

The Economic Effects of Immigration into the United Kingdom

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THIS ARTICLE EXAMINES the economic impact of immigration. The main emphasis is on the United Kingdom, but extensive material is also provided on other countries, both for comparison and to fill in certain gaps in the British evidence.

Since 1997 a new UK immigration policy has displaced previous policy aims, which were focused on minimizing settlement. Large-scale immigration is now officially considered to be essential for the UK's economic well-being and beneficial for its society; measures have been introduced to increase inflows. The benefits claimed include fiscal advantages, increased gross domestic product per head, a ready supply of labor, and improvements to the age structure. Fears that large-scale immigration might damage the interests of unskilled native workers are discounted.

We examine these claims as they relate to population and economy. We conclude that the economic consequences of large-scale immigration are mostly trivial, negative, or transient; that the interests of more vulnerable sections of the domestic population may well be damaged; and that any small fiscal or other economic benefits are unlikely to bear comparison with immigration's substantial and permanent demographic and environmental impact. We demonstrate that such findings are in line with those from other developed countries.

Development of a new immigration policy

UK immigration policy has been turned around. A restrictive policy on immigration had evolved in the late 1950s to limit the new and unexpected rise of immigration from New Commonwealth countries, hitherto subject to no controls. Its aim has been summarized as keeping to "an irreducible

minimum the number of people coming to Britain for permanent settlement" (Home Office 1994: iii). The Conservative government's 1962 Commonwealth Immigrants Act and the Immigration Act of 1971 progressively brought the entry of Commonwealth citizens under the same controls that had applied to foreign citizens since 1920. Despite initial Labour Party opposition and continued unease by sections of that party, the legislation survived the incoming Labour governments of 1964–70 and 1974–79 and was indeed strengthened in 1965 and 1968, although implementation of the Immigration Rules was considerably softened in 1974–79.

All that has changed since 1997, when the incoming Labour government began to make a decisive break with previous policies and attitudes toward immigration. Immigration had not been salient in the 1997 General Election, despite a rising trend in entrants under the previous Conservative government (Coleman 1997) and concerns about asylum seekers. Apart from a promise (rapidly implemented) to remove the "primary purpose rule" that had restricted arranged marriage migration (mostly from South Asia), the Labour Party manifesto contained few proposals. The first statement of new government policy in an official White Paper (Home Office 1998) presented no noteworthy novelties, although the commitment to "minimizing settlement" was dropped.

A radical reevaluation was maturing, however, heralded as long ago as 1994 in a publication by a Labour-leaning think tank, the Institute for Public Policy Research (Spencer 1994). The first clear signal of a new departure was made in a significant speech in 2000 by a Home Office junior minister, who promoted migration as an economic, social, cultural, and demographic asset (Roche 2000). While muted concessions to the continued need for regulation were still present, the main thrust was now to welcome and promote immigration, not to limit it. Initially the rhetoric was cautious, claiming only that "[m]igration can play a positive role in the economy," that "migrants...are more resourceful, entrepreneurial and ambitious than the norm," and that "the contribution migrants have made to the country is clear," with the added bonus that "[m]igration could help ease [the] economic impact of [population] ageing."

To dampen anxieties, the minister insisted that no radical change of direction was involved, for according to the speaker "Britain has always been a nation of immigrants" (Roche 2000)—a statement now often repeated in official pronouncements. In fact, this is a misleading half-truth. There has always been immigration into Britain, but the pace has accelerated markedly in recent times. Relative to population, apart from a few short-lived episodes, the scale of immigration is now much greater than during any period since the Anglo-Saxon and Danish invasions of the first millennium, the impact of which upon the genetic structure of the population is still very evident (Weale et al. 2002). The demographic history of England

is as well known as any (Wrigley and Schofield 1981; Baines 1991); Britain has been a country of emigration until recently, with immigration usually playing a minor role in its demographic development.

The second White Paper (Home Office 2001a), supported by a generally favorable Home Office review of migration and its consequences (Glover, Gott et al. 2001), completed the transition to the new approach. While still alluding to the need for regulation and to the “duties” as well as the “human rights” of immigrants, its proposals broke new ground in setting out numerous policies to abandon old restrictions and promote immigration. (A short summary of the new proposals can be found on the Home Office website.¹) In rejecting the notion that migration can or should be strictly controlled in favor of an emphasis on its benefits, a general policy of “managed migration” has thus been adopted, similar in outlook to that developed in organizations such as the Council of Europe (Salt 2003a) and the International Organization for Migration (IOM 2003), although not at present by most individual European countries.

The trend of net international migration to the UK is shown in Figure 1a, and separately by British and foreign citizenship in Figure 1b. A continuous long-term series cannot be shown at present. According to the 2001 census, the UK population size was about one million smaller than the intercensal estimates for the same year (see Redfern 2004). Because the census was initially defined to be infallible, downward adjustments were required elsewhere. Accordingly, net immigration estimates back to 1991 were substantially reduced, although the cuts have been partially restored in a second readjustment; a third may be forthcoming. Population projections were also affected by this incompatibility. Even after the upward readjustment of the net migration estimates, the 2002-based projections (GAD 2004a) had to incorporate an annual deduction of 27,000 for “unattributable population change” in order to make them fit the revised census totals. The latter concept was abandoned in September 2004 when ONS issued further revised population estimates and was omitted from the 2003-based principal projection (GAD 2004b). The post-1991 net migration series has not yet been reconciled with the pre-1991 series; other difficulties with respect to the precise reconciliation of some demographic statistics will become apparent below. Despite all that, however, a change of trend in net migration since the late 1990s seems to be apparent, as indeed intended by the new government policy.

The rise of a new orthodoxy

Although not devoid of cautious caveats, the new government policy holds that regular, large-scale legal immigration is essential to the continued prosperity and international competitiveness of the UK economy. Indeed David

FIGURE 1a Net immigration to the UK according to two definitions, 1963–2002

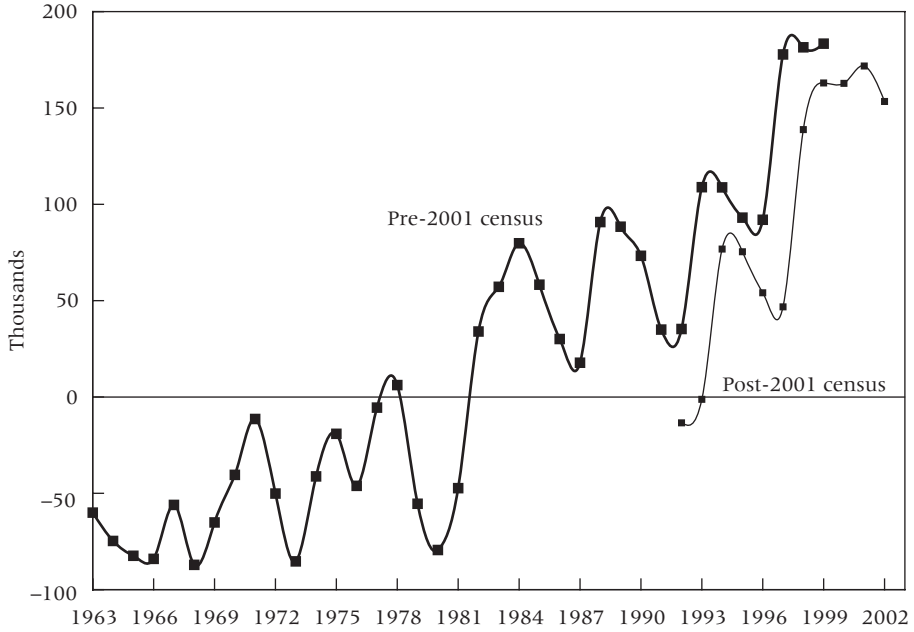
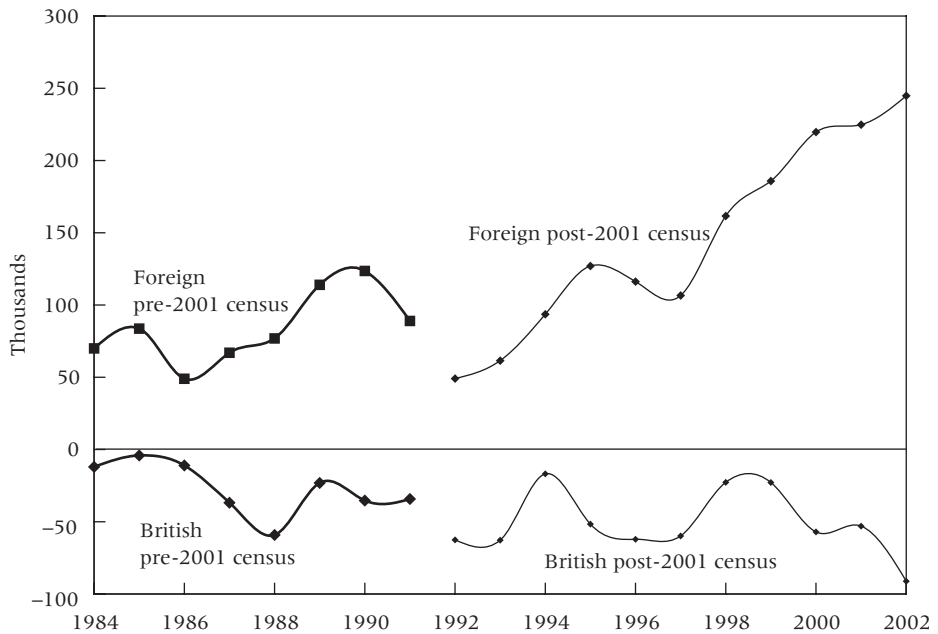


FIGURE 1b Net migration by foreign and British citizenship, UK, 1984–2002



SOURCE: ONS (2004a) and previous issues.

Blunkett, the cabinet minister now in charge of immigration policy, has declared that he sees “no obvious limit” to immigration (BBC TV Newsnight, 13 November 2003).² On the whole the new message has found much favor among the liberal, and especially among the metropolitan, elite, including business interests and economic commentators as well as left-liberal political groups. It enjoys the general support of the broadcast media, notably the BBC and its website, and much of the high-end press including (usually) the *Financial Times* and *The Economist*, numerous pressure groups representing asylum, immigrant, and human rights concerns, the Commission for Racial Equality and other quangos, and church opinion. Thus has been created a new and positive Establishment orthodoxy in favor of immigration. As is the case in other countries, however, public opinion remains unconvinced, with majorities feeling that immigration is excessive, out of control, and in need of further restriction.

For example, opinion polls in Britain since 2003 have shown that concern about immigration and asylum has risen to between third and first place among the most important current political issues reported by respondents, in sharp contrast to the relatively insignificant position that it occupied in most previous years. Between 29 percent (MORI, November 2003), 39 percent (YouGov, August 2003), and 56 percent (YouGov Daily Telegraph, 26 May 2004; King 2004)³ of respondents have stated that immigration and asylum were the most important current issue, compared with fewer than 10 percent a decade ago. In the last-mentioned poll, 82 percent of respondents stated that immigration and asylum policies were “not tough enough,” as did 46 percent of even ethnic minority respondents. This divergence between elite and mass opinion on migration and related matters is found in numerous other democracies, including so-called countries of immigration such as the United States, Canada, and Australia (Betts 2004). For example, a nationwide US Gallup Poll in June 2004 indicated that 49 percent of respondents wanted immigration decreased, while 14 percent wanted to see an increase, and that almost half believed immigration had a negative effect on taxes and crime.⁴

The economic case for large-scale migration

What, then, are the economic arguments put forward in defense of the new policy by its advocates inside and outside government? They fall into two categories: general arguments from considerations of economic theory, applicable to almost any national or regional situation; and other, often more empirical considerations closely focused on the European situation in general and on the UK case in particular. It is to the latter that most attention is given here. Most of these claims are two-sided: why national prosperity will falter without even more immigration; and how immigra-

tion is a positive benefit to the UK economy, its labor force, its society, and its demography.

Promotes population growth

Perhaps the most general pro-immigration case derives from the old mercantilist assumption that larger populations are better than smaller ones and that population growth is therefore welcome, underwriting national security in a variety of ways both military and civil. Insofar as immigration contributes to population growth or averts population decline, it should therefore be encouraged. These views on the long-run benefits of population increase (Simon 1986: Ch. 10; Sauvy 1969) are almost as old as states and empires themselves (Glass 1967: Ch. 2; Teitelbaum and Winter 1985). More specifically, moderate population growth and therefore its augmentation by immigration are believed by some economic theorists to have generally beneficial effects upon economic growth and the welfare of the native population (e.g., Simon 1989a: Ch. 17). Business interests, especially across the Atlantic, often assume this to be axiomatic, on the grounds that a growing population expands the domestic market, augments the size of the future labor force, and facilitates economies of scale, thus averting labor shortages and wage inflation and promoting productivity.

Averts population aging

Given their lower fertility and longer survival, most European countries face the end of population growth within the next few decades. In some countries such as Italy and Germany, deaths already exceed births, at least among the native population. Population decline would, it is claimed, reverse the advantages of population growth listed above. Population decline also goes hand in hand with population aging and its problems. So it is argued that immigration can ease the problem of supporting and caring for the relatively larger elderly population that is a consequence of population aging. A labor force that is smaller in relation to more numerous pensioners weakens the economic and demographic basis of welfare systems (International Labour Organization 1989; Johnson, Conrad, and Thomson 1989; Stolnitz 1992), especially pay-as-you-go systems, although funded schemes are not immune either (Chand and Jaeger 1996; Eatwell 2000; Gillion 1999).

Fills undesirable jobs

Finding labor for undesirable jobs is expected to become particularly difficult. Large-scale immigration specifically from poor countries with low wages and low expectations concerning conditions of work will be needed to fill "dirty" jobs that are difficult to mechanize and that the domestic labor force

will not undertake as its expectations rise. A permanent stream of first-generation immigrants will be needed to fill the bottom layer of this “dual labor market” (Piore 1979; Stalker 1994: Ch. 4; Fassmann 1997).

Augments the labor force

Immigration, by expanding the labor force, has been claimed to be an important moderator of inflation, and in the case of a declining native labor force permits enterprises to flourish that otherwise would have to close down, thus maintaining the level of output (for the United States, see Reubens 1987; Papademetriou and Martin 1991; for Europe see OECD 1978; Steinmann and Ulrich 1994). The initial European guestworker inflows of the 1960s are cited as having been essential to maintain labor supply at that time (Frey and Mammey 1996), and mass migration to the United States is said to be the basis of its past and current prosperity (Center for Labor Market Studies 2002; Chicago Council on Foreign Relations 2004) and the prosperity of the UK in the future (McMahon 2003). The role of immigrants as “replacement workers” in the UK has been cited (e.g., Peach 1967), for example Asians in the cotton mills of Yorkshire, together with the perennial example of immigration as the salvation of the National Health Service and metropolitan talk of how the building trade, access to nannies, and civilized life in the capital would decline without immigrants.

Does no harm

The preceding claims are balanced by a more defensive analytical literature claiming that mass migration, even an influx of illegal and unregulated labor, does not do any, or at least not much, harm (Venturini 1999; Venturini and Villosio 2002). The theoretical effects of immigration in curbing labor costs, claimed to be effective and beneficial when considered in the light of inflation, are found to be nonexistent when considered as an actual threat to the real wage levels of workers, instead even increasing their salaries or productivity by liberating them from less skilled work.

Cuts taxes

In parallel with the labor market advantages, immigration is also claimed to be fiscally beneficial. Inflows generate a net positive contribution to the national accounts because the modest welfare costs of (mostly youthful) immigrants are more than compensated by the tax contribution of (mostly working) immigrants (Gott and Johnson 2002).

In short, then, without large-scale immigration the UK and Europe in general will become an aging, uncreative, and poorer society, beset by high

taxation and inflationary wage claims, serious intergenerational conflicts, and deteriorating international competitiveness.

A critique of arguments for increased immigration

It is not possible to deal with this wide range of arguments in a single article. We concentrate on the more specific arguments relating to the UK, especially to population, labor force, and government finance, and on the broader costs of this great experiment. While believing that most of the propositions outlined above are either wrong or greatly exaggerated, we begin by noting that there is some common ground in this debate about the economic merits of migration. There is widespread agreement that some level of migration between open societies participating in a global exchange of trade and other contacts is both normal and desirable for all concerned. Our dispute is with those who claim that the new policy of mass immigration will be of economic benefit to the existing population of the UK and to their descendants.

We do not consider the possible advantages of immigration to the sending countries, because that has not been a central part of the case made by those promoting the new immigration. Migration is obviously in the interests of the migrants themselves. However, there is no consensus concerning the impact of migration on the sending countries. The traditional view was that these countries would suffer from the loss of skilled and talented labor (Beine et al. 2001), but would also benefit from the money sent home by migrants in the form of remittances. Both views have been questioned in recent years. Some authors now claim that the brain drain may sometimes encourage the economic development of poorer sending countries (Beine et al. 2001), while others claim that migrant remittances may harm those countries' development prospects (Chami et al. 2003). Such claims are based on the supposed effect of the brain drain and of remittances upon the incentives for economic growth within the sending countries.

In this article the terms "large-scale migration" and "mass migration" are used more or less synonymously. These have no exact definition. But the use of such adjectives is appropriate in view of the contrast between the scale of current migration to the UK and that of the recent past, its absolute size in relation to the settlements in which the inhabitants of the UK live, its relative magnitude in comparison with vital events, and its substantial and primary role, if continued, in promoting further population growth over the next few decades. Until the early 1990s, net immigration to the UK was negative. In 2002, net inflow in that year alone (153,000) was greater than the population size of the city of Oxford. Such annual net migration, officially assumed to be indefinite, would add about 6 million people to the UK population by midcentury. Net migration is equivalent to almost a quarter of the current annual total of births. The annual net immigration of foreign citizens—245,000 in 2002—is even more demographically potent.

Modern mercantilism: Immigration and population growth

Perhaps we can dismiss summarily the arguments for immigration as a pump for population growth. Political and military might certainly accrue more readily to larger countries (McNicoll 1999). But recent experience in the European Union and in some disputes between peaceful states suggests that small countries within a civilized international order can have influence out of proportion to their size, such as Sweden and the Irish Republic (Krebs and Levy 2001; Weiner and Teitelbaum 2001: Ch. 3). For the most part, it would be vain for countries locked into modern low-fertility demographic regimes to seek to change their position appreciably in the international league table of population size. While a large domestic market can obviously be an advantage, greater economic advantage should come from the adoption of free trade and single markets, and greater security from alliances. Naturally, total GDP tends to expand with total population size, but this has no necessary bearing upon individual welfare. What matters to the existing population is not GDP for its own sake, but GDP per head. There is no statistical association between population size and GDP per head, or between population growth and growth in GDP per head (Simon 1989b; Barlow 1994; Kelley and Schmidt 1995; Sheehey 1996; Barro and Sala-i-Martin 2003). In the industrial world, small countries are as rich as big ones. There may, however, be a weak relationship in some years between growth in population and growth in per capita income. But that is more likely to be the case because successful economies attract immigrants. In particular the claim that US prosperity has been driven by immigration (often made by journalists and business interests), as opposed to driving it, appears to lack any academic support.

Immigration and the growth of GDP

In a refinement of this population argument, immigration is additionally claimed to promote growth in GDP through its selective augmentation of the population of working age. Such claims usually rest upon two assumptions: (1) that immigrants are on average comparatively young, hence immigration increases the share of working-age people in the population; (2) that an increase in the population of nominal working age arising from immigration, leads automatically to a commensurate increase in total GDP. The first of these assumptions is generally correct. The second is generally false in the case of mass immigration along the current pattern. It assumes that immigrants of working age will perform just as well as their native counterparts in terms of employment and productivity, that any jobs filled by immigrants will be additional to those currently held by natives, and that immigrants do not displace native workers. In Europe these circumstances seldom hold true.

Let us take the example of the claim made in UK Prime Minister Tony Blair's speech of 27 April 2004.⁵ This was a significant statement designed to reaffirm a policy that had come under increasing criticism. It was the first speech by a British Prime Minister addressing the issue of immigration for 25 years. In a statement since widely quoted in support of continuing high levels of immigration, Blair claimed that "economic growth would be almost one-half percent lower" if net immigration were to cease—a figure rounded up from the 0.4 percentage points actually implied in the only explanatory source, a brief answer to a Parliamentary Question on the subject.⁶ That answer was in turn based upon Treasury estimates of 2.5 percent trend growth in the economy, of which 2.0 percent came from productivity increases and 0.6 percent from increases in the population of working age (some other, small contributions to trend growth are negative). Of the latter, two-thirds was from immigration in 2001–02. Thus 0.4 percentage points, or about 16 percent of the GDP growth of 2.5 percent, can be attributed to immigration given the Treasury assumptions (HM Treasury 2002a: Table 3.9).

The figure of 0.4 percent of GDP, therefore, is merely the annual increase in the population of nominal working age arising from net immigration between 2001 and 2002. The Prime Minister's claim ignored, among other things, the diversity of immigration: the fact that many working-age immigrants during the period in question were spouses with poor employment prospects and few skills of value in a modern economy, or students, or asylum seekers who are not permitted to work; and that immigrant employment may have been partially at the expense of local unskilled workers. Evidence relating to all this is presented in a later section.

But even without such important reservations, the claim takes no account of the contribution to overall population growth by immigration. What matters for national welfare is the increase in GDP per head, not the gross increase. In the year 2001–02 immigration increased the UK population of 59.1 million by 0.25 percent, given net immigration from mid-year to mid-year of 149,000. According to the government, it increased GDP by 0.4 percent over the same period. Thus, even if we accept the government estimate regarding the impact of immigration on national output, its effect was to raise GDP per head by 0.15 percent.

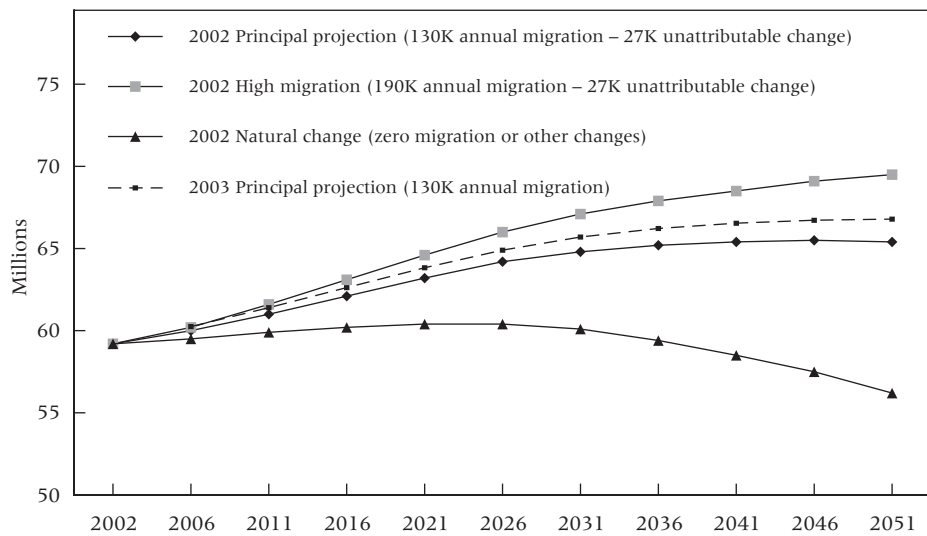
Immigration and population decline

Is the UK facing the prospect of population collapse that some other countries are allegedly confronted with? The answer is no, on present knowledge. The projections of the Government Actuary's Department (GAD 2004a) suggest that even in the complete absence of immigration, and given only a minuscule increase in the total fertility rate from the current 1.74 to 1.75, the population of the UK would continue to grow slightly from 59.3 million in 2002 to a peak of around 60.4 million in 2026 before a return to

59.4 million by 2036. Further relatively slow fertility decline would take the UK population down to 56 million in 2051, and, assuming fertility still at the 2002 level, to 49 million in 2070, the same as the population of 1950 and 10 million more than in 1900. Many people would probably welcome such a development on environmental grounds.

The prospect facing the UK at the moment and in the medium term is not decline but the resumption of immigration-fueled population growth, which is relatively fast by industrial country standards, with all its attendant problems of demand for new housing and other infrastructure provision. Thus on the 2002-based Principal Projection, which assumes annual net immigration of 130,000, effectively reduced to 103,000 by “unattributable population change” of 27,000, UK population is expected to grow by 6 million, reaching 65.3 million in 2051 (GAD 2004a); on the “high migration” variant where the assumed level of net migration is 190,000, higher than the actual 2002 figure of 153,000, population reaches 69.5 million by 2051 and increases further to over 70 million. It should be noted that GAD principal projections customarily employ net migration assumptions substantially lower than those actually estimated for current years by the ONS, in this case 28,000 compared with the average of the previous five years. In our opinion, this practice is unwarranted. The 2003-based projections did not incorporate variants, but the Principal Projection indicated a further increase (Figure 2), to 66.8 million in 2051 (GAD 2004b), thanks to the abandonment of the deduction for “unattributable population change,” which appears now to have found a home.

FIGURE 2 UK population projections 2002–2051, 2002-based and 2003-based



SOURCE: GAD (2004a, 2004b).

TABLE 1 Effect of migration on UK population size 2002–31

	GAD 2002-based projections (thousands)			
	High migration	Principal projection	Low migration	Zero migration
Projected UK population total 2031	67,051	64,835	62,618	59,229
Net annual migration assumption 2002–31	190	130	70	0
Total population increase 2002–31	7,822	5,606	3,389	173
Net migration	5,500	3,790	2,080	0
Natural increase with no migration	966	966	966	966
Additional natural increase with migration	2,139	1,633	1,126	0
Other (unattributable population change)	–783	–783	–783	–783
Contribution of migration to growth (%)	97.7	96.7	94.6	0
Contribution of migration excluding UPC (%)	88.8	84.9	76.8	0

NOTE: The bottom line excluding unattributable population change (UPC) from the denominator (i.e., increasing the denominator) is the more appropriate figure for the overall effect of migration. The 2003-based projection omits the UPC element and accordingly projects correspondingly higher population totals.

SOURCES: GAD (2004a,b,c).

This prospective growth is mostly due to the (conservatively) assumed continuation of the recent levels of net immigration. Official figures from the UK Office for National Statistics (ONS) initially showed that 66 percent of population growth in the UK from 2000 to 2002 was the result of net immigration. Furthermore 85 percent of the 5.6 million additional UK population expected by 2031 according to the GAD 2002-based Principal Projection would be a consequence of net immigration after 2002 and of the natural increase of those immigrants (Table 1). These estimates incorporated “unattributable demographic change.”⁷ It may be added that the first author considers the unchanged level of fertility assumed in these projections (1.74 throughout) to be unrealistically low.

Projection of population over a 50-year interval is something of a leap in the dark. The scope for movement in birth and death rates seems to be limited, however, and in this respect GAD projections are probably conservative. The projections can at least indicate the consequences of specified assumptions regarding net migration. If the substantial UK population growth envisaged in the 2002-based Principal and High-Migration Projections is not to come to pass, then the trend of migration will have to fall, either through policy changes or for exogenous reasons.

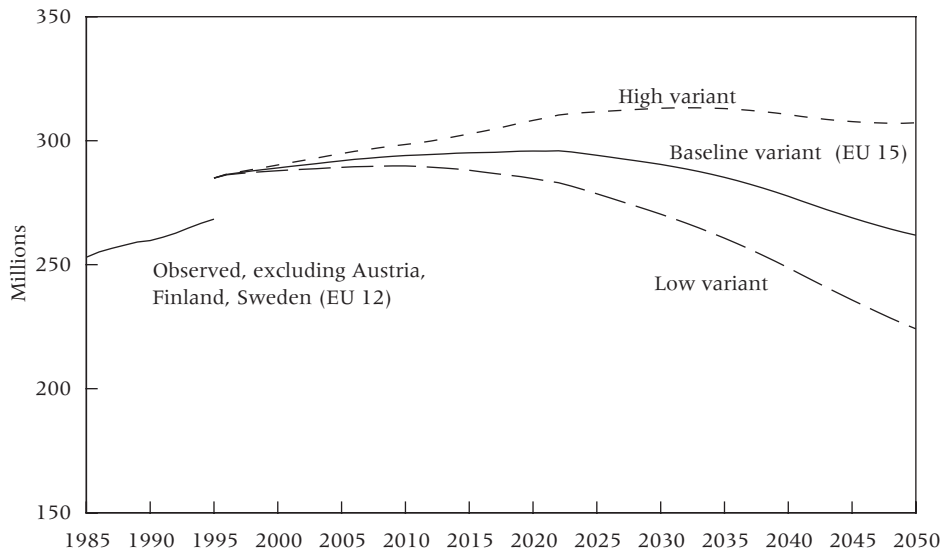
Immigration and the population of working age

It is often claimed that Europe, and the UK, have a general need for mass immigration, irrespective of specific economic or labor market considerations, arising from projected decline in the size of the population of nominal working age, usually defined as the population aged 15–64 or (by Eurostat)

20–59. Indeed, such an eventual decline does seem likely in almost all European countries on most current projections, although it is avoided up to 2050 in the “uniformity” scenarios for Northern and Western Europe of van Hoorn et al. 1999. However, anxieties on this issue tend to be somewhat telescoped: “projected” becomes “now.” Projections of the population of working age by the United Nations and other sources show that the numbers of potential workers will increase for at least another ten years in the 15-country EU as a whole (Figure 3). Moreover, there is no common European problem. In different parts of Europe, declines in the population of working age are projected to set in at very different times. The same diversity applies to the projected population of labor force entrance age, here taken to be 20–24 (Figure 4).

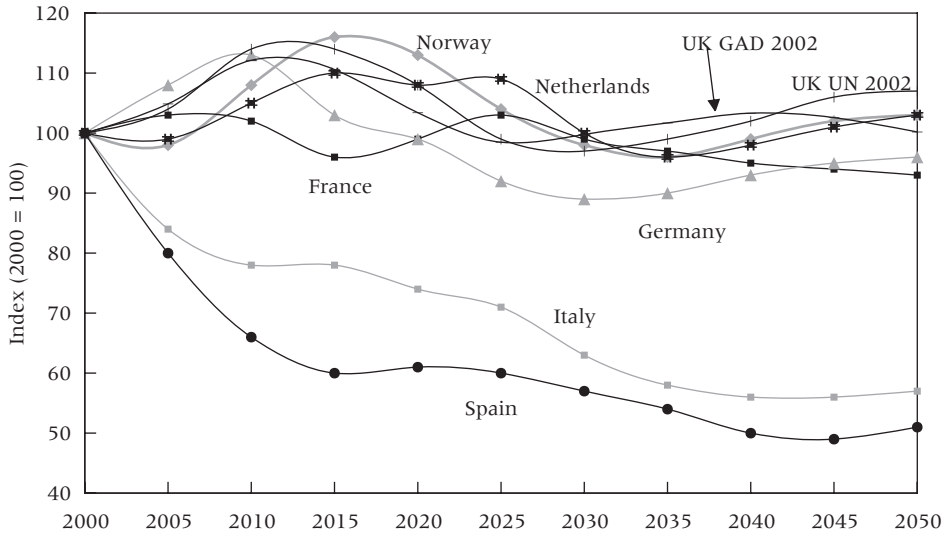
The 2002-based United Nations projections shown in Figure 4 (UN 2003) assume that total fertility rates will increase to a uniform 1.85 by 2050. The 2002 projections also include an element of net immigration, mostly at fairly high levels and kept at a constant level. On the basis of the UN assumptions, some countries, including the UK, face no fall in their potential working-age population, or in their population of labor-force entrance age, for decades. For the UK, the 2002-based Principal Projection from the Government Actuary’s Department (GAD 2004a) comes to similar conclusions even without the increase in fertility expected by the UN (1.74, not the UN’s 1.85).

FIGURE 3 Projections of the labor force (aged 15–74), 1995–2050, European Union (15 countries)



SOURCE: de Jong 1999: Figure 3.

FIGURE 4 Index of the projected population aged 20–24, selected European countries 2000–2050



NOTE: The UN 2002-based projections (UN 2003) used here assume that TFR will rise to 1.85 by 2050 in the countries depicted here. In most cases the immigration assumption is fairly high (e.g., net 211,000 per year for Germany, 135,000 for UK) and is kept constant to the end of the projection. In the case of France, the UN fertility assumption implies a decline.
SOURCES: UN (2003); GAD (2004a).

The GAD envisaged a population of nominal working age (assumed as 15–64) increasing from 38.8 million in 2002 to a maximum of 40.1 million in 2013 and declining slightly to 38.5 million, about today’s figure, by 2051. Plenty of time, it would seem, to plan for a fall of less than one percent.⁸ This projection assumes annual net migration of 130,000, with growth deflated by the further subtraction of 27,000 annually for “unattributable population change.” Without any migration, according to the GAD 2002-based “natural change” scenario, population aged 15–64 (38.8 million in 2002) would increase to 39.4 million by 2011 and not fall below the current level until 2015.⁹ The 2003-based projection issued in September 2004 no longer incorporates the concept of “unattributable demographic change,” but at the time of writing no variant projections had been issued that can be compared with the 2002-based data. However, that amendment is likely to increase the projected population of nominal working age with zero migration by a further half-million by the 2020s, postponing any decline below current numbers until after 2021.

Numbers in the potential working-age groups are likely to begin to fall quite soon in countries that have experienced especially low fertility for some years, such as Germany, Italy, and Japan, but much less, or much later, in countries such as France, Norway, and the Netherlands where fertility has remained higher or in recent years has even increased. Projected

TABLE 2 Projected population aged 15–64, according to two migration scenarios, in millions, selected countries, 2000–2050

	France		Germany		Italy		UK	
	Zero	Medium	Zero	Medium	Zero	Medium	Zero	Medium
2000	38.5	38.7	55.1	56.0	38.5	38.9	38.2	38.2
2005	39.1	39.6	53.5	55.2	37.4	38.1	38.7	39.5
2010	39.6	40.4	52.1	54.6	36.6	37.4	38.9	40.4
2015	39.0	40.0	50.7	54.4	35.2	36.2	38.2	40.6
2020	38.1	39.7	48.2	53.2	33.7	35.1	37.5	40.8
2025	37.4	39.4	45.0	51.2	31.7	33.4	36.5	40.7
2030	36.6	38.7	41.1	48.6	29.0	31.0	35.2	40.1
2035	35.9	38.2	37.7	46.2	26.5	27.9	34.3	39.8
2040	35.2	37.6	35.9	45.7	24.1	26.1	33.8	39.8
2045	34.8	37.4	34.5	45.8	22.7	24.5	33.3	40.1
2050	34.3	37.1	32.7	45.0	21.6	23.6	32.7	40.1
Final annual net immigration, thousands (2045–50)	0	75	0	211	0	62	0	135
Final TFR (2045–50)	1.96	1.85	1.64	1.85	1.66	1.85	1.9	1.85

SOURCES: For zero migration UN (2001) 1998 revision tables A.1 to A.14, medium variant assumptions for fertility and mortality; for medium variant migration UN (2003) World Population Prospects 2002 revision Volume 1.

levels of immigration make a contribution to the outcome, of course, and in some cases an important one. Table 2 shows some contrasting examples of the most recent (2002-based) assumptions of the United Nations, and also on the assumption of zero migration. The assumptions behind the UN 2002-based projections (UN 2003, medium variant) were noted above. The “zero-migration” data are taken from earlier, 1998-based UN projections (2001), which are the latest ones to incorporate a zero-migration variant. These assume a more modest recovery in fertility levels.

Much can happen in 50 years. If population decline is eventually considered to be a problem and birth rates have not increased, the immigration tap can be turned on at any time, although, as always, turning the tap off is more difficult. Potential immigrants are always assumed to be available, at least until the end of the century. In the more remote future, however, even that option may be foreclosed as global birth rates fall: some projections expect global population decline after 2070 (Lutz et al. 2001).

Replacement migration: An idea in retreat?

The notion that immigration can preserve the age structure of populations has enjoyed some popularity, in particular that immigration could preserve

the “potential support ratio” (PSR), that is, the ratio of persons of nominal working age (conventionally 15–64 years) to those of pensionable age (conventionally 65+). Immigration could thus act as a demographic elixir of youth, eliminating the problem of population aging and its associated economic difficulties and permanently defusing the “demographic time bomb” of which Western media are so fond. It is of course true that immigration to developed countries tends to make their populations younger, other things being equal, because immigrants tend to be younger than the average member of those populations. The “replacement migration” concept became temporarily popular as a “solution” to population aging following an ingenious analysis by the Population Division of the United Nations (2001). Their report showed the average volumes of annual net immigration that various countries and country groupings would need in order to hold population, working-age population, and potential support ratios constant up to 2050, given the 1998-based UN assumptions of future fertility and mortality.

The UN report showed that the stabilization of population numbers and even working-age population through immigration seemed to be within the realm of the possible, insofar as the levels of inflow technically “required” did not always seem to be unimaginably high, although they did need to be implausibly variable across countries. However, the report reminded its readers of the fundamental demographic principle that, given subreplacement fertility, population size could only be maintained by the eventual replacement of the original population by the immigrant one (Steinmann and Jaeger 2000). The working-age population could only be maintained with that proviso, and countries would face the resumption of considerable population growth as well as the task of arranging considerable alternating declines and increases in immigrant inflows (Coleman 2000; Shaw 2001).

However, much previous work (Lestheaghe et al. 1988; Wattelaar and Roumans 1996; van Imhoff and Keilman 1996) had already shown that only substantial and increasing levels of immigration could preserve the age structures and the potential support ratios of modern populations, requiring the population to grow to unprecedented size, indeed without limit. Achieving the goal of preserving the current UK potential support ratio of 4.2, for example, would notionally require an average of 1.2 million net immigrants every year up to 2050; and maintaining the ratio to the end of the century would require, by the end of the century, nearly 6 million migrants every year (Figure 5a, b; Shaw 2001). That would increase the population to 112 million by 2050, to 306 million by 2100 (Figure 6), and so on, so that the UK would eventually become the biggest country in the world if it chose to follow that course.

In the well-known limiting case of the Republic of Korea, all the world’s population would have to migrate there by 2050 in order to preserve its current age structure through that year (United Nations 2001; Shaw 2001;

FIGURE 5a Net annual immigration required to maintain constant working-age population and total population, UK 1998–2100

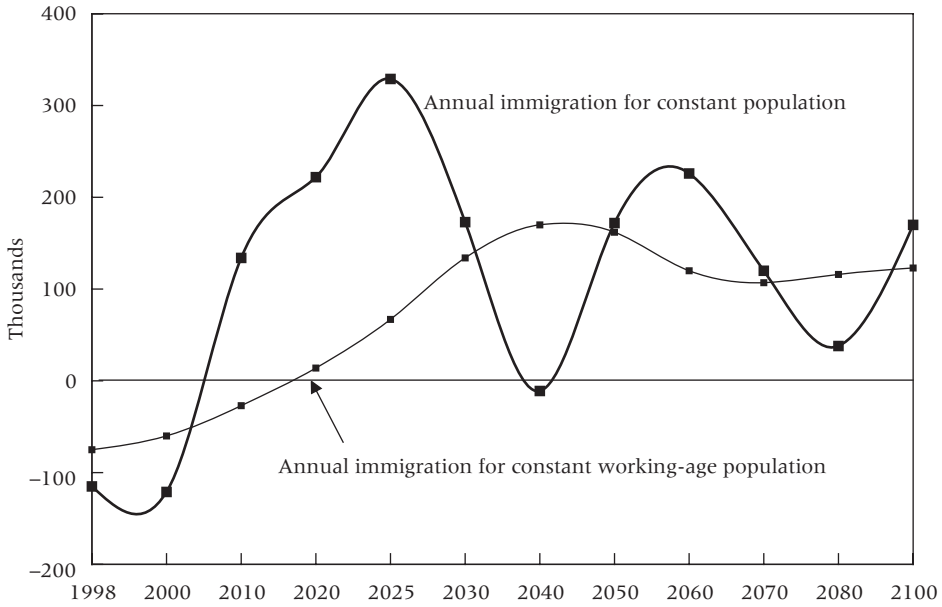
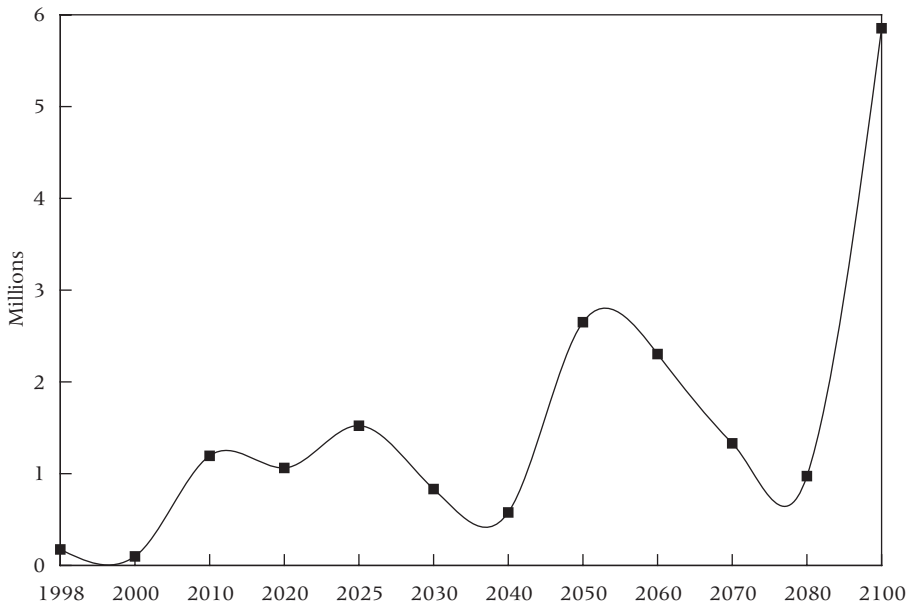


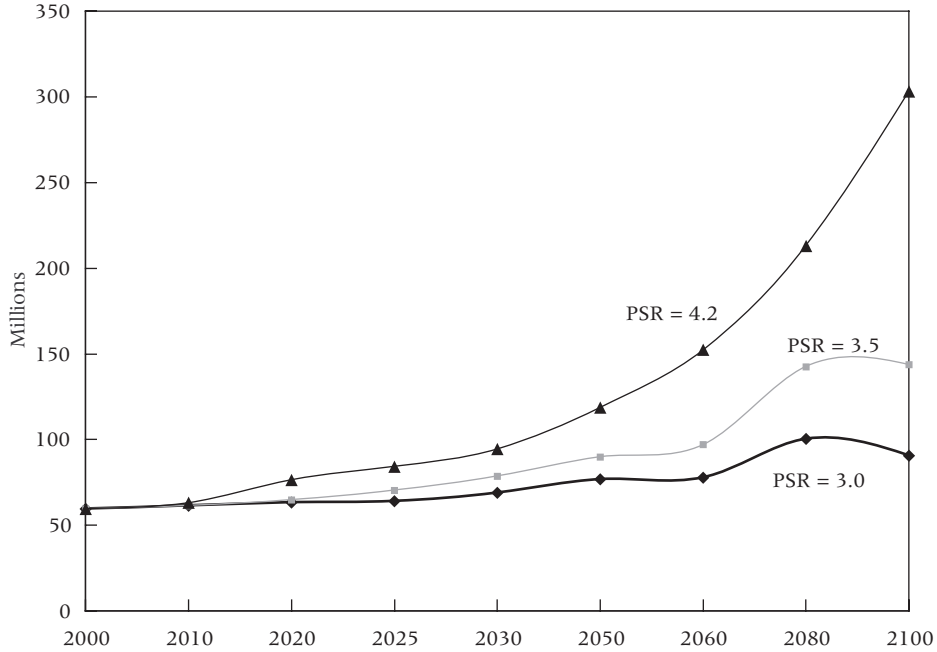
FIGURE 5b Net annual immigration required to maintain UK potential support ratio, 1998–2100 (millions)



NOTE: The potential support ratio is defined as the ratio of the number of persons at age 15–64 to the number of persons 65 and older.

SOURCE: GAD unpublished, using the fertility and mortality assumptions of the 1998-based principal projection.

FIGURE 6 UK population size required to maintain specified potential support ratios (PSR) through immigration, 2000–2100



SOURCE: GAD unpublished.

Coleman 2002). These and comparably amazing figures were originally intended by the UN Population Division simply to underline the inevitability of a substantial degree of population aging and the futility of attempting to arrest it by such crude devices as mass migration. Crude or not, the tone of the UN press release, combined with its literal-minded promotion by prominent migration enthusiasts, led many notable politicians and other commentators to endorse this bizarre vision of the future (for discussion of media coverage of the press release, see Teitelbaum 2004). For a while, no speech by UK ministers on migration was complete without allusion to the sovereign remedial powers of replacement migration against population aging. The notion now receives less emphasis in official speeches in the UK but remains popular in the media.

Nor can there be plausible “salvation” from population aging through higher fertility rates. In the UK the total fertility rate would have to rise to 3.5 to maintain the current potential support ratio of 4.2, generating 1.8 percent per annum population growth in the process. Replacement-level fertility would keep the PSR at nearly 3.0 in the absence of further increases in survival rates and would do so, in the long run, without further population growth and without any net migration (Shaw 2001). Figure 6 shows

that to maintain a similar PSR of 3.0 by immigration alone, without any significant rise in the birth rate, UK population size would have to rise to 77 million by 2050 and to 101 million by 2080. These calculations were based upon the fertility and mortality assumptions of the GAD 1998-based population projections, but they do not differ greatly from more recent ones. For fundamental demographic reasons, fertility offers a more efficient lever on the age structure than does immigration (Lesthaeghe 2000; Lutz and Scherbov 2002).

Europe's labor force potential

The actual size of a country's labor force is not just, or even primarily, determined by demographic factors but by participation rates. In recent decades, changes in labor force participation, especially among women, have had a much greater numerical effect upon the actual (as opposed to potential) labor force than purely demographic change, and this is likely to remain true for some decades to come. Eurostat projections of population, taken together with modest growth in participation rates, suggest that no country in Western Europe except Italy is likely to have a smaller labor force in 2025 than it has today (Feld 2000, 2004). Some other scenarios, for the EU 15 countries together, also offer the prospect of relatively favorable trends at least up to the 2020s (e.g., de Jong 1999), although others take a more pessimistic view (Lesthaeghe 2000; McDonald and Kippen 2001). As seen in Figure 3, de Jong's medium "baseline" scenario incorporates national population projections, including migration, and the continuation of modest upward workforce participation rates. The EU 15 labor force does not fall below the 1995 level until after 2035. Thereafter, without higher fertility or migration, the labor force declines further. Convergence on the participation rates of Denmark—admittedly an uphill task—would add about 34 million persons to the EU 15 labor force. That is approximately the assumption in de Jong's high, "convergence" scenario, which also assumes higher fertility and migration and thereby prevents decline altogether.

Europe's potential labor force is considerable (Fuchs 1995; Fuchs and Schmidt 2000; OECD 2003a) and could be mobilized through reforms of the labor market and—most effectively—later retirement (European Commission 1996; Punch and Pearce 2000; OECD 2003a). Although facing fearsome political obstacles, such reforms are necessary if the EU countries are to achieve the Lisbon goal of becoming the most productive economic unit in the world, in the event moderating their current economic problems and their future pensions burden. Some EU countries have high rates of labor force participation while others have remarkably low rates. University studies extend into the late 20s and 30s, retirement is early, and many women do not seek work at all. Many countries also have high unemployment. In Italy, for example, scarcely three-fifths of the 15–64-year-

old population is (officially) economically active, and little more than half the members of this age group have jobs (Table 3). The situation in Spain is not much different.

Concentration on the potential support ratio, as customarily defined to include only the older population, can be misleading. It ignores the fact that the advanced countries will have fewer children to support because of their lower birth rates. More importantly, it ignores the fact that a large number of people in the age range 15–64 are currently not working and could be mobilized, as noted above, to increase the actual labor force available. To provide a more rounded picture we therefore use an alternative measure, which we call the “real support ratio” or RSR for short. This ratio is defined as follows:

$$\text{Real support ratio} = \frac{\text{number of persons employed}}{\text{number of persons not employed}}.$$

In calculating this ratio we assume, as is conventional, that each child counts as one-third of an adult in terms of dependency costs (Ermisch 1990). Sometimes a ratio of one-half is used in calculations such as these (Gillion 1999) but we prefer the more conservative assumption. The RSR depends on the proportion of the population in each age group that has a job and on the age structure of the population. The changes in age structure that are now occurring will tend to reduce this ratio, whereas higher age-specific employment rates would have the opposite effect.

Table 4 shows the real support ratio for a number of countries in 2000 together with the projected values of this ratio under several employment scenarios. The table reveals some striking contrasts. In 2000, the United States had the highest RSR (1.33), followed closely by the UK (1.17) and then

TABLE 3 Economic activity and employment rates in selected countries, 2000, among the population aged 15–64

	Economically active (%)	Employed (%)
Denmark	80.0	76.4
France	68.0	61.1
Germany	71.1	65.6
Iceland	86.6	84.6
Italy	60.3	53.9
Japan	72.5	68.9
Spain	66.7	57.4
United Kingdom	76.6	72.4
United States	77.2	74.1

SOURCE: OECD (2003b): 175, 300.

TABLE 4 Real support ratios in 2000 and projected rates for 2050 under three employment scenarios (equivalent adults, zero migration)

	2000	A Constant age-specific employment rates 2050	B High employment path 2050	C Very high employment path 2050
France	0.84	0.66	0.99	1.15
Germany	0.99	0.66	0.87	1.01
Italy	0.67	0.45	0.79	0.93
Japan	1.09	0.70	0.85	0.99
United Kingdom	1.17	0.92	1.02	1.18
United States	1.33	1.00	1.07	1.24

NOTES: Real support ratio = number of persons employed ÷ number of equivalent adults not employed; 1 child = 0.33 adults. Employment rate = percent of age group in employment. Employment rates for 15–64-year-olds in 2000 as given in Table 3; employment rates for other age groups in 2000 are assumed to be zero. Employment rates in 2050 under the various scenarios are as follows:

	Scenario A	Scenario B	Scenario C
0–14	0	0	0
15–64	as in 2000	76.4%	80%
65+	0	0	5%

SOURCE: Age-structure projections from UN (2001); medium variant with zero migration.

Japan (1.09). Thus, if official statistics are to be believed, the average Italian with a job had almost twice as many people to support as his or her counterpart in the US or the UK.

All three scenarios shown in this table are based on the same UN projections of future age structure. However, they differ according to their assumptions about age-specific employment rates. Scenario A assumes that the proportion of persons in each age group with a job remains unchanged between 2000 and 2050. Thus, any change in the RSR is entirely the result of changes in the age structure of the population. In every country shown, the RSR falls because there is a large increase in the share of the population aged 65+ (who are assumed not to work under this scenario). The fall is comparatively small in the United States and the UK. Indeed, with zero net immigration and without any increase in age-specific employment rates, these countries would have a significantly higher real support ratio in 2050 than either France or Italy has today.

Scenario B shows what happens if employment rates increase so that by 2050 the proportion of 15–64-year-olds with a job in each country is 76.4 percent, which is the same as in Denmark in 2000; it is assumed that no one of age 65 or older is employed. Scenario C is more ambitious in assuming that 80 percent of 15–64-year-olds and 5 percent of persons aged 65+ have a job in 2050.

In comparing the various scenarios, we note that the impact of demographic changes on the real support ratio in the UK and the United States is quite small, as is the scope for increasing employment. As a result, the real support ratio in these countries does not vary much through time or between scenarios. The opposite is true on both counts in France, Germany, and Italy, where aging has a large effect on the real support ratio but the potential gain from higher employment is also very large. In every country except Japan and the United States, the real support ratio under Scenario C is higher in 2050 than it is today. Moreover, the differences between countries under this scenario are quite small.

This discussion can be summarized as follows. Even in the absence of immigration to rejuvenate the population, aging is unlikely to be a serious problem in the UK and the United States up to 2050. It is a potentially more serious problem in some Continental European countries, but its effects can be largely or entirely offset, at least up to about 2020, by increasing their currently low employment rates, especially among women and older men.

Fiscal arguments for more immigration into the United Kingdom

In promoting the new UK immigration policy, advocates place particular stress on the measurable fiscal benefits of immigration, notably a £2.5 billion “bonus” (Gott and Johnson 2002), and the contribution of immigration to the labor force. These are described as substantial and “essential” to the economic prosperity of the country, apart from other advantages (e.g., in the Prime Minister’s speech to the Confederation of British Industry of 27 April 2004). At this stage we turn to these central supports of the policy. To do so thoroughly, we first consider some of the principles involved.

There are two main approaches to the issue of fiscal accounting: static and dynamic. The static, or cross-section, approach selects a particular group of immigrants and calculates the taxes they pay and the amount of public expenditure they absorb in a given period of time, typically a year. The difference between taxes and expenditure is their net fiscal contribution during the period. The dynamic approach is an alternative procedure that considers the entire stream of future taxes and expenditures associated with immigrants and their descendants. Such taxes and expenditures are discounted back to the base year and summed to give a total known as the net present value. This total is the net fiscal contribution of the immigrants expressed as a capital sum. Although conceptually superior, the dynamic approach may be difficult to apply in practice because it requires diverse assumptions about the future levels of fertility, employment, productivity, tax rates, and government expenditure. The answer arrived at may also be sensitive to the choice of discount rate.

No matter what approach is chosen, static or dynamic, certain decisions must be made with regard to the treatment of government expenditure on goods and services. Where such expenditures are proportional to the number of people in a certain category, they can be allocated on a simple pro-rata basis. Some expenditure is not of this type, however. For example, immigration may lead to conflict and congestion and hence to a disproportionate rise in public expenditure on such items as policing and urban infrastructure. Conversely, other types of expenditure, such as defense, may be only loosely related to population size and at the margin may be unaffected by immigration. In this case immigration has the beneficial effect of allowing fixed costs to be spread over a greater number of taxpayers.

There is also the question of government solvency. To satisfy the inter-temporal budget constraint (that is, the obligation to balance planned expenditure against expected tax receipts), the discounted sum of taxes minus public expenditure must equal zero. In the dynamic approach it is normally assumed that tax rates will be adjusted, either now or in the future, to ensure that this condition is satisfied. The equivalent procedure in the static approach is to make a notional adjustment in current tax rates so as to eliminate any existing budget deficit or surplus. Some static estimates fail to make this adjustment and hence give a biased estimate of the fiscal contribution of immigrants.

Highly educated, skilled, or talented immigrants, provided they gain suitable employment and do not displace native workers, normally make a positive fiscal contribution. They pay more in taxes than they absorb in government expenditure. Such migrants come disproportionately from developed countries. Even unskilled immigrants may make a positive fiscal contribution provided they take jobs and do not displace local workers, and provided they and their dependents do not make large demands on the welfare state in the form of pensions and public expenditure. At the other end of the spectrum are immigrants who receive public support but do not pay tax because they are without gainful employment. Many asylum seekers and spouses, especially from developing countries, are in this category. So, too, are the children and aged relatives of working immigrants.

In measuring the fiscal impact of immigration it is conventional to ignore emigration. Such a procedure is justified if inward and outward migrations are causally unrelated. However, this is not always the case. Many top-level managers, artists, and other professionals circulate internationally, spending years in various countries. Their entry into one country is often matched by the departure of natives who would otherwise have remained at home. A transnational company may rotate its managers between countries, in so-called intra-company transfers. Much of the high-level manpower movement into (and out of) the UK has been of this kind (Salt 1991, 1997). In 2003, 37 percent of foreign workers in the UK had the same em-

ployer before immigration and are likely to be “corporate transferees”; this figure is almost the same as in the period 1985–2002 (38 percent; Salt 2003b: Table 4.11a, b). Such an interchange may help to raise global productivity, but its direct impact on government finances in the two countries involved is minor. In each case, a foreign manager will replace a native manager, but the amounts these managers pay in tax (and absorb in public expenditure) will be very similar. Yet conventional accounting will indicate that both governments have gained substantially. In each country, the account will include the large fiscal contribution made by the highly paid foreign manager, but it will ignore the fiscal loss resulting from the departure of the native manager. This is just one of many examples in which the inward and outward migrations of skilled workers are causally linked, and in which conventional accounting exaggerates the fiscal benefits of migration because it ignores such linkages.

In countries where large-scale immigration has occurred over a long period of time, the stock of migrants and their descendants normally contains a wide spread of different types and age groups. This explains why, as we will see, estimates of the fiscal contribution of the immigrant population as a whole are typically quite small. The positive contribution of some migrants is largely or wholly offset by the negative contribution of others. This finding holds across a variety of countries and methodologies. Estimates of the net fiscal contribution of past immigration normally lie within the range ± 1 percent of GDP. This is also the conclusion of most forward-looking estimates of the potential contribution of future immigration. A survey of the international evidence will make the point.

The international evidence

The fiscal contribution of immigrants has been most extensively studied in the United States. Borjas (1994), Huddle (1993), and Passel (1994) use a static accounting framework to compute the government surplus from all immigrants residing in the United States in the early 1990s. They find this annual surplus to be $-\$16$ billion, $-\$40$ billion, and $\$27$ billion respectively.¹⁰ These estimates are equivalent to -0.2 percent, -0.6 percent, and 0.4 percent of GDP.

Using a similar framework, Lee and Miller (1998) estimate the net fiscal contribution of all immigrants and their concurrent descendants living in the United States in 1994. This group constituted 15.5 percent of the national population, and between them they provided a fiscal surplus equal to $\$23.5$ billion or 0.35 percent of GDP. This estimate is based on the favorable assumption that none of the cost of debt interest and “public goods” is allocated to the immigrant community. Public goods are defined as national defense, expenditures on veterans, and research on health, science, space,

and technology. If this assumption is substantially modified, the immigrant contribution becomes negative.

In a later study Lee and Miller (2000) estimate the effect of raising net immigration into the United States by 100,000 per year while maintaining the age and skill composition of the current stream. Taking federal, state, and local taxes and expenditure into account, the overall fiscal impact is initially negative but gradually becomes positive after about 20 years as the children of immigrants enter the labor market. However, the beneficial effect is never more than 0.4 percent of total tax revenue. The authors conclude that "the overall fiscal consequences of altering the volume of immigration would be quite small and should not be a consideration for policy" (Lee and Miller 2000: 353).

Using a dynamic model, Storesletten (2000) obtains an estimate of \$7,400 for the net present value of the average immigrant into the United States. This average conceals a wide variation across different kinds of immigrants. The net present values for representative high-, medium-, and low-skilled legal immigrants are found to be \$96,000, -\$2,000, and -\$36,000.

Auerbach and Oreopoulos (2000) use a dynamic model to estimate the fiscal impact of halting all further immigration into the United States. The answer depends on a number of factors, the most important of which are the treatment of defense expenditure and the allocation of the fiscal burden across generations. On one set of assumptions, the ending of immigration would produce a bonus equivalent to an immediate proportionate reduction in all taxes of 3.8 percent and a similar increase in all transfers.¹¹ On another set of assumptions, the ending of immigration would mean an additional burden in the form of a 1.9 percent increase in the taxes paid by future generations and a similar reduction in transfers. These amounts are equivalent to a gain equal to 1.5 percent and a loss equal to 0.8 percent of GDP respectively.

Results for Europe are mostly similar to those for the United States. Weber and Straubhaar (1996) consider foreigners in Switzerland with permanent or annual residence permits, who constituted 9.5 percent of the Swiss households in 1990. Using the static approach, they estimate that this group made an annual fiscal contribution to the rest of the population equal to US\$460 million, which is equivalent to 0.2 percent of GDP. Note that asylum seekers, guestworkers, and the like are excluded. They constituted a further 7 percent of the population.

Wadensjö (1999) considers the fiscal contribution of immigrants in Denmark from two groups of countries. Group 1 consists of Western Europe, North America, Australia, and New Zealand; group 2 consists of the rest of the world. He finds that the average immigrant from group 1 countries made a net contribution in 1996 equal to 12,300 kroner (US\$2,100 at the 1996 exchange rate), whereas the corresponding figure for immigrants from group

2 countries is –63,700 kroner (–\$11,000). For second-generation immigrants with both immigrant parents from group 2 countries, the figure is –10,700 kroner (–\$1,850).

Roodenburg et al. (2003) and Ter Rele (2003) obtain similar results for the Netherlands. Roodenburg summarizes these findings as follows:

Taking into account the fact that immigrants usually have families, their long-term fiscal impact turns out to be practically zero. Thus, immigration will not solve the budgetary problem. This calculation assumes that immigrants show the same economic performance as the average Dutch resident. If, however, their average employment rate and income were lower, as it is for the present non-Western immigrant population, immigration would aggravate rather than alleviate the financial burden of ageing. Only if immigrants outperform the average Dutch resident on the labour market, will their fiscal impact be clearly positive. However, assuming we would be able to attract these high performers, it would still take millions of them to make a substantial contribution to the required budgetary adjustment. Given these findings, immigration does not seem to be an effective way to alleviate the financial burden of ageing. (Roodenburg 2003: 3)

This conclusion is echoed in two papers by Fehr et al. (2003, 2004) dealing with immigration into the United States, the EU, and Japan. These papers argue that the countries concerned will all require large tax increases to preserve fiscal viability in the future. They find, as well, that, “Increased immigration also proves to be a false elixir, if our model is to be believed. Even an immediate and sustained doubling of immigration—an extreme response by most policy makers’ standards—does very little to mitigate the fiscal stresses facing the developed world” (Fehr et al. 2003).

Pederson (2002) uses a dynamic model to estimate the effect of reducing immigration into Denmark by 50 percent from 1999 onward. This leads to a substantial fall in the Danish population over the following century, but has a small positive effect on per capita income and government finances. The exclusion of immigrants leads to an improvement in government finances equal to 0.4 percent of GDP. Thus, on average immigration into Denmark imposes a cost on the existing population. Other analyses of the Danish situation also come to unpromising conclusions (Schultz-Nielsen 2001).

Ekberg (1999) reports that the net contribution of immigrants in Sweden was positive during the 1950s, 1960s, and 1970s, but has become negative in recent years. This development is due to the deteriorating employment situation among immigrants. At all times the immigrant contribution has been small and in 1994 was around –0.9 percent of gross national product. This deterioration in the fiscal contribution is similar to that observed in the United States, and in each case is due to the deteriorating labor market performance of immigrants (Borjas 1990).

Storesletten (2003), also using a dynamic model, estimates that the average immigrant into Sweden represents a net government loss of 175,000 SEK (US\$26,000), equivalent to 6,100 SEK (US\$910) annually.¹² The author concludes that, on average, immigrants represent a “large burden on the public coffers.” This conclusion seems exaggerated. With an immigrant share of 10 percent of the national population, Storesletten’s estimate would imply a net fiscal cost of supporting immigrants equal to 0.31 percent of GDP.¹³

Other studies yield mixed results. Weber and Straubhaar (1996) survey thirteen studies covering a variety of advanced economies, of which five studies find that the net fiscal contribution of immigrants is positive, two find it is negative, and six report it is neutral or that no general conclusion is possible. Reports commissioned by the Australian and New Zealand governments find that immigration has a positive fiscal effect in those countries. However, these findings are not very informative because they refer only to central government and exclude many forms of public expenditure (Access Economics 2001; Immigration Research Programme 1999). They ignore the fact that immigration may impose a large fiscal burden at the local or state level (for the United States see Rothman and Espenshade 1992; Lee and Miller 1998).

Finally, a small group of studies find that in countries facing rapid demographic decline the fiscal contribution of future immigrants may be substantial (Bonin et al. 2000; Bonin 2001; Collado et al. 2003; Moscarola 2001). These studies are based on a method known as “generational accounting,” a method that allows them to explore the implications of immigration under different assumptions about the allocation of the fiscal burden across generations. Countries such as Germany, Italy, and Spain are predicted to experience a dramatic increase in the share of older people in the population and a declining number of people of working age (McDonald and Kippen 2001). To preserve fiscal solvency in the future will require higher taxes or lower transfers. The size of these changes depends on how the burden is spread between generations.

Suppose that the entire cost of adjustment is borne by future generations, that is, natives who have not yet been born and immigrants who have not yet arrived. Existing immigrants and natives pay none of the costs required to preserve fiscal solvency. Under these conditions, the tax burden on future generations is very high since they must service a huge government debt accumulated by profligate present generations. The fiscal contribution of future immigrants is also high under this scenario since future immigrants, like future natives, will be heavily taxed.

The assumption that only future generations pay is unrealistic for two reasons. First, it leads to a spectacular build-up of government debt that would never be allowed to occur in practice. Within a few years the government would be forced to respond. Second, the envisaged tax regime implies that individuals of similar ages and in similar economic circumstances pay very different tax rates or enjoy very different transfer entitlements. Such a policy

is theoretically possible but would mark a radical break with the principles that guide tax policy in Western democracies. If fiscal reform is implemented immediately, or phased in gradually over a decade or two, then existing generations bear much of the cost of adjustment, and the estimated increase in tax rates (cut in transfers) needed to restore balance is quite small even for countries facing rapid demographic decline. The potential contribution of immigrants is also quite small under these conditions.

Evidence of the fiscal impact for the United Kingdom

The only systematic study of the fiscal impact of immigration in the UK, by Gott and Johnston (2002), is concerned with the fiscal contribution of the migrant population in the tax year 1999/2000. Migrants are defined as foreign-born residents and UK-born dependent children who have two parents who are foreign-born or are in single-parent households where the head of household is foreign-born. According to this definition migrants constituted 8.4 percent of the UK population in the year concerned. The study points out that this definition may underestimate the fiscal contribution of immigration because it excludes the adult children of immigrants.

The study estimates that migrants paid £31.2 billion in taxes and consumed £28.8 billion in benefits and state services, giving a net fiscal contribution of approximately £2.5 billion after rounding. This calculation can be questioned on a number of grounds, most of which are pointed out by the authors themselves. Table 5 illustrates how the calculations might be adjusted to accommodate these criticisms.

TABLE 5 Alternative estimates of the fiscal impact of migrants in the UK 1999/2000

	Tax £ billion	Expenditure £ billion	Balance £ billion	% GDP	% individual consumption
Original	31.2	28.8	2.5	0.27	0.36
Adjustment					
Corporation tax	-0.8				
Budget balance	-1.3				
After first adjustment	29.1	28.8	0.4	0.04	0.06
Adjustment					
Immigration and citizenship		0.7			
After second adjustment	29.1	29.5	-0.4	-0.05	-0.06
Adjustment					
Defense		-1.9			
Debt interest		-1.1			
After third adjustment	29.1	26.6	2.6	0.28	0.36

NOTE: Totals may not add because of rounding errors.

SOURCE: Gott and Johnston (2002); and see text.

The first set of adjustments refers to taxes. These are as follows.

Corporation tax. The figure for taxes paid by migrants includes corporation tax that is ultimately paid by the overseas shareholders in companies that are based in or have subsidiaries in the UK. Removing this item reduces the amount of tax ascribed to migrants by £0.8 billion.¹⁴

Budget balance. In 1999/2000 the government had a fiscal surplus, and even the nonimmigrant population paid more taxes than they received in government expenditure. To correct for this we assume that taxes on all UK residents are lowered by a uniform percentage by an amount just sufficient to eliminate the surplus. This reduces the amount of tax paid by migrants by £1.3 billion.¹⁵ When these adjustments are made, the fiscal contribution of migrants sinks to £0.4 billion.

Expenditure. The next adjustment is for expenditure. Any assessment of the fiscal contribution of migrants should take into account the costs of administering the immigration program and providing for the special needs of immigrants. This type of expenditure has been increasing rapidly in recent years. As a proxy for such costs we assume that the full amount of government expenditure on "immigration and citizenship" is allocated to migrants.¹⁶ Following this adjustment the fiscal contribution of migrants becomes slightly negative.

The final adjustments are also to expenditure and were suggested by Gott and Johnston, the authors of the study.

Defense. The armed forces are a public good whose benefits to the existing population are not affected by the entry of immigrants. To allow for this we eliminate defense from the list of expenditures allocated to migrants. This reduces expenditure on migrants by £1.9 billion.¹⁷

Debt Interest. Some of the interest paid by the government is on debt that was acquired before most immigrants arrived in the UK. One can argue that such interest should be allocated to the domestic population only. We follow the suggestion of Gott and Johnston and reduce by 50 percent the amount of debt interest allocated to migrants. This reduces expenditure on migrants by £1.1 billion.¹⁸ When these adjustments are made the fiscal balance of migrants becomes positive once again at £2.6 billion, which is virtually the same as the original balance.

The preceding calculations are concerned entirely with the direct effects of immigration on the fiscal balance. They ignore the indirect or general equilibrium effects, which derive from the impact of immigration on employment and earnings of the domestic population. Tax revenues are lost and extra welfare expenditures are incurred if competition from immigrants leads to job losses or lower wages among unskilled local workers. Moreover, the immigration of unskilled workers is associated with more welfare spending and therefore higher taxes and more government bureaucracy—both of which distort the operation of the economy and impose hidden costs on the rest of the population. Conversely, the immigration of skilled workers or entrepre-

neurs may create new or better-paid jobs for local workers, thereby increasing the ability of the latter to pay taxes and reducing their dependence on welfare benefits. There is also congestion to consider. Immigration is contributing to a rapid growth of population in southern England, and the resulting congestion hampers production and is costly to manage.

These observations indicate the difficulties in obtaining an accurate picture of how immigration has affected government finances. If we ignore general equilibrium effects, which are mostly imponderable, the estimated net fiscal contribution of the migrant population lies between $-\text{£}0.4$ billion and $\text{£}2.6$ billion. The latter figure may seem large in absolute terms, but it should be seen in perspective. It is less than 0.3 percent of GDP, 0.4 percent of individual consumption. In comparison to the economy as a whole, the fiscal contribution of the migrant population is small, as is the case in most of the other studies reported here. Past immigration into the UK has not in aggregate led to a significant fiscal burden on the rest of society, nor has it provided a significant surplus. It has been broadly neutral. In this respect, Britain is similar to other advanced economies.

Employment and wages in international perspective

Increased immigration to the UK is claimed to meet essential labor-market needs while not adversely affecting the interests of British workers. A report by Dustmann and others (2003) for the Home Office is often cited as evidence that immigration does not harm local workers. In fact, the findings of this carefully qualified report are inconclusive (Dustmann et al. 2003: Tables 4.1 and 5.1). Depending upon the model used, a 10 percent increase in the current rate of immigration to an area increases local unemployment by between 2 percent and 6 percent. The authors also find that immigration leads to higher monetary wages for local workers. As they point out, however, these estimates are all subject to a large margin of error and are not statistically significant. This is not surprising, given the limitations of the data the authors are using. To find firmer evidence we must look to other countries.

Dustmann and his colleagues cite a number of studies suggesting that immigration into other countries has had a small negative effect on the local labor force. Subsequent evidence suggests that this effect may actually be quite large. A recent study by Borjas (2003) estimates that immigration into the United States has led to unemployment among native high school dropouts and reduced their weekly earnings by around 8.9 percent during the period 1980–2000 (Borjas 2003). (High school dropouts in the US represent at least 15 percent of each cohort and, according to some estimates, up to 30 percent; Center for Labor Market Studies 2003.) The figure of 8.9 percent has been subsequently modified to 7.4 percent (Borjas 2004). Borjas finds that virtually all of this effect is due to the massive

immigration of low-skilled Mexicans. Moreover, “[t]he negative effect on native-born black and Hispanic workers is significantly larger than on [non-Hispanic] whites because a much larger share of minorities are in direct competition with immigrants. The reduction in earnings occurs regardless of whether the immigrants are legal or illegal, permanent or temporary. It is the presence of additional workers that reduces wages, not their legal status” (Borjas 2004: 2).

Borjas (2003) also finds that immigration into the United States has reduced the employment rate of native workers. Using a different methodology, Card (2001: 58) finds that in some of America’s gateway cities, such as Los Angeles, large-scale immigration during the period 1985–90 “significantly reduced employment rates for younger and less educated native workers.” Given the racial makeup of these cities, we can presume that many of the natives adversely affected by immigration were black. It is striking that Card should find such a result since he is widely associated with the view that immigration does not significantly harm the native labor force.

In their study of EU countries, Angrist and Kugler (2003) conclude that on average the addition of 100 immigrants to the labor force leads eventually to the loss of 83 jobs for local workers. Although this estimate may seem implausibly high, the authors provide strong evidence for the view that immigration reduces employment among local workers. The effect is greatest in countries where local workers enjoy the most job protection. In such countries, employers cannot easily dismiss existing workers, but when filling new jobs they may choose immigrants because they are easier to fire than native workers. The authors conclude that more labor-market “flexibility” would reduce unemployment among local workers. If employers could easily dismiss local workers, they would have no reason to prefer immigrants. Thus, immigration leads either to unemployment or to greater job insecurity for local workers. In each case, workers lose and employers gain.

The conclusion we draw from this literature is that immigration of unskilled workers harms local workers who compete with them, possibly to a large extent. Moreover, among the workers who are harmed may be those who are located in other parts of the country. For example, an unskilled worker living in Scotland or the north of England may not move southward in search of work, because jobs elsewhere have been filled by immigrants or else housing costs have been pushed up (or wages down) by immigration. Conventional wisdom holds that such wider ramifications of immigration are negligible in the UK. However, a recent study by Hatton and Tani (2003) finds that foreign immigration into a region leads to significantly reduced net migration into the region from elsewhere in the UK. If their finding is correct, we should not expect the harmful effects of immigration to show up only in the south. They will also show up in persistent unemployment in other parts of the country that have a surplus of labor which is deterred from moving south by competition from foreign migrants.

It is often argued that immigrants are needed to do the jobs that locals will not do. This may be true in a few cases, but in general it is false. In most parts of the UK there are relatively few unskilled immigrants, and it is the locals who do most of the jobs that British workers supposedly will not do. Finland, presumably one of the most prosperous countries, has hardly any immigrants and the locals perform all tasks from cleaning to accounting.¹⁹ The problem in the end boils down to wages and conditions. As the OECD noted with respect to nursing: "The problem is not so much a shortage of nurses as a shortage of nurses willing to work under the conditions being offered them" (OECD 2003a: 23). When employers in the south of England say that they cannot get workers to perform menial tasks, what they often mean is that UK local workers will not accept, or stay in, jobs at the kind of wages and conditions that they are offering. In this case, the problem is not an absolute shortage of labor, but a shortage of cheap labor. The most effective way to raise the wages of low-paid workers is to maintain an artificial shortage of labor so that employers have no option but to pay more so as to attract workers from elsewhere in the economy or to reduce their labor requirements by producing more efficiently. Such a policy is inconsistent with the mass importation of cheap labor from abroad. Borjas (2004) has made this point forcefully in the American context. His arguments apply with equal force to the UK.

The implications of this discussion for the UK are obvious. The mass importation of unskilled workers in any form, temporary or permanent, legal or illegal, is harmful to those native workers who compete with them. Such natives come disproportionately from certain ethnic minorities, and it is these people above all who have the most to lose from mass immigration. The immigration of skilled workers or talented entrepreneurs is advantageous to unskilled locals because it stimulates demand for their labor. However, such immigration has the potentially serious downside that it may discourage investment in the education of the domestic population. This has already happened in the case of medicine, where the UK was long able to neglect the education of physicians because it imported a large number of them from other countries, as the president of the British Medical Association has recently observed (Johnson 2004). The UK is now facing the consequences of this neglect, and it will be some years before the current expansion of medical training starts to bear fruit. Thus, from the point of view of long-term national interest, excessive reliance on skilled workers from abroad may be inadvisable.

Immigrants as an essential source of labor

Another argument holds that more immigration is essential to meet current and future labor needs. In exploring this view we start with the posi-

tion of immigrants and their descendants in the labor market, to see whether this claim is supported by the evidence.

Few doubt the advantages to employers, and probably to the economy, of the ability to recruit highly skilled workers from abroad to fill job vacancies that cannot be filled from local sources. Until recently, however, such recruitment tended to be on a modest scale, temporary, and often reciprocally balanced between developed countries. Most earlier analyses of the economic effects of immigration to Continental Europe during the 1960s guestworker period, when most immigrants were workers, albeit with few skills, came to favorable conclusions (e.g., OECD 1978). The economic effects of immigration to the UK in the 1960s, however, appear to have been modest if discernible at all; few of those who arrived came to fill specific jobs (Jones and Smith 1970).

Many of the “temporary” Continental guestworkers stayed on even when unemployed, especially those from outside Europe. The original intention, of course, was that workers were expected to leave when their jobs ended, however poor their homeland. A developed economy requiring a skilled workforce was thus left to cope with a permanent population of unemployed and poorly skilled foreign labor (Werner 2001), concentrated in rust-belt areas, whose disadvantage has continued into subsequent generations (OECD 2001: part 1B). With the “rights revolution,” these guestworkers were later joined by their dependents—again, not part of the original idea according to which immigrant workers were meant to be a buffer against economic fluctuations. It was never envisaged that “temporary” immigration would give rise to a perpetual stream of permanent migrants. The process continues today through high and increasing levels of migration for marriage to second- and third-generation offspring of migrants. Of the major modern free-market economies, only Japan has avoided these difficulties.

Over time, the patterns of economic demand and of immigration have changed. Conclusions about the benefits of migration have become more nuanced and in some cases negative. The growth sectors of the economy now demand skilled or professional workers with managerial or professional qualifications especially in finance and engineering (Department of Education and Skills 2002; HM Treasury 2002b). Migrants from outside Europe tend to be less well equipped with such skills, although medicine and the information technology sector (Salt 2003a) are notable exceptions. Employers also want low-skilled workers in some sectors such as catering and cleaning despite a surplus of unemployed unskilled persons in Europe.

Immigrants who do not enter for purposes of work

Since the 1970s the majority of legal migrants into Western countries have not entered primarily for purposes of work. Most have entered as students,

dependents, new spouses for the growing ethnic-minority populations, or more recently as asylum claimants. In a number of countries, only a minority has entered through a job-recruitment process or specifically for work reasons: in 2000 well under 20 percent in Denmark, the United States, France, Norway, and Sweden, for example (OECD 2003a: Chart 1.2). In the United States, held up as a paradigm of work-related immigration, family migration comprised the majority of inflows (63.3 percent) in fiscal year 2002, compared with only 16.5 percent of legal immigrants admitted under the “employment preference” class (US Department of Homeland Security, Office of Immigration Statistics 2004: Table 4). The importance of family reunion and marriage as the reasons for migration is typically much greater for immigrants from developing countries than those from developed countries. For example, in France in 1994, family reunion and marriage migration accounted for 82 percent of legal inflow from North African countries but for less than 30 percent of legal inflow from European countries (Tribalat 1996: Table 1). Of course immigration for such purposes may not preclude subsequent employment.

In view of the persistence of disadvantage in education and work among the second generation of some immigrant groups, the predominance of fam-

TABLE 6 Labor force participation rates and unemployment rates of nationals and foreigners in selected OECD countries, by sex, 2000–01 average

	Labor force participation (% pop. 15–64)				Unemployment rate (%)			
	Males		Females		Males		Females	
	Nationals	Foreigners	Nationals	Foreigners	Nationals	Foreigners	Nationals	Foreigners
Belgium	73.3	72.4	57.0	41.0	4.6	14.2	7.0	16.5
Denmark	84.1	71.2	76.2	53.0	3.6	12.2	4.9	7.2
France	75.1	76.6	63.3	48.6	7.1	17.1	10.7	23.9
Germany	78.9	77.6	64.7	50.7	7.2	13.4	7.8	11.7
Netherlands	84.9	69.5	67.2	49.0	1.9	4.7	2.9	7.0
Sweden	78.0	63.1	74.2	60.3	5.5	16.1	4.6	13.0
Switzerland	89.2	89.3	73.3	68.6	1.3	4.3	2.6	6.4
UK	83.1	75.6	68.4	55.8	5.5	9.8	4.4	7.9
<i>Mean</i>	<i>80.8</i>	<i>74.4</i>	<i>68.0</i>	<i>53.4</i>	<i>4.6</i>	<i>11.5</i>	<i>5.6</i>	<i>11.7</i>
Italy	73.6	87.7	46.6	50.7	8.0	7.4	13.9	21.3
Spain	77.3	85.4	50.9	59.1	9.3	12.9	19.8	17.2
<i>Mean</i>	<i>75.5</i>	<i>86.6</i>	<i>48.8</i>	<i>54.9</i>	<i>8.7</i>	<i>10.2</i>	<i>16.9</i>	<i>19.3</i>
Australia	75.0	67.0	59.1	48.2	6.7	6.6	5.8	6.9
Canada	73.8	68.4	60.2	52.9	10.3	9.9	9.5	11.6
United States	80.7	85.6	71.4	61.7	4.9	4.4	4.1	5.6
<i>Mean</i>	<i>76.5</i>	<i>73.7</i>	<i>63.6</i>	<i>54.3</i>	<i>7.3</i>	<i>7.0</i>	<i>6.5</i>	<i>8.0</i>

SOURCES: OECD 2003a; SOPEMI 2002: Table 1.14.

ily reunion, family formation, and asylum immigration in recent decades, and cultural impediments to the employment of women, it is not surprising that the employment position of foreign and immigrant populations in Europe is unpromising (Table 6) and does not seem to be a good basis for arguments about the overall economic benefits of the process.

The employment position in the UK

Up to the end of the 1990s, the majority of workers coming to the UK under long-term work permits (over 12 months) were highly skilled (Salt and Clarke 2001) and from a limited number of countries (United States, Japan, Australia, now India—EU migrants do not need a work permit). Moreover, labor migration to the UK remains a two-way process: according to the annual flow data of the International Passenger Survey (IPS), in some years in the 1990s as many people left the UK for work purposes as entered it. Even the liberalization of work permits and other inducements since 1997 had apparently only yielded a net inflow of 2,000 labor migrants in 2002 (Table 7). This figure seems implausibly low, however, and unpublished data for more recent years may well be higher. These IPS figures must be regarded as approximate and may be distorted by outflows of former foreign students seeking work at home.

Unfortunately, statistics on labor force participation and unemployment in the UK are more readily obtained in the case of ethnic minority populations (including those born in the UK) than for populations born abroad, which would be the more appropriate category for analysis here.

TABLE 7 Migration to and from the UK for purposes of work, 1991–2002, all citizenships, both sexes (thousands)

Year	Inflow	Outflow	Balance
1991	41	57	-16
1992	40	59	-19
1993	41	77	-36
1994	52	56	-4
1995	51	70	-18
1996	66	81	-15
1997	62	75	-13
1998	83	64	19
1999	90	70	20
2000	105	95	10
2001	120	83	37
2002	102	100	2

SOURCES: International Passenger Survey; ONS (2004a) and previous years, Table 3.9.

TABLE 8 Labor force participation and unemployment rates by birthplace, UK 2000

	Country of birth			
	British	All foreign	EU/EFTA	Other
Economically active				
All ages over 16	63.6	58.6	57.7	60.0
Ages 15–59/64	79.6	69.4	74.4	67.6
Unemployed	5.5	8.5	5.9	9.5

NOTE: In the UK, entitlement to the state pension begins at age 65 for men, 60 for women.

SOURCE: Dobson et al. 2001: Tables 13.1, 13.2, Fig. 13.1.

TABLE 9 Economic activity among whites and ethnic minorities, all birthplaces, UK 2002

	Economic activity rate, ages 16–59/64	Employment rate, ages 16–59/64	Unemployment rate, ages 16+	Workless households (%)
White	80	76	5	16
British	81	77	5	
Other white	77	72	6	
All ethnic minorities	66	58	12	
Mixed	71	58	18	35
Black Caribbean	77	66	14	25
Black African	64	56	13	35
Indian	75	69	8	12
Pakistani	54	45	15	{27*}
Bangladeshi	47	41	14	
Chinese	65	60	—	25

NOTE: Workless households classified by ethnic group of household reference person.

*Pakistani and Bangladeshi data combined. — = sample size too small for reliable estimate.

SOURCE: Labour Market Trends, March 2003, p. 113; April 2003, p. 167 (data from Labour Force Survey).

Recent analysis performed for the Home Office shows that persons born abroad have lower employment participation and higher unemployment rates than UK citizens (Table 8). The position with respect to the ethnic minority populations, whether immigrants or their descendants, is generally less favorable, unemployment being in all cases higher, and in some cases three times higher, than that of the white population (Table 9). Most immigrants from developed countries and their children would not be included in these ethnic minority categories.

Discussion

Some degree of two-way migration is normal between open societies participating in international trade. Controlled levels of skilled migration have some

uncontroversial, if minor, advantages for the domestic population, as long as it is not permanently institutionalized to the detriment of local conditions and domestic training. Academic studies disagree on the effects of immigration on the less skilled sections of the population. The only study explicitly devoted to the local UK employment situation finds that these effects are statistically insignificant, but recent evidence from other countries suggests that they may be quite large, significant, and negative, at least in those countries. There is no reason to believe that the mass immigration of unskilled workers is to the advantage of the local workers with whom they will compete, however convenient such inflows may be to the short-term interests of employers. The UK has an excess, not a shortage, of unskilled population. Much of it is unemployed, and ethnic minorities are already overrepresented in that category. If low-skilled labor were scarce, then responses could include increasing wages, reforming welfare, automating the functions, offshoring production, or, in the case of tradable activities, simply abandoning the activity altogether—as in the case of some marginal agricultural production. These options are not easy; the only “easy” option is immigration.

Countries that survive on their competitiveness, however, cannot advance by importing uneducated labor to perpetuate low-value-added activities. If such labor comes from non-European countries it creates a low-paid ethnic underclass that will not be content to remain permanently at the bottom of the ladder as cleaners or in “corner shops.” As they move up the occupational ladder, this will create a demand for more immigrants to perform the jobs that the previous generation of immigrants and their children are no longer willing to do. The native population will shun such jobs because of the conditions offered and because they have become “immigrant jobs” (Böhning 1972: Chapter 4).

In the UK the natural change in the population of working age is projected to be slow and relatively benign, its size still increasing for some time without migration. What matters today for economic welfare is the quality and level of labor mobilization, the composition of output, and productivity per worker. Migration has a part to play. As in the past that part will be minor, but with potentially negative as well as positive consequences. Too easy an access to immigrant labor can import poverty and distract from the need to reform labor markets and to train and improve the existing labor force. It risks distorting the economy through permanent dependence on immigration and acceptance of poor labor conditions. A country of 60 million such as the UK should be self-sufficient in most labor needs most of the time.

Overall the economic record of recent immigration does not seem impressive, and there is a growing body of evidence that its effects are more often negative, partly because so much immigration is not primarily economic in motivation. Needs and benefits in the receiving countries may well be transient while the immigrant populations, especially those from poor countries, are more likely to be permanent (Rendall and Ball 2004). In the

current UK context, no consideration seems to have been given to the possibility of turning off those diverse immigration streams that are being so enthusiastically turned on, or to what will happen to the immigrants and their dependents if their jobs disappear in the future. The lessons of the Continental guestworker period have, it seems, not been learned.

The studies reviewed above show that the estimated fiscal contribution of immigrants depends on the analytical treatment of public goods and debt interest. It also depends on the allocation of fiscal adjustment across generations, on the age and skill composition of the immigrants and their descendants, on the extent to which members of this group are gainfully employed, and on tax rates and levels of public expenditure. The net contribution of immigrants may be positive or negative depending on the method of estimation and the type of immigration; its diversity, in any event, is persistently ignored in the present debate. In general, this contribution, however defined, is small in relation to GDP. The major exception concerns a small number of studies relating to countries facing rapid demographic decline. If the burden of fiscal adjustment in these countries is borne entirely by future generations, the estimated tax rate levied on future immigrants and natives alike is very high, and the fiscal contribution of such immigrants is therefore substantial. The practical relevance of such a finding is limited, however, since the required fiscal policy is inconsistent with the normal principles of taxation. With a more realistic assumption about fiscal policy, these studies imply that even in countries facing demographic decline the potential contribution of immigration is small in relation to GDP.

From a policy standpoint, the fiscal contribution of the migrant population as a whole is not of great significance. What matters is the contribution of particular types of immigrants. Asylum seekers, nonworking spouses, and many unskilled immigrants absorb more public expenditure than they contribute in taxes, whereas highly skilled or talented immigrants pay far more in taxes than they receive from the government. This is what really matters for policymaking. No one seriously advocates the complete ending of migration. The policy issues of the day are concerned with the absolute number and type of immigrants the UK should admit and how to maximize the contribution of immigrants once they arrive in the country.

Conclusion

This article has examined the impact of immigration on citizens of the United Kingdom. The claim that large-scale immigration will be of great economic benefit to them is false. Some will gain, but others will lose. With respect to the existing population of the UK and their descendants, the purely economic consequences of large-scale immigration could be negative or positive, but either way they will be small. Two earlier reviews of the economic

effects of immigration to the UK came to carefully argued conclusions that stopped far short of a clear endorsement of its advantages, despite being presented in collections that otherwise served to underpin the new policy (Findlay 1994; Kleinman 2003). Immigrants are the only unequivocal economic beneficiaries of migration. There is no guarantee that anyone else will be, not even the sending countries from which the migrants come.

The more important effects of sustained large-scale immigration on the UK are demographic, social, and environmental: provoking unexpected renewed growth in population and in housing demand and risking new and intractable social divisions and a corresponding weakening of national identity and cohesion, with the prospect of an eventual eclipse of the population receiving the migrants and of its culture.

Explaining why the UK government is embarking on a policy with such potentially radical social and demographic consequences for so little and uncertain material benefit for its own citizens is beyond the scope of this article. All that can be shown here is that immigration on the current scale can only be justified on grounds other than its economic advantage to the citizens of the UK.

For example, one could argue that immigration policy in a rich country, such as the UK, should have an altruistic dimension. Large-scale immigration may not be to the advantage of the local inhabitants, but it is to the advantage of the immigrants. It may also be beneficial to the countries from which these migrants come, although this is a matter of dispute among development economists. It may be legitimate to argue that large-scale immigration should be permitted because it is beneficial to people who are poorer than the inhabitants of the UK (for a discussion see Ruhs and Chang 2004). However, this case should be made explicitly. At present, it is smuggled in behind the claim that a high level of immigration will be of great economic benefit to the existing population. The evidence presented above suggests that it will not.

Notes

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1 «<http://www.ind.homeoffice.gov.uk/default.asp?PageId=3784>».

2 «http://newsvote.bbc.co.uk/mpapps/pagetools/email/news.bbc.co.uk/1/hi/uk_politics/3265219.stm».

3 «<http://news.telegraph.co.uk/news/main.jhtml?xml=/news/2004/05/26/nvote126.xml>».

4 Gallup Organization 2004, «<http://www.gallup.com/content/?ci=12439>».

5 «<http://www.number-10.gov.uk/output/page5708.asp>».

6 Written answer of 29 May 2004 in response to Parliamentary Question by Lord Lamont of Lerwick (HL2951), ref. HMT 2436LW 3/4.

7 «<http://www.gad.gov.uk/Population/2002/methodology/upc.htm>».

8 «<http://www.gad.gov.uk/population/2002/uk/wuk025y.xls>».

9 «<http://www.gad.gov.uk/population/2002/wncouk02cc.xls>».

10 These figures are taken from Storesletten (2000).

11 The figures cited here are based on Table 2 of Auerbach and Oreopoulos (2000). If all generations share the burden of adjustment and defense is not regarded as a public good, the change in taxes and transfers attributable to halting immigration is -3.8 percent ($= -2.5\% - 1.3\%$). If future generations shoulder the entire burden of adjustment and defense is considered a public good, the change in taxes and transfers attributable to halting immigration is 1.9 percent ($= 9.2\% - 7.3\%$). We converted these to percentages of GDP using national accounts data for 1998.

12 All figures refer to 1995. Conversion to US dollars is at the 1995 exchange rate US\$1 = 6.706 SEK. Conversion to an annual rate assumes an interest rate of 3.5 percent.

13 If immigrants are 10 percent of the population, the total net cost of supporting them is 6.4 billion SEK = 0.31 percent of GDP in 1995.

14 In 1999/2000 the total amount of Corporation Tax was £34.3 billion. Gott and Glover point out that at least 28 percent of this total represents taxes indirectly paid by over-

seas shareholders, which in money terms is equivalent to £9.6 billion. We assume that 8.4 percent of the latter figure was wrongly attributed to immigrants. This proportion corresponds to the share of immigrants in the UK population.

15 In 1999/2000 there was an overall budget surplus of £15.3 billion. Allocating this total according to their share in population yields £1.3 billion for immigrants (8.4 percent of the total) and £14.0 billion for nonimmigrants.

16 Total expenditure on immigration and citizenship in 1999/2000 was £797 million (Table 3.6 of *Public Expenditure: Statistical Analyses 2002–2003*, HMSO). The study by Gott and Johnston allocates 8.4 percent of this figure to immigrants. Our adjustment also assigns the remaining 91.6 percent ($= £0.7$ billion) to immigrants.

17 Total expenditure on defense in 1999/2000 was £22.5 billion. Gott and Johnston allocate 8.4 percent ($= £1.9$ billion) to immigrants.

18 The government paid £25.7 billion debt interest in 1999/2000. Gott and Johnston allocate 8.4 percent ($= £2.2$ billion) of this to immigrants. Cutting this allocation by a half implies a reduction of £1.1 billion.

19 For an international comparison of happiness and per capita income see Inglehart and Klingemann (2000: Fig. 7.2). The proportion of Finland's population born abroad was 1.8 percent in 2000, of which three-fifths were ethnic Finns from the former Soviet Union, Estonians, Swedes, and migrants from other developed countries (http://statfin.stat.fi/statweb/start.asp?LA=en&DM=SLEN&lp=catalog&clg=population_census).

References

- Access Economics. 2001. *Impact of Migrants on the Commonwealth Budget, Summary Report, 2000–01 Update*. Canberra: Department of Immigration and Multicultural Affairs.
- Angrist, J. D. and A. D. Kugler. 2003. "Protective or counter-productive? Labour market institutions and the effect of immigration on EU natives," *Economic Journal* 113(488): F302–331.
- Auerbach, A. and P. Oreopoulos. 2000. "The fiscal effects of U.S. immigration: A generational-accounting perspective," in J. Poterba (ed.), *Tax Policy and the Economy* 14: 123–156.
- Baines, D. 1991. *Emigration from Europe 1815–1930*. London: Macmillan.

- Barlow, R. 1994. "Population growth and economic growth: Some more correlations," *Population and Development Review* 20(1): 153–165.
- Barro, R. J. and X. Sala-i-Martin. 2003. *Economic Growth*. Cambridge, MA: MIT Press.
- Beine, M., F. Docquier, and H. Rapoport. 2001. "Brain drain and economic growth: Theory and evidence," *Journal of Development Economics* 64: 275–289.
- Betts, K. 2004. "People and parliamentarians: The great divide," *People and Place* 12(2): 64–83.
- Böhning, W. R. 1972. *The Migration of Workers in the UK and the European Community*. London: Oxford University Press.
- Bonin, H. B. 2001. *Fiskalische Effekte der Zuwanderung nach Deutschland: Eine Generationenbilanz*, Discussion Paper No. 305, April, IZA Bonn.
- Bonin, H., B. Raffelhüschen, and J. Walliser. 2000. "Can immigration alleviate the demographic burden?," *FinanzArchiv* 57(1): 1–21.
- Borjas, G. J. 1990. *Friends or Strangers: The Impact of Immigrants on the U.S. Economy*. New York: Basic Books.
- . 1994. "The economics of immigration," *Journal of Economic Literature* 32(December): 1667–1717.
- . 2003. "The labor demand curve is downward sloping: Re-examining the impact of immigration on the labor market," *Quarterly Journal of Economics* (November): 1335–1374.
- . 2004. "Increasing the supply of labor through immigration: Measuring the impact on native-born workers," *Background*, May, Center for Immigration Studies, Washington, DC.
- Card, D. 2001. "Immigrant inflows, native outflows, and the local labor market impacts of higher immigration," *Journal of Labor Economics* 19(1): 22–64.
- Center for Labor Market Studies. 2002. *Immigrant Workers and the Great American Job Machine: The Contribution of New Foreign Immigration to National and Regional Labor Force Growth in the 1990s*. Boston: Center for Labor Market Studies, Northeastern University, for National Business Roundtable, Washington, DC.
- . 2003. *The Hidden Crisis in the High School. Dropout Problems of Young Adults in the US: Recent Trends in Overall School Dropout Rates and Gender Differences in Dropout Behavior*. Boston: Northeastern University, Center for Labor Market Studies for National Business Roundtable, Washington, DC.
- Chami, R., C. Fullenkamp, and S. Jahjah. 2003. *Are Immigrant Remittance Flows a Source of Capital for Development?*, IMF Working Paper, WP/03/189.
- Chand, S. K. and A. Jaeger. 1996. *Aging Populations and Public Pension Schemes*, Occasional Paper 147. Washington, DC: International Monetary Fund.
- Chicago Council on Foreign Relations. 2004. *Keeping the Promise: Immigration Proposals from the Heartland*. Chicago: Chicago Council on Foreign Relations. «<http://www.c CFR.org/publications/immigration/main.htm>»
- Coleman, D. A. 1997. "UK immigration policy: 'Firm but fair', and failing?," *Policy Studies* 17(3): 195–213.
- . 2000. *Who's Afraid of Low Support Ratios? A UK Response to the UN Population Division Report on Replacement Migration*, Expert Group Meeting on Policy Responses to Population Aging and Population Decline, New York, United Nations. «<http://www.un.org/esa/population/publications/popdecline/Coleman.pdf>»
- . 2002. "Replacement migration, or why everyone is going to have to live in Korea: A fable for our times from the United Nations," *Philosophical Transactions of the Royal Society B* 357: 583–598.
- Collado, M. D., I. Iturbe-Ormaetxe, and G. Valera. 2003. "Quantifying the impact of immigration in the welfare state," University of Alicante, mimeo.
- Department of Education and Skills. 2002. *Skills in England*, Volume 2, London: Department of Education and Skills.
- de Jong, A. 1999. *Population and Labour Force Scenarios for the European Union: Acceleration, Continuity or Reversal*, European Population Conference 1999, The Hague, Statistics Netherlands. «<http://www.cbs.nl/en/publications/articles/population-society/population/population-and-labour-force-scenarios.pdf>»

- Dobson, J., K. Koser, G. McLaughlan, and J. Salt. 2001. *International Migration and the United Kingdom: Recent Patterns and Trends*, Home Office Research, Development and Statistics Directorate Occasional Paper No 75. London: Home Office.
- Dustmann, F., F. Fabbri, I. Preston, and J. Wadsworth. 2003. *The Local Labour Market Effects of Immigration in the UK*, Home Office Online Report 06/03. «<http://www.homeoffice.gov.uk/rds/pdfs2/rdsolr0503.pdf>»
- Eatwell, J. 2000. "The anatomy of the pensions 'crisis,'" in UNECE (ed.), *Economic Survey of Europe 1999*, No. 3. New York: United Nations, pp. 57–67.
- Ekberg, J. 1999. "Immigration and the public sector: Income effects for the native population in Sweden," *Journal of Population Economics* 12: 278–297.
- Ermisch, J. 1990. *Fewer Babies, Longer Lives*. York: Rowntree Foundation.
- European Commission. 1996. *The Demographic Situation in the European Union 1995*. Luxembourg: Office for Official Publications of the European Communities.
- Fassmann, H. 1997. "Is the Austrian labour market ethnically segmented?," *European Journal of Population* 13(1): 17–31.
- Fehr, H., S. Jokish, and L. Kotlikoff. 2003. "The developed world's demographic transition: The roles of capital flows, immigration, and policy," Boston University, mimeo; forthcoming in R. Brooks and A. Razin (ed.), *The Politics and Finance of Social Security Reform*. Cambridge: Cambridge University Press.
- . 2004. *The Role of Immigration in Dealing with the Developed World's Demographic Transition*, Working Paper 10512, National Bureau of Economic Research.
- Feld, S. 2000. "Active population growth and immigration hypotheses in western Europe," *European Journal of Population* 16: 3–40.
- . 2004. "Labour force trends and immigration in Europe," University of Liège, mimeo.
- Findlay, A. M. 1994. "The economic impact of immigration," in S. Spencer (ed.), *Strangers and Citizens: A Positive Approach to Migrants and Refugees*. London: Institute for Public Policy Research / Rivers Oran Press.
- Frey, M. and U. Mammey. 1996. *Impact of Migration in the Receiving Countries—Germany*. Geneva: International Organization for Migration.
- Fuchs, J. 1995. "Long-term labour force projections for Germany: The concept of the potential labour force," *IAB Labour Market Research Topics* 11: 28.
- Fuchs, J., and D. Schmidt. 2000. "The hidden labour force in the United Kingdom: A contribution to the quantification of underemployment in international comparisons," *IAB Labour Market Research Topics* 39: 23.
- GAD (Government Actuary's Department). 2000. National Population Projections 1998-based. Series PP2 No. 22. London: The Stationery Office.
- . 2002. National Population Projections 2000-based. Series PP2 No. 23. London: The Stationery Office. «<http://www.statistics.gov.uk/products/p4611.asp>».
- . 2004a. National Population Projections 2002-based. Series PP2 No. 24. London: The Stationery Office.
- . 2004b. National Population Projections 2003-based «<http://www.gad.gov.uk/Population/index.asp?v=Principal&y=2003&subYear=Continue>».
- . 2004c. *GAD Note on Migration Effect to 2031, Tables A, B*. London: Government Actuary's Office.
- Gillion, C. 1999. "The macroeconomics of pension reform," in UNECE *Economic Survey of Europe 1999* No. 3. New York: United Nations, pp. 62–64.
- Glass, D. V. 1967. *Population Policies and Movements in Europe*. Oxford: Oxford University Press.
- Glover, S. et al. 2001. *Migration: An Economic and Social Analysis*, Home Office Research and Development Directorate Occasional Paper No 67. London: Home Office.
- Gott, C. and K. Johnson. 2002. *The Migrant Population in the UK: Fiscal Effects*, Home Office Research, Development and Statistics Directorate Occasional Paper No. 77. London: Home Office.
- Hatton, T. and M. Tani. 2003. *Immigration and Inter-Regional Mobility in the UK, 1982–2000*, CEPR Working Paper, DP4061.

- HM Treasury. 2002a. *Trend Growth: Recent Developments and Prospects*. London: HM Treasury. «<http://www.hm-treasury.gov.uk/media/D6678/ACF521.pdf>».
- . 2002b. *Towards Full Employment in the European Union*, Part 2, Ch. 6. London: HM Treasury.
- Home Office. 1994. *Immigration and Nationality Department Annual Report 1994*. London: Home Office.
- . 1998. *Fairer, Faster and Firmer: A Modern Approach to Immigration and Asylum*, Cm 4018 (The White Paper on Immigration and Asylum). London: The Stationery Office.
- . 2000. *Statistics on Race and the Criminal Justice System 2000*. London: Home Office «<http://www.homeoffice.gov.uk/rds/index.htm>».
- . 2001a. *Secure Borders, Safe Haven: Integration with Diversity in Modern Britain* (White Paper). London: The Stationery Office.
- . 2001b. *Migration: An Economic and Social Analysis*, Research, Development and Statistics Directorate Occasional Paper No 67. London: Home Office.
- Huddle, D. 1993. *The Net National Cost of Immigration*. Houston: Rice University, mimeo.
- Immigration Research Programme. 1999. *Fiscal Impacts of Migrants to New Zealand*. New Zealand: Department of Labour.
- Inglehart, R. and H-D. Klingemann. 2000. "Genes, culture and happiness," in E. Diener and E. M. Suhs (eds.), *Subjective Well-Being Across Cultures*. Cambridge, MA: MIT Press.
- International Labour Office. 1989. *From Pyramid to Pillar: Population Change and Social Security in Europe*. Geneva: International Labour Organisation.
- IOM. 2003. *World Migration 2003: Managing Migration—Challenges and Responses for People on the Move*. Geneva: International Organization for Migration.
- Jones, K. and A. D. Smith. 1970. *The Economic Impact of Commonwealth Immigration*. Cambridge: National Institute for Economic and Social Research.
- Johnson, J. 2004. Speech of the Chairman of Council of the BMA, 28 June 2004. London: British Medical Association.
- Johnson, P. et al. (eds.). 1989. *Workers Versus Pensioners: Intergenerational Justice in an Ageing World*. Manchester: Manchester University Press.
- Kelley, A. and R. Schmidt. 1995. "Aggregate population and economic growth correlations: The role of the components of demographic change," *Demography* 32(4): 543–555.
- King, A. 2004. "A divided nation ready to say 'enough is enough,'" *Daily Telegraph*. London. «<http://news.telegraph.co.uk/news/main.jhtml?xml=/news/2004/05/26/nvot126.xml>»
- Kleinman, M. 2003. "The economic impact of labour migration," *Political Quarterly, Special Issue, The Politics of Migration: Managing Opportunity, Conflict and Change*, ed. S. Spencer: 59–74.
- Krebs, R. R. and J. S. Levy. 2001. "Demographic change and the sources of international conflict," in M. Weiner and S. S. Russell (eds.), *Demography and National Security*. Oxford: Berghahn, pp. 62–105.
- Lee, R. and T. Miller. 1998. "The current fiscal impact of immigrants: Beyond the immigrant household," in J. Smith and B. Edmonston (eds.), *The Immigration Debate*. Washington, DC: National Academy Press.
- . 2000. "Immigration, social security, and broader fiscal impacts," *American Economic Review: Papers and Proceedings* 90(2): 350–354.
- Lesthaeghe, R. 2000. *Europe's Demographic Issues: Fertility, Household Formation and Replacement Migration*, United Nations Expert Group Meeting on Policy Responses to Population Ageing and Population Decline, New York, United Nations: 20-1. «<http://www.un.org/esa/population/publications/popdecline/lesthtextandtable.pdf>»
- Lesthaeghe, R., H. Page, and J. Surkyn. 1988. "Are immigrants substitutes for births?," Brussels, Free University, Interuniversity Programme in Demography IPD Working Paper No. 1988-3.
- Lutz, W. et al. 2001. "The end of world population growth," *Nature* 412(2 August): 543–545.
- Lutz, W. and S. Scherbov. 2002. "Can immigration compensate for Europe's low fertility?," *IIASA Interim Report IR-02-052*; also as European Demographic Research Papers 2003 no. 1, Vienna Institute of Demography."

- Massey, D. S. 1999. "International migration at the dawn of the twenty-first century: The role of the state," *Population and Development Review* 25(2): 303–322.
- McDonald, P. and R. Kippen. 2001. "Labor supply prospects in 16 developed countries, 2000–2050," *Population and Development Review* 27(1): 1–32.
- McMahon, M. 2003. "Eastern European boost to UK trend growth?," *Lombard Street Research Monthly Economic Review* (July): 8.
- McNicoll, G. 1999. "Population weights in the international order," *Population and Development Review* 25(3): 411–442.
- Moscarola, F. C. 2001. "The effects of immigration inflows on the sustainability of the Italian welfare state," Working Paper 6/01, Center for Research on Pensions and Welfare Policies, Turin.
- OECD. 1978. *Migration, Growth and Development*. Paris: OECD.
- . 2001. *Trends in International Migration, SOPEMI 2001*. Paris: OECD.
- . 2003a. *Trends in International Migration, SOPEMI 2002*. Paris: OECD.
- . 2003b. *OECD Employment Outlook: Towards More and Better Jobs*. Paris: OECD.
- ONS. 2004a. *International Migration—Migrants Entering the United Kingdom and England and Wales 2002*. Series MN No. 29. London: The Stationery Office.
- . 2004b. *Population Trends 117; Tables*. London: The Stationery Office.
- Papademetriou, D. G. and P. L. Martin (eds.). 1991. *The Unsettled Relationship: Labor Migration and Economic Development. Contributions in Labor Studies*, 33. Westport, CT: Greenwood.
- Passel, J. S. 1994. *Immigration and Taxes, a Reappraisal of Huddle's The Cost of Immigrants*. Washington, DC: The Urban Institute, mimeo.
- Peach, G. C. K. 1967. "West Indians as a replacement population in England and Wales," *Social and Economic Studies* 16(3): 289–294.
- Pederson, L. H. 2002. "Ageing, immigration, and fiscal sustainability," DREAM, Copenhagen, mimeo.
- Piore, M. J. 1979. *Birds of Passage: Migrant Labor in Industrial Societies*. Cambridge: Cambridge University Press.
- Punch, A. and D. L. Pearce (eds.). 2000. *Europe's Population and Labour Market Beyond 2000*. Strasbourg: Council of Europe.
- Redfern, P. 2004. "An alternative view of the 2001 census and future census taking," *Journal of the Royal Statistical Society A* 167(2): 209–228.
- Rendall, M. S. and D. J. Ball. 2004. "Immigration, emigration and the ageing of the overseas-born population in the United Kingdom," *Population Trends* 116: 18–27.
- Reubens, E. P. 1987. "Benefits and costs of migration," in S. Klein (ed.), *The Economics of Mass Migration in the Twentieth Century*. New York: Paragon House, pp. 1–40.
- Roodenburg, H. J., R. Euwals, and H. Ter Rele. 2003. *Immigration and the Dutch Economy*. The Hague, CPB Special Publications, Sdu. «<http://www.cpb.nl/eng/pub/bijzonder/47/bijz47.pdf>»
- Roodenburg, H. J. 2003. "Immigration," *CPB Report 2003/2*, The Hague, CPB, p. 3.
- Roche, B. 2000. Speech on Migration to Institute of Public Policy Research. London: IPPR.
- Rothman, E. S. and T. J. Espenshade. 1992. "Fiscal impacts of immigration to the United States," *Population Index* 58(3): 381–415.
- Ruhs, M. and H. J. Chang. 2004. "Ethics of labor immigration policy," *International Organization* 58: 69–102.
- Salt, J. 1991. *Current and Future International Migration Trends Affecting Europe*, Report to the Council of Europe Fourth Conference of European Ministers responsible for migration affairs, Luxembourg, September. Strasbourg: Council of Europe.
- . 1997. *International Movements of the Highly Skilled*, International Migration Unit Occasional Papers No. 3. Paris: OECD.
- . 2003a. *Current Trends in International Migration in Europe*. Strasbourg: Council of Europe.
- . 2003b. "International migration and the United Kingdom," Report of the United Kingdom SOPEMI Correspondent. London, Migration Research Unit, Department of Geography, University College London.

- Salt, J. and J. Clarke. 2001. "Foreign labour in the United Kingdom: Patterns and trends," *Labour Market Trends* (October): 473–483.
- Sauvy, A. 1966. *The General Theory of Population*. London: Weidenfield and Nicholson.
- Schultz-Nielsen, M. L. 2001. *The Integration of Non-Western Immigrants in a Scandinavian Labour Market: The Danish Experience*. Copenhagen: Statistics Denmark.
- Shaw, C. 2001. "United Kingdom population trends in the 21st century," *Population Trends* 103(Spring): 37–46.
- Sheehey, E. J. 1996. "The growing gap between rich and poor countries: A proposed explanation," *World Development* 24(8): 1379–1384.
- Simon, J. L. 1986. *Theory of Population and Economic Growth*. Oxford: Basil Blackwell.
- . 1989a. *The Economic Consequences of Immigration*. Cambridge: Basil Blackwell.
- . 1989b. "On aggregate empirical studies relating population variables to economic development," *Population and Development Review* 15: 323–332.
- Spencer, S. (ed.). 1994. *Strangers and Citizens: A Positive Approach to Migrants and Refugees*. London: Institute for Public Policy Research / Rivers Oran Press.
- Stalker, P. 1994. *The Work of Strangers: A Survey of International Labour Migration*. Geneva: International Labour Office.
- Steinmann, G. and R. E. Ulrich (eds.). 1994. *The Economic Consequences of Immigration to Germany*. Heidelberg: Physica-Verlag.
- Steinmann, G. and M. Jaeger. 2000. "Immigration and integration: Non-linear dynamics of minorities," *Journal of Mathematical Population Studies* 9(1): 65–82.
- Stolnitz, G. J. (ed.). 1992. *Demographic Causes and Economic Consequences of Population Aging: Europe and North America*, UN ECE/UNPF Economic Studies No 3. New York: United Nations.
- Storesletten, K. 2000. "Sustaining fiscal policy through immigration," *Journal of Political Economy* 108(2): 300–324.
- . 2003. "Fiscal implications of immigration—A net present value calculation," *Scandinavian Journal of Economics* 105(3): 487–506.
- Teitelbaum, M. S. 2004. "The media marketplace for garbled demography," *Population and Development Review* 30(2): 317–327.
- Teitelbaum, M. and J. Winter. 1985. *The Fear of Population Decline*. London: Academic Press.
- Ter Rele, H. 2003. *The Fiscal Impact of Immigration*, CPB Report 2003/2, The Hague, CPB, pp. 23–28.
- Tribalat, M. 1996. "Chronique de l'immigration," *Population* 51(1): 144–191.
- United Nations. 2001. *Replacement Migration: Is It a Solution to Declining and Ageing Populations?* New York: United Nations.
- . 2003. *World Population Prospects: The 2002 Revision*. Volumes 1 and 2. New York: United Nations.
- US Department of Homeland Security. 2004. *2002 Yearbook of Immigration Statistics*. Washington, DC: USGPO. «<http://uscis.gov/graphics/shared/aboutus/statistics/ybpage.htm>»
- van Hoorn, W. et al. 1999. "Population development in Europe in the 21st century," in J. de Beer and L. van Wissen (eds.), *Europe: One Continent, Different Worlds. Population Scenarios for the 21st Century*. Dordrecht: Kluwer, pp. 109–147.
- van Imhoff, E. and N. Keilman. 1996. "The impact of future international migration on household composition and social security in the Netherlands," in S. Voets, J. School, and B. de Bruijn (eds.), *Demographic Consequences of International Migration*. The Hague: Netherlands Interdisciplinary Demographic Institute, pp. 307–324.
- Venturini, A. 1999. "Do immigrants working illegally reduce the natives' legal employment? Evidence from Italy," *Journal of Population Economics* 12: 135–154.
- Venturini, A. and C. Villosio. 2002. *Are Immigrants Competing with Natives in the Italian Labour Market? The Unemployment Effect*, Institute for Labour Economics (IZA). Discussion Paper no. 467.
- Wattelar, C. and G. Roumans. 1996. "Immigration, factor of population equilibrium? Some simulations," in S. Voets, J. School, and B. de Bruijn (eds.), *Demographic Consequences of International Migration*. The Hague: Netherlands Interdisciplinary Demographic Institute.

- Wadensjö, E. 1999. "Economic effects of immigration," in D. A. Coleman and E. Wadensjö, *Immigration to Denmark: International and National Perspectives*. Aarhus: Aarhus University Press, pp. 290–328.
- Weale, M. E. et al. 2002. "Y chromosome evidence for Anglo-Saxon mass migration," *Molecular Biology and Evolution* 19(7): 1008–1021.
- Weber, R. and T. Straubhaar. 1996. "Immigration and the public transfer system: Some empirical evidence for Switzerland," *Weltwirtschaftliches Archiv* 132(2): 330–355.
- Weiner, M. and M. S. Teitelbaum. 2001. *Political Demography, Demographic Engineering*. Oxford: Berghahn.
- Werner, H. 2001. "From guests to permanent stayers? From the German 'guestworker' programmes of the sixties to the current 'green card' initiative for IT specialists," *IAB Labour Market Research Topics* 43.
- Wrigley, E. A. and R. S. Schofield. 1981. *The Population History of England 1541–1871: A Reconstruction*. London: Edward Arnold.