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Policy Note

## **Migrants and Economic Performance in the EU15: their allocations across countries, industries and job types and their (productivity) growth impacts at the sectoral and regional levels**

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### **Abstract**

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This note discusses some of the results of a recent FIW study that analyses employment patterns of migrant workers across EU 15 economies as well as the question of their contribution to productivity and output growth performance at the sectoral and regional levels.<sup>1</sup> One of the important aspects of the study is the analysis of the allocation patterns of migrants with different educational attainment levels ('skills') and their impact upon economic performance. Although the study covers all EU 15 countries in the same manner, in this policy brief we shall focus on specific comparative features of migrants' employment patterns in the Austrian economy.

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## Policy Brief

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### **Migrants and Economic Performance in the EU15: their allocations and productivity impacts at the sectoral and regional levels**

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*This brief discusses some of the results of a recent FIW study that analyses employment patterns of migrant workers across EU 15 economies as well as the question of their contribution to productivity and output growth performance at the sectoral and regional levels.<sup>1</sup> One of the important aspects of the study is the analysis of the allocation patterns of migrants with different educational attainment levels ('skills') and their impact upon economic performance. Although the study covers all EU 15 countries in the same manner, in this policy brief we shall focus on specific comparative features of migrants' employment patterns in the Austrian economy.*

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<sup>1</sup> See Michael Landesmann, Robert Stehrer and Mario Liebensteiner (2010), "Migrants and Economic Performance in the EU15: their allocations across countries, industries and job types and their (productivity) growth impacts at the sectoral and regional levels" a study commissioned by the Austrian Federal Ministry of Economy, Family and Youth (BMWFJ) and undertaken in the context of the 'Research Centre International Economics' (FIW) and funded out of the Internationalisation Program 'Go International'.

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## 1. Migrants, their 'skills' and economic performance

This study is the starting point of an ambitious research agenda to analyse the role of 'migrants' in European economies from the point of view of their impact upon 'economic performance' (in the case of this study we limited ourselves to productivity and output growth) and to analyse this issue in a cross-European context. Economic research on the role of migrants has so far focussed on two areas: (i) their impact upon labour market outcomes and (ii) their net use of welfare state provisions and of other 'public goods'. The analysis of the impact of migrants on productivity performance has received more interest recently (see e.g. Hunt and Gauthier, 2009; Peri, 2009, Paserman, 2008) but the studies so far were limited to single countries. In this sense, this study and its precursor (see Huber et al, 2009) is a first attempt to study this issue in a cross-European context.

Part I of the study<sup>2</sup> presents an overview of migrants' positions in employment in the 'older' EU member countries (the EU-15 i.e. excluding the new member states which joined the European Union in 2004 and 2007 respectively<sup>3</sup>). 'Migrants' in this study have been defined as people who were born abroad. This definition of migrants facilitates inter-country comparisons as the other definition – by nationality – is less appropriate as procedures of acquiring nationality differ significantly across countries<sup>4</sup>.

Figure 1 depicts the presence of migrants in the EU-15 work forces for two periods (we worked with three year averages to reduce the impact of outliers), the first one referring to 2000-02 and the second one to 2005-07. The choice of these periods is guided to include the changes which might have occurred following the recent EU Eastern Enlargement.<sup>5</sup> As we can see, Austria is the economy, excluding Luxembourg (which for reasons of its size and geographic location has been excluded from this graph) amongst the EU-15 with the highest share of migrants in its labour force. Notice the strong increases (in percentage points) in Spain, Ireland and the UK which were the beneficiaries of strong migrant inflows in the wake of EU Enlargement. The study also contains information on places of origin of migrants and there – as is well-known – Austria features in both periods as the country with the highest percentage point presence of people from the New Member States (NMS 12)

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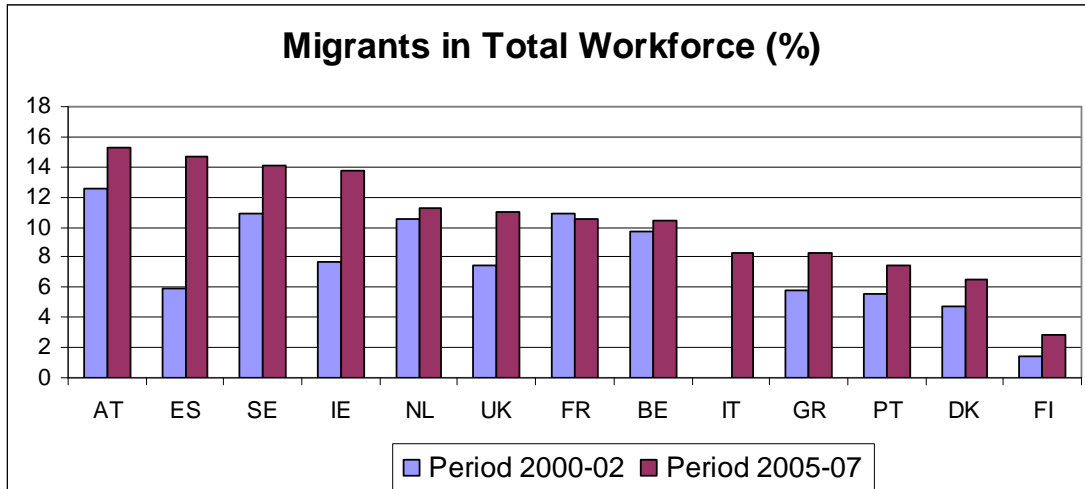
<sup>3</sup> The 'new member countries' (i.e. the EU 12 economies which joined in 2004 and 2007 respectively) do feature in the analysis as 'sending countries' but not as 'host countries' of migrant flows.

<sup>4</sup> This definition of migrants means, however, that the analysis could not include data for Germany as the European Labour Force Statistics (EU-LFS) on which the analysis in this study is mostly based, does not include information on place of birth for employees in Germany.

<sup>5</sup> In May 2004 the Czech Republic, Hungary, Poland, Slovakia, Slovenia and the three Baltic countries Estonia, Latvia and Lithuania joined the European Union (along with Cyprus and Malta) and in January 2007 Bulgaria and Romania joined.

in its work force. Other economies, such as Spain, France, Netherlands, Portugal, United Kingdom receive a high share of migrants from non-European poor and middle income countries (often due to ex-colonial links).

Figure 1



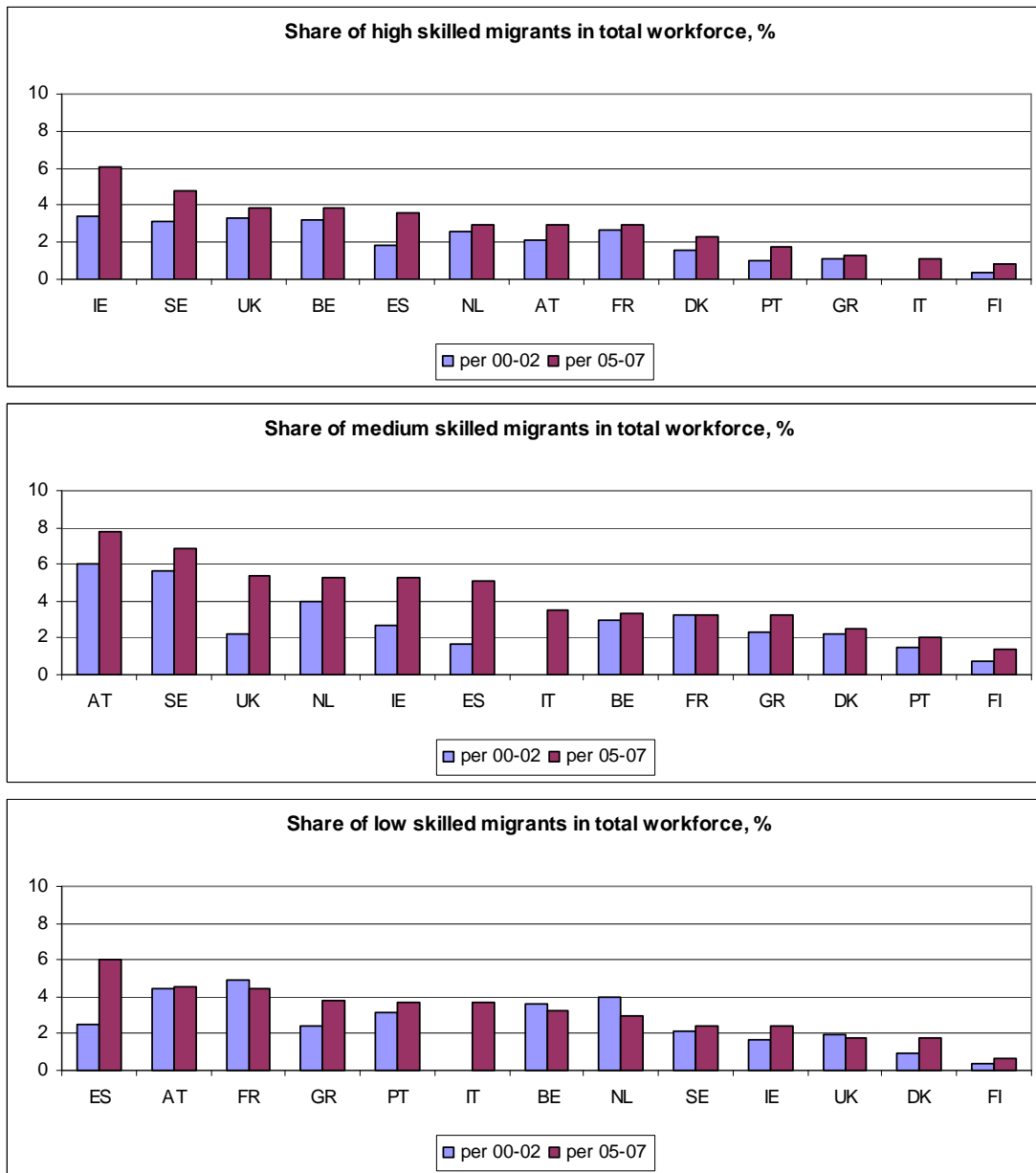
Source: EU-LFS Statistics; own calculations

Let us now come to the question of ‘skill composition’. The European Labour Force Statistics (EU-LFS) allow an identification of an employee’s ‘educational attainment level’, i.e. which type of schooling/training has been obtained. At the level of a rather crude 3-tier classification it is generally accepted that inter-country comparisons can be undertaken. The three levels refer to less than (completed) secondary education (the ‘low skilled’), completed secondary education (the ‘medium skilled’) and those with university or college education (the ‘high skilled’).<sup>6</sup> Figure 2 presents the information regarding the ‘skill composition’ of the migrant labour forces in the two periods. Austria (with its generally high share of migrants) sticks out in terms of its very high share of medium-skill migrants and its relatively high share of low-skill migrants, while high-skill migrants are much more poorly represented in its labour force.

<sup>6</sup> More precisely, using the ISCED classification, the 'low skill' group includes ISCED categories 0/1/2; the 'medium skill' group ISCED categories 3/4; and the 'high skill' group ISCED categories 5/6.

Figure 2

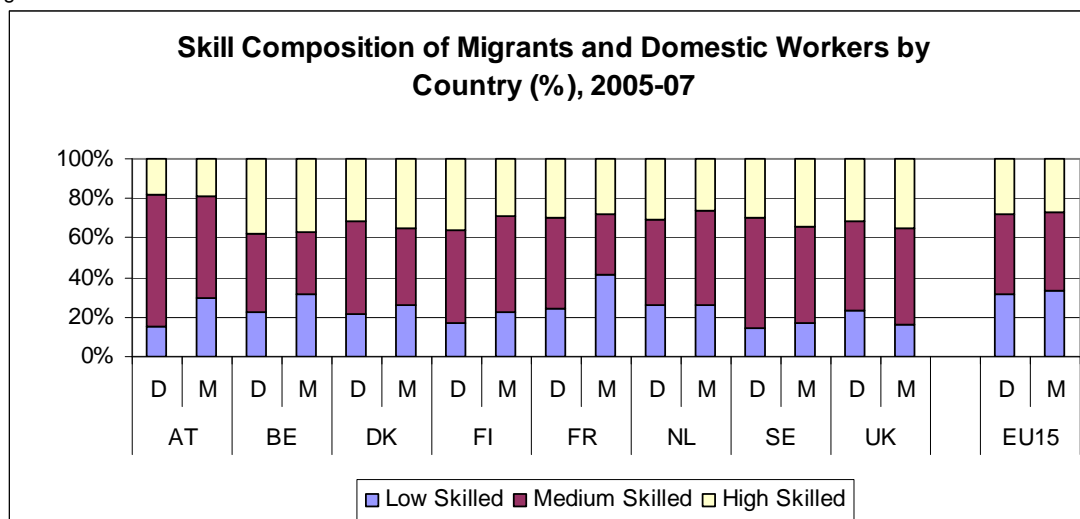
### Skill composition of migrants



Source: EU-LFS Statistics; own calculations

This is also born out by Figure 3 in which the skill composition of migrant and domestic labour forces can be compared. We have here selected as a 'peer group' for Austria the higher-income countries amongst the EU15 and we can see that Austria has the lowest share of migrants with tertiary degrees compared to any of the 'peer countries'. It is also interesting to see that in some economies the share of 'high-educated' is greater amongst the migrants than amongst the domestic labour forces. This is the case in Denmark, Ireland, Sweden and the United Kingdom, but not in Austria.

Figure 3



Source: EU-LFS Statistics; own calculations

## 2. Migrants' allocation across industry and 'job types'

In the following we shall present results from the study on the allocation patterns of migrants with different 'skills' across industries and also regarding the utilisation of their 'skills' relative to those of domestic workers in different 'job types' (the latter analysis refers to the issue of 'skills-jobs' mismatch).

Figures 4a and 4b focus on so-called 'high-skill industries' i.e. industries which require a relatively high share of employees with the highest educational attainment levels<sup>7</sup>. Figure 4a shows the shares of migrants and of domestic workers (in % of total migrant and domestic labour forces respectively) who work in these 'high-skill industries' and Figure 4b focuses on the shares of high-skill migrants and of high-skill domestic workers (again in % of total migrant and domestic labour forces respectively) who are employed in these industries. The pictures do not tell a favourable story about the Austrian allocation of labour forces across industries and that of migrants (and high-skill migrants) in particular. Figure 4a reveals that a relatively small share of Austria's labour force (domestic and foreign workers alike) is employed in 'high-skill industries' (which were defined at the EU15 level) and, secondly, we find that the relative shares of migrants compared to domestic workers working in these 'high-skill' industries is higher in most of the 'peer' (i.e. high income) economies which is not the case in Austria. Hence migrants in many of the 'peer countries' find over-proportionately employment in these industries; in Austria it is (though only marginally) the other way round.

<sup>7</sup> The classification was undertaken by ranking industries by shares of employees with tertiary degrees in their work forces (this was done at the EU15 level) and this singled out industries such as chemicals, office machinery and computers, air transport, petroleum and gas extraction, financial intermediation, insurance, computer services, research and development, other business activities, education, health and social work, as 'high skill industries'.

Figure 4a

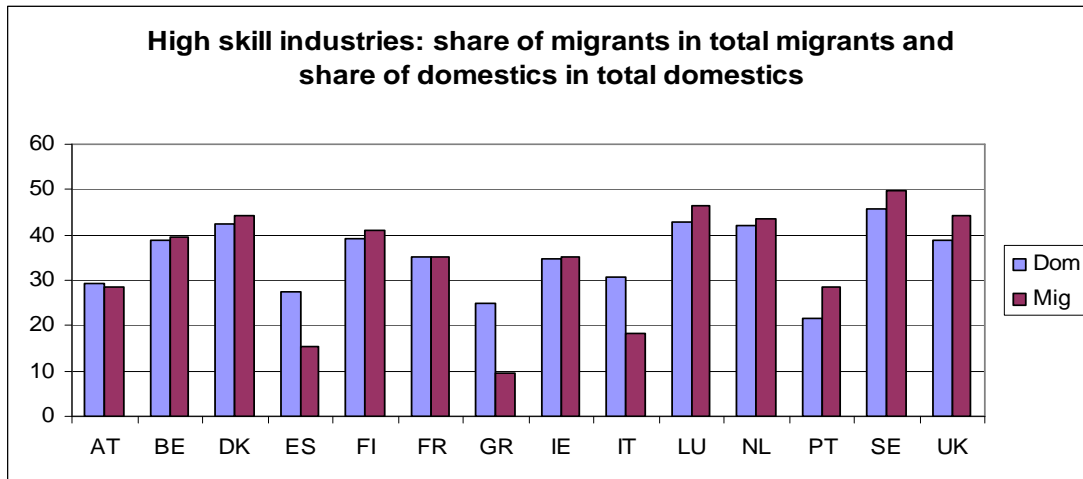
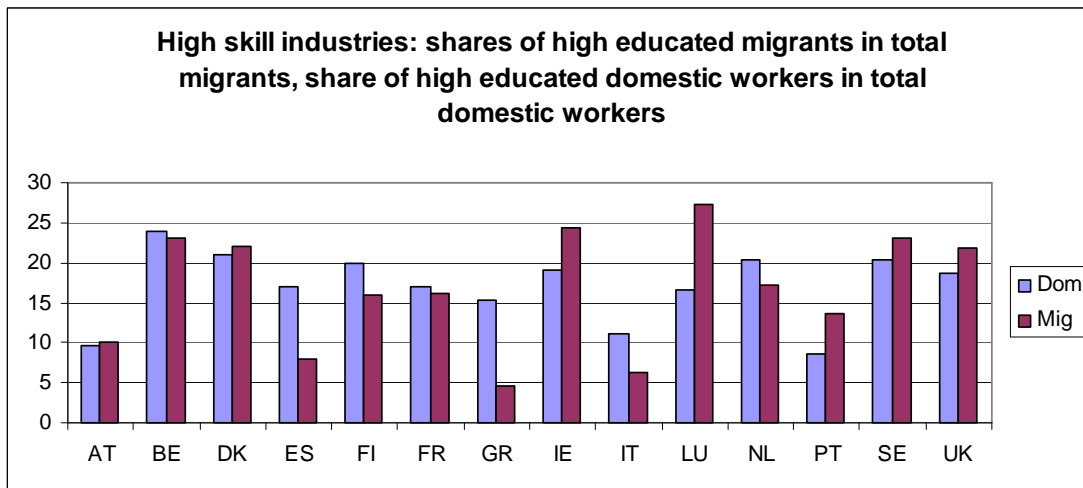


Figure 4b



Source: EU-LFS Statistics; own calculations

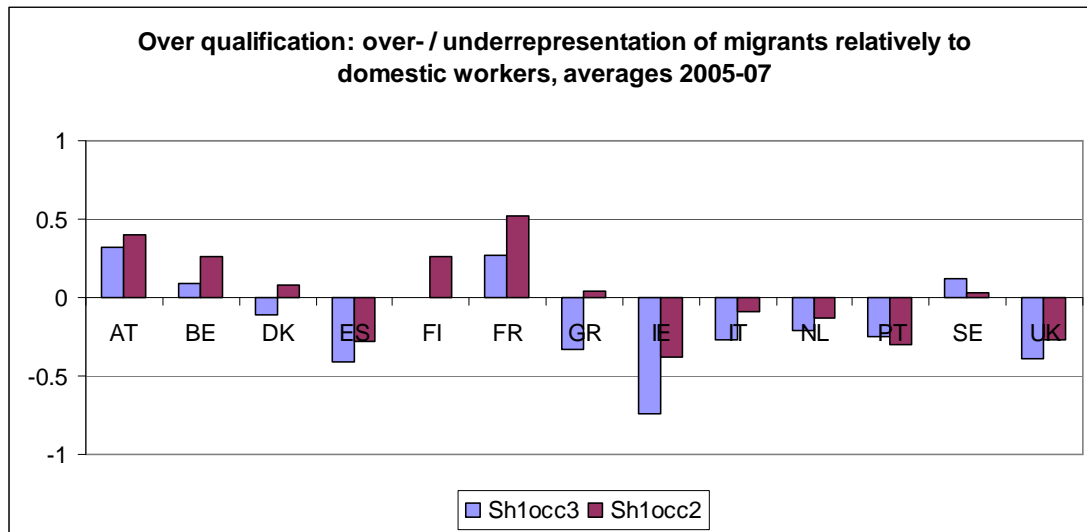
Figure 4b focuses on the high-skilled (or highly educated) parts of the work forces in the 'high skill industries'. Austria has a great weakness in the shares of people with completed tertiary degrees and this is particularly revealed in the shares of high-skilled workers (domestic and migrants) in the labour forces employed in the 'high-skill industries'. The extent of the gap compared to the peers is quite astonishing (a 10-15 percentage point gap) and Austria is much more in line with the Mediterranean group in this respect. Furthermore, we have the example of a range of countries (Denmark, Ireland, Luxembourg, Portugal, Sweden, United Kingdom) where the share of high-skilled migrants (in the total migrant labour force) employed in these industries exceeds that of the high-skilled domestic labour forces. I.e. in these countries high-skilled migrants are over-proportionately employed in these industries relative to domestic work forces. Again, this is not the case in Austria which shows that the short supply of high-skilled (i.e. those with tertiary degrees) in general from which high-skill industries must especially be suffering is not compensated by a special (successful) effort to attract high-skill migrants to these sectors.



Finally we want to come to the issue of ‘skills-jobs matching’. In this part of the study use was made of LFS information regarding the type of occupation an employee fills (such ‘occupations’ include categories such as: managers, professionals, technicians, clerks, plant and machine operators, elementary occupations, etc; these occupations are defined by the international ISCO classification). The occupations have then been classified into three groups, depending upon whether such jobs are generally executed by more or less skilled people and hence we arrived at a classification of ‘high skill’, ‘medium skill’, and ‘low skill’ types of ‘jobs’. We then undertook an analysis to which extent there was a ‘jobs-skills match’ or a ‘jobs-skills mismatch’ and, furthermore, compared domestic and migrant workers in this respect. A ‘job-skills mismatch’ would, for example, be found if a high share of highly trained are employed in jobs which in general require a lower level of education. We focus in the following only on a few most striking examples:

Figure 5 shows the extent to which high-skill migrants (i.e. those with tertiary degrees) are employed in ‘low skill jobs’ (occ3) or in ‘medium-skill jobs’ (occ2). This is an instance of – what the literature would call – ‘brain waste’. In fact, the figure shows to which extent this is more the case for migrants than for domestic workers. The figure shows that Austria belongs to that group of countries in which this form of ‘brain waste’ is more the case for migrants than for domestic workers. We shall return to this issue in the discussion of the econometric results from the study.

Figure 5



Source: EU-LFS Statistics; own calculations

Further interesting results regarding relative ‘skills-jobs’ matches and mismatches are shown in Figures 6a and 6b:

Figure 6a shows the same issue of relative ‘over-qualification’ or ‘brain waste’ of migrants compared to domestic workers, but instead of looking at the economy as a whole, it analyses the situation especially in the ‘high-skill industries’. Here again, we can see that in a few countries (Austria, Finland, France and Sweden most prominently) have an over-proportionate numbers of high-educated migrants employed in ‘low-skill’ occupations in these industries and a similar group (Austria, Belgium, Finland, France, Sweden) in ‘medium-skill jobs’ – all this is relative to domestic workers. Hence in these economies, there is more ‘down-grading’ of highly educated migrant workers compared to domestic workers in such industries. In other economies, the opposite is the case: there the degree of ‘brain waste’ amongst highly educated is less than amongst the domestic work force in these industries.

Figure 6a

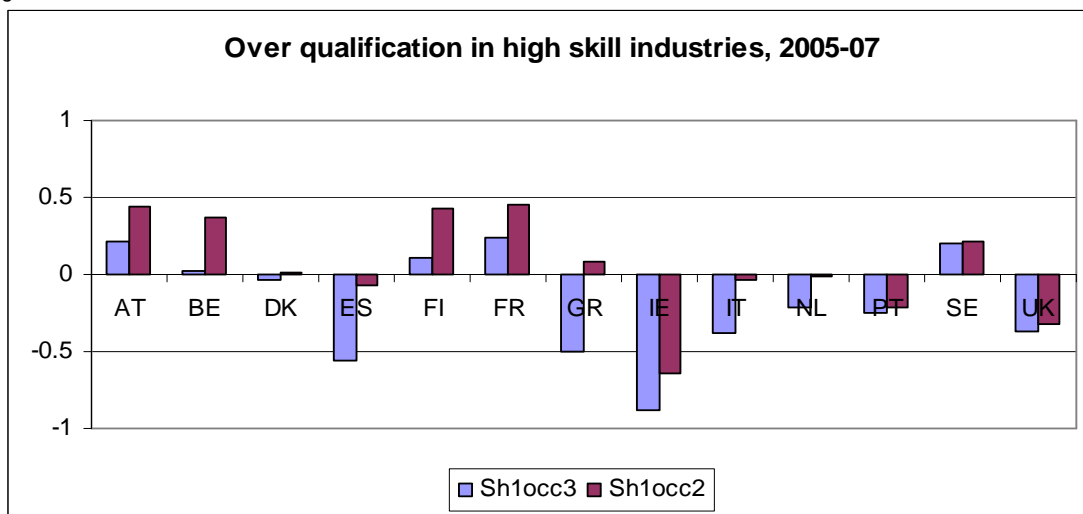
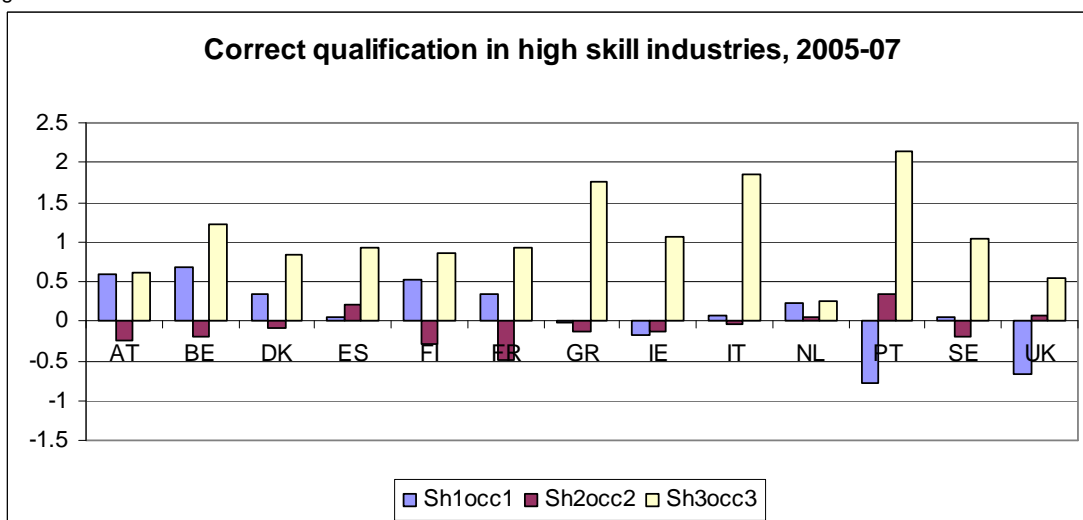


Figure 6b



Source: EU-LFS Statistics; own calculations

It is also interesting in this respect to look at Figure 6b which still refers to ‘high skill industries’: We can see here that in all economies, migrants are over-proportionately important to perform ‘lower-skill jobs’ (and this figure refers to ‘correct qualification’, i.e. it looks at members of the labour force with the ‘right skills’ performing these jobs). Also highly-qualified migrants are over-proportionately represented in undertaking ‘high-skill jobs’ in those ‘high-skill industries’ compared to domestic workers; hence in most economies – Austria amongst them – high skill migrants are very important (relative to their overall presence) to perform such jobs in high-skill industries. One can interpret this as high-skill migrants providing an important ingredient into the high-skilled labour force in those industries (over-proportionately represented compared to the domestic labour force).

### 3. Econometric Results

We now come to reporting some of the principal econometric results obtained in Part II of the study. Part II conducts a wide range of ‘descriptive econometric’ exercises to study the relationship between migrants employment across industries and regions and output and productivity growth. We call these exercises ‘descriptive econometric’ because the issues of causality and selectivity could not be properly addressed with the data-set we had at our disposal and hence further research will be called forth in this respect. We do, however, find robust results with respect to the *positive relationship between the presence of high-skilled migrants and productivity growth, especially in high-education-intensive industries* and also more generally – but less robustly – on the relationship between productivity growth and the shares of migrants in overall employment. There is also an analysis of the impact of different policy settings with respect to labour market access of migrants and to *anti-discrimination measures*. The latter *have a significant positive impact on migrants’ contribution to productivity growth*. The analysis of regional impacts of migrants on value added and labour productivity growth builds on a prior extensive study analysing regional growth patterns (see Crespo Cuaresmo et al, forthcoming) which had narrowed down the range of robust explanatory variables through Bayesian econometric techniques. In the present study the migration variables are added as explanatory variables and we find *positive and significant effects of migrants’ shares* (and specifically of high-skilled migrants) *on regional productivity growth*. However, as already mentioned earlier, the analysis also here still suffers from the limitations of being able to apply a satisfactory approach to determine causality.

### 4. Results on policy and policy conclusions

This Policy Brief has summarised results obtained in the FIW study on ‘Migrants Impact Upon Economic Performance’ and focused in particular on some descriptive results which puts Austria in a comparative perspective.

What is striking is that Austria has a very low share of 'highly educated' (i.e. those with completed tertiary degrees) migrants in its employed labour force. This is especially true in comparison with Austria's 'higher income peers' amongst the EU-15.

Together with the econometric results obtained that high skill migrants do have a positive impact upon productivity (and output) growth – with all due allowance of un-resolved causality issues – at the industrial and regional levels and their special roles in industries which require 'high skill labour' more intensively for which the results are particularly robust, this suggests that Austria would benefit to instate policies which make it particularly attractive to 'highly educated migrants'.

We also found in the econometric analysis a robust result that in countries in which anti-discrimination measures are not well-developed or successful, the relationship between migrants and productivity growth suffers. Austria has a particularly low index in this respect.

Furthermore, Austria also belongs to the countries in which 'skills-jobs mismatch' for highly educated migrants is more pronounced (relative to the domestic labour force); hence there is evidence for higher 'brain waste' of highly educated migrants and also for a less favourable allocation across industry groupings compared to many of the EU-15 peers. This is an important deficit particularly in the light of the robust positive relationship found between productivity and output growth and the presence of highly-skilled migrants in high-skill intensive industries.

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