Do Educational Differences and Their Impact on Earnings Hamper Immigrants?[*]

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Abstract

This paper analyzes the differences in educational rates of return between the foreign-born and native workers in France and Austria, and asks to what extent these differences result from a potential mismatch between the actual and required years of schooling typical for a certain occupation. The decomposition of the education variable into required education, overeducation and undereducation allows for better understanding of the reasons behind the lower payoff to schooling among migrants. The findings of the paper are generally in accordance with the existing studies, since overeducation contributes positively to earnings and undereducation lowers the expected payoff. However, what mainly accounts for the lower returns to education of immigrants in comparison to natives, is the substantial difference in returns to overeducation in favour of native workers. Undereducated migrants are penalized with respect to earnings by slightly higher negative returns, to undereducation than natives.

I. Introduction

The relationship between earnings and years of schooling has been widely discussed and examined in the existing literature. The basic Mincerian earnings function relates the log of earnings to years of schooling attained, experience and its square. An interesting finding regarding differences in educational returns among workers is that some workers have acquired either more or less education than the required years of schooling across different occupations. Numerous studies based on US data such as Duncan and Hoffman (1981), Verdugo and Verdugo (1989) and Cohn and Khan (1995) have examined the effect of too many years of schooling – overeducation, or too few – undereducation on earnings, and conclude that the rate of return to required schooling is positive and exceeds that of overeducation, while the return to undereducation is negative.

The research on the existence of an education-occupation mismatch has further implications for explaining the lower returns to education of migrants with regards to natives. Chiswick (1978) confirms that the partial effect of an additional year of schooling on earnings for foreign-born workers in USA is by 2.5 percent lower than that for natives. Recent studies have documented a similar regularity based on Canadian, German and UK data.[1] A potential explanation for this phenomenon is that human capital skills are still not fully transferable across countries. As a result, migrants are often either overeducated or undereducated in terms of years of education with regards to the requirements of fulfilling their current job.

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[1] See Baker and Benjamin (1994), Chiswick (1980), Dustmann (1993).

The goal of this paper is to analyze the difference in educational rates of return between foreign-born workers and natives in the European Union and ask whether and to what extent these differences result from a potential mismatch between the actual and required years of schooling typical for a certain occupation. While the incidence of overeducation and undereducation in the American labour market has been under constant research[2], fewer studies tackle migrant's human capital skills in Europe.[3] Further focusing on education-occupation mismatch in different European countries is relevant in the view of the recent and future EU expansion and the expected large migration flows towards the developed Western labour markets.

One of the most important issues in the literature of overeducation and undereducation is how the required schooling has been measured. There are three possible approaches regarding that issue depending on the perspective of defining the required education for a certain job: the job analysis approach, the worker self-assessment approach and the realized-matches approach.[4] While the first two approaches are based on the analysis of occupation analysts or the subjective estimate of the worker himself, the realized-matches approach, which I use in this paper, postulates that required education results from the usual schooling of the workers in a particular occupation measured by the mean or the mode of that distribution. Any schooling that is above the required education is considered to be overeducation and any schooling below the required education is respectively undereducation.

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[2] See Chiswick (1978), Cohn and Khan (1995).
[3] See Footnote 1 for studies based on UK and German data.
[4] For a detailed explanation of the three approaches see Hartog (2000).

In my analysis, I employ data from the Luxemburg Employment Study[5] for two European economies: France and Austria for the years 1997 and 2000. The analysis of these two economies could be useful since the EU comprises of few large economies like France and many small economies like Austria. Moreover, both countries are characterized by substantial immigration flows for the last 40 years. Further insights regarding migrants' versus natives' returns to education are to be expected given that France and Austria have pursued different immigration policies over time. Despite the fact that currently both countries encourage high-skilled labour, France has much stricter immigration policy for permanent settling of legal immigrants. In the past the Austrian migration system mainly channeled migrants into low-skilled industries that produced tradeables (manufacturing goods). This led to disproportionate employment of migrants into low-skilled/low paid jobs in the area of non-tradeables (services).

The findings of the paper are generally in accordance with the existing studies, since the difference between the rates of return on education for migrants and natives is around 2.5 percentage points in favour of native-born workers. The decomposition of the education variable into required education, overeducation and undereducation allows for a deeper analysis of the reasons behind the lower payoff to schooling among migrants. There is no significant difference between the returns to required education between native and migrant workers in both countries. In the absence of mismatches across occupations (over- and under–education) the returns to required education using the realized-matches approach for both groups of employees are substantially higher than their returns to

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[5] www.lisproject.org

education within the Mincerian framework. However, what mainly accounts for the lower returns to education of immigrants in comparison to natives, is the substantial difference in returns to overeducation in favour of native workers. Undereducated migrants are penalized with respect to earnings by slightly higher negative returns, to undereducation than natives.

II. Literature Review

The positive relationship between education and earnings is well acknowledged by economics literature. While the human capital models by Becker (1964) and Mincer (1974) assume that the education of a worker is fully utilized by his current occupation, the job competition model developed by Thurow (1975) suggests a more complicated relationship between education and earnings. The proponents of the latter view claim that since the job market allocation is based on available surpluses of both individuals and jobs, workers are likely to possess higher or lower education and skills than those required by their job. Under this assumption each occupation is characterized by a "required" level of education which is necessary for the worker to successfully perform his job. Any worker's education above this required level is known as "overeducation" and any education below the required level of education is "undereducation".

An important issue in the literature of overeducation and undereducation is how the required schooling has been measured. There are three possible approaches regarding that issue depending on the perspective of defining the required education for a certain job: the job analysis approach, the worker self-assessment approach and the realized-matches

approach. According to the job analysis approach the required level of education is specified for the different job titles across occupations by professional job analysts. Rumberger (1987) provides empirical evidence of the above approach by using the US Dictionary of Occupational Titles, and finds that overeducated workers in the US have lower rates of return than workers with the required level of education in a certain occupation.

The worker self-assessment approach uses information provided by the worker himself on what is the required level of education for a certain occupation, or what is the minimum level of education required to perform satisfactory the current job. This approach is used by Duncan and Hoffman (1981) who confirm the results of Rumberger (1987) based on US data. Daly *et al.* (2000) employs also the worker self-assessment approach in comparing the returns to overeducation and undereducation between the US and Germany.

The third method of realized-matches, which I use in this paper, postulates that required education results from the actual schooling of the workers in a particular occupation measured by the mean or the mode of that distribution. Any schooling that is above the mode or mean years of schooling for certain occupation is considered to be overeducation and any schooling below the required education is respectively undereducation. Verdugo and Verdugo (1989) use the mean and the standard deviation of schooling based on US 1980 census as a benchmark for the required level of education. In case the education of workers is one standard deviation above the mean value for their occupation then they are considered to be overeducated and respectively undereducated if their education is one

standard deviation below the mean value. They find that overeducated workers earn less than their either adequately educated or undereducated counterparts and claim that the returns to overschooling are negative.

Cohn and Kahn (1995) replicate the results by Verdugo and Verdugo (1989) and Sicherman (1991) using 1985 wave of the Panel Study of Income Dynamics based on US data. In their study they employ the worker self-assessment method and find similar results to Verdugo and Verdugo (1989). While Verdugo and Verdugo (1989) claim that the returns to overeducation are negative, Cohn and Kahn (1995) conclude that the returns to overeducation are positive and those to undereducation are negative.

Kiker *et al.* (1997) use the mode of the years of education as a reference for the required level of education of workers in Portugal. The mode of years of schooling, which I use in this paper, seems to be more appropriate measure of the required education than the mean value since the actual education required to perform a certain job might substantially differ from the occupational mean. Also, the use of the standard deviation could be problematic because it is likely to bias downwards the extent of overeducation.

Comparison of the benefits and drawbacks of all three approaches is given by Hartog (2000). Though it seems that the job analysis approach is the most objective one, followed by the worker self-assessment approach, this might not always be the case. Job analysts could give biased evaluations if they derive their measures from the actual years of schooling of workers across occupations, rather than the required education for a particular type of job. Worker self-assessment approach could also be biased since

workers differ in their evaluations depending on the way they perceive their job and the hiring standards which they have observed through the years. Hartog (2000) performs analysis using all three approaches and concludes that the results are not sensitive to the approach employed in measuring the required education. He tests the over – and under - education model against Mincer specification and finds the first model to be the preferred one, while there is no evidence of non-linearity in the returns to education.

While exploring the differences in returns to education among workers is important, concentrating on the possible educational differences and their impact on earnings between natives and immigrants is a valuable contribution to the existing literature, given the recent and future EU expansion and the expected large migration flows towards the developed Western labour markets. The goal of this paper is to analyze the difference in educational rates of return between foreign-born workers and natives and ask whether and to what extent these differences result from a potential mismatch between the actual and required years of schooling typical for a certain occupation. While the incidence of overeducation and undereducation in the American labour market has been under constant research[6], fewer studies tackle migrant's human capital skills in Europe.[7] In my analysis I consider two European countries - France and Austria and use the realized-matches approach where the required education is given by the mode of the education of workers across occupations and examine France and Austria.

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[6] See Chiswick and Miller (2005).
[7] Chiswick (1980) examines UK, Dustmann (1993) examines Germany.

III. Data Description

The analysis is based on data taken from the Luxembourg Employment Study (LES)[8] for Austria (2000) and France (1997). The LES is a micro-database compiled from labour force surveys across different countries. It provides demographic background information, work status and employment characteristics, both at the household and individual level. At the individual level, the LES includes such demographic variables as age, marital status, highest attained degree of education, ethnicity, migration status, labor force status, etc. The advantage of the LES data is that it is comparable across countries because the original data files are transformed into a harmonized LES data format. I work with annual cross-sectional data for each country where the unit of analysis are male individuals in full employment aged 20-64.

The two specifications employed in the analysis are as follows:

1 (Mincerian) $ln\ Y_i = \beta_0 + \beta_1\ Education + \beta_2 Exp + \beta_3 Exp^2 + \beta_4 Married + \ldots + u_i$

2 (Realized-matches) $ln\ Y_i = \beta_0 + \beta_1\ Required\ Education + \beta_2\ Over\text{-}Education + \beta_3\ Under\text{-}Education + \beta_4 Exp + \beta_5\ Exp^2 + \beta_6 Married + \ldots + u_i$

where $ln\ Y_i$ is the natural logarithm of the annual earnings per worker, *Education* is the actual years of schooling, *Required Education* is the mode value of years of schooling across occupations, *Over-Education* equals the years of schooling above the required education and *Under-Education* are the years of schooling below the required education.

The main difference between the two regression approaches is the education variable. In the standard Mincerian equation, education is simply calculated using the actual years of schooling for each male in employment derived from data on the highest educational degree achieved by both natives and immigrant workers.[9] According to the realized-matches approach the education variable splits into three sub-variables, namely *Required Education*, *Over-Education* and *Under-Education*. Therefore, each worker would be either over-educated, under-educated or have adequate education in accordance with the requirements of his current occupation, which means that for every employee either *Over-Education* or *Under-Education* or both should be zero.

Alongside the education variables, both specifications explain the natural logarithm of earnings with the same set of explanatory variables: potential labour experience which is approximated by the standard formula of (Age - Years of Schooling – 6), a dummy variable for marital status, a geographical dummy for urban areas, company ownership dummy indicating whether the worker is employed in a state or private enterprise and finally sectoral dummies indicating whether the sector of employment is industry, services or agriculture.[10]

Table 1 presents by country the average actual modal years of schooling among fully employed males aged 20-64 and their distribution according to the criteria of realized-matches approach, i.e. how many of them are correctly educated (have the required education), over-educated and under-educated. The modal years of schooling have been constructed using the mode of education of all workers in each four-digit occupation in

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[9] Table 2 and table 3 present the different educational levels in Austria and France and their corresponding years of schooling.

both countries. There is no difference in the modal years of schooling between natives and immigrants in both Austria and France where the modal educational attainment is 11 years in Austria and 14 years in France. In case the education of a worker is higher than the mode he is considered to be over-educated and when his education is lower than the mode he is under-educated. Equality between the education of an employee and the modal years of schooling qualify him to be correctly educated (matched) which means that he has the required years of education typical for his occupation.

Taking the modal value for each person's occupation, Austria has 79 percent correctly matched native workers and 62 percent correctly matched immigrants. The difference between the native and immigrant workers with required education in France is even smaller 59 and 57 percent respectively. While France has almost the same proportions of over-educated workers (59 percent for natives and 57 percent for immigrants), there is an 11.2 percentage points difference between the overeducated workers in Austria in favour of foreign-born workers. The proportions of under-educated immigrants are higher than these of native workers in both countries of analysis. Austria is the country where 21 percent of immigrants are under-educated compared to only 16 percent of under-educated natives. In France the under-educated employees constitute similar proportion of the population (27 percent for immigrants and 25 percent for natives).

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[10] One disadvantage of the data is that there is no information on years since migration for the foreign-born workers though in Chiswick and Miller (2005) this variable has minor impact on earnings.

Table 1. Distribution of Education Among Males 20-64 by Country and Status

(in percentage)

	Modal Years of Schooling	Correctly Educated	Overeducated	Undereducated
Austria				
Natives	11.0	78.53	5.98	15.52
Foreign-born	11.0	61.66	17.22	21.12
France				
Natives	14.0	59.33	15.63	25.07
Foreign-born	14.0	56.73	15.57	27.70

IV. Mincerian vs. Realized-Matches Approach

Table 4 presents the results for the regression estimates of earnings equations for both native and immigrant male workers in Austria for the year 2000. The columns correspond to 1 (Mincerian) or 2 (Realized-matches), depending on the employed specification described earlier and thus contrasting the results given by the two approaches. The first two columns provide the estimates resulting from the two approaches for natives, while the last two columns pertain to foreign born workers.

The Mincerian specification in column (1) of Table 4 suggests a 9.5 percent return to an additional year of schooling for native workers. The partial effect of labour experience is

given by 0.049 – 0.00144 *experience*. Thus five years of employment experience yields a 4.2 percent increase in earnings. The dummy variable *married,* indicating the presence of a spouse, is highly significant and raises the earnings of the married workers by 7.7 percentage points in comparison to workers of different marital status. Employees working in densely-populated (urban) areas are shown to receive wages 16.6 percentage points higher than those employed in rural areas.

Employing a similar specification for the foreign-born workers (column 3) provides estimates directly comparable to those for the native workers. The return to education for an immigrant in Austria is 6.8 percent which is 2.7 percentage points lower than that for the natives workers. The difference in the estimated effects between the returns to education of native and foreign-born workers is highly significant and requires deeper analysis of the possible explanations regarding the returns to education contributing to the lower pay of immigrants. I find that previously attained experience of immigrants has a significantly smaller effect on earnings than that for native workers, which is in line with findings in existing studies.[11] Five years of experience for an immigrant worker will increase earnings by 2.3 percent, which is only half the percentage effect for a native employee. The fact that the immigrant worker has a spouse raises his earnings by 27.3 percentage points, which is substantially higher than the corresponding increase in wages for the native worker in similar marital state. Foreign-born workers benefit less than natives from working in urban areas or in the industrial sector.

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[11] Chiswick and Miller (2005), Baker and Benjamin (1994)

The second specification based on the realized-matches approach is presented in column 2 for the native workers and column 4 for the foreign-born workers, respectively. In both cases R^2 increases, indicating a better explanatory power of the realized-matches approach. The return to required education for native workers is 11.5 percent, 2 percentage points higher than the return to actual years of schooling attained. This suggests that there are potential educational mismatches among native workers, which can be accounted only if the effects of over-education and under-education are distinguished from that of the required education. In case the worker has more years of schooling than those required in his occupation, i.e. he is over-educated, an extra year of schooling will raise his earnings by 8.2 percent. Conversely, under-education results in 7.2 percent lower payoff.

A similar pattern is observed in the last column of Table 4, which shows the estimates of the realized-matches approach for foreign-born workers. Once the education variable is segmented the return to required education for immigrants increases to 12 percent which is equivalent to the return for native workers. This is hardly surprising, since in an ideal framework an extra year of education required for a certain occupation, would raise earnings similarly for all workers having the same educational level, regardless of their country of origin. However, the Mincerian approach shows a significant difference between returns to education of natives and immigrants, with lower earnings for the latter. Moreover, in case two employees have different years of schooling and there are no educational mismatches, i.e. all workers are matched correctly across occupations, according to realized-matches approach the higher educated worker will benefit substantially more than the less educated one, in comparison to the Mincerian approach.

The latter statement is especially valid for immigrants, whereby an extra year of required education will raise the earnings by 12 percent in comparison to the 6.8 percent increase suggested by the standard Mincerian approach.

The return to over-education for foreign-born employees is 5.1 percent, 3.1 percentage points lower than its equivalent in the case of native workers. The difference in returns to over-educated workers, which is significant at 1 percent, is likely to contribute to the lower overall payoff of immigrants in comparison to natives. This tendency is further enhanced by the stricter penalty in earnings for under-educated foreign-born workers compared to natives. The negative returns to under-education for immigrants lowers their wages by 9.6 percent, while the similar effect for native workers decreases the corresponding wage only by 7.2 percent.

Table 5 presents the regression estimates of the two different educational approaches for France in 1997. The patterns observed in the Austrian data are largely present in the French case as well. The structure of Table 5 is identical to that of Table 4. The first two columns exhibit the results using the Mincerian and realized-matches approaches and are based on survey data of native French workers in full employment, while the last two columns refer to foreign-born workers.

Within the framework of standard Mincerian equation, an extra year of schooling will increase the earnings of native workers by 9.4 percent, while immigrants will only enjoy a 7.3 percent increase in income. In case both native and immigrant workers have five years of experience, the partial effect of labour experience on wages will be 3.8

percentage points for natives and 3.1 percentage points for immigrants. Similarly to Austrian immigrant employees, French immigrants experience lower earnings increases to an additional year of experience compared to the native counterparts. Being married benefits both immigrant and native employees and has similar effect on their wages, being 4.1 percentage points on average. Employment in urban areas and in industry has a positive effect on earnings. Furthermore, immigrant employees in urban areas receive on average 3.9 percentage points lower income compared to native worker in the same occupation.

Similarly to the Austrian results, the specifications obtained using the realized-matches approach for both native and immigrant workers improve. R^2 increases from 0.16 to 0.18 in the case of native workers and from 0.16 to 0.21 in the case of immigrant workers respectively. The substantially higher effects of an additional year of required education suggest the presence of potential educational mismatch for both groups. An extra year of required education will raise the earnings of a native worker by 11.2 percent, whereas the income of an immigrant employee will improve by 10.2 percent. In a world where all workers are correctly matched to their preferred occupations according to the required years of schooling, an immigrant worker would have received a 3 percent higher wage for an extra year of required schooling than the one he would take if no potential mismatches were taken into account.

The over-education will positively benefit earnings by 12.4 percent for natives and 6.7 percent for immigrants, revealing the highly significant difference of 5.7 percentage points in favour of native workers. This fact is not surprising, since anecdotal evidence

suggests that many highly educated immigrant workers take up employment in low-skilled jobs, as their professional and higher educational degrees are not recognized in the host country. The tendency for penalizing immigrant workers more than natives in case of under-education is observed in France, just as in Austria. A year of under-education reduces earnings by 4.5 percent for natives and 5.6 percent for immigrants.

Overall, contrasting the regression results obtained using the Mincerian and realized-matches approaches regarding the education attainment of native and foreign-born workers in Austria and France, highlights the importance of accounting for potential mismatches due to over- or under-education of workers. Using the realized-matches approach explains better the variation in earnings and allows a deeper understanding of why foreign-born workers have lower rates of return to education compared to natives. While returns to required education are similar between native and immigrant workers, over-educated immigrants have significantly lower wage increase than natives and incur higher penalties for under-educated than natives.

VII. Conclusion

This paper analyzes the differences in educational rates of return between the foreign-born and native workers in France and Austria, and asks to what extent these differences result from a potential mismatch between the actual and required years of schooling typical for a certain occupation. The decomposition of the education variable into required education, overeducation and undereducation allows for better understanding of the reasons behind the lower payoff to schooling among migrants. Contrasting the

regression results obtained using the Mincerian and realized-matches approaches regarding the education attainment of native and foreign-born workers in Austria and France, highlights the importance of accounting for potential mismatches due to over- or under-education of workers.

The findings of the paper are generally in accordance with the existing studies, since the difference between the rates of return on education for migrants and natives is around 2.5 percentage points in favour of native-born workers. There is no significant difference between the returns to required education among native and migrant workers in both countries. In the absence of mismatches across occupations (over- and under– education), the returns to required education using the realized-matches approach for both groups of employees are substantially higher than their returns to education within the Mincerian framework. However, what mainly accounts for the lower returns to education of immigrants in comparison to natives, is the substantial difference in returns to overeducation in favour of native workers. Undereducated migrants are penalized with respect to earnings by slightly higher negative returns, to undereducation than natives.

Table 2. The Highest Educational Degree Achieved by Workers and the Corresponding Years of Schooling (Austria 2000)

Highest Educational Degree	Years of Schooling
Less than 1st stage of secondary level	3
1st stage of secondary level	7.5
2nd stage of secondary level	11
3rd level other than university degree	13
Initial university degree or equivalent	16
Higher university degree or post-doctorate	18.5

Source: Luxembourg Employment Study

The education variable in the Luxembourg Employment Study is constructed according to the ISCED 97 international standard classification of education; calculations are done by the author.

Table 3. The Highest Educational Degree Achieved by Workers and the Corresponding Years of Schooling (France 1997)

Highest Educational Degree	Years of Schooling
Degree primary	10
Degree lycee	11
A-E baccalaureat	12
Professional	14
CAP, BEP	14
Technical	14
1st cycle	18
2nd cycle	20
3rd cycle	23

Source: Luxembourg Employment Study, calculations are done by the author.

Table 4. OLS Estimates of Earnings: Mincer vrs. Realized-matches Approach

Austria (2000)

	Natives		Foreign Born	
	1	2	1	2
Education	0.095^{***} (0.007)	(b)	0.068^{***} (0.019)	(b)
Required Education [a]	(b)	0.115^{***} (0.013)	(b)	0.120^{***} (0.029)
Overeducation	(b)	0.082^{***} (0.014)	(b)	0.051^{***} (0.033)
Undereducation	(b)	-0.072^{***} (0.011)	(b)	-0.096^{***} (0.029)
Experience	0.049^{***} (0.005)	0.048^{***} (0.005)	0.030^{***} (0.012)	0.022^{***} (0.013)
$\text{Experience}^2/100$	-0.072^{***} (0.012)	-0.072^{***} (0.011)	-0.066^{***} (0.043)	-0.058^{***} (0.034)
Married	0.077^{***} (0.029)	0.067^{**} (0.032)	0.273^{***} (0.123)	0.269^{***} (0.120)
Urban/Rural Dummies	0.166^{***} (0.081)	0.143^{*} (0.112)	0.137^{**} (0.102)	0.124^{***} (0.089)
Industry Dummies	0.176^{***} (0.032)	0.188^{***} (0.038)	0.142^{***} (0.032)	0.161^{**} (0.091)
Company's origin Dummies	yes	yes	yes	yes
R^2	0.32	0.35	0.47	0.52
Number of Observations	2358	2358	152	152

Notes: (a) Computed by using the modal value of years of schooling across occupations
        (b) Variable not included
 Huber-White standard errors are in parentheses.
*** denotes significance at the 1 percent significance level; ** denotes significance at the 5 percent significance level; * denotes significance at the 10 percent significance level.
Urban/Rural dummies – reference group are the rural regions
Industry dummies – reference group is services and agriculture (no immigrants employed in agriculture)
Company's origin dummies indicate whether the company is state or private

Source: Luxemburg Employment Study: www.lisproject.org

Table 5. OLS Estimates of Earnings: Mincer vrs. Realized-matches Approach

France (1997)

	Natives		Foreign Born	
	1	2	1	2
Education	0.094*** (0.003)	(b)	0.073*** (0.009)	(b)
Required Education[a]	(b)	0.112*** (0.004)	(b)	0.102*** (0.011)
Overeducation	(b)	0.124*** (0.007)	(b)	0.067*** (0.024)
Undereducation	(b)	-0.045*** (0.005)	(b)	-0.056*** (0.021)
Experience	0.046*** (0.004)	0.049*** (0.004)	0.036*** (0.012)	0.035*** (0.012)
$Experience^2/100$	-0.080*** (0.009)	-0.091*** (0.009)	-0.049* (0.028)	-0.056*** (0.028)
Married	0.045*** (0.021)	0.051*** (0.021)	0.041 (0.08)	0.035 (0.086)
Urban/Rural Dummies	0.193*** (0.048)	0.174*** (0.072)	0.154*** (0.09)	0.137** (0.10)
Industry Dummies	0.122 (31.233)	0.091 (28.345)	0.101 (0.152)	0.074*** (0.051)
Company's origin Dummies	yes	yes	yes	yes
R^2	0.16	0.18	0.16	0.21
Number of Observations	8409	8409	610	610

Notes: (a) Computed by using the modal value of years of schooling across occupations

(b) Variable not included

Huber-White standard errors are in parentheses.

*** denotes significance at the 1 percent significance level; ** denotes significance at the 5 percent significance level; * denotes significance at the 10 percent significance level.

Industry dummies – reference group is services and agriculture

Urban/Rural dummies – reference group are the rural regions Company's origin dummies indicate whether the company is state or private

Source: Luxemburg Employment Study: www.lisproject.org

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