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FEAR, UNEMPLOYMENT AND MIGRATION*

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We examine the impact on the UK economy of the flow of workers from ten East European countries after their accession to the European Union. We find evidence that those most susceptible to competition from these workers have seen weaker wage inflation. We document that the presence of these foreign workers has increased the fear of unemployment and helped to contain wage pressure. We argue that this inflow of workers has increased supply by more than it has raised demand and, thus, had the effect of reducing both inflationary pressures and the natural rate of unemployment.

The recent rise in migration to the UK from eight EU Accession countries (the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia – the A8 countries) which started in 2004, as well as subsequently from Romania and Bulgaria (the A2) in 2007, has generated a good deal of controversy. We will refer to these countries collectively as the A10 henceforth.[1] How many of these Eastern Europeans are there currently in the UK? Which countries did they come from and when? What impact has their influx had on the UK economy and what likely impacts will they have in the future?

We attempt to address these questions here. First, we examine changes in the UK population since the 1970s and note that growth has been very low by international standards. The UK population has, however, grown at a faster pace since the turn of the millennium, driven most recently by migration from the A8 nations and, to a much lesser extent, from the A2. It appears that the propensity to come to the UK from these countries is higher the lower is GDP *per capita*. Second, we examine the evidence on the numbers of individuals from Eastern Europe who have arrived in the UK in recent years. There is broad agreement from the various data sources on the numbers involved – eight hundred thousand workers is likely to be an upper bound for the stock who are in the UK by late 2007. Many of these individuals have stayed in the UK for only a short time and then returned home, possibly to return again at a later date. Our view is that these individuals should not actually be treated as migrants *per se* but are primarily *temporary workers* or *commuters*. Third, we examine the characteristics of the recent flow of individuals from the A10 countries that have arrived in the UK since accession and find that they are relatively young, male, educated, have high employment rates, low unemployment rates, lower wages, and high self-employment rates and are especially likely to be in temporary jobs. They appear to have very different characteristics than immigrants from non-A10 countries. Fourth, we examine the evidence suggesting that the *fear of unemployment* in the UK has risen over recent years and the consequences of that finding. We find that the fear of losing one's job lowers wage pressure. Fifth, we turn to the macroeconomic implications of A10 migration to the UK and argue that

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[1] Residents of Cyprus and Malta were also permitted to work in the UK from 2004 but the size of the flows is small and hence we concentrate on the more important flows from the Eastern European ten.

this immigration has made the labour market more flexible and is likely to have *lowered* the natural rate of unemployment and reduced inflationary pressures. Section 6 summarises the main findings.

1. Population Changes and UK Immigration Policy

According to official estimates published by the Office for National Statistics, the UK population grew by just 8.2% between 1971 and 2006, from 55.9 million to 60.5 million. In contrast, the US population grew by 44.6% over the same period, from 207.7 million in 1971 to 300.3 million in 2006.[2] Indeed population growth across most advanced countries has been greater than in the UK over the past three decades. Over the period 1971–2004, population growth in the UK ranks 31st out of 38 European and other large nations for which data are available (see Table 1), with only Germany (East and West) and seven East European countries having had slower population growth (Czech Republic, Croatia, Estonia, Hungary Latvia, Romania and Bulgaria). All the other major industrialised nations have had faster rates of population growth. Growth was particularly rapid in the US (+42%) as noted above but also in Australia (+54%), Canada (+45%), Spain (+25%), Japan (+21%) and France (+18%). The Indian population roughly doubled over the same period (96%), while the Chinese population grew by 52%. It is clear that UK population growth has been extremely low by international standards.

Long-run trends, however, mask some significant short-run changes in population growth. The UK population grew by 2.8 million (4.9%) between 1971 and 1999, but the population had subsequently risen by approximately another one and a half million by the end of 2005 (Table 2). The main cause of this increase has been a rise in net inward migration, driven by an increase in the inflow rate to the UK; the outflow rate has remained little changed over the years, although there has been a pickup since 1998. The ratio of births to deaths has seen less variation. In 2004/5 net migration accounted for two-thirds of the change in population (248/375). To place these numbers in some degree of context, net (legal) migration in the US accounted for approximately one third of net population growth in 2004/5.[3] Table 3 makes it clear that the scale of net inward migration to the UK has been much lower than in most other EU countries until recently, and even now remains well below the levels of both Italy and Spain.

The increase in the net flow of workers to the UK since the turn of the millennium coincides with changes in UK immigration policy and the relative attractiveness of the UK's economic position over the past decade. Most recently the increase in the inflow rate of migrants is in large part attributable to immigration policies that accompanied the accession of the A8 countries on May 1st 2004, and the A2 on January 1st 2007.[4] Citizens from the A8 nations obtained free movement and the right to work in the UK,

[2] *Source*. Statistical Abstract of the United States, 2001, 2006 and http://www.census.gov.

[3] Population in the US on July 1st 2004 was 293,657,000 increasing to 296,410,000 on July 1st 2005 a net increase of 2,754,000 or 0.94%. This increase was made up of 4,129,000 births, 2,425,000 deaths and net legal migration of 1,050,000. Source: US Census Bureau – http://www.census.gov/compendia/statab/tables/07s0004.xls.

[4] In addition Malta and (South) Cyprus also joined the EU at that date. Bulgaria and Romania joined the EU on January 1st 2007.

Table 1

Population Growth, 1971–2004 (%)

	1971–2000	2000–4	1971–2004
India	84.1	7.0	96.9
Liechtenstein	51.1	5.5	59.5
Australia	46.6	5.0	53.9
China	48.1	2.6	52.1
Canada	39.7	3.8	45.1
Albania	n/a	n/a	42.9
Iceland	36.4	3.9	41.7
USA	32.6	6.7	41.5
New Zealand	33.1	5.2	40.0
Ireland	27.2	6.9	36.0
Luxembourg	27.4	3.9	32.4
Greece	23.6	1.3	25.3
Spain	18.0	6.0	25.1
Netherlands	20.7	2.2	23.4
Portugal	18.3	2.7	21.5
Japan	20.6	−0.1	20.5
Cyprus	11.9	6.6	19.3
Switzerland	15.6	2.9	18.9
Slovakia	18.2	−0.1	18.1
France	15.1	2.4	17.8
Norway	15.1	2.3	17.7
Poland	17.3	−0.7	16.5
Slovenia	14.4	0.4	14.9
Finland	12.3	1.0	13.4
Sweden	9.6	1.4	11.1
Austria	6.8	2.0	8.9
Denmark	7.6	1.1	8.8
Lithuania	10.1	−1.8	8.1
Italy	5.3	2.2	7.6
Belgium	6.0	1.4	7.5
UK	5.4	1.6	7.0
Germany	4.9	0.4	5.3
Czech Republic	4.7	−0.6	4.1
Croatia	1.6	−1.3	0.3
Estonia	0.2	−1.5	−1.3
Hungary	−1.5	−1.0	−2.5
Latvia	−0.1	−2.5	−2.7
Bulgaria	−5.6	−3.5	−8.9

Source. Eurostat, US Statistical Abstract 2006 and Health Statistics Quarterly, 32, Winter 2006.

Ireland and Sweden from May 1st 2004,[5] although they have to register on the Worker Registration Scheme (WRS) and also register to obtain National Insurance numbers. The WRS does not apply to Bulgarian and Romanian nationals, and access to the UK labour market is more restricted.[6] The self-employed from all A10 countries are able to

[5] Finland, Greece, Portugal and Spain opened their labour markets to these workers on May 1st 2006, while Italy followed in late July 2006. Five other countries (Belgium, Denmark, France, the Netherlands and Luxembourg) alleviated restrictions in 2006 (Zaiceva, 2006).

[6] Skilled workers from the A2 with the 'right qualifications and experience' are allowed to take up specific jobs where there is no suitable UK applicant, while workers can also enter through the Highly Skilled Migrants Programme. Low-skilled migration from Bulgaria and Romania is restricted to those sectors of the economy where the UK already has low-skilled schemes and is subject to a strict quota capped at 20,000 workers per year. Furthermore, A2 workers' rights to work on these schemes are limited to six months, which means that they are not entitled to access benefits or public housing.

Table 2

UK Population Changes, 1971–2004/5 (000s)

	Population at start of period	Population at end of period	Average Annual Change		Births	Deaths	Net Migration
			(000s)	%			
1971–76	55,928	56,216	58	0.10%	766	670	−39
1976–81	56,216	56,352	27	0.05%	705	662	−15
1981–86	56,357	56,684	65	0.12%	733	662	−5
1986–91	56,684	57,439	151	0.26%	782	647	13
1991–96	57,439	58,164	145	0.25%	756	639	29
1996–97	58,164	58,314	150	0.26%	740	637	47
1997–98	58,314	58,475	161	0.28%	718	617	60
1998–99	58,475	58,684	209	0.36%	713	634	133
1999–00	58,684	58,886	202	0.34%	688	626	139
2000–01	58,886	59,113	227	0.38%	674	599	153
2001–02	59,113	59,322	209	0.35%	663	601	146
2002–03	59,322	59,554	232	0.39%	682	605	155
2003–04	59,554	59,834	280	0.47%	707	603	177
2004–05	59,834	60,210	375	0.62%	718	591	248

Source. Population Trends, 128, Summer 2007, Table 1.6, ONS and *Mid-year Population Estimates*, ONS.

work in the UK, but must be able to prove they are genuinely self-employed. Bulgarian and Romanian students can study in the UK and seek part-time employment during their stay but need a work authorisation document to do so.[7]

But why move to a foreign country in the first place? The literature focuses on the economic factors that determine migration. Very simply, the literature says that individuals will compare the income benefits from migration with the economic and social costs of moving. If the benefits outweigh the costs, they may choose to migrate. The gain from moving will be calculated as the expected income differential between the destination country and the country of origin, which will in turn be determined by the relative probability of getting a job – captured by differences in the unemployment or employment rates.

There is an ongoing debate in the international empirical literature on whether immigrants have major impacts on wages and unemployment. In part this debate is about methodology. There are some studies that do find statistically significant impacts, such as Dustmann and Weiss (2007). Of course, as a referee has pointed out, whether or not these statistically significant impacts are 'major' is debatable. We discuss these in more detail later.

Naskoteen and Zimmer (1980) find for the US that a 10 percentage point increase in the wage differential between the countries of destination and origin increases the probability of migration by 7 percentage points. Borjas (2005) finds that a 10 percentage point increase in the rate of employment growth in the state of origin reduces the probability of migration by approximately 2%. There is also evidence that migration is most common among younger and more educated workers (Borjas 2005). Moreover, workers who have just migrated are extremely likely to move back to their original

[7] http://press.homeoffice.gov.uk/press-releases/control-access-uk-labour-market?version=1.

Table 3

Net Migration Flow, 1960–2005 (000s)

	Population Millions 2006	Net Migration (Thousands) 1960/64 Yearly average	1965/69 Yearly average	1970/74 Yearly average	1975/79 Yearly average	1980/84 Yearly average	1985/89 Yearly average	1990/94 Yearly average	1995/99 Yearly average	2000	2003	2004	2005
EU-25	463.6	230	−34	82	265	15	382	856	645	677	1,981	1,887	1,776
EU-15	389.5	216	−29	190	280	31	427	1,022	627	1,077	1,925	1,847	1,720
Belgium	10.5	14.1	16.7	9.0	7.2	−7.1	8.2	18.8	11.0	12.9	35.6	35.8	51.0
Denmark	5.4	0.9	1.0	6.5	2.0	1.1	6.4	10.6	15.7	10.1	7.0	5.0	6.7
Germany	82.4	163.0	220.7	171.1	14.6	1.8	332.2	562.6	204.4	167.8	142.2	81.8	81.6
Greece	11.1	−41.9	−35.1	−24.8	56.1	17.9	24.4	88.6	61.9	29.4	35.4	41.4	40.0
Spain	43.8	−109.7	−30.1	−32.1	28.3	0.8	−19.7	49.4	129.0	389.8	624.6	610.0	641.2
France	63.0	303.7	95.3	114.8	33.8	52.3	49.8	22.5	8.0	102.7	132.7	107.7	205.1
Ireland	4.2	−20.9	−14.8	10.3	10.1	−6.8	−32.9	−1.4	16.0	31.8	31.3	47.6	66.2
Italy	58.8	−81.5	−94.3	−45.2	6.0	−27.8	−2.5	24.4	51.4	55.2	609.5	558.2	324.2
Netherlands	16.3	3.9	9.6	26.7	35.7	14.2	27.4	41.3	30.9	57.0	7.0	−10.0	−22.8
Austria	8.3	1.0	10.0	19.1	−3.0	3.3	14.4	48.7	7.1	17.2	38.2	61.7	56.4
Portugal	10.6	−78.3	−169.7	−45.0	88.9	6.1	−31.8	88.9	−7.0	29.6	47.1	47.3	38.4
Finland	5.3	−11.2	−18.9	1.3	−7.3	4.1	2.4	9.0	4.2	2.4	5.8	6.7	9.2
Sweden	9.0	10.6	24.6	6.9	17.3	5.2	24.1	32.5	9.6	24.4	28.7	25.3	26.7
UK	60.4	59.9	−44.7	−32.1	−11.3	−34.3	22.3	21.9	81.0	143.6	177.7	227.2	193.3
Luxembourg	0.5	2.1	0.9	3.9	1.4	0.4	2.2	4.0	3.9	3.4	2.1	1.5	2.8

Source. Population Statistics 2006 – Eurostat, Table C1 (population) and Table F1 (migration).

locations. The probability of a migrant returning to the state of origin within a year is about 13% and the probability of moving to another location is 15% (Devanzo, 1983; Dustmann, 2003). Zaiceva (2006) summarises the empirical literature on potential European migration flows, which she shows to be consistent with between 2 and 4% of the residents of Central and East European countries (CEECS) moving West, in the long run, constituting around 1% of the EU15 population. Zaiceva also presents evidence from simulations suggesting that the majority of migrants will be from Romania, Poland and Bulgaria, consistent with other estimates from the literature.

Gilpin *et al.* (2006) examine whether A8 citizens have come to the UK because it offers a higher standard of living (GDP *per capita*) or a higher probability of getting a job (measured by the inverse of the unemployment rate), or both. They examine data from the Worker Registration Scheme (WRS), which is described in detail below, and compute the number of WRS registrations as a percentage of the home country population and show it is correlated with GDP and unemployment. We update their analysis in Table 4. It is apparent that a larger fraction of people from Lithuania (1.85%), Latvia (1.43%), Slovakia (1.13%) and Poland (1.02%) have come to the UK compared to Estonia (0.47%), the Czech Republic (0.28), Hungary (0.19) and Slovenia (0.03) (Table 3).

Gilpin *et al.* find that countries with the lowest GDP per head, such as Lithuania (2,500 euros) are more likely to be registered on the UK WRS than those from countries with higher GDP, such as Slovenia (11,400 euros).[8] Workers in the WRS data are also more likely to come from countries with the highest unemployment rates, such as Poland (19.0%).[9] Pedersen *et al.* (2004) found similar effects for GDP *per capita* and the unemployment rate in both source and destination countries in their study of migration flows into OECD countries in the 1990s. Hughes (2007) found that GDP *per capita* was also a good predictor of flows from the A8 to Ireland.

The correlation coefficient is clearly highest with 2005 GDP per head, as noted by Gilpin *et al.* and even higher when GDP is in logs ($r = -0.832$). The correlation is slightly weaker with the unemployment rate but especially low with the employment rate. Interestingly, Schiopu and Siegfried (2006) found that the difference in GDP between the host and home countries increases the size of remittances.

Data are also available on the country's rank on the 2005 Human Development Index taken from the Human Development Report of the UN, and their average life satisfaction score for 2002 taken from the Eurobarometer Surveys.[10] A lower rank on

[8] Expressed as euros per inhabitant at 1995 exchange rates and prices.

[9] As noted by a referee, unemployment rates tend to be estimated in different ways in each of the new member states. Blanchflower (2001) discusses problems in measuring unemployment rates from 1989 to 1998 because of the pretransition lack of officially recognised unemployment in the countries. The very high unemployment rate for Poland is potentially an overestimate. With the exception of Hungary, the level of these unemployment rates has declined fairly rapidly since accession, as the procedures for calculation of the rates become normalised across countries. For example, in 2007 Eurostat estimates the unemployment rates as follows, with 2004 rates in parentheses – Bulgaria 6.9% (12.0%), Czech Republic 5.3% (8.3%), Estonia 4.7% (9.7%), Latvia 6.0% (10.4%), Lithuania 4.3% (11.4%), Hungary 7.4% (6.1%), Poland 9.6% (19.0%), Romania 8.1% (6.4%), Slovenia 4.8% (6.3%) and Slovakia 11.1% (18.2%). Source: http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1996,39140985&_dad=portal&_schema=PORTAL&screen=detailref&language=en&product=STRIND_EMPLOI&root=STRIND_EMPLOI/emploi/em071.

[10] The HDI is published annually by the United Nations and is a score that amalgamates three indicators: lifespan; educational attainment and adjusted real income (Blanchflower and Oswald, 2005).

Table 4

WRS Applications May 2004–March 2007, as a Proportion of Pre-accession Home Country Populations

	WRS registrations as a percentage of 2004 home country population	WRS registrations (000s)	Population (2004) (millions)	Unemployment rate (2004)	Employment rate (2004)	GDP per head (2005) (Euros per head at 1995 exchanges rates and prices)
Czech Republic	0.28	28.9	10.2	8.3	64.2	5,200
Estonia	0.47	6.2	1.3	9.7	63.0	4,000
Hungary	0.19	18.9	10.1	6.1	56.8	5,000
Latvia	1.43	32.8	2.3	10.4	62.3	3,100
Lithuania	1.85	62.8	3.4	11.4	61.2	2,500
Poland	1.02	394.2	38.6	19.0	51.7	4,200
Slovakia	1.13	61.2	5.4	18.2	57.0	4,200
Slovenia	0.03	0.6	2	6.3	65.3	11,400
Average/Total	0.83	605.4	73.3			
UK			59.5	4.7	71.6	
EU-25			458.9	9.1	63.3	
Correlation				0.560	−0.257	−0.711

Source. Gilpin *et al.* (2006) Table 4.3 updated. *Human Development Report*, 2006 and *Accession Monitoring Report* May 2004–March 2007.

HDI is better, a higher life satisfaction score is better. The propensity to migrate is even more highly correlated with these two measures than it is with GDP *per capita* (Blanchflower *et al.*, 2007).[11]

It is well known that East Europeans are more likely to report that they are unhappy (Blanchflower, 2001; Blanchflower and Freeman, 1997). In a recent *Candidate Eurobarometer* collected between September and October 2002 (ICPSR #4062), respondents were asked the following question.

Q. On the whole, are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with the life you lead?

A. Very satisfied = 4; *Fairly satisfied* = 3; *Not very satisfied* = 2; *Not at all satisfied* = 1

The scores by country were as follows: Bulgaria 2.02, Czech Republic 2.82, Estonia 2.55, Hungary 2.60, Latvia 2.46, Lithuania 2.44, Malta 3.00, Poland 2.69, Romania 2.39, Slovakia 2.56, Slovenia 3.05 and Turkey 2.43.[12] The means of the life satisfaction score variable reported above correlate reasonably well for the A8 countries with the propensity to migrate ($r = -0.751$) and considerably better than the unemployment or employment rates; see Blanchflower *et al.* (2007) for more details.[13]

[11] The correlation with the 2002 life satisfaction score is −0.75, which is similar to the 2001 score (−0.72), but lower in 2003 (−0.55), 2004 (−0.57) and 2005 (−0.58), see Blanchflower *et al.* (2007).

[12] Source: World Database on Happiness http://worlddatabaseofhappiness.eur.nl.

[13] Blanchflower (2001) found that in the mid-1990s support for the free market was especially high in Poland, Romania and Lithuania. The proportion of respondents in *East European Eurobarometers* 7 and 8 for 1996 and 1997 who reported that 'the free market is right for the country's future' compared to those who said it was 'wrong' was as follows:- Albania 85%, Poland 77%, Croatia 74%, Romania 71%, Lithuania 65%, Bulgaria 64%, Estonia 63%, Georgia 57%, Hungary 55%, FYR Macedonia 52%, Latvia 50%, Slovenia 50%, Belarus 48%, Slovakia 43%, Czech Republic 36%, Kazakhstan 36%, Ukraine 32%, Russia 29% and Armenia 27% (2001, Table X).

Table 5
Life Satisfaction Scores

	2001	2002	2003	2004	2005	2006	2007
Bulgaria	2.08	2.04	2.05	2.06	2.04	1.99	2.16
Czech Republic	2.84	2.84	2.73	2.82	2.93	2.92	2.95
Estonia	2.44	2.52	2.48	2.74	2.72	2.74	2.87
Hungary	2.54	2.63	2.53	2.44	2.53	2.50	2.44
Latvia	2.54	2.47	2.54	2.52	2.62	2.62	2.65
Lithuania	2.29	2.46	2.52	2.55	2.56	2.62	2.70
Poland	2.65	2.71	2.67	2.81	2.77	2.80	2.88
Romania	2.12	2.20	2.10	2.32	2.35	2.33	2.47
Slovakia	2.48	2.54	2.47	2.59	2.64	2.70	2.79
Slovenia	3.04	3.03	3.04	3.17	3.10	3.09	3.14
UK	3.17	3.14	3.16	3.22	3.21	3.18	3.18

Source. World Database on Happiness.

Interestingly there has been some improvement in the life satisfaction scores in a number of these Eastern European countries since accession in 2004, particularly in the Czech Republic, Hungary, Latvia, Lithuania and especially Slovakia. Mean scores using the same four point scale as above taken from the *Eurobarometer* and reported in the World Database on Happiness from 2001–2006, are shown in Table 5, along with those, for comparison, for the UK. The country rankings are very similar to those in the Candidate Barometers.

Growth in the A10 countries since accession has been strong: as we noted above, unemployment has fallen; growth has also been strong, probably in part driven by remittances from those working abroad. According to the IMF (2008) real GDP in 2007 averaged 8.9% in the Baltic states of Estonia, Latvia and Lithuania and 6.0% in the remaining countries. According to their most recent forecast, presented in Table 6, however, real GDP is expected to slow rapidly in 2008 and 2009.

Despite the fact that there is likely to be quite rapid slowing in GDP growth in the A10 countries it is unclear how much this will impact flows of both permanent migrants and especially temporary workers to the UK from the A10 countries in the future. Some countries such as Hungary are expected to see more marked slowing and this may provide an incentive for a larger flow of Hungarian workers to the UK than has been seen previously. The country mix of workers may thus change in the future.

In summary, the favourable macroeconomic climate (low unemployment) and high standard of living in the UK (GDP *per capita*) are reasons why workers from the A10 countries may have been attracted to the UK. Rapid GDP growth in some A10 countries and improvements in their unemployment rates might suggest a reduction in the flows of both permanent migrants and especially temporary workers to the UK from the A8 countries in the future.[14] However, growth rates are projected to fall quite rapidly over the next two years. Anticipated and legally required changes in the immigration

[14] We thank a referee for noting that rates of return migration may vary between different countries of origin. Those from neighbouring countries are likely to move back more often. There are different explanations for that. One is that income differentials are generally smaller between neighbouring countries, and mobility costs are lower. Another factor is regulation – if it is possible to return to the host country again the arguments for staying permanently are smaller. And third, the reasons for coming may differ – refugees are less likely to return home.

Table 6

Real Annual GDP Growth

	2006	2007	2008	2009
Baltics	9.8	8.9	4.8	3.5
Estonia	11.2	7.1	3.0	3.7
Latvia	11.9	10.2	3.6	0.5
Lithuania	7.7	8.8	6.5	5.5
Central Europe	6.1	6.0	4.4	4.3
Czech Republic	6.4	6.5	4.2	4.6
Hungary	3.9	1.3	1.8	2.5
Poland	6.2	6.5	4.9	4.5
Slovak Republic	8.5	10.4	6.6	5.6
Southern and SE Europe	7.0	6.0	5.2	4.6
Bulgaria	6.3	6.2	5.5	4.8
Croatia	4.8	5.8	4.3	4.0
Romania	7.9	6.0	5.4	4.7

Source. International Monetary Fund.

policies of other EU member states that will allow greater access to people from the A8 may also lead flows to the UK to fall as other opportunities become available. However, Pedersen *et al.* (2004) studied migration flows into 27 OECD countries from 1990–2000 and found that network effects, measured as the coefficient of the stock of immigrants of own national background already resident in a country, had a large positive impact on immigration flows. This reflects a key finding in the existing literature that the factors that sustain or perpetuate migration can be different from those that triggered migration in the first place.[15] It suggests that rather than dissipate, flows to the UK could continue well into the future.

2. Size of Flows from Eastern Europe

Much of the debate surrounding migration to the UK in recent times has focused on the ability of the country, both economically but also geographically, to absorb these new workers. The UK has the third highest population density (around 250k people per square kilometre) of the EU15, surpassed only by Belgium (341) and the Netherlands (393); the Scandinavian countries have the lowest densities (all 20 or less).[16] To assess these impacts we need to know how many workers have come to the UK.

It is difficult to get an exact estimate of the size of the flows of individuals from the A8 and A2 countries to the UK since accession. Some estimates suggest that around 800,000 A8 workers have come to the UK but other sources suggest many fewer. It is also unclear what proportion of such workers are long-term migrants and what proportion are here for a short time and have subsequently returned home, perhaps to return again in the future. The scale and nature of this flow is an important question for policy makers because it affects the labour market and the wider economy. It is therefore important to try and understand and reconcile the differences between different data sources as far as possible. Doing this, we find that 800,000 workers is an upper bound for the stock of

[15] We thank a referee for this point.
[16] Data are taken from the UN's Population Database: http://esa.un.org/unpp/.

Table 7

Worker Registration Scheme Data by Country of Origin

	Czech Republic	Estonia	Hungary	Latvia	Lithuania	Poland	Slovakia	Slovenia	Total
Q2 2004	2,265	595	1,020	2,625	7,115	21,755	3,410	45	38,830
Q3 2004	3,080	690	1,200	3,375	7,065	26,085	4,885	60	46,440
Q4 2004	2,910	580	1,395	2,670	5,090	23,185	4,725	55	40,610
2004	8,255	1,860	3,620	8,670	19,270	71,025	13,020	160	125,880
Q1 2005	2,725	710	1,430	3,030	5,540	23,210	4,805	50	41,495
Q2 2005	2,715	720	1,585	4,165	7,230	32,850	5,805	30	55,105
Q3 2005	2,860	600	1,670	3,290	5,720	38,310	6,375	35	58,870
Q4 2005	2,275	530	1,670	2,470	4,490	32,960	5,050	55	49,495
2005	10,575	2,560	6,355	12,960	22,990	127,325	22,035	170	204,970
Q1 2006	1,865	390	1,435	2,560	4,235	31,915	4,305	55	46,765
Q2 2006	2,045	340	1,600	2,790	4,470	38,125	5,490	40	54,905
Q3 2006	2,220	420	1,835	2,265	4,340	45,465	6,260	50	62,855
Q4 2006	2,215	325	2,190	1,880	4,015	46,985	5,695	40	63,350
2006	8,345	1,475	7,060	9,490	17,065	162,495	21,755	185	227,875
Q1 2007	1,820	275	1,965	1,835	3,740	35,785	4,840	45	50,305
Q2 2007	1,800	210	2,085	1,630	3,685	37,250	5,595	40	52,295
Q3 2007	1,980	270	2,295	1,535	3,700	41,010	6,200	50	57,040
Q4 2007	1,780	195	2,375	1,180	2,870	33,495	5,385	50	47,330
2007	7,380	950	8,720	6,180	13,995	147,540	22,020	185	206,970
2004–7	34,555	6,845	25,755	37,300	73,320	508,385	78,830	700	765,695

Source. Home Office (2008), *Accession Monitoring Report* May 2004–December 2007.

post-accession A10 workers in the UK by late 2007. This compares with a population of around 60 million and would therefore boost population density by just 1%. As such, at least geographically, the influx of foreign workers does not take the UK beyond densities experienced already in other EU countries.

There are four main sources of data on the flow of A8 individuals: the Worker Registration Scheme (WRS), National Insurance Number applications (NINos), Total International Migration (TIM) data, and the UK Labour Force Survey (LFS).[17] In addition there is some early data on the flows from Bulgaria and Romania. We look at each of these briefly in turn.

2.1. *Worker Registration Scheme (WRS)*

The WRS records those workers from the A8 that have registered to work in the UK since accession. Table 7 reports the number of employees, by A8 country, that registered on the WRS and that were approved for work. The self-employed and workers from Romania and Bulgaria do not need to register under the WRS. The largest number in every year has come from Poland. The flows by quarter are very similar. The WRS suggests that 765,695 A8 employees had registered to work in the UK since accession – a further 5,200 were refused, 1,675 were exempt and 22,615 applications were withdrawn making a grand total of 796,110 applicants. The three main countries from which migrants have come are Poland (65%), Lithuania (10%) and Slovakia (10%). There have been little obvious signs of slowing of the flows. For example in 2006Q1, 46,765 applications were approved, compared with 46,820 in 2007Q1.

[17] For further details of these surveys see Blanchflower *et al.* (2007).

Table 8

Intended Length of Stay of WRS Registered Workers in the UK, January 2007 to December 2007

Intended length of stay	12 months ending December 2007	Per cent
Less than 3 months	121,550	59
3 to 5 months	3,450	2
6 to 11 months	6,350	3
1 to 2 years	8,645	4
More than 2 years	16,465	8
Do not know	50,505	24
Total	206,965	100

Source. Accession Monitoring Report May 2004–December 2007.

Table 8 reports data from the WRS that suggest that 59% of A8 migrants registering in the twelve months to December 2007 only intended to stay in the UK for up to three months. Actions appear to mirror intentions.[18]

2.2. *National Insurance Numbers (NINos)*

Both employed and self-employed workers from the A8 and A2 nations need to register for a National Insurance number to work legally in the UK. Table 9 shows that between March 2004 and December 2007, some 807,115 A8 nationals registered for a UK National Insurance number. This estimate is slightly larger than the number recorded on the Worker Registration Scheme, with the difference probably reflecting self-employment.[19] At the time of writing numbers for the A2 were not available.

Table 9

Numbers of Overseas Nationals Entering the UK and Allocated a National Insurance Number

Period	Total Allocated	Purpose allocated for			Total Refused
		Employment	Benefit	Tax Credit	
2004	63,479	62,539	588	352	1,611
2005	221,818	218,521	1,649	1,648	2,354
2006	266,623	260,909	1,698	4,016	3,991
2007	255,195	246,293	2,198	6,704	3,783
Total	807,115	788,262	6,133	12,720	11,739

Source. Accession Monitoring Report May 2004–December 2007.
Notes. This Table includes all identified claims from A8 nationals, and is not restricted to those required to register with the Worker Registration Scheme.

[18] Migrants' intentions can change. Drinkwater *et al.* (2006) and Spencer (2007) suggest that some Eastern European migrants arrive with the intention of a short-term stay but then decide to stay longer or even settle permanently. We thank a referee for this point.

[19] It is possible that the number of self-employed workers from the A8 is much higher than this figure might suggest, since some who initially expressed an intention to work for others by registering on the WRS may have actually ended up working independently. This may be especially true for those in the construction industry.

2.3. *Labour Force Survey (LFS)*

The Labour Force Survey (LFS) is a continuous household survey that provides a wide range of data on labour market statistics and related topics such as training, qualifications, income and disability. The LFS is a quarterly survey of households living at private addresses, student halls of residence and NHS accommodation in the UK. The LFS has been running in its present form since the spring of 1992 although an LFS has been carried out in Great Britain since 1973. Like any survey, the LFS relies on additional information about the size and composition of the population – population weights – to produce an estimate of the 'true' immigrant population. In this respect, the accuracy of the LFS relies on the accuracy of the underlying population data (which in turn utilises the ONS estimates of the net migrant inflow). The accuracy of the survey will also depend on how representative the sample is of the population. (Saleheen and Shadforth, 2006) note that that immigrants may be less likely to respond to the LFS survey and so be underrepresented in the LFS data. This is because immigrants, particularly temporary immigrants, are less likely to live at private addresses and more likely to live in communal establishments, such as guest houses or hotels, than the domestically born population (Saleheen and Shadforth, 2006). As such, the LFS will not accurately reflect the size and characteristics of the immigrant population. However, since just 1% of the total population (and 2% of the immigrant population) lived in communal establishments in 2001, this is probably not a major source of bias.

In this article we define an A10 worker based on country of birth; it is possible to use country of origin but the results are the same. Column 1 of Table 10 reports the numbers of A8 nationals present in the UK in Q1 (January, February, March) each year since 2003. The LFS data indicate that around 435,000 nationals from the A8 countries were resident in the UK by 2007Q1, of whom 330,000 had arrived since 2004; three-quarters are workers. Over time the proportion of A8 migrants who are employees has risen and the self-employment rate fallen. The data suggest that there were 480,000 A8 nationals present in 2007Q4.

2.4. *Total International Migration, Predominantly from the International Passenger Survey*

The International Passenger Survey (IPS) is a voluntary survey of individuals passing through the main UK air and sea ports and the Channel Tunnel. The IPS questions 250,000 passengers annually of whom only 1% are migrants. The sample size for

Table 10

LFS Estimates of the Stock of Individuals from the A8 Resident in the UK

		Total A8 respondents	All workers	of which self-employed	Employment rate (%)	Self-employment rate (%)
Q1	2003	98,485	46,531	9,091	(47.2)	(19.5)
Q1	2004	106,404	58,143	21,786	(54.6)	(37.5)
Q1	2005	164,650	114,198	24,226	(69.4)	(21.2)
Q1	2006	301,961	240,299	39,062	(79.6)	(16.3)
Q1	2007	436,219	334,824	43,603	(76.8)	(13.0)

Source. Labour Force Surveys.

Table 11

Estimated Number of Immigrant Arrivals Since A8 Accession

	Available Data	Coverage	Period Covered	Adjusted Data
NINo registrations	807,115	Those registering for tax or benefit purposes	May 2004–Dec. 2007	807,115
WRS	765,695	Employed workers	May 2004–Dec. 2007	765,695
LFS	480,000	All those aged 16+	April 2004–March 2007	480,000
TIM (based on IPS)	181,000	All long-term migrants	Jan. 2004–Dec. 2005	247,000

Source. DWP, Home Office, ONS and own estimates.
The TIM number is calculated by adding the average net flow from 2005 and 2006 (66,000) as a proxy for the flow in 2007.

migrants is small, for example, in 2005, the IPS statistics were based on 2,965 migrants who entered the UK and 781 people who left.

The IPS has three main limitations. First, it does not cover all types of migration. The IPS excludes land routes between the UK and the Irish Republic. It also excludes most asylum seekers and some dependants of such asylum seekers. As such, the survey responses must be supplemented with data from alternative sources.[20] Second, because the IPS is a sample survey – that is not every migrant to or from the UK is interviewed – it is subject to a degree of uncertainty. This can manifest itself in both sampling error (the sample may not be an accurate representation of the total population) and non-sampling error (for instance, the sample may be biased if sampled respondents cannot communicate effectively in English). Third, the IPS data are based on respondents' intentions, which may or may not accord with their final actions (an alternative source of potential bias). Thus, some adjustments are required to account for those who change their intention – so called 'switchers' – which may also be subject to error. Other reasons why the IPS may mismeasure immigration are that: the survey was originally designed to capture tourism and business travel; participation in the survey is voluntary and immigrants may be less likely to respond (perhaps because of language difficulties).

These data suggest that there was a net positive migration flow of 244,000 in 2004, 204,000 in 2005, and a further 191,000 in 2006. making a total of 639,000. As part of these, the IPS suggests that 181,000 individuals have come to the UK from the A8 countries, which is a considerably lower number than the other estimates.

The numbers from the A10 entering the UK since accession appears somewhat uncertain given the available data. The WRS and NINo data give numbers several times greater than the TIM data. But the sources vary in their coverage, both in terms of the numbers captured (including definitional differences) and the period of observation. Table 11 attempts to accommodate the latter issue, adjusting the TIM (IPS) numbers such that they – like the WRS, NINo and LFS data – also cover the period since Accession. Following adjustment, it is apparent that the LFS and TIM (IPS) data now suggest similar numbers have come to the UK from the A8 but the estimates remain much lower than the WRS or NINo results. The remaining differences between the data sources reflect the groups of individuals covered and definitions employed. The LFS and TIM data are

[20] Data on asylum seekers and their dependents are provided by the Home Office, while estimates of migration between the Republic of Ireland and the UK are obtained from the Irish Quarterly National Household Survey and the National Health Service Central Register.

designed to capture only those who stay in the country for an extended period of time – more than 6 months for the LFS and 12 months for the IPS. In contrast, the NINo and WRS capture all those who have come to the UK, including those that might return home relatively quickly – or in some sense commute to the UK for work.

The broader ordering of the estimates also makes sense. The LFS micro-data suggest that about 40,000 self-employed workers have come to the UK since Accession. This broadly equates to the gap between the number of NINo applications, which covers all workers, and the number of WRS applicants, which are solely employees, particularly given that some registered WRS workers may have subsequently turned to self-employment. In addition, we should also expect the estimated number from the A8 in the LFS to exceed the estimate from the TIM (IPS) because the TIM (IPS) employs a more restrictive definition of a migrant – being someone who changes his or her country of usual residence for a period of at least a year.

Having reconciled the differences as far as possible, it appears that 800,000 workers is likely to be an upper estimate of the number of people from the A8 who could potentially be in the UK by late 2007. The data also suggest that as many as half of the individuals that have come to the UK have not stayed permanently (see Table 8 above).[21] There is another source of data on international migration that supports our findings. Population data from Eurostat (2006) suggest that there was no substantial decline in the populations of any of the A8 countries, especially Poland, between 2004 and 2005. As a proportion of the population, the greatest net outflows have been from Lithuania (−0.60%) and Latvia (−0.55%). This is consistent with the flows to the UK from the A8 being largely temporary in nature.

2.5. *Flows from Bulgaria and Romania*

Provisional data are available on the numbers of workers who have moved to the UK from Bulgaria and Romania during 2007 and the first quarter of 2008 (Source: *Bulgarian and Romanian Accession Statistics, January–March 2008*, Border and Immigration Agency, Home Office).[22] The statistics show that 32,620 A2 nationals have been granted access to the UK labour market since accession. Of these, 4,075 were granted an Accession Worker Card[23] (1,755 Bulgarians and 8,785 Romanians) and 28,545 individuals (8,785 and 19,760) were approved a registration certificate entitling them to enter the UK for a purpose other than paid employment.[24] The number applying for a registration certificate may be misleading however, as exempt[25] workers are not obliged

[21] The propensity to return is likely to vary by occupation and country of origin, therefore our findings may be driven by the size of the Polish contingent, or could be a more general result.

[22] http://www.ind.homeoffice.gov.uk/aboutus/reports/bulgarianandromanianaccession

[23] These include applications for work permits or applications for work authorisation in the Sectors Based Scheme for low skilled. Family members wishing to join those previously granted an Accession Worker Card (AWC) is also required to apply for an AWC.

[24] The category also includes those that are exempt from the employment restrictions, those in the Highly Skilled Migrants Programme, students, the self-employed, the self-sufficient and family members.

[25] An A2 national is entitled to seek an exemption following 12 months lawful employment in the UK, through marriage or civil partnership with a UK national, as the family member of an EEA national (other than an A2 national who does not have unconditional access to the UK labour market) or by meeting qualifying criteria of the Highly Skilled Migrants Programme, the Science and Engineering Graduates Scheme or the Scottish Graduates Scheme, SEGS.

to apply for exemption – the data therefore only reflect those that have chosen to do so. The largest proportion (49%) of registration certificates were issued to self-employed workers, while a further 18% went to individuals exempt from the employment restrictions and 13% to students.

Given the fact that the workers from Eastern Europe generally intend to, and actually do, stay in the UK for relatively short spells, or as in the case of some from Bulgaria or Romania who are only allowed to stay for six months, in our view it is inappropriate to call them migrants; they should more appropriately be considered *temporary workers*.

LaLonde and Topel (1997) found that 4.8 million of the 15.7 million US immigrants who arrived between 1907 and 1957 had departed by the latter year. Chiswick and Hatton (2003) pointed out that return migration exceeded immigration to the US during the 1930s. Yang (2006) recently examined the economics of return migration for temporary labour migration by Filipinos. Yang found that, on average, a 10% improvement in the exchange rate reduced the 12-month migrant return rate by 1.4 percentage points. This is a large effect, amounting to nearly one-fifth of the mean 12-month return rate in his sample.

In private communication Barry Chiswick has pointed out to us that most migration streams start with the early migrants expressing a desire to return and many do return. As family members join them, as they acquire destination-specific human capital, including labour market information, as they lose origin-specific human capital through depreciation, and as a larger ethnic community gets established, the return migration propensity declines. These A10 workers, Chiswick argues, may say they are temporary and act that way now, and they may even seriously believe that they are temporary, but they will increasingly become permanent if history has anything to offer.

Constant and Zimmermann (2007) examine return or what they call 'circular' migration and argue that it is potentially a way of minimising psychological costs due to long separations from family members. Using evidence on the *guestworker* population in the German Socio-Economic Panel they found that more than 60% were repeat migrants.

> Migrants from European Union member countries, those not owning a dwelling in Germany, the younger and the older (excluding the middle ages) were found to be significantly more likely to engage in repeat migration and to stay out of Germany longer. Males and those emigrants with a German passport exit more frequently, while those with more education exit less ... Males do not differ from females with respect to their total years away from the host country ... Migrants with family in the home country remain out longer (Constant and Zimmermann, 2007, p.4).

Christian Dustmann, in a number of papers, has undertaken the most complete analysis in the UK of the economics of return migration. Dustmann (1994), for example, suggests three potential motives for return migration

(1) the migrant prefers consumption in the home country,
(2) if prices are lower in the home country than in the host country this allows the entrant to take advantage of high wages abroad and low prices at home,

(3) human capital acquired in the host country is more valuable in the home country.

Dustmann (1996) found that return propensities in Europe increase with age and decrease with the number of years of residence.

Recently, Dustmann and Weiss (2007) have shown that return migration in the UK is not a new phenomenon. They explored this issue empirically before the influx from Eastern Europe using data from the LFS from 1992–2004. The authors found that, taking the population of immigrants who were still in the country one year after arrival as the base, about 40% of all males and 55% of all females had left Britain five years later. Their data suggests that return migration is particularly pronounced for the group of immigrants from the EU, the Americas and Australia/New Zealand; it was much less pronounced for immigrants from the Indian Sub-Continent and from Africa. Distinguishing between white and non-white immigrants, they found that white immigrants had substantially higher return propensities than non-white immigrants. Consequently, Dustmann and Weiss found, using data prior to the accession of the A10 in 2004, that immigrants still in the UK after ten years are different in terms of age and education than the sample of immigrants after one year. As we will show below it appears that the return rate for workers from the A10 is even more rapid than for those who have arrived in the UK from other countries.

3. Characteristics of the New Arrivals From Eastern Europe

It is possible to use the various data sources described above to determine the characteristics of new (defined here as post-2004, and used interchangeably with 'recent') A8 migrants and how they compare with new migrants from non-A8 countries, migrants who arrived pre-2004, as well as the non-migrant population or *natives*. The main characteristics of the new workers from the A8 are as follows.

3.1. *Region*

Table 12 shows the total number of worker applications from the WRS (column 1) that were approved by *region* and in column 2 the proportion, while column 3 gives the number of applications for National Insurance Numbers, column 4 gives the relevant percentages alongside the distribution of the 16+ population in column 5. It is apparent that WRS approvals have been especially high in the East of England. The proportion applying through London employers has decreased over time from 15% in 2005Q1 to 11% in 2007Q1. The proportion of NINo applications made in London is particularly high suggesting that this is the first port of call for many of the A10.

3.2. *Industry*

Polish workers make up the largest proportion in every sector, which is perhaps not surprising given that 65% of workers registered with the WRS are Polish.[26] The most

[26] In addition 65.6% of applications for NINos have been from Poles, 10.1% from Lithuanians and 9.7% from Slovakians.

Table 12

Worker Registration Scheme/NINo Applications by Region, May 2004–December 2007

Region	WRS applications	WRS % total	NINo applications	NINo % total	% 16+ population
East Anglia	112,785	14.8	66,087	8.1	9.2
West Midlands	100,795	12.9	55,379	6.8	8.9
London	91,275	12.5	206,139	25.2	12.7
East Midlands	77,460	10.0	66,466	8.1	7.2
North East	75,125	10.0	72,023	8.8	12.7
North West	71,350	9.1	78,528	9.6	11.3
South West	68,175	8.8	50,102	6.1	8.5
Scotland	62,440	7.8	79,759	9.7	8.5
South East	50,985	6.8	105,277	12.9	13.5
Northern Ireland	29,810	3.9			2.8
Wales	20,735	2.7	22,610	2.8	4.9
Fast track			17,104	2.1	
Total	765,690	100	818,854	100.0	

Source. Accession Monitoring Report May 2004–December 2007 and *Labour Force Statistics First Release*, Table 18(1), July 2007.

important industries are Administration, Business and Management; Hospitality and Catering and Agriculture. A greater proportion of Latvians (24%) and Lithuanians (20%) worked in Agriculture compared with any other nationality (10%). The majority of workers in the Administration, Business and Management occupation group work for recruitment agencies and could be employed in a variety of occupations, and on a temporary basis. In 2004 (May–December), 24.8% of registered workers were in this category, compared with 31.9% by end 2005, 36.7% by end 2006, and 37.0% in 2007Q1. Non-A8 migrants are more likely to be employed in the public sector – especially as nurses and carers – confirmed by work permits data.

3.3. *Occupations*

The dominant occupations are less skilled. The largest occupation is Process Operative (26%) followed by warehouse operative and packer (8%). Out of a total of 716,045 workers who registered between July 2004 and December 2007 the twelve occupations with more than ten thousand workers are shown in Table 13.

There appears to be a small, but apparently growing, number of workers in professional and technical occupations. These include the following 18 highly skilled occupations, shown in Table 14, that account for just over 8,500 workers.

3.4. *Education*

It is difficult to ascertain precisely the education level of the new arrivals from the A10 in the official data as around two thirds are reported as having 'other qualifications'. On average 7.9% report having a degree compared with 16.4% for natives, while 18.1% had no qualifications compared with 11.9% for natives. Using LFS data, Saleheen and Shadforth (2006) found that new immigrants, whose definition also included migrants other than from Eastern Europe, were likely to have a much higher level of education

Table 13

Occupations of A8 Workers

Process operative	197,845
Warehouse operative	59,070
Packer	43,835
Kitchen and catering assistants	42,295
Cleaner, domestic staff	39,290
Farm Worker	30,810
Waiter, waitress	26,090
Maid, room attendant	25,210
Care Assistants and Home Care	20,015
Labourer, building	20,680
Sales and retail assistants	20,325
Crop harvester	12,620

Source. Home Office (2008), Accession Monitoring Report May 2004–December 2007.

Table 14

A8 Workers in Highly Skilled Occupations

Mechanical engineer	1,045
Doctor (hospital)	730
Engineer, software	695
Civil engineer	675
Teachers	655
Manager, office	610
Pharmacist, pharmacologist	600
Engineer, other transport related	555
Researcher, higher education	470
Architect	445
Dental practitioner	370
Nurse	365
Researcher, medical	340
Systems analyst	255
Chemical engineer	225
Surveyor	200
Veterinarian	165
General practitioner	120

Source. Home Office (2008), Accession Monitoring Report May 2004–December 2007.

that the UK-born population. The authors found that in 2005, 66% of the UK-born population had completed secondary school while only 17% had a degree. In contrast, 45% of new immigrants had degrees. Saleheen and Shadforth (2006) also found that that new immigrants were disproportionately employed in Elementary occupations and as Process operatives. In other words, despite apparently being relatively well-educated, new immigrants found themselves overrepresented in low-skill, low-paid jobs. These results are consistent with those of Drinkwater *et al.* (2006) who consider data from the Worker Registration Scheme for Polish migrants. More generally. large numbers of workers from the A10 who arrived since 2004 find themselves working as waiting staff, bar staff, packers, van drivers etc.

3.5. *Temporary vs. Full-time Working and Earnings*

Approximately 50% of A8 workers hold temporary jobs but the proportions vary a lot between sectors; in Agriculture 70% of job were temporary, while in hospitality and catering the pattern was reversed with only 20% in temporary employment. In Administration, Business and Management 82% were in temporary employment. Overall, 97% were working full-time and the majority (77%) were earning between £4.50 and £9.99 per hour.

3.6. *Household Type*

It is apparent from the Labour Force Surveys that the household composition for those individuals who have come to the UK from the A10 is quite different from that of natives or immigrants from elsewhere. We examined weighted responses in the most recent surveys for January 2006–March 2007 in the LFS to the household composition variable *HLDCMP*. The distribution for natives, those from the A10 and from the non-A10 is shown in Table 15.

Table 15
Household Type (%)

	Natives	A-10	Non-A10
1 male over pensionable age with no children	0.6	0.0	0.6
1 female over pensionable age with no children	2.1	0.4	1.8
1 adult under pensionable age with no children	9.1	6.5	9.1
1 adult with one child	2.3	1.0	2.1
1 adult with two or more children	2.6	0.6	2.7
Married couple both under pensionable age with no children	12.5	9.3	11.0
Cohabiting couple both under pensionable age with no children	5.3	7.9	4.1
Married couple one or more over pensionable age with no children	9.5	1.1	4.6
Cohabiting couple one or more over pensionable age with no children	0.4	0.1	0.2
Married couple with one child	6.4	10.0	9.1
Married couple with 2 children	9.9	5.6	11.4
Married couple with 3 or more children	3.9	0.8	7.0
Cohabiting couple with one child	2.2	1.0	1.1
Cohabiting couple with 2 children	1.7	0.4	0.6
Cohabiting couple with 3 or more children	0.7	0.1	0.2
2 adults, not married or cohabiting, both under pensionable age with no children	3.0	5.6	3.9
2 adults, not married or cohabiting, one or more over pensionable age with no children	1.3	0.2	0.9
2 adults, not married or cohabiting with 1 or more children	1.7	1.5	1.8
3 or more adults with no children including at least one married/cohabiting couple	13.5	21.9	10.0
3 or more adults with 1 or 2 children including at least one married/cohabiting couple	7.1	10.2	9.3
3 or more adults with >=3 children including at least one married/cohabiting couple	0.8	1.8	2.6
3 or more adults with no children	2.4	12.9	5.0
3 or more adults with one or more children	0.5	0.9	0.7
Same sex cohabiting couple	0.3	0.3	0.4

Source. LFS 2006Q1–2007Q1.

It is apparent that those from the A10 were much more likely to be in households with at least three adults than is the case for either natives or those from the non-A10 (47.7%, 24.3% and 27.6% respectively). It thus appears that the A10 are particularly likely to be sharing quarters and not living with a spouse. Temporary migrants are presumably willing to live in poor conditions in high rent areas such as London whereas natives and even permanent migrants may be less prepared to do so. This may then help to ease worker shortages in the London area, for example, where rents are so high as to dissuade natives who are not making City wages.[27]

3.7. *Age and Gender*

The proportion of workers who register on the WRS who are young is particularly high and has changed little over time. Of those who applied between May 2004 and March 2007, 83% were aged 18–34 and 44% were aged 18–24. The male to female ratio was 57:43. Only 7% of registered workers who applied between May 2004 and March 2007 declared that they had dependants living with them in the UK. Amongst those who did have dependants with them the average number of dependants was 1.5. In the LFS recent A8 migrants are also found to be young, educated and disproportionately male (Saleheen and Shadforth, 2006).

These data fit with other information available from a Candidate Eurobarometer Survey conducted by the European Commission in April 2001, which considered the migration *intentions* of the A8 plus Cyprus and Malta residents well before the borders opened in May 2004. Respondents in these countries, plus Bulgaria, Romania and Turkey, were asked 'do you intend to go and live and work – for a few months or several years – in a current EU country in the next five years?'[28] Obviously, one cannot assume that everyone who expresses an interest in migration will actually move but it turns out that there are patterns in the data consistent with the actual flows to the UK. Table 16 reports the results of estimating the probability of an individual responding in the affirmative to the above question using a dprobit.[29] Column 1 includes controls for age, gender, schooling, labour market status and marital status and country dummies, with the excluded country being Malta. Probabilities of 'intending to move' were especially high in Lithuania and Poland, which, as we noted above, have been the two main source countries of A8 workers to the UK. Column 1 suggests that intentions to move were higher for men, the young, the most educated, unmarried or divorced, the unemployed, students and professionals.

Respondents in the survey were also asked 'how willing would you be to live in another European country where the language is different from your mother tongue?' Possible answers were 'not at all; not much; to some extent; very much'. Column 2 reports the results of estimating an ordered logit where the dependent variable is set to

[27] We are grateful to David Card for this point.

[28] Candidate Countries Eurobarometer no.2002.1, March–April 2002, ZA No. 4153. For details see http://www.gesis.org/en/data_service/eurobarometer/cceb/index.htm. See also Krieger (2004).

[29] The *dprobit* procedure in STATA fits maximum-likelihood probit models and is an alternative to probit. Rather than reporting the coefficients, dprobit reports the marginal effect, that is the change in the probability for an infinitesimal change in each independent, continuous variable and, by default, reports the discrete change in the probability for dummy variables.

Table 16

Eastern European Intentions to Live/Work in the EU in the Next 5 years

	1	2
Age	−0.0046 (14.20)	−0.0426 (21.23)
Male	0.0494 (7.68)	0.2836 (7.31)
Cyprus	0.1070 (3.38)	0.0161 (0.10)
Czech Rep.	0.0048 (0.20)	0.4547 (3.49)
Estonia	0.0881 (3.18)	0.4341 (3.32)
Hungary	0.0565 (2.16)	0.3409 (2.57)
Latvia	0.0803 (2.97)	0.2167 (1.66)
Lithuania	0.0998 (3.47)	0.7387 (5.67)
Poland	0.0935 (3.69)	0.8305 (6.84)
Slovakia	0.0461 (1.80)	0.9649 (7.52)
Slovenia	−0.0093 (0.41)	0.8303 (6.38)
Age left school 16–19 years	−0.0061 (0.68)	0.3062 (5.28)
Age left school 20+ years	0.0245 (2.24)	0.7187 (10.95)
Still studying	0.0418 (1.64)	0.6616 (4.36)
Student	0.0595 (2.20)	0.4338 (2.77)
Unemployed	0.0892 (6.16)	0.3514 (4.28)
Retired	−0.0241 (1.66)	0.0613 (0.68)
Farmer	0.0156 (0.74)	−0.0617 (0.44)
Fisherman	0.0114 (0.07)	1.0033 (1.31)
Professional	0.0732 (2.05)	0.7596 (3.96)
Owner of a shop	0.0355 (1.86)	0.3397 (2.96)
Business proprietors	0.0224 (0.85)	0.6679 (4.44)
Employed professional	0.0293 (1.44)	0.5402 (4.67)
General management	0.0595 (1.46)	0.5851 (2.69)
Middle management	−0.0181 (1.15)	0.4953 (5.18)
Employed at desk	0.0277 (1.66)	0.3818 (4.00)
Employed but travelling	0.0461 (2.22)	0.3193 (2.72)
Service job	0.0290 (1.70)	0.2900 (2.96)
Supervisor	0.0532 (1.44)	0.3980 (1.86)
Skilled manual worker	0.0428 (2.84)	0.2198 (2.49)
Other (unskilled) manual worker	0.0161 (0.87)	0.0204 (0.18)
Remarried	0.0315 (1.54)	0.1623 (1.47)
Unmarried, living with partner	0.0495 (3.52)	0.2946 (3.64)
Unmarried, never lived with a partner	0.0295 (2.91)	0.1785 (2.83)
Unmarried, lived with partner in past	0.0703 (3.52)	0.3849 (3.61)
Divorced	0.0401 (2.76)	0.3541 (4.55)
Separated	0.0137 (0.53)	0.1665 (1.11)
Widowed	−0.0051 (0.32)	−0.1642 (1.94)
Cut_1		−0.3725
Cut_2		0.6311
Cut_3		2.4033
N	12,219	12,971
Pseudo R^2	0.2107	0.1179

Source. Candidate Eurobarometer 2002.1 (ZA#4153), March–April 2002. Conducted in 2001.
Notes. Excluded categories – Malta, married, looking after home, Age left school <16. Dprobit column 1 and, ordered logit column 2. t-statistics in parentheses. Sample also includes Romania, Bulgaria and Turkey.
The dependent variable in column 1 is set to one if the answer to the following was in the affirmative, zero otherwise 'do you intend to go and live and work for a few months or several years in a current EU country in the next five years'. In column 2 the dependent variable is based on responses to the following question – 'how willing would you be to live in another European country where the language is different from your mother tongue?' 1 = not at all; 2 = not much; 3 = to some extent; 4 = very much.

one if not at all, 2 = not much etc. with the same controls as in column 1. The patterns revealed in column 2 are very similar to those in column 1 – the probability of being willing to move is higher among the young; men; the unmarried and divorced; the

most educated; professionals and business proprietors; those from Latvia and Poland, but also now Slovakia. These equations seem highly consistent with the characteristics of the migrants outlined above – intentions appear to be highly correlated with subsequent actions.

Interestingly, the World Bank (2007) addressed the issue of the mobility of the young in its recent World Development Report. They found that the propensity to migrate increases over the teenage years peaking in the early twenties in many destination countries, such as Spain and the US. Hence, young people make up a higher proportion of the flow of international migrants than the stock. Young people are likely to face lower costs of moving and have higher lifetime returns. The World Bank notes that when the only legal options for the young are through high-skilled immigration, categories requiring tertiary education or substantial job experience, migrants are less likely to be young.

The World Bank also conducted a survey of youths aged 15–24 in seven developing countries (Albania, Bangladesh, Ethiopia, Iraq, Malaysia, Romania and Tajikistan) and asked 'if it were possible for you legally to move to another country to work would you?' Results are presented in Table 17.[30] Very high proportions of young people in the World Bank survey said they would like to move, especially in Romania and Albania, but the vast majority of those who wanted to move expressed a desire to move for only a short period allowing them to save money to buy a house, open a business, or achieve other goals in their home countries (World Bank, 2007 ch. 8, fig. 8.5).[31] A high proportion of such moves would not then conform to the UN recommended definition of a migrant as an individual who changes their country of residence for at least one year.

Table 17

'*If It Were Possible For You Legally to Move to Another Country to Work Would You?*'

	Move permanently (%)	Move temporarily (%)	Try it out (%)	Not move (%)
Albanian Males	23	39	30	8
Albanian Females	21	40	30	9
Bangladeshi Males	3	70	20	7
Bangladeshi Females	3	44	17	36
Ethiopian Males	7	59	7	24
Ethiopian Females	12	51	13	17
Iraqi Males	21	32	28	20
Iraqi Females	16	28	27	29
Malaysian Males	3	18	42	38
Malaysian Females	2	20	30	48
Romanian Males	21	58	12	9
Romanian Females	11	58	16	15
Tajik Males	7	60	15	18
Tajik Females	6	26	9	59

Source. World Bank (2007).

[30] We thank David McKenzie at the World Bank for providing us with these data.

[31] In both Romania and Albania over 90% of males expressed a desire to move, but only around 20% of the total said they wanted to move permanently.

3.8. *Propensity to Work, Self-employment and Wages*

There is little or no evidence to suggest that the new A10 workers have come to the UK to claim or receive benefits: they have come to work.[32] A8 workers, who are registered under the WRS, have a right to reside and are entitled to in-work benefits such as housing benefit and council tax benefit. If they are in part-time work of less than 15 hours per week they can qualify for Jobseeker's Allowance. If they lose their job they lose their worker status but are able to remain in the UK to find another job. However, they do not have complete access to the benefit system, although after 12 months of continuous employment they can have access to the full range of benefits. Once someone has been working for 12 months they can apply for a residence permit.

By 2007Q4, only 1,373/7,765 applications for income support have been approved; 3,385/13,622 applications for income based Jobseeker's Allowance were approved; 114/372 applications for state pension credit and 1,021 applications for homelessness assistance had been allowed to proceed.[33] 51,518/78,944 applications for tax credit have been approved. As Hillier and Hayes note:

> '(I)t is unlikely that large numbers of A8 citizens will uproot themselves from their homes, come to the UK to work for at least a year in order to secure a future life of state-funded living. First, there is the effort involved in this, and we are presumably talking about people who are not prepared to make much effort on most fronts. Second, there is the standard of living involved. Would life on state benefits in the UK really be that much better than life on a low income in Estonia? Well, it might be. But probably not by enough to make it a worthwhile option for an otherwise idle person if they had to work for at least a year – perhaps working on a farm on minimum wages – to get it' (2006, p.13).

As we show below, the influx of workers from the A8 appears to have had little or no discernible effect on the unemployment rate or any other labour market aggregate for that matter. It is plausible of course, that an influx of immigrants could displace natives or less recent immigrants, and this is an issue we discuss. The large literature on the issue suggests that this is unlikely to have been very important.

We now move on to examine data from the LFS on the extent to which A10 entrants to the UK differ from natives and migrants from elsewhere. To do this, we examine the probability that they work, the so-called employment to population ratio (EPOP); their wages and, conditional on working, whether they are self-employed. We find that those from the A10 have high probabilities of working and being self-employed, and receive relatively low wages.

[32] Similar conclusions on the impact of the A10 arrivals were drawn by Wadensjö (2007) in the case of Sweden and Hughes (2007) for Ireland. Note that Ireland operated the same benefit rules as those implemented in the UK because of a Common Travel Area, which necessitates operating similar arrangements in relation to immigration.

[33] See *Accession Monitoring Report, May 2004-December 2007*, Border and Immigration Agency, Home Office. Source: http://www.bia.homeoffice.gov.uk/sitecontent/documents/aboutus/Reports/accession_monitoring_report/report14/may04dec07.pdf?view=Binary.

3.8.1. *Work*

We investigate the propensity to *work* of the new arrivals from the A10 in Table 18. Here the dependent variable is set to one if the respondent to the Labour Force Survey said they were working, either as an employee or self-employed, zero otherwise, including being unemployed or out of the labour force (OLF). The sample is restricted to those aged 16–70 and excludes students and those for whom their education level was not reported.[34] In column 1 we include age, gender and highest qualification along with one variable identifying whether the individual's country of origin was in the A10 or from the non-A10 along with three-year dummies. The A10 variable is significantly positive while the non-A10 is negative, suggesting those from the A10 have a higher propensity to work than either the indigenous population or those who were born outside the A10. Column 2 adds two separate controls distinguishing recent arrivals from the A10 from recent arrivals from the non-A10 alongside the same personal controls. It is apparent that the signs on the variables are also *opposite* for the A10 and non-A10 variables. Individuals from the A10 are *more* likely to be working than the native population, especially so for those who arrived recently. This is in direct contrast to the non-A10 immigrants who are *less* likely to be working than the native population; the probability of working is even lower for recent immigrants from outside the A10 who arrived in the UK from 2004 on. This is consistent with the OECD's (2006*a*, p. 51) more general finding that the participation rate of immigrants is on the whole lower than that of the native population. Results are similar in column 3 when region of residence controls are added. In column 4 of Table 18 we add five race dummies, with and without region of residence dummies respectively. Adding these dummies confounds some of the non-A10 immigrant effects but, noticeably, has little or no effect, as would be expected, on the A10 results. Columns 5 and 6, at the suggestion of a referee, add an additional variable from immigrants from the fourteen members of the EU15 excluding the UK. A worker from France, for example, would have a 1 to 'Non-A10 immigrant' plus a 1 to the EU15 variable, implying that, adding the two effects together they were little different to natives. In the final column we also separate out recent arrivals from the EU15 who have a higher probability again of working. Arrivals from the A10 have even higher probabilities of working than arrivals from the rest of the EU, higher than natives and markedly higher than non-European arrivals.

3.8.2. *Wages*

There is also evidence to suggest that these Eastern European workers in general and recent arrivals in particular, are being paid relatively low wages, *ceteris paribus*. Data are available on this in the Labour Force Surveys. Table 19 reports the results of estimating six log hourly wage equations using data from the 2004–7 LFS. They follow the same structure as in Blanchflower and Oswald (1994*a*, *b*). Sample sizes are smaller than in Table 18 as the sample is restricted to employees only and restricted further because wages are only asked in wave 1 and wave 5 of the survey.[35] In total then there are approximately 155,000 observations. Each equation includes a set of year dummies and

[34] We exclude students on the sensible suggestion of Jonathan Wadsworth who in private communication suggested that in his work with John Schmitt they find that the results are sensitive to their inclusion.

[35] In the LFS since 1997 a fifth of the sample each quarter is replaced and individuals stay in the sample for 5 consecutive waves or quarters.

Table 18

Probability of Working, Dprobits, 2004–7 (ages 16–70)

	(1)		(2)		(3)		(4)		(5)		(6)	
A10	0.0714	(13.95)	0.0514	(6.55)	0.0644	(8.40)	0.0640	(8.35)	0.0769	(15.17)	0.0633	(8.24)
Non A10 immigrant	−0.0739	(45.12)	−0.0716	(42.29)	−0.0607	(34.50)	−0.0052	(2.58)	−0.0833	(43.80)	−0.0807	(40.96)
EU14									0.0756	(24.04)	0.0734	(22.24)
A10 since 2004			0.0418	(3.88)	0.0297	(2.71)	0.0331	(3.03)			0.0301	(2.75)
Non A10 since 2004			−0.0250	(4.90)	−0.0256	(5.01)	−0.0249	(4.85)			−0.0288	(5.20)
EU14 since 2004											0.0382	(3.12)
Age	0.0204	(97.77)	0.0203	(97.67)	0.0206	(98.64)	0.0205	(98.19)	0.0207	(99.26)	0.0207	(99.15)
Age^2	−0.0002	(98.19)	−0.0002	(98.16)	−0.0003	(99.70)	−0.0003	(100.10)	−0.0003	(100.32)	−0.0003	(100.27)
Male	0.0818	(86.98)	0.0818	(86.94)	0.0823	(87.53)	0.0828	(88.01)	0.0826	(87.79)	0.0826	(87.74)
Degree	0.2228	(188.24)	0.2228	(188.26)	0.2203	(184.61)	0.2189	(183.02)	0.2200	(184.21)	0.2200	(184.24)
Higher education	0.1895	(141.98)	0.1895	(141.98)	0.1867	(138.73)	0.1855	(137.32)	0.1865	(138.51)	0.1865	(138.50)
Apprenticeship etc	0.1907	(159.79)	0.1907	(159.77)	0.1867	(155.20)	0.1846	(153.01)	0.1862	(154.70)	0.1861	(154.66)
GCSE A-C	0.1621	(132.82)	0.1621	(132.76)	0.1574	(127.87)	0.1554	(125.85)	0.1571	(127.55)	0.1570	(127.48)
Other qualifications	0.1284	(95.15)	0.1287	(95.28)	0.1250	(91.71)	0.1239	(90.60)	0.1248	(91.61)	0.1250	(91.70)
Mixed race							−0.0711	(11.72)				
Asian							−0.1239	(42.52)				
Black							−0.0812	(21.31)				
Chinese							−0.0988	(12.27)				
Other race							−0.1350	(28.32)				
Region residence dummies	No		No		19		19		19		19	
Pseudo R^2	0.0854		0.0854		0.0896		0.0886		0.0903		0.0903	
N	806,399		806,399		806,399		806,142		806,399		806,399	

Source. LFS 2004Q2–2007Q1. *Notes.* All equations also include three-year dummies. Excluded categories no qualifications; white, single. Excludes students. t-statistics in parentheses. EU14 is just EU15 minus the UK.
All respondents with missing education are excluded.

Table 19

Log Hourly Wage Equations, 2004–7 (ages 16–70)

	(1)		(2)		(3)		(4)		(5)		(6)	
A10	−0.2622	(15.85)	0.0267	(1.10)	−0.0612	(2.55)	−0.0507	(2.18)	−0.0580	(2.53)	−0.0594	(2.59)
Non A10 immigrant	0.0077	(0.87)	0.0443	(9.85)	−0.0198	(4.34)	−0.0110	(2.50)	−0.0220	(5.07)	0.0342	(6.84)
Arrived since 2004	−0.0483	(5.36)										
A10 since 2004			−0.1639	(5.45)	−0.0879	(2.96)	−0.0908	(3.17)	−0.0903	(3.19)	−0.0852	(3.01)
Non A10 since 2004			0.0290	(1.98)	0.0347	(2.40)	0.0204	(1.45)	0.0215	(1.56)	0.0253	(1.83)
Age	0.0911	(138.24)	0.0743	(126.94)	0.0746	(129.37)	0.0645	(112.81)	0.0623	(109.64)	0.0624	(110.00)
Age^2	−0.0010	(128.06)	−0.0008	(111.39)	−0.0008	(113.66)	−0.0006	(98.86)	−0.0006	(95.97)	−0.0006	(96.55)
Male	0.2253	(84.93)	0.2090	(88.79)	0.2086	(89.92)	0.1690	(67.66)	0.1655	(66.90)	0.1663	(67.35)
Higher education			0.5922	(30.99)	0.5803	(30.81)	0.5457	(29.92)	0.5355	(29.64)	0.5351	(29.68)
Apprenticeship etc			0.3334	(17.29)	0.3399	(17.89)	0.3203	(17.42)	0.3213	(17.65)	0.3216	(17.69)
GCSE A-C			0.1344	(7.04)	0.1399	(7.44)	0.1254	(6.89)	0.1256	(6.97)	0.1246	(6.93)
Other qualifications			0.0290	(1.52)	0.0320	(1.70)	0.0265	(1.46)	0.0307	(1.71)	0.0293	(1.63)
No qualifications			−0.0694	(3.60)	−0.0680	(3.58)	−0.0538	(2.93)	−0.0502	(2.76)	−0.0504	(2.78)
Don't know			−0.2013	(10.40)	−0.1905	(9.99)	−0.1621	(8.79)	−0.1573	(8.61)	−0.1570	(8.61)
Mixed race			−0.0415	(2.82)								
Asian			−0.1188	(15.97)								
Black			−0.1807	(19.03)								
Chinese			−0.1167	(5.73)								
Other race			−0.1220	(10.01)								
Constant	0.2669		0.3219		0.2384		0.2645		−0.3937		−0.3922	
Region residence dummies	No		No		19		19		No		No	
Region work dummies	No		No		No		No		19		19	
Industry dummies	No		No		No		60		60		60	
Adjusted R^2	0.1608		0.3540		0.3728		.4150		.4233		.4255	
N	156,749		156,749		156,749		156,604		156,026		155,956	

Source. LFS 2004Q2–2007Q1. *Notes.* All equations also include three-year dummies. Excluded categories degree or equivalent; white, single. Workers only. t-statistics in parentheses.

age and its square and gender; schooling controls are added in column 2; region of residence in column 3; and industry dummies in column 4. In columns 5 and 6 region of residence dummies are replaced with region of work controls. Column 6 also includes controls for race.

Adding controls has an impact – some of the difference in wages across groups depends on characteristics, particularly schooling, region and industry, with region, whether measured by residence or place of work, being particularly important. It is apparent that recent arrivals from the A10 have particularly low wages, *ceteris paribus*. For example, in column 5 which includes age, gender, schooling, region of work and industry dummies, A10 workers receive 5.6% lower wages than natives. The wages for the A10 who arrived since 2004 are 8.6% lower still – obtained by taking anti-logarithms and deducting one. Interestingly non-A10 migrants have significantly *higher* wages (+3.5%) than natives no matter when they arrived, holding constant their characteristics, including race (column 6).[36] The OECD (2006*a*, p.222) reports that one of the main features of labour immigration into the UK prior to the influx of workers from the A10 was the high proportion accounted for by corporate transfers. The OECD noted that in 2005 a quarter of the interviewees working abroad a year before and in the UK at the time of the interview were working for the same employer. This may, in part, help to explain the higher earnings of the non-A10 workers.

3.8.3. *Self-employment*

In almost all countries for which data are available, OECD (2006*a*) found that self-employment among immigrants has increased over the past few years, both in numbers and as a percentage of overall self-employment. The share of foreign-born workers in total self-employment reported by the OECD (%) is shown in Table 20.

Table 20

Share of Foreign-born Workers in Self-employment

	1999	2004
Austria	6.0	9.2
Belgium	10.0	12.4
Denmark	5.2	8.4
France	10.4	11.2
Germany	9.2	10.3
Greece	1.9	2.6
Ireland	7.5	8.0
Luxembourg	31.7	38.7
Netherlands	7.2	8.7
Norway	6.1	8.0
Portugal	2.8	3.8
Spain	2.7	4.5
Sweden	9.9	13.7
UK	10.2	10.9

Source. OECD.

[36] Drinkwater *et al.* (2006) found from an analysis of wages in the Labour Force Surveys of 2001–6, that Poles had lower rates of return to their human capital than other recent migrants, even after controlling for other personal and job-related characteristics.

In some countries, the OECD found that the increase has been particularly apparent. Foreign-born persons accounted in 2004 for some 11% of total self-employment in France and the UK, 12% in Belgium and nearly 14% in Sweden, figures which are generally higher than the share of immigrants in the total labour force.

It is appropriate then to examine the incidence of (self-reported) self-employment among A8 migrants given that the self-employed do not have to register under the WRS, although they do have to apply for a NINo, unless they work illegally in the black economy and are paid cash in hand. Table 21 once again uses the LFS data file for 2004–2007Q1 to estimate a dprobit, but here the sample is restricted to workers, with the dependent variable set to one if self-employed and zero if a worker. The question on labour market status is asked in all five waves so the sample size is around 630,000. The results are standard, in that the probability of being self-employed is higher for men, Asians and Chinese, rises with age and is especially high for those with a trade.[37] It is low for blacks and the young and for those with an HND, teaching or nursing ('other') qualification only.

Foreign workers have a higher probability of being self-employed; those from the A10 have a particularly high probability (column 1) but recent immigrants have lower probabilities (column 2). As we move to the right additional controls are added. Column 3 adds age, gender, race and schooling controls. Column 4 adds region of residence dummies. Column 5 replaces the region of residence dummies with controls for region of work. Column 6 separates out recent A10 workers from recent non-A10. It is apparent that the A10 have a particularly high propensity to be self-employed, although this is lower for those who arrived recently. One possibility is that many of the self-employed from the A10 are not being captured by the LFS as they are only in the UK for short spells.

Interestingly, several recent *Flash Eurobarometers* have been carried out for a number of countries on behalf of the European Commission, over the period 2000–4, on the topic of Entrepreneurship.[38] The list of countries includes the 25 members of the EU including the A8 plus the US, Iceland, Lichtenstein and Norway. Workers in these countries were asked if 'it is difficult to start one's own business due to a lack of financial support?' Table 22 ranks countries according to their answers to this question based on the proportion saying they 'strongly agreed' ($n = 32{,}606$). Column 2 is the proportion who strongly agreed that 'it is difficult to start one's own business due to the complex administrative procedures?'[39] Respondents in these countries were also asked 'suppose you could choose between different kinds of jobs. Which one would you prefer – being an employee or being self-employed?'[40] Column 3 tabulates the proportion saying they would like to be self-employed. It is apparent from the Table that there is a desire for self-employment in the A10 countries as well as a perceived lack of financial support alongside complex administrative procedures that make it hard to set up in business.

[37] See Blanchflower (2000, 2004), Blanchflower and Oswald (1998) and Blanchflower and Shadforth (2007).

[38] *Flash Eurobarometers – Entrepreneurship*, September 2000, September 2001, November 2002, September 2003 and April 2004.

[39] In both of the questions used in columns 1 and 2 possible responses were: strongly agree, agree, disagree, strongly disagree.

[40] This was the same question used in Blanchflower *et al.* (2001) based on data from the 1997/8 International Social Survey Programme.

Table 21

Self-employment Probabilities Dprobits: (ages 16–70)

	(1)	(2)	(3)	(4)	(5)	(6)
A10	0.0322 (6.39)	0.1341 (19.34)	0.1939 (26.64)	0.1091 (18.29)	0.1074 (18.06)	0.1413 (19.62)
Non A10 immigrant	0.0159 (10.61)	0.0253 (16.33)	0.0261 (14.36)	0.0149 (9.68)	0.0143 (9.35)	0.0134 (8.74)
Arrived since 2004		−0.1027 (27.76)	−0.0818 (21.98)	−0.0560 (18.01)	−0.0558 (17.94)	
A10 since 2004						−0.0695 (16.01)
Non A10 since 2004						−0.0451 (11.25)
Age			0.0091 (43.06)	0.0107 (58.97)	0.0098 (49.73)	0.0099 (49.77)
Age^2			−0.0001 (25.69)	−0.0000 (40.27)	−0.0001 (34.52)	−0.0000 (34.54)
Male			0.0915 (110.45)	0.0562 (70.98)	0.0559 (70.37)	0.0560 (70.44)
Higher education			−0.0206 (13.83)	−0.0224 (18.18)	−0.0225 (18.24)	−0.0225 (18.23)
Apprenticeship etc			0.0208 (17.28)	−0.0137 (13.42)	−0.0138 (13.51)	−0.0138 (13.53)
GCSE A-C			−0.0080 (6.50)	−0.0267 (25.77)	−0.0268 (25.80)	−0.0268 (25.79)
Other qualifications			−0.0131 (9.27)	−0.0359 (32.48)	−0.0359 (32.50)	−0.0361 (32.64)
No qualifications			0.0059 (3.90)	−0.0312 (26.64)	−0.0308 (26.25)	−0.0308 (26.25)
Don't know			0.0225 (4.56)	−0.0127 (3.45)	−0.0124 (3.37)	−0.0122 (3.31)
Mixed race			−0.0045 (0.80)	0.0021 (0.43)	0.0028 (0.58)	0.0029 (0.60)
Asian			0.0217 (8.36)	0.0356 (15.09)	0.0327 (13.93)	0.0328 (14.00)
Black			−0.0428 (13.61)	−0.0346 (13.43)	−0.0338 (13.01)	−0.0336 (12.95)
Chinese			0.0404 (5.49)	0.0420 (6.68)	0.0410 (6.54)	0.0413 (6.60)
Other race			−0.0097 (2.35)	−0.0054 (1.56)	−0.0063 (1.82)	−0.0063 (1.84)
Married						
Divorced					0.0123 (12.42)	0.0122 (12.34)
Separated					−0.0002 (0.13)	−0.0002 (0.13)
Widowed					0.0051 (3.41)	0.0050 (3.36)
Civil Partner					−0.0043 (1.47)	−0.0045 (1.52)
Region dummies	No	No	No	19	19	19
Industry dummies	No	No	No	57	57	57
Pseudo R^2	0.0003	0.0023	0.0668	0.2079	0.2084	0.2085
N	630,657	630,657	630,475	629,915	629,915	629,915

Notes. All equations also include three-year dummies. Excluded categories degree or equivalent; white, single. Workers only. t-statistics in parentheses.
Source. LFS 2004Q2–2007Q1.

Table 22

Difficulties in Becoming Self-employed and 'Desire' for Self-employment (%)

	1 Financial Difficulties	2 Administrative Difficulties	3 Wants to be self-employed
Slovenia	62	61	35
Hungary	58	46	47
Lithuania	52	58	62
Malta	52	28	46
Greece	51	37	63
Latvia	48	41	44
Estonia	47	42	49
Poland	42	37	57
Sweden	40	45	35
Cyprus	39	18	59
Austria	39	32	40
Czech Republic	39	33	37
France	38	41	43
Portugal	36	34	70
Spain	35	26	61
Slovakia	33	28	36
Italy	32	31	57
Germany	32	34	46
Luxembourg	30	27	45
Belgium	28	31	37
US	26	20	66
UK	24	24	47
Denmark	24	37	36
Iceland	22	15	61
Ireland	21	18	62
Lichtenstein	20	10	54
Finland	18	27	28
Norway	14	25	36
Netherlands	9	16	33

Source. Flash Eurobarometers – 'Entrepreneurship', 2000–2004.

Notes. Column 1 reports responses to the question do you strongly agree, agree, disagree or strongly disagree that 'it is difficult to start one's own business due to a lack of financial support' and reports the percentage who strongly agree. Column 2 reports responses to the question do you strongly agree, agree, disagree or strongly disagree that 'it is difficult to start one's own business due to the complex administrative procedures'. In both of the questions used in columns 1 and 2 possible responses were strongly agree, agree, disagree; strongly disagree. Column 3 reports responses to the question 'suppose you could choose between different kinds of jobs. Which one would you prefer – being an employee or being self-employed'. The percentage preferring self-employment is tabulated. Workers only.

It is well known in the literature that capital constraints have a major impact on the ability to become and remain self-employed (Blanchflower and Oswald, 1998; Blanchflower, 2000, 2004; Blanchflower and Shadforth, 2007). These factors will likely contribute to a desire to come to the UK, where these circumstances may appear less prevalent. Over the last couple of years there has been a dramatic increase in the numbers of self-employed. For example, over the period December/February 2005–7 the number of self-employed increased by 187,000, representing 64.0% of the total growth of employment of 292,000 (Source: *Labour Market Statistics First Release*, ONS April 2007). In part this increase is likely attributable to the influx of self-employed workers – particularly Polish plumbers and construction workers – from Eastern Europe who do not have to register on the WRS. Hence, the growth is self-employment

reported above is likely to be an under-estimate of the true number of self-employed from Eastern Europe, especially for those who are in the UK for short spells.

In summary, the new arrivals from Eastern Europe who have come to work in the UK tend to be young, male, educated and unmarried. Approximately one third work for recruitment agencies. They disproportionately work in East Anglia and the West and East Midlands. Holding constant a variety of characteristics including age, qualifications and location, A10 workers have higher self-employment rates, lower wages and have higher employment to population ratios than natives. In contrast, recent non-A10 migrants have comparable wages and lower self-employment rates than natives. A10 workers who arrived before 2004 have higher self-employment rates, but lower wage rates than natives. Higher self-employment rates before 2004 may reflect the ease with which migrants were able to enter the UK as workers before and after that date. We thank a referee for this point.

4. The Fear of Unemployment

Increasing numbers of migrants to the UK may well have increased the 'fear' of unemployment, which tends to have a downward impact on pay especially in the non-union sector (Blanchflower, 1991). As part of the 2005 European Working Conditions Survey, workers were asked (Q37a) 'How much do you agree or disagree with the following statements describing some aspects of your job? – I might lose my job in the next 6 months – Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree?'.[41] Across all 32 countries asked, 14.1% of workers agreed or strongly agreed that they might lose their job in the next six months. The proportions were particularly high in Eastern Europe but low in Denmark, Luxembourg, Norway and the UK.[42,43] In the US General Social Survey workers are asked how likely it is that they will lose their job or be laid-off in the next 12 months and, on average across the 2002, 2004 and 2006 surveys 11.2% answered 'very likely' or 'quite likely' (variable *joblose*). The fear of unemployment appears widespread.

Columns 1 and 2 of Table 23 model the responses to the above question across the available countries using an ordered logit procedure. Column 1 includes controls for age, gender, schooling, immigrant, type of contract, years of job tenure, private sector along with country dummies. Column 2 adds 64 industry dummies. It is apparent from these regressions that the fear of unemployment is higher the shorter job tenure is and is lower for the more educated, for those on indefinite contracts, full-timers and those

[41] The survey was conducted by the European Foundation for the Improvement of Living and Working Conditions. For details of the survey see 'Quality Report of the 4th European Working Conditions Survey', 2007. See http://www.eurofound.europe.eu.

[42] The percentage answering that they agreed or strongly agreed by country was as follows - Austria 9, Belgium 9, Cyprus 14, Czech Republic 33, Germany 13, Denmark 7, Estonia 19, Spain 15, Finland 13, France 8, Greece 21, Hungary 22, Ireland 10, Italy 9, Lithuania 23, Luxembourg 6, Latvia 19, Netherlands 18, Malta 15, Poland 27, Portugal 19, Sweden 20, Slovenia 27, Slovakia 15, UK 7, Norway 7, Switzerland 12, Bulgaria 23, Croatia 19, Romania 18 and Turkey 19.

[43] The same question was also asked in the 2003 *European Quality of Life Survey*. The percentage answering that they aggress or strongly agreed by country was as follows: Austria 5, Belgium 7, Bulgaria 5, Cyprus 13, Czech Republic 16, Denmark 9, Estonia 21, Finland 8, France 10, Germany 7, Greece 12, Hungary 9, Ireland 6, Italy 7, Latvia 30, Lithuania 32, Luxembourg 8, Malta 8, Netherlands 3, Poland 18, Portugal 12, Romania 18, Slovakia 19, Slovenia 9, Spain 10, Sweden 9, Turkey 28, UK 7, weighted total 11.3. Own calculations.

Table 23

Probability of Losing a Job and its Impact on Earnings, 2005

	(1) Ordered logit Lose job	(2) Ordered logit Lose job	(3) OLS Earnings	(4) OLS Earnings
Male	0.0743 (2.89)	0.0088 (0.31)	1.3854 (41.02)	1.2148 (33.96)
Age	−0.0670 (0.64)	−0.0226 (1.08)	1.5064 (11.10)	1.3904 (10.46)
Age^2	0.0067 (0.26)		−0.3143 (9.64)	−0.2890 (9.05)
Austria	0.2937 (3.07)	0.3112 (3.24)	1.7612 (13.16)	1.8070 (13.80)
Belgium	0.1707 (1.76)	0.2582 (2.64)	2.5469 (19.56)	2.4569 (19.26)
Bulgaria	1.3563 (14.94)	1.3490 (14.66)	1.8012 (14.33)	1.8605 (15.07)
Croatia	0.8730 (9.19)	0.8474 (8.86)	0.0416 (0.32)	0.1204 (0.94)
Cyprus	0.1305 (1.16)	0.1883 (1.65)	−0.2296 (1.57)	−0.3197 (2.23)
Czech Republic	1.8164 (19.45)	1.8146 (19.28)	−0.1265 (0.92)	−0.1022 (0.76)
Denmark	−0.4289 (4.18)	−0.4315 (4.17)	0.2858 (2.26)	0.3661 (2.95)
Estonia	1.1841 (11.42)	1.1787 (11.27)	0.8953 (6.06)	0.9252 (6.38)
Finland	0.2813 (2.99)	0.2709 (2.85)	1.7804 (14.41)	1.8516 (15.27)
France	−0.2525 (2.60)	−0.2676 (2.72)	0.7881 (6.09)	0.8127 (6.38)
Germany	0.8774 (9.69)	0.8960 (9.77)	1.1968 (9.50)	1.3080 (10.55)
Greece	0.8213 (7.96)	0.8629 (8.31)	1.6918 (12.42)	1.6803 (12.58)
Hungary	1.2503 (13.49)	1.2609 (13.48)	−0.6480 (5.08)	−0.5601 (4.48)
Ireland	0.3000 (3.22)	0.3363 (3.59)	1.0271 (7.97)	0.9676 (7.68)
Italy	0.2953 (3.02)	0.3436 (3.49)	0.8052 (5.94)	0.758 (5.71)
Latvia	1.1142 (12.42)	1.1405 (12.55)	−0.4204 (3.33)	−0.3912 (3.16)
Lithuania	1.6493 (18.11)	1.6479 (17.92)	0.1515 (1.16)	0.2650 (2.07)
Luxembourg	−0.2053 (1.82)	−0.1496 (1.31)	1.2683 (8.65)	1.0853 (7.53)
Malta	0.2599 (2.35)	0.3134 (2.80)	−0.8679 (5.94)	−0.9633 (6.70)
Netherlands	0.5383 (5.85)	0.5695 (6.15)	0.5099 (4.08)	0.5443 (4.45)
Norway	−0.5445 (5.10)	−0.5456 (5.07)	−0.6108 (4.73)	−0.6423 (5.07)
Poland	1.3447 (14.32)	1.3673 (14.39)	1.0936 (8.31)	−1.0424 (8.06)
Portugal	0.8545 (9.20)	0.8912 (9.46)	1.3214 (10.05)	1.3722 (10.60)
Romania	0.8684 (8.94)	0.8318 (8.44)	−0.4304 (3.23)	−0.3015 (2.30)
Slovakia	1.1519 (12.41)	1.1632 (12.42)	0.0818 (0.62)	0.1097 (0.85)
Slovenia	1.0080 (9.21)	1.0062 (9.14)	0.7856 (5.35)	0.8350 (5.81)
Spain	0.0465 (0.47)	0.0887 (0.88)	1.0975 (8.10)	1.2342 (9.23)
Sweden	0.4863 (5.18)	0.4946 (5.23)	−0.3200 (2.60)	−0.2993 (2.49)
Switzerland	0.3062 (3.21)	0.3265 (3.40)	0.6038 (4.76)	0.5520 (4.44)
Turkey	0.8190 (7.09)	0.8647 (7.44)	−0.6746 (4.27)	−0.7074 (4.56)
Private sector	0.4697 (17.21)	0.1680 (4.88)	−0.2261 (6.45)	−0.0115 (0.27)
Part-time	0.0749 (3.78)	0.0801 (4.01)	−0.5798 (19.29)	−0.5308 (17.98)
Age left school	−0.0323 (9.42)	−0.0207 (5.82)	0.1812 (44.15)	0.1624 (39.20)
Years tenure	−0.0080 (6.79)	−0.0079 (6.60)	0.0276 (17.61)	0.0252 (16.37)
Fixed contract	1.0736 (25.54)	1.1021 (26.1)	−0.7623 (14.05)	−0.7229 (13.60)
Employment agency	1.5856 (14.24)	1.5659 (13.9)	1.1272 (7.84)	−1.0652 (7.57)
Apprenticeship	0.3002 (2.09)	0.2982 (2.07)	1.3199 (6.94)	−1.3499 (7.27)
No contract	0.4505 (8.61)	0.4493 (8.45)	0.8862 (12.91)	−0.7426 (10.95)
Immigrant	0.2700 (4.24)	0.2421 (3.77)	−0.5355 (6.51)	−0.4662 (5.76)
Days per week			0.0524 (2.16)	0.0713 (3.00)
Usual hours			0.0527 (26.83)	0.0544 (27.97)
Lose job disagree			−0.2455 (6.11)	−0.2196 (5.59)
Lose job neither			−0.5423 (10.12)	−0.4757 (9.05)
Lose job agree			−0.8114 (14.28)	−0.7683 (13.79)
Lose job strongly agree			−0.8857 (12.51)	−0.8290 (11.94)

who work in the public sector. In column 1 the fear of unemployment is significantly higher for men but the coefficient becomes insignificant in column 2 when industry dummies are added. The fear of unemployment is highest in the East European countries and lowest in Norway and France.

Table 23
Continued

	(1) Ordered logit Lose job	(2) Ordered logit Lose job	(3) OLS Earnings	(4) OLS Earnings
Industry dummies		No		64
cut1/constant	−0.0985	−0.0336	−2.5902	−3.0981
cut2	1.2561	1.3369		
cut3	2.0857	2.1745		
cut4	3.3015	3.3972		
Pseudo/Adjusted R^2	0.0636	0.0691	0.3962	0.4254
N	22,407		22,407	

Source. 4th European Working Conditions Survey, 2005. Excluded categories – UK; Lose job next six months strongly agree; indefinite contract. Equations also include three additional controls for type of contract – Other, DK and refused, results not reported. t-statistics in parentheses.
In columns 1 and 2 the dependent variable is the ordered responses to the question 'How much do you agree or disagree with the following statements describing some aspects of your job? – I might lose my job in the next 6 months – Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree?'. In columns 3 and 4 the dependent variable is the country specific decile of their net monthly income from their main paid job, which is coded 1–10.

Columns 3 and 4 of Table 23 model the impact the fear of unemployment has on earnings. Here the earnings variable is the country-specific decile of the respondent's net monthly income from their main paid job, which is coded 1–10. In each country, the respondents were asked to indicate in which band their income lies. The respondents were given a scale on which they could place themselves, because this tends to produce higher response rates. The problem facing international surveys, however, is how to make the scales meaningful in each country (by adapting them to the national pay levels) but also comparable internationally. The European Foundation's approach to this issue was to ensure that the national 10-point scales roughly matched the real distribution of earnings. Using Eurostat's *European Earnings Structure Survey, 2002*, the earnings of each EU country were divided into 10 bands and ranked from low to high. For instance, the lowest 10% of wage earners in the UK received less than £1,310 in gross earnings per month in 2002, the second 10% received between £1,310 and £1,549 per month etc., up to the highest 10% of wage earners, who earned more than £4,941 per month. This Table was then adjusted to indicate net, rather than gross, earnings, and the effects of inflation from 2002 to 2005 were included. Finally, some figures were rounded (to make them easier to read) and presented to the fieldwork institutes in each country for consultation.[44] We model the dependent variable as the country specific decile in which the individual's income falls. Results are similar if an ordered logit is used. Other possibilities would be to include mid-points and close off the tails in some arbitrary way but this involves making more assumptions than simply to model the deciles using Ordinary Least Squares, which is what we do here. Controls are essentially the same as in columns 1 and 2 and are pretty much standard for wage equations; additional controls are added for days and hours worked.

[44] For further details of the precise income values used across countries see Annex 2 of the 'Quality Report of the 4th European Working Conditions Survey', 2007 referred to above.

The results in columns 3 and 4 of Table 23 confirm the findings in Blanchflower (1991), that the fear of unemployment lowers wages. That paper showed that the probability of job loss appears to have a powerful effect upon earnings. Workers who stated that they expected to be made redundant did not receive a compensating differential but were paid, on average, approximately 8% less, *ceteris paribus*. One possibility is that bad workers have a relatively high fear of redundancy because of their poor performance. However, Blanchflower (1991) argued that fear of unemployment itself, and not poor worker quality, is the explanation for the significant coefficient on the redundancy dummy. One possible way around this problem is to exploit the fact that when plants close both good and bad workers lose their jobs. Thus, as a check the 'redundancy expected' variable for the UK was replaced with one relating to the expectation of plant closure which also lowered pay by 8%. This seems to support the idea that fear of unemployment is not primarily a proxy for worker quality. Unfortunately in the data we use here we do not have information on the reason why workers expect to lose their jobs in the next six months so the results are suggestive.

The coefficients on the four variables included to distinguish whether an individual agrees that they are likely to lose their job rise with the level of agreement and, as might be expected, are highest for those who agree strongly that this is likely to happen to them. The effects appear to be large. We experimented with a set of interaction terms between the immigrant dummy and the fear of unemployment variables using the specification in column 4. The reason for doing so is that it is clear from columns 1 and 2 of Table 23 that given the positive coefficient on the immigrant dummy, that they have the most to fear from recessions.[45] These variables were always insignificant suggesting that fear of unemployment changes perceptions among both natives and immigrants.[46]

A recent, monthly survey of consumers conducted by the EU is also consistent with the view that the fear of unemployment in the UK has risen and been above its long-run average since around 2005.[47] The Directorate General for Economic and Financial Affairs of the European Commission conducts regular harmonised surveys for different sectors of European Union and applicant country economies. They are addressed to representatives of the industry (manufacturing), the services, retail trade and construction sectors, as well as to consumers. Consumers in each monthly survey are asked (Q7): 'How do you expect the number of people unemployed in this country to change over the next twelve months? The number will (a) increase sharply (b) increase slightly (c) remain the same (d) fall slightly (e) fall sharply (f) don't know.' The answers obtained from the survey are aggregated into a survey 'balance'. Balances are constructed as the difference between the proportion giving positive and negative replies. The Commission calculates EU and euro-area averages on the basis of the national results and seasonally adjusts the balance series.

Figures 1–3 plot three-month averages of the survey balances (advanced 12 months) against the actual unemployment rate for the UK, EU-15 and Ireland respectively. Figure 1 shows that fear of unemployment and actual unemployment have risen over the past few years in the UK. Figure 2 shows that the fear of unemployment has

[45] For example, OECD (2006*b*) reports that 'immigrants and foreigners are often more exposed to unemployment than the native population or nationals', p.58.
[46] We are grateful to Jonathan Wadsworth for this suggestion.
[47] See http://ec.europa.eu/economy_finance/db_indicators/db_indicators8650_en.htm.

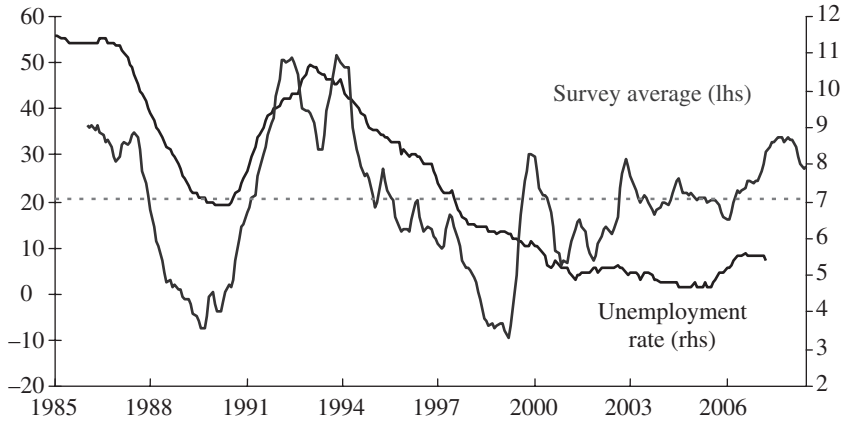

Fig. 1. *UK – Unemployment Expectations over the Next 12 Months* (3 month average – advanced 12 months)

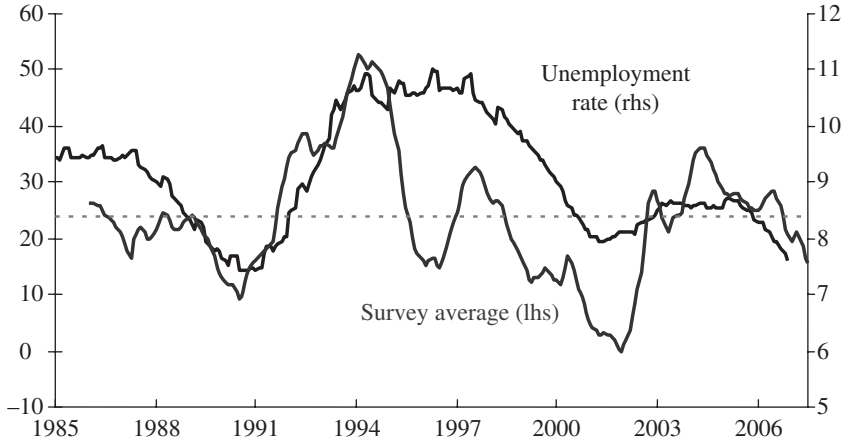

Fig. 2. *EU-15 – Unemployment Expectations over the Next 12 Months* (3 month average – advanced 12 months)

declined in the EU-15 since 2003/4.[48] Interestingly, the survey balances have fallen in Austria; Belgium; Denmark; Finland; France; Germany; Luxembourg; the Netherlands; Portugal and Sweden since mid-2003. The main exceptions are the UK and Ireland, which experienced increases and Greece, Italy and Spain where the series were essentially flat. Among the A10 accession countries there was a decline in the survey balances of all but Hungary, which saw an increase. Over the past twelve months only

[48] We calculated the series for EU-15 weighted according to the population of each country for each year. Due to the availability of the data, the EU-15 series for unemployment expectations includes: January 1985–March 1986 – UK, Belgium, Denmark, Germany, Ireland, Greece, France, Italy, Netherlands April 1986–August 1987 – as above, plus Portugal and Spain September 1987–July 1995 – as above, plus Finland August 1995–October 2001 – as above, plus Sweden and Austria November 2001–December 2006 – as above, plus Luxembourg And the EU-15 series for unemployment rate includes: January 1985–December 1994 – UK, Spain, France, Italy, Netherlands, Austria, Portugal, Finland, Sweden January 1995–December 1996 – as above, plus Belgium, Denmark, Germany, Ireland January 1997–March 1998 – as above, plus Luxembourg April 1998–December 2006 – as above, plus Greece.

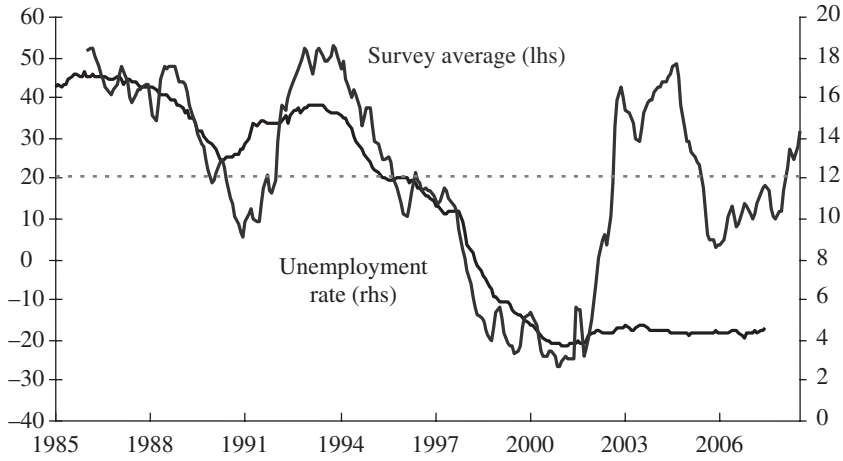

Fig. 3. *Ireland – Unemployment Expectations over the Next 12 Months* (3 month average – advanced 12 months)

Table 24

Average Irish Weekly Earnings

Year	Weekly earnings (€)	% annual increase
1996	410.47	
1997	427.13	4.06
1998	447.68	4.81
1999	475.07	6.12
2000	511.95	7.76
2001	558.59	9.11
2002	589.52	5.54
2003	627.50	6.44
2004	658.89	5.00
2005	684.21	3.84
2006	705.60	3.13

Source. Central Statistics Office Ireland website – downloadable from http://www.cso.ie/px/pxeiresat/database/irestat/Earnings.asp.

the UK (+0.2%), Portugal (+0.2%), Luxembourg (+0.2%) and Hungary (+0.4%) have experienced increases in unemployment. In contrast, unemployment *fell* by 1.0pp in the EU as a whole, although it should be said that the EU has a higher level than the UK – 7.0% and 5.4% respectively, (source: Table 19, *Labour Market Statistics, First Release,* July 2007, ONS).

Figure 3 reports the survey balance and unemployment rate in Ireland, which is the only other major country in the EU that has experienced a big increase in migration from the A10. Ireland's population increased by 313,000, or 8.1%, between 2002 and 2006. Of this increase 213,000 was from migration. The largest increases were from Poland (+60k); Lithuania (+22k) and +40k from the rest of the EU-25 excluding Britain and Northern Ireland.[49] According to the 2006 Census (Table 29A) 129,000

[49] http://www.cso.ie/census/documents/PDR%202006%20Commentary.pdf.

Fig. 4. *Sweden – Unemployment Expectations over the Next 12 Months* (3 month average – advanced 12 months)

people whose birthplace was in Eastern Europe were living in the Irish Republic.[50] These numbers are dramatically higher than they were in the 2002 Irish Census, when there were only approximately 2,000 Poles and Lithuanians living in Ireland.

Interestingly, the fear of unemployment in Ireland rose, as it did in the UK as the number of East Europeans in the country has increased since 2002, even though there has been no change in unemployment in Ireland. ILO unemployment has remained steady in Ireland at 4.4% since 2002.[51] Consistent with a rise in the fear of unemployment, average earnings growth has fallen since 2003 from 6.4% to 3.1%. The data in Table 24 are average weekly earnings in euros for Ireland and cover all industries and relate to employees in firms with 10 or more persons.

Swedish unemployment has been relatively tight recently and the Swedish government has been concerned about skill shortages and so opened its borders to workers from Eastern Europe (Wadensjö, 2007). Figure 4 provides evidence on changes in the fear of unemployment. As in the case of the UK and Ireland, the fear of unemployment has increased from 2003 to 2005.[52] It does appear that the scale of the net and even the gross flows has been relatively small though. According to Statistics Sweden the numbers of immigrants in 2004 was 62,028, 65,229 in 2005 and 95,750 in 2006, compared with 36,586, 38,118 and 44,908 emigrants respectively.[53] The number of immigrants in the first half of 2007 was not significantly higher than it was in the first half of 2006 (46,970 and 45,649 respectively). The decline in the fear of unemployment accompanied a fairly substantial decline in actual unemployment. Swedish ILO unemployment for June 2007 for those aged 16–64 was 4.9%, down from 6.3% a year earlier. As unemployment fell so did respondent's perceptions of what was going to happen to the number of unemployed in the following twelve months. Fear subsequently picked up from October 2007.

[50] http://www.cso.ie/census/documents/Final%20Principal%20Demographic%20Results%202006.pdf.
[51] http://www.cso.ie/statistics/sasunemprates.htm.
[52] As noted by a referee this is consistent with the increase in the probability of workers reporting that they fear losing their jobs as reported in the 2003 EQLS and the 2005 EWCS reported above for Sweden. In the 2005 survey, which referred to the probability of losing a job in the next six months, 20% of Swedish workers agreed or agreed strongly, whereas in the former survey 9% of Swedes agreed or agreed strongly.
[53] http://www.scb.se/templates/tableOrFig__26047.asp.

5. The Macro-economic Policy Consequences of A10 migration

The overall impact of immigration on native labour market outcomes, inflation and growth on its own is not clear-cut – there is no automatic rule-of-thumb that we can look to in order to determine the impact on the economy. Dustman and Fabbri (2005) examined the way immigration impacted native outcomes in the UK using data from the 1983–2000 Labour Force Surveys. They used pooled data for 18 years across 17 regions ($n = 306$) but, because of data availability, just the period 1992–2000 for wages. They estimated a series of regressions with the immigrant-native ratio as a control. Their main findings were that there was little evidence of any adverse outcomes for natives on wages, employment or unemployment, consistent with findings for the US and elsewhere. If there was evidence of any adverse outcomes it was limited to those with intermediate levels of education. An increase in immigration, amounting to 1% of the native population in their preferred IV specification, would lead to a decrease of 0.07 percentage points in the native employment rate but this was not significant at conventional levels.[54] Furthermore, the authors found no evidence of any significant effects on wages, unemployment or participation using their IV specification.

Hatton and Tani (2005) have investigated the hypothesis that net immigration is a determinant of inter-regional migration flows for Britain. The evidence indicates consistently negative correlations between immigration to one region from abroad and in-migration from other regions. But they are only significant for the southern regions where immigration of foreign citizens is most concentrated. Nevertheless they suggest that inter-regional migration may be an important mechanism through which the British labour market adjusts to immigration. Their results are also consistent with the modest wage and employment effects of immigration at the local level. Frijters *et al.* (2005) find that immigrant job search is less successful than that of natives; immigrants are as likely to gain employment through informal methods as via verifiable routes; the probability of success increases with years since migration. The finding that immigrants do not effectively compete for jobs may thus help explain why immigration has little impact on native employment.

Manacorda *et al.* (2007) find evidence that natives and immigrants in the UK are imperfect substitutes, like Ottaviano and Peri (2005) for the US. They show that an increase in immigration primarily reduces the wages of immigrants relative to natives with little discernable effect on the wages of the native-born. Manacorda *et al.* find *no* effect on the employment of either natives or previous migrants, consistent with the view that the elasticity of aggregate labour supply is close to zero in the UK. This acts to attenuate any effect of increased labour supply on the native wage distribution and then only has a sizeable effect on wages of migrants who were already in the UK. It also helps to explain the findings of Dustman and Fabbri (2005) and others that the wage impact of immigration on natives is small, as summarised by Longhi *et al.* (2005) in a meta-analysis of 18 studies. In a separate study, Longhi *et al.* (2006) calculate that, across 165 estimates from nine recent studies for various OECD countries, the average estimated impact on natives' employment of a 1% increase in the number of

[54] IV is necessary because immigrant shares and immigrant outcomes may be spatially correlated because of common fixed influences.

immigrants is stronger for low-skilled than for high-skilled workers (−0.04% for low-skilled only) but on average it amounts to a negligible −0.02%.The impact is larger on existing immigrants but still small at only −0.05%.

In an interesting new study for the OECD, Jean and Jiménez (2007) also examined the unemployment effect of immigration in OECD countries, with a focus on the time profile of these effects and on their interaction with product and labour market policies. They did not find any permanent effect of immigration, measured as the share of immigrants in the labour force, upon natives' unemployment. They did, however, find significant evidence of a transitory and delayed impact on unemployment of changes in the share of immigrants. The impact was weak when measured at the skill level: natives with skills most similar to those of immigrants were not found to suffer from a strong rise in their unemployment rate relative to other categories of natives. Jean and Jiménez (2007) found further that the extent and duration of the unemployment impact of immigration partly is shown to depend on policies. In particular, they found that anti-competitive product market regulation increased both the magnitude and persistence of the impact of a change in the share of immigrants in the labour force on native male unemployment. They show that employment protection legislation increases the persistence of the unemployment impact of immigration, while the generosity of unemployment benefits increases its magnitude. These are particularly low in the UK compared with most other OECD countries. The authors conclude as follows.

> Policies that enhance the adaptability of labour and product markets to immigration shocks should help limit the impact of these shocks, while at the same time helping the labour market to quickly revert to a new equilibrium. In sum, immigration *per se* is not a problem for natives' unemployment. However, changes in immigration flows may require adjustments that are costly for the native population, and well-suited framework policies can be important in minimising these costs (Jean and Jiménez, 2007, p.22).

In thinking about the supply potential of an economy, most people would probably agree that extra (immigrant) workers in an economy would raise the supply potential of the economy. But the extent to which aggregate supply increases will depend on the economic characteristics of immigrants relative to native workers. A recent survey of contacts of the Bank of England's regional Agents suggested that the new A8 workers were highly productive. This is consistent with the findings of a Home Office Study on the use of migrant labour that concluded as follows.

> Employers cited advantages of migrant workers in terms of their general attitude and work ethic. They tended to be more motivated, reliable and committed than domestic workers. For example, migrants were said to be more likely to: demonstrate lower turnover and absenteeism; be prepared to work longer and flexible hours; be satisfied with their duties and hours of work; and work harder in terms of productivity and speed. In the view of some employers, the more favourable work ethic of migrant workers encouraged domestic workers to work harder (Dench *et al.*, 2006).

In Saleheen and Shadforth (2006) it was argued that immigration of higher skilled (or more productive) workers could temporarily raise the domestic rate of productivity growth; and that immigrant labour could lower the natural rate of unemployment, either by filling skill gaps (assuming that foreign-born workers are complementary to the domestic workforce) or by tempering wage demands, as wage bargainers become aware that they can be replaced more easily than in the past. In support of the latter argument, the OECD *Economic Outlook* notes that 'international as well as UK evidence suggests immigration can serve to make the labour market as a whole more fluid and wages less sensitive to demand fluctuations' (2006*b*, p. 68).

Katz and Krueger (1999) argue that recruitment agencies for temporary workers have also contributed to declines in the natural rate. Shimer (1998) argues that time series changes in the natural rate of unemployment in the US are driven by demographic changes; the declining natural rate of unemployment over the past decade or so has resulted from declines in the proportion of individuals in the population that had high propensities for unemployment. So the ageing of the baby boom generation was particularly important as the proportion of the population that was young – and subject to high unemployment rates – declined over time.

The analogy for the UK is that the workforce has increased in size as a result of adding a group – the A10 – with a relatively low propensity to be unemployed and to claim benefits. The workforce appears more flexible and mobile than it was before the entry of workers from the A10. Borjas, for example, argues that

> immigration greases the wheels of the labour market by injecting into the economy a group of persons who are very responsive to regional differences in economic opportunities (Borjas, 2001, p.2).

This has the effect of improving labour market efficiency and hence leads to a more efficient allocation of national resources.

In thinking about aggregate demand, most people would agree that immigrants are extra consumers and that they raise aggregate consumption demand. It is likely that immigrants spend a lower fraction of their income when compared to domestic workers, perhaps because they send remittances back home or spend less on durable goods while temporarily resident in the UK – this would, on its own, suggest that immigrants raise demand by less than they raise supply. However, the funds that migrants send home might be recycled back to the UK through greater export demand and UK consumers might also benefit from lower prices as a result of the extra productivity of migrants. Aggregate demand might also rise because of increased investment. The theoretical argument here is that firms require both labour and capital to produce their output. Immigration gives them more labour, and firms may wish to supplement this with more capital. But the extent to which investment rises, and how quickly, will depend on the skills of immigrants and the technologies of firms. If firms are able to substitute between labour and capital, then there may be a smaller impact on investment than might otherwise be the case. Early work by Welch (1970), Griliches (1969) and Berndt and Christensen (1974) all suggested that physical capital is more complementary with skilled than with unskilled labour. More recently, Lewis (2006) found that US cities with a larger share of migrant labour are also the ones with less capital intensive production technologies. Early theoretical work on the short-run

consequences of immigration on aggregate demand and the balance of payments includes Mishan and Needleman (1966). An early discussion of the long-run consequences of immigration, including external diseconomies, are contained in Mishan and Needleman (1968*a*, *b*).

On balance we would suggest that at present it appears that the recent inflow of workers from the A10 has acted to *reduce* the natural rate of unemployment in the UK. But it also seems that it is likely to have raised potential supply by more than it has raised demand, and thereby has acted to *reduce* inflationary pressures.[55] This argument holds for three reasons. First, the consumption behaviour of native workers may have been affected by the increased 'fear' of unemployment resulting from a more flexible labour market. Second, the recycling of remitted funds back to the UK is unlikely to be perfect. Third, firms may be able to substitute between capital and labour, offsetting some of the potential for investment spending to rise.

Consistent with the results from previous studies, such as Manacorda *et al.* (2007), Figure 5 shows that regions with the biggest increases from Eastern Europe have tended to see the smallest rises in their unemployment rates.[56,57] This is consistent with the possibility that foreign workers are attracted to those regions where the unemployment rate is lowest and opportunities are greatest, for which there appears to be some evidence. There is tentative evidence, however, in contrast to some other studies,

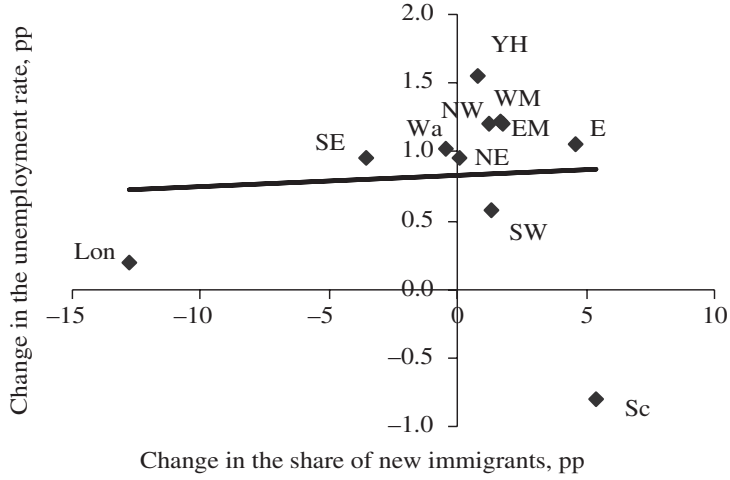

Fig. 5. *Have Regions with the Biggest Rise in Unemployment Also Seen the Biggest Rise in Immigration* (2006/7 less 2004)?

Source. ONS and LFS micro-data, 2005–2007Q1.

[55] Mishan and Needleman (1966) demonstrate that under certain conditions, the opposite could be found (the demand effects could outweigh the supply effects).

[56] Note that the negative correlation shown in Figure 1 is not statistically significant. A regression of the change in the total unemployment rate (between 2005Q3 and 2006Q3) on the change in the share of new immigrants (between 2005 and 2006) gives a *t*-statistic of −1.02.

[57] One might consider weighting the regional shares of immigrants to reflect the number of employees in each region as a bigger effect might be expected in regions which have received more migrants. However, WRS data suggest that while most migrants settle in London and the South East, the ratio of A8 migrants to the current population by region is broadly the same nationwide, at around 1:67.

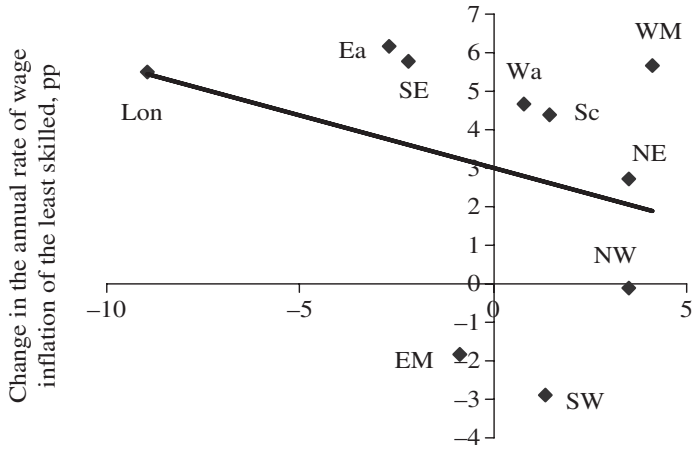

Fig. 6. *Change in the Annual Rate of Wage Inflation Between 2005 and 2006 of Those in Elementary Occupations and the Change in the Share of A8 Migrants between 2004 and 2005 by Region Source.* ONS and LFS micro-data, 2005–2006 and various Accession Monitoring Reports.

to suggest that A8 workers have lowered wage inflation among the least skilled. Figure 6 shows a negative relationship between the change in the annual rate of wage inflation of those in elementary occupations (defined in the LFS as SOC 9) between 2005 and 2006 and the change in the share of A8 workers one year earlier, as recorded in the WRS in 2004 and 2005, across regions. The downward sloping line is consistent with a reduction in wage pressures brought about by immigration, or an increase in the fear of unemployment, or both.[58]

We know that most immigrants are young (43% of workers on the WRS are aged 18–24), and that the most recent rise in the aggregate unemployment rate has been disproportionately driven by an increase in youth unemployment. In fact, the proportion of total unemployment accounted for by 18–24 year olds has been rising steadily, from 24.3% of the total in 2000, to 30.7% in 2006Q3 and 31.6% March–May 2007. So what about the possibility that the influx of migrants has increased the youth unemployment rate? Figure 7 shows that there is only a weakly positive but statistically insignificant relationship between those regions that have witnessed the largest increases in youth unemployment and those that have seen the biggest influxes of new immigrants.

It seems that the increase in unemployment in the UK has had relatively little to do with the influx of temporary workers from Eastern Europe. Hughes (2007) also concluded that the arrivals from the A10 have had little or no impact on unemployment and aggregate wages in Ireland. A similar conclusion was reached by FÁS (2006), the Irish Training and Employment Authority:

> while definitive conclusions could not be drawn from the data, the statistics would suggest that displacement is not a major or widespread issue in the current circumstances of the Irish economy (p. 43).

[58] The correlation coefficient is −0.32.

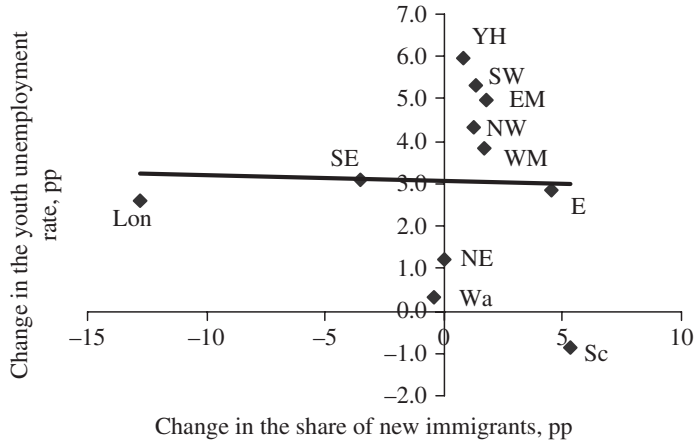

Fig. 7. *Have Regions with the Biggest Rise in Youth Unemployment Also Seen the Biggest Rise in Immigration?* (2006/07 less 2004)
Source. ONS and LFS micro-data, 2005–2007Q1.

Metcalf (2007) summarises a large body of evidence that suggests that the introduction of, and subsequent raises in, the National Minimum Wage has also had little or no impact on employment or unemployment. There is also no empirical evidence whatsoever to support the claim that unemployment in the UK has increased because wages have not been sufficiently flexible downwards. The UK has a flexible labour market and has policies in place (Jean and Jiménez, 2007), which are likely to have minimised the impact on employment and unemployment of the recent inflow of workers from the A10. Replacement rates, for example are low and job protection measures are also well below OECD averages (OECD, 2004).[59] Rising labour market slack, which has occurred in the UK since mid 2005 has probably reduced worker's bargaining power (Blanchflower and Oswald, 1994*a*, *b*) as has a rising fear of unemployment.

Workers are better able to match to available jobs and the workforce is more flexible than it was previously and hence the (non-inflationary) growth potential of the UK economy has improved. That is to say trend GDP is likely to have risen with the acquisition of these new workers from the A10. Some commentators argue that focusing on trend GDP growth is the wrong metric and in fact it is better to look at GDP *per capita*, for example. This was the conclusion of the UK House of Lords Economic Affairs Committee in early 2008, when it stated:

> GDP *per capita* is a better measure than GDP because it takes account of the fact that immigration increases not only GDP but also population.

And

> The overall conclusion from existing evidence is that immigration has very small impacts on GDP *per capita* . . .

[59] According to this study the US, the UK and Canada 'remain the least regulated countries' in the OECD (OECD, 2004, p.71).

This may be so but deciding whether immigration is good or bad for the economy by solely focusing on whether it increases average incomes ignores the other benefits that migration can bring, particularly in reducing wage and price pressures. The presence of highly productive workers from the A10 who are prepared to work for relatively low wages along with associated increases in actual unemployment are what has helped to keep UK wages down in recent years. There is little or no evidence of any displacement effects of natives or previous migrants. Furthermore, there are also the intangible benefits of immigration, such as the capture of new, innovative thinking and the cultural and genetic benefits of ethnic and cultural diversity.

6. Conclusions and Summary

Over the period 1971–2004, population growth in the UK ranks 31st out of 38 nations with only Germany (East and West) and seven East European countries having had slower population growth (Czech Republic, Croatia, Estonia, Hungary, Latvia, Romania and Bulgaria). All the other major industrialised nations have had faster rates of population growth.

The UK population has grown at a faster pace since the turn of the millennium. This recent growth has been driven primarily by changes in net migration. Both the inflow and outflow migration rates have risen but the inflow rate has risen more rapidly, most recently, with an influx of migrants from eight East European countries. However, the increase in the net migration flow predates the influx of A8 workers, reflecting a steady rise in the number of immigrants from Asia and the Middle East too.

The propensity to come from the A8 countries to the UK to work is higher the lower is GDP *per capita* in each of the A8 countries. The decision is also strongly correlated with life satisfaction scores and unemployment rates, but is uncorrelated with employment rates or rates of inflation.

There is reason to believe that the majority of workers who have arrived in the UK from the A8 have not come permanently. When surveyed only 9% said they expected to stay for more than two years. Hence, in our view it is inappropriate to call them migrants; they should more appropriately be considered *temporary workers*.

The recent arrivals from the A10 are different from those who have arrived from other countries. The A10 arrivals are much more likely to work, have lower wages, be educated, be self-employed, be younger and are especially likely to live in households with at least three adults.

There appears to be consistent evidence from the Worker Registration Scheme and National Insurance Number applications that approximately 800,000 individuals from the A8 countries had come to work in the UK between May 2004 and late 2007. But other sources suggest a significant proportion of these workers – perhaps as many as a half – have returned to their country of origin.

The empirical literature from around the world suggests little or no evidence that immigrants have had a major impact on native labour market outcomes such as wages and unemployment. However, we find tentative evidence that the pay of those most susceptible to competition from workers from the A10 have seen weaker wage inflation. The UK is a highly flexible labour market: recent work by the OECD (Jean and

Jiménez, 2007) suggests that the labour market policies in place in the UK are likely to have minimised the impact of the worker inflow.

There is evidence that the fear of unemployment has risen recently in the UK. This is likely to have contained wage pressure.

The impact of the recent influx of workers from the A10 countries on the UK economy will be determined by the extent to which such workers add to supply relative to demand, since it is the balance between these two factors that determines prospects for inflation. At present it appears that the inflow of workers from Eastern Europe has tended to increase supply by more than it has increased demand in the UK, and thereby acted to *reduce* inflationary pressures and *reduce* the natural or equilibrium rate of unemployment over the past few years.

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