Policy aspects

The role of immigration policies was investigated in the context of migration decision-making in Chapter 3, and a comprehensive data base of legal texts and policy variables on entry/admission was built in the context of this thesis. However, policies also aim to influence investment decisions and aspects related to return migration, the research areas studied in Chapters 4 and 5. For instance, "return migration programmes" - primarily targeting undocumented migrants, but also skilled migrants such as students - have been part of French policy for several decades, though with limited success (Diatta and Mbow, 1999; Bruzzone et al., 2006; Kabbanji and Flahaux, 2010). In addition to stimulating or enforcing return, measures include financial or technical support to facilitate reintegration of return migrants in the labour market. The recent discussion of a revival of temporary migration can be expected to further enhance the development of policy instruments that affect the situation of migrants after their return. Similarly, co-development policies target the migrant diaspora as potential investors, such as the "Mobilisation of diaspora expertise" component of the co-development initiatives programme (Kabbanji and Flahaux, 2010).

The construction of comparable quantitative indicators of policies targeting investment and return migrants would certainly be challenging. Policies are financed and implemented through multilateral programmes, bilateral agreements, or as part of national policy, and the gap between stated policies and implementation is likely to be larger than in the case of policies affecting entry considered in this thesis. Still, extending the analysis of the role of policies to the other topics investigated in the thesis would be an interesting research area to develop.

Less ambitiously, the already collected data could be used to analyse the role of policies for outcomes such as destination choice, the probability of undocumented migration, or the choice of a specific legal category (students, family). Analyses can use the MAFE-survey data exploited in this thesis, but can also revert to other national longitudinal data sets, as long as there is sufficient variation in policies over time. Policies may affect the switching

between categories more than the decision to migrate itself (Czaika and de Haas, 2011).

6.2.3 Broaden the scope to related research questions

Similarly, the findings on migration and investment as well as on labour market behaviour of return migrants presented in this thesis have highlighted questions that merit further examination. For instance, the result that access to migrant networks does not appear to affect individual investments of non-migrants highlights that there may be other types of support, such as providing the asset for use by family members or bequeathing it. In this context, it would also be interesting to examine the interaction between individual investments, collective types of support through donations for community-level projects or membership in associations as well as remittance transfers. Are those activities complementary or substitutive? In the context of the analysis on labour market outcomes of return migrants and non-migrants in the region of Dakar, a manifest extension would be to examine in more detail than what was possible in the scope of the thesis the quality of the work performed, for instance by taking into account the socio-economic status attached to the occupation. A second interesting extension would consist of analysing the role of migration characteristics in explaining differential occupational outcomes among return migrants. Given the sample limitations, this would require pooling the sample across the three African countries surveyed in the framework of the MAFE-project or the use of a different data set.

6.2.4 Extend the geographical scope

The last point under the heading of future research ideas refers therefore to the broadening of the geographical scope of the analysis. While only the surveys on the Senegalese population were used for this thesis, data on Congolese and Ghanaian migration are now available for analysis. Comparative research on two African countries which have a socio-economic context as well as migration history that are very different from the Senegalese one, can provide interesting insights into the generalizability of results.

Moreover, other new data sources on Senegal could be exploited to corroborate findings at the national level or extend the coverage beyond the region of Dakar. Since MAFE data were collected in Senegal in 2008, more emphasis has been placed on the importance of conducting migration-surveys in Europe and/or Africa. Data from two projects mentioned in the data chapter (Chapter 2), the "Migration and Development in Senegal" (MIDDAS)

project and the "EUMAGINE" project could be possible sources for further research on international migration from Senegal.

Bibliography

Abdou Fall, L. S. and Q. Wodon (2010). Impact sur la pauvreté et perceptions de la crise économique au Sénégal: Analyses quantitative et qualitative. *Perspective Afrique 5*(1-3), 1–17.

Adams, R. H. J. and A. Cuecuecha (2010, November). Remittances, household expenditure and investment in Guatemala. *World Development 38*(11), 1626–1641.

ADB (2001). Senegal - evaluation of the structural adjustment programme II - Project Performance Evaluation Report. Technical report, African Development Bank.

ADB (2007). Les transferts des fonds des migrants - un enjeu de développement. Technical report, African Development Bank. Survey report.

Adepoju, A., F. Van Noorloos, and A. Zoomers (2010). Europes migration agreements with migrant-sending countries in the Global South: A critical review. *International Migration 48*(3), 42–75.

Ajzen, I. (1985). From intentions to actions: A theory of planned behaviour. In J. Kuhl and J. Beckmann (Eds.), *Action control: From cognition to behaviour*. Berlin and New York: Springer.

Ajzen, I. and M. Fishbein (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ, Prentice-Hall.

Allison, P. (1982). Discrete time methods for the analysis of event histories. In S. Leinhardt (Ed.), *Sociological Methodology*, pp. 61 – 98. San Francisco: Jossey-Bass.

Amuedo-Dorantes, C. and S. Pozo (2006). Remittance receipt and business ownership in Dominican Republic. *The World Economy 29*(7), 939 – 956.

Angeles, G., D. K. Guilkey, and T. A. Mroz (1998). Purposive program placement and the estimation of family planning program effects in Tanzania. *Journal of the American Statistical Association 93*(443), 884 – 899.

Angelucci, M. (2012). US border enforcement and the net flow of Mexican illegal migration. *Economic Development and Cultural Change 60*(2), 311 – 357.

Angrist, J. (2001). Estimation of limited dependent variable models with dummy endogenous regressors: Simple strategies for empirical practice. *Journal of Business and Economic Statistics 19*(1), 2–16.

ANSD (2007). Situation économique et sociale du Sénégal en 2006. Technical report, Agence Nationale de la Statistique et de la Démographie, Dakar.

ANSD (2008). Sénégal. Résultats définitifs du troisième Recensement Général de la Population et de lHabitat (2002). Technical report, Agence Nationale de la Statistique et de la Démographie, Dakar.

ANSD (2009). Situation économique et sociale du Sénégal en 2008. Technical report, Agence Nationale de la Statistique et de la Démographie, Dakar.

ANSD (2010). Situation économique et sociale du Sénégal en 2009. Technical report, Agence Nationale de la Statistique et de la Démographie, Dakar.

Antoine, P., P. Bocquier, A. S. Fall, Y. M. Guissé, and J. Nanitelamio (1995). *Les familles dakaroises face à la crise.* Dakar: ORSTOM-IFAN-CEPED.

Antoine, P., P. Bocquier, R. Marcoux, and V. Piché (2007). L'expérience des enquêtes biographiques en Afrique. Chaire Quételet 2006 : Les systèmes d'information en démographie et en sciences sociales. Nouvelles questions, nouveaux outils ? Louvain-la-Neuve, 29 novembre - 1er décembre 2006, 19 p.

Antoine, P., X. Bry, and P. D. Diouf (1987, December). The "AGEVEN" record: A tool for the collection of retrospective data. *Survey Methodology 13*(2), 163–171.

Antoine, P. and A. Fall (2001). Crise, passage à l'âge adulte et devenir de la famille dans les classes moyennes et pauvres à Dakar; rapport d'étape. Technical report, IRD and IFAN.

Auriat, N. (1996). *Les défaillances de la mémoire humaine: aspects cognitifs des enquêtes rétrospectives.* Travaux et documents - Institut national d'études démographiques. Presses universitaires de France.

Azam, J.-P., M. Dia, C. Tsimpo, and Q. Wodon (2007). Has growth in Senegal after the 1994 devaluation been pro-poor? In Q. Wodon (Ed.), *Growth and poverty reduction: case studies from West Africa*, Chapter 3, pp. 45–70. World Bank.

Azam, J.-P. and F. Gubert (2006). Migrants' remittances and the household in Africa: A review of evidence. *Journal of African Economies 15*(2), 426 – 462.

Ba, C. (1997). Réseaux migratoires des sénégalais du Cameroun et du Gabon en crise. In J. Bonnemaison, L. Cambrzy, and L. Quinty Bourgeois (Eds.), *Le territoire, lien ou frontière ? : Identités, conflits ethniques, enjeux et recompositions territoriales.* Paris: ORSTOM.

Ba, C. (2007, June). Barça ou barzakh: La migration clandestine sénégalaise vers l'Espagne entre le Sahara Occidental et l'océan atlantique. Presented at the Round Table "Le Maghreb, terre d'émigration, de passage et d'immigration", Casa Arabe, University of Murcia.

Ba, C. O. and A. I. Ndiaye (2008, March). L'émigration clandestine sénégalaise. *REVUE Asylon(s) 3*.

Babou, C. A. (2002). Brotherhood solidarity, education and migration: The role of the Dahiras among the Murid muslim community of New York. *African Affairs 101*(403), 151–170.

Backiny-Yetna, P., M. Camara, D. Ndoye, P. T. Ndiaye, C. Tsimpo, and Q. Wodon (2010). Progrès accomplis dans le cadre de la stratégie pour la croissance et la réduction de la pauvreté au Sénégal. *Perspective Afrique 5*(1-3), 7.

Baizan, P., C. Beauchemin, and A. González Ferrer (2011). A reassessment of family reunification in Europe - The case of Senegalese couples. *MAFE Working Paper 16*, 1–27.

Bakewell, O. (2009). South-south migration and human development: Reflections on African experiences. *Human development research paper 7*, 80.

Balkenhol, B. and E. H. Gueye (1994). Tontines and the banking system - is there a base for building linkages? *Small Enterprise Development 5*(1), 47 – 55.

Barrett, A. and J. Goggin (2010). Returning to the question of a wage premium for returning migrants. *National Institute Economic Review 213*(1), 43–51.

Barrett, A. and P. J. O'Connell (2001). Is there a wage premium for returning Irish migrants? *The Economic and Social Review 32*(1), 1–22.

Bauer, T. and M. Sinning (2008). An extension of the Blinder-Oaxaca decomposition to nonlinear models. *AStA Advances in Statistical Analysis 92*(2), 197–206.

Beauchemin, C. (2012). Migrations between africa and europe: Rationale for a survey design. Technical report, INED MAFE Methodological Note 5.

Beauchemin, C., A. Bringé, and E. Morand (2011). Migrations internationales et trajectoires matrimoniales : L'exemple des migrations sénégalaises. In M.-E. Tremblay, P. Lavallée, and M. Tirari (Eds.), *Pratiques et méthodes de sondage*, pp. 250–254. Paris: Dunod.

Beauchemin, C. and A. González Ferrer (2011). Sampling international migrants with origin-based snowballing method: New evidence on biases and limitations. *Demographic Research 25*(3), 103–134.

Beauchemin, C., L. Kabbanji, D. Lessault, and B. Schoumaker (2010). Migrations between Africa and Europe:Survey Guidelines. Technical report, INED - MAFE Methodological Note 1.

Beauchemin, C. and B. Schoumaker (2005). Migration to cities in Burkina Faso: Does the level of development in sending areas matter? *World Development 33*(7), 1129–1152.

Becker, S. O. and M. Caliendo (2007, January). mhbounds - Sensitivity Analysis for Average Treatment Effects. IZA Discussion Papers 2542, Institute for the Study of Labor (IZA).

Becker, S. O. and A. Ichino (2002, November). Estimation of average treatment effects based on propensity scores. *Stata Journal 2*(4), 358–377.

Bekkar-Lacoste, R. and P. Fall (2006). Les Sahéliens à l'assaut de la forteresse européenne. De la patera marocaine à la pirogue artisanale au départ du Sénégal. *Zénith 47*, 14–16.

Bennett, J. (2010, January). Informal firms in developing countries: entrepreneurial stepping stone or consolation prize? *Small Business Economics 34*(1), 53–63.

Bertoli, S., J. Fernández-Huertas Moraga, and F. Ortega (2011). Immigration policies and the Ecuadorian exodus. *World Bank Economic Review 25*(1), 57 – 76.

Bevelander, P. and H. Skyt Nielsen (2001). Declining employment success of immigrant males in Sweden: Observed or unobserved characteristics? *Journal of Population Economics 14*(3), 455–471.

Bhattacharya, J. and W. B. Vogt (2007, September). Do instrumental variables belong in propensity scores? Working Paper 343, National Bureau of Economic Research.

Bilsborrow, R. E., G. Hugo, A. Oberai, and H. Zlotnik (1997). International migration statistics: Guidelines for improving data collection systems. Technical report, International Labour Office, Geneva.

Birdsall, N. and J. L. Londoño (1997). Asset inequality does matter: Lessons from Latin America. *OCE Working Paper 4066*, 1–28.

Black, R. and A. Castaldo (2009). Return migration and entrepreneurship in Ghana and Côte d'Ivoire: The role of capital transfers. *Tijdschrift voor Economische en Sociale Geografie 100*(1), 44 – 58.

Blanchard, M. (2008). Entre logiques de redistribution et volonté d'entreprendre : Les difficiles relations des migrantes sénégalaises avec leur famille d'origine. In *Presented at the Chaire Quetelet 2008*. 3-5 December 2008.

Blanchflower, D. G. and A. J. Oswald (1998, January). What makes an entrepreneur? *Journal of Labor Economics 16*(1), 26–60.

Blinder, A. S. (1973). Wage discrimination: Reduced form and structural variables. *Journal of Human Resources 8*(4), 436455.

Blion, R. and S. Bredeloup (1997). La Côte-d'Ivoire dans les stratégies migratoires des Burkinabé et des Sénégalais. In B. Contamin and F. Memel (Eds.), *Le modèle ivoirien en questions. Crises, ajustements, recomposition.*, pp. 707–737. Paris: Karthala-Orstom.

Bocquier, P. (1998). L'immigration ouest-africaine en Europe : une dimension politique sans rapport avec son importance démographique. *La Chronique du CEPED 30*, 1–4.

Boeri, T., G. H. Hanson, and B. McCormick (2002, July). *Immigration Policy and the Welfare System: A Report for the Fondazione Rodolfo DeBenedetti*. Number 9780199256310 in OUP Catalogue. Oxford University Press.

Borjas, G. (1989). Economic theory and international migration. *International Migration Review 23*(3), 457–485.

Borjas, G. J. (1987, September). Self-selection and the earnings of immigrants. *American Economic Review 77*(4), 531–53.

Borjas, G. J. and B. Bratsberg (1996, February). Who leaves? The outmigration of the foreign-born. *The Review of Economics and Statistics 78*(1), 165–176.

Borodak, D. and M. Piracha (2011, July). Occupational choice of return migrants in Moldova. *Eastern European Economics 49*(4), 24–46.

Boussichas, M. and M. Goujon (2010). A quantitative indicator of the immigration policy's restrictiveness. *Economics Bulletin 30*(3), 1727–1736.

Boyd, M. (1989). Family and personal networks in international migration: Recent developments and new agendas. *International Migration Review 23*(3), 638–670.

Bredeloup, S. (1993). Les migrants du fleuve Sénégal : A quand la "Diams'pora" ? *Revue européenne de migrations internationales 9*(1), 67–93.

Bruzzone, T., P. D. Fall, M. Tall, and C. Gueye (2006). Le milieu sénégalais et l'action transnationale des migrants. unpublished - Centro Studi di Politica Internazionale (Ce-SPI).

Burda, M. (1993). The determinants of East-West German migration - some first results. *European Economic Review 37*, 452–461.

Burda, M., W. Hardle, M. Muller, and A. Werwatz (1998). Semiparametric analysis of German East-West migration intentions: Facts and theory. *Journal of Applied Econometrics 13*(5), 525–541.

Butz, W. (1981). *Why collect retrospective data?* P (Rand Corporation). Rand Corp.

Calamia, A. (1980). *Ammissione ed allontanamento degli stranieri.* Istituto di diritto internazionale "D. Anzilotti". A. Giuffrè.

Caliendo, M. and S. Kopeinig (2008). Some practical guidance for the implementation of propensity score matching. *Journal of Economic Surveys 22*(1), 3172.

Calvès, A. E. and R. Marcoux (2007). Présentation: Les processus d'individualisation "à l'africaine". *Sociologie et sociétés 39*(2), 5 – 18.

Cameron, A. C. and P. K. Trivedi (2005). *Microeconometrics: methods and applications.* New York: Cambridge University Press.

Campbell, J. and R. Shiller (1988). The dividend price ratio and expectations of future dividends and discount factors. *Review of Financial Studies 1*(3), 195 – 227.

Carling, J. (2007). Migration control and migrant fatalities at the Spanish-African borders. *International Migration Review 41*(2), 316343.

Carrington, W. J., E. Detragiache, and T. Vishwanath (1996, September). Migration with endogenous moving costs. *The American Economic Review 86*(4), 909–930.

Cassarino, J.-P. (2004). Theorising return migration: the conceptual approach to return migrants revisited. *International Journal on Multicultural Societies 6*(2), 253–279.

Cerrutti, M. and D. Massey (2001). On the auspices of female migration from Mexico to the United States. *Demography 38*(2), 187–200.

Chami, R., C. Fullenkamp, and S. Jahjah (2003). Are immigrant remittance flows a source of capital for development? *IMF Working Paper WP/03/189*(189), 1–48.

Chiswick, B. (1999). Are immigrants favorably self-selected? *American Economic Review 89*(2), 181185.

Chiswick, B. R. (1978, October). The effect of americanization on the earnings of foreign-born men. *Journal of Political Economy 86*(5), 897–921.

CIMADE (2010). Enquête sur les pratiques des consulats de France en matière de délivrance des visas. Technical report, laCimade, Paris.

Cissé, F., M. Dansokho, and A. Diagne (2006). Migration et développement de l'entreprenariat des migrants sénégalais d'Italie. In S. Ceschi and A. Stocchiero (Eds.), *Relazioni transnazionali e co-sviluppo. Associazioni e imprenditori Senegalesi tra Italia e luoghi di origine.* Torino: L'Harmattan Italia.

Clement, M. (2011). Remittances and household expenditure patterns in Tajikistan: A propensity score matching analysis. Cahiers du GREThA 2011-09, Groupe de Recherche en Economie Thorique et Applique, (GREThA, CNRS, UMR 5113).

Co, C. Y., I. N. Gang, and M.-S. Yun (2000). Returns to returning. *Journal of Population Economics 13*, 57–79.

Collyer, M. (2005). When do social networks fail to explain migration? accounting for the movement of Algerian asylum-seekers to the UK. *Journal of Ethnic and Migration Studies 31*(4), 699–718.

Condé, J. and P. Diagne (1986). *South-North International Migrations.* Organisation for Economic Co-operation and Development. Development Centre.

Cornelius, W. and M. Rosenblum (2005). Immigration and politics. *Annual Review of Political Science 8*, 99–119.

Cornelius, W. and T. Tsuda (2004). Controlling immigration: the limits to government intervention. In W. Cornelius, T. Tsuda, P. Martin, and J. Hollifield (Eds.), *Controlling immigration: A Global Perspective*, Chapter 1, pp. 3–48. Stanford, CA: Stanford University Press.

Cornelius, W. A. and I. Salehyan (2007). Does border enforcement deter unauthorized immigration? The case of Mexican migration to the United States of America. *Regulation & Governance 1*(2), 139–153.

Coslovi, L. and A. Zarro (2008, April). Stati africani e migrazioni - la sfida dellinstitution building. ricerca-azione sulle politiche di alcuni Stati africani verso la diaspora. Working Paper 39, Centro Studi di Politica Internazionale CeSPI. Coordinated by Ferruccio Pastore.

Courgeau, D. (1991). Analyse des données biographiques erronées. *Population 46*(1), 89–104.

Cox-Edwards, A. and E. Rodrguez-Oreggia (2009, May). Remittances and labor force participation in Mexico: An analysis using propensity score matching. *World Development 37*(5), 1004–1014.

Czaika, M. and H. de Haas (2011). The effectiveness of immigration policies: A conceptual review of empirical evidence. *DEMIG/IMI Working Paper 33*, 1–26.

Da Vanzo, J. (1981). Microeconomic approaches to studying migration decisions. In G. De Jong and R. Gardner (Eds.), *Migration Decision Making*, pp. 90–129. New York: Pergamon.

Davis, B., G. Stecklov, and P. Winter (2002). Domestic and international migration from rural Mexico: Disaggregating the effects of network structure and composition. *Population Studies 56*(3), 291–309.

de Coulon, A. and M. Piracha (2005). Self-selection and the performance of return migrants: The source country perspective. *Journal of Population Economics 18*, 779807.

de Haas, H. (2008). The myth of invasion: the inconvenient realities of African migration to Europe. *Third World Quarterly 29*(7), 13051322.

de Haas, H. (2010). Migration and development: A theoretical perspective. *International Migration Review 44*(1), 227 – 264.

De Jong, G. (1999). Choice processes in migration behaviour. In K. Pandit and S. Withers (Eds.), *Migration and Restructuring in the U.S.*, pp. 273292. New York: Rowman and Littlefield Publishers.

De Jong, G. (2000). Expectations, gender, and norms in migration decision-making. *Population Studies 54*(3), 307–319.

De Jong, G. and J. Fawcett (1981). Motivations for migration: an assessment and a value-expectancy research model. In G. De Jong and R. Gardner (Eds.), *Migration Decision Making*, pp. 13–58. New York: Pergamon.

De Vreyer, P., F. Gubert, and A. Robilliard (2010). Are there returns to migration experience? An empirical analysis using data on return migrants and non-migrants in West Africa. *Annales d'Economie et de Statistique 97/98*, 307–328.

Deere, C. D. and C. Doss (2006). The gender asset gap: What do we know and why does it matter? *Feminist Economics 12*(1 - 2), 1 – 50.

Dehejia, R. and S. Wahba (1999). Causal effects in nonexperimental studies: reevaluating the evaluation of training programs. *Journal of the American Statistical Association 94*(448), 10531062.

Delaunay, D. (1984). *De la captivité à l'exil: histoire et démographie des migrations paysannes dans la Moyenne Vallée du fleuve Sénégal.* Travaux et documents de l'ORSTOM. O.R.S.T.O.M.

Démurger, S. and H. Xu (2011). Return migrants: The rise of new entrepreneurs in rural China. *World Development 39*(10), 1847–1861.

Di Bartolomeo, A., T. Fakhoury, and D. Perrin (2010). Carim migration profile, Senegal. Technical report, CARIM Consortium for Applied Research on International Migration.

Diagne, A. (2005). L'entrée des jeunes dans la vie professionnelle à Dakar: Moins d'attente et plus de précarité. *African Population Studies 20*(1), 119 – 139.

Diagne, A. and D. Lessault (2007). Emancipation résidentielle différée et recomposition des dépendances intergénérationnelles à Dakar. *Collection Regards sur 2007*, 41.

Diagne, Y. and F. Diane (2008). Impact des transferts des migrants sur la pauvreté au Sénégal. *DPEE Document d'étude 7*, 1–29.

Diane, F. and A. Fall (2008). Existe-t-il une bulle immobilière à Dakar? *DPEE Document d'étude 10*, 1–37. Direction de la Prévision et des Études Économiques, Ministère de l'économie et des finances.

Diatta, M. A. and N. Mbow (1999). Releasing the development potential of return migration: The case of Senegal. *International Migration 37*(1), 243–264.

Dimé, M. N. (2007). Remise en cause, reconfiguration ou recomposition? des solidarités familiales à l'épreuve de la précarité à Dakar. *Sociologie et sociétés 39*(2), 151 – 171.

Diouf, P. D. and C. Z. Guilmoto (1994). Démographie et développement dans la moyenne vallée du Sénégal. Présentation des enquêtes de 1992-93, premiers résultats et analyse typologique des ménages. Technical report, DPS-ORSTOM, Dakar.

Donato, K. M., J. Durand, and D. S. Massey (1992). Stemming the tide? Assessing the deterrent effects of the immigration reform and control act. *Demography 29*(2), 139–157.

Dos Santos, M. D. and F. Postel-Vinay (2003). Migration as a source of growth: The perspective of a developing country. *Journal of Population Economics 16*(1), 1432 – 1475.

Doss, C., C. Grown, and C. D. Deere (2008). Gender and asset ownership: A guide to collecting individual-level data. *Policy Research Working Paper WPS 4704*, 1–78. World Bank.

DPS (1995). Enquête sur les migrations et l'urbanisation au Sénégal (EMUS) 1993 - rapport national. Technical report, Direction de la prévision et statistique, Ministère de l'économie et des finances.

DPS (2004a). Le secteur informel dans l'agglomération de Dakar : Performances, insertion et perspectives. rapport résultats de la phase 2 de l'enquête 1-2-3. Technical report, Direction de la prévision et statistique, Ministère de l'économie et des finances, Dakar.

DPS (2004b). L'emploi, le chômage et les conditions d'activité dans l'agglomération de Dakar. résultats de la phase 1 de l'enquête 1-2-3 de 2002. Technical report, Direction de la prévision et statistique, Ministère de l'économie et des finances, Dakar.

DPS (2004c). Rapport de synthèse de la deuxième enquête sénégalaise auprès des ménages. Technical report, Direction de la prévision et statistique, Ministère de l'économie et des finances, Dakar.

Drinkwater, S. (2003a). Estimating the willingness to move within Great Britain: Importance and implications. Department of Economics, University of Surrey.

Drinkwater, S. (2003b). Go West? Assessing the willingness to move from Central and Eastern European countries. Department of Economics, University of Surrey.

Duflo, E. and C. Udry (2004). Intrahousehold resource allocation in Côte d'Ivoire: Social norms, separate accounts and consumption choices. *EGC Discussion paper 857*, 1–52. Economic Growth Center, Yale University.

Durand, J., W. Kandel, E. A. Parrado, and D. S. Massey (1996). International migration and development in Mexican communities. *Demography 33*(2), 249 – 264.

Duruflé, G. (1988). *L'ajustement structurel en Afrique (Sénégal, Côte d'Ivoire, Madagascar)*. Karthala.

Dustmann, C. (2000, August). Temporary migration and economic assimilation. *IZA Discussion Paper Series 186*, 1–36.

Dustmann, C. and O. Kirchkamp (2002). The optimal migration duration and activity choice after re-migration. *Journal of Development Economics 67*, 351372.

Earle, J. S. and Z. Sakova (2000). Business start-ups or disguised unemployment? Evidence on the character of self-employment from transition economies. *Labour Economics 7*(5), 575 – 601.

Ebin, V. (1995). International networks of a trading diaspora : the Mourides of Senegal abroad. In P. Antoine and A. Diop (Eds.), *La ville à guichets fermés ? Itinéraires, réseaux et insertion urbaine*, pp. 323–336. IFAN ; ORSTOM.

Echevin, D. and F. Murtin (2009). What determines productivity in Senegal? Sectoral disparities and the dual labour market. *Journal of Development Studies 45*(10), 1707 – 1730.

Eckstein, Z. and R. Shachar (2007). Correcting for bias in retrospective data. *Journal of Applied Econometrics 22*(3), 657–675.

ECOWAS (2008). Common approach on migration. Technical report, Economic Community of West African States, Ouagadougou. 18 January 2008.

Epstein, G. and I. Gang (2006). The influence of others on migration plans. *Review of Development Economics 10*(4), 652–665.

Espenshade, T. J. (1995). Using INS border apprehension data to measure the flow of undocumented migrants crossing the U.S.-Mexico frontier. *International Migration Review 29*(2), 545–565.

Espenshade, T. J. and D. Acevedo (1995). Migrant cohort size, enforcement effort, and the apprehension of undocumented aliens. *Population Research and Policy Review 14*(2), 145–172.

Evans, D. S. and B. Jovanovic (1989, August). An estimated model of entrepreneurial choice under liquidity constraints. *Journal of Political Economy 97*(4), 808–27.

Evans, D. S. and L. Leighton (1989). Some empirical aspects of entrepreneurship. *American Economic Review 79*(3), 519–535.

Evans, M. (2000). Briefing: Senegal: Wade and the Casamance dossier. *African Affairs 99*(397), 649–658.

Facchini, G., A. M. Mayda, and P. Mishra (2011, September). Do interest groups affect US immigration policy? *Journal of International Economics 85*(1), 114–128.

Facchini, G. and C. Testa (2010, November). The rhetoric of closed borders: quotas, lax enforcement and illegal migration. *Norface Discussion Paper Series 2010-1*(2010001), 1–28.

Fairlie, R. W. (1999, January). The absence of the African-American owned business: An analysis of the dynamics of self-employment. *Journal of Labor Economics 17*(1), 80–108.

Fall, P. D., S. M. Tall, V. T. Bruzzone, and C. Gueye (2006). Capital social et potentiel d'investissement dans les territoires d'origine des Sénégalais d'Italie. In S. Ceschi and A. Stocchiero (Eds.), *Relazioni transnazionali e co-sviluppo. Associazioni e imprenditori Senegalesi tra Italia e luoghi di origine.* Torino: L'Harmattan Italia.

Fan, C. and O. Stark (2007). International migration and "educated unemployment". *Journal of Development Economics 83*, 7687.

Fasani, F. (2009). Deporting undocumented immigrants: The role of labor demand shocks. University College London.

Fawcett, J. (1985). Migration psychology - new behavioral models. *Population and Environment 8*(1&2), 5–14.

Fawcett, J. (1989). Networks, linkages and migration systems. *International Migration Review 23*(3), 671–680.

Flahaux, M., C. Beauchemin, and B. Schoumaker (2010). Partir, revenir : Tendances et facteurs des migrations africaines intra et extra-continentales. In C. Beauchemin, L. Kabbanji, and B. Schoumaker (Eds.), *Entre parcours de vie des migrants et attentes politiques, quel co-developpement an Afrique subsaharienne ?*, Number 166 in Documents de travail INED, pp. 39–60. INED.

Flahaux, M.-L. (2009). Les migrations de retour et la réinsertion des Sénégalais dans leur pays d'origine. Master's thesis, Université Catholique De Louvain; Ecole des Sciences Politiques et Sociales.

Fonseca, R., P. Lopez-Garcia, and C. A. Pissarides (2001, May). Entrepreneurship, start-up costs and employment. *European Economic Review 45*(4-6), 692–705.

FRONTEX (2005). FRONTEX Agency Budget 2005.

FRONTEX (2011). FRONTEX Agency Budget 2011.

Fuller, T., P. Lightfoot, and P. Kamnuansilpa (1985). Mobility plans and mobility behaviour: Convergences and divergences in Thailand. *Population and Environment 8*(1&2), 15–40.

Fussell, E. and D. S. Massey (2004, February). The limits to cumulative causation: International migration from Mexican urban areas. *Demography 41*(1), 151–171.

Ganzeboom, H. and D. Treiman (1996). Internationally comparable measures of occupational status for the 1988 international standard classification of occupations. *Social Science Research 25*(3), 201–239.

Ganzeboom, H. B. G., P. M. De Graaf, and D. J. Treiman (1992). A standard international socio-economic index of occupational status. *Social Science Research 21*(1), 156.

Gardner, R., G. De Jong, F. Arnold, and B. Cario (1985). The best-laid schemes: an analysis of discrepancies between migration intentions and behaviour. *Population and Environment. 8*(1&2), 63–77.

Garip, F. (2008). Social capital and migration: How do similar resources lead to divergent outcomes. *Demography 45*(3), 591 – 617.

Gerdes, F. (2007, November). focus Migration Senegal. Technical Report 10, Hamburgisches WeltWirtschaftsInstitut (HWWI).

Gindling, T. (2009, January). South-South migration: The impact of Nicaraguan immigrants on earnings, inequality and poverty in Costa Rica. *World Development 37*(1), 116–126.

Goldsmith, H. and J. Beegle (1962). *The initial phase of voluntary migration.* Number 1 in Rural Sociology Studies. East Lansing: Michigan State University.

Gomulka, J. and N. Stern (1990, May). The employment of married women in the United Kingdom 1970-83. *Economica 57*(226), 171–99.

GRAB (1999). *Biographies d'enquêtes: Bilan de 14 collectes biographiques.* Méthodes et savoirs. Groupe de réflexion sur l'approche biographique, INED.

Gries, T. and W. Naudé (2010, January). Entrepreneurship and structural economic transformation. *Small Business Economics 34*(1), 13–29.

Groenewold, G. and R. Bilsborrow (2008). Design of samples for international migration surveys: Methodological considerations and lessons learned from a multi-country study in Africa and Europe. In C. Bonifazi, M. Okólski, J. Schoorl, and P. Simon (Eds.), *International migration in Europe; new trends and new methods of analysis*, pp. 293–312. Amsterdam: Amsterdam University Press.

Grogger, J. and G. H. Hanson (2011). Income maximization and the selection and sorting of international migrants. *Journal of Development Economics 95*(1), 42 – 57.

GSS (2008). Ghana Living Standards Survey Report of the Fifth Round (GLSS 5). Technical report, Ghana Statistical Service.

Gubert, F. and C. J. Nordman (2008). Return migration and small enterprise development in the Maghreb. Technical report, MIREM Project, Robert Schuman Centre for Advanced Studies.

Guilmoto, C. (1998). Institutions and migrations. short-term versus long-term moves in rural West Africa. *Population Studies 52*(1), 85–103.

Gutierrez., R., S. Carter, and D. Drukker (2001). On boundary-value likelihood-ratio tests. *Stata Technical Bulletin 10*(60), 15–17.

Hall, S. G., Z. Psaradakis, and M. Sola (1999). Detecting periodically collapsing bubbles: A Markov-switching unit root test. *Journal of Applied Econometrics 14*(2), 143 – 154.

Ham, J., W. Li, and P. Reagan (2011). Matching and semi-parametric IV estimation, a distance-based measure of migration, and the wages of young men. *Journal of Econometrics 161*(2), 208–227.

Hanson, G. H. and A. Spilimbergo (2001, August). Political economy, sectoral shocks, and border enforcement. *Canadian Journal of Economics 34*(3), 612–638.

Harris, J. and M. P. Todaro (1970). Migration, unemployment and development: A two-sector analysis. *American Economic Review 60*(1), 126 – 142.

Hatton, T. J. and J. G. Williamson (2003, 09). Demographic and economic pressure on emigration out of Africa. *Scandinavian Journal of Economics 105*(3), 465–486.

Heckathorn, D. (1997). Respondent-driven sampling: A new approach to the study of hidden populations. *Social Problems 44*(2), 174–199.

Heckman, J., H. Ichimura, J. Smith, and P. Todd (1998, September). Characterizing selection bias using experimental data. *Econometrica 66*(5), 1017–1098.

Hoddinott, J. (1994). A model of migration and remittances applied to Western Kenya. *Oxford Economic Papers, New Series 46*(3), 459 – 476.

Holtz-Eakin, D., D. Joulfaian, and H. S. Rosen (1994, Summer). Entrepreneurial decisions and liquidity constraints. *RAND Journal of Economics 25*(2), 334–347.

Horvath, F. (1982). Forgotten unemployment: Recall bias in retrospective data. *Monthly Labor Review 105*, 40 – 43.

Iara, A. (2006, June). Skill diffusion by temporary migration? Returns to Western European working experience in the EU accession countries. Development Working Papers 210, Centro Studi Luca d'Agliano, University of Milano.

Ichimura, H. and C. Taber (2001). Propensity-score matching with instrumental variables. *AEA Papers and Proceedings 91* (2), 119–124.

Ilahi, N. (1999). Return migration and occupational choice. *Review of Development Economics 3* (2), 170–186.

Imbens, G. and J. Wooldridge (2009a, June). Control functions and related methods. Centre for Microdata Methods and Practice (cemmap) Masterclass "New Developments in Econometrics" lecture notes.

Imbens, G. and J. Wooldridge (2009b, June). Weak instruments and many instruments. Centre for Microdata Methods and Practice (cemmap) Masterclass "New Developments in Econometrics" lecture notes.

IOM (2005). *World Migration Report 2005: Costs and Benefits of International Migration.* Geneva: International Migration Organization.

IOM (2009). Migration au Sénégal. profil national 2009. Technical report, International Migration Organization.

Jenkins, S. (1995). Easy estimation methods for discrete-time duration models. *Oxford Bulletin of Economics and Statistics 57* (1), 129–138.

Jenkins, S. (2001). A discrete-time split population survival ('cure') model for Stata 6 or Stata 7: Spsurv. In *Presentation UK Stata User Group Meeting.* 15 May 2001.

Jenkins, S. (2005). Survival analysis. Unpublished manuscript.

Jürges, H. (2007). Unemployment, life satisfaction and retrospective error. *Journal of the Royal Statistical Society: Series A (Statistics in Society) 170* (1), 43–61.

Kabbanji, L. (2010). Migration et développement: Quelles politiques menées en Afrique subsaharienne? In C. Beauchemin, L. Kabbanji, and B. Schoumaker (Eds.), *Entre parcours de vie des migrants et attentes politiques, quel co-développement en Afrique sub-saharienne ?*, Number 166 in Documents de Travail INED, Chapter 1, pp. 11–38. INED.

Kabbanji, L. and M. Flahaux (2010). Return migration to Senegal: Do policies meet migrants' needs? European Population Conference, 1-4 September 2010, Vienna.

Kaldor, N. (1934). The equilibrium of the firm. *Economic Journal 44* (173), 60–76.

Kanaiaupuni, S. M. (2000, June). Reframing the migration question: An analysis of men, women, and gender in Mexico. *Social Forces 78* (4), 1311–1347.

Kanbur, S. M. R. (1982, February). Entrepreneurial risk taking, inequality, and public policy: An application of inequality decomposition analysis to the general equilibrium effects of progressive taxation. *Journal of Political Economy 90* (1), 1–21.

Katz, E. and O. Stark (1986). Labor migration and risk aversion in less developed countries. *Journal of Labor Economics 4*(1), 134 – 149.

Kilic, T., G. Carletto, B. Davis, and A. Zezza (2007, September). Investing back home: Return migration and business ownership in Albania. *World Bank Policy Research Working Paper 4366*, 1–36.

Klugman, J. and I. Medalho Pereira (2009, October). Assessment of national migration policies: An emerging picture on admissions, treatment and enforcement in developing and developed countries. Human Development Research Papers (2009 to present) HDRP-2009-48, Human Development Report Office (HDRO), United Nations Development Programme (UNDP).

Knight, F. H. (1921). *Risk, uncertainty and profit.* New York: Houghton-Mifflin.

Koopmans, R., I. Michalowski, and S. Waibel (2012). Citizenship rights for immigrants: National political processes and cross-national convergence in Western Europe, 1980 - 2008. *American Journal of Sociology 117*(4), 1202 – 1245.

Krainer, J. and C. Wei (2004). House prices and fundamental value. *FRBSF Economic Letter 27*, 1 – 3.

Lessault, D. and C. Beauchemin (2009). Ni invasion, ni exode. Regards statistiques sur les migrations dAfrique subsaharienne. *Revue Europenne des Migrations Internationales 25*(1), 163–194.

Lessault, D., C. Beauchemin, and P. Sakho (2010). Migration internationale et conditions d'habitat des ménages à Dakar. In C. Beauchemin, L. Kabbanji, and B. Schoumaker (Eds.), *Entre parcours de vie des migrants et attentes politiques, quel co-développement en Afrique sub-saharienne ?*, Number 166 in Documents de Travail INED. INED.

Lessault, D., C. Beauchemin, and P. Sakho (2011). International migration and housing conditions of households in Dakar. *Population 66*(1), 195–225.

Lessault, D. and C. Mezger (2010). La migration internationale sénégalaise. Des discours publics à la visibilité statistique. *MAFE Working Paper 5*, 1–15.

Leuven, E. and B. Sianesi (2003, April). PSMATCH2: Stata module to perform full Mahalanobis and propensity score matching, common support graphing, and covariate imbalance testing. Statistical Software Components, Boston College Department of Economics. This version 4.0.3.

Lillard, L. (1993). Simultaneous equations for hazards. *Journal of Econometrics 56*, 189 – 217.

Lillard, L., M. Brien, and L. Waite (1995). Premarital cohabitation and subsequent marital dissolution: A matter of self-selection? *Demography 32*(3), 437 – 457.

Lindstrom, D. P. (1996, August). Economic opportunity in Mexico and return migration from the United States. *Demography 33*(3), 357–374.

Litchfield, J. and B. Reilly (2009). Modelling migration attempts and the role of gender in Albania. *Economic Annals 54* (182), 7–39.

Lu, M. (1999). Do people move when they say they will? Inconsistencies in individual migration behaviour. *Population and Environment 20* (5), 467–488.

Lucas, R. E. (2006, December). Migration and economic development in Africa: A review of evidence. *Journal of African Economies 15* (2), 337–395.

Lucas, R. E. J. (1978, Autumn). On the size distribution of business firms. *Bell Journal of Economics 9* (2), 508–523.

Manski, C. (1990). The use of intentions data to predict behavior: A best-case analysis. *Journal of the American Statistical Association 85* (412), 934–940.

Marchetta, F. (2011). Return migration and the survival of entrepreneurial activities in Egypt. Technical Report 2011/01, EUI Working Paper RSCAS.

Marie, A. (1997). *L'Afrique des individus : Itinéraires citadins dans l'Afrique contemporaine (Abidjan, Bamako, Dakar et Niamey)*. Paris, Karthala: Karthala.

Massey, D. (1987). The ethnosurvey in theory and practice. *International Migration Review 21* (4), 1498–1522.

Massey, D. (1990). Social structure, household strategies, and the cumulative causation of migration. *Population Index 56* (1), 3–26.

Massey, D. S. and K. E. Espinosa (1997, January). What's driving Mexico-U.S. migration? A theoretical, empirical, and policy analysis. *The American Journal of Sociology 102* (4), 939–999.

Massey, D. S. and E. A. Parrado (1998, March). International migration and business formation in Mexico. *Social Science Quarterly 79* (1), 1–20.

Massey, D. S. and A. Singer (1995). New estimates of undocumented Mexican migration and the probability of apprehension. *Demography 32* (2), 203 – 213.

Mattoo, A., I. C. Neagu, and C. Özden (2008). Brain waste? educated immigrants in the US labor market. *Journal of Development Economics 87* (2), 255 – 269.

Mayda, A. M. and K. Patel (2004). OECD countries migration policy changes. http://www9.georgetown.edu/faculty/amm223/papers.htm.

Mayr, K. and G. Peri (2004). Return migration as channel of brain gain. *CReAM Discussion Paper Series 04* (8), 1–53.

Mazzucato, V. (2009). Informal insurance arrangements in Ghanaian migrants' transnational networks: The role of reverse remittances and geographic proximity. *World Development 37* (6), 1105 – 1115.

Mbacké, K. and J. Hunwick (2005). *Sufism and religious brotherhoods in Senegal*. Princeton, NJ: Markus Wiener Publishers.

Mbow, P. (2008). Senegal: The return of personalism. *Journal of Democracy 19*(1), 156–169.

McCormick, B. and J. Wahba (2001, May). Overseas work experience, savings and entrepreneurship amongst return migrants to LDCs. *Scottish Journal of Political Economy 48*(2), 164–178.

McFadden, D. (1973). Conditional logit analysis of qualitative choice behavior. In P. Zarembka (Ed.), *Frontiers in econometrics*. New York: Academic Press.

McKenzie, D. (2007). Paper walls are easier to tear down: Passport costs and legal barriers to emigration. *World Development 35*(11), 20262039.

McKenzie, D., J. Gibson, and S. Stillman (2007). A land of milk and honey with streets paved with gold: Do emigrants have over-optimistic expectations about incomes abroad? *World Bank Policy Research Working Paper 4141*, 1–34.

McKenzie, D. and J. Mistiaen (2009). Surveying migrant households: A comparison of census-based, snowball and intercept point surveys. *Journal of the Royal Statistical Society 172*(2), 339–360.

McKenzie, D. and H. Rapoport (2007). Network effects and the dynamics of migration and inequality: Theory and evidence from Mexico. *Journal of Development Economics 84*, 124.

McKenzie, D. and M. Sasin (2007). Migration, remittances, poverty, and human capital: Conceptual and empirical challenges. *World Bank Policy Research Working Paper WPS 4272*, 1–16.

MEFSN (2010). Le paysage bancaire sénégalais. Ministere de l'Economie et des Finances, Republique du Sénégal, last accessed 01/11/2010 [http://www.finances.gouv.sn/lire-le-contenus,23.html].

Meng, C.-L. and P. Schmidt (1985). On the cost of partial observability in the Bivariate Probit Model. *International Economic Review 26*, 71–85.

Mesnard, A. (2004). Temporary migration and capital market imperfections. *Oxford Economic Papers 56*, 242262.

Mesnard, A. and M. Ravallion (2006). The wealth effect on new business startups in a developing economy. *Economica 73*, 367392.

Mesplé-Somps, S. (2007). Programme de lutte contre la pauvreté et stratgie de croissance au Sénégal les deux politiques se complètent-elles ? *Document de travail DIAL DT/2007-03*, 1–13.

Mezger, C. (2008). Who comes back ? The case of Senegalese returning to Dakar. *MAFE Working Paper 4*, 1–32.

Mincer, J. (1978). Family migration decisions. *The Journal of Political Economy 86*(5), 749–773.

Molho, I. (1986). Theories of migration: A review. *Scottish Journal of Political Economy 33*, 396–419.

Money, J. (1999). *Fences and neighbors: the political geography of immigration control*. G - Reference, Information and Interdisciplinary Subjects Series. Cornell University Press.

Mooney, M. (2003). Migrants' social ties in the U.S. and investment in Mexico. *Social Forces 81*(3), 1147 – 1170.

Muschkin, C. G. (1993, Spring). Consequences of return migrant status for employment in Puerto Rico. *International Migration Review 27*(1), 79–102.

Nascimbene, B. (1988). *Lo straniero nel diritto italiano*. L'Italia e la vita giuridica internazionale. Giuffrè.

Naudé, W. (2010, January). Entrepreneurship, developing countries, and development economics: new approaches and insights. *Small Business Economics 34*(1), 1–12.

Ndione, B. (2009). Contexte local et migration: l'exemple des dynamiques migratoires internationales de quartiers dans la ville sénégalaise de Kaolack. *European Journal of Population/Revue européenne de Démographie 25*(3), 325–354. 10.1007/s10680-008-9169-3.

Ndione, B. and A. Broekhuis (2006). Migration international et développement. Points de vue et initiatives au Sénégal. *Working Papers Migration and Development Series Report 8*, 1–30.

Ndione, B. and R. Lalou (2005). Transferts de revenus, investissements, obligation de dons? les usages économiques et sociaux de l'argent de la migration au Sénégal (Dakar, Touba, Kaolack) et au Mali (Bamako, Kayes). In *Presented at the XXV IUSSP International Population Conference*, Tours, France. 18-23 July 2005.

Ndoye, D., F. Adoho, P. Backiny-Yetna, M. Fall, P. T. Ndiaye, and Q. Wodon (2009). Tendance et profil de la pauvreté au Sénégal de 1994 à 2006. *Perspective Afrique 4*(1-3), 1–29.

Oaxaca, R. (1973, October). Male-female wage differentials in urban labor markets. *International Economic Review 14*(3), 693–709.

O'Connell, P. (1997). Migration under uncertainty: "try your luck" or "wait and see". *Journal of Regional Science 37*(2), 331–347.

OECD (2008). Handbook on constructing composite indicators: Methodology and user guide. Technical report, Organisation for Economic Co-operation and Development.

Orrenius, P. M. and M. Zavodny (2005, October). Self-selection among undocumented immigrants from Mexico. *Journal of Development Economics 78*(1), 215–240.

Ortega, F. and G. Peri (2009, April). The causes and effects of international migrations: Evidence from OECD countries 1980-2005. *NBER Working Papers 14833*, –. http://ideas.repec.org/p/nbr/nberwo/14833.html.

Osili, U. O. (2004). Migrants and housing investments: Theory and evidence from Nigeria. *Economic Development and Cultural Change 52*(4), 821 – 849.

Oxford Analytica (2008). Labour migration policy index, phase II. Technical report, Business Advisory Board, International Organization for Migration.

Papapanagos, H. and P. Sanfey (2001). Intention to emigrate in transition countries: the case of Albania. *Journal of Population Economics 14*, 491–504.

Parrado, E. and M. Cerrutti (2003). Labor migration between developing countries: The case of Paraguay and Argentina. *International Migration Review 37*(1), 101–132.

Peters, H. E. (1988). Retrospective versus panel data in analyzing lifecycle events. *Journal of Human Resources 23*(4), 488–513.

Piracha, M. and F. Vadean (2010, August). Return migration and occupational choice: Evidence from Albania. *World Development 38*(8), 1141–1155.

Pison, G., K. Hill, B. Cohen, and K. Foote (1997). *Les changements démographiques au Sénégal.* Travaux et documents - Institut national d'études démographiques. Institut national d'études démographiques.

Platteau, J.-P. (2006). *Institutions, social norms, and economic development.* London: Routledge.

Poirier, J., V. Piché, G. Le Jeune, B. Dabiré, and H. R. Wane (2001). Projet d'étude des stratégies de reproduction des populations sahéliennes à partir de l'enquête "dynamique migratoire, insertion urbaine et environnement au Burkina Faso". *Cahiers québécois de démographie 30*(2), 289–309.

Poulain, M., B. Riandey, and J.-M. Firdion (1992). Data from a life history survey and from the Belgian population register: A comparison. *Population: An English Selection 4*, 77–96.

Pylypchuk, Y. and T. M. Selden (2008, July). A discrete choice decomposition analysis of racial and ethnic differences in children's health insurance coverage. *Journal of Health Economics 27*(4), 1109–1128.

Radu, D. C. and G. Epstein (2007, September). Returns to return migration and determinants of subsequent moves. EALE annual conference, 2022 September 2007, Oslo.

Rapoport, H. and F. Docquier (2005). The economics of migrants' remittances. *IZA Discussion Paper 1531*, 1–82.

Ricci, M. (1986). Lo straniero extracomunitario e il regime delle circolari. *Rivista Amministrativa della Repubblica Italiana 137*, 628–647.

Riccio, B. (2001). From "ethnic group" to "transnational community"? Senegalese migrants' ambivalent experiences and multiple trajectories. *Journal of Ethnic and Migration Studies 27*(4), 583 – 599.

Riccio, B. (2005). Talkin' about migration. Some ethnographic notes on the ambivalent representation of migrants in contemporary Senegal. *STICHPROBEN. Wiener Zeitschrift fr kritische Afrikastudien 8*, 99 – 118.

Riccio, B. (2008). West African transnationalisms compared: Ghanaians and Senegalese in Italy. *Journal of Ethnic and Migration Studies 34*(2), 217–234.

Rivers, D. and Q. H. Vuong (1988, November). Limited information estimators and exogeneity tests for simultaneous probit models. *Journal of Econometrics 39*(3), 347–366.

Robin, N. (1996). La multipolarisation de la migration sénégalaise. In E. Ma-Mung (Ed.), *Mobilités et investissements des émigrés. Maroc, Tunisie, Turquie, Sénégal*, pp. 48 – 64. Paris: L'Harmattan.

Robin, N., R. Lalou, and M. Ndiaye (2000). Facteurs dattraction et de répulsion à l'origine des flux migratoires internationaux. Rapport National Sénégal Push-Pull. Technical report, European Commission; Eurostat.

Ródenas Calatayud, C. and M. Martí Sempere (2009, Autumn). ¿Son fiables los datos de migraciones del censo de 2001? *Revista de Economia Aplicada 17*(2), 97–118.

Roodman, D. (2010). The Commitment to Development Index: 2010 edition. Technical report, Center for Global Development.

Rosenbaum, P. and D. Rubin (1983). The central role of the propensity score in observational studies for causal effects. *Biometrika 70*(1), 4150.

Rosenbaum, P. and D. Rubin (1985). Constructing a control group using multivariate matched sampling methods that incorporate the propensity score. *The American Statistician 39*(1), 3338.

Rosenbaum, P. R. (2002). *Observational Studies* (2nd ed.). New York: Springer.

Rossi, P. (1955). *Why families move.* New York: The Free Press.

Ruhs, M. (2008). Economic research and labour immigration policy. *Oxford Review of Economic Policy 24*(3), 403–426.

Ruhs, M. and P. Martin (2008). Numbers vs rights: Trade-offs and guest worker programs. *International Migration Review 42*(1), 249–265.

Ruiz, I. and C. Vargas-Silva (2009). To send, or not to send: That is the question. a review of the literature on workers' remittances. *Journal of Business Strategies 26*(1), 73 – 98.

Sakho, P. (2006). Les migrations internationales sénégalaises: Potentiel financier et changement social. unpublished work.

Sall, M. (2004). *Acteurs et pratiques de la production foncière et immobilière à Ourossogui (Sénégal).* Thèse de doctorat, Université Catholique de Louvain.

Santo Tomas, P. A., L. H. Summers, and M. Clemens (2009). Migrants count: Five steps toward better migration data; report of the commission on international migration data for development research and policy. Technical report, Center for Global Development.

Sassen, S. (1999). Beyond sovereignty: De-facto transnationalism in immigration policy. *European Journal of Migration and Law 1*, 177–198.

Schmidt, P. and R. P. Strauss (1975, June). The prediction of occupation using multiple logit models. *International Economic Review 16*(2), 471–86.

Schoorl, J., L. Heering, I. Esveldt, G. Groenewold, R. van der Erf, A. Bosch, H. de Valk, and B. de Bruijn (2000). Push and pull factors of international migration: a comparative report. Technical report, EUROSTAT, Luxembourg.

Schoumaker, B., H. Bonayi Dabire, and B. Gnoumou-Thiombiano (2006). Collecting community histories to study the determinants of demographic behaviour. A survey in Burkina Faso. *Population (english edition) 61*(1), 71–97.

Schoumaker, B., V. S., and J. Mangalu (2009). Political turmoil, economic crisis and international migration from Africa. evidence from event-history data in DR Congo (1975-2007). IUSSP Seminar on the 'Demographic consequences of sudden economic and environmental changes', Kashiwa, Japan.

Shima, I. (2010, February). Return migration and labour market outcomes of the returnees. does the return really pay off? The case-study of Romania and Bulgaria. Technical Report 7, FIW. FIW Research Reports 2009/10 N 07.

Siety, F. (1967). Chronique de l'immigration; l'immigration étrangère en France en 1966. *Population (French Edition) 4*, 735–738.

Sinatti, G. (2009). Home is where the heart abides. migration, return and housing investment in Dakar, Senegal. *Open House International 34*(3), 49–56. Special issue 'Home, Migration, and The City: Spatial Forms and Practices in a Globalising World'.

Sinatti, G. (2011). 'Mobile transmigrants' or 'unsettled returnees'? Myth of return and permanent resettlement among Senegalese migrants. *Population, Space and Place 17*(2), 153 – 166.

Sjaastad, L. (1962). The costs and returns of human migration. *Journal of Political Economy 70*(5), 80–93.

Sly, D. F. and J. M. Wrigley (1985). Migration decision making and migration behavior in rural Kenya. *Population and Environment 8*(1&2), 87–97.

Smith, J. A. and P. E. Todd (2001, May). Reconciling conflicting evidence on the performance of propensity-score matching methods. *American Economic Review 91*(2), 112–118.

Smith, R. J. and R. W. Blundell (1986, May). An exogeneity test for a simultaneous equation tobit model with an application to labor supply. *Econometrica 54*(3), 679–85.

Staiger, D. and J. H. Stock (1997, May). Instrumental variables regression with weak instruments. *Econometrica 65*(3), 557–586.

Stark, O. (1991). *The Migration of Labor*. Oxford: Blackwell.

Stark, O. (1995). *Altruism and Beyond*. Oxford and Cambridge: Basil Blackwell.

Stark, O. (2004). Rethinking the brain drain. *World Development 32*(1), 1522.

Stark, O. and D. Bloom (1985). The new economics of labor migration. *American Economic Review 75*(2), 173 – 178.

Stark, O., C. Helmenstein, and Y. Yegorov (1997). Migrants' savings, purchasing power parity, and the optimal duration of migration. *International Tax and Public Finance 4*, 307–324.

Stata Press; StataCorp LP (2009). *Stata Base Reference Manual Release 11*. College Station, Texas: Stata Press; StataCorp LP.

Steele, F. (2005). Event history analysis. *NCRM Methods Review Papers NCRM/004*, 1–37.

Steele, F. (2008). Multilevel models for longitudinal data. *Journal of the Royal Statistical Society Series A 171*(1), 5 – 19.

Stier, H. and M. Tienda (1992). Family, work and women: The labor supply of hispanic immigrant wives. *International Migration Review 26*(4), 1291–1313.

Sueyoshi, G. (1995). A class of binary response models for grouped duration data. *Journal of Applied Econometrics 10*(4), 411–431.

Tall, S. (1994). Les investissements immobiliers à Dakar des émigrants sénégalais. *Revue Européenne des Migrations internationales 10*(3), 137 – 151.

Tall, S. (2002). L'émigration internationale sénégalaise d'hier à demain. In M. C. Diop (Ed.), *La Société sénégalaise entre le local et le global*, pp. 549 – 578. Paris: Karthala.

Tall, S. (2008). La migration internationale sénégalaise : des recrutements de main-d'oevre aux pirogues. In D. M. (Ed.), *Le Sénégal des migrations : Mobilités, identités et sociétés*, pp. 37–67. Paris: KARTHALA, ONU-Habitat et CREPOS.

Tall, S. and A. Tandian (2010). Regards sur la migration irrégulière des Sénégalais : Vouloir faire fortune en Europe avec des pirogues de fortune. Notes d'analyse et de synthèse 2010/50, CARIM, Robert Schuman Centre for Advanced Studies.

Tall, S. M. (2009). *Investir dans la ville africaine*. Dakar-Paris: Editions CREPOS - Karthala.

Tamvada, J. (2010, January). Entrepreneurship and welfare. *Small Business Economics 34*(1), 65–79.

Tandian, A. (2008). Des migrants sénégalais qualifiés en Italie: entre regrets et résignation. In D. M. (Ed.), *Le Sngal des migrations : Mobilits, identits et socits*, pp. 365–388. Paris: KARTHALA, ONU-Habitat et CREPOS.

Tani, M. and S. Mahuteau (2008). Return migration and working choices. Analytical report 2008/01, MIREM Project, Robert Schuman Centre for Advanced Studies.

Taylor, J. (1999). The new economics of labour migration and the role of remittances in the migration process. *International Migration 37*(1), 63 – 88.

Taylor, J. E., J. Arango, G. Hugo, A. Kouaouci, D. S. Massey, and A. Pellegrino (1996). International migration and community development. *Population Index 62*(3), 397 – 418.

Taylor, J. E. and J. Mora (2006). Does migration reshape expenditures in rural households? Evidence from Mexico. *World Bank Policy Research Working Paper WPS 3842*, 1–45.

Todaro, M. (1969). A model of labor migration and urban unemployment in less developed countries. *American Economic Review 59*, 138–148.

Toma, S. (2011, January). The role of migrant networks in the international mobility and the economic integration of Senegalese migrants in Europe. *FIERI Working Papers 01/2011*, 1–24.

Traore, S. (1994). Les modèles migratoires soninké et poular de la Vallée du fleuve Sénégal. *Revue europenne de migrations internationales 10*(3), 61–81.

Treiman, D. J. (1977). *Occupational Prestige in Comparative Perspective*. New York: Academic Press.

Upchurch, D. M., L. A. Lillard, and C. W. A. Panis (2002). Nonmarital childbearing: Influences of education, marriage, and fertility. *Demography 39*(2), 311 – 329.

van Dalen, H., G. Groenewold, and J. Schoorl (2005). Out of Africa: what drives the pressure to emigrate? *Journal of Population Economics 18*(4), 741–778.

van Dalen, H. v. and K. Henkens (2008). Emigration intentions: Mere words or true plans? explaining international migration intentions and behavior. Discussion Paper 2008-60, Tilburg University, Center for Economic Research.

Vidal, C. (1991). *Sociologie des passions*. Paris: Karthala.

Vidal, C. (1994). La 'solidarité africaine', un mythe à réviser. *Cahiers d'études africaines 39*(136), 687 – 691.

Vogler, M. and R. Rotte (2000). The effects of development on migration: Theoretical issues and new empirical evidence. *Journal of Population Economics 13*(3), 485–508.

Wahba, J. and Y. Zenou (2009). Out of sight, out of mind: Migration, entrepreneurship, and social capital. *CEPR Discussion Paper Series 7552*, 1–38.

Weissman, S. R. (1990, December). Structural adjustment in Africa: Insights from the experiences of Ghana and Senegal. *World Development 18*(12), 1621–1634.

Willems, R. (2008). Les "fous de la mer" : Les migrants clandestins du Sénégal aux Îles Canaries en 2006. In D. M. (Ed.), *Le Sénégal des migrations : Mobilités, identités et sociétés*, pp. 277–303. Paris: KARTHALA, ONU-Habitat et CREPOS.

World Bank (2005). *Sénégal - Une évaluation du climat des investissements.* Rapport No XX Sen. World Bank. Région Afrique, Département Secteur Privé et Infrastructures, Programme Régional sur le Développement des Entreprises.

World Bank (2006). Republic of Senegal. Joint IDA-IMF Staff Advisory Note of the Second Poverty Reduction Stratgey Paper. Technical report, World Bank.

World Bank (2007). *Senegal Looking for Work: The Road to Prosperity, Country Economic Memorandum*, Volume 40344 - SN of *Report.* World Bank.

World Bank (2011, December). World Development Indicators 2011. last visited on 03/04/2012.

Yang, D. (2006). Why do migrants return to poor countries? Evidence from Philippine migrants responses to exchange rate shocks. *The Review of Economics and Statistics 88*(4), 715–735.

Yang, D. (2008). International migration, remittances and household investment: Evidence from Philippine migrants' exchange rate shocks. *The Economic Journal 118*(528), 591 – 630.

Zampagni, F. (2011). A visa for Schengen's Europe. Consular practices and regular migration from Senegal to Italy. Technical report, CARIM/Euro-Meditteranean Consortium for Applied Research on International Migration.

Annex

Annex A

Consulted legal texts on immigration in France, Italy and Spain

Table A.1: *French legal texts*

Year	Type	Date and Nr.	Title
1945	Ordonnance	45-2658 du 2 novembre 1945	Relative à l'entrée et au séjour des étrangers en France
1945	Ordonnance	45-2447 du 19 octobre 1945	Portant code de la nationalité française
1946	Décret	46-1574 du 30 juin 1946	Réglementant les conditions d'entrée et de séjour en France des étrangers
1947	Circulaire	47-18 du 20 janvier 1947	Introduction, accueil, implantation des immigrants et de leurs familles
1947	Circulaire	10 février 1947	Délivrance carte de séjour
1956	Décret	56-149 du 24 janvier 1956	Publication du code : code de la famille et de l'aide sociale
1960	Loi	60-752 du 28 juillet 1960	Modification du code de nationalité
1961	Loi	61-1408 du 22 décembre 1961	Modification du code de nationalité
1964	Convention	21 janvier 1964	Convention entre la France et le Sénégal sur la circulation des personnes
1968	Circulaire	29 juillet 1968	Relative à la régularisation de la situation des travailleurs étrangers immigrés
1971	Décret	71-376 du 13 mai 1971	Inscription des étudiants
1973	Loi	73-42 du 9 janvier 1973	Modification du code de nationalité
1974	Convention	29 mars 1974	Convention d'établissement, France et Sénégal

Year	Type	Date and Nr.	Title
1974	Convention	29 mars 1974	Convention entre la France et le Sénégal sur la circulation des personnes
1974	Convention	29 mars 1974	Convention entre la France et le Sénégal sur la sécurité sociale
1974	Circulaire	9-74 du 5 juillet 1974	Stop immigration de travail
1974	Circulaire	30 novembre 1974	Conditons carte de séjour pour ressortissants de certains Etats d'Afrique noire entrés en France
1975	Décret	75-1088 du 21 novembre 1975	Relatif aux autorisations de travail
1976	Décret	76-56 du 21 janvier 1976	Relatif au séjour des étrangers en France
1976	Circulaire	76-3 du 24 février 1976	Autorisation provisoire de travail
1976	Arrêté	29 février 1976	Catégories d'étrangers auxquels la situation de l'emploi n'est pas opposable
1976	Décret	76-383 du 29 avril 1976	Relatifs aux conditions d'entrée et de séjour en France des membres des familles des étrangers autorisés à résider en France
1976	Arrêté	24 août 1976	Catégories d'étrangers auxquels la situation de l'emploi n'est pas opposable
1977	Arrêté	1 juillet 1977	Catégories d'étrangers auxquels la situation de l'emploi n'est pas opposable
1977	Décret	77-1239 du 10 novembre 1977	Suspendant provisoirement l'application des dispositions du décret 76-383
1977	Circulaire	77-524 du 12 dec 1977 (Bonnet)	Admission en France des étudiants étrangers
1978	Arrêté	16 mars 1978	Catégories d'étrangers auxquels la situation de l'emploi n'est pas opposable
1978	Circulaire	78-213 du 30 mai 1978	Conditions d'entrée et de séjour en France des étrangers venant suivre des cours du second cycle de l'enseignement secondaire
1978	Conseil d'Etat	24 novembre 1978	Décision judiciaire de Conseil d'Etat, 24 novembre 1978
1979	Circulaire	79-3 du 12 mars 1979	Autorisation provisoire de travail
1979	Arrêté	22 mai 1979	Catégories d'étrangers auxquels la situation de l'emploi n'est pas opposable
1979	Arrêté	18 juillet 1979	Catégories d'étrangers auxquels la situation de l'emploi n'est pas opposable
1979	Décret	79-1214 du 31 dec 1979 (Imbert)	Inscription des étudiants
1980	Loi	80-9 du 10 janvier 1980 (Bonnet)	Prévention de l'immigration clandestine

ANNEX A. CONSULTED LEGAL TEXTS ON IMMIGRATION IN FRANCE, ITALY AND SPAIN

Year	Type	Date and Nr.	Title
1980	Circulaire	80-135 du 2 avril 1980 (Bonnet)	Admission en France des étudiants étrangers
1980	Circulaire	25 avril 1980 (Imbert)	Admission en France des étudiants étrangers
1980	Arrêté	10 juin 1980	Catégories d'étrangers auxquels la situation de l'emploi n'est pas opposable
1980	Accord	1er décembre 1980 (conv application 1987)	L'accord sur la formation en vue du retour et de l'insertion dans l'économie sénégalaise des travailleurs ayant émigré temporairement en France
1981	Arrêté	19 février 1981	Catégories d'étrangers auxquels la situation de l'emploi n'est pas opposable
1981	Circulaire	81-50 du 10 juillet 1981	Relative au regroupement des familles des travailleurs étrangers
1981	Circulaire	5 août 1981	Relative au contrôle de la circulation transfrontalière
1981	Arrêté	6 août 1981	Catégories d'étrangers auxquels la situation de l'emploi n'est pas opposable
1981	Circulaire	7 août 1981	Délivrance titre de séjour
1981	Circulaire	11 août 1981	Régularisation de la situation de certains étrangers
1981	Loi	81-941 du 17 octobre 1981	Relatives à l'emploi de travailleurs étrangers en situation irrrégulière
1981	Loi	81-973 du 29 octobre 1981 (Questiaux)	Relative aux conditions d'entrée et de séjour des étrangers en France
1981	Décret	81-1221 du 31 décembre 1981	Accueil des étudiants étrangers
1982	Circulaire	82-001 du 4 janvier 1982	Relative à l'accueil des étudiants étrangers dans les universités
1982	Circulaire	82-41 du 5 mars 1982 (Grimaud)	Conditions d'entrée et de séjour en France des étudiants étrangers
1982	Circulaire	12 mars 1982	Relative à l'emploi de travailleurs étrangers en situation irrégulière
1982	Décret	82-442 du 27 mai 1982	Relative aux conditions d'entrée et de séjour des étrangers en France
1984	Arrêté	10 avril 1984	Relatif aux conditions d'entrée des étrangers sur le territoire
1984	Circulaire	84-246 du 16 juillet 1984	Modalités d'inscription des élèves étrangers
1984	Loi	84-622 du 17 juillet 1984 (Dufoix)	Relative aux étrangers séjournant en France et aux titres uniques de travail et séjour

Continued on next page

ANNEX A. CONSULTED LEGAL TEXTS ON IMMIGRATION IN FRANCE, ITALY AND SPAIN

Year	Type	Date and Nr.	Title
1984	Circulaire	84-250 du 17 sep 1984 (Joxe)	Conditions d'entrée et de séjour en France des étudiants étrangers
1984	Circulaire	84-394 du 8 oct 1984	Relative aux autorisations provisoires de travail délivrées aux étudiants étrangers
1984	Décret	84-1078 du 4 décembre 1984	Réglementant les conditions d'entrée et de séjour en France des étrangers
1984	Décret	84-1080 du 4 décembre 1984	Relatifs aux conditions d'entrée et de séjour en France des membres des familles des étrangers autorisés à résider en France
1984	Arrêté	14 décembre 1984	Catégories d'étrangers auxquels la situation de l'emploi n'est pas opposable
1984	Circulaire	84-24 du 21 décembre 1984	Relative aux titres uniques de séjour et travail
1984	Circulaire	84-337 du 31 décembre 1984	Conditions d'entrée et de séjour
1985	Circulaire	4 janvier 1985	Procédure d'introduction en France des membres de la famille des ressortissants étrangers
1985	Circulaire	85-196 du 1 aout 1985	Conditions d'entrée et de séjour en France des étudiants étrangers
1986	Loi	86-1025 du 09 septembre 1986 (Pasqua)	Relative aux conditions d'entrée et de séjour en France des étrangers - admission sur le territoire francais
1987	Décret	87-645 du 30 juillet 1987	Relative aux conditions d'entrée et de séjour des étrangers en France
1987	Arrêté	30 septembre 1987	Catégories d'étrangers auxquels la situation de l'emploi n'est pas opposable
1989	Loi	89-548 du 02 aout 1989 (Joxe)	Relative aux conditions de séjour et d'entrée des étrangers en France
1989	Circulaire	89-247 du 2 août 1989	Application loi 89-548
1990	Loi	90-34 du 10 janvier 1990	Relative aux conditions d'entrée et de séjour des étrangers en France
1990	Circulaire	90-20 du 23 janvier 1990	Relative aux autorisations provisoires de travail
1991	Décret	91-829 du 30 août 1991	Relative aux conditions d'entrée et de séjour en France des étrangers - admission sur le territoire francais
1991	Décret	91-902 du 6 septembre 1991	Portant publication de l'ordonnance no 45-2658 du 2 novembre 1945 modifiée relative aux conditions d'entrée et de séjour des étrangers en France

ANNEX A. CONSULTED LEGAL TEXTS ON IMMIGRATION IN FRANCE, ITALY AND SPAIN

Year	Type	Date and Nr.	Title
1991	Loi	91-1383 du 31 décembre 1991	Renforçant la lutte contre le travail clandestin et la lutte contre l'organisation de l'entrée et du séjour irréguliers d'étrangers en France
1992	Loi	92-190 du 26 février 1992	Relative aux conditions d'entrée et de séjour des étrangers en France
1992	Loi	92-625 du 6 juillet 1992	Sur la zone d'attente des ports et des aéroports
1993	Loi	93-1027 du 24 août 1993	Relative à la maîtrise de l'immigration et aux conditions d'entrée, d'accueil et de séjour des étrangers en France
1993	Loi	93-1417 du 30 décembre 1993	Portant diverses dispositions relatives à la maîtrise de l'immigration
1993	Décret	93-1362 du 30 décembre 1993	Nationalité française
1994	Circulaire	94-50 du 8 février 1994	Application loi 93-1027
1994	Décret	94-513 du 20 juin 1994	Avenant n° 1 à la convention générale de sécurité sociale du 29 mars 1974 entre le Gouvernement de la République française et le Gouvernement de la République du Sénégal
1994	Décret	94-770 du 2 septembre 1994	Relative aux conditions d'entrée et de séjour en France des étrangers - admission sur le territoire francais
1994	Décret	94-963 du 7 novembre 1994	Relatif au regroupement familial des étrangers
1994	Circulaire	7 novembre 1994	Relative au regroupement familial
1994	Loi	94-1136 du 27 décembre 1994	Relative aux conditions d'entrée et de séjour des étrangers en France
1995	Circulaire	95-11 du 17 février 1995	Maîtrise de l'immigration et aux conditions d'entrée et de séjour des étrangers en France et de ses décrets d'application
1995	Convention	1er août 1995 (in force only 2002)	Convention entre le Gouvernement de la République française et le Gouvernement de la République du Sénégal relative à la circulation et au séjour des personnes
1997	Loi	97-396 du 24 avril 1997	Portant diverses dispositions relatives à l'immigration
1997	Circulaire	24 juin 1997	Relative au réexamen de la situation de certaines catégories d'étrangers en situation irrégulière
1998	Loi	98-349 du 11 mai 1998	Relative aux conditions d'entrée et de séjour des étrangers en France

ANNEX A. CONSULTED LEGAL TEXTS ON IMMIGRATION IN FRANCE, ITALY AND SPAIN

Year	Type	Date and Nr.	Title
1998	Décret	98-502 du 23 juin 1998	Relative aux conditions d'entrée et de séjour en France des étrangers - admission sur le territoire francais
1998	Circulaire	98-420 du 9 juillet 1998	Relative à la délivrance des autorisations provisoires de travail aux étudiants étrangers
1999	Décret	99-1 du 4 janvier 1999	Relatif à la motivation des refus de visas opposés aux étudiants étrangers
1999	Décret	99-352 du 5 mai 1999	Réglementant les conditions d'entrée et de séjour en France des étrangers
1999	Décret	99-566 du 6 juillet 1999	Relatif au regroupement familial des étrangers
2000	Circulaire	2000-114 du 28 février 2000	Conditions d'entrée et de séjour
2000	Convention	25 mai 2000	Convention de co-developpement entre la France et le Sénégal
2000	Convention	25 mai 2000	Convention d'établissement, France et Sénégal
2002	Circulaire	2002-25 du 15 janvier 2002	Relative à la délivrance et au renouvellement des autorisations de travail aux étudiants étrangers
2002	Circulaire	26 mars 2002	Conditions d'entrée et de séjour en France des étudiants étrangers et modalités de renouvellement des cartes de séjour "étudiant"
2003	Loi	2003-1119 du 26 novembre 2003	Relative à la maîtrise de l'immigration, au séjour des étrangers en France et à la nationalité
2004	Ordonnance	2004-1248 du 24 novembre 2004	Relative à la partie législative du code de l'entrée et du séjour des étrangers et du droit d'asile
2004	Décret	2004-1237 du 17 novembre 2004	Conditions d'entrée et de séjour des étrangers en France; motivation des refus de visas opposés aux étudiants étrangers
2004	Circulaire	2004-135 du 23 novembre 2004	Attestation d'accueil
2005	Décret	2005-253 du 17 mars 2005	Regroupement familial des étrangers
2005	Décret	2005-1051 du 23 août 2005	Réglementant les conditions d'entrée et de séjour en France des étrangers
2005	Circulaire	2005- NOR/ INT/ 05/ 00097/ C du 31 octobre 2005	Mesures à prendre à l'endroit des ressortissants étrangers dont le séjour en France est irrégulier et dont au moins un enfant est scolarisé depuis septembre 2005
2006	Circulaire	20006-26 du 17 janvier 2006	Relative au regroupement familial des étrangers
2006	Loi	2006-911 du 24 juillet 2006	Relative à l'immigration et à l'intégration

ANNEX A. CONSULTED LEGAL TEXTS ON IMMIGRATION IN FRANCE, ITALY AND SPAIN

Year	Type	Date and Nr.	Title
2006	Accord	23 septembre 2006	Accord relatif a la gestion concertée des flux migratoires entre la France et le Sénégal
2006	Circulaire	2006-446 du 10 octobre 2006	relative à l'immigration et à l'intégration concernant la procédure de naturalisation
2006	Décret	2006-1378 du 14 novembre 2006	Relatif à la partie réglementaire du code de l'entrée et du séjour des étrangers et du droit d'asile
2006	Circulaire	2006-INT/ D/ 06/ 00117/ C du 27 décembre 2006	Regroupement familial
2007	Circulaire	2007-75 du 22 février 2007	Regroupement familial
2007	Circulaire	2007-323 du 22 août 2007	Relative aux autorisations de travail
2007	Loi	2007-1631 du 20 novembre 2007	Relative à la maîtrise de l'immigration, à l'intégration et à l'asile
2008	Accord	25 février 2008	Avenant à l'accord relatif a la gestion concertée des flux migratoires entre la France et le Sénégal
2008	Décret	2008-1115 du 30 octobre 2008	Relatif à la préparation de l'intégration en France des étrangers souhaitant s'y installer durablement
2009	Circulaire	2009-51 di 7 janvier 2009	Regroupement familial-condition de ressources
2009	Circulaire	2009-55 du 30 janvier 2009	Relative à la maîtrise de l'immigration, à l'intégration et à l'asile
2009	Circulaire	24 novembre 2009	Admission exceptionnelle au séjour
2011	Circulaire	31 mai 2011 (Guéant)	Maîtrise de l'immigration professionnelle
2011	Loi	2011-672 du 16 juin 2011	Relative à l'immigration, à l'intégration et à la nationalité
2012	Circulaire	12 janvier 2012	Accès au marché du travail des diplômés étrangers de niveau au moins équivalent au Master

ANNEX A. CONSULTED LEGAL TEXTS ON IMMIGRATION IN FRANCE, ITALY AND SPAIN

Table A.2: *Italian legal texts*

Year	Type	Date and Nr.	Title
1912	Legge	13 giugno 1912, N.555	Sulla cittadinanza italiana
1931	R.D.	18 giugno 1931, n. 773	Approvazione del testo unico delle leggi di pubblica sicurezza.
1933	R.D.	31 agosto 1933, n. 1592	Approvazione del testo unico delle leggi sull'istruzione superiore
1940	R.D.	6 maggio 1940, n. 635	Approvazione del regolamento per l'esecuzione del testo unico 18 giugno 1931, n. 773 delle leggi di pubblica sicurezza
1947	Circolare del del Ministero degli Affari Esteri	8 settembre 1947, n.38	Norme relative all'ingresso ed al transito degli stranieri in Italia
1949	Legge	29 aprile 1949, n. 264	Provvedimenti in materia di avviamento al lavoro e di assistenza dei lavoratori involontariamente disoccupati
1955	D.P.R.	30 maggio 1955, n. 797	Testo unico delle norme sugli assegni familiari
1961	Legge	10 febbraio 1961, n.5	Abrogazione della legislazione sulle migrazioni interne e contro l'urbanesimo nonchè disposizioni per agevolare la mobilità territoriale dei lavoratori
1961	Circolare del del Ministero degli Affari Esteri	31 ottobre 1961, n.48	Titolo di viaggio per stranieri
1962	Circolare del del Ministero degli Affari Esteri	5 aprile 1962, n.18	Ingresso, occupazione e soggiorno di lavoratori subordinati e delle loro famiglie negli Stati Membri della CEE
1963	Circolare del Ministero del lavoro	4 dicembre 1963, n.51/ 22/ IV	Norme per l'impiego in Italia dei lavoratori subordinati stranieri
1965	D.P.R.	30 dicembre 1965, n. 1656 (1)	Norme sulla circolazione e il soggiorno dei cittadini degli Stati membri della C.E.E. (1/circ).
1966	Circolare riservata, Ministero degli Affari Esteri	07 aprile 1966, n.0003	Norme per l'ingresso, il soggiorno ed il transito degli stranieri in Italia
1966	Circolare, Ministero degli Affari Esteri	17 settembre 1966, n.38	Regime dei visti tra l'Italia ed il Senegal
1970	Circolare riservata, Ministero degli Affari Esteri	28 dicembre 1970, n.0007	Norme per l'ingresso, il soggiorno ed il transito degli stranieri in Italia

ANNEX A. CONSULTED LEGAL TEXTS ON IMMIGRATION IN FRANCE, ITALY AND SPAIN

Year	Type	Date and Nr.	Title
1973	Circolare riservata, Ministero degli Affari Esteri	27 gennaio 1973, n.0002	Osservanza della regolamentazione in mteria di visti d'ingresso e di transito
1973	Circolare, Ministero degli Affari Esteri	23 giugno 1973, n.30	Ammissione di studenti stranieri alle Università, Politecnici ed Istituti Universitari italiani
1975	Legge	19 maggio 1975, n. 151	Riforma del diritto di famiglia
1975	Legge	22 maggio 1975, n. 152	Disposizioni a tutela dell'ordine pubblico
1975	Decreto Ministeriale	5 luglio 1975	Modificazioni alle istruzioni ministeriali 20 giugno 1896 relativamente all'altezza minima ed ai requisiti igienico sanitari principali dei locali d'abitazione
1976	Circolare, Ministero degli Affari Esteri	28 dicembre 1976, n.31	Ammissione di studenti stranieri alle Università, Istituti universitari, Politecnici e Accademie di Belle Arti. Norme per l'anno accademico 1980-81
1978	Legge	23 dicembre 1978, n. 833	Istituzione del servizio sanitario nazionale
1979	Circolare, Ministero dell'Interno	4 gennaio 1979, n.443/ 225388	Disposizioni di massima sull'ingresso e soggiorno degli stranieri in Italia
1979	Circolare, Ministero degli Affari Esteri	12 febbraio 1979, n.3	Ammissione di studenti stranieri alle Università, Istituti universitari, Politecnici e Accademie di Belle Arti. Norme per l'anno accademico 1979-80
1979	Circolare, Ministero degli Affari Esteri	14 novembre 1979, n.25	Ammissione di studenti stranieri alle Università, Istituti universitari, Politecnici e Accademie di Belle Arti. Norme per l'anno accademico 1980-81
1980	Legge	29 febbraio 1980, n. 33	Finanziamento del Servizio sanitario nazionale
1981	Legge	10 aprile 1981, n.158	Ratifica ed esecuzione delle convenzioni numeri 92, 133 e 143 dell'Organizzazione internazionale del lavoro
1982	Circolare del Ministero del lavoro	2 marzo1982, n.14194/ IR/ A	Accesso all'impiego di lavoratori extracomunitari
1982	Circolare del Ministero dell'interno	24 marzo 1982, n.443/ 186378/ 5/ 11/ 3/ 1/ 2	Nuove disposizioni sull'accesso al lavoro in Italia di manodopera extracomunitaria
1982	Circolare del Ministero del lavoro	14 maggio 1982, n.14677/ IR/ A	Accesso all'impiego di lavoratori extracomunitari
1982	Circolare del Ministero del lavoro	9 settembre 1982, n.15106/ IR/ A	Rilascio autorizzazioni a lavoratori stranieri
1982	Circolare del Ministero dell'interno	18 settembre 1982, n.443/ 186378/ 5/ 11/ 3/ 1/ 2	Nuove disposizioni sull'accesso al lavoro in Italia di manodopera extracomunitaria

ANNEX A. CONSULTED LEGAL TEXTS ON IMMIGRATION IN FRANCE, ITALY AND SPAIN

Year	Type	Date and Nr.	Title
1983	Legge	21 aprile 1983, n.123	Disposizioni in materia di cittadinanza
1985	Circolare, Ministero degli Affari Esteri	29 giugno 1985, n.12	Norme in materia di cittadinanza
1985	Circolare del Ministero dell'interno	19 agosto 1985, n.559/ 443/ 225388/ 2/ 4/ 6	Disposizioni di massima sull'ingresso e soggiorno degli stranieri in Italia: aggiornamento
1986	Circolari Ministero degli Affari Esteri	3 febbraio 1986, n. 4, 5, 6, 7	Introduzione del visto di ingresso (Algeria, Morocco, Tunisia, Kenya)
1986	Legge	30 dicembre 1986, n. 943	Oggetto: Norme in materia di collocamento e di trattamento dei lavoratori extracomunitari immigrati e contro le immigrazioni clandestine.
1987	Circolare del Ministero dell'interno	22 gennaio 1987, n.559/ 44// 186378/ 5/ 11/ 3/ 1/ 2/ la Div	Norme in materia di collocamento e di trattamento dei lavoratori extracomunitari immigrati e contro le immigrazioni clandestine.
1987	Circolare del Ministero del lavoro	1 aprile 1987, n.4608/ IR/ A-74	Studenti extracomunitari
1987	Decreto- legge	27 aprile 1987, n. 154	Proroga dei termini per la regolarizzazione dei lavoratori clandestini extracomunitari
1987	Decreto- legge	27 giugno 1987, n. 242	Proroga dei termini per la regolarizzazione dei lavoratori clandestini extracomunitari
1987	Decreto- legge	28 agosto 1987, n.353	Proroga dei termini per la regolarizzazione dei lavoratori clandestini extracomunitari
1988	Legge	16 marzo 1988, n. 81	Proroga dei termini per la regolarizzazione dei lavoratori clandestini extracomunitari
1989	Decreto-legge (cd. decreto MARTELLI)	30 dicembre 1989, 416	Norme urgenti in materia di asilo politico, di ingresso e soggiorno dei cittadini extracomunitari e di regolarizzazione dei cittadini extracomunitari ed apolidi già presenti nel territorio dello Stato.
1990	Legge	28 febbraio 1990, n. 39	Conversione in legge, con modificazioni, del decreto-legge 30 dicembre 1989, n. 416, recante norme urgenti in materia di asilo politico, di ingresso e soggiorno dei cittadini extracomunitari e di regolarizzazione dei cittadini extracomunitari ed apolidi già presenti nel territorio dello Stato. Disposizioni in materia di asilo.
1990	D.P.R.	15 maggio 1990, n. 136	Regolamento per l'attuazione dell'art. 1, comma 2, del decreto-legge 30 dicembre 1989, n. 416, conv., con modificazioni, dalla legge 28 febbraio 1990, n. 39, in materia di riconoscimento dello status di rifugiato

Continued on next page

ANNEX A. CONSULTED LEGAL TEXTS ON IMMIGRATION IN FRANCE, ITALY AND SPAIN

Year	Type	Date and Nr.	Title
1990	Legge	7 agosto 1990, n. 241	Nuove norme in materia di procedimento amministrativo e di diritto di accesso ai documenti amministrativi
1991	Legge	2 dicembre 1991, n. 390	Norme sul diritto agli studi universitari
1992	Legge	5 febbraio 1992, n. 91	Nuove norme sulla cittadinanza.
1992	Decreto Legislativo	26 novembre 1992, n. 470	Attuazione delle direttive 90/364/CEE, 90/365/CEE e 90/366/CEE in materia di diritto di soggiorno dei cittadini comunitari, dei lavoratori salariati e non salariati che hanno cessato la propria attivita' professionale e degli studenti.
1993	Legge di ratifica	30 settembre 1993 n.388	Indice degli atti di adesione della repubblica italiana all'accordo Schengen e relativa intesa con la francia
1995	Decreto Legge (DINI)	18 novembre 1995, n.489	Disposizioni urgenti in materia di politica dell'immigrazione e per la regolamentazione dell'ingresso e soggiorno nel territorio nazionale dei cittadini dei Paesi non appartenenti all'Unione europea.
1996	Decreto Legge	19 marzo 1996 n. 132	Disposizioni urgenti in materia di politica dell'immigrazione e per la regolamentazione dell'ingresso e soggiorno nel territorio nazionale dei cittadini dei Paesi non appartenenti all'Unione europea.
1996	Decreto Legge	17 Maggio 1996, n. 269	Disposizioni urgenti in materia di politica dell'immigrazione e per la regolamentazione dell'ingresso e soggiorno nel territorio nazionale dei cittadini dei paesi non appartenenti all'unione europea
1996	Decreto Legge	16 luglio 1996 n. 376	Disposizioni urgenti in materia di politica dell'immigrazione e per la regolamentazione dell'ingresso e soggiorno nel territorio nazionale dei cittadini dei paesi non appartenenti all'unione europea
1996	Legge	9 dicembre 1996, n. 617	Salvaguardia degli effetti prodotti dal decreto-legge 18 novembre 1995, n. 489, e successive decreti adottati in material di política dell'immigrazione e per la regolamentazione dell'ingresso e soggiorno nel territorio nazionale dei cittadini dei Paesi non appartenenti all'Unione europea
1998	Legge Turco-Napolitano	6 marzo 1998, n. 40.	Disciplina dell'immigrazione e norme sulla condizione dello straniero

ANNEX A. CONSULTED LEGAL TEXTS ON IMMIGRATION IN FRANCE, ITALY
AND SPAIN

Year	Type	Date and Nr.	Title
1998	Decreto Legislativo	25 luglio 1998 , n. 286	Testo unico delle disposizioni concernenti la disciplina dell'immigrazione e norme sulla condizione dello straniero.
1998	Presidente del Consiglio dei Ministri, Decreto	16 ottobre 1998	Integrazione al decreto interministeriale 24 dicembre 1997 recante programmazione dei flussi di ingresso per l'anno 1998 di cittadini stranieri non comunitari
1998	Decreto Legislativo	19 ottobre 1998, n. 380	Disposizioni correttive al testo unico delle disposizioni concernenti la disciplina dell'immigrazione e norme sulla condizione dello straniero, a norma dell'articolo 47, comma 2, della legge 6 marzo 1998, n 40.
1999	Decreto Legislativo	13 aprile 1999, n. 113	Disposizioni correttive al testo unico delle disposizioni concernenti la disciplina dell'immigrazione e norme sulla condizione dello straniero, a norma dell'articolo 47, comma 2, dellalegge 6 marzo 1998, n. 40
1999	D.P.R.	31 agosto 1999, n. 394	Regolamento di attuazione del testo unico delle disposizioni concernenti la disciplina dell'immigrazione e norme sulla condizione dello straniero.
2000	DIRETTIVA Ministero dell'Interno	1° marzo 2000	Definizione dei mezzi di sussistenza per l'ingresso ed il soggiorno degli stranieri nel territorio dello Stato.
2000	Circolare, Ministero della Sanità	24 marzo 2000	Disposizioni in materia di assistenza sanitaria
2000	Decreto Ministero Affari Esteri	12 luglio 2000	Definizione delle tipologie dei visti d'ingresso e dei requisiti per il loro ottenimento
2001	Circolare del Ministero dell'interno	8 gennaio 2001	Nuovi orientamenti interpretativi per le donne coniugatesi dopo il 1° Gennaio 1948 con stranieri
2002	Testo coordinato del decreto-legge	4 aprile 2002, n. 51	coordinato con la legge di conversione 7 giugno 2002, n. 106 concernente: "Disposizioni urgenti recanti misure di contrasto all'immigrazione clandestina e garanzie per soggetti colpiti da provvedimenti di accompagnamento alla frontiera".
2002	Legge di conversione	7 giugno 2002, n. 106	Conversione in legge, con modificazioni, del decreto-legge 4 aprile 2002, n. 51, concernente disposizioni urgenti recanti misure di contrasto all'immigrazione clandestina e garanzie per soggetti colpiti da provvedimenti di accompagnamento alla frontiera

Continued on next page

ANNEX A. CONSULTED LEGAL TEXTS ON IMMIGRATION IN FRANCE, ITALY AND SPAIN

Year	Type	Date and Nr.	Title
2002	Legge Bossi-Fini	30 luglio 2002, n. 189 (testo in vigore dal: 10-9-2002)	Modifica alla normativa in materia di immigrazione e di asilo
2002	Decreto-legge	9 settembre 2002, n. 195	Disposizioni urgenti in materia di legalizzazione del lavoro irregolare di extracomunitari
2002	Legge di conversione con modificazioni	9 ottobre 2002, n. 222	Conversione in legge, con modificazioni, del decreto-legge 9 settembre 2002, n. 195, recante disposizioni urgenti in materia di legalizzazione del lavoro irregolare di extracomunitari
2002	Presidente del Consiglio dei Ministri, Decreto	15 ottobre 2002	Programmazione transitoria dei flussi d'ingresso dei lavoratori extracomunitari nel territorio dello Stato per l'anno 2002
2003	Decreto Legislativo	7 aprile 2003, n. 87	Attuazione della direttiva 2001/51/CE che integra le disposizioni dell'articolo 26 della Convenzione applicativa dell'Accordo di Schengen del 14 giugno 1985
2003	Presidente del Consiglio dei Ministri, Decreto	19 dicembre 2003	Programmazione transitoria dei flussi d'ingresso dei lavoratori non stagionali extracomunitari nel territorio dello Stato per l'anno 2004.
2004	D.P.R.	27 luglio 2004, n. 242	Regolamento per la razionalizzazione e la interconnessione delle comunicazioni tra Amministrazioni pubbliche in materia di immigrazione.
2004	Decreto-legge	14 settembre 2004, n. 241	Disposizioni urgenti in materia di immigrazione.
2004	D.P.R.	18 ottobre 2004, n.334	Regolamento recante modifiche ed integrazioni al decreto del Presidente della Repubblica 31 agosto 1999, n. 394, in materia di immigrazione.
2004	Legge di conversione con modificazioni	12 novembre 2004, n.271	Conversione in legge, con modificazioni, del decreto-legge 14 settembre 2004, n. 241, recante disposizioni urgenti in materia di immigrazione
2005	Decreto-legge	27 luglio 2005, n. 144	Misure urgenti per il contrasto del terrorismo internazionale
2006	Circolare D.G.I.E.P.M. Uff. VI -	Centro Visti del 29 novembre 2006 Ministero degli Affari Esteri	Visti d'ingresso per ricongiungimento familiare e familiare al seguito. Procedura di validazione Ministero dell'Interno: Dipartimento per le Libertà Civili e l'Immigrazione Roma
2007	Decreto Legislativo	8 gennaio 2007, n.3	Attuazione della direttiva 2003/109/CE relativa allo status di cittadini di Paesi terzi soggiornanti di lungo periodo.
2007	Decreto Legislativo	9 gennaio 2007, n.5	Attuazione della direttiva 2003/86/CE relativa al diritto di ricongiungimento familiare.

ANNEX A. CONSULTED LEGAL TEXTS ON IMMIGRATION IN FRANCE, ITALY AND SPAIN

Year	Type	Date and Nr.	Title
2007	Decreto Legislativo	9 gennaio 2008, n.17	Attuazione della direttiva 2005/71/CE relativa ad una procedura specificamente concepita per l'ammissione di cittadini di Paesi terzi a fini di ricerca scientifica.
2007	Testo coordinato del decreto-legge	15 febbraio 2007, n. 10 (GU n. 84 del 11-4-2007)	coordinato con la legge di conversione 6 aprile 2007, n. 46, recante: "Disposizioni volte a dare attuazione ad obblighi comunitari ed internazionali".
2007	Circolare Ministero del Lavoro	24 febbraio 2009 , n. 4537	Nuove disposizioni in materia di ricongiungimento familiare
2007	Legge di conversione	6 aprile 2007, n. 46	Conversione in legge, con modificazioni, del decreto-legge 15 febbraio 2007, n. 10, recante disposizioni volte a dare attuazione ad obblighi comunitari ed internazionali
2007	Legge	28 Maggio 2007 , n. 68	Disciplina dei soggiorni di breve durata degli stranieri per visite, affari, turismo e studio.
2007	Decreto Legislativo	10 agosto 2007, n. 154	Attuazione della direttiva 2004/114/CE, relativa alle condizioni di ammissione dei cittadini di Paesi terzi per motivi di studio, scambio di alunni, tirocinio non retribuito o volontariato
2007	Decreto del Presidente del Consiglio dei Ministri	30 ottobre 2007	Programmazione transitoria dei flussi d'ingresso dei lavoratori extracomunitari non stagionali, nel territorio dello Stato, per l'anno 2007
2008	Decreto Legislativo	9 gennaio 2008, n.17	Attuazione della direttiva 2005/71/CE relativa ad una procedura specificamente concepita per l'ammissione di cittadini di Paesi terzi a fini di ricerca scientifica
2008	Decreto-Legge	23 maggio 2008, n. 92	Misure urgenti in materia di sicurezza pubblica
2008	Legge di conversione con modificazioni	24 luglio 2008, n. 125	Conversione in legge, con modificazioni, del decreto-legge 23 maggio 2008, n. 92, recante misure urgenti in materia di sicurezza pubblica.
2008	Decreto legislativo	3 ottobre 2008, n. 159	Modifiche ed integrazioni al decreto legislativo 28 gennaio 2008, n. 25, recante attuazione della direttiva 2005/85/CE relativa alle norme minime per le procedure applicate negli Stati membri ai fini del riconoscimento e della revoca dello status di rifugiato.
2008	Decreto legislativo	4 ottobre 2008, n. 160	Modifiche ed integrazioni al decreto legislativo 8 gennaio 2007, n. 5, recante attuazione della direttiva 2003/86/CE relativa al diritto di ricongiungimento familiare.

ANNEX A. CONSULTED LEGAL TEXTS ON IMMIGRATION IN FRANCE, ITALY AND SPAIN

Year	Type	Date and Nr.	Title
2009	Circolare Ministero dell'Interno	17 febrero 2009, n.737	Nuove disposizioni in materia di ricongiungimento familiare
2009	Legge	15 luglio 2009, n. 94	Disposizioni in materia di sicurezza pubblica
2009	Messaggio del Ministero degli affari esteri	21 agosto 2009	Oggetto: Legge n. 94/09 - Modifiche al T.U. n. 286/98 - ricongiungimento familiare
2009	Circolare Ministero dell'Interno	18 novembre 2009, n.7170	Legge 15 luglio 2009, n. 94 Disposizioni in materia di sicurezza pubblica
2010	Circolare Ministero dell'Interno	27 luglio 2010	Oggeto: Legge 15 luglio 2009, n. 94 Disposizioni in materia di sicurezza pubblica
2011	Decreto-Legge	23 giugno 2011, n. 89	Disposizioni urgenti per il completamento dell'attuazione della direttiva 2004/38/CE sulla libera circolazione dei cittadini comunitari e per il recepimento della direttiva 2008/115/CE sul rimpatrio dei cittadini di Paesi terzi irregolari

ANNEX A. CONSULTED LEGAL TEXTS ON IMMIGRATION IN FRANCE, ITALY
AND SPAIN

Table A.3: *Spanish legal texts*

Year	Type	Date and Nr.	Title
1935	Decreto	4 de octubre 1935	Permanencia y circulación de los extranjeros en España
1954	Decreto	2 de julio 1954	Permanencia y circulación de los extranjeros en España
1968	Ley	20 de junio 1968; no. 29	Modificando exacciones por expedición de permisos de trabajo a súbditos extranjeros
1968	Decreto	27 de julio 1968; no. 1870	Por el que se regulan el empleo, régimen de trabajo y establecimiento de los extranjeros en España
1971	Decreto	23 de julio 1971, no. 2048	Por el que se modifica el articulo 25 del Decreto de 4 de octubre de 1935, sobre expedición de pasaportes a extranjeros que carezcan de nacionalidad o en quienes concurran determinadas circunstancias
1974	Decreto	14 de febrero 1974	Por el que se regula el régimen de entrada, permanencia y salida de los extranjeros en España
1978	Real decreto	1 de junio 1978, no. 1817	Por el que se autoriza al Director general de Seguridad a delegar en los Gobernadores civiles las facultades que le corresponden en materia de entrada, permanencia y salida de extranjeros
1978	Real decreto	2 junio 1978, no. 1874	Por el que se regula la concesión y renovación de permisos de trabajo a extranjeros
1979	Orden	8 de octubre 1979, no. 23872	Por la que se regula la concesión de permisos de trabajo de validez restringida a extranjeros.
1980	Real decreto	3 de mayo 1980, no. 1031	Por el que se regula el procedimiento de concesión y prórroga de los permisos de trabajo y autorizaciones de residencia a extranjeros
1982	Orden	30 de abril 1982	Sobre extranjeros
1983	Orden	18 de abril 1983, no. 12476	Sobre expedición de títulos de viaje a extranjeros
1985	Ley orgánica	1 de julio 1985, no.7	Sobre derechos y libertades de los extranjeros en España
1986	Real decreto	26 de mayo 1986, no.1099	Sobre entrada, permanencia y trabajo en España de ciudadanosde Estados Miembros de las Comunidades Europeas
1986	Real decreto	26 de mayo 1986, no.1119	Por el que se aprueba el Reglamento de ejecución de la Ley Orgánica 7/1985, de 1 de julio, sobre derechos y libertades de los extranjeros en España.

Year	Type	Date and Nr.	Title
1988	Circular	1 ed julio 1988	Circular conjunta de las Direcciones Generales de Asuntos Consulares, de la Policía y del Instituto Español de Emigración, de 1 de julio de 1988 sobre exencion de visado
1988	Real decreto	5 de febrero 1988, no. 116	Por el que se modifica el párrafo primero del apartado 4 del artículo 50 del Reglamento de ejecución de la Ley Orgánica 7/1985, de 1 de julio. sobre Derechos y Libertades de los Extranjeros en España, aprobado por Real Decreto 1119/1986, de 26 de mayo.
1988	Resolución	10 de octubre 1988	De la Dirección General del Instituto Español de Emigración, sobre la tramitación de solicitudes de permisos de trabajo para realizar prácticas profesionales
1988	Vademecum		Vademecum para inmigrantes 1988
1989	Orden	22 de febrero 1989	Sobre medios económicos cuya posesión habrán de acreditar los extranjeros para poder efectuar su entrada en España
1989	Orden	26 de julio 1989	Por la que se fijan normas generales y de procedimiento en relación con el reconocimiento de situaciones de excepción a la obligación de obtener permiso de trabajo
1992	Acuerdo	13 de febrero 1992	Acuerdo entre el Reino de España y el Reino de Marruecos relativo a la circulacion de personas, el transito y la readmision de extranjeros entrados ilegalmente
1992	Ley orgánica	21 de febrero 1992, no.1	Sobre Protección de la Seguridad Ciudadana
1992	Real decreto	26 de junio 1992, no.766	Sobre entrada y permanencia en España de nacionales de Estados miembros de las Comunidades Europeas
1993	Instrucción		Instrucción sobre reunificaión familiar
1994	Instrucción		Instrucción sobre reunificaión familiar
1994	Circular	28 de julio 1994, no.7	De la Secretaría de Estado de Interior, sobre exenciones de visado para la obtención de permisos o tarjetas para permanecer en Territorio Español. (BOE 193/1994 de 13-08-1994, pág. 26148)

ANNEX A. CONSULTED LEGAL TEXTS ON IMMIGRATION IN FRANCE, ITALY AND SPAIN

Year	Type	Date and Nr.	Title
1994	Resolución	15 de febrero 1994	Conjunta de las Subsecretarías de los Ministerios del Interior, de Trabajo y Seguridad Social y de Asuntos Sociales, por la que se dictan instrucciones generales y de procedimiento sobre la tramitación de visados para la reagrupación de familiares de extranjeros no nacionales de Estados miembros de la Unión Europea
1994	Resolución	18 de febrero 1994	De la Subsecretaría, por la que se dispone la publicación del Acuerdo del Consejo de Ministros de 12 de novimebre de 1993, sobre tramitación de visados para la reagrupación de familiares de extranjeros no nacionales de Estados miembros de la Unión Europea
1995	Circular	28 de agosto 1995, no.12	De la Secretaria de Estado de Interior, sobre entrada en territorio espaiiol de escolares nacionales de países no miembros de la Unión Europea ni del Espacio Económico Europeo, que residan en alguno de los Estados miembros de la Unión Europea
1995	Real decreto	5 de mayo 1995, no.737	Sobre entrada y permanencia en España de nacionales de Estados miembros de las Comunidades Europeas
1996	Orden	11 de abril 1996	Orden del Ministerio de Justicia e Interior sobre Exenciones de Visado
1996	Real decreto	2 de febrero 1996, no.155	Por el que se aprueba el Reglamento de ejecución de la Ley Orgánica 7/1985
1997	Orden	7 de febrero 1997	Por la que se regula la Tarjeta de Extranjero
1997	Real decreto	14 de noviembre 1997	REAL DECRETO 1710/1997 por el que se modifica parcialmente el régimen de entrada y permanencia en España de los nacionales de los Estados Miembros de la UE y de otros Estados parte en el Acuerdo sobre el EEE
1997	Orden	19 de noviembre 1997	Por la que se concreta el régimen de los permisos de residencia de extranjeros en España, por circunstancias excepcionales
1998	Orden	25 de febrero 1998	Orden de 25 de febrero de 1998 por la que se fijan los requisitos y procedimiento sobre concesión de autorizaciones para trabajar, aplicación de determinados supuestos de preferencias, modificación de los permisos de trabajo y compatibilidad de permisos de trabajo

ANNEX A. CONSULTED LEGAL TEXTS ON IMMIGRATION IN FRANCE, ITALY AND SPAIN

Year	Type	Date and Nr.	Title
1998	Resolución	4 de junio 1998	De la Subsecretaría, por la que se dispone la publicación del acuerdo entre el Ministerio de Asuntos Exteriores y el Ministerio del Interior sobre encomienda de gestión para la expedición de visados en frontera. (BOE 139/1998 de 11-06-1998, pág. 19436)
1999	Orden	22 de febrero 1999	Sobre normas de funcionamiento y régimen interior de los centros de internamiento de extranjeros
1999	Orden	8 de enero 1999	Por la que se establecen las normas generales y de tramitación de los expedientes de visado y de los permisos de residencia por reagrupación familiar, en desarrollo del Reglamento de Ejecución de la Ley Orgánica 7/1985
2000	Ley orgánica	11 de enero 2000, no.4	Sobre derechos y libertades de los extranjeros en España y su integración social
2001	Acuerdo	12 de noviembre 2001	Acuerdo entre el gobierno del Reino de España y el gobierno de la República Federal de Nigeria en materia de inmigración, hecho en Abuja el 12 de noviembre de 2001
2001	Real decreto	20 de julio 2001, no.864	Por el que se aprueba el Reglamento de ejecución de la Ley Orgánica 4/2000, de 11 de enero, sobre derechos y libertades de los extranjeros en España y su integración social, reformada por Ley Orgánica 8/2000, de 22 de diciembre.
2002	Protocolo	31 de julio 2002	Protocolo entre el Gobierno de España y el Gobierno de la República Argelina Democrática y Popular sobre circulación de personas, hecho ad referéndum en Argel el 31 de julio de 2002.
2002	Resolución	23 de abril 2002	Resolución de la Dirección General de Ordenación de las Migraciones por la que se extiende por la que se concede validez de permiso de trabajo en todo el territorio nacional y para todos los sectores de actividad a determinandas autorizaciones para trabajar
2003	Acuerdo	4 de noviembre 2003	Acuerdo entre el Consejo general del notariado y la Comisaria general de extranjería y documentacion de la direccion general de la policia sobre comunicación de documentos notariales en materia de inmigración

ANNEX A. CONSULTED LEGAL TEXTS ON IMMIGRATION IN FRANCE, ITALY AND SPAIN

Year	Type	Date and Nr.	Title
2003	Aplicación	7 de febrero 2003	Aplicación provisional del Acuerdo entre el Reino de España y la República de Guinea-Bissau en materia de inmigración
2003	Resolución	14 de enero 2003	Por el que se regulan los procedimientos de contratación y se fija el número y las características de las ofertas de empleo que se ofrecen para el año 2003 a extranjeros residentes legales en España y a extranjeros que no se hallen ni sean residentes en ella (BOE 16 Enero 2003)
2003	Real decreto	14 de febrero 2003, no.178	Sobre entrada y permanencia en España de nacionales de Estados miembros de la Unión Europea y de otros Estados parte en el Acuerdo sobre el Espacio Económico Europeo
2003	Aplicación	1 de julio 2003	Aplicación provisional del Acuerdo entre el Reino de España y la República Islámica de Mauritania en materia de inmigración
2003	Ley orgánica	29 de septiembre 2003, no.11	De medidas concretas en materia de seguridad ciudadana, violencia doméstica e integración social de los extranjeros
2003	Tratado	11 de noviembre 2003	Tratado de amistad, buena vecindad y cooperación entre el Reino de España y la República Argelina democrática y popular
2003	Ley orgánica	20 de noviembre, no.14	Reforma de la Ley orgánica 4/2000, de 11 de enero, sobre derechos y libertades de los extranjeros en España y su integración social, modificada por la Ley Orgánica 8/2000, de 22 de diciembre; de la Ley 7/1985, de 2 de abril, Reguladora de las Bases del Régimen Local; de la Ley 30/1992, de 26 de noviembre, de Régimen Jurídico de las Administraciones Públicas y del Procedimiento Administrativo Común, y de la Ley 3/1991, de 10 de enero, de Competencia Desleal.
2003	Instrucción	19 de diciembre 2003	Instrucción consular común dirigida a las misiones diplomáticas y oficinas consulares de carrera (2003/c 310/01)
2003	Decisión del consejo	22 de diciembre 2003	Por la que se modifica el punto 1.2 de la parte II de la Instrucción Consular Común y se añade un nuevo cuadro a dicha Instrucción

ANNEX A. CONSULTED LEGAL TEXTS ON IMMIGRATION IN FRANCE, ITALY AND SPAIN

Year	Type	Date and Nr.	Title
2003	Decisión del consejo	22 de diciembre 2003	Por la que se modifica el punto 1.4 de la parte V de la Instrucción Consular Común y el punto 4.1.2 de la parte I del Manual Común en relación con la inclusión del requisito de posesión de un seguro médico de viaje entre los documentos justificativos para la expedición de un visado de entrada uniforme
2003	Decisión del consejo	22 de diciembre 2003	Relativa a la recalificación del anexo 5 de la Instrucción Consular Común y el correspondiente anexo 14b del Manual Común y a la desclasificación de los anexos 9 y 10 de la Instrucción Consular Común y los correspondientes anexos 6b y 6c del Manual Común
2004	Protocolo	12 de febrero 2004	Protocolo entre el gobierno de España y el gobierno de la República Argelina democrática y popular sobre circulación de personas
2004	Real decreto	30 de diciembre 2004, no.2393	Por el que se aprueba el Reglamento de la Ley Orgánica 4/2000, de 11 de enero, sobre derechos y libertades de los extranjeros en España y su integración social
2005	Instrucción	23 de diciembre 2005, DG-I/SGGCFM/02/2006	Por el que se regula el Contingente de trabajadores extranjeros de régimen no comunitario en España para el año 2006
2006	Acuerdo	10 de octubre 2006	Acuerdo Marco de Cooperación entre el Reino de España y la República de Senegal
2006	Acuerdo	5 de diciembre 2006	Acuerdo entre la República de Senegal y el Reino de España sobre cooperación en el ámbito de la prevención de la emigración de menores de edad senegaleses no acompañados, su protección, repatriación y reinserción
2006	Instrucción	2006, DGI/SGRJ/06/2006	Instrucción sobre autorización de residencia temporal por circunstancias excepcionales, por colaboración con la inspección de trabajo y seguridad social
		16 de febrero 2007, no. 240	Sobre entrada, libre circulación y residencia en España de ciudadanos de los Estados miembros de la Unión Europea y de otros Estados parte en el Acuerdo sobre el Espacio Económico Europeo
2007	Acuerdo	20 de marzo 2007	Acuerdo marco de cooperación en materia de inmigración entre el Reino de España y la República de Cabo Verde, hecho ad referendum en Madrid el 20 de marzo de 2007

ANNEX A. CONSULTED LEGAL TEXTS ON IMMIGRATION IN FRANCE, ITALY AND SPAIN

Year	Type	Date and Nr.	Title
2007	Orden	10 de mayo 2007, no.1282	Sobre medios económicos cuya disposición habrán de acreditar los extranjeros para poder efectuar su entrada en España
		10 de mayo 2007, no.1283	Por la que se establecen los términos y requisitos para la expedición de la carta de invitación de particulares a favor de extranjeros que pretendan acceder al territorio nacional por motivos de carácter turístico o privado
2007	Instrucción	26 de julio 2007	De la Dirección General de los Registros y del Notariado, sobre tramitación de las solicitudes de adquisición de la nacionalidad española por residencia
2007	Instrucción	28 de julio 2007	Instrucciones conjuntas de la Dirección General de la Policía y la Guardia Civil, la Dirección de Política Interior y la Dirección General de Inmigración, sobre tratamiento de polizones extranjeros
2008	Instrucción	2008, DGI/SGRJ/01/2008	Instrucción sobre la reagrupación familiar de menores o incapaces sobre los que el reagrupante ostenta la representación legal
2008	Recomendación	2008	Recomendación del Defensor del Pueblo sobre el procedimiento de tramitación y expedición de la carta de Invitación a favor de extranjeros que pretendan acceder al territorio nacional por motivos de carácter turístico o privado, pidiendo la modificación de la Orden de Presidencia 1283/2007 de 10 de mayo
2008	Resolución	10 de julio 2008	Resolución legislativa del Parlamento Europeo, de 10 julio de 2008, sobre la propuesta de Reglamento del Parlamento Europeo y del Consejo por el que se modifica la Instrucción consular común dirigida a las misiones diplomáticas y oficinas consulares de carrera en relación con la introducción de datos biométricos y se incluyen disposiciones sobre la organización de la recepción y la tramitación de las solicitudes de visado (COM(2006)0269 - C6-0166/2006 - 2006/0088(COD))
2009	Addenda	2 de febrero 2009	Addenda la Instrucción de la DGI/SGRJ/05/2007

ANNEX A. CONSULTED LEGAL TEXTS ON IMMIGRATION IN FRANCE, ITALY AND SPAIN

Year	Type	Date and Nr.	Title
2009	Real decreto	10 de julio 2009, no.1162	Por el que se modifica el Reglamento de la Ley Orgánica 4/2000, de 11 de enero, sobre derechos y libertades de los extranjeros en España y su integración social, aprobado por el Real Decreto 2393/2004, de 30 de diciembre
2011	Instrucción	20 de abril 2011	Instruccion DGI/SGRJ12/2011, sobre la vigencia de instrucciones, circulares y oficios elaborados por la dirección general de inmigración. A partir de la fecha de entrada en vigor del reglamento de la ley orgánica 4/2000, sobre derechos y libertades de los extranjeros en España y su integración social, tras su reforma por ley orgánica 2/2009, aprobado por real decreto 557/2011, de 20 de abril
2011	Real decreto	20 de abril 2011	Real Decreto 557/2011, de 20 de abril, por el que se aprueba el Reglamento de la Ley Orgánica 4/2000, sobre derechos y libertades de los extranjeros en España y su integración social, tras su reforma por Ley Orgánica 2/2009.

List of ImPol-MAFE(SN) indicators

#	Indicator	Scale		
		-1	**0**	**1**
	Entry for short stays			
1	Exemption from tourist visa	No		Yes
2	Travel document (valid passport)	Yes, with additional requirements	Yes, valid passport	No
3	Economic resources for stays of less than 3 months, in addition to repatriation guarantees	Yes	Taken into consideration in extreme cases	No
3a	if yes: can be substituted by housing certificate or other proofs	No	Taken into consideration	Yes
4	Proof of housing required	Yes		No
4a	Control visits at sponsors house if family visit	Yes		No
4b	Responsibility of the host (economic responsibility or more)	Yes		No
5	Health Insurance	Yes, separate from economic resources	Sufficient economic resources	No

#	Indicator	Scale		
		-1	0	1
6	Other requirements: finger prints; verification of previous stays; return invitation letter at the border	Yes		No
7	Visa rejection has to be motivated	No, never	Yes, but exceptions	Yes
Need of residence permit				
8	Need of residence permit (Senegalese case)		Need	No need
Marriage with National				
9	Automatic acquisition of the permit if marriage with a national	No, only after fulfilling some conditions		Yes
10a	If conditions	Previous legal residence	Previous residence or previous length of marriage	Legal entry
10b	Type of permit granted	1 Year (temporary)	Temporary btw. 1 & 5 years	More than 5 years or permanent (whatever length)
Family Reunification				
11	Legal protection of family reunification	Procedure not contained in regulative or legislative texts; or no possibility	Procedure exists but not full protection	Full protection
12	Eligibility for legal residents	$>=$ 2 years of legal residence and/or holding a permit for $>=$ 2 years	$>$1 year of legal residence and/or holding a permit for $>$1year & $<$2 years	$<=$ 1 year of legal residence and/or holding a residence permit for $<=$ 1 year
13	Eligibility for dependent relatives in the ascending line	not allowed	certain conditions apply (other than dependency)	allowed
14	Explicit prohibition for polygamous spouses	yes		no

ANNEX B. LIST OF IMPOL-MAFE(SN) INDICATORS

#	Indicator	Scale		
		-1	**0**	**1**
15	Economic requirements	Yes, at least the level of the minimum social income or specific amount	More open conditions (sufficient + indications but not binding) Flexible way of considering the proof of requirement	No requirement
16	Housing requirement	Yes rigid (list of conditions like # sq. meters, number of rooms, etc)	Yes flexible (adequate or comparable to nationals)	No requirement
17	Health Insurance requirement	Yes		No
18	Integration proofs for sponsors	Yes		No
19	Sequence of reunification (for the same sponsor)	All at once		Staged possible
20	Minimum duration of permit	Temporary Reunified relative needs to prove his/her own length of residence (5 years or whatever) to obtain permanent or >2 years if the sponsors is permanent	With a waiting period of <=2 year before getting the permanent one in case the sponsors is permanent	permanent if the sponsor's is permanent
21	Possibility of working	Not at all, only if they obtain an independent permit or national employment clause/ situation applies	After 1 year or more of residence or with limitations (e.g. part-time)	Immediately or less than 1 year
22	Withdrawal if break-up	Previous cohabitation in destination country of 3 years or more	Less than 3 years of cohabitation in country of destination	No
23	Withdrawal if death	Previous cohabitation in destination country of 3 years or more	Less than 3 years of cohabitation in country of destination	No
	Work			
24	Occupational restrictions	National employment clause, national employment situation or no work immigration	List of specific occupations or authorisation necessary, or true quotas	More open conditions

ANNEX B. LIST OF IMPOL-MAFE(SN) INDICATORS

#	Indicator	Scale		
		-1	**0**	**1**
25	Geographical restriction	Yes		No

	Students			
26	Admission at university requirement	Pre-selection	only language test	admission same as national students
27	Economic resources requirement	Yes, clearly defined amount	yes, but not defined	no
28	Health insurance	Yes		no
29	Possibility of working during the studies	No or national employment clause/situation applies	Only part-time and with some time and salary limitations	Yes, no limitations
30	Possibility of transitioning to a work permit	No	With conditions: e.g. more than one year of residence, good grades, no previous scholarship, or national employment situation	Yes (also if restricted to specific academic degrees)
31	Time spent as student counts as legal residence	does not count	Does not count for certain procedures (permanent residence, family reunification or citizenship) or is evaluated differently from other statuses	counts

	Illegal entry or stay			
32	Extraordinary regularisations - ongoing application (limited to two years if criteria remain the same)		No	Yes
33	Permanent mechanisms of regularisation exists	No, or only humanitarian or more 10 years residence	5-10 years residence; or on family grounds; or less than 5 but proof of effective incorporation to labour market for at least 1 year	Less than 5 years of residence or work offer (includes quotas which are de facto regularisations)
34	Readmission agreement with SN	Yes	Signed but not in force	No

ANNEX B. LIST OF IMPOL-MAFE(SN) INDICATORS

#	Indicator	Scale		
		-1	0	1
35	Readmission agreement with transit countries	More than 1 in force	One or several signed but not in force or 1 in force	None
16	Access to healthcare for illegal immigrants	Only emergency treatment or previous residence + income requirement	Either income, previous residence, "empadronamiento"	same as nationals
37	Period of temporary retention in case of expulsion or at entry (max. duration)	More than 45 days	15 to 45 days	<15 days or no administrative retention

Annex C

Answers to open question about type of business (non-exhaustive list)

Current migrant	Returnee	Non-migrant
Sold spare parts	Phone centre	Hairdresser
Clothes shop	Garage	Sale of wood
Taxi (Bought a car and rented it out to a driver)	Sale of paintings	Sale of food products
Sale of food products	Sale of food products	Sale of fishing equipment
Phone centre	Toiletry sale	Sale of soap (powder)
Neighbour shop	Small fruit shop	Sale of audio- and VHS cassettes
Market stand	Dyer	Vegetable retailer
Sold "everything": gold, equipment...	Office material shop	Couscous seller
Etc.	Taxi	Sewing studio
	Carpenters workshop	Etc.
	Etc.	

Notes: Migrant status at the time of investment; author's translation from French, Spanish or Italian *Source: MAFE-Senegal survey (2008)*

Coefficient estimates of MNL for occupational status; for non-migrants and return migrants

Explanatory variables	Non-migrants		Return migrants	
	Wage emp. versus No income earner	Self-empl. versus No income earner	Wage emp. versus No income earner	Self-empl. versus No income earner
Female	-0.938	-0.610	-0.123	-0.835
	(0.378)**	(0.385)	(1.060)	(0.906)
Education	0.032	-0.027	0.151	0.028
	(0.022)	(0.020)	(0.049)***	(0.041)
Ethnicity (ref. Wolof)				
Pular	-0.258	0.103	0.410	-0.619
	(0.324)	(0.240)	(0.657)	(0.570)
Serer	0.669	0.116	-2.420	-1.213
	(0.330)**	(0.305)	(1.409)*	(0.894)
Other	0.588	-0.104	0.550	-0.192
	(0.288)**	(0.281)	(0.673)	(0.619)
Occupation at age 25/before departure (ref. no income earner)				
Wage employed	2.558	0.764	1.445	0.568
	(0.264)***	(0.285)***	(0.747)	(0.681)
Self-employed/employer	0.579	2.697	0.002	0.375
	(0.413)	(0.265)***	(0.858)	(0.643)
Father's occupation when respondent was 15 (ref. no income earner; deceased/absent)				
Wage employed	-0.312	-0.405	0.649	0.569
	(0.304)	(0.257)	(0.804)	(0.634)
Self-employed/employer	-0.335	-0.221	0.213	-0.913
	(0.281)	(0.232)	(0.632)	(0.564)
Age	0.492	0.378	0.285	0.082
	(0.085)***	(0.060)***	(0.192)	(0.145)
Age squared	-0.006	-0.004	-0.004	-0.002
	(0.001)***	(0.001)***	(0.002)**	(0.001)
In partnership	0.148	0.149	0.344	-0.208
	(0.377)	(0.392)	(0.922)	(0.791)
Female*In partnership	-1.475	-0.455	-2.538	-1.780
	(0.501)***	(0.481)	(1.338)*	(1.152)
Household head	0.295	0.011	1.077	0.836
	(0.312)	(0.282)	(0.694)	(0.607)
Household size	-0.053	0.008	0.003	0.047
	(0.023)**	(0.017)	(0.045)	(0.038)
Constant	-9.467	-8.188	-6.004	1.013
	(1.725)***	(1.303)***	(4.579)	(3.524)
Observations N=	864		175	

Notes: Standard errors in parentheses; ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels.

Source: *MAFE-Senegal survey (2008)*

ANNEX D. COEFFICIENT ESTIMATES OF MNL FOR OCCUPATIONAL STATUS; FOR NON-MIGRANTS AND RETURN MIGRANTS