Does migration influence fertility? A case study.[1]

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Abstract. It was argued that fertility and migration are not independent demographic phenomena (Singley&Landale, 1998). For the context of Eastern Europe, some authors considered that the measures of fertility are biased due to the shrinking populations through migration (Philipov, 2001). In this paper, using data from a community based survey on migration (2002) and various aggregated level statistics on fertility, I tried to see of there is any relationship between migration and fertility decline in Romania, an Eastern European country.

1. Introduction

In 1963, in his article "The Theory of Change and Response in Modern Demographic History", Davis argued that migration and decreasing fertility are responses that a population has in times of extraordinary hardship. Although his article refers to high fertility settings, his ideas make sense for other situations too, generally speaking, for any population that experiences a high level of poverty. The experience of Eastern European countries after 1990 seems to be a good example for Davis' theory: living in declining economies (Table 1), during the times of extreme economic uncertainty, people migrate and reduce their number of children.

Table 1. GDP in Eastern European countries, 1989-1992 (1990 Geary-Khamis Dollars)

	Bulgaria	Czechoslovakia	Hungary	Poland	Romania	USSR	Yugoslavia
1988	6336	8675	6929	5790	4035	7032	6026
1989	6217	8729	6787	5685	3890	7078	5917
1990	5764	8464	6348	5113	3460	6871	5458
1991	4516	7244	6010	4798	2887	5793	4861
1992	4054	6845	5638	4726	2565	4671	3887

source: Maddison, 1995

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Although high migration and declining fertility can be seen as independent outcomes of the same cause (high poverty) there are certain relationships between the two outcomes. Several studies (Lindstrom& Saucedo, 2002, Singley&Landale, 1998, Hervitz, 1985) investigated the relationships between fertility and migration for the case of people migrating from countries with high fertility to countries with lower fertility in various regions of the world. Some researchers suggest that migration is a *disruptive* process for fertility: migrants tend to postpone having children because of the socio-psychological stress associated with living in a new place and spouse separation. On the other hand, as other studies pointed out, migrants are not a random sample from the origin country population, they are selected, they have special characteristics and having fewer children is one of their features. Migrants, said other students, tend to adopt – gradually or quickly- the norms of the receiving country in many aspects, including number of children, and after a while their fertility resembles more the fertility of the destination country rather than that of the sending country.

This paper analyzes the relationship between migration (international migration) and fertility, after 1990, in Romania. Using various sources of data (Census data and surveys), I am trying to answer to the following questions: 1) are migration and low fertility interdependent? and 2) does migration distortion fertility measures? The paper is divided into five parts : *Introduction* , with a short overview of the subject, *Migration and fertility*, which presents the main theories relating migration and fertility, *Fertility levels and trends in Eastren Europe,* which discusses the main characteristics of fertility in Eastern Europe during the past years, *East-West Migration in Europe*, describing the post 1990s East West European migration, and, finally, *Data,* with the data, methods and results of this research and *Conclusions***.**

2. Migration and fertility. Interrelationships

Migration is a spatial phenomenon (Hammar & Tomas: 15), migrants being people who changed their residence for a longer period of time. Even if "migrant" and "migration" seem to be easily understandable, the meaning can vary from study to study. Usually, the refugees (people who were forced to migrate) are considered a distinct and special group of migrants, but even within the non-refugee migrants, the definitions can be very different. For example, under the US law, an *immigrant* is a foreigner who is entailed to live and work permanently in the United States (Martin & Midgley: 5), but many studies discuss about "undocumented migrants to US" (Massey & Espinosa: 940), obviously not taking in account the US law definition of migrant.

Some researchers consider also important the distinction between international and internal migration, while others think it is rather a formal one (Hammar&Tomas: 15). *International migrants* are defined as people who changed their residence from one country to another (they crossed at least one national border); *internal migration* is defined as migration within national borders.

Several micro and macro level theories tried to explain how the internal and international migration began and why they continue in the world. Taking in account to what moment of migration they refer to, these theories are often classified in two main groups: *initiation* and *perpetuation* theories.

From the first group, there are four important perspectives: neoclassical economics, new economics of migration, dual labor market and world system theory. The second group (perpetuation) includes network theory, institutional theory, migration systems and cumulative causation theory. *Neoclassical economics theory*, from a *macro* level point of view, pointed out the geographical differences in labor supply and demand as being the main cause of migration (Massey& all: 433). At a *micro* level, the neoclassical economic theory is a model of individual choice based on a cost – benefit analysis (Massey&all:434).Potential migrants estimate the cost and future benefits they would have from moving to another place, and choose the place from where they can get the best at returns (Massey&all:434)

The *new economics of migration* theory does not consider the migrant as an isolated individual, but as a part of a household (family). The migration decisions are made within the

household and the people involved in them try to minimize different risks associated to the household (crop market fluctuations, unemployment) or to enable families to capital necessary for financing new projects (Massey& all: 436).

Dual labor market theory (or segmented labor market) was developed by Piore as a proponent to the new economics of migration and neoclassical economic theory. Essentially, Piore argued that immigration is not a result of the sending country conditions, but an effect of the industrial society's characteristics. Wages are not simply the result of supply and demand, they embed also a hierarchy, and they are attached to a social status. In a dynamic economy, there will be always a need for work force at the bottom of the hierarchy, because people who used to be there advanced on the social scale. The need for low skilled work cannot be simply covered by increasing the wages attached to this work, because this will upset people who are doing a more skilled work and get a lower wage. Two categories of native population used to fill the need of low skilled work: women and teenagers (Massey & all: 423). In a less advanced society, women were working mostly part –time, and their social status was not defined by the work that they did, but by the position of their husband. The situation was changed in nowadays-industrialized societies, where women have more stable jobs, and are more interested in their careers. Teenagers used to be also a segment of population that accepted low skilled jobs, but because of the drop in birth rates and increasing in formal education they are not anymore enough numerous to fill all these jobs.

In this way, the immigration is the only solution for filling the low paid jobs in an advanced economy. The immigrants do not consider themselves as a part of the host, but of the sending society, so they do not feel ashamed for being at the bottom of host country hierarchy. They accept jobs and wages that the native would not accepted, helping in this way the receiving country economy to go up.

World system theory considers migration as a result of the world market structure (Massey& all: 444). The incorporation of more and more land and population into the world market economy because of the capital penetration into peripheral societies and the global inequality as a structural given (Zolberg:403) makes more people to migrate from a region to another.

One of the most popular theories trying to explain the perpetuation of migration nowadays is *network theory*. Migrants, former migrants and non-migrants in origin and host country are

related through a set of interpersonal ties that facilitate migration by declining the costs of moving and risks. As a result, once a migration process began, the migration stream between two countries tends to expand and is less likely to be controlled by the governments, because the interpersonal networks are outside of their possible control (Massey& all: 450).

Institutional theory predicts that, once a migration process began, private institutions that offer different kinds of services for migrants arise. Clandestine transportation, counterfeit documents and visa, lodging in the country of destination, and many other services making easier the migration and adaptation of migrant in receiving country (Massey& all: 450).

Cumulative causation theory argues that each act of migration change the social context, making further movements more likely to occur (Massey& all: 451). The migration affects the distribution of land, income, and human capital, the organization of agriculture, culture and the social meaning of work. The *relative deprivation* hypothesis (people who feel poorer in comparison with their neighbors are more likely to migrate) is an example how the migration affects the distribution of income and is further affected by the changes induced in the distribution of income (Massey& all: 452).

Migration interferes with other demographic processes, as mortality and fertility. Immigrants are selected populations and they are coming from countries with a different culture than the receiving country has. Their mortality patterns can be very different than those of the native people, as the case of Mexicans in US shows: Mexican groups in US have one of the lowest infant mortality, and mortality of old ages is lower than the mortality of White population, despite their low socio-economic status.

Immigration, on the other hand, is considered a possible solution for the problem of aging in the developed world (Jonsson & Rendall: 129). Although in long term it is assumed that immigrants fertility will not differ from the native population fertility (Espenshade, 1994) so immigration does not have a direct effect on fertility, on short term immigration brings an infusion of young population and delay the effects of aging population.

Four main hypotheses regarding the relationship between migration and fertility were developed. *Selection hypothesis* considers that migrants are a special group, with characteristics that differentiate them from the non migrants. Having fewer children – or norms regarding a low fertility – is one of these characteristics that differentiate them from the

non migrants (Singley&Landale:1439). *Disruption hypothesis* suggests that migration lowers fertility of migrants because of spousal separation and because moving to a new place is a stressful event, making migrants to postpone having children until they adapt to the new country. Assimilation and adaptation hypotheses predict that the fertility of migrants will become – sooner or later – similar to the fertility of the receiving country population. These two last hypotheses were tested only for the case of migration from countries with high fertility to countries with low fertility. It would be interesting to see if migrants moving from low fertility countries to countries with higher fertility (as Eastern Europeans to Western Europe) tend to have higher fertility than the non migrants from the origin countries. Most of the studies investigate the relationship between fertility and migration - studies on the influence of emigration on fertility of the sending countries are very rare, because in most cases sending countries have a high fertility and the levels of out-migration have little if any effect. Ebanks &all (1975) investigated the influence of emigration on fertility in Barbados, and they concluded that emigration played an important role in the fertility decline in this country. Lindstrom& Saucedo (2002) studied the short and long term effects of US migration experience on Mexican Women's fertility and observed that spousal separation reduces probability of birth in short term and fertility of Mexican women migrants in US are lower because of migration. The case of Eastern European countries, with below replacement fertility and countries of emigration is quite singular. Philipov (2001) was among the first who advanced the hypothesis that between high emigration of Eastern Europe (especially Southern Europe) leads to underestimates of fertility, because in the official statistics is calculated without taking emigration[2] into account and, in this way, fertility is underestimated. He argued that, in the case of Bulgaria where 8% of the population is estimated to work and live outside of the country (Philipov:9), TFR in 1998 would be higher with 0.2 higher if migration is taken in account. Migration could also have an impact on family formation, as Sklar (1974) argued for the case of Central Europe, where the massive emigration of young men in the early 1900s made 'increasingly difficult for women in the Czech, Baltic and Polish areas to

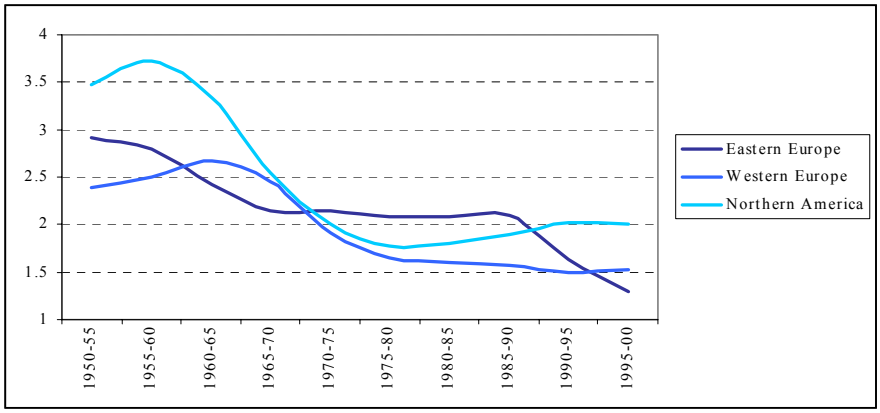
[2] Official statistics take into account only those emigrants who establish officially their residence outside of a country. However, most of the emigrants from South Eastern Europe are circulatory migrants, who work outside of their native country in many cases illegally, so their number cannot be computed from official statistics, but only estimated.

find husbands' (Sklar:241) and, as a consequence, age at marriage and number of single women increased.

4. Fertility levels and trends in Eastern Europe

It is generally accepted that all modern populations followed the demographic transition pattern from high to low rates of fertility and mortality. When and at which limit the decrease in mortality will stop is one of the many unknown points about the demographic transition. Regarding fertility, many researchers hypothesized that replacement level is the lowest point that would be attained, and that fertility will remain more or less around that value. Unfortunately, this was not the case and nowadays most of the European countries have persistent below replacement fertility. Although the TFR values in Eastern Europe are not much smaller than the TFR values for Western Europe, what distinguishes them within Europe is a continuous decrease after 1990 (**Graphic 1**). Several researchers tried to explain this particular situation of decreasing fertility in Eastern Europe at the same time with constant or even increasing rates in Western European countries.

Graphic 1. Evolution of TFR between 1950-2000 in Eastern Europe, Western Europe and North America



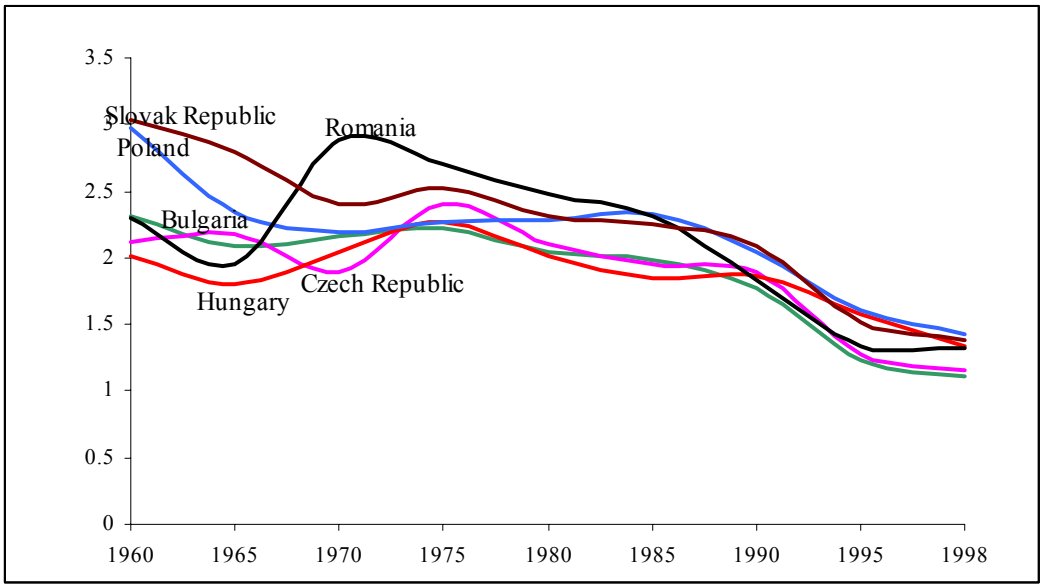
Source: UN

Three main explanations were advanced to explain these fertility changes in Eastern Europe: 1) some researchers characterized the situation as a "shock" (Eberstandt, 1994) or an anomical situation (Ranjan, 1999) following the changes in the political and economic system, 2), others argued for an economic explanation, emphasizing the increasing poverty that characterized the region after 1990 as a major factor in decreasing fertility (Carlson & Omori, 1998, Macura (2000), Cornia and Paniccià (1996)) and, 3) a smaller, but increasing group,

argue for a cultural explanation of this 'sudden' (Philipov, 2001:10) decrease in fertility (Sobotka&all, 2001), a second demographic transition which would affect Eastern Europe after 1990. None of these perspectives are mutually exclusive, and, in fact, as Philipov (2001) observed, lack of adequate data makes impossible to decide which one can offer the best explanation. The general picture shows that, if around 1965 the level of fertility (TFR) in Eastern European countries varied between 2 and 2.5 children per woman (Althus, 1992:140), after 1996 only Albania is above replacement level (Graphic 2). Gradually or very fast, all other countries fell below replacement during this period of time despite of various policies toward increasing fertility some Eastern European governments adopted.

Fertility levels in Eastern European countries are similar to or lower than in Western countries, although patterns of marriage are different (Sardon, J.P.:119): until 1990, for example, total marital fertility rates are around 28% lower in Western countries than in Eastern Europe mainly as a result of a much higher percentage of consensual unions in Western than in Eastern countries (Sardon: 137).

Graphic 2[3]. TFR during 1960-1998, selected Eastern European countries



source: Recent demographic developments in Europe, 1999

[3] I did not include Albania in this graphic because data are missing for most of the years. However, it is known that demographic transition began very late in Albania in comparison with other Eastern European countries (Falkingham&Gjonca, 2002). In 1960, in Albania, TFR was 6.85 and in 1996, 2.7 (Recent Demographic Developments in Europe, 1999)

How is it possible to have a high and almost universal pattern of marriage and a low rate of fertility? For the Balkan countries the answer is: using abortion. As can be learned from Table 1 and 2, the rate of abortion in these countries is around 1 or higher than 1 and much higher than in other countries. Romania has a strong tradition of using abortion; the highest abortion rate ever recorded in statistics was in Romania in 1965 – 252 per 1000 women (Henshaw&all:S33).

Table A. Rate of abortion

Country and year	Abortions	Rate
Bulgaria (1988)	111700	0.951
Yugoslavia (1987)	365700	1.018
Romania (1990)	992300	3.153
Czechoslovakia (1987)	156000	0.729
Hungary(1987)	84500	0.671
Poland (1987)	122600	0.202

Source: F. Althus (1992)

Table B. Number of abortions, 1995

Region and subregion	No.of abortions (millions)		
	Total	Legal	Illegal
Europe	**7.7**	**6.8**	**0.9**
Eastern Europe	6.2	5.4	0.8
Northern Europe	0.4	0.3	-
Southern Europe	0.8	0.7	0.1
Western Europe	0.4	0.4	-

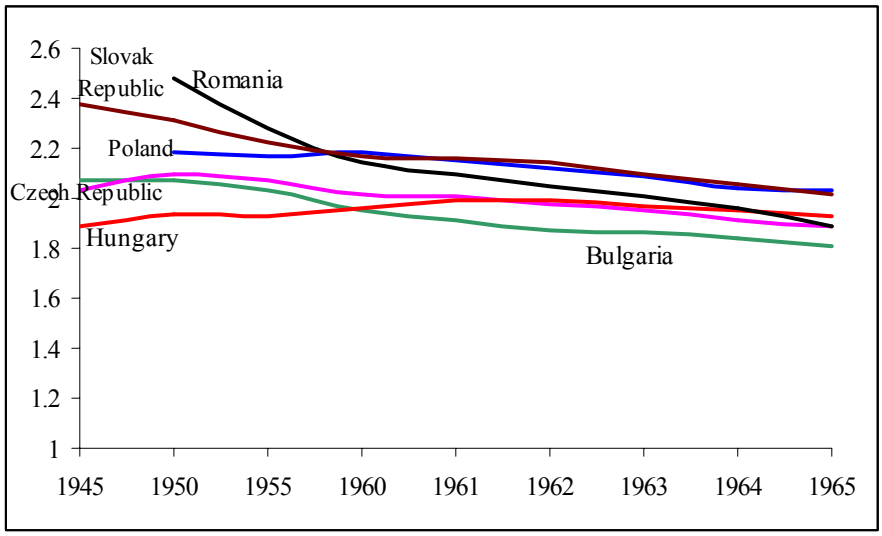
Source: H.Davis

After 1990, the mean age at first birth increased in most of the Eastern European countries, which made some researchers conclude that the low fertility observed in the region is actually a result of postponement childbearing rather than a quantum decrease. Bongaarts and Feeney's (1998) influential article on the adjusted TFR was enthusiastically incorporated into several articles trying to prove that the fertility perspectives of Eastern Europe are rosier than the actual data predict. It is still unclear what role, if any, plays postponement in declining fertility in Eastern Europe. On one hand, although for some Eastern European countries there were observed tempo changes (Philipov, Kohler, 1999), there are cases (Bulgaria, 1991, 1992) where the decrease in fertility was the sole result of quantum, not tempo changes, so it is unclear if women postpone childbearing or just give up having children.

On the other hand, the fact that fertility in Eastern Europe has been very low (1.5-1.3) for more than a decade makes less credible the idea that women will catch up soon after postponing childbearing and a sudden increase in the number of children will be recorded. Longitudinal measures (as completed cohort fertility) are not affected by the postponement of childbearing, but they can be recorded only after the cohorts leave the childbearing ages (over

45). The fertility of cohorts shows that higher order fertility decreased in the cohorts born between 1935 and 1950. On the other hand, the region is not homogeneous. Higher order fertility in Poland and Czechoslovakia is about double that in Bulgaria, East Germany and Hungary (Althus:141). In Graphic 2 I present data on the fertility of cohorts of females born during 1945-1965. Although this is not completed cohort fertility for all generations, it gives some perspective on how fertility evolves.

Graphic 2. Cohort fertility for females born during 1945-1965 in Eastern European countries



source: Recent demographic developments in Europe, 1999

Scholars have attempted to explain the low fertility levels in Eastern Europe from various perspectives. Three of these perspectives have become well known and were reinforced in various occasions: one focuses on poverty as the main factor, the other on anomy and a third one considers the second demographic transition as explaining the fall of fertility.

a) Economic explanation

After 1990, as a result of political and economic changes in the region, many people fell into poverty and continued to remain poor for the rest of the transition period. Inflation manifested all over, many countries imposed a monetary reform in an effort to stabilize their

currencies and to help national economies. GDP fell in all countries of the region during the first part of the 1990s, and although some of the countries achieved a good economic increase and improved the average standard of life, economic inequality exploded after 1990 and many people remained under the poverty line.

Researchers using the economic approach to explain fertility decline in Eastern Europe argue that raising a child is increasingly costly nowadays and, therefore, many couples prefer to limit their fertility. At the same time, childlessness is not an option for the majority of women, and this feature distinguishes Eastern from Western countries[4]. In an article focused on fertility regulation in Bulgaria, Carlson & Omori (1998) note that the declining state socialist economy, followed by 'rapidly changing socioeconomic conditions' (Carlson&Omori:187) after 1990 made more and more women use both contraception and abortion as methods for limiting their fertility. Macura (2000), in research dealing with poverty and fertility in Eastern and Central Europe, argues that the economic problems of transition from a Communist economic system to an open market had a significant effect on falling fertility.

b) Anomy, uncertainty about the future

Although the idea of a relationship between income uncertainty (anomy) and low fertility appears in several studies and seems to make a lot of sense (Philipov, 2001), the evidence to support such a relationship is very scarce. Ranjan (1999), using a two-period stochastic model of fertility behavior, argues that it is economically rational for individuals to postpone childbearing during the times of economic uncertainty. He concludes that 'the increase in uncertainty about future income… gives rise to a threshold behavior such that individuals above the threshold level of income want to have a child immediately, while those below the threshold wait for the uncertainty to be resolved'(Ranjan:17).Although Ranjan suggests that his results can be used to explain fertility decline in Eastern Europe after 1990, he does not explain how to reconcile his conclusions with the fact that poor people in Eastern

[4] For example, in 1999, among women age 35-39, only 7.7 did not give birth to at least one child (Reproductive health Survey, 1999:29)

Europe, who obviously are more exposed to income uncertainty, tend to have more children compared to people with higher income (*Reproductive Health Survey*, Romania, 1999:32).

c) Second demographic transition

The theory of the second demographic transition is nowadays one of the most popular explanations for the demographic changes occurring in Western Europe after 1970. First advanced by Lesthanghe (1983) as an explanation for contemporary trends in fertility and marriage in Europe, the idea of a second demographic transition seems to be a successful cultural explanation linking declining fertility, declining rates of marriage, increasing cohabitation and divorce to the ideational change that affects post modern Europe. Desacralization of life and individualism make people less willing to raise a high number of children or to commit themselves to a lifetime union and, as a result, fertility and nuptiality rates decline. Initially developed at a macro level, this theory was later tested at a micro level and received a fair amount of support too. Although not many studies published in English or French argue for a second demographic transition explanation of fertility trends in Eastern Europe, the idea seems to be rather popular among Eastern European students (Philipov, 2001:13). However, studies reinforcing such an explanation focus on Central rather than on South-Eastern Europe, and use similar arguments for these countries as were used for Western European countries. Sobotka, Zeman & Kantorová (2001), for example, argue that after 1990, demographic changes characteristic of the second demographic emerged simultaneously in Czech Republic (Sobotka, Zeman & Kantorová:10), making it impossible to establish which one caused the others. The authors conclude that, since the early 1990s, 'there is no doubt that the second demographic transition has been taking place in the Czech Republic' (Sobotka, Zeman & Kantorová :15). Frątczak & Chmielewska (2001) explain that the new lifestyle, promoted through mass media and adopted by the young generations, makes people consider having children as a minor value. The decline in fertility in Poland, they say, increasing age at first marriage and the slow increase in cohabitation characterize thesecond demographic transition in Poland. The idea of the second demographic transition seems to be particularly popular in Poland and in 1999 a book called "*Demographic change in Poland during the 90s in the light of the second demographic transition*" was even published (Philipov, 2001:12).

d) Women's status and fertility

The relationship between women's status and fertility in Eastern Europe is not a popular direction of study, as these two subjects are hardly studied together. However, this seems to be a promising line of research. McDonald (2000) observed that, among the low fertility countries, those countries which preserve strong inequality within the family and family oriented institutions have the lowest fertility. He suggests that having a child in such places is too a heavy burden for a woman and this is why many women decide to postpone or to avoid having children. On the other hand, students of women's position in former Socialist countries (Funk, Nanette& M. Mueller, 1993, Gal & Kligman, 2000)) observe that, in spite of, or most probably because of, more than fifty years of strong political pressure for raising women's status and a large participation of women to the labor force, the status of women is still low in Eastern European countries. This observation suggests that Eastern and Southern European low fertility could be the result of similar factors: the status of women within the family and family related institutions.

4. East –West Migration in Europe

Few quantitative studies published in English have analyzed the new phenomenon of East-West migration, although before 1950, the phenomenon had quite a history. During 1850-1920, when almost 30 million people left Europe for North or South America, several hundred thousands Polish and Ukrainians migrated to France, Germany or England (Fassman& Munz, 1994:520). About 3% of Czech population and 6% of Polish population migrated during 1900-1914 (Sklar:241). Three factors are considered important in explaining this trend: economic growth of the West, due to the industrial revolution, differences in political systems between East and West and rise of nationalism in Central and Eastern Europe, which forced ethnic and religious minorities to migrate (Fassman&Munz, 1994: 522).

During 1944-1989, economic migration from Eastern to Western Europe was relatively rare. In forty years, between 12 and 14 million people migrated on this direction, but most of them emigrated because of their national origin, or as refugees. About 75% were ethnic minorities – Jewish or Germans – or East Germans moving to West Germany. During 1960-1992, about 500,000 people (mostly Jewish) went to Israel or United States, and 60,000 Hungarians emigrated to Hungary. During this time from Slovakia, Romania and former Yugoslavia, about 315, 000 people migrated to Hungary, most of them being transferred by order of their governments (Fassmann & Munz, 1994: 523). During 1946-1955, over 200, 000 people left Bulgaria (Guentcheva&all:20), many of them members of ethnic minorities (Turks, Armenians, Jews, Czechs and Slovaks) and settled in their country of origin or in other countries.

Although there were economic reasons that drove these people emigration, they were able to migrate because of the special political treatises existing between various Eastern European countries on one hand and Germany, Israel and Turkey on the other hand, so they are not considered either economic migrants or refugees. Only Yugoslavia allowed its citizens to work and immigrate to a capitalist country before 1989, and this is why only 15% of East-West migrants during 1950-1989 can be classified as labor migrants or as dependent family of labor migrants (Fassmann&Munz, 1994: 527).

After 1990, the number of ethnic Germans (*Aussiedler*) moving from Eastern Europe to Germany increased (Table 2).

Table 2. Number of ethnic Germans living in Eastern Europe who migrated to Germany after 1990

Country of origin	Year								
	1990	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**
Total	397,073	217,898	177,751	134,419	103,080	104,916	95,615	98,484	91,416
Poland	133,872	1,677	1,175	687	488	428	484	623	553
Hungary	1,336	43	14	18	4	4	2	2	3
Romania	111,150	6,519	4,284	1,777	1,005	855	547	380	256
Former Czecheslovakia	1,708	62	14	8	16	11	18	22	13
Former Soviet Union	147,950	209,409	172,181	131,895	101,550	103,599	94,558	97,434	90,587
Former Yugoslavia	961	178	77	34	14	19	--	17	4
Other countries	96	10	6	--	3	--	6	6	--

source: Statistisches Bundesamt (Federal Statistical Office), apud *Migration Source*

The disruptive Yugoslavian war after 1990 made many Serbs, Croats and Bosnians to migrate and ask for refugee status in Western Europe (Table 3), while several thousands Romanians, Bulgarians and Albanians left their countries looking came to West looking for a better life.

Table 3. Stock of immigrants from former Yugoslavian republics in European countries

Country of citizenship	Population of foreign citizenship in			
	Germany (1.1.1999)	Austria (1.1.1999)	Italy (1.1.1998)	Belgium (1.1.1999
Bosnia and Herzegovina	281,380		10,246	1,995
Croatia	206,554		13,575	736
Former Yugoslavia*	721,029	337,863	74,869	12,130

source: Recent demographic developments in Europe, 1999

* Serbia, Montenegro, Croatia, Slovenia, Bosnia-Herzegovina

Gypsy groups are among the most 'visible' minorities which massively migrated to West after 1990: only between January and September 1991, about 70,000 Gypsies from Romania

and another couple of thousands from Macedonia reached Germany (Barany: 243). Russian immigration was also feared by Westerners: in a study done in 1993, demographers estimated that, in the future, 1.5 million Russians plan to emigrate to Western Europe (Shevtsova: 244), and this seems to be an underestimation given the fact that, in 1991, 50% of Russians declared they were ready to leave the country (Shevstova: 244).

However, the number of migrants from Eastern European countries was lower than it was believed, (Lazaroiu, 2003, Guentcheva, 2003, Korys, 2003) and some of the Eastern European countries – as Czech Republic and Slovenia – became actually countries of immigration after 1995. As an overall, the benefits that Western Europe has by getting foreign people to work for low wages seem to surpass the negative effects of having immigrants, and this is why the immigration regulations regarding Eastern Europeans became more an more relaxed. On the other hand, the remittances sent by the immigrants back to their country of origin play an important role in the GDP of these countries. For Bulgaria it was estimated that in 2002 emigrants sent home 449.6 million USD, which represent 2.9% of Bulgarian GDP, and surpass the amount of direct foreign investment by 20.9 million (Guentcheva&all:16). National Bank of Romania estimates that, during 2002, the emigrants transferred home 1.2 billion USD (Lazaroiu:20). Poland, with an estimated number of 786,100 of emigrants, benefited from 900 million USD in remittances in 1998 (Korys: 40).

The pattern of migration (which countries send people in what countries) it is an important point in understanding East-West migration in Europe. At the beginning of ’90, a large proportion of migrants settled in Germany (81% in 1990) (Fassman & Rainer, 1992:463, 466), but this is mainly because the ethnic Germans living in Eastern European countries (*Aussiedler*) moved to Germany, where they immediately received German citizenship. Later one, migrants preferred to move to other countries, historically countries of emigration as Italy, Spain and Portugal.

The direction of migration (where people from a certain country migrate) can be explained from several points of view. First, geographic vicinity plays an important role: people tend to move to states neighbor of their native country. Even if this is the case for some waves of migration (Romanians of Hungarian origin into Hungary, Bulgarians with Turkish origin going to Turkey), this is not the general pattern. A second hypothesis was derived from neoclassical economic theory: people want to earn as much as possible, so they move in the

countries with high wages. However, many situations still remain unexplained: Portuguese migration into France, during the last half of the 21th century, for example, does not support such a theory, because Germany would be more attractive than France from a neoclassical point of view. A third hypothesis argues that cultural, political and historical connections between the origin and host country determine the direction of migration (Fassman&Rainer, 1992:469).

Figure 1. East-West main directions of migration in Europe, after 1990

5. Data

Romania is one of the countries with high migration and below replacement fertility. UN studies placed Romania among the first ten countries of emigration with an estimated 80,000 emigrants per year (around 1995). At the same time, fertility attained 1.3 children per woman in 2003, a level well below replacement. The last census (2002) shows that between 1992 and 2002, the Romanian population decreased by one million (~5%) as a result of migration and negative natural increase.

There are two types of data available for studying the relationship between migration and fertility: censuses and surveys. Migration became significant only after 1990, so I will use 1992 and 2002 censuses to estimate the number of migrants and the influence of migration on fertility. For survey data on migration, I will use "Community census on temporary external migration of rural population", a survey conducted by International Migration Organization, University of Bucharest, Ministry of Public Information and Ministry of Internal Affairs in 2001. There were 12357 villages (from 127000) and 148 small towns (from 152) included in this study. For each village and small town information was recorded on the number of emigrants, on people who worked abroad and came back, and some characteristics of the community (Sandu, 2001). People involved in the study recognized that data can be affected by errors, taking into account that the study was done on the village/small town level not on the individual/household level (Sandu, 2001), and they suggested that data at the county/region level are much more reliable than data on the village/town level. This study does not have any data about fertility, so for studying the relationship between migration-fertility, I used fertility data from annual publications of Romanian National Institute for Statistics, Romanian Yearbook (2001) and National Census (1992).

5.1. Census data

One method for estimating the number of out-migrants from a country with low immigration is by using data from two consecutive censuses. For the relationship between fertility and migration, it is particularly important to estimate the number of women migrants who are in the reproductive ages.

By comparing the female population ages 15-64 in 1992, on age groups and nationalities in Romania[5], with the female population age 25-74 in 2002, I find that for all ethnic groups except Gypsies, the female population decreased (Table 4).

Table 4. Difference in size between 1992 and 2002 (female cohorts age 15-64 in 1992)

	Total	Romanians	Hungarians	Gypsy	Ukrainians	Germans
15-19	101224	88033	10805	-480	618	2156
20-24	56147	46471	9077	-1547	304	2023
25-29	30828	26828	4164	-1081	149	1141
30-34	42151	37353	4377	-987	144	1411
35-39	44282	38796	4431	-684	149	1577
40-44	33697	29300	3573	-354	144	1039
45-49	39709	32670	4891	335	206	1475
50-54	71367	61296	6084	800	274	2324
55-59	100221	85771	8727	1602	336	2751
60-64	138001	118959	12328	1579	462	3082

Number of Gypsy females increased for all age groups between 1992 and 2002, which is not an expected result, as it is not known about any Gypsy immigration to Romania. Actually countries as France, Italy and Spain claim to have an increasing stock of Romanian Gypsies.

There are two possible explanations for this result. Figures regarding the number of Gypsies are not very reliable anywhere, and there are still cases of children born at home who do not have birth certificates, it is very possible that the counting was not accurate

[5] In this chapter I focus only on out migration. In 2002, there were 23,945 foreign citizens living in Romania for 12 months and over (Romanian Census, 2002).There were also 109,924 Romanian citizens born in other country (Romanian Census, 2002). Most of these people lived all their life in the same place, but because of the frequently changing borders during the 20th century they are recorded as being born in another country. In the following I will assume no immigration.

in 1992, or in 2002 or in both years. Another reason can be related to how ethnicity is recorded: the respondent identify himself/herself as belonging to a certain ethnicity, so people can declare themselves as being Gypsies at one point in time, and then declare some other ethnicity. Usually, Gypsies choose to declare themselves as Romanians, but there are cases when they declared other ethnicities. One well publicized case of such shifting in identity appeared in Transylvania when the Hungarian government decided to give some special rights to Hungarian ethnics living abroad (so called Status Law). The so called Hungarian Gypsies – a Gypsy tribe claiming to be similar to Gypsies living in Hungary, living mostly in the Western part of the country, declared themselves as Hungarians in order to qualify for the Status Law rights, and got very angry when the Hungarian associations denied they are indeed Hungarians. These data problems with Gypsies counting made me to use, in the following, only the other four ethnic groups (Romanian, Hungarian, Ukrainian, German), as I was not sure what is the cause.

In order to estimate the number of women migrants, I computed (from 1992 figures) the number of women who would be in 2002 in the absence of migration. As migration occurs usually at young ages, I used only the cohorts that were 15-34 in 1992, and I estimated the number of deaths for these cohorts using the death rates from the life tables published by the Romanian National Institute for Statistics (Demographic Yearbook, 2001)[6]. I considered all ethnic groups as having similar deaths rates; as the death rates were not very high (see footnote 3), they would not be significant even if there would be differences in the death rates. Table 4 shows the number of women that should be alive in 2002 in the absence of migration, and the number of women that were alive in 2002, for the four ethnic groups.

Table 4. Number of women that should be alive in 2002, in the absence of migration

	Romanians		**Hungarians**		**Ukrainians**		**Germans**	
Age in 1992	*without migration*	*actual*	*without migration*	*actual*	*without migration*	*actual*	*without migration*	*actual*
15-19	817570	744186	62159	52468	2793	2225	3435	1341
20-24	892063	866261	65778	58225	2251	1999	3691	1754
25-29	539122	529674	39503	36612	1924	1837	2199	1129
30-34	658464	655462	46953	45025	2008	1969	2886	1626

[6] I had the death rates only until 2000, so I assumed they remained until 2002. The death rates were between 0.002 and 0.008.

These data show that, among women who were age 15-34 in 1992, and belonging to one of the four ethnic groups (Romanian, Hungarian, Ukrainian, and German) by 2002, about 4% migrated – 5% of the Romanian group, 12% of the Hungarian groups, 2% of the Ukrainian group and 72% of the German group migrated. Let consider the worst scenario, with these migrants never having children in Romania during 1992-2002. Suppose that these women, would have the same fertility as the women who did not migrate if they stayed,. Then, for each 1000 women who migrated, we can estimate the number of children lost as the difference between the numbers of children ever born in 2002 and in 1992 to women who stayed (Table 5).

Table 5. Number of children 'lost' because of migration, for every 1000 women, 1992-2002

age in 1992	Romanians	Hungarians	Ukrainians	Germans
15-19	877.4	852.9	1299.3	666.3
20-24	765.7	839	1263.1	769.4
25-29	348.9	395.1	761.1	334.2
30-34	128.6	142.7	384.3	160.8

Table 6. Estimated number of women-migrants

	Romanians	Hungarians	Ukrainians	Germans
15-19	73384	9691	568	2094
20-24	25802	7553	252	1937
25-29	9448	2891	87	1070
30-34	3002	1928	39	1260

From Table 5 and 6, about 108. 430 children were 'lost' because of female migration. Taking into account that, during 1992-2002, there were around 2.4 million children born in Romania, it means that the ***fertility would be at most 5% higher if women did not migrate during this interval of time.***

Considering the second issue that high migration causes the fertility measures to be underestimated, I compared the TFR for 1999-2001 from official statistics with the TFR

computed with 2002 census data. Using the 2002 census data and probabilities of death for women age 15-49[7], I projected backwards the number of women that would be alive in 2001, 2000 and 1999 for each year of age. Then I computed the TFR for 1999-2001 using figures resulted from the projection as the denominator [8] and I compared them with data published by the National Institute for Statistics. The results are presented in Table 5.

Table 7. TFR and number of women age 15-49 years

	Women, age 15-49		**TFR**	
Year	***Projected***	***Used in statistics***	***Projected***	***Used in statistics***
2001	5538580	5817197	1.32	1.2
2000	5543080	5816755	1.38	1.3
1999	5549933	5817083	1.41	1.3

As it can be observed, TFR is 0.1 higher when the backwards projected number of women is used as the denominator because the number of women age 15-49 used in official statistics is about 5% smaller than the number of women resulted from the projection. The difference is probably a result of not taking out migration into account the official statistics, so, as Philipov (2001) for Bulgarian case, there is certain bias in measuring fertility in Romania, due to high rate of out migration. ***As these results showed, TFR would be around 8% higher if migration is taking in account.***

[7] For probabilities of death, I used the complete life table on sex, 1998-2000, the only one with data for each year of age.
[8] For number of births I used published data (Births, 1999, 2000, 2001, *Romanian National Institute for Statistics*).

5.2. Survey data

One of the few studies that examined the migration process using data from a country of origin was done in Romania in 2001. Using a so called "community census" –in which for each village, data were recorded regarding the characteristics of the village, the history of internal migration and international migration - the authors were able to estimate the volume as well as the main directions of economic migration from Romania to European Union.

Data were recorded about temporary migration during 1990-2001 for people from 12300 villages (from a total 12700 villages) and 148 small towns (from 152). The results showed that the large villages, with a high level of development, located especially in Transylvania or in the Western part of the country have the highest level of international out migration.

Six countries seem to absorb most of the migrants from Romania: Yugoslavia, Hungary, Germany, Turkey, Italy and Spain. In the late 1990s, Germany is no longer a preferred destination of Romanian migrants; Italy and Spain now capture more and more migrants with few of them returning. Yugoslavia and Hungary have a special position; people travel frequently in these countries, for buying and selling things, but also for working thereGypsies (a category frequently mentioned in the articles about migration in Western Europe), go especially in Germany, Yugoslavia and Spain.

From a demographic, as well as an economic point of view, Romania is not a homogeneous country. During 1945-1990, the communist governments tried to reduce the economic disparities between regions by industrializing and urbanizing the poorest parts of the country (Moldova and the southern part of Muntenia, Figure 1).

Figure 1. Historical regions in Romania

Historically divided in regions (Transylvania, Moldova, Banat, Crisana-Maramures, Oltenia, Muntenia, Dobrogea), the Romanian administrative structure changed several times during the last one hundred years. The concepts of the main administrative units (village, comuna, town and county) remained unchanged during the last forty years, although the number and boundaries of counties and towns changed frequently. After 1990, the administrative changes were minor, with the rural region around Bucharest becoming a county and being separated from the main town.

The forty one counties that now compose Romania have different demographic and economic characteristics: those situated in the North Eastern part are among the least developed and have the highest fertility rates, while those in the Western part and the capita (Bucharest) are the most developed and have the lowest fertility rates (Table 6).

Table 6. Demographic indicators in the poorest and richest counties from Romania

County	Region	Rank of development, 1998*	TFR 1989	TFR 2000	Life expectancy, males, 1988-1990	Life expectancy, males, 1998-2000
Vaslui	Moldova	1	2.16	1.8	68.01	67.92
Botosani	Moldova	2	2.97	1.8	65.98	66.17
Suceava	Moldova	3	2.57	1.7	68.02	68.57
Sibiu	Transylvania	37	2.02	1.2	67.24	67.14
Cluj	Transylvania	38	1.91	1.3	67.01	68.22
Timis	Banat	39	1.86	1.2	65.57	66.93
Brasov	Transylvania	40	1.87	1.1	67.34	67.75

source: Demographic Yearbook *and* The villages of Romania, World Bank Report

Obs. The poorest counties are those with the lowest development rank. Life expectancy is computed using average death rates for three years because this is how *Romanian National Institute for Statistics* computes and publishes death probabilities.

In terms of out-migration, Romania is not homogeneous either: 4.5% of all villages contain 60% of all returned migrants and 20% of all migrants (Sandu:26), which shows the

emigration phenomenon is regionally concentrated. Most migrants are coming from the North Eastern and Western part of the country. There are three major groups of migrants: one group is the migrants leaving the Central-Western counties (Covasna, Harghita, Mures, Salaj), many of them with Hungarian origin, who go to work in Hungary because they know the language and also have various benefits[9]. As statistics show, the most numerous group of foreign citizens living in Hungary are those coming from Romania: 62,130 on January 1st, 1998, which represent about 42% of all foreign citizens living in Hungary (*Recent demographic developments in Europe*, 1999). A second group is formed by those coming from the Northeastern counties (Moldova), who go for work to Portugal, Italy and Spain. A third group of counties (Timis, Arad, Sibiu, Brasov) send most of the emigrants to Germany. Gypsies from Transylvania migrate to Germany (26% of people who came back from Germany are Gypsy), Hungary (15% of all people who came back from Hungary are Gypsy) and Spain (Sandu: 25). Although French media concentrates on Gypsies' migration in France (from Romania as well as other Eastern European countries), in the general picture this group is not numerically important: only 4% of people who came back from France are Gypsy.

The relationship between migration and fertility in Romania can be studied from two points of view: 1) migration could be an important factor in decreasing fertility (and, in this case, those counties with the highest levels of migration would also be those with the lowest levels of fertility); 2) migration and low fertility can both be the results of poverty (so the poorest counties will have the lowest levels of fertility and the highest levels of migration) or 3) regions with a history of high fertility will have also higher levels of migration, because the number of young people, able to migrate, is higher . For all hypotheses there are several arguments: migrants are, generally speaking, young men and women who, by going to work abroad, postpone marrying and having children. On the other hand, it can be argued that people postpone having children and migrate because they live in poverty and want to get a better economic situation. Thus migration and low fertility would be the outcomes of the same cause (poverty).

In the following, I tested these hypotheses regarding the relationship between fertility and migration at the county level. For migration, I used two types of measures: a 'rate of

[9] Status Law gives various benefits to ethnic Hungarians living outside Hungary who come and work in Hungary: they get very easily an work permit, and the state pays the health insurance. A person who works continuously for three years in Hungary is eligible to apply for permanent residence.

migration' : the number of people from a county who went to work abroad during 1999-2000 divided by the population of that county and a 'rate of return': the number of people who came back in the county after working abroad during 1990-2000 divided by the population of county.

For fertility, I used two measures: Total Fertility Rate in 2000 (TFR2000) and the difference between Total Fertility Rate in 1989 and Total Fertility Rate in 2000 (TFRD). For past fertility, I used the proportion of people age 15-45 in the total population. Additionally I controlled for several variables:

- *ethnic composition* of the county measured with the variable:
  - *Gypsy* (proportion of Gypsy in the county)

Among the three most numerous ethnic groups (Romanians, Hungarians, Gypsies), Gypsies tend to have higher fertility, while Romanians and Hungarians have similar levels (Hungarians tend to have fewer children, but the difference between Romanians and Hungarians is not significant as data from censuses and other studies show) (*see* Table 7).

Table 7. Fertility of Romanians, Hungarians and Gypsies in Romania

	TFR*	**CFR1**	**CFR2**
Romanians	1.2	2.07	1.84
Hungarians	1.3	2.03	1.82
Gypsies	2.6	4.03	3.71

source: Reproductive Health Survey, 1999 and Romanian Census, 2002

*- TFR was estimated for 1994-1996 from survey data

CFR1 – cohort fertility rate, measured in 2002, for women age 40-44 in 2002

CFR2 – cohort fertility rate, measured in 2002, for women age 35-39 in 2002. Although it is not the final cohort fertility, because women will still have children, I thought it could be useful to show that the differences in fertility between ethnic groups continue to manifest even for young women.

- *Economic development of the county:* - rate of unemployment in 1997
- *location of the county* (Moldova is historically a region with high rates of fertility)

- *age at first marriage* for women (age at marriage is considered to play an important role in fertility)

- *fertility in 1989* (I used this factor to include the unmeasured things that remained constant after 1989: values related to fertility, ideal number of children, etc)

The data regarding migration have two components: 1) people who left after 1990 and are, at the moment of the survey, working abroad, and 2) people who worked abroad for a while after 1990, but came back later on, and are living in Romania at the moment of the survey. In order to test the influence of migration on fertility, I used two models.

In the first model, the dependent variable is total fertility rate in 2000 (TFR2000) and two independent variables: 'rate of out - migration' (number of people who work abroad at the moment of the survey divided by the population[10]) and 'rate of return' (number of people who worked abroad and came back, divided by the total population. The coefficients are presented in Table 8; I included in the analysis all Romanian counties, so this analysis in done at the population, no sample level. This is why there is no need for testing if the coefficient are significant or not.

Table 8. Regression coefficients for analysis, fertility

	Unstandardized Coefficients		**Standardized Coefficients**
	B	Std. Error	Beta
(Constant)	1.491	0.975	
TFR1989	0.361	0.075	0.538
%Gypsy	0.018	0.014	0.141
Moldova	0.207	0.056	0.441
Rate of returning migration	0.000	0.004	0.014
Rate of out migration	-0.002	0.003	-0.100
Unemployment	0.002	0.007	0.028
Age at first marriage, 2000	-0.044	0.038	-0.136

R^2 adjusted=0.672,

N=41

[10] I used population at 1st of July, 1997, from Romanian Yearbook, 1997, published by Romanian National Institute for Statistics.

TFR1989 : total fertility rate in 1989

%Gypsy: percentage of Gypsy population in the county. I used the 2002 census data for this variable- ethnic composition of population is available only for census years.

Moldova: it is a dummy variable, with 1 if the county is located in Moldova and 0 otherwise.

Moldova is historically a region with high fertility rate

Unemployment: rate of unemployment on 1 July 1997

Age at first marriage, 2000: age at first marriage for women in 2000.

As can be observed from the standardized coefficients, the total fertility rate in 1989 and being locate in Moldova play the most important role in the fertility level in 2000. An increase in the age at first marriage is associated with a decrease in fertility; this is not an unexpected result, as many fertility studies show that fertility and age at marriage are negatively correlated.

The rate of return migration, controlling for all other factors, has a positive influence on fertility, while the rate of out-migration decreases fertility. Young people who leave the country to go to work abroad postpone marrying and having children until they will have a better financial situation; the negative coefficient for out migration rate shows that the more people are leaving, the lower the fertility will be, while the positive coefficient associated with the return migration rate show that, in the counties where more migrants are coming back, fertility is higher. People avoid having children when they are in a bad financial situation. The coefficient for the unemployment rate shows that the higher the rate of unemployment, the lower the fertility. However, many returning migrants are in a good financial situation, so they can afford to have children.

In the second model, I used the difference between the total fertility in 2000 and the total fertility rate in 1989 as the dependent variable. This variable is a measure for change in fertility during 1990-2000, and I tried to see how important was the role played by migration in the fertility decrease after 1990. Fertility declined for all counties during 1989-2000, so TFR2000-TFR1989 is a negative variable (varying between -0.36 to -1.3). The regression coefficients for this model are reported in Table 9.

Table 9. Regression coefficients

	Unstandardized Coefficients		Standardized Coefficients
	B	Std. Error	Beta
(Constant)	0.487	0.190	
%Gypsy	0.019	0.014	0.156
Moldova	0.186	0.060	0.407
Unemployment	0.003	0.007	0.043
Change in age	-0.070	0.063	-0.145
Rate of returning migration	0.001	0.004	0.034
Rate of out migration	-0.003	0.003	-0.117
TFR1989	-0.610	0.070	-0.932

R^2 adjusted=0.653,

N=41

TFR1989 : total fertility rate in 1989

%Gypsy: percentage of Gypsy population in the county (2002)

Moldova: it is a dummy variable, with 1 if the county is located in Moldova and 0 otherwise.

Unemployment: rate of unemployment on 1 July 1997

Change in age: the difference between age at first marriage for women in 2000 and age at first marriage for women in 1989.

Percentage of Gypsy in a county has a positive influence on the difference in fertility: 1% increase in the percentage of Gypsies in a county increases the change in TFR during 1989-2000 with 0.156. However, because the dependent variable has only negative values, an increase in the dependent variable represents a decrease in the absolute value of the dependent variable (for example, if the dependent variable increases with 0.156 from -1.3, it means it will get the value of -0.144, and $-1.3 < -0.144$, but $|-1.3| > |-1.444|$. In other words, a higher percentage of Gypsies in a county makes the absolute change in fertility during 1989-2000 to be smaller.

A higher rate of returning migration is associated with an increase in the dependent variable, but, in absolute terms, it helps to keep fertility in 2000 closer to fertility in 1989. Rate of out migration has the opposite effect: it makes the absolute difference between 1989 and 2000 fertility to increase.

6. Conclusions

In a country with a high rate of inflation and unemployment, where almost 50% of people are below poverty, it is not difficult to understand what makes Romanians look for jobs in Western Europe. Although factors other than poverty play an important role in migration – as the case with the ethnic Hungarians migrating to Hungary, or Germans going to Germany show- migration is a result of poverty and perceived poverty. The data discussed in this chapter show that migration influences other demographic phenomena, namely fertility. A high rate of out migration depresses fertility in two ways. One way is by biasing fertility measures: in computing fertility rates, migration is not taken in account, so the denominator of various rates is artificially inflated by including those people who are not actually in the country. On the other hand, migrants tend to be young people, and they postpone having children until they achieve a better economic situation. Once they achieve that, they have children, as the results regarding return migration show: those counties with higher rate of returning migration also have higher fertility. Even if on short term migration decreases fertility through disruption and bias fertility measures, on long term it increases fertility

Of course, migration is not the main factor in depressing fertility – even if nobody had migrated after 1990 from Romania, fertility would not be more than 8% higher than it is. As more and more return migrants go back, fertility has a chance of increasing, especially in those areas, such as Moldova, where the idea of having many children is still strong.

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