

Long-Term Trends in Spatial Mobility in Sweden: An Order-Specific Analysis of Migration of Young Adults

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The aim of this study is to investigate spatial mobility in Sweden over time and changes in mobility patterns by population subgroups. Most studies on internal migration focus on spatial redistribution of population and determinants of inter-regional migration flows; surprisingly little research has investigated dynamics of spatial mobility in industrialised societies over time. By using Swedish register data we will calculate annual age standardised migration rates to investigate spatial mobility of young adults (aged 18 to 29) over the last three decades (from 1980 to 2009). We will then disaggregate mobility rates by calculating order-specific mobility rates. We will next standardise order-specific mobility rates for place of residence and for changes in other life domains of individuals (education and family) to find out how much changes in various life domains of individuals or couples explain the change in mobility levels over time. The study of the dynamics of spatial mobility will deepen our understanding of how lives of individuals change over time and how changes in various domains of individuals' lives interact with their spatial mobility.

Keywords: migration, mobility, life course, standardisation, Sweden

Introduction

There is a long tradition in migration research investigating spatial redistribution of population. Classical studies focussed on inter-regional migration flows and their determinants (Ravenstein 1885; Wilson 1970); subsequent studies have examined migration streams by population subgroups, particularly by age because of the central role age does play in determining migration intensity and directions (Rogers et al. 1983; Kupiszewski et al. 1998). The research on spatial redistribution has largely been driven by the need for regional population projections (Wilson and Rees 2005); these provide policy-makers with information required for the monitoring and planning of socio-economic development of regions.

Another research stream has focussed on understanding and explaining individual migration behaviour. This research, usually seen as a micro-level analysis of migration, has its roots in life-paths and life-course paradigms (Hägerstrand 1982; Elder 1994); the main interest is to understand how changes in various life domains of individuals, families or households (usually employment and family relations) explain their migration behaviour (Kulu and Milewski 2007). While most studies have used small-scale longitudinal surveys (Courgeau 1985; Mulder and Wagner 1998; Clark and Davies-Withers 2007), recent research has also exploited large-scale administrative data that have become increasingly available. Research based on register data from Nordic countries is obviously the best-known to exploit opportunities that have recently opened up with an increased availability of administrative data (Fischer and Malmberg 2001; Lundholm 2007; 2010; 2012; Mulder and Malmberg 2011, Kulu and Steele 2013).

While some comparison of trends and patterns over time or across cohorts is ingredient of any migration study, surprisingly little research has examined migration trends over time. Annual migration rates are reported by statistical offices of most countries where data on geographical movement of population are available; however, explicit analysis of trends and determinants is exception rather than a rule (see Rogerson 1987; Lundholm 2007). This is particularly striking when there is an assumption by general public that spatial mobility has recently increased driven by changing nature of work (i.e. short-term work contracts are increasingly common) in advanced industrialised countries and de-standardisation and diversification of life-courses of individuals (cf. Macmillan 2005).

The aim of this study is to investigate spatial mobility in Sweden over time and explain changes in the mobility patterns. We focus on geographical mobility of individuals aged 18 to 29; adolescents and young adults are known to be the most mobile group in industrialised societies (Rogers and Castro 1981). We conduct our study in Sweden for the following reasons. First, Sweden belongs to the group of 'advanced economies'; it is a country with high average income and where services and information technology have become dominant employment sectors. Second, Sweden is a society where life-course patterns have significantly diversified in the recent decades; premarital cohabitation,

separation, re-partnering and the spread of stepfamilies are more common than in any other industrialised country (Oláh and Bernhardt 2008). Finally, the availability of register data for a longer period of time offers excellent opportunities to conduct a study on spatial mobility: large-scale data ensure reliable estimates of spatial mobility over years and make the calculation of disaggregated measures possible.

Research on spatial mobility

The best-known study on spatial mobility is a seminal paper by Zelinsky (1971) on ‘mobility transition’. In his paper, Zelinsky did not conduct any empirical analysis; rather he set the results of previous studies into a coherent theoretical framework and made predictions of the future trends. Research has shown that spatial mobility increased during industrialisation and modernisation and that this was closely linked to demographic transition. While emigration and rural-urban migration explained much of the increase in spatial mobility in ‘transitional’ societies, in ‘advanced societies’, increased interurban migration and circulation became responsible for high mobility levels; residential mobility rates were also high. For ‘super-advanced societies’ the framework predicted some decline in residential migration and deceleration in some forms of circulation because of improved communication due to technological advancements.

Zelinsky’s study has been a source of inspiration for much of migration research; however, studies on trends in spatial mobility over time and across countries are still rare. Long (1991) investigated differences in residential mobility in industrialised countries in the 1970s and 1980s. The study showed, first, a significant variation in residential mobility levels across countries: while residential mobility was relatively high in the U.S., Canada, Australia and New Zealand, the mobility levels were low in many European countries including Britain; he attributed the variation across countries to the differences in housing availability and affordability due to the housing market regulations and potentially also longstanding customs and traditions that govern use of housing and relationship of people to their housing. Second, the analysis showed some decline in mobility levels for most countries over the study period, which the author explained by reduced housing affordability in industrialised countries.

A study by Rogerson (1987) on spatial mobility in the U.S. also reported declining geographical mobility rates. The analysis showed relatively high mobility levels in the 1950s and 1960s and a sharp decline from the mid-1960s to the early 1980s. While changing age composition of the U.S. population explained some decline in the crude mobility rates, the further analysis also revealed declining age-specific migration rates in the 1970s. The author attributed declining rates to an increased competition at labour and housing market, potentially due to the arrival of ‘baby-boomers’ to the labour market, and increased female labour force participation. A recent study by Molloy et al. (2011) supported these findings. The authors calculated mobility rates at different spatial scales for the last 30 years and

showed a decline in spatial mobility at all levels and across socioeconomic groups. They discussed various factors behind the trend including aging of population, an increased share of homeowners and that of dual earners, improved telecommunications and the end of the 'move-to-South' era, a factor specific to the U.S. context. Interestingly, however, a closer look into the results by age shows that inter-state migration rates were relatively stable for all age groups between 1980 and 2000; some decline was observed only for the past decade.

Studies on other industrialised countries have shown that the recent trends in spatial mobility are not that clear once changing age composition of population is controlled for. Bell et al. (2002) discussed various measures of spatial mobility and compared mobility intensities at various spatial scales in Australia and Britain. The analysis revealed that while geographical mobility declined slightly in Britain in the 1980s, the mobility rates increased in Australia, possibly in the early 1990s. Lundholm (2007) examined trends in interregional migration in Sweden over a long period of time. The analysis supported that migration rates significantly declined during the 1970s and 1980s; however, the mobility rates increased again in the 1990s. The patterns differed by population subgroups: while migration levels for families with children declined over time, migration rates for singles and couples without children significantly increased suggesting polarisation of migration patterns by stage in the life course. The declining mobility rates among families and also among employed population were attributed to the increase in the number of dual income families and delayed family formation.

Similarly, a study by Stillwell and Call (2000) on Spain showed increasing migration rates for working age people between 1988 and 1994; however, intra-provincial mobility increased more than that of inter-provincial, which the authors explained by an increased suburbanisation in Spain during that period; Cannari et al. (2000), in contrast, showed declining mobility rates in Italy between the 1960s and early 1990s largely due to the declining South-North migrations, which they explained by increased differences in the housing costs. Most studies have thus reported the decline in spatial mobility in the 1970s and 1980s; however, the results on trends since the 1990s are less conclusive; these vary across countries and also seem to depend on whether migration or residential mobility is examined.

Population aging has reduced overall spatial mobility in industrialised societies in the recent decades. However, once we control for the effect of changing age composition of population, there are a list of factors that have either hindered or promoted (higher) spatial mobility. First, spatial mobility levels may have declined in industrialised countries in the recent decades because of an increased share of dual-earner couples; this has significantly reduced migration for the sake of a man's career. Second, research has shown that the share of homeowners increased in many industrialised countries until very recently; this is another factor which may have reduced the levels of spatial mobility. Third, most people in industrialised countries live in urban areas; with the spread of post-secondary educational institutions to smaller cities and towns the need has diminished for young adults to move to another place for the study (traditionally from rural to urban area) and return thereafter.

Fourth, with the development of telecommunication technologies, opportunities have opened up to work from home even over long distances; this has made possible of employment changes without the need for residential changes. Fifth, studies have also argued that spatial mobility, particularly residential mobility has declined during the recent recession due to inability of homeowners to sell their houses, which they bought during the economic boom at a high price, and potential buyers to afford these over-priced houses.

There is also a list of factors that have promoted higher spatial mobility in industrialised countries in the recent decades. First, changes in family and fertility patterns have lead to smaller households and a larger single population who has fewer obstacles to move over short or long distances. Further, mobility of young adults may have increased because of delayed family formation; an increased number of individuals in their mid- or late twenties have no children, although they may have a partner. Increased separation, divorce and re-partnering rates is another demographic trend driving higher mobility levels in industrialised societies. Second, on employment side, the rise of post-industrial economies and the emergence of post-Fordist economic model have challenged the stability that many generations used to enjoy at labour market; long-term work contracts are in decline and short-term work contracts are increasingly common, particularly among the younger population groups.

This study examines spatial mobility of Swedish population in ages 18 to 29. We extend previous research in the following ways. First, we will calculate age controlled migration measures to investigate spatial mobility of Swedish population over time. While some studies reviewed above have applied age-standardised measures, surprisingly many studies have used the crude migration rate to examine spatial mobility over time; with being sensitive to population age composition, clearly this measure is inappropriate for a detailed study of trends in geographical mobility. Second, we will investigate annual mobility rates over a long-time period. Most studies compare geographical mobility rates at two to three time points; the study period is also usually short. Third, we will disaggregate mobility rates by calculating order-specific rates. The calculation of order-specific mobility rates will provide us with a detailed description of the changes in spatial mobility in Sweden over time. Further it allows to find out whether changes in mobility rates are explained by changed mobility patterns among all population subgroups or whether just some subgroups have become more or less mobile than they used to be (and account for the changes in mobility rates)? To our knowledge no previous study has examined trends in spatial mobility by mobility order. Finally, we will standardise order-specific mobility rates also for place of residence and for changes in other life domains of individuals (education, work, family) to find out how much changes in various life domains of individuals or couples explain the change in mobility levels over time.

Data (in progress)

We will use data from the Population Register of Sweden; we will calculate annual migration rates for individuals aged 18 to 29 for the period of 1980 to 2009 (birth cohorts 1951–1991).

In total, there are 5,645,556 individuals; for preliminary analysis we have drawn a five-percent random sample of 282,278 individuals. Migration is defined as a move between two labour market areas (in total 72 labour market areas).

Methods (in progress)

We will use a discrete-time hazard regression model to calculate annual order-specific migration rates standardised for various covariates. The model is as follows:

$$h_t^n = c_t^n \times \exp \left\{ \sum_k \beta_k^n x_{kt}^n \right\}$$

Where h_t^n is the hazard of n th migration for an individual at time / year t , c_t^n denotes a set of parameters to measure the effect of calendar year on the hazard of n th move; x_{kt}^n are the values of a set of covariates with k covariates (e.g. age, duration, education etc); β_k^n denotes the parameters describing the effects of the covariates.

Results (in progress)

Trends

1. Spatial mobility of young adults has increased in Sweden (Figures 1 and 2).
2. All order-specific migration rates have increased, but the first migration rates have increased the most (Figures 3, 4 and 5).
3. The increase in the first migration rates has been the largest in ages 19-22, but migration levels have also increased in ages 23-29 (Figure 6).
4. There are no major differences in the dynamics of spatial mobility by sex (Figures 7 and 8).

Potential causes

1. An introduction of a change in the registration practice (students registered at the place of study now rather than at parental home).
2. The spread of tertiary education in the 1990s.

Methodological advances

1. Annual order-specific migration rates provide detailed information on the trends in spatial mobility
2. Standardisation of rates allows controlling for the changes in demographic (age, duration, sex) and socioeconomic composition of population (e.g. place of residence, education)

Next steps

We will standardise migration rates for educational enrolment, level, family status and place of residence to find out how much changes in population composition explain increased mobility levels among young adults in Sweden.

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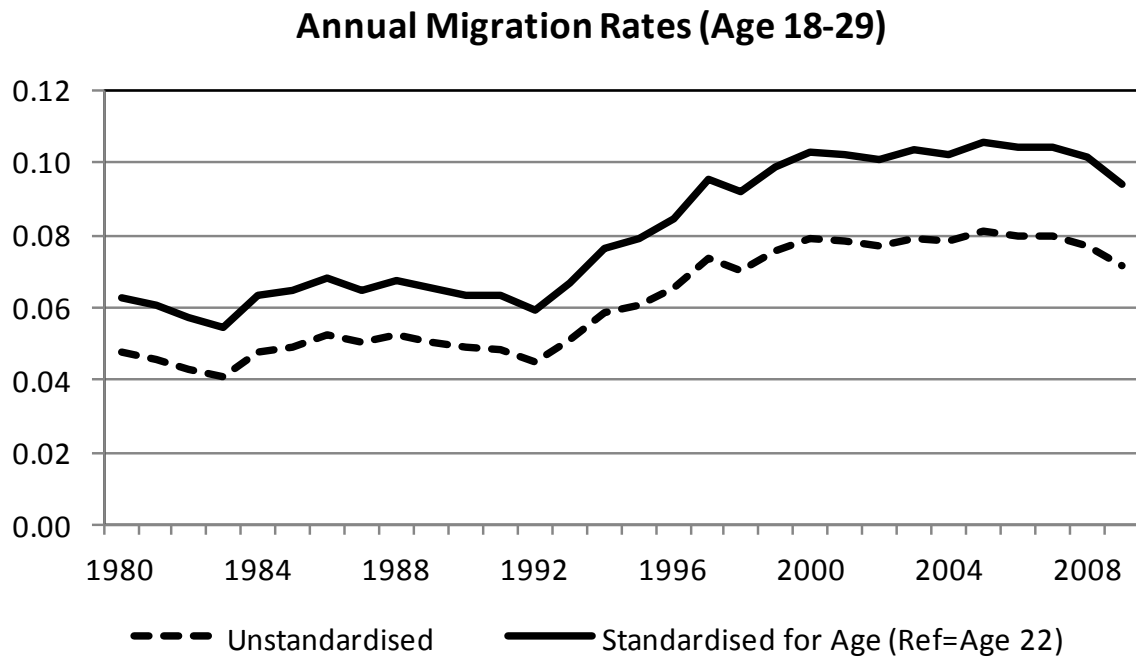


Figure 1. Annual Migration Rates, 1980-2009.

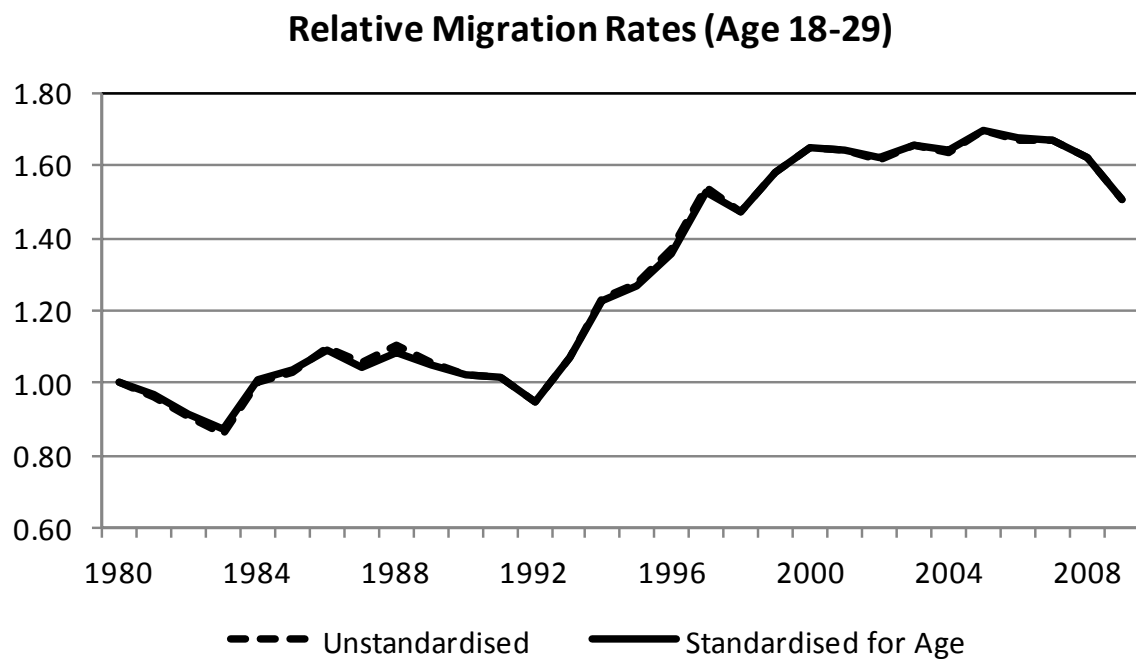


Figure 2. Relative Migration Rates, 1980-2009.

Relative First Migration Rates (Age 18-29)

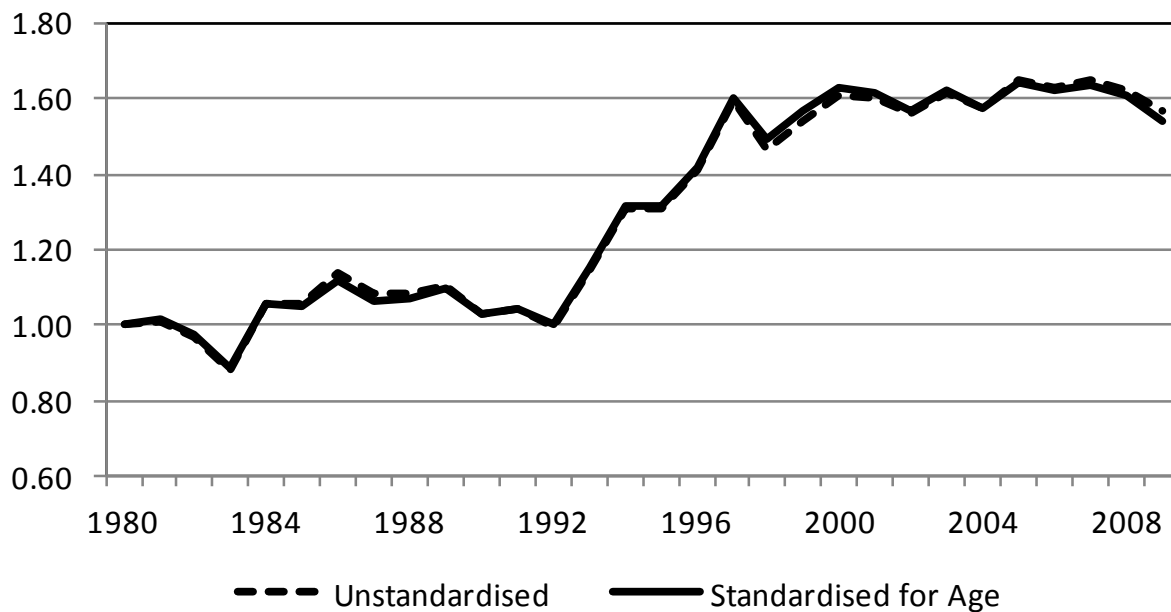


Figure 3. Relative First Migration Rates, 1980-2009.

Relative Second Migration Rates (Age 18-29)

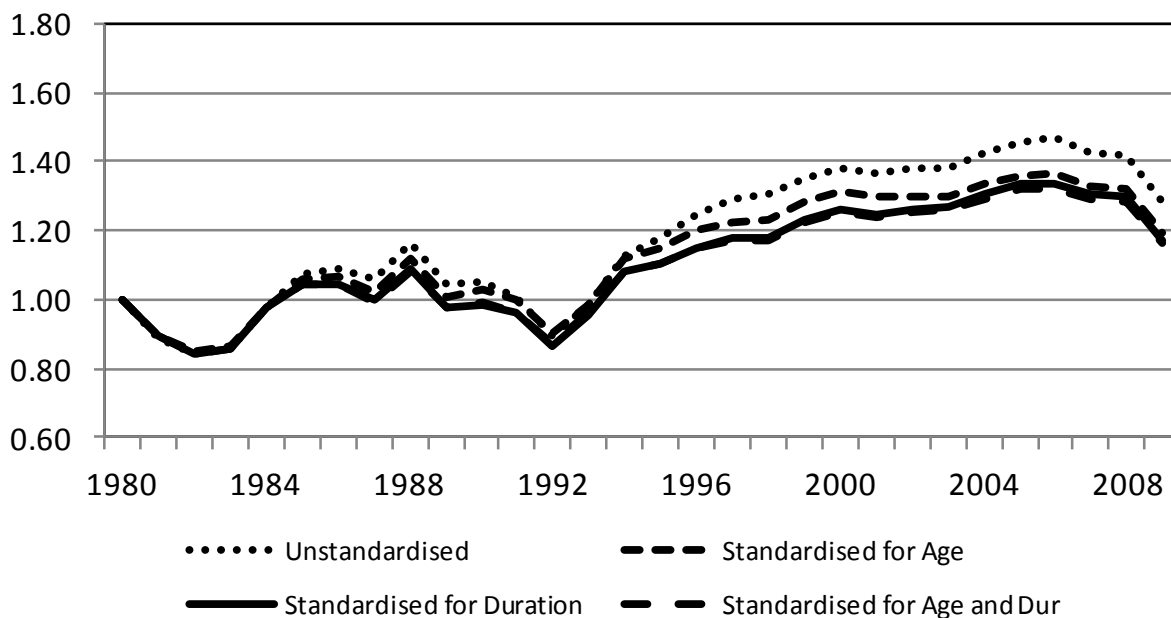


Figure 4. Relative Second Migration Rates, 1980-2009.

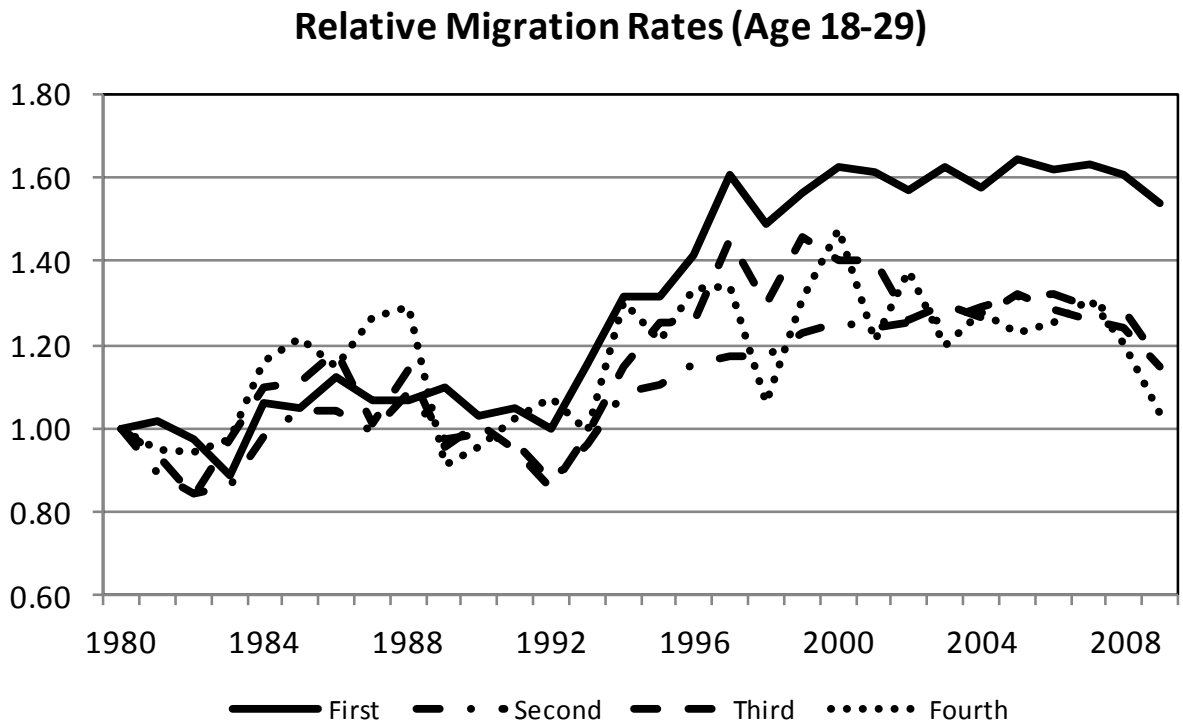


Figure 5. Relative Migration Rates by Order, 1980-2009.

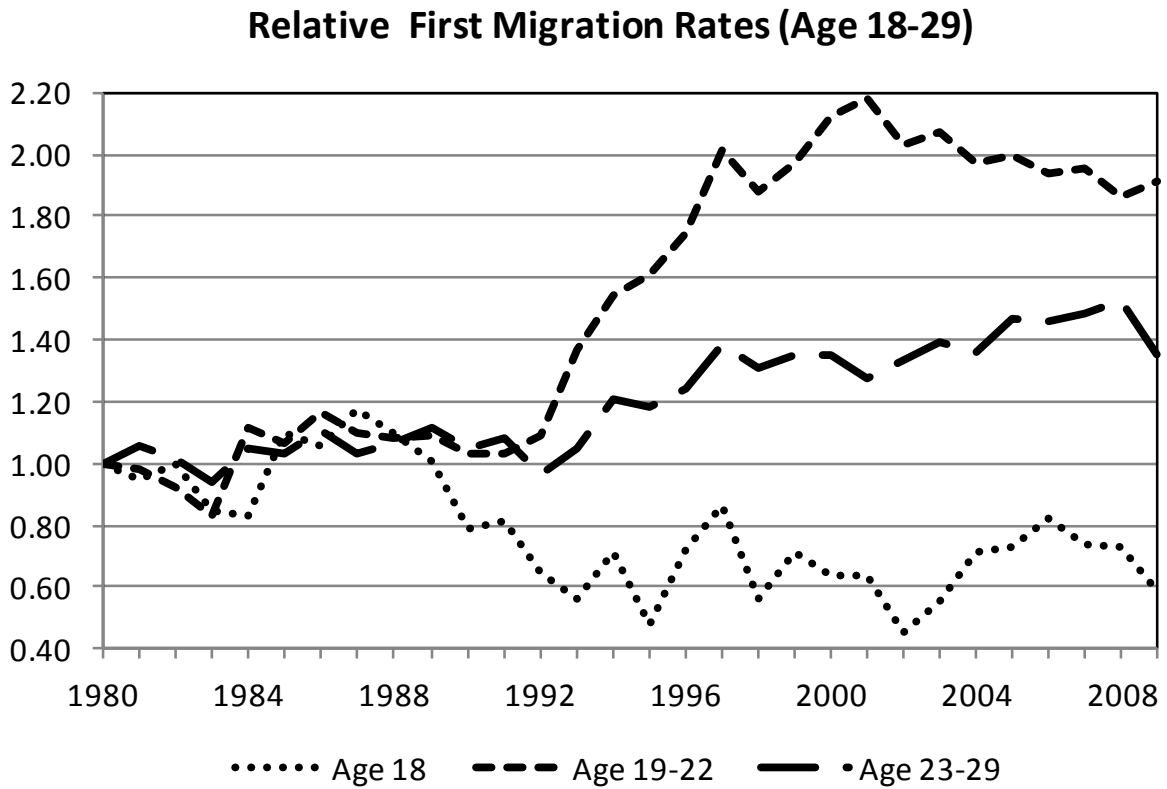


Figure 6. Relative First Migration Rates by Age, 1980-2009.

Relative First Migration Rates (Age 18-29)

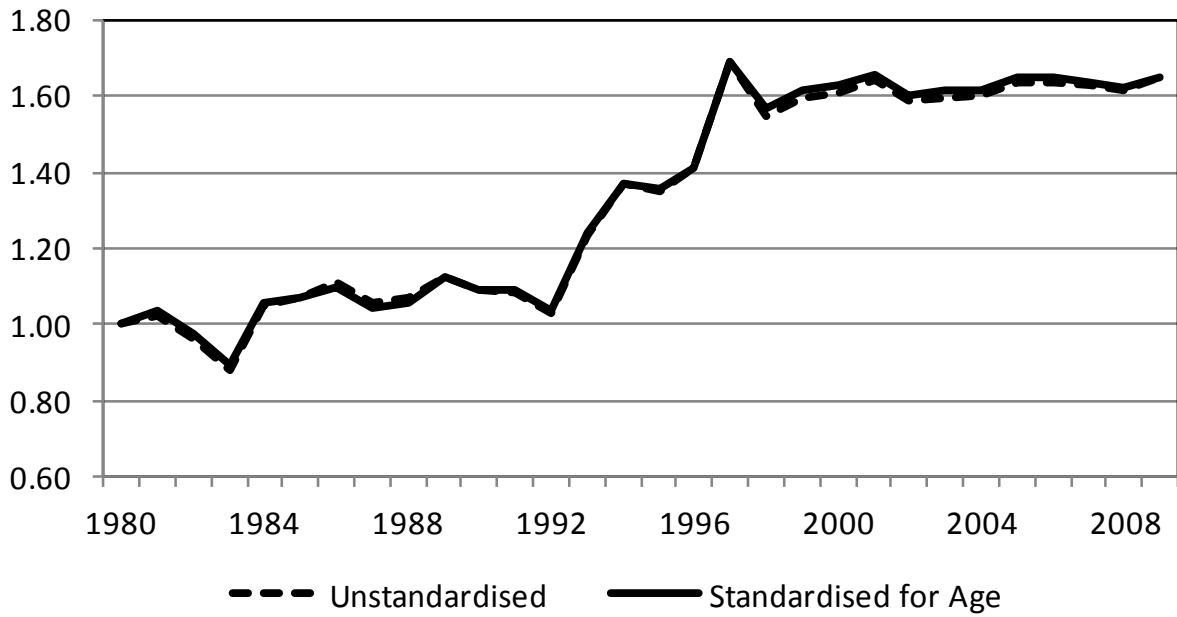


Figure 7. Relative First Migration Rates for Males, 1980-2009.

Relative First Migration Rates (Age 18-29)

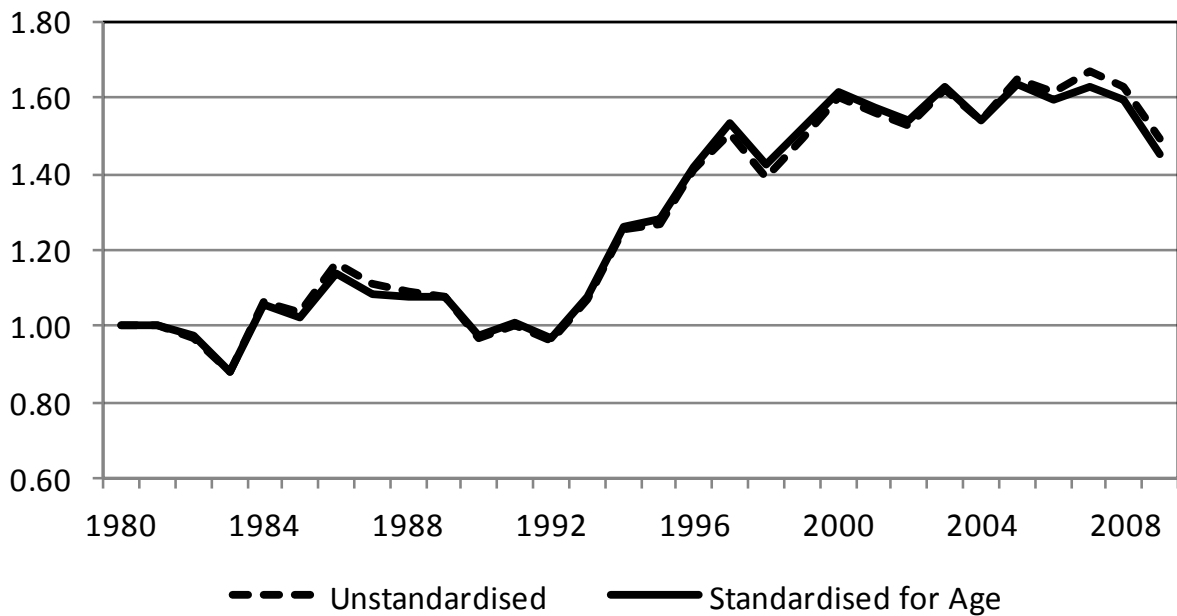


Figure 8. Relative First Migration Rates for Females, 1980-2009.