Labor Market Assimilation of Immigrants in Norway

Report Prepared for the Norwegian Ministry of Finance

by

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Chapter 1

Overview and Recommendations

Immigration from less-developed nations has become a major source of demographic change in most developed countries. In Norway, where in-flows of workers from abroad are strictly regulated, immigration can be an important instrument for public policy. For example, policies that increase admissions of immigrants are often cited as potential countermeasures to the fiscal consequences of an aging native population.

For long-term planners, it is desirable to evaluate the effects of alternative levels of sustained annual immigration on future tax revenues and pension fund contributions. Such effects are inherently tied to the labor market outcomes of foreign-born workers. Recent experiences of several destination countries of international migration flows point to significant differences in the labor market outcomes of immigrants and natives. Moreover, earnings and employment of immigrants and natives move differently over the life cycle— labor market outcomes of immigrants typically improve at a faster rate than those of natives at early stages of the life cycle as immigrants assimilate into the economy of the host country. The main purpose of the present report is to characterize life-cycle labor market outcomes of immigrants relative to those of natives. Specifically, the project aims at developing underlying parameters that support analyses of long-term effects of increased immigration to Norway based on projections of simulation models.

This chapter first gives an overview of the remaining chapters of the report and then concludes with a presentation of specific recommendations.

1.1. Overview of the Chapters

Chapter 2 of the report reviews the recent international literature on earnings and employment assimilation of male and female immigrants drawing on a research body that covers a large number of host countries. Although the empirical evidence reveals some differences across host countries, the literature review uncovers many important similarities. For example, the evidence suggests significant labor market assimilation—with labor market outcomes improving at a faster rate with age for immigrants than for natives—for most groups of immigrant workers in the United States, the United Kingdom, Denmark, and Norway. Evidence from Germany, on the other hand, does not indicate different labor market adjustment rates for foreign-born and native workers. Research further reveals that assimilation rates differ across immigrant groups. For example, in the United Kingdom earnings of immigrants from less-developed nations exhibit faster growth rates than those of immigrants from developed nations—whose earnings profiles resemble those of natives. An important exception in the United States is that of Mexican immigrants, whose earnings profiles are flatter than those of natives. This again warns of the hazard of generalizing across host countries.

An important, common finding for many of the countries covered by the review is that labor market performance of immigrants relative to natives has declined across arrival cohorts. Although the source of such decline remains a hotly debated topic, both among researchers and policy makers, its existence presents a serious challenge for the estimation of assimilation effects. Empirical evidence from the United States, Canada, and Norway shows

that failure to account for inherent differences across arrival cohorts leads to overstatement of assimilation effects on earnings and employment. The chapter argues that the state-of-the-art synthetic panel methodology, even with its own shortcomings, is the most appropriate estimation strategy available.

Chapter 3 summarizes developments of immigration policy in Norway and the United States and provides an overview of trends in the immigrant populations of the two host countries. A common feature is that policy at one point (1965 for the United States and 1975 for Norway) changed to favor immigration based on family reunification. Another common trend is that immigration flows and the size of the immigrant population have increased, at least since 1970. A third common feature is an important change in the mix of origin countries. In both Norway and the United States, immigration has gone from being dominated by nationals from first-world countries to those from third-world countries.

Chapters 4 and 5 present results from an original, comparative study of earnings and employment assimilation of immigrants in Norway and the United States, drawing on the synthetic panel methodology. Chapter 4 examines labor market assimilation separately for male and female immigrants in the two host countries. The analyses uncover assimilation effects in both countries, although such effects are stronger in the United States. Results verify evidence of prior studies showing important differences across immigrant arrival cohorts. Estimates reveal permanent declines in labor market performance of immigrants in both countries but slight differences in timing of such declines. In the United States, the large drop-offs are associated with immigrant cohorts who arrived during the 1970s while in Norway they are linked to cohorts arriving during the 1980s. At least for men, the quantitative magnitudes of cross-cohort differences are greater in Norway than they are in the United States. Because of such developments, recent immigrants are less likely to reach parity during their time in either host country with the labor market outcomes of natives.

Chapter 5 turns to differences according to national origin, focusing on earnings of immigrant men. The chapter first correlates source-country components of earnings in the two host countries and finds strong similarities. Further, the analysis shows that a single characteristic—the per-capita GDP—of the source country explains between 50 and 60 percent of the variation in source-country components of earnings in each the two labor markets. The relationship between such components and development of the source country is found to be strikingly similar for the two host countries. The implication is that labor market outcomes of immigrants are tied to their national origin. The chapter concludes with an assessment of assimilation effects by national origin. This analysis uncovers important differences across national origin groups and across host countries.

1.2. *Specific Recommendations*

The primary aim of the report is to develop simple parameters that aid long-term planners forecasting the consequences of varying immigration policy regimes in Norway. Perhaps the simplest such parameter comes from the question: Accounting for economic assimilation, how does the lifetime labor market performance of a typical immigrant compare with that of a typical native? Is there a number that gives the outcome of immigrants relative to that of natives? Based on the various analyses of this report, the answer to that question is reported in Table 1-1.

[insert Table 1-1 about here]

Table 1-1 lists figures capturing labor market outcomes of immigrants in Norway as a fraction of the outcomes of natives. For example, the table shows that a male immigrant who is employed every year between the ages of 25 and 65, over his life cycle on average will earn 89.7 percent of the typical native male. Likewise, employed female immigrants will on average earn slightly more than the average native-born woman. For employment rates the percentages are 87.6 and 81.9 for males and females respectively.

The figures in the top row of Table 1.1 are generated from the empirical analyses of chapter 4. For example, based on the earnings equations estimated in that chapter we first predict the annual earnings of native-born men for each age starting at age 25 and ending at age 64. Coefficient estimates are next used to generate the predicted annual earnings at each age for the typical male immigrant (who arrives at age 25 and retires at 65). Because the empirical evidence of chapters 4 and 5 reveal significant declines in earnings profiles following the arrival cohorts of the 1970s, the calculation is based on the predicted earnings of immigrants who arrived in Norway during the decade between 1969 and 1978. An implicit assumption is therefore that policy that allows for increased immigration successfully leads to immigration of individuals who have similar employment propensities and that labor market prospects are the same as those of the baseline cohort. Next the computation evaluates the earnings of immigrants as a fraction of native earnings at each age. The reported figure is the average of such fractions over the life cycle.

(The figures in Table 1.1 do not adjust for differences in educational attainment of immigrants and natives. Standardizing for educational attainment has modest effects on the reported fractions. Evaluated at completed secondary education, immigrant-native fractions are slightly higher for males and lower for females—reflecting lower mean educational attainment in the data of immigrant men and higher mean attainment of immigrant women compared to natives.)

Because the empirical evidence in chapter 5 shows important differences in labor market outcomes by national origin, Table 1.1 also presents immigrant-native fractions for three major source-country groupings. The central message here is that the long-term economic consequences of policies that increase immigration to Norway may depend on the origin of the new immigrants.

**Table 1-1: Immigrant Life-Cycle Earnings and Employment
as Fraction of Native Profiles**

	Annual Earnings		Employment	
	Men	Women	Men	Women
All Immigrants	.897	1.042	.876	.819
National Origin:				
OECD	1.033	1.080	.932	.956
Non-OECD Europe	.850	1.052	.948	1.035
Asia/Africa/C+S America	.718	.939	.774	.592

Note: Predicted life-cycle profiles are based on parameter estimates reported in chapters 4 and 5; immigrant profiles use coefficients for 1969-78 arrival cohorts. Fractions are computed as averages of immigrant earnings and employment relative to natives at each age between 25 and 65. Annual earnings are conditional on employment. "OECD" denotes pre-1990 membership countries of OECD except Turkey.

Chapter 2

A Summary of the Recent Literature on the Economic Assimilation of Immigrants

This chapter provides an overview of recent studies of immigrant labor market assimilation in developed countries. In turn, the chapter summarizes empirical evidence from the United States, Canada, the United Kingdom, Germany, Denmark, Sweden, and, of course, Norway. A common theme in the empirical literature on labor market assimilation of immigrants is the focus on earnings assimilation—how do immigrant wages or earnings compare with those of native workers; do immigrant wages grow faster than native wages with age; and do immigrant wages catch up with those of natives, perhaps the result of labor market assimilation? In comparison, only a handful studies examine assimilation in terms of employment or labor force participation. Further, most of the empirical evidence in the literature is based on male immigrants—female immigrants are typically ignored on the grounds that cultural differences make it difficult to interpret the data on their labor market experiences in host countries. The chapter concludes with a brief summary of topics related to the labor market status of immigrants—their participation in social assistance programs, the fiscal impact of immigration, the impact of immigration on wages and employment of native workers, the consequences of return migration, and inter-generational correlation of labor market outcomes of immigrants, their children, and their grandchildren.

2.1. Labor Market Assimilation of Immigrants

The United States. Today's branch of the empirical literature on labor market assimilation of immigrants dates back to the seminal work of Chiswick (1978). Using the 1970 census of population, Chiswick showed that immigrants typically earn less than natives when they first arrive in the United States but that with time in the labor market their earnings grow faster than natives' and that, in fact, immigrant earnings after 10-15 years overtake the earnings of native workers. Chiswick attributed the faster earnings growth of immigrants to labor market assimilation—the result of acquisition of human capital specific to the host country, of improved language skills, and increased knowledge of their new labor market. Subsequent studies examining more specific immigrant groups and women confirmed Chiswick's findings (Carliner, 1980; Long, 1980; Stewart and Hyclak, 1984). Greenwood and McDowell (1986) review this early literature.

Borjas (1985) challenged the interpretation of the early studies showing considerable earnings assimilation of U.S. immigrants. The key concern of Borjas was that the cross-sectional data used by these studies fail to account for both aging and cohort effects on immigrant earnings. Arguing that changes in U.S. policy and national origin mix had resulted in a decline in unobserved labor market "quality" of immigrants, he introduced an alternative estimation strategy and showed that accounting for differences in cohort quality reduced estimates of the rate of earnings assimilation of immigrants. The implication is that labor market performance of more recent arrival cohorts falls short of that of earlier cohorts at similar stages of the life cycle, and that by confounding cohort and aging effects, cross-sectional studies overstate immigrant earnings assimilation.

The Synthetic Panel Methodology. The basic premise of Borjas' methodology, as refined in subsequent work (Borjas, 1987; 1994; 1995), is that it is possible to estimate cohort and assimilation effects on earnings by pooling data from several cross-sections. By

including data on native workers, it is also possible to account for differences in period effects under the assumption that period effects on earnings are similar for immigrant and native workers. Drawing on the notation of Borjas (1999) and ignoring higher-order polynomials, the methodology can be represented by two earnings equations, one for immigrants (Equation 2-1) and one for natives (Equation 2-2):

$$(2\text{-}1) \quad \ln w_{jt} = x_{jt}\phi_{it} + \delta_i A_{jt} + \alpha y_{jt} + \beta C_{jt} + \sum_t \gamma_{it}\pi_{jt} + \varepsilon_{jt}$$

$$(2\text{-}2) \quad \ln w_{jt} = x_{jt}\phi_{nt} + \delta_n A_{jt} + \sum_t \gamma_{nt}\pi_{jt} + \varepsilon_{jt}$$

where w_{jt} denotes the earnings of person j in year t, and where x is a vector of control variables; A denotes age; and π is an indicator variable reflecting the year of observation. Two terms appear only in the earnings equation for immigrants; C depicts the calendar year in which the immigrant arrived in the host county and y denotes years since arrival.

Note that the parameters of equation 2-1 are not identified because y, C, and π are perfectly correlated in the data. (This is, essentially, the reason why one cannot separate assimilation and cohort effects on immigrant earnings in cross sectional data.) The synthetic panel methodology solves the identification problem by pooling data for immigrants and natives and restricting period effects to be the same for immigrant and native workers (i.e., estimating equations 2-1 and 2-2 simultaneously, imposing the restriction that $\gamma_{it} = \gamma_{nt}$).

The synthetic panel methodology has its detractors. For example, Friedberg (1993) and Smith (1992) show that the methodology is sensitive to treatment of age-at-immigration; LaLonde and Topel (1992) argue that results are biased unless one accounts for changes in the wage structure across sample periods; Duleep and Regets (1992; 1997) uncover a negative correlation in U.S. census data between wages at the time of entry and the rate of wage assimilation and argue that the methodology leaves a false impression of relative immigrant skills; the methodology remains sensitive to return-migration bias, as is the cross-sectional methodology (Borjas and Bratsberg, 1996); and Longva and Raaum (1998) demonstrate that the assumption of equal period effects for immigrants and natives leads to misstated assimilation estimates when there are business cycle differences across sample periods. Borjas (1995) describes the robustness of the methodology to the first three issues in detail.

The importance of declining cohort effects on earnings has been documented by other authors using U.S. data (e.g., Funkhouser and Trejo, 1995; Schoeni, 1997) and in recent studies of earnings of immigrants in Norway (Hayfron, 1998; Longva and Raaum, 2000). Therefore, the empirical analyses of chapters 4 and 5 will rely on the (state-of-the-art) synthetic cohort methodology in order to separate assimilation and cohort effects on earnings and employment.

A related issue to surface in the U.S. literature is the empirical interpretation of *assimilation*. As discussed by Borjas (1999), the common-language usage of the term suggests comparing earnings growth of immigrants to that of natives. Using parameters in equations 2-1 and 2-2, according to this usage assimilation occurs when

$$(2\text{-}3) \quad \delta_i + \alpha > \delta_n .$$

In the empirical immigration literature, however, a not uncommon usage of the term considers only the coefficient α and defines assimilation as occurring when this coefficient is positive. The use of quartic polynomials of age and years of residence in the empirical investigation below complicates direct interpretation of coefficients, but the analyses will gauge immigrant assimilation based on comparison of predicted earnings and employment profiles of immigrants and natives, adopting the interpretation of assimilation implicit in equation 2-3.

Given the differences in methodological approaches and even interpretation of the empirical evidence, it is not surprising that there exists a great deal of controversy in the literature examining earnings assimilation of immigrant men in the United States. Nevertheless, there is general consensus that there was some decline in relative (but not absolute) labor market skills of immigrant arrivals between 1960 and 1990. Further, in general there is some earnings assimilation among U.S. immigrants, but the rate of assimilation and whether or not there is convergence between immigrant and native earnings vary across immigrant groups. In particular, Mexican immigrants do on average not experience convergence with natives (Smith and Edmonston, 1997).

Female Immigrants. Blau (1992), Reimers (1997), Funkhouser and Trejo (1998), and Schoeni (1998) study earnings assimilation of female immigrants in the United States drawing on the synthetic panel approach. The empirical evidence for women parallels that for men: immigrants in general experience modest earnings assimilation with time in the United States and there has been a marked decline in wage profiles across arrival cohorts. The decline in earnings across arrival cohorts is almost identical to that of immigrant men, but the source of the decline appears to differ for men and women. For example, Funkhouser and Trejo finds that changes in the national origin mix explain a greater portion of the earnings decline for male than for female immigrants.

Employment. Fry (1996), Chiswick, Cohen, and Zach (1997), and Funkhouser and Trejo (1998) study labor market activities of male immigrants and Duleep and Sanders (1993) and Schoeni (1998) study labor force participation of female immigrants in the United States. A central finding is that employment rates of men and women rise sharply during the first 5 to 10 years following arrival in the United States. For men, the evidence suggests that employment experiences of immigrants resemble those of natives thereafter. For women, the indication is that withdrawal from the labor market starts at an earlier point of the life cycle for immigrants compared to natives. Trends showing a decline in labor market performance across arrival cohorts show up for both genders—for men cohort differences in employment rates are small while for women cohort effects parallel those on earnings.

Canada. Baker and Benjamin (1994) and Bloom, Grenier, and Gunderson (1995) apply the synthetic panel methodology and examine earnings assimilation of immigrants in Canada. They conclude that there is, at best, modest earnings assimilation among immigrants and that, as in the United States, there exists a trend towards worsened labor market outcomes among more recent cohorts of Canadian immigrants. Baker and Benjamin (1997) examine hours worked and wages of male and female immigrants in Canada and conclude that the patterns of labor supply over the life cycle are consistent with a family investment model. In particular, relative high labor force participation rates of married, female immigrants during early years and their tendency to withdraw from the labor market at younger ages than other women support a model in which immigrant women finance their immigrant husbands'

investment in location-specific human capital. Green and Green (1995) review the historical developments of Canada's immigration policy and tie such development to the national economic situation.

In a recent study, Antecol, Cobb-Clark, and Trejo (2000) draw on census data from Australia, Canada, and the United States and examine the influence of immigration policy on attracting immigrants with high labor market skills. Foremost, their results show that differences in relative labor market outcomes of immigrants in the three settler countries are the consequence of the United States receiving a much larger share of immigrants from Latin America than do the other two host countries. They conclude that the employment-oriented immigration policies of Australia and Canada and the family-reunification oriented policy of the United States have not led to important differences in labor market outcomes of immigrants in the three economies.

United Kingdom. Bell (1997) studies the labor market performance of immigrants in the United Kingdom using the synthetic cohort methodology. On average, immigrants outperform natives in British labor markets and Bell shows that the finding is the result of generally higher levels of educational attainment of immigrants. Contrary to the experience of the United States, Bell finds that relative skills of immigrants have risen over time and attributes this trend to a shift in national origin. Finally, the study uncovers significant earnings assimilation among immigrant groups who are disadvantaged at the time of arrival in the United Kingdom.

Germany. Pischke (1993) and Schmidt (1997) study the earnings of temporary migrants and guest workers in Germany. Although the data reveal important heterogeneity in earnings and labor market performance across immigrant groups, they do not support the hypothesis that there is earnings assimilation among foreign-borns in Germany. Schmidt concludes that there is no evidence that earnings of guest workers relate to the duration of residence in Germany. In a related study, Riphahn (2000) uses the synthetic panel approach and examines participation of guest workers in German social assistance programs. Her findings point to both assimilation and cohort effects on program participation—participation rates increase with time of stay in Germany and more recent arrival cohorts have higher participation rates than early cohorts. Dustmann (1997) studies the factors influencing acquisition of German language skills among immigrants in Germany.

Denmark. Two recent studies draw on large, register-based panel data and study employment and earnings assimilation among immigrant men in Denmark (Husted, Skyt Nielsen, Rosholm, and Smith, 2000; Rosholm, Scott, and Husted, 2000). The key evidence in Husted et al. is summarized in Figure 2-1.

[Insert Figure 2-1 about here]

As the figure reveals, labor market success of immigrants in Denmark is linked to their immigration status. The evidence reveals striking differences in levels of employment and earnings of those who initially were admitted to Denmark as refugees and those who were not. For both groups, there are significant assimilation effects on both labor market activity and earnings. With respect to employment, however, the assimilation process halts after five years of residency. Further, the employment profiles suggest that immigrant men in Denmark withdraw from the labor market at a relatively young age. After ten years (or the age of 36), predicted employment rates decline significantly faster for immigrant men than

for native men. The assimilation process has a more prolonged duration on earnings. Indeed, earnings of refugees who remain in the labor market rise at a faster rate than native earnings for about 20 years and earnings of non-refugee immigrants eventually overtake those of natives. Limiting the analyses to immigrants from a smaller subset of countries, Rosholm et al. show that employment outcomes of immigrant men in Denmark have declined over time.

Sweden. Empirical evidence from Sweden shows that economic activity among immigrants has declined over time. While immigrants had high employment rates and high relative earnings prior to 1970 (Wadensjo, 1973; Ohlsson, 1975), by the 1980s employment rates of immigrants had fallen significantly below those of natives (Scott, 1999). Indeed, one study reports negative employment assimilation among immigrants in Sweden (Bevelander and Nielsen, 1999). Ekberg and Andrsson (1995) link such developments to the change in national origin of Swedish immigrants, and Rosholm, Scott, and Husted (2000) show that employment rates of Norwegian males in Sweden exceed those of Turks and Iranians (although they are similar to employment rates of Polacks and significantly below those of natives). In a recent study, Edin, Fredriksson, and Åslund (2000) treat the Swedish immigrant dispersal program ("Hela Sverige Strategin"), which was in effect between 1985 and 1991, as a natural experiment and examine the role of ethnic enclaves on the economic success of immigrants. Their results point to significant benefits of living in an enclave as increased concentrations of other immigrants in the municipality is associated with reduced labor market idleness and increased earnings of immigrants in Sweden.

Norway. Two recent studies employ the synthetic panel approach and estimate assimilation effects on the earnings of immigrant men in Norway (Hayfron, 1998; Longva and Raaum, 2000). Hayfron apply the original methodology of Borjas (1985) to samples of 963 immigrants and 2,102 natives drawn from the 1980 census and 1,764 immigrants and 2,482 native-born men from the 1990 census. Hayfron's samples show significant assimilation effects on earnings—between 1980 and 1990 immigrants who arrived during the 1970s experienced earnings growth that exceeded that of native men by 11 percent. Hayfron also concludes that there are cohort differences in the data, with earnings of recent arrival cohorts falling below earnings of older cohorts, but does not provide statistical evidence on this issue.

Longva and Raaum draw on large, register-based data from 1980 and 1990 and re-examine the evidence in Hayfron, applying the same estimation methodology. The study confirms the presence of assimilation effects, but the estimates of Longva and Raaum are lower than (about one-half of) those of the prior study. The authors show that estimates based on cross-sectional data exceed those of the synthetic panel approach and attribute this to declining cohort effects across arrival cohorts. Longva and Raaum also estimate assimilation effects separately for immigrants from OECD and non-OECD countries and find that such effects are greater for the latter group. For OECD immigrants, they conclude that earnings profiles are comparable to those of native workers. Despite their higher assimilation rates, the study finds that earnings of immigrants from non-OECD countries do not reach parity with earnings of natives.

Although they do not separate cohort and assimilation effects, several studies examine employment outcomes among immigrants in Norway (Sivertsen, 1995; Longva and Raaum, 1996; Blom, 1998; Rogstad and Raaum, 1998). This literature points to generally worse employment outcomes among immigrants than natives but large differences by national origin. Rogstad and Raaum show that employment among immigrants is more sensitive to

business cycle fluctuations than is employment of native Norwegians. Brox (1998) outlines arguments showing that employment is key to the integration of immigrants in Norway and questions the effect of the government's dispersal policy on immigrant employment, citing evidence that immigrants dispersed to smaller towns tend to migrate to Oslo within a few years of arrival (Sørlie, 1996). The relationship between economic independence and social integration remains complex, however. In their study of living conditions among political refugees in Oslo, Djuve and Hagen (1995) uncover a (weak) negative correlation between employment and integration as refugees with full-time employment are more isolated from their surroundings than are refugees receiving public assistance.

2.2. Other Topics in the Economics of Immigration

Although labor market assimilation forms the central focus of the empirical literature on the economics of immigration, the literature has in recent years shifted towards other topics, including immigrant participation in social assistance programs, the fiscal impact of immigration, and the impact of immigration on labor market outcomes of native workers. This section provides a brief overview of this literature; more detailed discussions of the U.S. evidence are contained in Borjas (1994; 1999) and Smith and Edmonston (1997).

Immigrant Participation in Social Welfare Programs. Recent empirical evidence from Germany and the United States show that immigrant participation rates in public assistance programs exceed that of natives, even after accounting for enrollment of refugees in refugee settlement programs (Borjas and Trejo, 1991; Riphahn, 2000). For example, in the United States 10.4 percent of immigrant households received cash benefits compared to 7.0 percent of native households in 1998. Including all types of public assistance (e.g., food stamps, housing subsidies, and Medicaid), 22.4 percent of immigrant households and 15.4 percent of native households received some type of assistance (Borjas, 1999). In Germany, households headed by a former guestworker were 24 percent more likely to rely on public assistance as the primary source of income than native households in 1996 (Riphahn, 2000).

Not surprisingly, the research on welfare use by immigrant households uncovers a general negative association between labor market outcomes and welfare program use across immigrant groups. Immigrant participation rates have increased over time as the relative labor market position of immigrant arrival cohorts has weakened. (In fact, early evidence from the United States showed that immigrants where less likely to receive public assistance than comparable natives, Blau, 1984; Jensen, 1988.) There is also a negative correlation between labor market outcomes and program participation across national origin and age at arrival (Borjas and Trejo, 1993; Hu, 1998). A controversial issue in this literature is whether or not a generous welfare system itself stimulates immigration. Borjas and Hilton (1996) interpret the geographic clustering of immigrants in states with high welfare benefits as evidence that immigrants are attracted to "welfare magnets."

Fiscal Impact of Immigration. In part the response to policy concerns motivated by the increased participation of immigrants in public assistance programs, an emerging literature examines the fiscal impacts of U.S. immigration. Two recent studies conducted at the state level show net negative fiscal impacts of immigrants in California and New Jersey (Clune, 1998; Garvey and Espenshade, 1998). But the impact differs greatly between the two states; in California immigrant households receive on average $1,174 more in government services than they pay in taxes each year while in New Jersey the "deficit" is $229. Such

differences are the result of both differing costs of public programs (such as public education) and differences in composition of immigrant households (e.g., national origin and number of children) in the two states. Despite the negative short-run impacts, Smith and Edmondston (1997, chapter 7) show that the long-run net impact is likely positive when they simulate the fiscal costs and benefits of current U.S. immigrants and their descendents using a 300-year timeframe.

Relying on a generational accounting framework, Auerbach and Oreopoulos (1999) show that whether or not immigration alleviates fiscal stress in the United States depends on the ability of lawmakers to shift the burden of the stress onto future generations. The authors also conclude that the impact of immigration on fiscal balance is very small relative to the size of today's imbalance. Storesletten (2000) studies whether immigration reform can resolve the fiscal problems of an aging U.S. workforce using a calibrated general equilibrium overlapping generations model. While the simulation exercise shows that such policy exists, the findings underscore the importance of the composition of immigrant flows. Relying on a simpler modeling framework, a recent United Nations Population Division (2000) report addresses whether or not replacement migration can offset the consequences of declining and aging populations in a number of developed nations. The results of the UN study show that, of the countries considered and at present levels of immigration, only the United States will maintain the current size of the workforce through year 2050. For the European countries considered, the report concludes that immigrant admissions must increase many-fold from present levels in order to stabilize the size of the workforce let alone to maintain a constant working-aged fraction of the population.

Labor Market Impacts of Immigration. Economic theory suggests that labor market outcomes of native workers are not isolated from immigration. For example, increases in labor supply caused by immigration would be expected to have adverse impacts on wages and employment of groups of native workers for whom immigrants are substitutes in the labor market. Yet, empirical evidence from France, Germany, Portugal, and the United States has failed to uncover important labor market effects of immigration (Card, 1990; Carrington and DeLima, 1996; Hunt, 1992; Pischke and Velling, 1997). In their review of the empirical literature, Friedberg and Hunt (1995) conclude that a 10 percent increase in immigration has no effect on employment and lowers wages of native-born workers by at most 1 percent. Borjas (1999) points to weaknesses in the methodology of these studies and describes the inherent difficulties of detecting the effects of immigration in the data. Relying on an alternative methodology, Borjas, Freeman, and Katz (1997) attribute one half of the rise in the wage differential between high-school dropouts and other workers that took place in the United States between 1980 and 1995 to increased immigration.

Return Migration. A challenge for immigration policy aimed at generating a sustained stock of immigrants is to account for return migration. Research from Norway and the United States show that a substantial number of immigrants return migrate within a short period of arrival in the host country. For example, Tysse and Keilman (1998) report that 43 percent of immigrants who arrived in Norway between 1986 and 1990 had remigrated by 1995. Similarly, Jasso and Rosenzweig (1982) conclude that 50 percent of the immigrants who arrived in the United States in 1971 had remigrated by 1979. Tysse and Keilman (1997) find that remigration rates from Norway are high for immigrants from Nordic and Western European countries and low for immigrants from Asian countries. Studying return migration among immigrants who arrived in the United States during the 1970s, Borjas and Bratsberg

(1996) find that a 10 percent increase in source-country per-capita GNP raises the remigration rate by one-half percentage point.

       Intergenerational Correlations of Labor Market Outcomes. In a series of articles published during the 1990s, Borjas (1992; 1993; 1994; 1995) examine the intergenerational economic mobility of U.S. immigrants and their descendents. In part motivated by an earlier literature (Chiswick, 1977; Carliner, 1980) showing significant economic progress of American-born children of immigrants compared to their parents, Borjas points to biases in this literature caused by its reliance on cross-sectional data. Tracking labor market outcomes of immigrant arrival cohorts and their children across the 1940 and 1970 U.S. censuses, Borjas (1993) instead uncovers a strong correlation between the relative outcomes of first and second generation immigrant men, as children of immigrant groups with favorable labor market outcomes also did well in the labor market one generation hence, and vice versa. In Borjas (1994), he shows that such intergenerational correlations persist across three generations of Americans. Focusing on Mexican-American men, Trejo (1997) links such intergenerational correlations of labor market success to acquisition of human capital. Although Trejo uncovers some improvement in attainment between first and second generation Mexican-Americans, he concludes that lower educational attainment explains roughly half of the 21 percent wage gap between third-generation Mexican-American men and non-Hispanic whites.
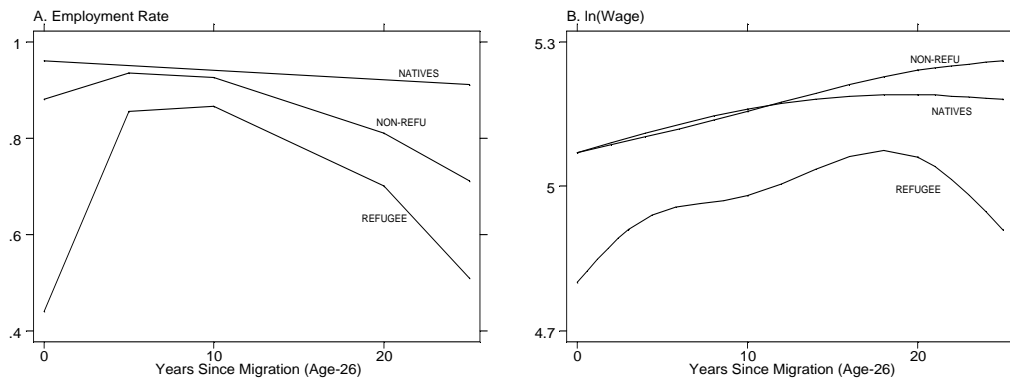
A. Employment Rate

B. ln(Wage)

Fig 2-1: Employment and Earnings Assimilation in Denmar

Source: Husted, Skyt Nielsen, Rosholm, and Smith (2000).

Chapter 3

Immigration Policy and Patterns of Immigration to Norway and the United States

In the following two chapters, the report will turn to a comparative study of labor market outcomes of immigrants in Norway and the United States. To provide a backdrop for the comparative study, this chapter briefly summarizes elements of immigration policy and reviews recent patterns of immigrant arrivals in the two host countries. Excellent, detailed description of present immigration legislation and characteristics of contemporary immigrants are available at the internet sites of the immigration authorities of the two countries, UDI (www.udi.no) in Norway and the INS (www.ins.usdoj.gov) in the United States.

Norway. In Norway, net immigration was negative until the 1960s as emigration (most often to the United States) of Norwegians exceeded arrivals of foreign nationals. In 1970, there were 59 thousand immigrants living in the country, making up only 1.5 percent of the total population (see Table 3-1). Immigration policy was liberal with few restrictions on admissions until 1975, at which time the national parliament imposed a temporary moratorium on immigration (the "innvandringstopp"). Since 1975 new legislation has favored admissions on the basis of family reunification, skilled workers in specific industries (e.g., the offshore oil industry), and humanitarian grounds (political asylum). To illustrate, in 1999 UDI issued 15,480 residence permits and 19,290 work permits to foreign-borns admitted that year. Of the new permits, 26 percent were granted on the grounds of family reunification, 14 percent were given to individuals from membership countries of the European Economic Area (EEA)—who in principle do not face any restrictions with respect to seeking employment in Norway, and 8,552 (25 percent) were temporary permits extended to seasonal workers in agriculture, the majority going to Polish nationals engaged in harvesting berry crops (UDI, 2000).

[insert Table 3-1 about here]

Despite enactment of strict immigration legislation in 1975, Table 3-1 shows that the immigrant population of Norway has grown steadily since 1970. By 1999, the 261 thousand immigrants residing in Norway accounted for almost six percent of the total population. A succinct pattern of Norwegian immigration is the change in mix of source countries over time. Early immigrants predominantly originated in the other Nordic countries or in Western Europe. For example, in 1970 45 percent of immigrants in Norway were born in a neighboring Nordic country and another 38 percent in a Western European country. By the 1990s the fraction Nordic immigrants had declined to less than twenty percent, being replaced by immigrants from Asia and Africa whose share grew to almost 50 percent. An important observation is that such developments are not the result of declines in Nordic or Western European immigration (in fact, there were twice as many Nordic immigrants in Norway in 1999 as in 1970), but instead the consequence of substantial increases in Asian and African immigration to Norway.

United States. A "country of immigrants," immigration flows to the United States increased steadily during the 19th century, peaking with the arrival of 8.8 million immigrants between 1900 and 1910. During the 1800s, nationals from Western and Northern European countries dominated U.S. immigrant arrivals; by the turn of the century this had tipped in

favor of nationals from Southern and Eastern Europe. After passing some minor acts affecting immigration policy, Congress enacted the first permanent legislation restricting immigration to the United States in 1924. Important elements of the 1924 legislation were an annual cap on immigrant admissions and a national quota system that strongly favored admission of European nationals. The national quota system was in place until 1965, when it was replaced by legislation that favored family reunification. Especially since the early 1980s, annual caps on admissions have frequently seen upwards adjustments. In 1991, a record number of immigrants, more than 1.8 million, were admitted into the country (this figure includes 1.1 million illegal aliens who obtained legal status as part as the Immigration Control and Reform Act (IRCA) of 1986). Recent legislation has opened for more employment-based immigration, but family reunification remains the most important basis for admission. For example, of the 798 thousand immigrant admissions in 1997, only 91 thousand (11 percent) were based on an employment preference category.

[insert Table 3-2 about here]

The United States has seen a change in national origin mix of immigrants similar to that in Norway (although the U.S. experience slightly predates that of Norway). As seen in Table 3-2, immigrants from European countries—which accounted for about 90 percent of U.S. immigrants during the first half of the 20th century—have given way to immigrants from Central and South America and from Asia. For example, in 1997 Mexican nationals made up 27 percent and Asian nationals accounted for 35 percent of (legal) U.S. immigrant admissions.

In summary, both Norway and the United States have seen increases in their immigrant populations since 1970. Both host countries have also seen important changes in the national origin mix of immigrants away from first-world countries and toward third-world countries.

Table 3-1: Immigrant Population of Norway

			Percent of Immigrants Born in:			
Year	Total Immigrants	Percent of Population	Nordic Countries	W Europe, Can, US, Aus, NZ	E Europe	Asia, C+S America, Africa
1970	59,196	1.5	44.8	38.0	9.8	6.0
1980	95,202	2.3	32.8	36.2	7.5	23.5
1990	168,298	4.0	22.6	23.7	8.1	45.6
1991	174,668	4.1	21.3	22.1	8.4	48.1
1992	182,994	4.3	20.5	21.1	8.7	49.7
1993	193,095	4.5	19.8	20.3	9.7	50.3
1994	205,598	4.8	19.0	18.9	12.8	49.3
1995	215,048	4.9	18.9	18.1	14.1	48.9
1996	223,797	5.1	18.6	17.5	14.8	49.0
1997	232,192	5.3	18.8	17.0	14.9	49.4
1998	244,705	5.5	19.6	16.4	14.6	49.5
1999	260,742	5.9	20.1	16.0	14.4	49.6

Source: Statistics Norway (1999)

Table 3-2: Immigrant Population of the United States

Year	Total Immigrants (thousands)	Percent of Population	Percent of Immigrants Born in:			
			Europe, Can, Aus, NZ	Mexico	Other C+S America	Asia, Africa
1920	14,020	13.2				
1940	11,657	8.8				
1960	9,738	5.4				
1970	9,619	4.7				
1980	14,080	6.2				
1990	19,767	7.9				
Immigrant Arrivals:						
1901-10	8,795		93.8	0.5	1.5	3.8
1911-20	5,736		88.5	3.8	3.2	4.4
1921-30	4,107		82.7	11.2	3.2	2.9
1931-40	528		86.9	4.2	5.7	3.6
1941-50	1,035		78.1	5.9	8.9	4.3
1951-60	2,515		68.3	11.9	10.3	6.6
1961-70	3,322		47.0	13.7	25.0	13.8
1971-80	4,493		22.5	14.2	26.1	37.1
1981-90	7,338		13.1	22.6	24.6	39.7
1991-97	6,945		16.5	26.9	21.8	35.2

Source: U.S. Census Bureau (1999), U.S. Immigration and Naturalization Service (1999)

Chapter 4

Earnings and Employment Assimilation of Immigrants in Norway and the United States—A Comparative Study

This chapter reports the results of a comparative study of labor market outcomes of immigrants in Norway and the United States. The study draws on large micro data sets of immigrants and representative samples of natives describing their labor market status in 1970 (U.S. only), 1980, and the 1990s. The chapter first tracks the relative earnings of successive arrival cohorts of male immigrants in the two labor markets. Drawing on the synthetic panel methodology, we then estimate earnings profiles of immigrants over their life cycle and compare their profiles in the host country to those of native workers. Next the chapter examines earnings profiles of female immigrants, contrasting their earnings with those of native women in the labor market. The chapter concludes with a comparative analysis of employment rates of male and female immigrants relative to natives.

4.1. Data

For Norway, the data source is a database assembled from register data by the Frisch Centre for Economic Research. The data extract used in the present study contains the complete immigrant populations of Norway in 1980, 1990, 1992, 1993, 1994, and 1995. The immigrant micro data are supplemented with 8.3 percent random samples of the native-born population in each year. Because the analysis requires information on time of residence in Norway and because the register data did not include such information prior to 1992, the immigrant samples from the early years are restricted to those still residing in Norway as of 1992. Foreign-borns with Norwegian parents and Norwegian-borns with immigrant parents are excluded from the samples.

The U.S. data source consists of a 2 percent sample of the 1970 census and 5 percent public use samples from the 1980 and 1990 censuses of population. In addition, the descriptive analyses of male earnings add samples drawn from the 1994, 1995, and 1996 Current Population Surveys (CPS). Because of general non-compatibility of census and CPS micro data, however, regression analyses are based on data from the three censuses only. The immigrant samples include all foreign-borns of non-U.S. parents included in the public use data. The samples of natives are reduced in size so they represent 0.1 percent random samples of the native-born population.

For both countries, the analyses are limited to those aged 25 to 64. The Norwegian regression samples consist of 851,479 observations of males and 789,709 females; the U.S. samples of 585,389 males and 691,934 females. Table 4-1 lists sample means of key variables separately by country and by nativity.

[insert Table 4-1 about here]

As Table 4-1 shows, on average immigrants in the United States have more years of residence in the host country than immigrants in Norway (for males, 15.7 years vs. 12.6 years). Because sample mean ages are similar in the two countries, by implication immigrants in Norway were on average older when they arrived in the host country than were immigrants in the United States. In the Norwegian data, educational attainment is

represented by a series of six indicator variables. To illustrate, *Educ4* is set to unity if the individual has completed high school ("videregående skole") and *Educ6* captures whether or not the individual has obtained an advanced degree requiring four or more years of college education. Unfortunately, the education records of immigrants are frequently incomplete in the Norwegian data—for 50 percent of male immigrants and 47 percent of female immigrants do the data not reveal educational attainment. The regression analyses below therefore include a separate indicator variable reflecting whether or not information on educational attainment is missing from the individual record.

Table 4-1 also reveals that immigrants in Norway are more likely to have originated in an OECD country than are immigrants in the United States. Conversely, U.S. immigrants are more likely to have been born in Central and South America than are immigrants in Norway. Differences in labor market outcomes according to country of origin form the topic of the next chapter, Chapter 5. Finally, the table shows there are important differences between immigrant and native earnings and employment rates, with different patterns in the two countries. Such patterns are examined in the present chapter.

4.2. Tracking the Relative Earnings of Arrival Cohorts of Immigrant Men

We begin the analysis of earnings assimilation of immigrant men by tracking the earnings of specific arrival cohorts relative to the earnings of native-born men over time. Results appear in Table 4-2.

[insert Table 4-2 about here]

In the table, the row labeled *Constant* gives the average log salary (measured in 1990 currency) of native men in each year. The top row lists the average log earnings differential between all immigrants and natives. This table row shows that relative earnings of immigrant men have declined over time in both host countries. In 1980, male immigrants in Norway earned on average more than natives, but by 1995, salaries of immigrants were 21 percent [exp(-.2387) – 1] below those of natives. In the United States, earnings of immigrant men stood four percent below those of natives in 1970; by 1995 the earnings disadvantage of immigrants had grown to 22 percent. While most of the decline in the relative earnings of immigrants in Norway took place during the 1980s, in the United States the share of the decline happened during the 1970s.

As stressed by authors such as Borjas and Schoeni, the decline in average earnings of immigrants relative to natives does not mean that relative earnings of a given group of immigrants have fallen over time. Instead the pattern likely reflects that successive arrival cohorts of immigrants are doing worse in the host-country labor markets. To shed light on this issue, the table also lists the log earnings differential between natives and individual cohorts of immigrants grouped by five-year arrival intervals. (Unfortunately, the Norwegian data do not permit further classification of those who arrived prior to 1965.)

The patterns of earnings differentials by arrival cohort suggest important differences in immigrant labor market adjustments over time in the two host countries. On balance, the data indicate stability of relative earnings of given immigrant cohorts in Norway, while there is a marked improvement in relative earnings over time for a given immigrant cohort in the United States. Consider, for example, immigrants who arrived during the late 1970s. In

Norway, the relative position of this cohort was unchanged between 1980 and in 1995—in both years their earnings differential stood at minus eight percent. In the United States, the same cohort earned 41 percent less than natives in 1980 but by 1995 the differential had shrunk to 19 percent. A notable exception is the 1970 arrival cohort in Norway, whose relative earnings have declined over time with the earnings disadvantage increasing from one to ten percent over the sample period.

A common feature for immigrant cohorts in both Norway and the United States is that earnings of immigrant men who arrived in the host country prior to 1965 tend to exceed earnings of native-born men, at least during the 1990s. Whether this earnings advantage is the consequence of immigrant assimilation in the labor market or other favorable characteristics of the early immigrant cohorts is the topic of the next section.

4.3. Empirical Estimates of Assimilation and Cohort Effects on Earnings of Immigrant Men

The analysis of the earnings data in the prior section suggests that earnings of immigrants who have been in the host country for a long time have higher earnings than recent immigrants but also that the relative earnings of recently arrived immigrants have declined over time. This section uses the synthetic panel methodology (Borjas 1985; 1994; 1995) to untangle assimilation and cohort effects on the earnings of immigrant men. Results from the synthetic panel regressions are presented in Table 4-3; columns 1-2 lists coefficient estimates of the earnings equation for Norway and columns 3-4 for the United States. To allow for flexibility in the shape of age-earnings profiles, equations are estimated with quartic polynomials of age and years since migration.

[insert Table 4-3 about here]

Consider first the results in column 1. Although difficult to gauge given the quartic specification, the coefficients of the years-since-arrival terms show that there are significant, positive effects of years in the host country on the earnings of male immigrants in Norway. There are also large (permanent) differences in earnings across arrival cohorts, with recent cohorts earning substantially less than the early immigrant cohorts. For example, the estimated age-earnings profile of immigrants who arrived during the early 1980s is 27 percent above, and the profile of the 1965 cohort is 40 percent above, that of immigrants who arrived during the early 1990s, the omitted immigrant cohort (the coefficients of the 1975 and 1965 cohorts are .2393 and .3337, respectively). According to the coefficients of interaction terms between immigrant and age terms, the underlying age-earnings profile of immigrants is flatter than that of natives—the returns to pre-immigration experience trail the returns to experience earned by natives. When the regression includes controls for educational attainment (column 2), the age-earnings profile of immigrants flattens further relative to that of natives and cohort differentials magnify.

As columns 3-4 reveal, there are important differences in the levels of earnings across immigrant cohorts in the United States. Immigrants who arrived prior to 1970 have significantly higher earnings than recent immigrant cohorts, which is consistent with prior research based on U.S. data (Borjas, 1995; Schoeni, 1997). Compared to the evidence in the two prior columns, cohort differences are smaller in the United States than in Norway. And, consistent with the patterns uncovered in the raw data, the largest cohort differentials in the

United States are between immigrants who arrived during the late 1960s and late 1970s, while in Norway the largest differentials are between immigrants who arrived during the late 1970s and the late 1980s.

The log earnings profiles of natives and three immigrant cohorts (1965, 1975, and 1985 arrival cohorts) implied by the coefficients in Table 4-2 are plotted in Figure 1. The left-hand column traces profiles for Norway; the column on the right for the United States. The top panel is based on regressions that do not control for educational attainment (Table 4-2, cols 1 and 3), while the bottom panel adjusts for education (cols 2 and 4). Intercepts are evaluated at 25 years of age and 11 years of schooling (lower panel); profiles are traced out using period coefficients from 1990.

[insert Figure 4-1 about here]

Four general findings stand out in the figure. First, age-earnings profiles differ in the two countries. For both natives and immigrants, profiles flatten out earlier during the life cycle in Norway than they do in the United States. According to profiles in the top panel, earnings of native men peak at 41 years of age in Norway and at 49 in the United States. Second, for both countries the figure confirms the pattern observed above that earnings profiles of recent arrival cohorts sit below the profiles of early cohorts. Further, inter-cohort differences are larger in Norway than in the United States. Third, the figure bears evidence of earnings assimilation in the sense that earnings of immigrant men grow faster— particularly during the first ten years in the host-country—than earnings of native men. Fourth, however, only for the 1965 arrival cohort is there complete earnings assimilation with earnings catching up with those of native-born men (in the United States, this requires holding education constant). For more recent immigrant cohorts, earnings profiles are significantly below those of native men throughout the life cycle. For example, the smallest predicted differential between earnings of the 1985 cohort and natives is .3778 (implying immigrants earning 69 percent of natives) in Norway and .3408 in the United States according to the top panel. When the regression controls for education, the minimum predicted distance between the profiles of natives and 1985 immigrants is .4002 in Norway and .2054 in the United States. According to these numbers, earnings of recent immigrants fall significantly below the earnings of prior immigrants and natives—and the earnings disadvantage of recent immigrants is more severe in Norway than in the United States.

(When the analysis for Norway is limited to the 1980 and 1990 data, results indicate stronger immigrant assimilation effects during the first five years of residency than what is implied by the profiles in Figure 4-1. The faster assimilation rates are accompanied by lower predicted earnings at the time of entry, however, and after five years of residency profiles match those in Figure 4-1.)

4.4. The Relative Earnings of Immigrant Women

Tables 4-4 and 4-5 and Figure 4-2 report results from the synthetic-panel based analysis of the earnings of women. Table 4-4 lists the unadjusted earnings differentials between native and immigrant women (conditional on employment) separately by year and host country.

[insert Table 4-4 about here]

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As was the case for males, Table 4-4 shows that the earnings of female immigrants relative to natives on average have declined over time in both host countries, but that the decline is less severe than for male immigrants. In the early sample years, female immigrants earned on average more than female natives, but by the 1990s immigrant earnings were lagging native earnings by 7 percent in both countries. Some of the decline in relative earnings appears to be linked to cohort differences—for both countries does the table reveal a pattern in which the gap between natives and the most recently arrived immigrants is greater in more recent sample years.

Consistent with prior research in general, the table reveals an increase in real earnings of native women over time, with growth rates exceeding those of men. Tracking the relative earnings of individual arrival cohorts, the pattern resembles that of males—there is relative stability in the position of immigrant earnings in Norway and improvement over time in the United States.

[insert Table 4-5 about here]

[insert Figure 4-2 about here]

Table 4-5 lists coefficients and Figure 4-2 summarizes results from log earnings regressions for immigrant and native women in Norway and the United States. In both countries are earnings profiles of women flatter than those of men. According to the top panel, earnings of native women increase by less than 15 percent over the life cycle in both countries—compared to increases of more than 50 percent for men (see Figure 4-1). In Norway, earnings growth of native women accelerates after age 30; for men earnings growth is fastest between the ages of 25 and 30.

For immigrant females, age-earnings profiles bear a strong resemblance to those of men. Wage growth is most rapid at younger ages and taper off after the age of 35. Compared to native women, the data therefore reveal considerable assimilation affects on female immigrant earnings. In fact, during the first ten years in the host country, the top panel of Figure 4-2 indicates that earnings of immigrant women grow by 25.7 percent in Norway and 37.7 percent in the United States. Cumulative earnings growth for native women at the comparable stage of their life cycle is 8.8 percent in Norway and 11.0 percent in the United States. However, the evidence of substantial earnings assimilation of immigrant women is complicated by the faster earnings growth of native women between the ages of 35 and 45.

Results further reveal substantial differences in the level of earnings of immigrant women across arrival cohorts. These cohort effects are similar to those estimated for male immigrants. Although coefficient estimates of cohort variables in Table 4-5 are larger in Norway than in the United States, cohort effects of immigrant women are similar in the two countries when the comparison group is the same. For example, compared to the 1985 cohort, earnings of women who immigrated during the late 1960s are 31.2 percent higher in Norway and 36.6 higher in the United States. The data therefore provide evidence of significant declines in relative earnings of recent immigrant arrivals—the pattern that is revealed to hold for both male and female immigrants in both Norway and the United States.

4.5. Employment Rates of Immigrants and Natives

Having uncovered assimilation, especially during the early years of residence, but substantial cohort differences in earnings, we next turn to employment rates. To what extent are assimilation and cohort effects on earnings linked to employment and labor market assimilation? Are the lower earnings of immigrant cohorts that arrived after 1980 also reflected in lower employment propensities of recent immigrant cohorts?

Unfortunately, the data (particularly the Norwegian register data) do not provide direct information on whether or not the individual is employed in a given year. We therefore construct a proxy variable based on their annual earnings, defining an individual as being employed in a given year if their earned income from wages exceeds 10,000 kroner in Norway and $ 1,000 in the United States (all measured in real 1990 currencies). This places limitation on the analyses of this section which should only be interpreted as suggestive of patterns in the data.

We begin the study of employment by considering employment rates of immigrant and native men and women in 1990, see Table 4-6. (Patterns are similar in other sample years.)

[insert Table 4-6 about here]

The earnings-based definitions of employment yield 1990 employment rates for the samples of natives aged 25-64 of 91 percent for Norwegian men, 78 percent for Norwegian women, 88 percent for U.S. men, and 70 percent for U.S. women. (These employment rates are close to official statistics for that year.) A Table 4-6 reveals, in Norway employment rates of immigrants are substantially below those of natives, 14 percentage points below for males and 12 percentage points below for females. In the United States, overall employment rates are similar for immigrant and native men, while immigrant women are 8 percentage points less likely to be employed than native women. In both countries, employment rates of the most recently arrived immigrants are substantially below those of immigrants with more than five years of residence in the host country.

[insert Table 4-7 about here]

[insert Figure 4-3 about here]

The low employment rates of recently arrived immigrants could be the consequence of labor market assimilation of older immigrants or the result of lower cohort-specific labor market attachment along the lines of their lower cohort effects on earnings. Table 4-6 provides background of the relative importance of the two explanations—the table reports results from synthetic panel analyses of immigrant employment propensities relative to those of natives. (The underlying methodology is the linear probability model, but we obtain basically identical results when we use the probit model.) Figure 4-3 summarizes the evidence; the top panel traces life-cycle employment profiles for men and the bottom panel for women; the left-hand column fro Norway and the right-hand column for the United States. As in prior figures, intercepts are evaluated at age 25, years since arrival of 0, and educational attainment of 11 years. Profiles are drawn using the period-specific coefficients of 1990.

Not surprisingly, the evidence shows relative stable employment propensities (around .9) of native men over the life cycle, with some decline in employment rates after age 50 in both countries. Further, employment rates of native women are below those of men, showing some decline between the ages of 25 and 30. Paralleling the pattern for earnings, in Norway employment rates of native-born women rise between the ages of 35 and 45.

For immigrants of both genders and in both countries, the evidence reveals marked assimilation effects on employment during early years of residency. In particular, the profiles of immigrant males show rapid growth in employment rates during the first ten years after arrival in the host country. Immigrants appear to withdraw from the labor market at an earlier age than natives, however. The pattern of early labor market withdrawal is consistent across immigrant groups; it shows up for immigrants of both genders in both Norway and the United States but the effect is perhaps most dramatic for male immigrants in Norway. For this group, the pattern in Figure 4-3 strongly resembles recent empirical evidence for immigrants in Denmark presented in Figure 2-1 (Husted et al, 2000).

Finally, the empirical analysis of employment rates reveals important cohort effects, parallel to the difference across arrival cohorts in terms of earnings. For example, employment rates of male and female immigrants who arrived in Norway during the early 1990s are 34 and 35 percentage points below employment rates of those who arrived during the late 1960s. As the figure shows, cohort differentials in employment are smallest among immigrant men in the United States. In summary, the empirical evidence shows strong assimilation effects on employment during the first ten years in the host country, but immigrants who arrived after 1980 have permanently lower employment rates than immigrants who arrived earlier.

Table 4-1: Sample Means

	Norway		United States	
	Males	Females	Males	Females
Immigrants:				
Years Since Arrival	12.6007	14.1227	15.7142	16.9386
Age	40.0830	40.8685	40.7133	42.0924
Educ1	.0326	.0366		
Educ2	.0569	.0690		
Educ3	.1439	.1586		
Educ4	.1238	.0849		
Educ5	.0783	.1178		
Educ6	.0661	.0646		
Educ Missing	.4983	.4686		
Education			11.3140	10.8927
Country of Origin in:				
OECD	.4807	.5682	.2421	.3153
Other Europe	.0542	.0656	.0758	.0706
Other Asia	.3249	.2782	.1992	.1943
Other Americas	.0426	.0437	.4025	.3542
Africa	.0955	.0416	.0206	.0118
Employment Rate	.7071	.6029	.8690	.5796
Log(Annual Earnings)	11.9126	11.5938	9.9058	9.3601
Observations	338,598	296,035	455,393	543,967
Natives:				
Age	42.4813	42.4832	42.0178	42.6078
Educ1	.0580	.0614		
Educ2	.1696	.1945		
Educ3	.2858	.3949		
Educ4	.2471	.1318		
Educ5	.1328	.1506		
Educ6	.0941	.0562		
Educ Missing	.0125	.0106		
Education			12.2255	12.0642
Employment Rate	.9002	.7780	.8683	.6009
log(Annual Earnings)	12.1218	11.6217	10.1086	9.3803
Observations	512,881	493,674	129,996	147,967

Note: Annual earnings reflect income from wages and are measured in constant 1990 NOK (Norway) or 1990 US$ (United States). Mean log(Annual Earnings) is conditional on employment. "OECD" denotes pre-1990 membership countries of the OECD except Turkey. Norwegian data samples cover the years 1980, 1990, 1992, 1993, 1994, and 1995; U.S. samples cover 1970, 1980, and 1990.

Table 4-2: Log Annual Earnings Differentials between Immigrant and Native Men

| | Norway | | | United States | | | |
	1980	1990	1995	1970	1980	1990	1995
All Immigrants	.0119 (.0043)	-.2100 (.0042)	-.2387 (.0040)	-.0443 (.0052)	-.1680 (.0046)	-.2284 (.0044)	-.2447 (.0048)
Year of Arrival:							
1990			-.5130 (.0092)				-.4039 (.0075)
1985		-.4924 (.0063)	-.4067 (.0060)			-.5781 (.0055)	-.4042 (.0086)
1980		-.1615 (.0081)	-.1443 (.0084)			-.4031 (.0054)	-.3201 (.0076)
1975	-.0870 (.0080)	-.1014 (.0086)	-.0845 (.0092)		-.5212 (.0060)	-.2355 (.0057)	-.2101 (.0094)
1970	-.0106 (.0078)	-.0979 (.0097)	-.1027 (.0099)		-.2851 (.0060)	-.1315 (.0061)	-.1491 (.0101)
1965	.0602 (.0120)	-.0192 (.0148)	-.0056 (.0143)	-.3288 (.0091)	-.1185 (.0063)	-.0038 (.0066)	-.0040 (.0118)
1960	.0689 (.0062)	.0408 (.0086)	.0570 (.0104)	-.0786 (.0099)	-.0240 (.0070)	.0920 (.0073)	.1012 (.0144)
1950				.0500 (.0078)	.0445 (.0060)	.1788 (.0071)	.1455 (.0139)
1940				.0358 (.0067)	.0668 (.0071)	.1920 (.0118)	.1882 (.0279)
Constant	12.0714 (.0021)	12.1109 (.0024)	12.1514 (.0024)	10.1421 (.0037)	10.1270 (.0040)	10.0674 (.0039)	6.3324 (.0058)
Observations	89,408	111,125	126,899	70,455	176,401	261,734	72,920

Note: Standard errors are reported in parentheses. "Year of Arrival" denotes five-year arrival cohort beginning the prior year for Norway and the current year for the United States; "Constant" gives mean value for natives. Dependent variable is the log annual earnings (1990 currency) except for column 7 where it is the log weekly wage. Samples in column 7 are drawn from the 1994, 1995, and 1996 Current Population Surveys.

Table 4-3: Log Annual Earnings Equations, Males

| | Norway | | United States | |
	(1)	(2)	(3)	(4)
Years Since Arrival	.0412***	.0365***	.0414***	.0586***
(YSM)	(.0027)	(.0028)	(.0016)	(.0015)
$YSM^2/10$	-.0312***	-.0219***	-.0195***	-.0312***
	(.0034)	(.0036)	(.0012)	(.0012)
$YSM^3/100$	.0068***	.0027*	.0043***	.0067***
	(.0015)	(.0016)	(.0003)	(.0003)
$YSM^4/1000$	-.0003	.0003	-.0003***	-.0005***
	(.0002)	(.0002)	(.0)	(.0)
Immigrant	-.4471***	-.4461***	-.5661***	-.4899***
	(.0103)	(.0109)	(.0110)	(.0103)
1985 Arrivals	-.0298***	-.0095		
	(.0059)	(.0058)		
1980 Arrivals	.1846***	.1988***	.0393***	.0474***
	(.0079)	(.0078)	(.0061)	(.0057)
1975 Arrivals	.2393***	.2503***	.1045***	.1225***
	(.0088)	(.0090)	(.0059)	(.0057)
1970 Arrivals	.2276***	.2434***	.1585***	.1866***
	(.0094)	(.0097)	(.0073)	(.0071)
1965 Arrivals	.3337***	.3815***	.2400***	.2371***
	(.0106)	(.0108)	(.0081)	(.0081)
1960 Arrivals	.4073***	.4331***	.3096***	.2906***
	(.0124)	(.0128)	(.0094)	(.0096)
1950 Arrivals			.3581***	.3531***
			(.0107)	(.0112)
1940 Arrivals			.3630***	.3790***
			(.0134)	(.0141)
Age	.0920***	.0931***	.0689***	.0704***
	(.0030)	(.0029)	(.0038)	(.0036)
$Age^2/10$	-.0611***	-.0622***	-.0329***	-.0408***
	(.0033)	(.0032)	(.0043)	(.0040)
$Age^3/100$	.0180***	.0189***	.0097***	.0141***
	(.0013)	(.0013)	(.0018)	(.0016)
$Age^4/1000$	-.0021***	-.0022***	-.0014***	-.0020***
	(.0002)	(.0002)	(.0002)	(.0002)
Imm*Age	-.0406***	-.0480***	-.0110***	-.0176***
	(.0026)	(.0025)	(.0038)	(.0035)
$Imm*Age^2/10$	.0454***	.0486***	.0088**	.0160***
	(.0028)	(.0028)	(.0043)	(.0040)
$Imm*Age^3/100$	-.0161***	-.0172***	-.0046***	-.0073***
	(.0011)	(.0011)	(.0017)	(.0016)
$Imm*Age^4/1000$	.0019***	.0020***	.0008***	.0011***
	(.0002)	(.0001)	(.0002)	(.0002)
Educ1		-.0841***		
		(.0200)		
Educ2		-.0822***		
		(.0066)		
Educ4		.1507***		

		(.0058)		
Educ5		.2836***		
		(.0066)		
Educ6		.4315***		
		(.0082)		
Educ Missing		-.0622***		
		(.0127)		
Imm*Educ1		.1617***		
		(.0105)		
Imm*Educ2		.0854***		
		(.0069)		
Imm*Educ4		-.0325***		
		(.0054)		
Imm*Educ5		-.0409***		
		(.0063)		
Imm*Educ6		.0367***		
		(.0065)		
Imm*Educ Missing		.1457***		
		(.0104)		
Schooling				.0760***
				(.0006)
Imm*Schooling				-.0104***
				(.0006)
Constant	11.7157***	11.5793***	9.6587***	9.5106***
	(.0081)	(.0089)	(.0101)	(.0094)
R^2	.1029	.1541	.1144	.2309
Observations		701,128		508,590

*Statistically significant at the .10 level; **at the .05 level; ***at the .01 level.

Note: Standard errors are reported in parentheses. Additional control variables are indicator variables for year of observation and interaction terms between the age and education variables and period indicators. The constant term is evaluated at 25 years of age and 11 years of schooling. Norwegian samples cover the years 1980, 1990, 1992, 1993, 1994, and 1995; U.S. samples cover 1970, 1980, and 1990.

Table 4-4: Log Annual Earnings Differentials between Immigrant and Native Women

| | Norway | | | United States | | |
	1980	1990	1995	1970	1980	1990
All	.1098	-.0025	-.0660	.0296	-.0419	-.0717
Immigrants	(.0067)	(.0049)	(.0044)	(.0078)	(.0054)	(.0047)
Year of Arrival:						
1990			-.3468			
			(.0103)			
1985		-.1481	-.1675			-.3696
		(.0087)	(.0075)			(.0066)
1980		-.0359	-.0251			-.1738
		(.0101)	(.0096)			(.0063)
1975	.0967	.0141	.0118		-.2574	-.0551
	(.0140)	(.0108)	(.0103)		(.0077)	(.0065)
1970	.1155	.1073	.0964		-.0529	.0101
	(.0147)	(.0121)	(.0116)		(.0073)	(.0067)
1965	.0886	.1202	.1219	-.0938	.0226	.0711
	(.0182)	(.0153)	(.0136)	(.0135)	(.0074)	(.0070)
1960	.1164	.0620	.0401	-.0013	-.0015	.0961
	(.0085)	(.0084)	(.0094)	(.0142)	(.0080)	(.0076)
1950				.0485	.0109	.0381
				(.0117)	(.0071)	(.0074)
1940				.0866	.0269	.0144
				(.0101)	(.0083)	(.0123)
Constant	11.3207	11.5902	11.7035	9.2273	9.3577	9.4749
	(.0034)	(.0027)	(.0025)	(.0058)	(.0048)	(.0042)
Observations	62,291	88,661	105,337	46,595	140,344	217,235

Note: Standard errors are reported in parentheses. "Year of Arrival" denotes five-year arrival cohort beginning the prior year for Norway and the current year for the United States; "Constant" gives mean value for natives. Dependent variable is the log annual earnings (1990 currency).

Table 4-5: Log Annual Earnings Equations, Females

| | Norway | | United States | |
	(1)	(2)	(3)	(4)
Years Since Arrival (YSM)	.0374***	.0246***	.0337***	.0434***
	(.0035)	(.0035)	(.0020)	(.0019)
$YSM^2/10$	-.0410***	-.0254***	-.0189***	-.0276***
	(.0043)	(.0044)	(.0015)	(.0015)
$YSM^3/100$	.0153***	.0089***	.0043***	.0061***
	(.0018)	(.0018)	(.0004)	(.0004)
$YSM^4/1000$	-.0019***	-.0010***	-.0003***	-.0004***
	(.0003)	(.0003)	(.0)	(.0)
Immigrant	-.4094***	-.3471***	-.4811***	-.3886***
	(.0126)	(.0132)	(.0134)	(.0130)
1985 Arrivals	.1343***	.1409***		
	(.0074)	(.0072)		
1980 Arrivals	.2444***	.2403***	.1014***	.1258***
	(.0094)	(.0092)	(.0081)	(.0078)
1975 Arrivals	.3097***	.2643***	.1739***	.2011***
	(.0107)	(.0108)	(.0078)	(.0076)
1970 Arrivals	.3896***	.3400***	.2523***	.2857***
	(.0118)	(.0119)	(.0093)	(.0092)
1965 Arrivals	.4060***	.3971***	.3119***	.3419***
	(.0126)	(.0128)	(.0102)	(.0105)
1960 Arrivals	.3616***	.4020***	.3170***	.3416***
	(.0150)	(.0153)	(.0117)	(.0123)
1950 Arrivals			.3061***	.3572***
			(.0135)	(.0144)
1940 Arrivals			.3259***	.3975***
			(.0166)	(.0179)
Age	-.0019	.0011	.0090**	.0143***
	(.0035)	(.0034)	(.0046)	(.0044)
$Age^2/10$	.0172***	.0202***	.0037	-.0043
	(.0039)	(.0038)	(.0051)	(.0049)
$Age^3/100$	-.0078***	-.0088***	-.0024	.0018
	(.0016)	(.0015)	(.0021)	(.0020)
$Age^4/1000$	.0008***	.0009***	.0001	-.0005*
	(.0002)	(.0002)	(.0003)	(.0003)
Imm*Age	.0141***	.0063**	.0170***	.0157***
	(.0031)	(.0030)	(.0046)	(.0044)
$Imm*Age^2/10$	-.0132***	-.0123***	-.0180***	-.0139***
	(.0034)	(.0033)	(.0052)	(.0050)
$Imm*Age^3/100$	.0051***	.0049***	.0058***	.0041**
	(.0014)	(.0013)	(.0021)	(.0020)
$Imm*Age^4/1000$	-.0006***	-.0006***	-.0006**	-.0004
	(.0002)	(.0002)	(.0003)	(.0003)
Educ1		-.1055***		
		(.0248)		
Educ2		-.1363***		
		(.0068)		
Educ4		.1555***		

		(.0070)		
Educ5		.3457***		
		(.0064)		
Educ6		.5249***		
		(.0123)		
Educ Missing		.0428***		
		(.0160)		
Imm*Educ1		.1010***		
		(.0120)		
Imm*Educ2		.0545***		
		(.0077)		
Imm*Educ4		-.0837***		
		(.0071)		
Imm*Educ5		-.0649***		
		(.0063)		
Imm*Educ6		-.0062		
		(.0078)		
Imm*Educ Missing		.0253**		
		(.0128)		
Schooling				.0824***
				(.0008)
Imm*Schooling				-.0155***
				(.0008)
Constant	11.513***	11.3392***	9.4054***	9.1986***
	(.0094)	(.0101)	(.0119)	(.0115)
R^2	.0486	.1127	.0296	.1138
Observations		562,560		404,174

*Statistically significant at the .10 level; **at the .05 level; ***at the .01 level.

Note: Standard errors are reported in parentheses. Additional control variables are indicator variables for year of observation and interaction terms between the age and education variables and period indicators. The constant term is evaluated at 25 years of age and 11 years of schooling. Norwegian samples cover the years 1980, 1990, 1992, 1993, 1994, and 1995; U.S. samples cover 1970, 1980, and 1990.

Table 4-6: Employment Differentials between Immigrants and Natives, 1990

| | Norway | | United States | |
	Males	Females	Males	Females
All	-.1384	-.1206	-.0069	-.0826
Immigrants	(.0020)	(.0026)	(.0017)	(.0022)
Year of Arrival:				
1985	-.2259	-.2267	-.0921	-.2033
	(.0028)	(.0042)	(.0021)	(.0029)
1980	-.0918	-.1261	.0126	-.0696
	(.0039)	(.0053)	(.0021)	(.0029)
1975	-.0819	-.1057	.0332	-.0372
	(.0041)	(.0057)	(.0022)	(.0030)
1970	-.1310	-.0309	.0314	-.0235
	(.0045)	(.0068)	(.0024)	(.0032)
1965	-.0912	.0125	.0243	-.0129
	(.0071)	(.0088)	(.0026)	(.0033)
1960	-.0561	-.0704	.0178	-.0369
	(.0042)	(.0046)	(.0029)	(.0036)
1950			-.0106	-.1046
			(.0027)	(.0033)
1940			-.0986	-.1937
			(.0043)	(.0051)
Constant	.9089	.7764	.8768	.6964
	(.0012)	(.0016)	(.0015)	(.0020)
Observations	129,863	120,904	300,487	346,164

Note: Standard errors are reported in parentheses. "Year of Arrival" denotes five-year arrival cohort beginning the prior year for Norway and the current year for the United States; "Constant" gives mean employment rate for natives.

Table 4-7: Employment Equations

	Norway		United States	
	Males	Females	Males	Females
Years Since Arrival (YSM)	.0516***	.0296***	.0313***	.0249***
	(.0013)	(.0016)	(.0006)	(.0009)
$YSM^2/10$	-.0439***	-.0283***	-.0213***	-.0184***
	(.0017)	(.0021)	(.0005)	(.0006)
$YSM^3/100$	.0120***	.0091***	.0050***	.0043***
	(.0007)	(.0009)	(.0001)	(.0002)
$YSM^4/1000$	-.0010***	-.0010***	-.0004***	-.0003***
	(.0001)	(.0001)	(.0)	(.0)
Immigrant	-.4458***	-.3977***	-.2186***	-.2769***
	(.0050)	(.0064)	(.0045)	(.0062)
1985 Arrivals	.1102***	.1212***		
	(.0025)	(.0032)		
1980 Arrivals	.1958***	.1942***	.0423***	.0967***
	(.0036)	(.0044)	(.0025)	(.0035)
1975 Arrivals	.2534***	.2027***	.0451***	.1232***
	(.0042)	(.0052)	(.0024)	(.0033)
1970 Arrivals	.2641***	.2803***	.0845***	.1809***
	(.0045)	(.0058)	(.0030)	(.0042)
1965 Arrivals	.3375***	.3466***	.1059***	.2219***
	(.0050)	(.0063)	(.0035)	(.0047)
1960 Arrivals	.3830***	.3728***	.1220***	.2259***
	(.0059)	(.0075)	(.0041)	(.0055)
1950 Arrivals			.1426***	.2353***
			(.0048)	(.0064)
1940 Arrivals			.1323***	.2436***
			(.0059)	(.0079)
Age	.0066***	-.0142***	.0062***	-.0109***
	(.0015)	(.0019)	(.0015)	(.0021)
$Age^2/10$	-.0083***	.0200***	-.0108***	.0115***
	(.0017)	(.0020)	(.0017)	(.0023)
$Age^3/100$	.0041***	-.0071***	.0059***	-.0042***
	(.0007)	(.0008)	(.0007)	(.0009)
$Age^4/1000$	-.0007***	.0006***	-.0011***	.0003***
	(.0001)	(.0001)	(.0001)	(.0001)
Imm*Age	-.0005	.0123***	.0094***	.0040*
	(.0012)	(.0015)	(.0015)	(.0021)
$Imm*Age^2/10$	.0044***	-.0138***	-.0062***	-.0034
	(.0013)	(.0017)	(.0017)	(.0023)
$Imm*Age^3/100$	-.0032***	.0045***	.0016**	.0017*
	(.0005)	(.0007)	(.0007)	(.0009)
$Imm*Age^4/1000$	.0005***	-.0005***	-.0001	-.0002*
	(.0001)	(.0001)	(.0001)	(.0001)
Educ1	-.1135***	-.3031***		
	(.0091)	(.0107)		
Educ2	-.0422***	-.1274***		
	(.0034)	(.0036)		
Educ4	.0454***	.0554***		

	(.0030)	(.0040)		
Educ5	.0548***	.1181***		
	(.0035)	(.0038)		
Educ6	.0683***	.1203***		
	(.0044)	(.0073)		
Educ Missing	-.3046***	-.2600***		
	(.0059)	(.0077)		
Imm*Educ1	.0517***	.0881***		
	(.0047)	(.0057)		
Imm*Educ2	.0223***	.0250***		
	(.0034)	(.0039)		
Imm*Educ4	.0057**	-.0265***		
	(.0027)	(.0039)		
Imm*Educ5	.0031	.0039		
	(.0032)	(.0035)		
Imm*Educ6	.0550***	.0530***		
	(.0034)	(.0046)		
Imm*Educ Missing	.1342***	.0488***		
	(.0049)	(.0064)		
Schooling			.0139***	.0267***
			(.0003)	(.0004)
Imm*Schooling			-.0067***	-.0067***
			(.0002)	(.0003)
Constant	.9035***	.8078***	.8985***	.7391***
	(.0046)	(.0056)	(.0041)	(.0058)
R^2	.1630	.1492	.0649	.0761
Observations	851,479	789,709	585,389	691,934

*Statistically significant at the .10 level; **at the .05 level; ***at the .01 level.

Note: Standard errors are reported in parentheses. Additional control variables are indicator variables for year of observation and interaction terms between the age and education variables and period indicators. The constant term is evaluated at 25 years of age and 11 years of schooling. Norwegian samples cover the years 1980, 1990, 1992, 1993, 1994, and 1995; U.S. samples cover 1970, 1980, and 1990.
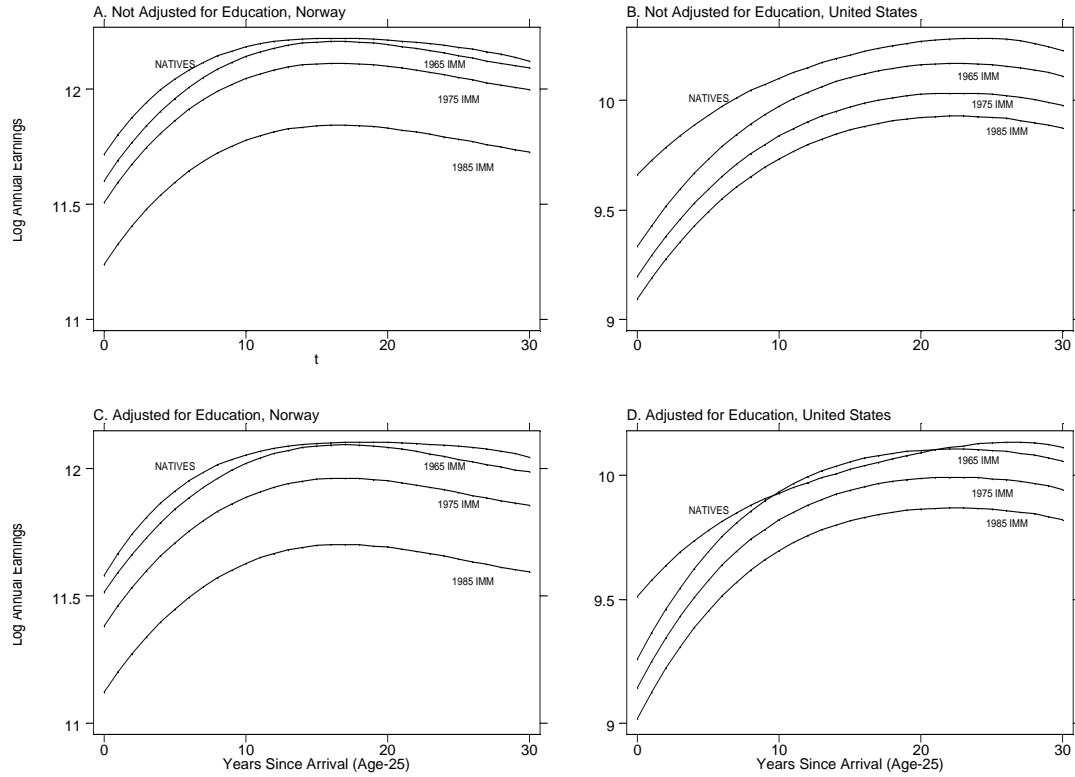
Fig 4-1: Predicted Log Earnings, Males

Note: Profiles are based on coefficient estimates reported in Table 4-3, col. 1 (panel A), col. 3 (panel B), col. 2 (panel C), and col. 4 (panel D). Profiles in panels C and D are evaluated at 11 years of schooling.
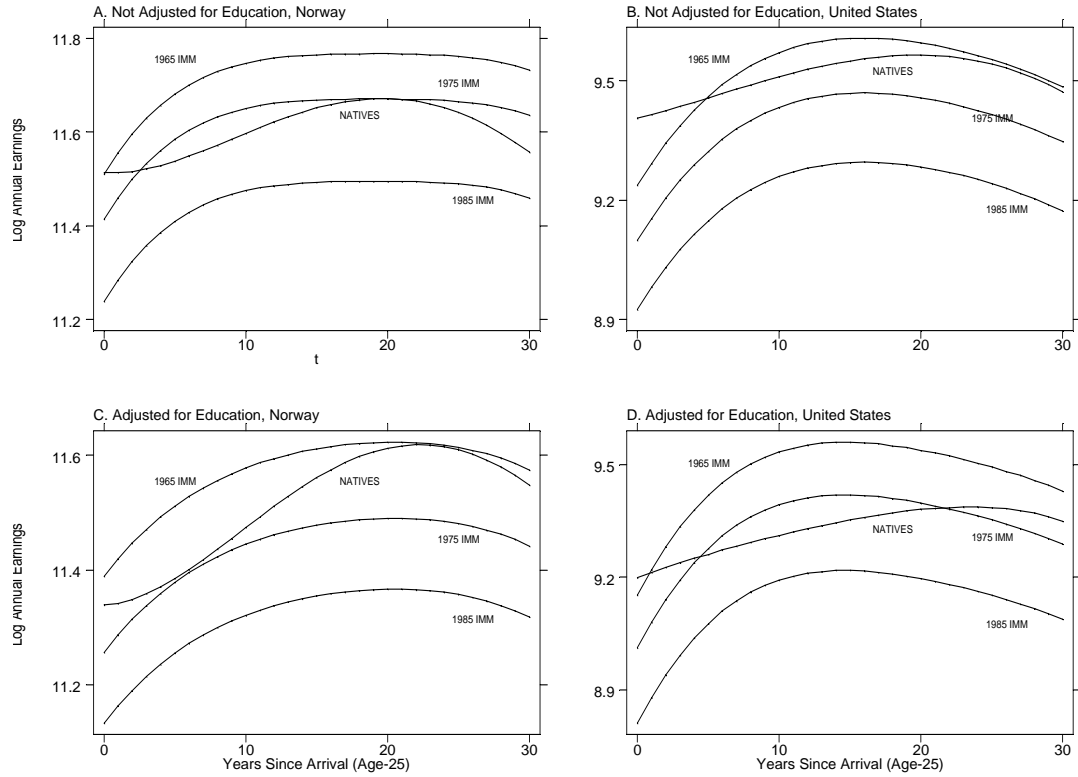
Fig 4-2: Predicted Log Earnings, Females

Note: Profiles are based on coefficient estimates reported in Table 4-5, col. 1 (panel A), col. 3 (panel B), col. 2 (panel C), and col. 4 (panel D). Profiles in panels C and D are evaluated at 11 years of schooling.
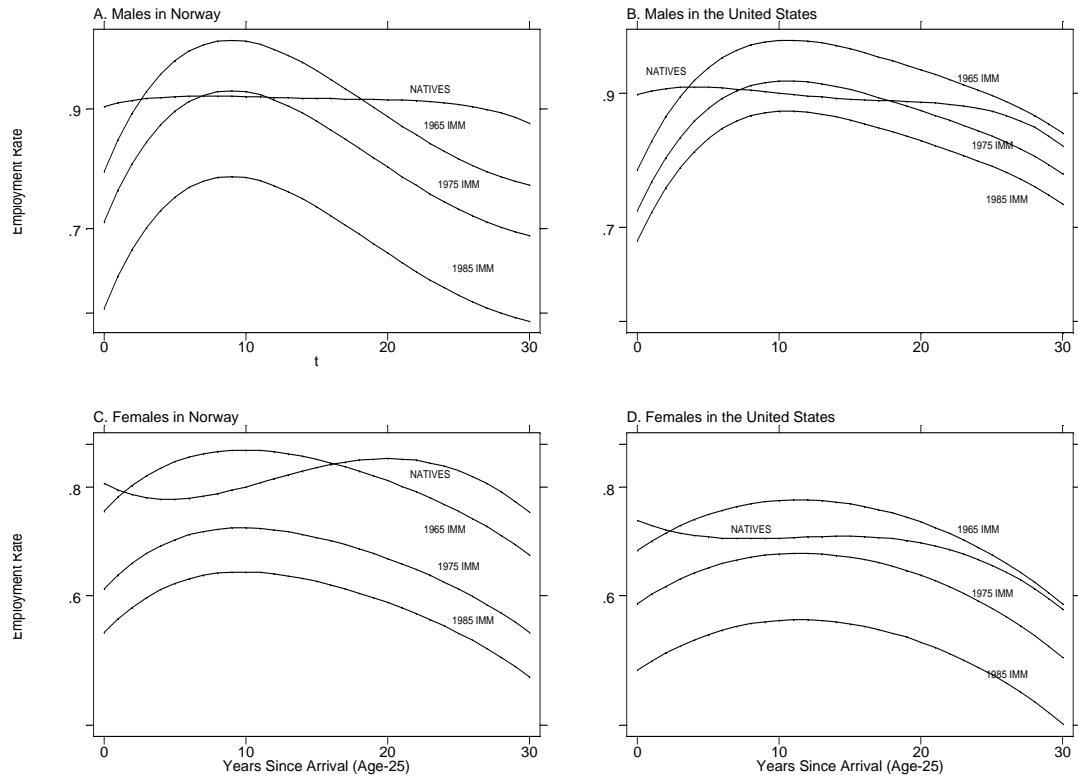
Fig 4-3: Predicted Employment Rates

Note: Profiles are based on coefficient estimates reported in Table 4-7, col. 1 (panel A), col. 3 (panel B), col. 2 (panel C), and col. 4 (panel D).

Chapter 5

Country-of-Origin Components of Labor Market Assimilation

In this chapter we turn to differences in labor market outcomes across immigrants from different countries. Among the central issues examined are, does the trend showing a decline in labor market performance of more recent immigrants uncovered in the prior chapter also persist for given source countries, or is the trend in part the result of a shift in the national origin mix of immigrants? Does labor market assimilation rates differ by source country, or is there a common component of labor market adjustment in the host country shared by all immigrants? How do differences in labor market outcomes by national origin compare in the two host countries, Norway and the United States? Is there some common factor that can explain the variation in labor market performance of immigrants from different source countries in the two host countries?

To provide background, Table 5-1 lists sample means for key variables separately for male and female immigrants in Norway and the United States from five source-country groupings; pre-1990 OECD countries (except Turkey), other Europe, other Asia (Japan is included with OECD), Central and South America, and Africa.

[insert Table 5-1 about here]

Among the important similarities across host countries, is that OECD and European immigrants have significantly more years of residence in the host the country than do immigrants from Asia, the Americas, and Africa. For example, male immigrants from OECD or Europe average more than 15 years in Norway compared to less than ten for the other country groupings. Such cross-country differences in years since migration are mirrored by differences in earnings—country groupings with longer residency also have higher earnings. In Norway, the data show that immigrants from Asia, Central and South America, and Africa have less educational attainment than immigrants from OECD and Europe. (To keep the table legible, the six educational categories available in the data are collapsed into two and conditioned on education being reported in the underlying micro data.) In addition to their fewer years since migration, the lower educational attainment emerges as a potential explanation of the lower earnings of these groups. In the United States, educational attainment among Asian and African immigrants exceeds those of other immigrant groups. (Educational attainment among African immigrants in the United States is examined by Butcher (1994)). With only a few exceptions, patterns of characteristics and labor market outcomes for women parallel those of men. The regression analyses of this chapter are therefore limited to the male samples.

[insert Table 5-2 about here]

Table 5-2 provides further detail on the differences in labor market outcomes of native immigrant men, listing the 1990 log earnings and employment differentials between natives and immigrants from each of the five country groupings. The table verifies that, in Norway, earnings and employment rates of immigrants from the less-developed country groupings are significantly below those of natives (and other immigrants). In fact, for immigrants from the less-developed country groupings average earnings are between 37 and 42 percent below those natives. In the United States, immigrant earnings compare in general more favorably with those of natives (immigrants from OECD/Europe earn significantly

more than natives) but the pattern across country groupings is similar to that in Norway. One apparent exception is Central and South America, for whom earnings in the United States fall significantly below other groups. A large portion of U.S. immigrants in this grouping come from Mexico—a source country that is basically missing from the Norwegian data. A large literature studies earnings of Mexican immigrants in the United States (e.g., Schoeni, 1997) and concludes that their earnings are lower than other ethnic groups in the United States—a feature of the data that appears explained by their general low levels of human capital investment, particularly in education (Smith and Edmonston, 1997).

5.1. Source-Country Components of Earnings

The finding that there are parallel patterns of cross-source country differences in earnings of immigrants in the two host countries raises the question of whether there are common factors affecting immigrant labor market performance. Research from the United States, for example, indicate that earnings of immigrants can be linked to the level of development of their source country (Jasso and Rosenzweig, 1987; Bratsberg and Ragan, forthcoming). For example, a positive relationship between development of the source country and earnings may result from differences in transferability of human capital (Greenwood and McDowell, 1991) or from differences in quality of educational institutions (Bratsberg and Terrell, 1997).

[insert Table 5-3 about here]

To examine the correlation of cross-country components of earnings and their linkages to source country development, we first compute earnings differentials (with natives) for each source country separately for immigrants in Norway and the United States. Table 5-3 lists such differentials for each of 67 source countries (sample inclusion is based on the cell count of the 1990 regression sample exceeding 25 for each source country). Columns 1-2 lists the "unadjusted" earnings differentials, simply obtained as the coefficient of a source-country indicator variable in a regression of log earnings on 67 such indicators (with the constant term reflecting the average log earnings of natives). Because results in Table 5-1 indicate that some of the differences in earnings across source countries may result from differences in individual characteristics such as years since migration and educational attainment, columns 3-4 lists differentials obtained from regressions that also include educational attainment and quartic polynomials of age and years since migration and where education and age variables are interacted with immigrant status (i.e., predicted log earnings at the time of entry). Interestingly, when the regression controls for age and educational attainment, earnings differentials across the board become more negative. To illustrate, among OECD immigrants in Norway unadjusted earnings differentials tend to be positive— immigrants from OECD countries have on average higher earnings than natives. The adjusted earnings differentials of OECD immigrants, however, lie between -.3 and -.4, indicating that part of the favorable earnings of OECD immigrants is attributable to their generally high levels of educational attainment. Indeed, the data in Table 5-1 show that almost 60 percent of OECD immigrants in Norway have completed 12 or more years of schooling, compared to 47 percent of native males (Table 4-1). A similar pattern emerges in the data for the United States. Not adjusting earnings, immigrants from about half the countries in the sample have higher average earnings than natives. After adjusting for education, age, and years since migration, only immigrants from Japan have higher predicted earnings than natives. (This discussion is, of course, complicated by the fact that adjusted

immigrant earnings are evaluated at zero years since migration—the earnings differential reflects the gap between native earnings and entry earnings of immigrants. Labor market assimilation will reduce the predicted earnings gap between natives and immigrants were earnings evaluated at, say, 35 years of age.)

[insert Figure 5-1 about here]

The content of Table 5-3 is captured in Figure 5-1, which plots source-country earnings differentials in Norway against those in the United States. Whether or not we adjust earnings, the figure reveals a strong correlation between source-country components of earnings in the two host countries. Immigrants from countries such as Somalia, Afghanistan, and Bangla Desh have among the lowest relative earnings in both Norway and the United States. At the other end, immigrants Japan, Switzerland, and Sweden have high relative earnings in both source countries. The simple correlation coefficient is .73 for the unadjusted series and .77 for the adjusted series.

Each plot adds the regression line from the regression of earnings differentials in Norway on those in the United States. (The underlying equations are

$$(5\text{-}1) \quad \text{unadj } D^N = -.336 + .865 \text{ unadj } D^{US} + u, \quad R^2 = .543$$
$$\phantom{(5\text{-}1) \quad \text{unadj } D^N = } (.026) \quad (.099)$$

$$(5\text{-}2) \quad \text{adj } D^N = \quad -.292 + .847 \text{ adj } D^{US} + e, \quad R^2 = .583$$
$$\phantom{(5\text{-}2) \quad \text{adj } D^N = \quad } (.046) \quad (.090)$$

and N = 66; Norway and the United States are excluded from the regression but included in the plots.) With the regression line as reference, immigrants from Iran and Iraq are "outliers" in Norway—their earnings fall short of what one would predict based on the performance of Iranian and Iraqi immigrants in the United States. A plausible explanation is that the Norwegian data contain a higher portion of political refugees from these countries than do the U.S. data. Unfortunately, neither data source reveals the immigration status of the individual.

Having uncovered a strong correlation between the relative labor market positions of immigrants in Norway and the United States, we next turn to the linkages between relative immigrant earnings and development of the source country. Table 5-4 reports results from regressions of the earnings differentials on the per-capita GPD of the source country and Figure 5-2 summarizes the contents of the regressions. (To give a visual impression of the underlying data, the figures weight each data point by the cell size in the underlying regression sample, with larger circles representing countries with more immigrants in the respective host country.)

[insert Table 5-4 about here]

[insert Figure 5-2 about here]

As revealed by the table and the figure, there is a significant relationship between the earnings of immigrants and the GDP of the source country—and this relationship shows up in both the Norwegian and the U.S. data. When differentials are adjusted for characteristics such as age and educational attainment, the relationship between relative immigrant earnings and source country development is strikingly similar in the two host countries (see bottom

panel of Figure 5-2). In fact, the coefficients of the GDP variable predict that earnings rise by 3.6 percent for each 1,000 dollars increase in source-country GDP for immigrant in both Norway and the United States. Interestingly, the intercept of this relationship is lower in Norway than in the United States, indicating larger gaps between native and immigrant earnings in Norway. This likely relates to the generally lower levels of assimilation of immigrants in Norway uncovered in the prior chapter. A possible explanation is that immigrant assimilation is tied to language acquisition (Chiswick and Miller, 1993; 1995; Raaum, 1998). If Norwegian language skills are generally lower among immigrants in Norway than are English language skills among immigrants in the United States, one would expect relative earnings of immigrants in Norway to be lower than those in the United States. As indicated by the intercepts in Table 5-4, the differential in adjusted relative earnings between the two host countries is about .2 log point—a difference that likely is too large to be explained by differences in language skills alone.

5.2. Earnings Assimilation by Country of Origin

We conclude the examination of source-country effects on host-country labor market outcomes of immigrants with a comparative analysis of earnings assimilation. The analysis draws on the synthetic panel methodology and estimates earnings profiles and gauges assimilation separately for each of the five country groupings listed in Table 5-1. Table 5-5 and Figure 5-3 present results for immigrants in Norway, Table 5-6 and Figure 5-4 for immigrants in the United States. (The figures trace earnings profiles for native workers and immigrants of three arrival cohorts; 1965, 1975, and 1985. Not all profiles are labeled in figures in order to keep graphs legible. The identity of each plotted profile becomes apparent if one compares coefficients of cohort indicators listed in the tables.)

[insert Table 5-5 about here]

[insert Figure 5-3 about here]

[insert Table 5-6 about here]

[insert Figure 5-4 about here]

Several conclusions can be drawn. First, there are significant differences in age-earnings profiles across national origin groups. Immigrants from OECD countries do well in both host countries, even outperforming natives in the United States. In Norway, differences between earnings profiles of natives and immigrants from OECD countries are minor. Immigrants from the Central and South America, immigrants from Africa, and post-1980 immigrants from non-OECD Europe and Asia have low earnings profiles in Norway. Even though the profiles of each of these groups show earnings assimilation during the period following immigration (their earnings grow at a faster rate than earnings of native worker of similar age), after ten years in Norway their earnings profiles flatten out while the profile of natives keep its rise for additional years. In fact, for Asian immigrants the data reveal a significant decline in earnings starting about 12 years after arrival. (Although not analyzed separately in this section, the data reveal a similar decline in employment rates. For Asian males in Norway, the data indicate early withdrawal from the labor market. Indeed, most of the decline in male employment rates in Figure 4-3 can be attributed to immigrants from Asia.) In the United States, only for immigrants from Central and South America do the

profiles indicate lack of earnings assimilation. This point has been noted in prior research; e.g., Borjas (1995) and Schoeni (1997).

Second, cohort differentials show up for certain immigrant groups, particularly in Norway. For all non-OECD immigrant groups in Norway do the data reveal significant declines in relative earnings across arrival cohorts. For example, the earnings of immigrants who arrived during the late 1980s from non-OECD Europe, from Central and South America, or from Africa are 37 percent below those of immigrants who arrived from the same source countries during the late 1960s. For non-OECD immigrants in Norway, therefore, the pattern of diminished labor market success across arrival cohorts cannot be attributed to changes in the mix of source countries. Even when we examine earnings of immigrants from the same sending countries do we find that immigrants who arrived during the 1980s have worse outcomes in the Norwegian labor market than immigrants who arrived at an earlier date. The causes of such decline in the labor market performance of immigrants remain unresolved and represent an important line of future research.

Table 5-1: Sample Means by Country of Origin

	OECD	Other Europe	Other Asia	Other Americas	Africa
A. Male Immigrants in Norway					
Years Since Arrival	15.2007	15.0469	9.9056	9.2446	8.7274
Age	43.1747	43.2520	36.5882	38.1675	35.3886
Educ4/5/6	.5948	.6529	.4453	.4565	.4627
Employment	.7656	.6796	.6640	.7438	.5586
Log(Annual Earnings)	12.1176	12.1009	11.6510	11.7305	11.5307
Observations	162,770	18,344	110,026	14,422	32,323
B. Male Immigrants in the United States					
Years Since Arrival	22.0074	19.4723	10.8791	13.6926	10.3608
Age	44.3006	45.9419	39.0274	38.5295	36.6350
Education	12.3339	12.1500	13.9536	9.1012	14.9303
Employment	.8895	.8543	.8533	.8792	.8396
Log(Annual Earnings)	10.2670	10.1228	9.9501	9.6325	9.8898
Observations	110,251	34,506	90,719	183,316	9,394
C. Female Immigrants in Norway					
Years Since Arrival	17.3881	15.5196	8.7099	9.2258	8.3431
Age	43.3452	42.6357	36.7035	38.1136	34.7123
Educ4/5/6	.5308	.6169	.3871	.4365	.3787
Employment	.6914	.5696	.4661	.5402	.4275
Log(Annual Earnings)	11.6792	11.6636	11.3789	11.4014	11.3773
Observations	168,200	19,424	82,344	12,944	12,321
D. Female Immigrants in the United States					
Years Since Arrival	22.9789	19.7069	10.7452	14.3251	12.0101
Age	45.4328	45.9869	39.4114	39.8666	38.0014
Education	11.6810	11.3910	12.4233	9.2215	13.0772
Employment	.5551	.5631	.6256	.5816	.6130
Log(Annual Earnings)	9.3951	9.4507	9.5180	9.2180	9.4619
Observations	171,493	38,395	105,702	192,698	6,395

Note: "OECD" denotes pre-1990 membership countries of OECD except Turkey; "Africa" excludes South Africa. Education indicator for Norway denotes educational attainment of "videregående skole" or higher and is conditional on non-missing education record. Log(Annual Earnings) is conditional on employment.

Table 5-2: Male Immigrant-Native Differentials by Country of Origin, 1990

| | Norway | | United States | |
	Log Annual Earnings	Employment	Log Annual Earnings	Employment
OECD	.0101*	-.0918***	.2465***	.0189***
	(.0052)	(.0025)	(.0055)	(.0022)
Other Europe	-.2173***	-.1305***	.0819***	-.0363***
	(.0124)	(.0058)	(.0085)	(.0033)
Other Asia	-.4756***	-.1794***	-.1079***	-.0230***
	(.0065)	(.0030)	(.0052)	(.0020)
South + Central Americas	-.4568***	-.1608***	-.4965***	.0022
	(.0154)	(.0071)	(.0046)	(.0018)
Africa	-.5430***	-.2524***	-.1557***	-.0058
	(.0127)	(.0055)	(.0117)	(.0046)
Constant	12.1109***	.9089***	10.0674***	.8768***
	(.0024)	(.0012)	(.0038)	(.0015)
Observations	111,1125	129,863	261,734	300,487

*Statistically significant at the .10 level; **at the .05 level; ***at the .01 level.

Note: Standard errors are reported in parentheses. "Constant" gives mean value for natives.
"OECD" denotes pre-1990 membership countries of OECD except Turkey; "Africa" excludes South Africa.

Table 5-3: Male Immigrant-Native Log Earnings Differentials by Detailed Country of Origin, 1990

ISO Country Abbreviation	Unadjusted		Adjusted	
	Norway	United States	Norway	United States
AUT	.1174***	.4065***	-.3617***	-.2857***
	(.0401)	(.0347)	(.0490)	(.0368)
BEL	.0262	.3560***	-.4676***	-.2559***
	(.0650)	(.0454)	(.0689)	(.0453)
BGR	-.5293***	.0244	-.9113***	-.5767***
	(.0510)	(.0785)	(.0569)	(.0736)
CZE	-.1014	.2891***	-.5855***	-.3689***
	(.0897)	(.0312)	(.0903)	(.0339)
DNK	-.0661***	.2986***	-.4747***	-.3024***
	(.0095)	(.0467)	(.0322)	(.0463)
FIN	-.1427***	.1912***	-.5606***	-.3883***
	(.0213)	(.0651)	(.0374)	(.0619)
FRA	.0147	.2779***	-.4494***	-.2677***
	(.0314)	(.0243)	(.0429)	(.0287)
DEU	.0398***	.2611***	-.4716***	-.3573***
	(.0153)	(.0109)	(.0345)	(.0214)
GRC	-.3065***	.0076	-.6621***	-.4771***
	(.0448)	(.0183)	(.0526)	(.0250)
HUN	-.0783***	.2397***	-.6161***	-.3944***
	(.0288)	(.0240)	(.0419)	(.0291)
ISL	-.0746**	.0929	-.4950***	-.4305***
	(.0300)	(.1187)	(.0420)	(.1093)
IRL	-.0631	.2198***	-.4641***	-.2557***
	(.0691)	(.0203)	(.0723)	(.0260)
ITA	-.1174***	.1669***	-.5579***	-.2911***
	(.0323)	(.0114)	(.0439)	(.0214)
NLD	.0777***	.3031***	-.4179***	-.3318***
	(.0226)	(.0246)	(.0377)	(.0293)
NOR		.4439***		-.1553***
		(.0469)		(.0465)
POL	-.1953***	.0033	-.6538***	-.4379***
	(.0233)	(.0140)	(.0386)	(.0225)
PRT	-.1880***	-.0555***	-.5580***	-.2781***
	(.0410)	(.0157)	(.0497)	(.0235)
ROM	-.1725**	.0688***	-.6334***	-.4033***
	(.0820)	(.0263)	(.0836)	(.0304)
ESP	-.1782***	.0025	-.5731***	-.4485***
	(.0310)	(.0278)	(.0427)	(.0312)
SWE	.0623***	.4169***	-.3792***	-.1290***
	(.0114)	(.0404)	(.0325)	(.0410)
CHE	.0853*	.5104***	-.3987***	-.1081***
	(.0440)	(.0393)	(.0524)	(.0401)
GBR	.1424***	.3803***	-.3415***	-.1939***
	(.0113)	(.0106)	(.0329)	(.0209)
YUG	-.2990***	.1299***	-.6212***	-.3574***
	(.0201)	(.0201)	(.0351)	(.0261)
USR	-.0642	.0589***	-.5649***	-.5063***

	(.0413)	(.0171)	(.0502)	(.0244)
AFG	-.8560***	-.3162***	-1.0427***	-.7143***
	(.1012)	(.0493)	(.1001)	(.0485)
BGD	-.7988***	-.3114***	-1.1174***	-.7092***
	(.0580)	(.0403)	(.0628)	(.0411)
CHN	-.4675***	-.3083***	-.8285***	-.7476***
	(.0335)	(.0109)	(.0436)	(.0209)
HKG	-.4773***	-.0024	-.7779***	-.4992***
	(.0420)	(.0190)	(.0502)	(.0253)
IND	-.2910***	.1603***	-.6778***	-.4508***
	(.0187)	(.0103)	(.0352)	(.0210)
IDN	.1483	.1060***	-.3481***	-.4995***
	(.1114)	(.0333)	(.1101)	(.0356)
IRN	-.9681***	.0529***	-1.1581***	-.5420***
	(.0221)	(.0155)	(.0350)	(.0239)
IRQ	-.9814***	-.0761**	-1.1968***	-.5628***
	(.0603)	(.0353)	(.0635)	(.0374)
ISR	-.4668***	.1946***	-.8297***	-.3287***
	(.0540)	(.0260)	(.0599)	(.0301)
JPN	.0955	.4621***	-.4177***	.0259
	(.1012)	(.0158)	(.1008)	(.0229)
LBN	-.4985***	-.0438*	-.7409***	-.4794***
	(.0587)	(.0239)	(.0625)	(.0287)
MYS	-.2755**	-.2591***	-.6656***	-.6253***
	(.1132)	(.0448)	(.1117)	(.0445)
PAK	-.3922***	-.1672***	-.7633***	-.6430***
	(.0122)	(.0218)	(.0314)	(.0273)
PHL	-.1096***	-.1009***	-.5249***	-.6161***
	(.0299)	(.0088)	(.0415)	(.0204)
LKA	-.6265***	.0717	-.7896***	-.5090***
	(.0163)	(.0556)	(.0326)	(.0538)
SYR	-.6566***	-.0980***	-1.0247***	-.5205***
	(.0954)	(.0383)	(.0953)	(.0393)
THA	-.3845***	-.1495***	-.7504***	-.6903***
	(.1150)	(.0292)	(.1132)	(.0324)
TUR	-.4074***	.1530***	-.7086***	-.3587***
	(.0180)	(.0345)	(.0338)	(.0365)
VNM	-.4877***	-.2843***	-.8307***	-.6132***
	(.0163)	(.0112)	(.0352)	(.0218)
CAN	.0404	.2407***	-.3957***	-.3145***
	(.0444)	(.0106)	(.0523)	(.0209)
TTO	-.1438	-.1489***	-.5856***	-.5969***
	(.1098)	(.0238)	(.1090)	(.0284)
ARG	-.1295*	.0938***	-.6179***	-.4001***
	(.0730)	(.0232)	(.0758)	(.0280)
BRA	-.1978*	-.2155***	-.6533***	-.4800***
	(.1053)	(.0261)	(.1044)	(.0296)
CHL	-.5197***	-.0608**	-.7507***	-.5378***
	(.0175)	(.0293)	(.0326)	(.0325)
COL	-.4356***	-.2616***	-.8783***	-.6094***
	(.0965)	(.0141)	(.0964)	(.0224)
PER	-.4602***	-.2853***	-.8273***	-.6758***
	(.0888)	(.0190)	(.0894)	(.0253)
DZA	-.6456***	-.0861	-.8746***	-.6036***
	(.0500)	(.0785)	(.0556)	(.0738)

EGY	-.2477***	.1377***	-.7271***	-.4875***
	(.0628)	(.0239)	(.0672)	(.0289)
ETH	-.5285***	-.3627***	-.8692***	-.7628***
	(.0387)	(.0368)	(.0476)	(.0383)
GMB	-.7591***	-.6814***	-1.0576***	-.7791***
	(.0417)	(.1454)	(.0502)	(.1331)
GHA	-.7024***	-.1890***	-.9510***	-.7822***
	(.0391)	(.0425)	(.0469)	(.0431)
KEN	-.5261***	.0271	-.8506***	-.5255***
	(.0871)	(.0571)	(.0878)	(.0551)
MAR	-.4693***	-.0887*	-.7483***	-.4622***
	(.0232)	(.0513)	(.0370)	(.0499)
NGA	-.6541***	-.3501***	-1.0568***	-.9004***
	(.0538)	(.0244)	(.0595)	(.0296)
MUS	-.1584	.2502	-.5445***	-.4286***
	(.1000)	(.1625)	(.0995)	(.1486)
SLE	-.5043***	-.2653***	-.7810***	-.8338***
	(.0944)	(.0789)	(.0945)	(.0741)
SOM	-1.1024***	-.6741***	-1.2796***	-1.0682***
	(.0647)	(.1366)	(.0670)	(.1254)
ZAF	-.1611**	.4660***	-.6085***	-.0833**
	(.0683)	(.0394)	(.0716)	(.0403)
TZA	-.5255***	.0726	-.9583***	-.5135***
	(.1098)	(.0826)	(.1087)	(.0774)
TUN	-.5120***	.1130	-.7373***	-.3844***
	(.0515)	(.0996)	(.0570)	(.0922)
UGA	-.3494***	-.0864	-.7727***	-.6611***
	(.0800)	(.0770)	(.0812)	(.0724)
AUS	.1159*	.3311***	-.3651***	-.1932***
	(.0641)	(.0371)	(.0682)	(.0383)
NZL	.0057	.2311***	-.4439***	-.2269***
	(.0897)	(.0551)	(.0904)	(.0532)
USA	.0268		-.4525***	
	(.0165)		(.0348)	
Constant	12.1109***	10.0674***	11.5974***	9.4088***
	(.0024)	(.0038)	(.0099)	(.0131)

Note: Standard errors are reported in parentheses. "Constant" gives mean value for natives. Unadjusted differential gives the average log point salary differential between native and immigrant men; adjusted differential is computed from regressions that include education and quartic polynomials of age and years since migration and interacts all variables with an immigrant indicator variable. Adjusted differentials are evaluated at 11 years of education, 25 years of age = 25, and zero years since migration.

Table 5-4: Regressions of Earnings Differential on Source Country GDP

	Unadjusted		Adjusted	
	Norway	United States	Norway	United States
GDP	.0498***	.0416***	.0357***	.0352***
	(.0052)	(.0051)	(.0037)	(.0043)
Constant	-.5318***	-.1534***	-.8279***	-.6277***
	(.0420)	(.0334)	(.0297)	(.0279)
R^2	.5935	.5156	.6000	.5219

Note: Sample size is 64. Dependent variable is the native-immigrant earnings differential listed in Table 5-2. GDP denotes 1975 per-capita GDP measured in 1,000 1985 U.S. dollars. Regressions weight each observation by the cell count in the underlying data samples.

Table 5-5: Log Annual Earnings Equations by Country of Origin, Males in Norway

	OECD	Other Europe	Other Asia	Other Americas	Africa
Years Since Arrival (YSM)	.0135***	.0527***	.0873***	.0542***	.0793***
	(.0036)	(.0088)	(.0047)	(.0119)	(.0087)
$YSM^2/10$	-.0105**	-.0809***	-.0667***	-.0626***	-.0686***
	(.0045)	(.0113)	(.0063)	(.0148)	(.0113)
$YSM^3/100$	.0029	.0342***	.0161***	.0240***	.0207***
	(.0019)	(.0048)	(.0029)	(.0062)	(.0050)
$YSM^4/1000$	-.0002	-.0045***	-.0011***	-.0030***	-.0020***
	(.0003)	(.0007)	(.0004)	(.0009)	(.0007)
Immigrant	-.2003***	-.5232***	-.6999***	-.6148***	-.7946***
	(.0151)	(.0418)	(.0170)	(.0460)	(.0294)
1985 Arrivals	.0193**	-.0192	.1918***	.1098***	.1139***
	(.0080)	(.0253)	(.0099)	(.0326)	(.0158)
1980 Arrivals	.0894***	.2029***	.4347***	.3662***	.3497***
	(.0099)	(.0302)	(.0140)	(.0408)	(.0240)
1975 Arrivals	.0983***	.3553***	.5665***	.4638***	.4615***
	(.0113)	(.0326)	(.0163)	(.0417)	(.0282)
1970 Arrivals	.0760***	.4097***	.5959***	.6230***	.5509***
	(.0122)	(.0329)	(.0170)	(.0489)	(.0309)
1965 Arrivals	.0992***	.4641***	.8705***	.5791***	.5578***
	(.0132)	(.0368)	(.0260)	(.0531)	(.0375)
1960 Arrivals	.1380***	.5558***	1.2141***	.8137***	.9569***
	(.0156)	(.0391)	(.0294)	(.0557)	(.0454)
Age	.0911***	.0897***	.0947***	.0908***	.0910***
	(.0031)	(.0031)	(.0030)	(.0031)	(.0031)
$Age^2/10$	-.0618***	-.0602***	-.0628***	-.0606***	-.0613***
	(.0033)	(.0034)	(.0034)	(.0034)	(.0034)
$Age^3/100$	.0191***	.0186***	.0190***	.0186***	.0189***
	(.0013)	(.0014)	(.0014)	(.0014)	(.0014)
$Age^4/1000$	-.0023***	-.0023***	-.0023***	-.0023***	-.0023***
	(.0002)	(.0002)	(.0002)	(.0002)	(.0002)
Imm*Age	-.0232***	-.0339***	-.0705***	-.0354***	-.0506***
	(.0036)	(.0097)	(.0036)	(.0093)	(.0070)
$Imm*Age^2/10$	.0283***	.0493***	.0501***	.0335***	.0466***
	(.0037)	(.0098)	(.0043)	(.0107)	(.0085)
$Imm*Age^3/100$	-.0111***	-.0204***	-.0153***	-.0132***	-.0167***
	(.0014)	(.0037)	(.0019)	(.0046)	(.0038)
$Imm*Age^4/1000$	.0014***	.0026***	.0017***	.0018***	.0021***
	(.0002)	(.0005)	(.0003)	(.0006)	(.0005)
Educ1	-.1263***	-.3185***	-.1593***	-.2325***	-.1600***
	(.0300)	(.0570)	(.0287)	(.0544)	(.0476)
Educ2	-.0999***	-.1034***	-.0908***	-.1006***	-.1011***
	(.0065)	(.0066)	(.0066)	(.0066)	(.0066)
Educ4	.1415***	.1425***	.1491***	.1451***	.1448***
	(.0058)	(.0059)	(.0059)	(.0059)	(.0059)
Educ5	.2809***	.2770***	.2844***	.2827***	.2821***
	(.0066)	(.0068)	(.0068)	(.0068)	(.0068)
Educ6	.4394***	.4336***	.4239***	.4359***	.4340***
	(.0083)	(.0088)	(.0089)	(.0089)	(.0089)

Educ Missing	-.0314**	-.0993***	-.0147	.0410*	.0244
	(.0141)	(.0220)	(.0150)	(.0228)	(.0208)
Imm*Educ1	.1669***	.2352***	.1818***	.2877***	.2560***
	(.0117)	(.0440)	(.0201)	(.0505)	(.0397)
Imm*Educ2	.0920***	.1128***	.0412***	.1096***	.1574***
	(.0088)	(.0248)	(.0110)	(.0292)	(.0224)
Imm*Educ4	-.0019	-.0065	-.1521***	-.0927***	-.1528***
	(.0070)	(.0205)	(.0085)	(.0221)	(.0167)
Imm*Educ5	.0421***	-.0194	-.2457***	-.2609***	-.2562***
	(.0079)	(.0222)	(.0099)	(.0262)	(.0181)
Imm*Educ6	.0584***	-.0412**	-.1496***	-.0627**	-.1943***
	(.0080)	(.0209)	(.0117)	(.0294)	(.0202)
Imm*Educ Missing	.1169***	.2354***	.0051	.0797***	.1144***
	(.0112)	(.0223)	(.0109)	(.0180)	(.0151)
Constant	11.6020***	11.6042***	11.5716***	11.5946***	11.5973***
	(.0093)	(.0093)	(.0090)	(.0093)	(.0093)
R^2	.1244	.1371	.1855	.1453	.1666
Observations	586,315	474,169	534,763	472,430	479,759

*Statistically significant at the .10 level; **at the .05 level; ***at the .01 level.

Note: Standard errors are reported in parentheses. Additional control variables are indicator variables for year of observation and interaction terms between the age and education variables and period indicators. The constant term is evaluated at 25 years of age and 11 years of schooling. Samples cover the years 1980, 1990, 1992, 1993, 1994, and 1995.

Table 5-6: Log Annual Earnings Equations by Country of Origin, Males in the United States

	OECD	Other Europe	Other Asia	Other Americas	Africa
Years Since Arrival	.0307***	.0848***	.1277***	.0592***	.1094***
(YSM)	(.0029)	(.0047)	(.0049)	(.0025)	(.0121)
$YSM^2/10$	-.0159***	-.0455***	-.0711***	-.0348***	-.0566***
	(.0021)	(.0036)	(.0049)	(.0020)	(.0106)
$YSM^3/100$	.0031***	.0097***	.0196***	.0080***	.0120***
	(.0005)	(.0010)	(.0018)	(.0006)	(.0033)
$YSM^4/1000$	-.0002***	-.0007***	-.0019***	-.0006***	-.0009***
	(.0)	(.0001)	(.0002)	(.0001)	(.0003)
Immigrant	.0486***	-.5365***	-.8249***	-.4891***	-.7069***
	(.0162)	(.0279)	(.0175)	(.0123)	(.0416)
1980 Arrivals	-.0948***	.2055***	.0169	.0996***	-.1621***
	(.0159)	(.0248)	(.0111)	(.0082)	(.0327)
1975 Arrivals	-.1199***	.0833***	.0532***	.1795***	-.1238***
	(.0125)	(.0208)	(.0101)	(.0081)	(.0283)
1970 Arrivals	-.1872***	.2478***	.0723***	.2743***	-.1106***
	(.0146)	(.0238)	(.0133)	(.0098)	(.0349)
1965 Arrivals	-.1538***	.2721***	.0065	.3369***	.0634
	(.0141)	(.0216)	(.0167)	(.0111)	(.0415)
1960 Arrivals	-.1462***	.3045***	-.0372*	.4339***	.0764
	(.0157)	(.0246)	(.0216)	(.0130)	(.0512)
1950 Arrivals	-.1497***	.3729***	-.1820***	.4522***	.1007
	(.0168)	(.0251)	(.0282)	(.0155)	(.0614)
1940 Arrivals	-.1237***	.4313***	-.3977***	.4816***	.1955**
	(.0198)	(.0277)	(.0412)	(.0209)	(.0900)
Age	.0828***	.0849***	.0789***	.0758***	.0813***
	(.0041)	(.0045)	(.0043)	(.0038)	(.0046)
$Age^2/10$	-.0505***	-.0550***	-.0498***	-.0452***	-.0534***
	(.0045)	(.0050)	(.0049)	(.0043)	(.0052)
$Age^3/100$	.0177***	.0196***	.0181***	.0157***	.0196***
	(.0018)	(.0020)	(.0020)	(.0018)	(.0021)
$Age^4/1000$	-.0025***	-.0027***	-.0026***	-.0022***	-.0028***
	(.0002)	(.0003)	(.0003)	(.0002)	(.0003)
Imm*Age	.0159***	-.0121	.0027	-.0403***	-.0214*
	(.0046)	(.0075)	(.0051)	(.0039)	(.0117)
$Imm*Age^2/10$	-.0030	.0086	.0027	.0268***	.0291**
	(.0050)	(.0078)	(.0058)	(.0045)	(.0138)
$Imm*Age^3/100$	-.0015	-.0045	-.0056**	-.0109***	-.0121**
	(.0020)	(.0030)	(.0024)	(.0019)	(.0059)
$Imm*Age^4/1000$	.0004	.0008**	.0012***	.0016***	.0017**
	(.0003)	(.0004)	(.0003)	(.0002)	(.0008)
Education	.0786***	.0872***	.0883***	.0736***	.0923***
	(.0008)	(.0010)	(.0010)	(.0007)	(.0011)
Imm*Education	-.0117***	-.0257***	-.0201***	-.0238***	-.0276***
	(.0007)	(.0009)	(.0010)	(.0007)	(.0023)
Constant	9.4309***	9.4259***	9.4302***	9.4842***	9.4224***
	(.0109)	(.0118)	(.0112)	(.0098)	(.0121)
R^2	.1630	.1673	.2206	.2527	.1749

Observations	210,936	142,349	190,286	274,039	120,758

*Statistically significant at the .10 level; **at the .05 level; ***at the .01 level.

Note: Standard errors are reported in parentheses. Additional control variables are indicator variables for year of observation and interaction terms between the age and education variables and period indicators. The constant term is evaluated at 25 years of age and 11 years of schooling. Samples cover 1970, 1980, and 1990.
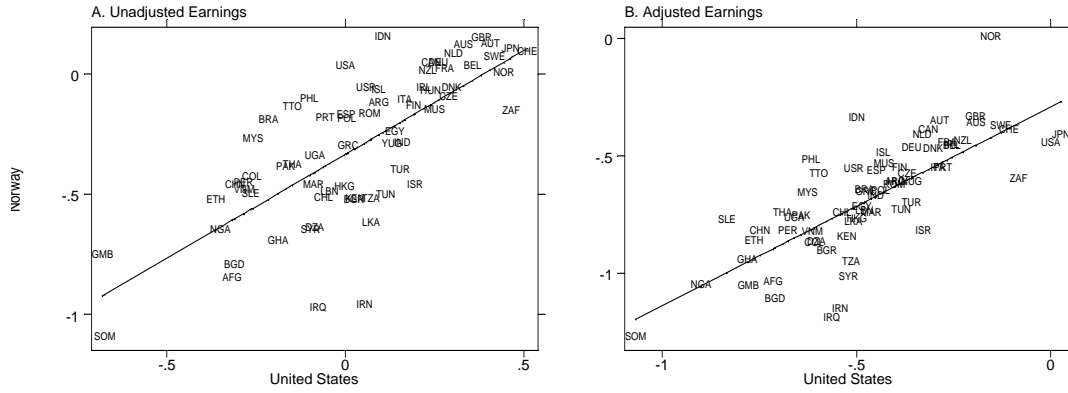
Fig 5-1: Relative Earnings of Immigrants, Norway vs. US

Note: Figures plot 1990 male immigrant-native earnings differentials listed in Table 5-3.
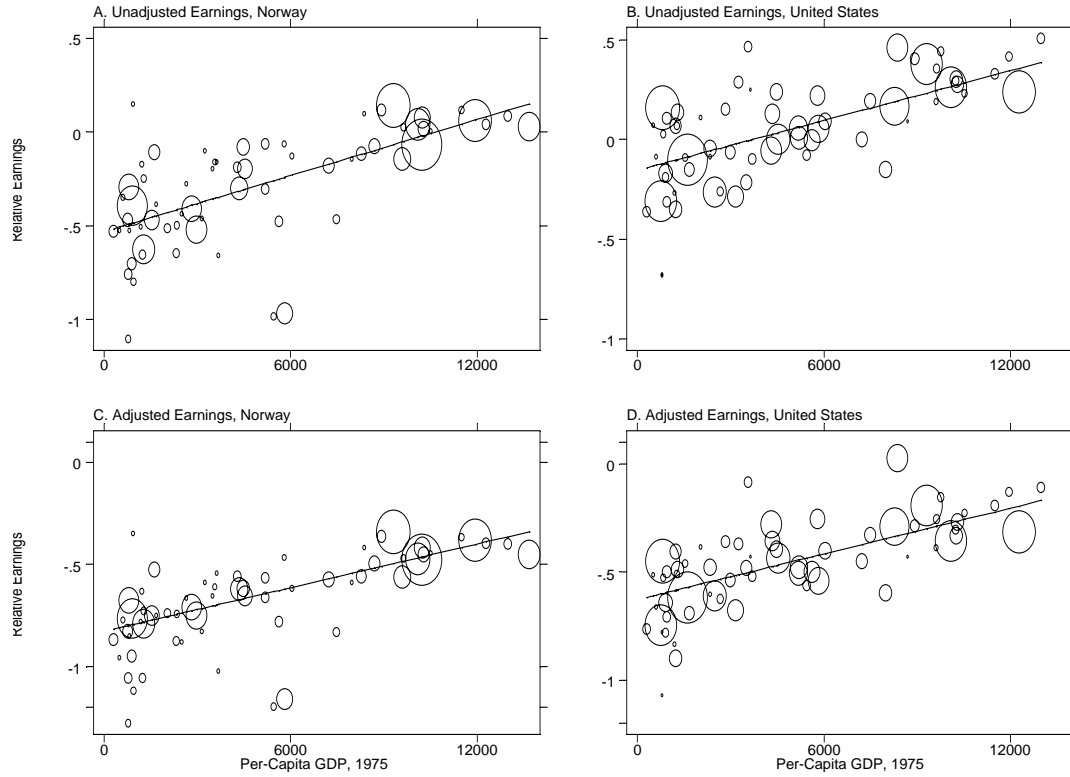
Fig 5-2: GDP and Relative Earnings of Immigrants

Note: Figures illustrate relationship between male immigrant-native earnings differentials listed in Table 5-3 and 1975 per-capita GDP of source country. Size of symbol reflects cell size in micro data. Solid lines represent predicted differentials based on regressions in Table 5-4.
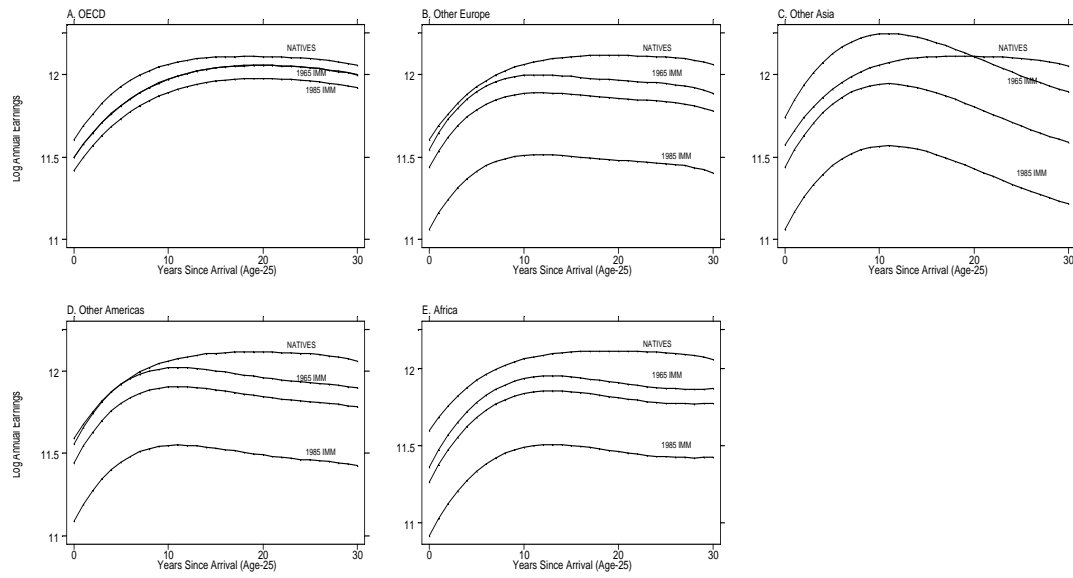
Fig 5-3: Predicted Log Earnings, Males in Norway

Note: Profiles illustrate log earnings paths of native and three cohorts of immigrant men (1965, 1975, and 1985 arrivals) by national origin and are based on coefficient estimates listed in Table 5-5.
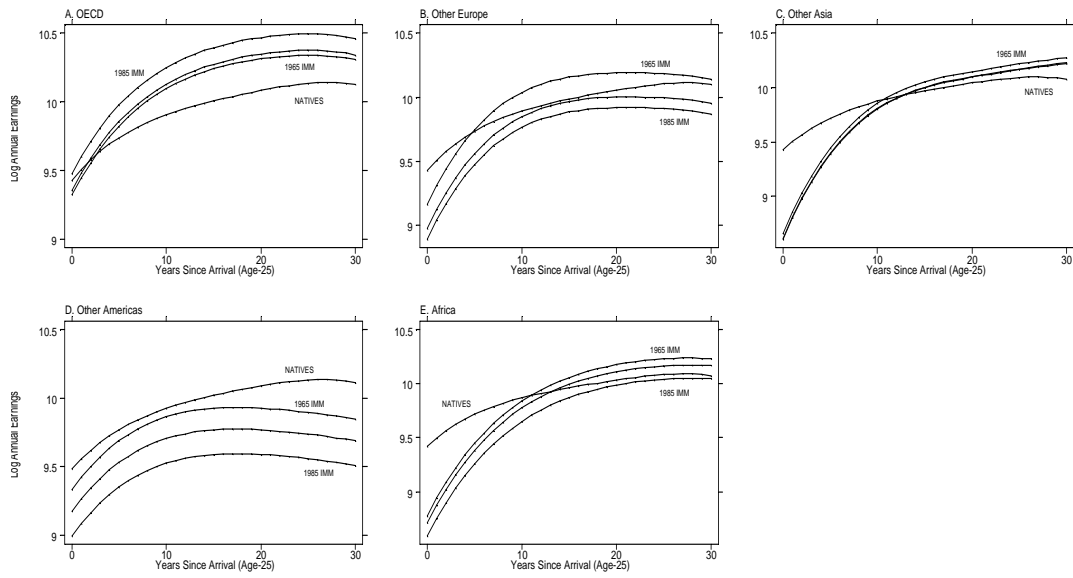
Fig 5-4: Predicted Log Earnings, Males in the United States

Note: Profiles illustrate log earnings paths of native and three cohorts of immigrant men (1965, 1975, and 1985 arrivals) by national origin and are based on coefficient estimates listed in Table 5-6.

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