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Chapter 8

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Political Turmoil, Economic Crisis, and International Migration in DR Congo: Evidence from Event-History Data (1975-2007)

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Political Turmoil, Economic Crises, and International Migration in DR Congo: Evidence from Event-History Data (1975-2007)

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Abstract

The aim of this study is to document the impact of political and economic crises in DR Congo on international migration using a recent longitudinal survey on international migration conducted in Kinshasa. The data was collected in Kinshasa (DR Congo) in August-September 2007 as part of a research project called "Crisis and international migration in DR Congo". The survey was conducted among a representative sample of 945 households in Kinshasa, the capital city of DR Congo. This paper is organized around three objectives. The first objective is to measure the impact of economic and political crises on the risks of international migration, using event history analyses. The second objective is to evaluate separately the impact of crises on migration to African countries and to developed countries (mainly Europe and North America). Our results show notably that political crises have a strong impact on migration to developed and developing countries in similar ways. The third objective of this study is to evaluate if sudden economic and political changes influence different people in different ways. We show that migration is less sensitive to crises among the better educated than among the less educated.

1. Background and Objectives

Since its independence in 1960, DR Congo has been hardly hit by economic and political crises. The deteriorating economic context and the wars that have affected the country over the last decades epitomize the tragic and complex situations faced by many African countries. Over the last four decades (and especially since the 1980s), migration flows from DR Congo to Europe (measured with immigration statistics and asylum claims) have also increased significantly (Migration Policy Institute 2007) and are widely thought to be reflecting the deteriorating economic and political situation in the country.[1] Large numbers of Congolese refugees in neighboring countries (more than 250,000 according to the UNHCR 2007) also illustrate the impact of political instability in DR Congo on international migration.

Although these data suggest a link between deteriorating political and economic conditions and international migration, the impact of crises on international migration in DR Congo has received very little attention in the scientific literature. One reason may be that this impact seems obvious. Yet, research in other contexts (mainly in Latin America) has shown that the influence of political and economic crises on migration may be complex, and that crises do not necessarily increase international migration.

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[1] The topic is little discussed in the scientific literature, but commonly debated on 'forums' or in the press.

Previous research also suggest that economic or political crises may influence migration to different destinations in different ways (Massey and Capoferro 2006; Jokisch and Pribilsky 2002). Crises can also influence the composition of the flows of migrants or, said differently, can have different effects on different categories of people (Massey and Capoferro 2006; Jones 1989).

The lack of studies on this topic also reflects the lack of appropriate data. Data on migration flows to African countries are very limited (not to say inexistent). Data on 'stocks' of refugees (UNHCR 2007), and on the variations in stocks of refugees (Moore and Shellman 2004) provide useful information to analyze trends in migrations. However, they do not include 'classical' migrants, and are affected by measurement errors. Moreover no information on the characteristics of refugees is available. In Western countries, existing data on Congolese migration mainly include data on flows of Congolese immigrants and asylum seekers. While these data are also very useful, they have several drawbacks to analyze the impact of crises on migration from DR Congo (and from developing countries more generally). First, the analyses are conditioned by the availability of data in the destination countries, and such data are not readily available in many countries.[2] Lack of data on undocumented migrants is another limitation of the available aggregate data. In addition, the immigration dates recorded in the statistics may not correspond to the dates of departure of the countries of origin, and are not necessarily appropriate to analyze the relationship between crises and migration.[3] Finally, aggregate data on migration flows do not allow analyzing differential migratory responses according to individual characteristics, such as education.

The aim of this study is to document the impact of political and economic crises in DR Congo on international migration, using a recent longitudinal survey on international migration conducted in Kinshasa (MAFE-Congo). These data, collected from households in the origin areas, allow more detailed analyses than the aggregate data presented above.

This paper is organized around three objectives:

(1) The <u>first objective</u> is to measure the impact of economic and political crises on the risks of international migration. Even though the impacts of economic and political changes are not easily disentangled in migration analysis (Morrison 1993), we take into account both political and economic macro-level variables to distinguish their effects on migration.

(2) The <u>second objective</u> is to test if political and economic crises have had similar effects on migrations to African countries and to Western countries (Europe and North America). Existing data make it difficult to estimate if some destinations are preferred in times of crisis. While aggregate data on immigration and asylum claims in European countries suggest that European countries are particularly attractive in times

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[2] And when they are available, they are not necessarily comparable across countries.

[3] For instance, some migrants (notably irregular migrants) can take several months or years to reach their 'final destination'.

of crises, such conclusions do not take into account the fact that migration to other destinations may also increase.

(3) The third objective of this study is to evaluate if economic and political changes influence different people in different ways. More specifically, we test the hypothesis that migration is less selective according to education in times of economic and political troubles or, said differently, that the impact of crises is stronger on the less educated than on the more educated people.

This study uses two complementary types of data: individual data on migration collected from households in Kinshasa, and macro-level variables to measure political and economic conditions (see details in data section). Event history models are used to reconstruct migration trends, and to test the impact of crises on migration.

2. The Political and Economic Context in DR Congo

The Democratic Republic of Congo is one of the largest countries in Sub-Saharan Africa. It is the second largest Sub-Saharan African country in term of area (after Sudan), and with a population estimated at 59 millions in 2005 (United Nations 2009),[4] DR Congo is also the third most populated country in Sub-Saharan African (after Nigeria and Ethiopia), and the largest country in francophone Africa. DR Congo is also currently one of the poorest countries in the World. According to the Human Development Index (UNDP 2009), DR Congo ranked 177 out of 179 countries in 2008, and poverty is a mass phenomenon in DR Congo.

Since the country gained independence in 1960, Congo has experienced a series of economic downturns and of episodes of political instability. Overall, six broad periods can be distinguished in the country's political and economic history. The period from 1960 to 1965 (First republic) started with independence from Belgium and ended with the seizing of power by Joseph Mobutu (Stengers 1989; Ndaywel 1998; Bamba 2003). That period was a time of political instability, in which several parties struggled for power, most of which were constituted on regional or tribal grounds. From the economic point of view, the period was characterized by a stagnating economy, high inflation, and a deterioration of external balance (Peemans 1997; RDC and UNDP 2000). However, the repercussions of the economic troubles on the population are thought to have been limited at that time, notably because infrastructure and social systems were still operating (Ndaywel 1998).

The Mobutu regime started at the end of 1965, and opened a new period in Congo's political and economic history. The Second Republic lasted from 1965 to 1997, and was characterized by a strongly centralized regime and dictatorship. At first the political situation was fairly stable, but it seriously deteriorated until the end of the Mobutu regime in 1997. The country's economy improved at the beginning of the Second Republic, but it started deteriorating in the mid 1970s. Between 1965 and 1974, the average GDP growth rate was around 7% per year (Nzisabira 1997; RDC and PNUD 2000). The high prices on the world copper market, the increase of foreign direct

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[4] It doubled between 1985 and 2005, and increased fivefold since 1960.

investments, and the growing internal market all contributed to the positive economic performances (Peemans 1997; Nzisabira 1997). However, government spending and debts also increased during that period, notably to fund projects of dubious profitability (Peemans 1997; Nzisabira 1997; RDC and PNUD 2000).

From 1975 to 1982, the economic situation deteriorated. The 1973 oil crisis, along with the collapse of the price of copper (1974) and of other commodities, and bad economic policy (notably the process of zaïrianisation of the economy which started in 1973), ruined the benefits of the preceding period (Peemans 1997; Nzisabira 1997). Foreign investments decreased, public expenditures increased, and the country accumulated a large foreign debt, in unfavourable conditions (RDC and PNUD 2000). From 1975 to 1978, the GDP dropped by 3.5 percent annually. That period was also characterized by political turmoil. Opponents to the regime started wars to try gain control of the country, notably in 1977 (80 day war) and in 1978 (Shaba War). The support of Western countries was decisive to control the rebellions (Peemans 1997; Ndaywel 1998).

The period from 1983 to 1989 started with economic reforms, and with a slight increase of the GDP, along with the start of a structural adjustment program with the World Bank and the IMF (Nzisabira 1997; RDC et PNUD 2000). In 1986, the country broke off with Bretton Woods institutions, and the GDP growth rate plunged (Nzisabira 1997). Inflation increased (from 65% in 1986 to 75% in 1987), and the devaluation of the currency accelerated (Peemans 1997). At the end of the period, the growth rate was negative (-1.3 % in 1989). The end of this period coincided with the end of the cold war and serious changes in the political situation in DR Congo.

The period from 1990 to 1999 is one of the darkest periods in Congo's recent political and economic history. The combined pressure of the internal opposition and of the international community forced the President Mobutu (in April 1990) to announce the democratization of the regime. However, the process was lagging and remained unfinished: in May 1997, a rebellion led by Laurent-Désiré Kabila (AFDL), seized power (the first Congo War in 1996-1997) and ended the 32 years of Mobutu's regime. The second Congo War started in 1998, and formally ended in 2003. That decade was also characterized by a rapid deterioration of the economic situation. The GDP growth rate, which was already negative at the beginning of the period, decreased from -6.6% in 1990 to -14% in 1999. Congo's economy was also struck by hyperinflation, and the country's public debt also soared. During that period, the purchasing power of the Congolese population declined drastically.

Since the year 2000, and especially since 2003, the economic context and living conditions of the population have slightly improved. In 2002, the country experienced positive GDP growth rates for the first time since 1995, and the growth rate was above 1% for the first time since 1986. The improvement in the economic situation is explained by the post-war reunification of the country, by the resumption of international development aid, the control of public finances, and a massive injection of foreign currency by the IMF in Congo's economy as part of the Poverty Reduction and Growth Facility (PRGF). However, the living conditions of the Congolese population remain extremely difficult.

The political situation has also changed since the year 2000. In early 2001, Laurent-Désiré Kabila was assassinated and his son, Joseph Kabila, became President of the DR Congo. In 2002, the second Congo War officially ended, and a transition government was installed in 2003 and formally ended the war. In 2006, elections were organized and Joseph Kabila was elected President. Despite the end of the war, Eastern Congo has continued to be regularly prone to violence. In 2009, Laurent Nkunda (chief of rebels in Northern Kivu) was arrested, heralding an improvement of the political situation in Eastern Congo.

As shown by this summary, Congo's history has been characterized by large economic and political changes. It is also clear that, in DR Congo as elsewhere, economic and political troubles are closely intertwined (Akokpari 1999; Smith 1992). As a result, it may not be easy to disentangle their effects on migration.

3. Congolese Migration over the Last Decades

Congolese migration is relatively little studied. In Western countries, Congolese migration has mainly been studied using immigration statistics and statistics on asylum seekers. In African countries, data sources are even scarcer, and quantitative research on Congolese migration to other African countries are not readily available, apart from some research on migration to South Africa (Steinberg 2005). Despite the lack of data and studies, it is possible to draw a general picture of Congolese migration.

Congolese migrations within Africa are to a large extent directed to neighbouring countries. Angola and Congo Brazzaville are major destinations for migrants originating from Western Congo (where Kinshasa is located), while Zambia is a common destination among migrants living in the region of Lubumbashi, in Katanga. Congolese migrations to neighbouring countries also include movements of refugees, which have been quite large since Congo's independence. In 2007, according to the UNHCR (2007), more than 250 000 Congolese refugees were living in neighbouring countries, most of them in Tanzania, Zambia, Rwanda and Uganda. Since the 1990s, South Africa has also become a major destination for Congolese migrants (Steinberg 2005). According to estimates in the early 2000s, more than 20 000 Congolese were registered as refugees in South Africa (Steinberg 2005), and many more were living without refugee status.

Congolese migration to Western countries has also increased significantly over the last 30 years, according to migration statistics in selected European Countries. Congolese migration to Europe started in the early 1960s, after Congo gained its independence from Belgium. At that time, migration to Europe was primarily a migration of elites moving to Belgium for training (Kagne and Martiniello 2001). Over the past 30 years, the profiles of migrants and their destinations have progressively diversified. France has become an increasingly popular destination among Congolese and, more recently, the United Kingdom and Germany have attracted a sizeable share of the Congolese migrants in Europe. In the 1980s, economic migration gained momentum and, since the 1990s, asylum-seekers have been the bulk of Congolese migrants. Currently, the largest communities of Congolese migrants in Western countries live in France (approximately 90 000 Congolese migrants in the early 2000s, see Bazenguissa-

Ganga 2005) and in Belgium (approximately 50,000 Congolese migrants in 2007, Schoonvaere 2009). Other destinations such as Canada and the United States have become increasingly popular among Congolese migrants, but the number of Congolese migrants living in these countries remains much lower than in Europe.

Although data and research point to increasing numbers of Congolese migrants in African, European and North American countries, research on the timing of migrations is lacking. If one wants to link increasing migration with economic and political troubles, time series on migration are needed. In African countries, statistics on migration flows are lacking, and to our knowledge, no study has been done on Congolese migration trends to African countries. In Europe, immigration statistics and statistics on asylum seekers provide a more detailed picture of variations in Congolese migration over the last decades. The available data suggest that migration from DR Congo to Europe was especially intense during the periods of crisis in DR Congo since the early 1990s. For instance, statistics combining immigration flows and asylum seekers in Belgium (Figure 1) indicate that migration was particularly high in the early 1990s and at the end of the 1990s and early 2000s (Schoonvaere 2009). However, data on annual migration flows to Europe may be difficult to interpret for several reasons: lack of data on undocumented migrants, time lag between departure from Africa and arrival in Europe, lack of information on place of departure of migrants.
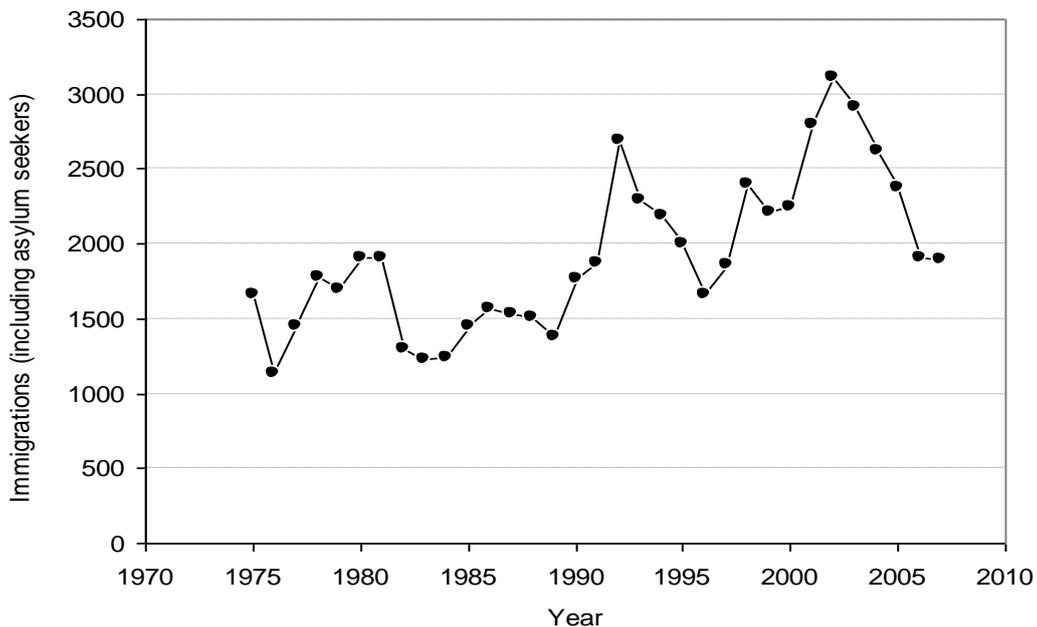

Figure 1. Number of entries of Congolese immigrants and asylum seekers in Belgium (1975-2007).

Source: Schoonvaere (2009)

4. Crises and Migrations: A Brief Review of the Literature

The impact of macro economic and political conditions on migration has, surprisingly, received relatively little attention in developing countries. Migrations have often been

studied through the lens of individual determinants, especially with the neoclassical paradigm. The role of the larger economic context in which migration takes place is rarely take into account in empirical research on migration in developing countries. Yet, from a theoretical point of view, many authors recognize that macro-economic and political conditions are major driving factors in migration. For instance, in the African context, Adepoju (1994) mentions four types of macro conditions that can explain migration dynamics: the deterioration of economic conditions, changes in demographic population (which increase underemployment), political instability and cultural practices (traditional practices tend to push young people to leave the country). According to him, economic factors and political instability are the two most important factors to explain flows of migrants and refugees. Nevertheless, no empirical results are provided in his study.

Despite the lack of empirical research on the links between crises and migration, especially in Sub-Saharan Africa, some studies have been produced in a variety of contexts in present-day populations. Migratory responses to wars and political turmoil (including movements of refugees and asylum-seekers) have been documented in places like ex-Yugoslavia (Conti and Mamolo 2007), the Gulf Countries (Addleton 1991; Russell 1992), and Vietnam (Merli 1997). Moore and Shellman also used a global sample of countries over 40 years to measure the impact of violence (wars, dissident violence…) on forced migration, and concluded that "violent behavior has a substantially larger impact on forced migration than variables such as the type of political institution or the average size of the economy" (2004, 723). All in all, political turmoil generally has a positive impact on migration, although – as we shall see later – this general conclusion should be qualified.

Most of the empirical literature on the impact of economic crises on migration has been done on Latin American countries. A recent paper by Massey and Capoferro (2006) studied the impact of the deteriorating economic context on international migration in Peru in the 1980s and the 1990s. Using longitudinal data of the LAMP project (and event history models), they showed that the start of the structural adjustment programme, along with the deterioration of employment opportunities and wages, coincided with an increase in international migrations. They also showed a diversification of the destinations of migrations (with an increase of migration to European countries), as well as a decrease in the selectivity of migration. Their work indicates that, before the economic crisis, migration was more selective by level of education. Their explanation is that, in a 'reasonably functioning labor market', people are likely to move to maximize earnings, and will be positively selected with respect to education, as expected from the neoclassical theoretical perspective. On the other hand, in periods of economic downturns, people tend to flee deteriorating economic conditions rather than seek to maximize earnings abroad, and migration becomes less selective. This situation is more in line with the new economics of labor migration.

Work was also done in Ecuador on this topic (Jokisch and Pribilsky 2002), although the impacts of economic and political troubles on migration were not tested in statistical models. The authors consider that new Ecuadorian migrations are a response to economic and political crises. Before the 1990s, Ecuadorian international migrations

were mainly directed to the United States. From the 1990s, Ecuador experienced a political and economic crisis, which coincided with stronger immigration policies in the US. The authors observe increasing migration flows in times of crisis, a change in destinations (more migrations to European countries like Spain, France, Italy), and a diversification of migrants profiles in terms of gender (feminization) and socio-economic status. Contrary to results found by Massey and Capoferro in Peru, Jokisch and Pribilsky (2002, 91) suggest that migration to the United States are mainly done by "poor *campesiños* from the countryside", while "migration to Spain is a phenomenon capturing the imagination of Ecuadorians of all classes". In short, migration is also less selective in times of crises, but in a different way from what is found in Peru.

Little research has looked simultaneously at the effects of economic and political troubles on migration. One of the early works on this topic was done by Stanley (1987), who studied international migration from Salvador to the United States in the early 1980s, and tried to distinguish the impact of political and economic factors. Using aggregate time series data on migration flows (US Immigration and Naturalization Service apprehension statistics) and indicators of economic and political troubles (political violence), Stanley (1987, 147) concluded that "fear of political violence is an important and probably the dominant motivation of Salvadorans who have migrated to the U.S. since the beginning of 1979". In contrast, economic factors were considered less important, although the author underlines that economic conditions interact with political turmoil in a number of ways, e.g. violence can "disrupt economic activities, thereby eliminating jobs and reducing pay levels" (Stanley 1987, 133). Also working on migration from Salvador to the United States, Jones (1989) reached different conclusions. According to him, bad economic conditions did influence migration to the United States. In contrast, a spatial analysis of regions of origin of migrants to the United States led him to conclude that "political violence has most affected the relatively poor Northern provinces, but a lack of money and knowledge makes flight to the United States out of the question" (Jones 1989, 194).

Research of relevance to our work has also been done on internal migration. For instance, Morrison (1993), and Morrison and May (1994) compare the impact of economic factors and violence on internal migration, and conclude that "even when political violence is explicitly introduced, the coefficients on purely economic variables continue to be strongly significant, and the elasticity of migration response with respect to economic variables is significantly larger than it is with respect to violence variables" (Morrison 1993, 828).

All in all, the existing research is scarce, and has led to mixed conclusions. The general idea is that deteriorating economic and political conditions tend to increase migration, although this should be qualified, notably because the impact can vary according to the destination of migration and according to the characteristics of individuals (e.g. education and gender). Research on the relative importance of political and economic crises has also provided mixed results. Finally, the impact of economic and political crises on African migration is almost totally absent from the literature.

In this paper, we treat the three following questions:

Question #1: *Do economic and political troubles increase migration?* Our hypothesis is that, as economic conditions deteriorate, people will move to neighboring countries or more distant countries to secure a job or better wages. We also expect migration to increase in times of political troubles. People may flee to neighboring countries during wars, although it might not be the most frequent type of moves from Kinshasa. Another reason why people moved during periods of political troubles may be due to the regime change, especially among people who used to be close to the Mobutu regime.

Question #2: *Do the impacts of economic and political troubles on migration vary by destination?* As discussed in the literature review, economic and political crises may have different impacts depending on the destination. We expect that the impact of deteriorating economic conditions will be larger on migration to Africa than on migration to Europe. Our hypothesis is that, as the economy deteriorates, financial resources to move to distant countries are less readily available. In contrast, people may be tempted to move to close countries with better economic prospects (e.g. South Africa). Although the impact of political crises on migration may also vary depending on the destination, the direction of the effect is not obvious. For instance, in Salvador, Jones (1989) found that political violence did not increase international migration from Salvador to the United States, but rather increased internal migration, while Stanley (1987) concludes the opposite.

Question #3: *Is migration more or less selective according to education in times of crises?* According to Massey and Capoferro (2006), migration is less selective in times of economic crises. Their argument can be summarized as follows: in periods of economic downturns (and probably in periods of political instability), people tend to flee deteriorating economic conditions rather than to maximize earnings abroad. As a result, the selectivity should be lower in periods of crisis than in periods of economic stability. In contrast, Jones' work on migration from Salvador to the United States (Jones 1989) has pointed out that the poorest people are not able to migrate to the United States to flee violence in periods of political crises. Migration may thus be more selective with respect to education in times of crises.

5. Data

This study relies on unique retrospective data collected in Kinshasa (DR Congo) in August-September 2007 as part of a research project called "Crisis and international migration in DR Congo". This project is a collaborative research project between the University of Kinshasa (DR Congo) and the University of Louvain (Belgium), and is part of an international research program on 'Migration between Africa and Europe' (MAFE[5]).

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[5] The survey used in this research was funded by the French government through the FSP program coordinated by the CEPED. The design of the survey and of the questionnaires was done in close collaboration with INED in France and IPDSR in Senegal. The MAFE program is now funded by the European Union, and involves three African countries (DR Congo, Senegal, and Ghana) and six European countries (France, Belgium, Italy, Spain, The Netherlands and United Kingdom).

The survey was conducted among a representative sample of 943 households in Kinshasa, the capital city of DR Congo.[6] Selected retrospective data were collected in the household survey, and full life histories were also collected from 992 adults in these households (males and females, return migrants and non-migrants) aged between 20 and 60. Only data from the household questionnaire are used in this paper.

In all the households, questions were asked to identify all the people who had lived in the household at some point in time and who had gone abroad for at least three months, whether they were still living abroad or had returned to DR Congo. In addition, brothers and sisters of the household head and of his/her spouse who had lived out of DR Congo were also identified through this questionnaire. Data on the migrations of these individuals (year of departure, destination country, year of return if the person returned, etc.) were collected. In addition, socio-demographic characteristics (age, gender, education, marital status and date of marriage, place of birth) were recorded for all the current members of the households as well as for the migrants. The availability of data for both migrants and non-migrants, as well as data on the timing of migration enables us to use event history models. In this research we use data on current members of household and past members of households (data on brothers and sisters are not used, unless they were part of the household at some point in time).

Macro-level data are used in this research to measure changes in economic and political conditions. Two types of data are used. Economic conditions are measured with the GDP growth rate. The GDP data were obtained from the World Development Indicators online data base (World Bank 2009). Political conditions are captured using an index of political troubles. The index is computed using the "Internal Wars and Failures of Governance, 1955-2007" data set prepared by the Political Instability Task Force (PITF) at the School of Public Policy (George Mason University).[7] The dataset includes four types of political instability events for all the years since 1955. These events include "ethnic wars, revolutionary wars, genocides and politicides, and adverse regime changes. Each annual record for each event includes three measures of magnitude and a composite magnitude score" (PITF 2009).[8] Our index of political troubles uses all four types of events, and is computed as a weighted average of the four composite magnitude scores, using principal components analysis. The first component, which explains 68% of the variance, is used as the index of political troubles. The value of this indicator is shown on Figure 2. In the event history models, the average of these indicators for the two preceding years (standardized) are used (see footnote 13).

These indicators suffer from some limitations. For example, the GDP growth rate is affected by measurement errors. Also, the GDP does not necessarily measure precisely the deterioration of the living conditions of the population. However, it is one

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[6] The sampling frame of the 2007 Demographic and Health Survey was used to select randomly 29 primary sampling units (neighbourhoods) in Kinshasa. Four streets were selected randomly in each neighbourhood, and 8 households were selected in each street. Overall, 943 households were successfully interviewed.

[7] The data sets are available online at http://globalpolicy.gmu.edu/pitf/pitfpset.htm.

[8] http://globalpolicy.gmu.edu/pitf/pitfpset.htm, consulted on May 11, 2009.

of the few indicators for which time series are available, and which reasonably describes economic conditions in the country. The index of political troubles also has some limitations. One of them is that all the conflicts are taken into account in the indicator even if they do not directly affect Kinshasa. Another potential limitation is that the quantitative indicator is computed using ordinal data. However, we believe this indicator provides a more detailed picture of the intensity of political troubles in the country than simple dichotomous indicators.

6. Methods

Event history models are used to reconstruct migration trends and to evaluate the impact of political and economic crises on migration since 1975 among people aged 15. Event history models are particularly well-suited to study the impact of sudden economic, political and environmental changes on migration (Henry, Schoumaker and Beauchemin 2004), as time-varying variables at micro and macro levels can be included in the models.

Piecewise exponential models are used (Allison 1995; Blossfeld et al. 2007). These models rely on the organization of the data file as a person-period file. Each line in the data file represents a period of time during which the explanatory variables (including age and year) are constant. The dependant variable (dummy variable) indicates if the event (international migration) takes place during the time interval corresponding to the line in the data file. The rate of migration is supposed constant within each time interval. Age (in single years) and years are included in the models as time varying variables, so that in practice migration rates are allowed to vary each year and at each age. The model is estimated with Poisson regression (Allison 1995; Blossfeld et al. 2007), and an offset is included in the models to control for the varying lengths of the periods (exposure).[9]

The population at risk of experiencing a migration includes all the people currently living in the households, and people who lived in the household in the past and who have migrated to another country for at least 3 months (whether they were still living abroad at the time of the survey or had returned to DR Congo). In this way, the risk set includes non-migrants, return migrants, as well as migrants still living abroad. Individuals are included in the data set from age 15 and from year 1975. For people older than 15 when entering the data set (1975), this corresponds to a situation of late entry (left truncation) (Allison 1995; Guo 1993). The analysis period starts in 1975 for two reasons. First, because of the retrospective nature of the migration data, sampling errors increase as one goes back in time, as the size of the sample gets smaller. Moreover, as explained in section 2, the economic and political situation was fairly stable until the mid 1970s. The analyses are also restricted to migration after age 15, as we are interested in autonomous migration.

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[9] Complex sample design (stratification, multi-stage sampling, weighting) is taken into account in the analyses. Standard errors of coefficients are corrected for the clustering of observations in the same neighborhoods.

The <u>reconstruction of migration trends</u> is done using the piecewise exponential model with no explanatory variables, except age and year. A linear function of age and logarithm of age is included in the model, and time periods (years) are taken into account in the models in two separate ways. First, it is included as a series of dummy variables (non parametric approach), in order to measure annual variations in migration risks. Secondly, linear splines are fitted to identify breaking points in migration trends. The number and location of the knots (breaking points) are estimated using a stepwise forward method of selection (Marsh and Cormier 2001).[10] Results are presented in Section 7.1.2.

Piecewise exponential models are also used to test the impact of political and economic troubles on migration rates. Three series of models are estimated, that correspond to the 3 research questions.

The <u>first series</u> of models are fitted to measure the impact of political and economic troubles on migration rates (Question #1). The two indicators of political and economic troubles are first included separately in the models, and are then included jointly. Individual variables (age, marital status, education) are controlled in the models, as well as a variable measuring the migration trend.

The <u>second series</u> of models is similar to the first series, but distinguishes migration by broad destination (Europe and North America vs. Africa). These models are fitted to test the impact of economic and political troubles on migration by destination (Question #2). Separate analyses rely on recoding the dependant variable to take into account the migration of interest. For example, if one is interested in migrations to Europe and North America, the dependant variable is equal to 1 if a person migrates to Europe or North America, and zero otherwise.[11]

Finally, the <u>third series</u> of models explores the interactions between economic and political troubles and education. More specifically, the objective is to identify if migration is less or more selective with respect to education in times of crisis (Question #3). Said differently, these models aim at testing if crises impact different people in different ways. Models with interactions are estimated separately for migration to Western countries, African countries and all countries.

7. Results

We first present descriptive results, and next turn to the event history models corresponding to the three research questions.

7.1 Influence of Political and Economic Crises on Migration: Descriptive Analyses

7.1.1 Political and economic crises: 1975-2007

The two indices presented in section 5 are used to measure changes in economic and

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[10] Spline variables are included in the model using stepwise regression. The p-value for a variable to enter the model is set to 0.09 (Wald test), and the p-value for the variable to remain in the model is set to 0.10.

[11] Migration to the other region is considered as censored.

political conditions since 1975 in DR Congo (Figure 2). They illustrate the very changing political and economic conditions in DR Congo described in section 2. As shown by the GDP growth rate, economic conditions started deteriorating seriously at the end of the 1980s and remained very poor until the early 2000s. The situation was at its worst in the early 1990s, when the GDP was decreasing at a rate close to 10% per year. Since 2002, the country's economic situation has improved significantly but the situation remains fragile.
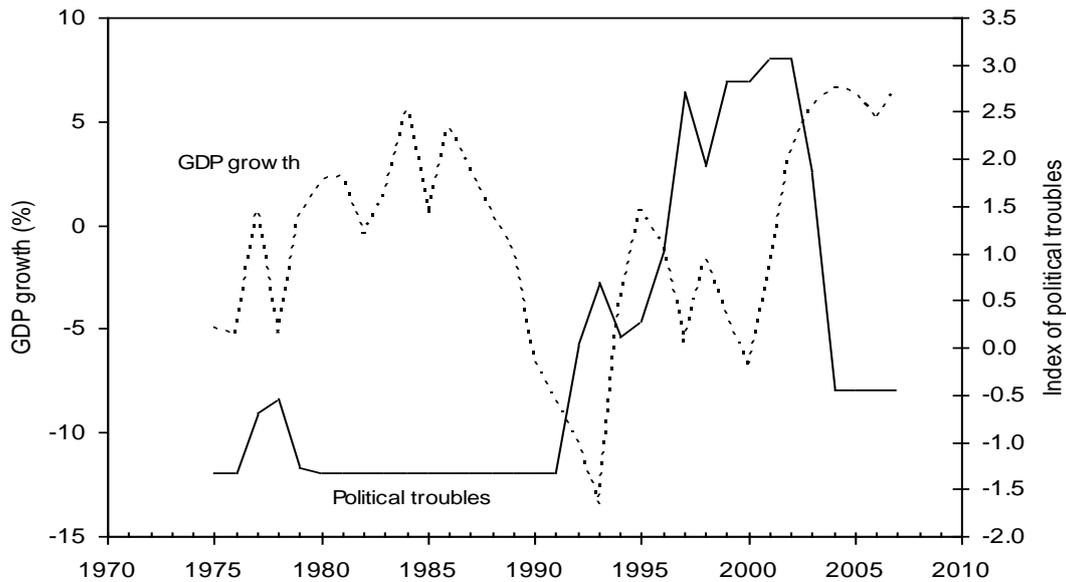

Figure 2. Indices of economic conditions (GDP growth) and political troubles, DR Congo, 1975-2007.

The index of political troubles summarizes the political history of DR Congo since the mid-1970s. The first hump corresponds to the 80-day war and the Shaba war in 1977 and 1978. The 1980s were fairly stable from a political point of view. The situation started deteriorating in the early 1990s with the regime crisis. The start of the war in 1996 and the regime change in 1997 (replacement of President Mobutu by President L. Kabila) correspond to periods of increasing political troubles. Between 1996 and 2002, corresponding to the periods of wars, the value of the index remains very high. The war officially ended in 2002, and the political situation improved significantly from 2003.

7.1.2 Reconstruction of migration trends: 1975-2007

Figure 3 shows annual migration rates[12] and linear splines fitted to the annual migration rates. The overall trend is clearly an upward trend: the rates of first migration at age 25

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[12] The values of migration rates are computed at age 25 for the graphical presentation. Since the model relies on the assumption of the proportionality of effects of independent variables, the relative annual variations in migration rates do not depend on the age variable. As a result, the trend in migration rates for other ages is the same as the trend for age 25.

were less than 1% until the mid-1980s, they went as high as 3%, and decreased to less than 2% in 2007. Four knots, which correspond to breaking points in the migration trends, were located with the spline regressions: 1983, 1991, 1996, and 2001. Rates started to increase significantly around 1983; in the early 1990s, the trend stabilized. Of particular significance is the large increase in migration risks after 1996 (starting in 1997, the end of the Mobutu Regime), and the significant decrease after 2001, when economic and political conditions improved.


Figure 3. Rates of first international migration, Kinshasa (DR Congo), 1975-2007.

7.1.3 Comparisons of political and economic conditions and migration trends

The comparison of the indices of economic and political troubles[13] and migration rates (Figure 4a and Figure 4b) indicates overall a good consistency between migration trends and trends in economic and political conditions. The consistency is particularly striking for the index of political troubles: the large increase in international migration rates at the end of the 1990s corresponds with the intense political crisis. The correlation between migration rates and changing economic conditions is less striking; however, this figure shows that since the mid-1990s, periods of deteriorating economic conditions (grey curve going up) correspond to increasing migration rates, while periods of economic improvement are accompanied by decreasing migration rates.

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[13] The indices were computed as averages over the two preceding years. This is based on the idea that migrant respond with a time lag to deteriorating economic and political conditions. This time lag was chosen because it seems a reasonable time needed to realize the situation is deteriorating, and to organize the migration. Several lags were tested, and this approach turned out to be the most statistically significant.
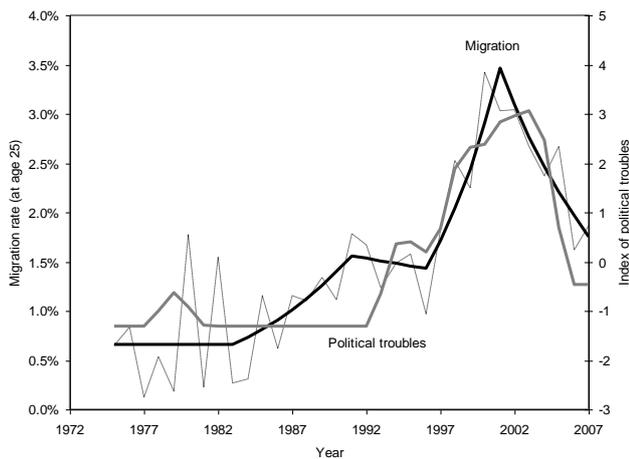
(a) Index of political troubles
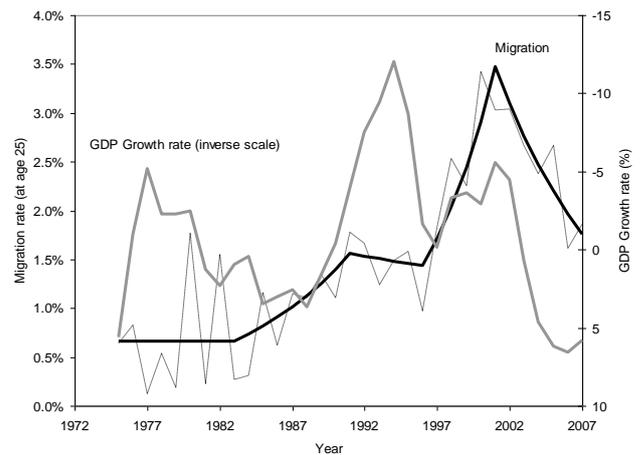
(b) GDP growth rate

Figure 4. Comparison of migration rates and (a) index of political troubles and (b) GDP growth rate, DR Congo, 1975-2007.

Note: Both indices are computed as the average of the original indices over the two preceding years (e.g. the index represented for the year 1995 is the average for the years 1993 and 1994).

7.2 Influence of Political and Economic Crises on Migration: Event history models

Although graphical analyses provide strong hints of a positive relationship between political and economic troubles and migration, they do not allow testing the statistical significance of these relationships, nor do they allow isolating the effects of economic and political conditions, or testing the differential impact of crises on different categories of people.

In the next section, event history models are used to measure the effect of political and economic conditions on international migration from Kinshasa. The models also include individual variables in the migration models, and are used to test interactions between crises and individual characteristics.

7.2.1 Question #1: Do economic and political troubles increase migration?

Models 1 to 3 measure the effects of economic and political troubles on migration. All the models include age, education, gender and marital status as individual control variables (age not shown). Year is also included as a control variable, to capture the trend in migration, regardless of the variations in political and economic conditions. In the first model, the index of political troubles is included as the only macro variable. GDP growth rate is included alone in the second model. The third model includes both variables together.

First, individual-level variables show expected results. Males are significantly more likely to migrate than females. People who have never been married are also twice as likely to migrate for the first time at each age as married people. Finally, education is strongly correlated to migration. People with secondary or higher education are more than twice as likely to migrate as their less educated counterparts. The variable 'year', which measures the trend in migration rates, is positive, but not significant in two of the three models.

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Table 1. Event-history models of first international migration, Kinshasa (DR Congo), 1975-2007 (results expressed as rate ratios).

Variables	Categories	Models		
		1	2	3
Education	No / primary	1.00	1.00	1.00
	Secondary	2.16***	2.24***	2.23***
	Higher education	2.33***	2.50***	2.48***
Gender	Males	1.00	1.00	1.00
	Females	0.77**	0.78**	0.77**
Marital status	Ever married	1.00	1.00	1.00
	Never married	2.10***	2.06***	2.10***
Year (linear trend)		1.02 (ns)	1.05***	1.02 (ns)
GDP growth (a)			0.89***	0.97 (ns)
Political troubles (b)		1.27 ***		1.25***
Sample size		4485	4485	4485

Notes:
a) Average GDP growth rate over the two previous years (standardized variable)
b) Average index of political troubles over the two previous years (standardized variable)
Significance: *: p<0.10; **: p<0.05; ***: p<0.01; (ns) : not significant.

The first two models show that, when included separately in the models, economic and political troubles both significantly increase the risk of international migration, controlling for individual factors (Table 1). In the first model, an increase of one standard deviation in the index of political troubles is associated with an increase of migration rates of 27%. The second model shows that that an increase of one standard deviation of the GDP growth rate is associated with a decrease in migration rate of 11%. When both indicators are included in the same model (Model 3), the impact of economic conditions is almost completely offset and is not significant. The impact of politic troubles, on the other hand, is very strong and largely significant. This result suggests that migration is much more responsive to political troubles than to economic troubles.

7.2.2 Question #2: Do the impacts of economic and political troubles on migration vary by destination?

Separate analyses by destination show several important results (Table 2). First, as expected, education is a major determinant of migration to Europe and North America, but much less so for African migration. Rates of first migration to Europe and North America are more than ten times higher among people with higher education than among less educated people. Migrations to Africa are, on the other hand, more likely among people with secondary education. Interestingly, gender is a strong determinant of migration, but with opposite effects for migration to African and to Western countries. Migration rates to Europe and North America are more than 50% higher among females, while migrations to Africa are more frequent among males. For both destinations, single persons are, as expected, significantly more likely to migrate.

Table 2. Event-history models of first international migration by destination of migration, Kinshasa (DR Congo), 1975-2007 (results expressed as rate ratios).

Variables	Categories	Destination	
		Africa	Europe & N.A.
Education	No / primary	1.00	1.00
	Secondary	1.69**	4.98***
	Higher education	1.28 (ns)	11.62***
Gender	Males	1.00	1.00
	Females	0.57***	1.58***
Marital status	Ever married	1.00	1.00
	Never married	1.77***	2.41***
Year (linear trend)		1.07***	0.97**
GDP growth (a)		0.89***	1.03 (ns)
Political troubles (b)		1.13*	1.41***
Sample size		4485	4485

Notes:
a) Average GDP growth rate over the two previous years (standardized variable)
b) Average index of political troubles over the two previous years (standardized variable)
Significance: *: $p<0.10$; **: $p<0.05$; ***: $p<0.01$; (ns) : not significant.

Macro-level variables also show different effects by destination. Migrations to Europe and North America seem completely independent from economic conditions, and vary only according to changes in political conditions. An increase of one standard deviation is associated with a 41% increase of migration rate to Western countries. Interestingly, the overall trend measured by the variable 'year' is negative: in other words, after controlling for political troubles in DR Congo, there is a slight decrease of migration rates to Europe and North America. It suggests that improving political conditions in origin countries is a major lever in stabilizing migration flows to Europe and North America.

Migrations to Africa, on the other hand, depend on both economic and political conditions. Bothe indices have similar (and expected) effects on migration (the GDP growth rate is more significant): an increase of one standard deviation in political or economic troubles corresponds to an increase in the rate of migration of a little more than 10%. The model also shows that there is a residual positive trend in migration rates, after controlling for political and economic troubles. Said differently, migration to Africa has been increasing, regardless of political and economic troubles.

7.2.3 Question #3: Is migration less selective according to education in times of crises?

Previous models have shown that political and economic crises influence migration. Economic and political troubles both influence migration to Africa, while migration to Europe and North America is influenced only by political conditions in the departure country. These models have also shown that migration propensities depend on individual characteristics. As explained earlier, crises may influence different categories of people in different ways. For instance, as shown by Massey and Capoferro (2006) in Peru, migration tends to be less selective according to education in times of economic crises. The third hypothesis we test in this section is that the impacts of economic and political conditions on migration depend on the level of education of individuals.

Table 3 shows the results of three models that include the interactions between education and the two macro-level variables (for all destinations, Africa, Europe & North America). The interactions between education and political conditions show a clear pattern, consistent across destinations: deteriorating political conditions have a significantly stronger impact on people with no education or primary education than on their more educated counterparts. On the contrary, economic conditions do not interact with education. In other words, the impact of deteriorating or improving economic conditions does not vary significantly by level of education.

As shown in the first model (all destinations), the rate ratio for the impact of political troubles on the less educated is equal to 1.83: an increase of one standard deviation in the index of political troubles is associated with an 83% increase in the rate of first migration. In contrast, political troubles are not associated with a significant increase in migration among people with higher education (rate ratio equal to 1.17, not significant). A similar (but less pronounced) result is found for migration to Africa. On the other hand, the interaction between education and political troubles is very strong and highly significant for migration to Western countries. In periods of political troubles, rates of first migration increase more than threefold among the less educated, while they change more slightly among the more educated (rate ration equal to 1.30).

Table 3. Event-history models of first international migration by destination, including interactions between education and economic and political troubles, Kinshasa (DR Congo), 1975-2007 (rate ratios).

		Destination		
Variables	**Categories**	**All destinations**	**Africa**	**Europe & N.A.**
Education	No / primary	1.00	1.00	1.00
	Secondary	2.82***	2.07**	9.36***
	Higher education	3.21***	1.59**	23.47***
Gender	Males	1.00	1.00	1.00
	Females	0.78*	0.57***	1.57***
Marital status	Ever married	1.00	1.00	1.00
	Never married	2.05***	1.79***	2.45***
Year (linear trend)		1.02*	1.07***	0.97***
Interactions				
GDP growth (a) *	No /primary	1.09 (ns)	0.99 (ns)	1.05 (ns)
Education	Secondary	0.93 (ns)	0.85 (ns)	1.05 (ns)
	Higher education	1.03 (ns)	1.00 (ns)	1.00 (ns)
Political troubles (b) *	No /primary	1.83***	1.46 **	3.51***
Education	Secondary	1.24 (ns)	1.12 (ns)	1.47 (ns)
	Higher education	1.17 (ns)	1.00 (ns)	1.30 (ns)
Sample size		4485	4485	4485

Notes:
a) Average GDP growth over the two previous years (standardized variable)
b) Average index of political troubles over the two previous years (standardized variable)
Significance: *: $p<0.10$; **: $p<0.05$; ***: $p<0.01$; (ns): not significant.

Another way of interpreting this interaction is to look at the impact of education in period of political crises vs. periods of relative political stability. As shown on Figure 5, rates of migration are much higher in periods of intense political crises (corresponding to the average plus two standard deviations of the indicators) than in

periods of political stability. This figure also clearly shows that the impact of crises is stronger among the less educated than among the more educated (measured by the ratio of the black bar to the grey bar). In other words, migration is much less selective according to education in periods of political troubles than in periods of political stability. However, as is also clear from this figure, the more educated are much more likely to migrate than their less educated counterparts, even in periods of political troubles.
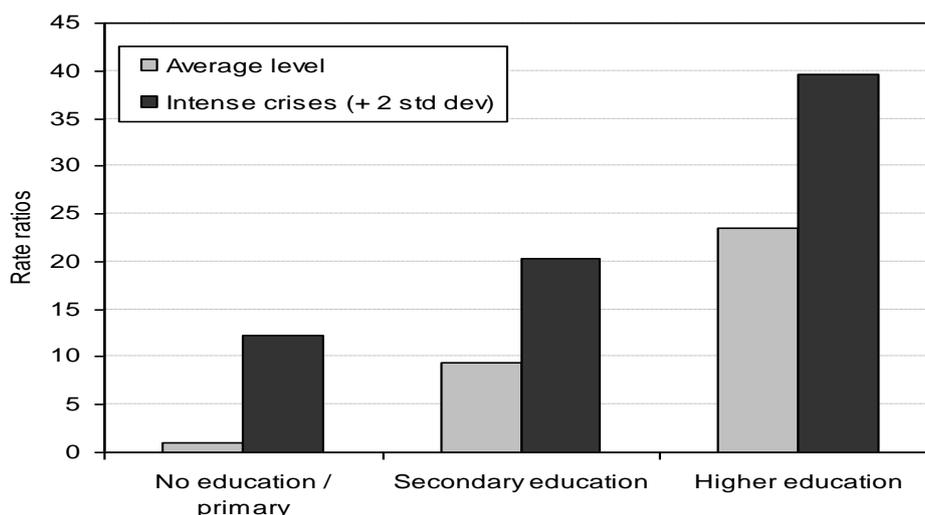

Figure 5 . Impact of economic and political troubles on migration to Western countries, by level of education.

8. Discussion and Conclusion

Using recent retrospective data and event history models, we have shown that international migration from DR Congo since the mid-1970s has been clearly influenced by political troubles and, to a lesser extent, by economic crises. Periods of political instability and wars have contributed to significantly higher risks of migration, especially to Europe and North America, but also to Africa. The graphical analyses and the robust results of event history models show clearly that international migration and political crises are closely related in DR Congo. This expected impact of political crises is in line with results in other parts of the world (Moore and Shellman 2004; Stanley 1987), and suggests that improving political conditions in departure countries contributes to stabilizing migration flows. The recent slowdown of migration from DR Congo (since 2002) illustrates this influence of the improvement of the political conditions in DR Congo on migration.

Economic troubles have also increased migration, but their effect is less clear-cut than the impact of political troubles. Results suggest that, when controlling for political conditions in the models, deteriorating economic conditions only increase migrations to Africa. In contrast, migrations to Europe seem largely unaffected by economic conditions, and have varied essentially with the political situation in DR Congo. One possible explanation is that, in periods of crises, the availability of resources to migrate to distant places may not be available. Although desires to move may increase, the

financial resources may be lacking. This result should be qualified however. First, economic troubles and political troubles are not independent from each other. Models including only economic indicators show that economic troubles increase migration when all destinations are considered together (the coefficient is also positive for migration to Western countries, but not significant). In other words, migrations do increase in periods of economic crises, but the association between economic conditions and migration is very much reduced when political conditions are taken into account. Secondly, the simple indicator of economic troubles that was used (GDP growth) may also partly explain that the impact of economic conditions is not significant. More refined indicators might lead to stronger results.[14] However, at this stage, it seems reasonable to say that political conditions clearly have a strong impact on migrations, while the effects of economic conditions are less conclusive.

Models including interactions between individual education and political and economic troubles have also shown that educated and uneducated people respond in different ways to crises (Figure 4). A consistent result across all the models is that political crises have a significantly stronger impact on migration among the less educated than among the more educated, and the impact is much stronger on migration to Europe and North America than on migration to Africa. This means that, in times of political crises, migration to Western countries is much less selective by education than in periods of relative stability. A similar result was found by Massey and Capoferro (2006) in Peru, although their work dealt with economic crisis. This might be interpreted, as in Massey and Capoferro's study in Peru (2006), as the result of different migration strategies prevailing in periods political troubles compared to more stable periods. Another reason, specific to the Congolese context, is that bilateral cooperation seriously slowed down in periods of political troubles. As a result, a decrease in the number of scholarships granted to Congolese students may have had an offsetting effect among the better educated on the increasing desire to migrate in period of political troubles.

Further work is needed on several issues. The mechanisms by which political and economic crises influence migrations have not been dealt with in detail in this paper. The analysis of in-depth interviews conducted with Congolese migrants will provide further insight into the motivations of migrations in times of crisis. Retrospective quantitative data collected in Kinshasa among non migrants may also help understand the way crises influence migration. These data include information on migration attempts, which can be compared to data on effective migration (sued in this paper). Such data make it possible, for instance, to estimate if increasing migrations in times of crises reflect increasing desires to migrate (higher migration attempts), or a higher "success rate" of migration attempts (i.e. higher probability that an attempt is transformed into an effective migration). Using more refined indicators, especially of economic troubles, may also lead to a better understanding of the links between crises and migration.

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[14] Preliminary tests with another indicator, measuring change in GDP growth, rather than GDP growth, indicate that when growth rates are going down migration increase.

References

Addleton, J. 1991. The impact of the Gulf war on migration and remittances in Asia and the Middle East. *International Migration* 29(4): 509-26.

Adepoju, A. 1994. Preliminary analysis of emigration dynamics in Sub-Saharan Africa. *International Migration* 32(2): 197-216.

Akokpari, John, 1999. The political economy of migration in Sub-Saharan Africa. *African Sociological Review* 3(1): 15p.

Allison, P. 1995. *Survival Analysis Using the SAS System*, SAS Institute, Cary, 292p.

Bamba, D. L. 2003. *La Démystification du Parti-Etat au Zaïre. Contribution à uns dynamique de renouveau* démocratique *au Congo*, thèse de doctorat, Université catholique de Louvain, Louvain-la-Neuve, 277p.

Bazenguissa-Ganga, R. 2005. *Democratic Republic of Congo (Congo-DRC) and Republic of Congo (Congo) Country Study. A Part of the Report on Informal Remittance Systems in Africa, Caribbean and Pacific (ACP) Countries*. ESRC Centre on Migration, Policy and Society (COMPAS), Oxford, 22p.

Blossfeld H.-P., Rohwer G. and Golsch K. 2007. *Event History Analysis with Stata*. Lawrence Erlbaum, Philadelphia, 300p.

Coghlan B., Ngoy P., Mulumba F. et al. 2009. *Mortality in the Democratic Republic of Congo. An Ongoing Crisis*, International Rescue Committee / Burnet Institute. New York / Melbourne, 26p.

Conti, C. and M. Mamolo 2007. Yougoslavie et Asie centrale : terres de conflits et de migrations, in AIDELF, *Les Migrations Internationales. Observation, Analyse et Perspectives*, Presses Universitaires de France, Paris, pp.499-509.

Henry, S., Schoumaker B. and C. Beauchemin 2004. The impact of rainfall on the first out migration: A multi-level event-history analysis in Burkina Faso. *Population and Environment* 25(5): 423-460.

Guo, G. 1993. Event-history analysis for left-truncated data. *Sociological Methodology* 23: 217-243

Jokisch, B. and J. Pribilsky. 2002. The panic to leave: Economic crisis and the 'new emigration' from Ecuador. *International Migration* 40(4): 75-101.

Jones, R. 1989. Causes of Salvadoran migration to the United States. *Geographical Review* 79(2): 183-194.

Kagne, B. and Martiniello M. 2001. L'immigration sub-saharienne en Belgique, *Courrier hebdomadaire du CRISP*, n°1721, 50p.

Marsh, L. and Cormier D. 2001. *Spline Regression Models*, Quantitative Applications in the Social Sciences, Sage, Thousand Oaks, 80p.

Massey, D. and C. Capoferro. 2006. Sálvese Quien Pueda: Structural adjustment and emigration from Lima. *The Annals of the American Academy of Political and Social Science* 606(1): 116-127.

Merli, G. 1997. Estimation of international migration for Vietnam, 1979-1989, Center for Studies in Demography and Ecology, University of Washington, Seattle, 59p.

Migration Policy Institute. 2007. *Migration Policy Institute data Hub*, Migration policy institute, Washington D.C., online database (http://www.migrationpolicy.org).

Moore, W. and S. Shellman. 2004. Fear of persecution. Forced migration, 1952-1995. *Journal of Conflict Resolution* 40(5): 723-745.

Morrison, A. 1993. Violence or economics: What drives internal migration in Guatemala? *Economic Development and Cultural Change*, 41(4): 817-831.

Morrison, A. and May R. 1994. Escape from terror: Violence and migration in post revolutionary Guatemala. *Latin American Research Review* 29(2): 111-132.

Ndaywel è Nziem, I. 1998. *Histoire Générale du Congo. De l'héritage Ancien à la République Démocratique.* De Boeck et Larcier, Bruxelles et Paris, 955p.

Nzisabira, J. 1997. *Gaspillage Technologique, Récession Économique, Expansion de la Pauvreté et Dégradation de l'environnement au Zaïre.* Institute for New Technologies, United Nations University, Maastricht, 175p.

PITF. 2009. *Political Instability Task Force. Internal Wars and Failures of Governance 1955-2006 (Problem Set Annual Data)*, online database, consulted on May 2, 2009 (http://globalpolicy.gmu.edu/pitf/pitfpset.htm).

Peemans, J. -P. 1997. *Le Congo-Zaïre au gré du 20ème siècle. Etat, économie, société 1880 1990,* collection Zaïre-Histoire et Société, L'Harmattan, Paris et Montréal, 279p.

Republique Democratique du Congo et Programme des Nations Unies Pour le Developpement 2000. *Rapport National sur le Développement Humain 2000. Gouvernance pour le développement humain en RDC*, Kinshasa, 227p.

Russell, S. 1992. International migration and political turmoil in the Middle East. *Population and Development Review* 18(4): 719-727.

Smith, D. 1992. Conflicts and Wars, in George, S. (ed), *The Debt Boomerang: How Third World Debt Harms us All.*, Pluto, London.

Stanley, W. 1987. Economic migrants or refugees from violence? A time-series analysis of salvadoran migration to the United States. *Latin American Research Review* 22(1):132-154.

Schoonvaere, Q. 2009. *Etude de la population Congolaise en Belgique*, Mimeo, Université catholique de Louvain, 35p.

Steinberg, J. 2005. *A mixed reception. Mozambican and Congolese Refugees in South Africa*, ISS Monograph Series, n°117, Institute for Security Studies, Cape Town.

Stengers, J. 1989. *Congo. Mythes et réalités. 100 ans d'histoire*, Duculot, Paris-Louvain-la Neuve, p.283.

Undp. 2009. *Statistics of the Human Development Report*, online database, consulted on March 23, 2009 (http://hdr.undp.org/en/statistics/).

Unhcr, 2007. *UNHCR Statistical Yearbook 2007. Trends in Displacement, Protection and Solutions*. UNHCR, Geneva.

United Nations. 2009. *World Population Prospects. The 2008 Revision.* United Nations, New York.

World Bank. 2009. *World Development Indicators,* online database, The World Bank, Washington DC.