Immigration and Prices in the UK

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November 2008

JOB MARKET PAPER

Abstract

This paper uses regional RPI and CPI indices for over 300 items to investigate the effect of immigration on prices of goods and services in the UK between 1995 and 2006. My results show that immigration had significant but quantitatively limited effects on prices, and that the effects were different for services and tradable goods. Immigration contributed to reduce price growth of services in sectors with a high concentration of low-wage workers such as restaurants, bars, and take-away food through its effects on labour supply. Conversely there is some evidence that immigration increased the price of low-value grocery goods via demand side effects.

JEL classification: F22, J61

Keywords: Migration, Impact, Prices

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1 Introduction

In the last twenty years an incredibly rich literature has emerged studying the effect of immigration on host countries (e.g. Altonji & Card (1991), Card (2001), Borjas (2003), Ottaviano & Peri (2006), Manacorda et al. (2006), Dustmann et al. (2008)). Its motivation lies largely in a desire to understand how immigration affects the resident population, and its focus has been almost exclusively on the labour market, either on employment or wages.[1] Despite their insightfulness, these results tell only part of the story. If we are ultimately interested in the effect of immigration on the resident population's real income, then we must explore the implication of immigration for output prices as well. Indeed, changes in prices clearly have an effect on real wages. Also, changes in relative prices may have distributional effects in addition to those arising from changes in wages. This paper focuses on the impact of immigration on prices of goods and services. In this way it indirectly contributes to the literature in two ways. First, it extends the traditional scope of analysis by centring its focus on product and service market rather than on labour market outcomes. Second, in doing so, it implicitly suggests further distributional effects of immigration.

Economic theory suggests that immigration affects prices through different and opposing mechanisms making the overall effect ambiguous. On the supply side, production costs may increase or decrease depending on the way relative wages are affected by changes in the overall composition of labour supply. In a fully traded economy this would not translate into changes in output prices, but would result in changes in factor intensity or in output mix. Still, part of the output will typically be non-tradable. In this case we can expect final prices to decrease for those goods and services produced at lower cost, whereas we expect the reverse result for those goods and services that immigration has made relatively more expensive to produce. Similarly ambiguous is the effect of immigration on the demand side. Immigrants, as additional consumers, will not only increase aggregate demand but also potentially change its composition. The foreign population may in fact differ from natives in aspects such as price elasticity and tastes, so that the overall demand effects are not clear *a priori*.

[1] Some exceptions are studies of the impact on industry mix and technology changes (e.g. Lewis (2004), Lewis (2005), Hanson et al. (2004)).

Given all these contrasting effects, the relationship between immigration and prices is ultimately an empirical question. Yet so far there are few empirical studies addressing it. Some authors have focused on the specific case of the impact of immigration on rents and housing price (e.g. Saiz (2003), Saiz (2007), Ottaviano & Peri (2007)), and have found an overall positive effect on prices. However their results are not easily generalizable to other items because housing supply is typically fixed in the short run.

Only two papers (Lach (2007) and Cortes (2008)) have adopted a more general perspective, similar to the one used here.[2] Lach (2007) explores the effects of the unexpected mass inflow of Former Soviet Union immigrants to Israel during the 1990s. He finds that this inflow lowered the price of goods in his sample, which however excludes services. Lach attributes this result to the higher price elasticity and lower search costs of the new immigrants compared to the Israeli residents. Unlike Lach, Cortes (2008) considers non-tradable goods and services only, and uses US data for 1980, 1990 and 2000. Her results point to a negative impact of low-skilled immigration on price of services, which is shown to occur because of a decrease in wages.

This paper examines the case of the UK from 1995 to 2006. In this period the overall immigrant population has increased by over two million, and the share of immigrants in the working age population has risen from 8.2% to 12.2%. The UK is therefore an interesting case to look at, and the availability of detailed annual data for over a decade greatly enhances the empirical evidence. Prices time series are derived from regional RPI and CPI indices for over 300 items. I use data from the Labour Force Survey to track changes in immigrant stock at regional level. I then exploit variation in immigrant inflows and price changes across regions and over time to identify the impact of new immigrants on prices. It is well known (see e.g. Jaeger (2007)) that immigrants tend to settle in regions with more favourable labour markets, which also tend to have higher inflation. In order to overcome the endogeneity of immigrant inflows, I use an instrumental variable based on past patterns of settlement choices. The results from this identification strategy require different interpretations for non-tradable goods and services as opposed to tradable goods. In the first case my results capture the overall price effect brought

[2] A third paper (Bodvarsson et al. (2008)) touches only marginally on the issue showing that the average price level in Miami increased in the aftermath of the Mariel boatlift. The focus of the paper is however not on prices, but on wage consequences of immigration.

about by immigration, either via supply or demand. In fact for non-tradable items the price is entirely determined by local demand and supply. Conversely for goods that are tradable at national level there is no geographical variation in supply. Even if the effect of immigration on production costs was to be concentrated in one specific location, trade would nonetheless spread the price effects all over the country. Yet demand is determined locally for most goods, so that my identification strategy will allow detecting demand-side effects in the case of tradable goods.

My results reveal two distinct patterns for tradable and non-tradable goods. For services and non-tradable goods produced with low-wage-labour intensive technologies, immigration decreases the growth rate of prices. In particular the paper shows that an increase in the immigrants-natives ratio of one percentage point would lead to a 0.2% decrease in prices of such services. This result reflects the occupational distribution of recent immigrants, whereby they concentrate in low-wage occupations in labour intensive sectors. These results fit neatly with previous findings pointing to a negative impact of immigration on UK wages at the bottom of the wage distribution, but no effects between the 20th and the 40th percentile and positive effects higher up (Dustmann et al. (2008)). Taken together, this evidence suggests that the negative impact of immigration on the price of low-wage services arises from a reduction in their production costs. The second set of results refers to tradable goods and points to opposite effects insofar as immigration appears to some extent to contribute to their price growth. In particular the upward effect on average prices is driven by the growth in prices of some prevalently low-value grocery goods. I suggest that this is is precisely the type of goods whose relative demand increases as a result of immigration.

The rest of the paper is structured as follows. Section 2 describes the immigrant population in the UK. Section 3 discusses the channels through which immigration may affect prices and presents the identification strategy and the econometric issues. Section 4 describes the data and section 5 reports the results, which are then discussed in section 6. Section 7 concludes.

2 Immigration in the UK

Although Britain has a long history of migration, recent years have witnessed new inflows of unprecedented magnitude. As Table 1 shows, the share of working age immigrants[3] in the total working age population increased by four percentage points between 1995 and 2006, from 8.2% to 12.2%.

Primarily immigration to the UK is economically driven, as is proved by the high share of immigrants in the labour force. Table 2 reports the labour market participation rate of natives and immigrants in 1995 and 2006, expressed as the ratio of individuals in the labour force to the total working age population. I distinguish between "earlier" immigrants - who have been in the UK for two or more years - and "recent" immigrants - who have settled in the UK within the previous two years. This distinction is especially relevant because my identification strategy (set out in section 3) relies on annual changes in the stock of immigrants to identify the effect of immigration on prices, and therefore the population of interest for my analysis is that of recent immigrants. Most immigrants are active on the labour market in both 1995 and 2006, and the participation rate of recent immigrants has considerably increased over time from 54% to 72%. Over the same period the participation rate of natives increased only slightly to just above 76% and that of earlier immigrants increased by more than three percentage points from 68% to almost 72%. Despite the fact that immigrants' participation rate is similar to that of natives, they tend to have a higher unemployment rate. In 2006 for instance the unemployment rate was at 5% for natives and 12% for recent immigrants. While these figures may indicate that immigrants have upon arrival some difficulties in entering the UK labour market upon arrival, the situation of recent immigrants in the UK is still markedly different from that of Russian immigrants in Israel in 1990 studied by Lach. In that case the immigrant population was largely out of the labour force, with a 19% participation rate, or unemployed even if active in the labour market, with a 53% unemployment rate (Lach (2007)).

The UK immigrant population is therefore actively participating in the labour market, although I show in the next Table 3 that most immigrants tend to be employed in more unskilled

[3]I define immigrants as foreign born. Throughout the paper I shall use the two definitions interchangeably.

and low-wage occupations than natives, especially in the first years after their arrival.[4] Changes in variable definitions do not allow intertemporal comparisons before 2000, but Table 3 reports the distribution of immigrants and natives across the National Statistics Socio-Economic Classification (NS-SEC) classes for years 2000-2006 pooled, and the last column displays the average hourly wage for each class, discounted using the 2005 CPI.[5] The table shows, on the one hand, that the occupational distribution of earlier immigrants is relatively similar to that of natives, although earlier immigrants are slightly more concentrated at the top and less concentrated in the middle part of the distribution. On the other hand, recent immigrants are relatively more concentrated than natives in the highest paid and the two least paid occupational classes. In particular over 41% of recent immigrants are in the two least paid occupational categories, while only 30% of natives are. The clustering of recent immigrants in unskiled occupations resembles the US situation. In that case, though, immigrants perform more unskilled jobs because they have lower levels of education (see e.g. Ottaviano & Peri (2006)) while in the British case this is mainly driven by an initial downgrading on the new labour market.

Given the focus of this paper, it is particularly relevant to look at the industrial sectors where immigrants and natives operate. Sectoral concentration of immigrants may in fact suggest the sectors where price effects are more likely to occur. Table 4 reports the distribution of immigrants and natives across the UK Standard Industrial Classification (SIC) sections. Recent immigrants are over three times more concentrated than natives in hotels and restaurants (13% and 4% respectively), while earlier immigrants are two times more concentrated (8%) in this category. On the other hand, natives are two times more concentrated than immigrants in the primary sectors (agriculture, hunting, forestry, fishing and mining) and in construction. A huge discrepancy between recent immigrants' and natives' sectoral distribution is evident looking at private households with employed persons: while only 0.4% of natives and 0.6% of earlier immigrants are employed by a private household, almost 5% of recent immigrants are.

Finally, my empirical model requires heterogeneity in regional immigrant inflows to estimate the impact of immigration on prices. In Table 5 I show that there is considerable variation in

[4]This happens despite the fact that immigrants have considerably higher levels of education than natives, see Dustmann et al. (2008).

[5]I exclude self employed because no wage information is available.

regional immigrant inflows both across regions and time. Although the foreign born population in the UK has historically been disproportionately concentrated in London, more recent waves of migrants have a tendency to be more dispersed across the country. While less than 10% of natives lived in London in the first and in the last year under analysis, this share was above 40% for earlier immigrants in both years. However while in 1995 over 43% of recent immigrants were concentrated in London, in 1996 only 31% of the new arrivals chose to settle in London. On the other hand the share of recent migrants living in the rest of South East, traditionally another large recipient of migrants, remained more or less constant around 13%, while it increased in nearly all other regions - more than doubling in some cases such as the East Midlands and the North East.

3 Analysis

3.1 Channels

How can immigration affect prices of goods and services in the host country? In a small open economy, if all goods are perfectly tradable, immigration will not have any impact on output prices because they are set on the international market. However, we may well expect immigration to affect prices of non-tradable goods and services.

On the one hand immigration will affect a country's factor endowment, thus potentially leading to changes in relative factor prices. Therefore immigration will increase or reduce production costs of goods and services, depending on what factors are more intensively used in their production, and what is the effect of immigration on the price of each factor. If the market is sufficiently competitive, and there are no counterbalancing demand shifts, we would expect changes in production costs to be translated in price changes. In the UK, Dustmann et al. (2008) show that recent immigration decreased native wages at the bottom of the wage distribution, while having no effect on wages between the 20th and 40th percentile, and positive effects on the median wage and higher up. Therefore we would expect, *ceteris paribus*, a reduction in the price of those goods and services that are produced with a low-wage labour intensive technology, and

an increase in the price of those goods and services whose production technology is intensive in the use of above-median-wage workers.

On the other hand immigrants are consumers as well, therefore apart from affecting the supply side, immigration will also increase aggregate demand. If immigrants are similar to natives, this should lead to an increase in prices as long as supply does not immediately adjust. However demand from immigrants may not be the same as demand from natives. Lach (2007) argues for instance that Russian immigrants to Israel were characterized by lower search costs and higher price elasticity than natives. In this case immigration may force retailers to increase their competition and reduce their price mark-up. Yet, if immigrants' search costs are the same as those of natives or even higher (because for example. they have a higher opportunity cost of time, or their limited knowledge of the host country's institutions and language makes it more costly to check prices in stores that are further from their residence or workplace) and supply does not readily accommodate changes in demand, then at least in the short run one of the consequences of immigration may be an increase in prices of those items that are relatively more demanded by immigrants.

Conversely, the price of tradable goods should not be susceptible to local conditions. Nevertheless, even if a good is perfectly tradable, part of the final retail price may arguably reflect handling costs which may indeed depend on local labour supply. Still it is reasonable to expect that handling costs do not make up a large fraction of total costs, hence on the supply side we do not expect sizeable impacts of local factor endowments on prices of goods. However, on the demand side imperfect information and search costs guarantee the existence of price dispersion, as is documented in the empirical industrial organization literature (see e.g. Lach (2002)). Moreover price dispersion will be inversely proportional to a product's mean price, because search is less valuable the lower the item's price (as noted since the influential work of Pratt et al. (1979)). Therefore immigration may have an impact on local prices of traded goods through changes in demand, even if the supply side is not affected, and in particular we expect *a priori* to see larger effects on prices of low-value goods.

Since the channels through which tradable and non-tradable goods may be affected by immigration are substantially different, in my empirical analysis I shall separately consider services

and non-tradable goods.

3.2 Estimation strategy

I identify the impact of immigration on prices using an estimation strategy based on comparison of the 12 UK Government Office Regions,[6] which essentially relies on correlating (changes in) prices in a region with (changes in) immigration in the same region (see also e.g. Altonji & Card (1991)).

The basic specification of the empirical model is the following:

$$\ln p_{it} = \beta m_{it} + \phi_i + \tau_t + \epsilon_{it} \tag{1}$$

where $i = 1, ..., 12$ indexes regions, and $t = 1995, ..., 2006$ indexes years, $\ln p$ is the average log-price index of the items under analysis and m is the ratio of immigrants to natives. The ϕ_i dummy allows for permanent differences in prices across regions, while τ_t controls for all time effects that are common across regions. The parameter of interest is β which captures the effect of immigrant concentration on the average price of all items.

I estimate equation 1 in differences to remove region fixed effects. The specification in differences also fits more naturally with my chosen instrumental variable, as I explain later. The previous equation therefore becomes:

$$\Delta \ln p_{it} = \beta \Delta m_{it} + \tau_t + \Delta \epsilon_{it} \tag{2}$$

I apply equation 2 separately to non-tradable goods and services and to tradable goods, and to finer subgroups within the two as described in section 5. Therefore $\ln p_{it}$ will be alternatively computed as the average log-price index of all tradable items, non-tradable items, or of any other sub-group.

Equation 2 would identify the causal effect of immigration on average prices if the sorting of immigrants among regions were purely random. However, this is not likely to be the case (see e.g.

[6] North East, North West, Yorkshire and the Humber, East Midlands, West Midlands, Eastern, London, South East, South West, Wales, Scotland, Northern Ireland.

Jaeger (2007)) as immigrants may tend, for instance, to settle in regions that are experiencing positive economic shocks and where therefore they may find more easily a job and/or earn higher wages. Such regions are also likely to experience a higher than average price growth, and the OLS estimate of β would therefore be positively biased.[7]

A further source of bias in the estimation could be the measurement error in m_{it}. The LFS is a nationally representative survey, and since the immigrant population accounted for less than 10% of the total population for most of the years we consider (and much less so in some regions), the number of sampled immigrants may be quite small. Therefore measures of regional immigrant concentration may suffer from measurement error due to small sample size, which would be emphasised by estimation in first differences. Aydemir & Borjas (2006) show that the measurement error in regional immigrant shares in this type of studies may lead to a very severe downward bias in the estimated coefficient.

I correct for all these potential sources of bias by using an IV based on settlement patterns of previous immigrants. Instruments of this form are motivated by a number of studies (see for instance Bartel (1989), Munshi (2003)) showing that settlement patterns of previous immigrants from the same country of origin are a main determinant of the location choices of current immigrants. Following Card (2001) I construct a variable which gives the predicted inflow of immigrants in each region in every year. Since the composition of the immigrant population has changed considerably through the years, the idea is to exploit the differential location choices of immigrants from each area of origin in the past to predict the settlement decisions of immigrants from the same country. In this way, the variable that is obtained should give a measure of immigrant inflows free from local contemporary demand factors. For this reason, Card (2001) refers to it as the "supply push component".

The instrument is constructed in the following way. First, I divide immigrants into 11 areas of origin[8] and calculate ΔM_{ct}, the number of immigrants from each area c who entered the UK in year t. I then define $\lambda_{ic} = M_{ic}/M_c$ the fraction of immigrants from area c in region i in a base

[7]It should also be noted that immigrants may even settle in regions with lower than average price growth, for instance because settling in those regions is cheaper. In this case, the estimate of β would be negatively biased (see Friedberg (2001) for a similar argument).

[8]EU (old), Other Western Europe, Eastern Europe, Americas, Africa, Indian Sub-Continent, Middle East, Remainder of Asia, Australasia, Other Countries.

period, which I choose to be 1991. Information on the 1991 distribution of immigrants is taken from the 1991 Census, so that the sample is the whole population. Therefore the predicted number of new immigrants from area c in region i in year t can be expressed as $\lambda_{ic}\Delta M_{ic}$. Summing over all origin groups one obtains a measure of the predicted total immigrant inflow into region i at time t which is "cleansed" of local demand shocks. Finally, I normalize this measure dividing it by the number of natives in the region at time $t-2$:

$$SP_{it} = \sum_{c} \frac{\lambda_{ic}\Delta M_{ct}}{Natives_{it-2}} \tag{3}$$

Table 6 shows that (3) is a good instrument for the annual immigrants inflow Δm_{it}. A regression of Δm_{it} on SP_{it} and all other control variables gives a coefficient of 0.879 with a standard error (clustered by region) of 0.022, while the partial R-squared is 0.363 and the F-test for joint significance of excluded instruments is 1527. In order to check the sensitivity of the results to the chosen instrument I also use as an alternative instrument for Δm_{it} the ratio of immigrants to natives lagged four periods m_{it-4}.[9] First stage results for this alternative instrument are reported in Table 7 and confirm that the lagged stock of immigrants is a good predictor of immigrant inflows.

4 Data

4.1 Price Data

Information on prices comes from data that the Office for National Statistics (ONS) uses to construct the Retail Prices Index (RPI) and the Consumer Prices Index (CPI). The ONS samples prices of over 650 representative items in different locations and different types of stores on a particular Tuesday of each month (Index Day). Depending on the type of items involved, the sample may be stratified by region, shop type (multiples or independents), both, or neither (see ONS (2007)). The raw data are then progressively aggregated: initially all prices collected

[9]Data limitations do not allow the use of further lags without reducing the number of available observations. As a robustness check I have nevertheless experimented using up to the 8th lag as an IV - see Appendix.

for one item in one stratum are combined into an "elementary aggregate", then elementary aggregates for each item are aggregated into a single item index. Item indices are then grouped into categories called "sections", which are then progressively aggregated into "groups", "broad groups", and finally into the overall RPI. The construction of the CPI follows a similar procedure but the key difference is that the elementary aggregate indices are computed as the geometric mean of the prices in each stratum, while for RPI elementary aggregates are obtained as the arithmetic mean.

Since individual store-level data are not available, my analysis will be based on elementary aggregate indices for all items which are stratified by region for each of the 12 UK Government Office Regions. Regional elementary aggregates are not normally published by the ONS, as they are only computed as an intermediate step in the production of the published national indices, but I obtained them under the Freedom of Information Act. The main reason why the ONS does not publicly distribute elementary aggregate indices is that the sample size underpinning such indices is often very small and they can therefore be subject to considerable measurement error. In order to increase the sample size and thus alleviate the problems arising from measurement error, in my analysis I always pool together elementary aggregate indices for several items. In this way even if some measurement error persists it is more likely that the error is not systematic. Since the price index is my dependent variable, if the "classical measurement error" assumptions are satisfied then this will go against finding any effect.

I received from the ONS RPI and CPI monthly regional indices for several items for the period January 1995 - May 2007 (RPI) and July 1996 - May 2007 (CPI). The number of items varies slightly across time because the basket of sampled products is revised every year. By construction, in January of every year the index for each item has value 100, and the values in the following months indicate the deviation of the item's price from its price at the beginning of the year. Indices can be chained over time because every January the index also reports deviations from the value of the previous January. Because it is reasonable to expect that immigration takes some time to affect the price structure and I do not have in any case monthly data on immigration, I conduct my analysis using annual changes in immigration and in prices. Therefore I first link the monthly series over time, then I compute for each regional item index

the average annual[10] value weighting each month by its number of observations, and choose 2002 as the base year for all series (i.e. the index is set to 100 in 2002). I exclude from the analysis all series running for less than five years. This leaves me with 317 items. My analysis is based on RPI because of the longer time dimension, but I check the robustness of all results using CPI.

There are cases where an item changes name and coding over time, or where some items are identified separately for some years and as one single item in others. In order to maximise the number of observations I try, wherever possible, to correct for these changes. This means that for a (very limited) number of cases, the item's characteristics may have slightly changed over time. However such changes are common to all regions in every year, and therefore they are fully accounted for by the year dummies in my regression analysis.

Similarly, a potential source of concern is the extent to which changes in prices may reflect changes in quality. Since we do not directly observe the raw prices but only the elementary aggregate, we are not able to directly control for any item characteristics and therefore changes in the composition of the elementary aggregates could potentially be driving changes in its value. However, the sampling procedure used by the ONS ensures that this does not happen: for every year in each outlet only one specific variety of all products matching the item description is chosen, and the price of the same variety is recorded every month. Although in principle it is therefore possible that different varieties of the same item are sampled in different stores, the variety is kept constant everywhere during the year. If changes in product specification within an item description ever happen, they may therefore only happen in January every year. If they are common across all stores (as is the case of computers or mobile phones for example), then the change in product quality is fully accounted for by the year dummies, and it does not pose any problems in the estimation. But even if they occur in some stores only, they do not invalidate my estimation strategy. In fact, since the index captures only changes in prices with respect to the previous January, the chaining procedure ensures that changes in quality *level* across years do not affect the validity of the index as long as different varieties of the same item do not exhibit differences in their price *growth rate*. And since items are very narrowly defined

[10]For consistency with the LFS, years are defined as running from March to February. See section 4.2 for details.

it is highly unlikely that prices for different varieties of the same item may evolve differently, although differences in their price level may certainly exist.

4.2 Immigrant concentration and labour market data

I use the UK Labour Force Survey (LFS) as the main source of information on immigrant concentration and on labour market and socio-economic characteristics. The LFS, established in 1973, is a sample survey of households living at private addresses in Great Britain, conducted by the ONS. Since 1992, the LFS has been a rotating quarterly panel. Each sampled address is interviewed for five consecutive times at three monthly intervals. The sample size is about 55,000 responding households in Great Britain every quarter, representing about 0.2% of the population. The LFS collects information on respondents' personal circumstances and their labour market status during a reference period of one to four weeks immediately prior to the interview. Since I am not interested in quarterly variations, and in order to increase the number of observations, I pool all quarters for every year. Until 2005, the LFS was using "seasonal" quarters, so that the first quarter of year t, the "spring" quarter, was covering the months March to May and the last quarter, the "winter" quarter was running from December of year t to February of year $t+1$. However, since 2006 the LFS switched to "calendar" quarters, so that the first quarter of each year is now January-March, and the last quarter is October-December. In order to avoid overlapping and to guarantee the highest possible degree of homogeneity, I therefore pool quarters 1 to 4 for years 1995/2005, while year 2006 is obtained by pooling quarters 2-3-4 2006 and quarter 1 2007. Years 1995/2005 are therefore defined over the months from March to February, while 2006 is defined over the period April 2006/March 2007.[11]

Information on sectoral wages come from the New Earnings Survey (NES) and the Annual Survey of Hours and Earnings (ASHE). The NES and its successor ASHE are annual cross-sectional datasets collected by the ONS with information about the levels, distribution and make-up of earnings and hours worked for employees. The ASHE samples one per cent of employee jobs in all industries and occupations from HM Revenue & Customs PAYE records

[11]The LFS contains month indicators, but because the sampling occurs over the quarter, and weights are calibrated quarterly, artificially reconstructing calendar years for the pre-2006 period would lead to biased estimates.

(approximately 142,000 individuals were sampled in 2007). Information on wages is obtained confidentially from employers, which ensures a high quality of wage data, in April every year. ASHE does not have any information on wages of self-employed. The ASHE was introduced in 2004 to replace and improve the previously used NES, but NES data for years 1997-2003 have been revised by the ONS to take into account the weights and imputation used in the ASHE, and the revised NES is now part of the ASHE dataset, and referred to as ASHE without supplementary information. I use the NES/ASHE data, going back until 1986, for information on wage structure at a detailed sectoral level.

Financial information by industry is obtained from the standard extracts of the Annual Business Inquiry (ABI). The ABI is a survey of employment and accounting information from businesses and other establishments in most industry sectors of the economy conducted annually by the ONS since 1998. It replaces the Annual Employment Survey (AES) which ran from 1995 to 1998 and the Annual Census of Production and Construction (1970-1997) and the Distribution and Services Inquiries (1976-1997). The ONS produces tables based on the ABI and its predecessors with employment and financial information by industrial sector which currently cover years years 1995-2006. I use the ABI to compute the ratio of employment costs to costs for other inputs of goods and services for each four or five digit SIC sector.

5 Results

5.1 Non-tradable goods and services

I start by estimating the model on services and non-tradable goods. Results are reported in Table 8. Columns 1-2 show the OLS results, while IV results are reported in columns 3-4 - where the chosen instrument is the predicted immigrant inflow calculated according to the formula in equation (3) - and 5-6 - where the IV is the fourth lag of the immigrants-natives ratio, in levels. Odd columns report results from the basic specification of equation (2), while even columns show estimates from a richer specification where I have included the change in regional employment rate and in the logarithm of the native population as additional covariates. I have

added these in an attempt to control for demand and size effects on prices. Yet, both variables are arguably endogenous, and there is no suitable instrument to correct for that. Therefore my preferred specification is that of equation (2). The OLS estimate for β in column 1 is negative and significant at 5%, although in the specification with all controls (column 2) the coefficient is positive but not significant at conventional significance levels. The IV coefficients of columns 3-6 are all negative and larger in magnitude than the OLS estimates and they are always significant at 5%, except for the specification in column 6.[12]

The estimates of column 3 imply that an inflow of immigrants that increases the ratio of immigrants to natives by 1 percentage point would lead to a 0.17% decrease in the average price of services. To put this number in perspective, consider that between 1995 and 2006 the average annual increase in the immigrants-natives ratio across all regions was just above 0.4 percentage points. This means that immigration pushed down growth in average price of services by about 0.07%. The average annual price growth across all regions, years and services in my sample is about 4%, so that immigration contributed modestly to dampenn its growth.

5.1.1 The labour cost channel

Why does immigration have a causal negative effect on price of services? One plausible explanation is that immigration reduced wages and hence dampened price growth of services through a reduction in their production costs.

To investigate the role of labour costs in the explanation of the results, I first link every item to a 4 digit SIC sector as detailed in Table 9. This allows me to study more in detail the features of the sectors where the items under analysis originate. Linking each item to a sector is not always straightforward, and some choices may be arbitrary. Sometimes even if a matching is possible the item ends up in residual classifications (e.g. "other service activities not elsewhere specified") or two items are grouped in the same sector although they are very different (e.g. "child minders" and "playgroups" would both be classified in "8532 - social work activities without accommodation" despite being fundamentally different). Although matching all items to a sector may be useful for descriptive purposes, in the following sectoral analysis I

[12] I report in the Appendix a numer of robustness checks on these and the following results.

shall use only those sectors where the matching is meaningful and unambiguous.

Table 10 displays some summary statistics about each sector's cost structure: for each sector I report in column 2 the share of workers earning a wage below the national 10th percentile, in column 3 the share of workers earning a wage above the median (columns 2 and 3 are computed from NES and ASHE for years 1995-2006), and in the last column the ratio of total employment costs to total costs for the purchase of goods materials and services (from ABI for years 1995-2006).[13] Sectors where the share of workers below the 10th percentile is above 10% employ a share of low-wage workers above the national average. As the table shows, 20 out of the 28 sectors where non-tradable goods and services are produced are intensive in the use of "low wage" labour, and moreover 89% of the items fall in one of these "low wage" sectors (see Table 9). Conversely column 3 shows that in four sectors only the share of workers earning an above median wage is greater than 50%, and only 5% of the items pertain to one of these sectors[14]. Finally, column 4 indicates that in most sectors employment costs represent a sizeable fraction of total input costs.[15]

As discussed earlier Dustmann et al. (2008) have shown that recent immigration to the UK had heterogeneous effects in different points of the wage distribution, affecting negatively wage growth at the bottom, not having any effect between the 20th and 40th percentile, and pushing up wages around the median and up to around the 90th percentile. The production costs explanation of the results seems therefore quite realistic given the types of services I am analysing.

[13]It is worth noting that one of the sectors is Sic 70.20 "Letting of own property". Although we report information on cost structure for this sector as well, it is clear in this case that the supply of housing for renting is almost fixed in the short run, and any price effect in this sector would therefore come from changes in demand. As I shall show later, though, my analysis did not detect any significant impact of immigration on rents.

[14]Note also that except for "Driving school activities" where the item-sector matching is unambigous, the other three sectors are very imprecisely macthed to an item - see Table 9

[15]It should be noted that the share of low-wage workers in Sic sector 95.00 "Households employing domestic staff" is only 10%. Yet housekeeping and domestic cleaning are known to be very low paid occupations. The apparent contradiction is due to the fact that NES/ASHE data come from PAYE records and therefore they undersample domestic occupations. Using LFS data, where wage information is asked from individuals in the sample, the share of low pay workers in the sector is around 35%. Moreover, the domestic sector is not covered by the ABI and therefore we have no information on its ratio of employment costs to other input costs.

5.1.2 Sectoral analysis

If the reduction in labour costs explains the reduction in the average price of non-tradable goods and services, then we should expect a stronger negative effect for those items that are produced using more "low wage" labour. To test this I estimate equation (2) only for sectors where more than 25% of the workers earn a wage below the 10th percentile. Results are reported in Table 11 and show that the estimated coefficients are now larger in magnitude and statistically more significant than the estimates for all services. The IV estimates are stable across all specifications and robust to the choice of instruments, ranging from -0.273 in my preferred specification of column 3, with only year dummies as additional controls and the predicted inflow as instrument, to -0.296 in column 6, where all controls are included, and the fourth lag of the immigrants-natives ratio serves as instrument. In contrast, none of the coefficients from regressions on price of services from sectors with less than 25% of workers below the 10th wage percentile, reported in Table 12, are significant. This seems to indicate that the negative impact of immigration on services and non-traded goods originates from the negative effects on prices of "low wage" sectors only, which is consistent with the wage-related explanation of the results proposed above.

In order to further analyse sectoral differences, I try to replicate the analysis separately for each four digit sector. Conducting the analysis at such a disaggregated level poses some problems. First, as noted above, matching of items to sectors is sometimes arbitrary or non-informative. Moreover in some cases only one item is matched to a sector, and therefore analysing the sector would simply mean analysing the individual item. As I pointed out in section 4.1, single price series suffer from potentially serious measurement error due mainly to the small sample size. The measurement error is nevertheless mitigated when several items are pooled together. For this reason I do not analyse each item separately, not even when it is the only item in a four digit SIC sector. Finally, some sectors are composed of a very limited number of items, and not all item series have the same start and end dates. Therefore for each sector I perform some sensitivity checks to avoid the risk that the inclusion or exclusion of one specific item drives the estimates, and only report results if they are stable to the random exclusion of one item.

Table 13 shows results for the five sectors where the IV estimates are significant: restaurants,

take-away food, bars and pubs, washing and dry cleaning, and hairdressing and beauty parlours. These are indeed the five sectors with the highest share of low-pay workers (motion picture projection and industrial cleaning have not been considered in the analysis because they consist of one single item each). Moreover the strongest negative effects are felt in hairdressing and washing and dry cleaning - the two sectors where the ratio of employment costs to other costs is highest; on the other hand the smallest effect is for bars and pubs - where the ratio of employment to other costs ratio is the lowest. Overall, sectoral results strongly support the hypothesis that immigration kept down the growth in the average price of services through a reduction in the labour cost component of final price.

5.2 Traded goods

The previous section focused on non-tradable goods and services, and it showed that immigration tends to decrease their price growth. Here I focus on tradable goods only. As stressed before, supply conditions for tradable goods are largely set on the (inter)national market. Local factor endowments may only marginally influence supply through, for example, changes in transport or handling costs. However demand is largely determined locally, and especially in the short run changes in demand may lead to changes in prices, if they are not readily accommodated by supply changes.

Table 14 reports results from estimation of equation 2 on tradable goods. Both OLS and IV estimates, in all specifications, are positive and significant. It is worth noting that IV estimates are always larger than OLS estimates, which indicates that the prevailing bias in the OLS estimates comes from measurement error, rather than from endogenous immigrant location choices. The magnitude of the effect is such that an increase of one percentage point in the immigrants-natives ratio would lead to an increase in average prices of between 0.14% and 0.18%, depending on the specification. Taking into account that the average annual inflow of immigrants was just about 0.4 percentage points between 1995 and 2006, this means that immigration contributed about 0.05% per year to the average price growth of tradable goods. The average annual growth rate in RPI over all tradable goods and all regions was for the same

period about 0.8%, which shows that although the impact of immigration on prices of traded goods was statistically significant, it did not have major effects on their overall increase.

We can have further insights into why immigration has a positive impact on prices of goods by looking separately at different types of goods. As in the case of traded services, I have grouped all items into 4 digit SIC sectors, as reported in Table 15. I have then separately analysed each sector which satisfied the requirements set out in the previous section (more than one item in the sector, non-residual sector). Table 16 reports results for those sectors where the estimated IV coefficient is significant, and for which results are not sensitive to the exclusion of any one item from the group (the sensitivity check described before). The estimated coefficient is positive for seven out of eight of the sectors where I find significant results.[16] In particular, immigration is shown to have a significant positive effect on price of potatoes, fruit, poultry meat, flour and breakfast cereals, snacks, sweets, sauces and beers. It is worth noting that all these items are low-value and of everyday use, while my analysis does not detect any effect of immigration on prices of higher value food items, or on e.g. electric household items. For all the items where we find a positive effect search costs are in fact quite high relative to the items' value; as discussed in section 3.1 it is precisely for this type of items that we would expect the existence of higher price dispersion. Moreover, although there are no consumption surveys allowing identification of immigrants' consumption behaviour,[17] on the basis of immigrants' socio-economic status we can reasonably expect them to increase the demand for such items and to consume them proportionately more than the average native.

6 Discussion

I have shown that immigration in the UK reduced the growth rate in price of services and non-tradable goods, while it has to some extent increased the growth in prices of tradable goods.

My results indicate that the reduction in prices of services and non-tradable goods is due to the negative effect that immigration has on wages at the bottom of the wage distribution.

[16]The estimate is negative for parts and accessories of motor-vehicles only, but the result is not very robust - see Appendix.

[17]The Expenditure and Food Survey does not have any information about country of birth or nationality.

These findings are in line with those of Cortes (2008) for the US. Her results show as well that immigration decreased the prices of services, especially in those industries that employ more low-skilled immigrants. Remarkably, although she looks at decadal changes and at a different country, her estimates are also similar in magnitude to mine. In both cases the main channel through which prices are affected is through a reduction in the production costs of such services. Given the types of services where we find a significant impact (food out of home and take away, bars and pubs, washing and dry cleaning, beauty parlours), it is unlikely that immigrants increase demand considerably. Still, if this was the case this would tend to counterbalance the supply side effects, and therefore if anything I would be underestimating the effects arising from changes in labour supply.

However in my case another possible explanation is that immigration may reduce prices through an increase in competition: immigrants may start up their own businesses, and the increased competition brought by new start-ups may lead to a reduction in the average mark-up charged on costs. This explanation appears especially suited to this study because in two of the sectors where I find negative effects (restaurants and take-away food) a large share of the businesses is owned by immigrants. Although I do not have direct data on ownership, it is possible to calculate the share of immigrants among the self employed in both sectors using the LFS:[18] pooling over years 1995-2006, almost 50% of self employed in the take-away sector and more than 43% of those in restaurants were foreign born.

To investigate the competition channel I have obtained information on the stock of VAT registered enterprises by SIC sector in every region and year from the Inter-Departmental Business Register (IDBR), a list of UK businesses maintained by the Office for National Statistics (ONS). I have then run regressions of the form in equation (2) where the dependent variable was the change in stock of businesses in each sector. However, this analysis did not show any positive effect of immigration on the number of start-ups in the sectors considered and there is therefore no evidence that this additional channel is at work.

The results I obtain for tradable goods are different from those in Lach (2007). While in his case a one percentage point increase in the immigrants-natives ratio was shown to decrease

[18]This looks a very good proxy of ownership.

prices of goods by about 0.5%, my estimates show that in the UK over the period I consider an inflow of the same size would have if anything increased prices by about 0.14%. However there are major differences in the types of migration analysed.

Lach looks at a single episode of mass migration, where the Israeli population increased by about 4% within a year as a result of Russian immigration. Conversely, the average annual inflow of immigrants to the UK between 1995 and 2006 was about 0.4% of the total population. Moreover, and crucially, Russian immigration to Israel was primarily led by political rather than economic reasons, so that most Russian immigrants were out of the labour market. Upon their arrival in Israel only 20% of Russians were part of the labour force, and even among those in the labour force 53% were unemployed. Therefore, given their very low opportunity cost of time, the Russian population was characterized by substantially lower search costs than natives. In contrast, as section 2 shows, immigrants to the UK have participation rates similar to those of natives and their unemployment rate is only slightly higher (see Table 2), even immediately after arrival. We have no direct survey information as regards their time use, because the Time Use Survey does not contain any information on country of birth or nationality. However, we know from the LFS that recent immigrants tend to work longer hours and to travel more than natives to reach their workplace: in 1995-2006 the average number of hours worked per week was 41.9 for natives and 45.4 for recent immigrants; similarly the average home-to-work travel time was 25 minutes for natives and 29 for recent immigrants. Moreover, while 72% of natives travel to work by car, this percentage is less than 33% among recent immigrants.[19] This also suggests that most immigrants do not own a car and their movements are therefore more costly. Their higher costs of movement together with the fact that they may have limited knowledge of the language and institutional features of the host country and are therefore less aware of where it is best to shop, makes it more likely that they tend to shop locally without engaging in much search activity.

As regards the distributional consequences of my results, the types of items that experience the highest price reductions (food and drinks out of home, dry cleaning, hairdressing) are those that tend to be relatively less consumed by low income households. Conversely the share of

[19]Source: LFS, 1995-2006 pooled.

expenditure for food and drinks to be consumed at home, for which my analysis found positive price effects, tends to be inversely proportional to the household's income. Overall these findings therefore tend to reinforce the distributional effects highlighted by previous results on wages(Dustmann et al. (2008)).

7 Conclusion

This paper has presented new evidence on the impact of immigration on prices in the UK. Despite a relatively large literature studying important economic consequences of immigration on host economies, the focus to date has been mainly on its impact on wages and employment. Only very recently have some researchers started to investigate empirically other important areas where immigration may have an impact. In particular the literature on the consequences of immigration on prices is so far very scant. I studied the issue for the UK between 1995 and 2006, the years in which the country received the highest inflow of immigrants of its recent history. I used annual changes in immigration and in price level in different regions to identify the effect of immigration on prices of goods and services. However the chosen identification strategy requires that the consequences of immigration on the prices of tradable goods (driven by changes in demand) are considered separately to the consequences on services and non-tradable goods and services (which may potentially arise from changes in both demand and supply).

My results have shown that immigration reduced the average price growth of non-traded goods and services. However, this reduction was not common to all services, nor very large in magnitude. In particular I have demonstrated that the average negative effect comes through a reduction in prices of services whose production is intensive in the use of low-pay labour, such as restaurants, bars, take-away food, washing and dry cleaning and hairdressing. Yet immigration did not affect the prices of other services. Based also on previous literature showing that immigration reduced wages at the bottom of the wage distribution, I have argued that the observed reduction is caused by a decrease in the cost of those types of labour that are intensively used in the production of such services. According to my estimates immigration reduced the price of the average service by about 0.07% per year, while during the same period the average

annual increase in the price of services has been about 4%.

I also find that immigration had a positive causal effect, statistically significant but quantitatively modest, on average prices of traded goods. In particular, the positive effects come from an increase in the prices of cheap grocery goods, which are more intensively demanded by low-income individuals. Moreover these are the type of goods for which theory predicts that price dispersion is higher, because their unit value is quite low and therefore search costs are relatively higher.

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Appendix - Robustness checks

Instrumental variable

Firstly, as reported in all tables and in the text, I have always used two different instruments to validate the results. One potential concern with both instruments is that they may not be fully exogenous because they do not go far enough back in time. In fact, I cannot use more than four lags of the immigrants/natives ratio in each GOR without reducing the number of observations. This is because GOR identifiers are not available in the LFS before 1992, and the geographic identifiers available before that date do not allow aggregating up to GOR level. For the same reason I cannot use the LFS to compute the regional distribution of immigrants from each country of origin for years before 1991, which could be used in the construction of the predicted inflow of immigrants. Neither can I use the 1981 or 1971 Census because the publicly available tabulations from the Census 1971 and 1981 do not have enough details on the composition of the foreign population by country of origin. To check the robustness of my results I have nevertheless replicated my analysis using up to eight lags of the immigrants/natives ratio as IV. All the main results still hold, although for traded goods they tend to become less significant the higher the number of lags used.

CPI and RPI

The second robustness check replicated the entire analysis using CPI instead of RPI. As I explained in section 4.1 the choice of RPI is motivated by the availability of a longer time series: CPI series start only in July 1996 and therefore any analysis conducted with CPI implies losing one year of observations. However my results show that the use of CPI does not affect the results for non-traded goods and services. Results for tradable goods on the other hand are more sensitive: when using CPI the average impact of immigration on non-tradable goods is still positive but no longer significant. Still, the sectoral analysis confirms the result obtained with RPI, with the exception of beers and parts and accessories for motor vehicles for which no significant effect is detected.

Aggregated vs. item-level data

Thirdly, in my analysis I have always used regional log-price index averages as the dependent variable, as reported in equation 2. However I have data on item-level price indices at regional level, so I have replicated all regressions with item-level data clustering standard errors at regional level to account for the different levels of aggregation in the immigrant concentration and price variables. This allows me to control for item-specific time effects. Where possible (i.e. when the number of items is small enough) I do that with item-year interaction dummies, while I use item-specific time trends when the number of items is too large to allow the estimation of completely unrestricted item-specific time effects. Therefore the regression equation becomes:

$$\Delta \ln p_{jit} = \beta \Delta m_{it} + \tau_t + \eta_{jt} + \Delta \epsilon_{jit}$$

where η_{jt} is the item-specific time effect. Results are largely invariant to the choice of specification.

Endogeneity in the choice of technology

Furthermore, I have addressed concerns regarding potential endogeneity of sectoral wage structure by classifying industrial sectors according to their wages before the period under analysis. While table 10 uses wage information for 1995-2006, I have also computed the same statistics using NES data for years 1986-1994, and using LFS data for 1992-1993. Computing the latter requires grouping items using the SIC80 industrial classification which results in a slightly different aggregation, since the SIC92 was introduced in the LFS only from the third 1993 quarter. Despite differences in classification and time period considered, when I restrict the analysis to items from sectors defined as "low wage" with either classification, I still find that the negative impact on prices come from those sectors only, while no significant effect is found for services from other sectors.

Tables

Table 1: Immigrant stock in UK, 1995 - 2006

Year	Share of Immigrants in total population
1995	8.2
1996	8.2
1997	8.5
1998	8.8
1999	8.9
2000	9.2
2001	9.6
2002	10.0
2003	10.3
2004	10.7
2005	11.3
2006	12.2

Entries are the share of working age (16-65) immigrants on total working age population in the UK in each year.

Source: LFS, various years.

Table 2: Labour market status of immigrants and natives, 1995-2006

	1995			2006		
	Natives	Immigrants		Natives	Immigrants	
		Earlier	Recent		Earlier	Recent
Participation rate	75.7	68.2	53.6	76.5	71.7	72.4
Unemployment rate	8.3	12.4	15.4	5.2	7.4	12.1

The table reports the participation and unemployment rate of natives, earlier and recent immigrants for years 1995 and 2006. Participation rate is defined as the ratio of individuals in the labour force to total working age population. Unemployment rate is defined as the ratio of unemployed individuals to total active population. "Earlier" immigrants are immigrants who have been in the UK for 2 or more years."Recent" immigrants are immigrants who arrived in the UK within the previous two years.
Source: LFS, various years

Table 3: Occupational distribution of immigrants and natives

	Natives	Immigrants		Average wage
		Earlier	Recent	
Higher managerial and professionals	13.4	19.3	19.1	18.6
Lower managerial and professionals	29.3	29.4	22.7	12.6
Intermediate occupations	14.1	11.3	10.5	8.5
Lower supervisory and technical occupations	12.4	9.5	6.5	8.3
Semi-routine occupations	17.7	17.9	19.9	6.4
Routine occupations	13.1	12.6	21.4	6.5

The table reports the occupational distribution across NS-SEC analytical classes of natives, earlier and recent immigrants in years 2000-2006 pooled. "Earlier" immigrants are immigrants who have been in the UK for 2 or more years."Recent" immigrants are immigrants who arrived in the UK within the previous two years. The last column reports average hourly wages for each occupational class, discounted using CPI 2005.
Source: LFS, 2000-2006.

Table 4: Industry distribution of immigrants and natives

	Natives	Immigrants	
		Earlier	Recent
Agriculture, fishing, and mining	1.9	0.8	1.1
Manufacturing	16.5	13.1	13.3
Electricity, gas and water supply	0.7	0.4	0.3
Construction	7.7	4.6	4.0
Trade; repair of motor vehicles, and personal and household goods	15.6	13.7	10.2
Hotels & restaurant	4.0	8.3	12.9
Transport, storage and communication	6.7	7.6	5.6
Financial intermediation	4.4	4.5	5.3
Real estate, renting and business activities	10.5	13.6	16.1
Public administration and defence; compulsory social security	6.7	4.9	2.7
Education	8.3	8.1	5.8
Health and social work	11.2	14.7	13.3
Other community, social and personal service activities	5.4	5.1	4.9
Private households with employed persons	0.4	0.6	4.6

The table reports the distribution of natives, earlier and recent immigrants across SIC sections in years 1995-2006 pooled. "Earlier" immigrants are immigrants who have been in the UK for 2 or more years."Recent" immigrants are immigrants who arrived in the UK within the previous two years.
Source: LFS, 1995-2006.

Table 5: Regional distribution of immigrants and natives

	1995			2006		
	Natives	Immigrants		Natives	Immigrants	
		Earlier	Recent		Earlier	Recent
London	9.6	41.5	43.5	9.3	41.7	31.2
South East	13.4	12.8	13.5	13.7	12.9	12.9
South West	8.4	4.7	2.9	8.7	4.8	5.7
Eastern	9.2	6.9	8.3	9.3	8.1	10.3
East Midlands	7.3	5.0	2.6	7.4	5.2	5.7
West Midlands	9.1	8.7	7.8	9.0	7.4	6.6
Yorks & Humbs	8.8	5.6	5.0	8.7	5.3	8.4
North West	12.1	7.3	5.5	11.9	6.5	6.7
North East	4.7	1.3	0.7	4.5	1.5	1.9
Wales	5.2	1.8	3.1	5.3	1.8	2.7
Scotland	9.4	3.4	5.5	9.2	3.7	5.3
Northern Ireland	2.9	1.1	1.6	3.1	1.1	2.6

Entries are the regional distribution of natives, earlier and recent immigrants in 1995 and 2006. "Earlier" immigrants are immigrants who have been in the UK for 2 or more years."Recent" immigrants are immigrants who arrived in the UK within the previous two years.

Source: LFS, 1995,2006.

Table 6: First stage - Supply push component

	(1)	(2)	(3)	(4)
Predicted inflow	0.879**	0.688**	0.885**	0.699**
	(0.023)	(0.073)	(0.0212)	(0.070)
Log natives	No	Yes	No	Yes
Employment rate	No	No	Yes	Yes
Year effects	Yes	Yes	Yes	Yes
Partial R-sq.	0.363	0.462	0.365	0.475
F-test for excluded instruments	1527.390	89.560	1746.730	98.370

The table reports results from the first stage regression of the change in the ratio of immigrants to natives on the supply push component (as defined in the text). The last two rows report the partial R-squared of excluded instruments and the F-test for joint significance of excluded instruments.

Standard errors in parenthesis are clustered by region.

*** denotes significance at 1%, * at 5%*

Table 7: First stage - Fourth lag immigrant share

	(1)	(2)	(3)	(4)
m_{it-4}	0.044**	0.037**	0.044**	0.037**
	(0.000)	(0.003)	(0.000)	(0.004)
Log natives	No	Yes	No	Yes
Employment rate	No	No	Yes	Yes
Year effects	Yes	Yes	Yes	Yes
Partial R-sq.	0.361	0.534	0.361	0.536
F-test for excluded instruments	10362.860	111.080	7680.590	102.880

The table reports results from the first stage regression of the change in the ratio of immigrants to natives on the fourth lag of the level of the same ratio. The last two rows report the partial R-squared of excluded instruments and the F-test for joint significance of excluded instruments.

Standard errors in parenthesis are clustered by region.

*** denotes significance at 1%, * at 5%*

Table 8: All services and non-tradable goods pooled

	OLS	OLS	IV - SP	IV - SP	IV -4th lag	IV -4th lag
	(1)	(2)	(3)	(4)	(5)	(6)
Imm./nat. ratio	-0.085*	0.023	-0.169*	-0.164*	-0.141*	-0.132
	(0.030)	(0.064)	(0.062)	(0.066)	(0.058)	(0.065)
Log natives		0.192		0.012		0.042
		(0.118)		(0.109)		(0.111)
Employment rate		0.014		0.032		0.029
		(0.089)		(0.111)		(0.108)
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
N	132	132	132	132	132	132

Dependent variable is the change in logarithm of the average log-RPI of non-tradable goods and services. IV is the supply push component in columns 3 and 4, and the fourth lag of the ratio of immigrants to natives in columns 5 and 6.

Standard errors in parenthesis are clustered by region.

*** denotes significance at 1%, * at 5%*

Table 9: Items grouping: services

Sic2003		Item
50.20	Maintenance and repair of motor vehicles	Car repairs - labour per hour
		Car service
		Auto car wash
52.72	Repair of electrical household goods	Washing machine repair
		TV repair
		PC repair
52.73	Repair of watches, etc.	Watch repair - clean and service
55.30/1-2	Restaurants	Restaurant - cup of coffee
		Restaurant main course 1st
		Restaurant - sweet
		Restaurant main course 2nd
		Burger in bun-eat in
55.30/3-4	Take away food shops	Fish & chips takeaway
		Sandwich take-away
		Coffee - take-away
		Tea - take-away
		Takeaway soft drink
		Ethnic takeaway
		Pizza takeaway or delivered
		Pasty/savoury pie - takeaway
		Takeaway coffee latte
		Burger in bun - takeaway
		Kebab - takeaway
55.40	Bars	Pub - cold filled roll/sandwich
		Pub - hot meal
		Potato crisps - individual pack
		Draught bitter (per pint)
		Draught lager (pint)
		Draught stout per pint
		Cider - 1/2pt or 275-340ml bot
		Lager bottled
		Whisky (per nip) specify ml
		Vodka (per nip) specify ml
		Wine (per glass)
		Bottle of wine
		Bottle of mixer 113-180ml
		Liqueur per nip specify ml
		Lemonade/cola
		Spirit based drink 275ml
55.51	Canteens	Staff restaurant - main course
		Staff restaurant - sweet/pudding
		Staff restaurant - hot snack item
		Primary school - fixed charge
		Secondary school - cafeteria
55.52	Catering	Catering - 50 set menu per head
60.24	Freight transport by road	Home removals
63.21	Other support. transport act.	Car park charges
70.20	Letting of own property	Priv Rentd Unfurnishd Property
		Private Rented Furnished Prpty
70.31	Real estate agencies	House conveyancing
71.10	Renting of automobiles	Self-drive van hire
		Self-drive car hire basic 24hr
71.40	Renting of personal goods nes	Daily film dvd rental
74.70	Industrial cleaning	Window-clean 3-bed semi
80.41	Driving school activities	Driving lesson 1 hour
85.12	Medical practice activities	Eyesight test charge
85.13	Dental practice activities	Private dental examination
85.14	Other human health activities	Non-NHS medicine-physiotherapy
85.31	Social work activities with accommodation	Residential homes
		Nursing homes
85.32	Social work activities without accommodation	Child minder rate
		Playgroup fees per session
92.13	Motion picture projection	Cinema (std adult eve seat)
92.31	Artistic and literary creation etc.	Theatre adult eves-front stlls
92.62	Other sporting activities	Squash court - evening
		Leisure centre membership
93.01	Washing and dry cleaning	Laundrette charge 1 load wash
		Dry cleaning - man's suit
93.02	Hairdressing etc.	Man's haircut
		Women's hairdressing - cut/blowdry
		Womens highlighting
		Full leg wax (both legs)
93.05	Other service activities nes	Dog kennel fees
95.00	Households employing domestic staff	Domestic cleaner hourly rate

The table reports details of how non-tradeable goods and services are grouped into 4 digit Sic 2003 sector.

Table 10: Sector characteristics: non-tradables

Sic 2003		% Below 10th wage percentile	% Above median wage	Employment/ Other costs
55.40	Bars	53.5	12.3	0.253
92.13	Motion picture projection	53.0	13.7	0.271
55.30/3-4	Take away food shops	51.8	8.3	0.270
55.30/1-2	Restaurants	44.1	13.3	0.316
93.02	Hairdressing etc.	41.6	11.6	0.544
74.70	Industrial cleaning	39.6	12.4	0.685
93.01	Washing and dry cleaning	37.1	12.1	0.508
55.52	Catering	34.2	17.2	0.420
55.51	Canteens	24.6	25.4	0.358
85.31	Social work act. with accommodation	20.0	29.0	0.629
52.73	Repair of watches, etc.	18.2	22.7	0.320
92.62	Other sporting activities	17.2	30.9	0.374
93.05	Other service activities nes	15.8	42.9	0.267
71.10	Renting of automobiles	15.5	36.6	0.165
85.13	Dental practice activities	13.0	16.4	*0.590*
70.20	Letting of own property	12.9	42.2	0.244
85.32	Social work act. without accommodation	11.5	43.8	0.619
50.20	Maintenance and repair of motor vehicles	11.4	37.5	0.216
52.72	Repair of electrical household goods	11.0	40.9	0.377
95.00	Households employing domestic staff	10.6	20.2	
71.40	Renting of personal goods nes	8.7	37.2	0.338
70.31	Real estate agencies	8.7	47.3	0.528
92.31	Artistic and literary creation etc.	6.3	63.4	0.254
63.21	Other supporting transport activities	6.2	67.7	0.278
80.41	Driving school activities	4.8	58.6	0.361
85.12	Medical practice activities	4.8	36.3	*0.590*
60.24	Freight transport by road	4.5	35.9	0.312
85.14	Other human health activities	3.6	59.8	0.470

The table reports the list of sectors in which non-tradable goods and services have been grouped. For each sector, the table also reports the share of workers earning a wage below the 10th percentile, the share of workers earning a wage above the median, and the ratio of employment costs to other costs. For sectors 85.12 and 85.13 no 4 digit data on employment costs were available, therefore I report 3 digit information. There are no available data on costs for sector 95.00.

Source - wages: NES/ASHE 1995-2006.

Source - employment and total costs: ABI 1995-2006.

Table 11: Low wage sectors

	OLS	OLS	IV - SP	IV - SP	IV -4th lag	IV -4th lag
	(1)	(2)	(3)	(4)	(5)	(6)
Imm./nat. ratio	-0.158**	-0.072	-0.273**	-0.275**	-0.285**	-0.296**
	(0.034)	(0.067)	(0.056)	(0.065)	(0.048)	(0.065)
Log natives		0.152		-0.044		-0.064
		(0.135)		(0.155)		(0.160)
Employment rate		0.114		0.133		0.135
		(0.106)		(0.131)		(0.133)
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
N	132	132	132	132	132	132

Dependent variable is the change in logarithm of the average log-RPI of "low wage" items. IV is the supply push component in columns 3 and 4, and the fourth lag of the ratio of immigrants to natives in columns 5 and 6.

Standard errors in parenthesis are clustered by region.

*** denotes significance at 1%, * at 5%*

Table 12: Not low wage sectors

	OLS	OLS	IV - SP	IV - SP	IV -4th lag	IV -4th lag
	(1)	(2)	(3)	(4)	(5)	(6)
Imm./nat. ratio	0.019	0.136	-0.019	-0.014	0.047	0.074
	(0.037)	(0.150)	(0.086)	(0.135)	(0.111)	(0.143)
Log natives		0.211		0.068		0.152
		(0.252)		(0.210)		(0.221)
Employment rate		-0.178		-0.164		-0.172
		(0.127)		(0.137)		(0.132)
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
N	132	132	132	132	132	132

Dependent variable is the change in logarithm of the average log-RPI of nontraded goods and services from sectors with a share of low wage workers lower than 25%. IV is the supply push component in columns 3 and 4, and the fourth lag of the ratio of immigrants to natives in columns 5 and 6.

Standard errors in parenthesis are clustered by region.

*** denotes significance at 1%, * at 5%*

Table 13: Non-tradable goods and services - Individual sectors

	OLS		IV - SP		IV - 4th lag		OLS		IV - SP		IV - 4th lag	
	Restaurants						*Take-away food*					
imm./nat.	-0.261**	0.066	-0.276*	-0.170	-0.310*	-0.257	-0.177*	-0.165*	-0.292**	-0.313**	-0.279**	-0.299**
	(0.077)	(0.153)	(0.108)	(0.117)	(0.115)	(0.119)	(0.066)	(0.054)	(0.061)	(0.057)	(0.046)	(0.057)
	Bars						*Washing and dry cleaning*					
imm./nat.	-0.085**	-0.035	-0.187**	-0.197**	-0.187**	-0.200**	-0.342**	-0.411	-0.765**	-0.874**	-0.783**	-0.893**
	(0.022)	(0.056)	(0.040)	(0.050)	(0.035)	(0.051)	(0.067)	(0.196)	(0.113)	(0.197)	(0.093)	(0.187)
	Hairdressing and beauty parlours											
imm./nat.	-0.073	-0.104	-0.421*	-0.583*	-0.390*	-0.469						
	(0.037)	(0.211)	(0.155)	(0.253)	(0.143)	(0.228)						
Other controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	132	132	132	132	132	132	132	132	132	132	132	132

The table reports results from regressions of the change in logarithm of the average log-RPI of items in each sector on the change in the ratio of immigrants to natives. IV is the supply push component or the fourth lag of the ratio of immigrants to natives.
Standard errors in parenthesis are clustered by region.
*** denotes significance at 1%, * at 5%*

Table 14: All tradable goods pooled

	OLS	OLS	IV - SP	IV - SP	IV -4th lag	IV -4th lag
	(1)	(2)	(3)	(4)	(5)	(6)
Imm./nat. ratio	0.076**	0.108**	0.145*	0.183*	0.157**	0.182**
	(0.021)	(0.032)	(0.061)	(0.078)	(0.042)	(0.052)
Log natives		0.057		0.129*		0.128*
		(0.050)		(0.057)		(0.054)
Employment rate		0.07		0.062		0.062
		(0.109)		(0.118)		(0.115)
Year effects	Yes	Yes	Yes	Yes	Yes	Yes
N	132	132	132	132	132	132

Dependent variable is the change in logarithm of the average log-RPI of tradable goods. IV is the supply push component in columns 3 and 4, and the fourth lag of the ratio of immigrants to natives in columns 5 and 6.

Standard errors in parenthesis are clustered by region.

*** denotes significance at 1%, * at 5%*

Table 15: Items grouping: tradeable goods

Sic2003		Item
11.1	Growing of cereals and other crops nes	Potatoes Old Loose White -CS
		Potatoes Old Loose White
		Potatoes New Loose -CS
		Potatoes New Loose
11.2	Growing of vegetables, etc	Fresh Veg-Tomatoes -CS
		Fresh Veg-Tomatoes
		Fresh Veg-Cabbage -Whole -CS
		Fresh Veg-Cabbage -Whole
		Fresh Veg-Cauliflower-Each -CS
		Fresh Veg-Cauliflower-Each
		Fresh Veg-Sprouts -CS
		Fresh Veg-Sprouts
		Fresh Veg-Carrots -CS
		Fresh Veg-Carrots
		Fresh Veg-Onions -CS
		Fresh Veg-Onions
		Fresh Veg-Mushrooms -CS
		Fresh Veg-Mushrooms
		Fresh Veg-Cucumber-Whole -CS
		Fresh Veg-Cucumber-Whole
		Fresh Veg-Lettuce-Iceberg-Each -CS
		Fresh Veg-Lettuce-Iceberg-Each
		Fresh Veg-Organic Carrots Kg
11.3	Growing of fruit, nuts and spice crops	Apples -Cooking -CS
		Apples -Cooking
		Apples -Dessert -CS
		Apples -Dessert
		Pears -Dessert -CS
		Pears -Dessert
		Bananas -CS
		Bananas
		Grapes -CS
		Grapes
		Oranges-Class 1-Each -CS
		Oranges-Class 1-Each
		Avocado Pear-Each -CS
		Avocado Pear-Each
		Kiwi Fruit-Each -CS
		Kiwi Fruit-Each
		Grapefruit-Each -CS
		Grapefruit-Each
		Organic Dessert Apples Kg
15.11	Production and preserving of meat	Home Killed Beef-Lean Mince Kg -CS
		Home Killed Beef-Lean Mince Kg
		Home Kld Beef-Rump/Popes Steak -CS
		Home Kld Beef-Rump/Popes Steak
		Home Killed Beef-Topside Kg -CS
		Home Killed Beef-Topside Kg
		H-Killed Beef Braising Steak -CS
		H-Killed Beef Braising Steak
		Home Killed Lamb-Loin Chops Kg -CS
		Home Killed Lamb-Loin Chops Kg
		Home Killed Lamb-Shoulder Kg -CS
		Home Killed Lamb-Shoulder Kg
		Imp Lamb Loin Chop-Bone Per Kg -CS
		Frzen Imp Lamb: Leg (Per Kg)
		Home Killed Pork-Loin Chops Kg -CS
		Home Killed Pork-Loin Chops Kg
		H-Kill Pork-Boneless Shoulder -CS
		H-Kill Pork-Boneless Shoulder
15.12	Production and preserving of poultry meat	Frozen Chicken Pieces
		Frozen Turkey- Per Kg- Specify
		Fresh/Chilled Chicken Per Kg -CS
		Fresh/Chilled Chicken Per Kg
		Frzen Roasting Chicken Per Kg
		Fresh/Chilled Chicken Pieces -CS
		Fresh/Chilled Chicken Pieces
15.13	Production of meat and poultry meat products	Frozen Beefburgers Pack Of 4
		Bacon-Gammon-Per Kg -CS
		Bacon-Gammon-Per Kg
		Bacon-Back-Per Kg -CS
		Bacon-Back-Per Kg
		Cooked Meat - Turkey Sliced -CS
		Cooked Meat - Turkey Sliced
		Canned Meat-Corned Beef
		Canned Meat-Stewed Steak
		Pork Pie-Individual-Not Buffet -CS
		Pork Pie-Individual-Not Buffet
		Individual Meat Pie -CS
		Individual Meat Pie
		Salami Sliced
		Sausages-Pork-Per Kg -CS
		Sausages-Pork-Per Kg
		Cooked Ham Prepacked Sliced
		Cooked Ham Loose Specify Type -CS
		Cooked Ham Loose Specify Type

Continues on next page

Sic2003		Item
15.20	Processing and preserving of fish and fish products	Fresh White Fish Fillets Kg -CS
		Fresh White Fish Fillets Kg
		Fresh Fish-Salmon Fillets-Kg
		Frozen Fish Fingers
		Frozen Fish In Sauce
		Canned Fish-Tuna-180-200G
15.31	Processing and preserving of potatoes	Potatoes-Old-Prepk-White-Per kg -CS
		Potatoes-Old-Prepk-White-Per kg
		Potato Crisps-25G/40G
		Potato Crisps-Multi-Pack
		Frozen Chips 900G-1Kg
		Potato Flavour Snack In Tube
15.32	Manufacture of fruit and vegetable juice	Fruit Squash 1L
		Pure Orange Juice-1 Ltr Carton
		Fruit Juice Not Orange 1L
		Pure Orange Juice- Pack 3/4
15.33	Processing and preserving of fruit and vegetables nes	Pre-Packed Salad
		Canned Tomatoes-Apprx 390-400G
		Baked Beans-415-420G Tin
		Canned Sweetcorn 198-340G
		Frozen Garden Peas 900G-1Kg
		Packet Of Peanuts 100G
		Canned Fruit-400-450G
		Vegetable Pickle-280-310G
15.41	Manufacture of crude oil and fats	Cooking Oil -Vegetable 1 Litre
15.43	Manufacture of margarine etc.	Margarine/Low Fat Spread-500G
15.51	Manufacture of dairy products	Butter-Home Produced-250G
		Butter-Imported 250G
		Cheddar-Home Produced Per Kg
		Cheddar-Imported-Per Kg
		Brie Per Kg
		Cheese Spread-Tub-200G
		Edam Per Kg
		Eggs-Large-Per Doz Or 2 X 6
		Eggs-Medium-Per Doz Or 2 X 6
		Shop Milk-Pasteurised-4Pt/2Ltr
		Milk Semi-Per 2 Pints/1.136 L
		Milk, Flavoured
		Fresh Cream Single
		Powdered Skimmed Milk
		Yoghurt/Fromage Frais-Small
		Yoghurt/Fromage Fr-4Pk-50-125G
		Chilled Pot Dessert 50-200G
		Hot Milk Drink-300-400G
15.52	Manufacture of ice cream	Choc Covered Ice Cream Bar
		Ice Cream 500Ml-1L
15.61	Manufacture of grain mill products	Flour-Self-Raising-1.5Kg
		Muesli 500G - 1Kg
		Breakfast Cereal 1
		Breakfast Cereal 2
		Corn Snack Single Packet
15.62	Manufacture of starches etc.	Basmati Rice
15.72	Manufacture of prepared pet foods	Dog Mixer/Meal
		Dog Food-Can-385-400Gm
		Cat Food-Can-385-400Gm
15.81	Manufacture of bread, fresh pastry goods and cakes	Large Loaf-White-Sliced-800G
		Large Loaf-White-Unsliced-800G
		Large Wholemeal Loaf-Unsliced
		Six Bread Rolls-White/Brown
		Brown Loaf,400G,Sliced-Gran
		Pitta Bread
15.82	Manufcature of rusks and biscuits, etc.	Cream Crackers-Packed-200G
		Plain Biscuits-200-300G
15.83	Manufacture of sugar	Sugar -Granulated-White-Per Kg
15.84	Manufacture of cocoa, choc. and sugar confectionery	Choc Coated Biscuits-200-300G
		Choc Ctd Biscs-Ind Wrapd 6-8Pk
		Fruit Scones
		Choc/Sponge Cake Not Frozen
		Fruit Pies-6 Pack
		Frozn Cake/Gateau No Ice-Cream
		Doughnut-Each
		Kitkat (4 Finger Bar)
		Jar Of Jam-340-454G
		Original Polo Mints
		Smarties-Small Tube
		Mars Bar (Approx 62.5G)
		Rowntrees Fruit Pastilles
		Bag Of Sweets 200-250G
		Chewing/Bubble Gum-Single Pk
		Carton/Box Of Chocolates
		Crunchie
15.85	Manufacture of macaroni, etc.	Dry Spaghetti Or Pasta 500G
15.86	Processing of tea and coffee	Tea Bags 1 Packet Of 80 (250G)
		Coffee: Ground: Filter Fine
		Coffee-Instant-100G Jar

Continues on next page

Sic2003		Item	Sic2003		Item
15.87	Manufacture of condiments and seasoning	Tomato Ketchup (340-500G)	24.52	Manuf. of perfumes and toilet prep.	Air Freshener Aerosol Spray
		Cook-In Sauce-Jar/Can 350-520G	25.22	Manuf. of plastic packing goods	Refuse Sack From Pack Of 10-20
		Mayonnaise 400G-500G	28.72	Manuf. of light medal packaging	Aluminium Cooking Foil 300Mm
15.88	Manuf. of homogenised food etc.	Baby Food	29.71	Manuf/ of electric domestic appliances	Vacuum Cleaner
15.89	Manufacture of other food products nes	Canned Soup-390-425G			Electric Cooker
		Frzn Ready-Cookd Meal Serves 1			Washing Machine
		Coleslaw-Plain-200-250G			Fridge/Freezer
		Chilled Rdy-Cookd Meal-Serve 1			Electric Kettle - 1.5-1.7L
		Frozen Pizza-Med Size-300-450G			Microwave (State If Combined)
		Frozen Veg Burger/Grills-4Pack			Dish Washer
		Frozen Veg Ready Meal 300-350G			Smoke Alarm-Standard Single
15.96	Manufacture of beer	Brown Ale-4 Cans 440-500Ml			Electric Iron
		Lager-4 Cans			Toaster-2 Slices
		Cider 1-2 Litre Bottle			Food Processor-Standard-1 Bowl
		Draught Bitter-4Cans-440-500Ml			Hair Dryer
		Lager-Bottled			Cordless Phone (Spec Dig/Anal)
		Lager 'Stubbies'	31.40	Manuf. of accumulators, etc.	Drycell Battery-Pack Of 4
		Lager Pack 12 Cans	31.50	Manuf. of lighting equipment etc.	Light Bulb
15.98	Manufacture of mineral waters and soft drinks	Coca/Pepsi Cola 330Ml Can	32.30	Manuf. of TV and radio receivers,etc.	Telephone-Home Use
		Other Fizzy Drink-Per Can-330M	34.30	Manuf. of parts for motor vehicles	Tyres-Tubeless Radial
		Lemonade-2 Litre Bottle			Car Battery
		Fruit Drink-200-290Ml 3-Pack			Oil Filter
		Mineral Water Still 1.5-2L			Windscreen Wiper Blades
		Cola Flavoured Drink-2 Ltr Btl			Childs Car Seat
		Pk6/8 Fizzy Drink/Cola Cans			Steering Lock Device
		Fizzy Energy Drink 250-500Ml			Brake Pads-Pair
21.22	Manufacture of household and sanitary goods etc.	Toilet Rolls (Packet Of 2)	36.63	Other manufacturing nes	Ball Point
		Toilet Rolls- 8 To 10 Pack			Ball Point -CS
21.23	Manufacture of paper stationery	Writing Paper Pad-20-50Sheeets -CS			Clear Sticky Tape
		Writing Paper Pad-20-50Sheeets			Clear Sticky Tape -CS
		Packet Of Envelopes			Animal Cage (E.G For Gerbil)
		Packet Of Envelopes -CS			Mot Test Fees: Vat Exempt
		Greetings Card; State Code			
		Greetings Card; State Code			
24.51	Manufacture of soap and detergents, etc.	Washing Up Liquid-400-600Ml			
		Household Cleaner Cream/Liquid			
		Washing Powder - Automatic			
		Washing Machine- Liquid			
		Dish Washer Powder-1Kg-3Kg			
		Dish Washer Powder-1Kg-3Kg -CS			

The table reports details of how non-tradeable goods and services are grouped into 4 digit Sic 2003 sector.
CS = Chain Store; items sold by retailers with at least 10 outlets.

Table 16: Tradable goods - Individual sectors

	OLS		IV - SP		IV - 4th lag		OLS		IV - SP		IV - 4th lag	
	Growing of cereals and other crops						*Growing of fruit, nuts and spice crops*					
imm./nat.	0.927	-0.118	1.746**	1.623*	1.280*	1.154**	0.253*	0.207	0.433*	0.479*	0.430*	0.461*
	(0.820)	(0.576)	(0.448)	(0.722)	(0.446)	(0.361)	(0.090)	(0.136)	(0.170)	(0.178)	(0.146)	(0.154)
	Production and preserving of poultry meat						*Grain mill products*					
imm./nat.	0.275	0.666**	1.208*	1.615**	0.967**	1.196**	0.202	0.582*	0.420**	0.646**	0.551**	0.705**
	(0.245)	(0.169)	(0.468)	(0.501)	(0.302)	(0.307)	(0.117)	(0.215)	(0.104)	(0.167)	(0.085)	(0.152)
	Cocoa, chocolate and sugar confectionery						*Condiments and seasoning*					
imm./nat.	0.131*	0.239*	0.295**	0.349**	0.340**	0.406**	0.328*	0.713*	0.842**	1.099**	0.837**	1.024**
	(0.055)	(0.107)	(0.070)	(0.073)	(0.069)	(0.062)	(0.112)	(0.285)	(0.205)	(0.250)	(0.226)	(0.260)
	Beer						*Parts and accessories for motor vehicles*					
imm./nat.	0.101	-0.01	0.167*	0.144	0.144*	0.131*	-0.117	-0.149	-0.392	-0.520*	-0.453*	-0.537*
	(0.061)	(0.110)	(0.074)	(0.093)	(0.051)	(0.051)	(0.087)	(0.151)	(0.190)	(0.234)	(0.178)	(0.193)
Other controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	132	132	132	132	132	132	132	132	132	132	132	132

The table reports results from regressions of the change in logarithm of the average log-RPI of items in each sector on the change in the ratio of immigrants to natives. IV is the supply push component or the fourth lag of the ratio of immigrants to natives.
Standard errors in parenthesis are clustered by region.
*** denotes significance at 1%, * at 5%*