International Outsourcing and the Sector Bias: Empirical Evidence

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Abstract

Considering labor market effects of International Outsourcing on more disaggregated industry levels, theoretical contributions illuminate a sector bias and show that cases exist where low skilled labor benefits in receiving a wage premium. However, empirical contributions fail to test this pattern. Reconciling theory and empirics, this paper applies a panel data analysis for Germany showing that the wage differential between high and low skilled labor decreases when International Outsourcing takes place in low skill intensive industries. Thus, the paper provides empirical evidence for the sector bias concluding that harmful effects of International Outsourcing for low skilled labor may be exaggerated.

JEL classification: F16; J31; F40

Keywords: International Outsourcing; sector bias; labor market

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1 Introduction

Since International Outsourcing moved into the focus of political and social discussion, it has been blamed to reduce relative demand for low skilled labor. Thus, beside skill-biased technical change, International Outsourcing is seen as one main culprit for labor market disruptions in industrialized countries. Examining the effects of International Outsourcing on more disaggregated industry levels, research illuminates a so called sector bias leading to different adjustment patterns if International Outsourcing takes place in different industries. Considering this sector bias, several theoretical contributions as e.g. Arndt (1997, 1998a,b), Egger and Falkinger (2003), or Kohler (2003) show that there indeed exist cases where low skilled labor can benefit from International Outsourcing. In a diversified International Outsourcing equilibrium, relative wages of the low skilled increase if Outsourcing takes place in low skill intensive industries. Thus, with the possibility for low skilled labor to gain in specific situations, "concerns about the welfare-reducing implications of offshore sourcing appear to be greatly exaggerated" (Arndt, 1997, p. 77).

However, most empirical investigations examine labor market effects of International Outsourcing on a more aggregated industry level. Feenstra and Hanson (1996a,b, 1999) e.g. are the first who highlight the importance of International Outsourcing for understanding changes in labor demand. With highly statistically significant results they illuminate the factor bias and present positive effects of International Outsourcing on relative high skilled wages in the US manufacturing industry. Investigating the manufacturing sector in France, Strauss-Kahn (2003) shows that International Outsourcing contributes significantly to the decline of the share of unskilled workers in employment. Hijzen et al. (2004) estimate the effects of International Outsourcing within the manufacturing sector in the UK and also note that International Outsourcing has a strong negative effect on the demand of low skilled workers. For Germany, Falk and Koebel (2002) estimate a factor demand system based on the Box-Cox cost function. As results they note that output and capital growth are more important than International Outsourcing for explaining changes in labor demand. With the examination of International Outsourcing effects on more aggregated industry levels these contributions base

on the one-sector model of Feenstra and Hanson (1996b). Thus, they are not capable (and even not designed) to examine the importance of the sector bias of International Outsourcing. In order to investigate this pattern, analysis has to move the focus toward more disaggregated industry levels. To this end, only few contributions exist providing empirical evidence.

Hijzen (2007) investigates the effects of International Outsourcing and skill biased technological change on factor prices in the UK for the period 1993-1998. He shows that International Outsourcing effects are significant, however, technological change is the predominant force behind the change in relative wages. Additionally, he mentions the importance of the sector bias for International Outsourcing effects on labor markets. Based on a huge micro-econometric analysis, Geishecker and Görg (2005, 2008) show for the German economy that International Outsourcing significantly reduces the real wage of low skilled workers employed in low skill intensive industries, whereas effects of low skilled workers in high skill intensive industries are not as significant. On the other hand, high skilled workers significantly gain from International Fragmentation only if they are employed in high skill intensive industries. Since these results base on a micro-econometric analysis they contain both, the factor as well as the sector bias with the possibility of one effect outperforming the other one.

The few empirical papers investigating International Outsourcing effects on more disaggregated industry levels do not aim to examine the theoretically mentioned sector bias described above. Thus, there is a lack of empirical contributions showing that low skilled labor receives a wage premium and thus, can benefit from International Outsourcing if it takes place in low skill intensive industries. This paper contributes to fill the gap.

Therefore, section (2) discusses the sector bias of International Outsourcing and the respective labor market adjustment effects. In order to empirically examine this pattern, section (3) introduces the index used to measure International Outsourcing activities. Due to the variety of International Outsourcing indices, the contribution decides to use an index characterized by good properties for measuring International Outsourcing at a more disaggregated industry level. Afterward, the level as well as the development of International Outsourcing are examined for the German economy during the period

1991 - 2000. Therefore, several levels of industry aggregation are considered: the whole economy, the manufacturing industry, the service sector, as well as more disaggregated levels like the low skill intensive industries and the high skill intensive industries (both as a subset of the manufacturing sector). In section (4), a panel data analysis is applied examining the sector bias of International Outsourcing. With data from the German Socio Economic Panel (GSOEP) and the Federal Statistical Office in Germany, the within industries' wage differential is regressed on the International Outsourcing activity, as well as the output and the high skilled labor utilization as control variables. As it turns out, highly significant results occur confirming the above mentioned theoretical findings. Since International Outsourcing takes place in high skill intensive industries, it significantly increases the wage gap between high and low skilled labor. By contrast, if the low skill intensive industries relocate their production fragments, the wage differential significantly decreases. These results empirically support the importance of the theoretically mentioned sector bias of International Outsourcing: there are indeed cases where low skilled labor benefits from International Outsourcing activities. Section (5) concludes by summarizing the main findings. Since the effects of International Outsourcing depend strongly on the nature of the respective industry, the welfare-reducing effects of International Outsourcing seem to be exaggerated.

Two aspects are beyond the aim of this contribution. Even though theoretical research mostly examines the sector bias within general equilibrium frameworks, the empirical analysis in this paper follows a partial equilibrium approach, focusing solely on wage effects. Second, the paper focus on explaining the sector bias and does not aim to examine weather it is the factor or the sector bias that is more important for International Outsourcing effects (as done e.g. by Hijzen (2007)).

2 The Sector Bias of International Outsourcing

The theoretical discussion on weather it is the factor or the sector bias that matters for changes in factor prices is well known since the discussion of Leamer (1996) and Krugman (2000).

The importance of the factor bias of International Outsourcing is shown by the one-sector model of Feenstra and Hanson (1996a,b). With significant results for the aggregated US manufacturing industry they first provide evidence that International Outsourcing, beside skill biased technological change, is an additional explanation of the change in relative wages.

Moving the focus toward more disaggregated industry levels, Arndt (1997, 1998a,b) highlights the importance of the sector bias of International Outsourcing and shows that labor market effects depend strongly on the nature of the industry relocating its production fragments. Considering a traditional 2 x 2 Heckscher-Ohlin model, he concludes that, if International Outsourcing takes place in the relative low skill intensive industry, relative wages of the low skilled increase. This effect occurs either if the industry relocates its high skill intensive or its low skill intensive production blocks. Thus, low skilled labor can indeed benefit from International Outsourcing activities if it takes place in the low skill intensive industry.

Egger and Falkinger (2003) show that the dominance of the factor or the sector bias in International Outsourcing models depends on different equilibrium situations. Within a diversified International Outsourcing equilibrium it is the sector bias that determines the factor price developments. However, if there remain firms with integrated production patterns even in the outsourcing sector, it is the factor bias that matters.

Kohler (2003) investigates distributional effects of International Outsourcing formally. Presenting a "general principle which is at force" (p. 91), he provides a theoretical framework able to show both, the factor bias mentioned in Feenstra and Hanson (1996b) as well as the sector bias mentioned in Arndt (1997).

3 International Outsourcing in Germany (1991-2000)

In order to explain the development of International Outsourcing descriptively, this section first introduces the index used to measure International Outsourcing activities. Afterward it applies a German case-study calculating the level as well as the development of International Outsourcing for the period 1991-2000.

Since International Outsourcing can not be observed on a macroeconomic level, there is a need to proxy it. Therefore, research developed several International Outsourcing indices with a few of them very common in use.[1] To measure International Outsourcing activities, this paper uses an index called Vertical Specialization (VS). As shown in my companion paper, the VS-index is characterized by good properties for more disaggregated industry levels as well. This property is welcome when examining the sector bias of International Outsourcing within the panel data analysis in the following section.[2] The VS-index can be calculated using

$$VS_t = \sum_{j=1}^{n} \sum_{w=1}^{z} \frac{f_{wt} \cdot q_{wjt}}{p_{jt}} = \sum_{j=1}^{n} \sum_{w=1}^{z} \frac{\frac{m_{wt}}{s_{wt}} \cdot q_{wjt}}{p_{jt}} \tag{1}$$

with q_{wjt} as total inputs from industry $w = 1, \ldots, z$ used to produce output in industry $j = 1, \ldots, n$ at point of time t, and p_j as production value in industry j. With m_{wt} as total imports and s_{wt} as the domestic use of good w, $f_{wt} = \frac{m_{wt}}{s_{wt}}$ is a fraction estimating the international component of intermediates. Thus, since there is no need to directly observe imported inputs, the index is quite popular and often used in recent empirical examinations. The goodness of the VS-index strongly depends on the goodness of the international estimation ratio f.

Campa and Goldberg (1997) present this index as "Imported Inputs into Production" and descriptively calculate International Outsourcing shares for the US, Canada, the UK, and Japan. Considering different input-output tables since 1974 they show that International Outsourcing increased strongly in the US, Canada, and the UK, but decreased slightly in Japan. Feenstra (1998) summarizes different tables from Campa and Goldberg (1997) and additionally presents calculations for some politically important disaggregated industries as well. Strauss-Kahn (2003) also uses the VS-index and presents results for France showing that International Outsourcing increases, however,

[1] For a discussion of often used International Outsourcing indices and an empirical comparison of their impact on labor market estimation results see my companion paper Horgos (2007).

[2] Note that "Vertical specialization" is sometimes also used as a synonym for International Outsourcing. In this paper, however, it is used throughout to identify one specific index.

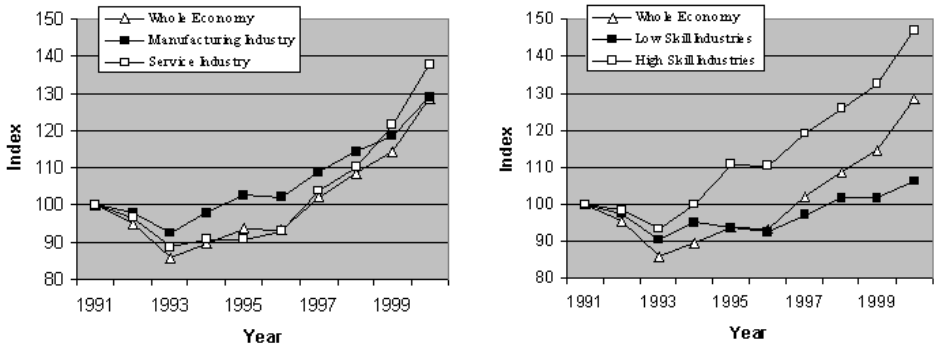

Figure 1: Development of International Outsourcing in Germany

illuminating different patterns for more disaggregated industries.[3]

To examine International Outsourcing activities in Germany the VS-index is used to calculate the level as well as the development for several levels of industry aggregation, considering the period 1991 - 2000. As aggregation levels the whole economy, the manufacturing industry, and the service sector are considered. To focus also on more disaggregated levels the manufacturing sector is additionally divided into its low skill intensive and high skill intensive industries.[4] As data the analysis bases on input-output tables from the German Federal Statistical Office.

Figure (1) shows the development of International Outsourcing in Germany for the different levels of industry aggregation. For all aggregation levels, International Outsourcing fluctuated slightly in the first years from 1991 - 1995, before the main boost occurred in the second half of the considered period. Considering the whole economy, the index reached 9 percent in 2000 while starting at only 7 percent in 1991, as can be seen in table (1). Considering more disaggregated industry levels, there are several patterns of the change in International Outsourcing that are worth being mentioned. In the service industry, International Outsourcing is still at a quite low level, however, with a very strong increase after 1995. As shown in Amiti and Wei (2004), this result is similar than in the UK and the US. There, International Outsourcing in the service sector is also still at a low level but increases strongly. In order to focus on the above described

[3]The index used in Chen et al. (2005) is also named "Vertical Specialization" though it is a more narrow measure of International Outsourcing, considering only the imported inputs used to produce products that finally get exported. Thus, it is not the index considered in this paper.

[4]To differ between high and low skill intensive industries of the manufacturing sector the paper refers to a cluster analysis provided by Geishecker and Görg (2005). The results of this cluster analysis are presented in the Appendix.

Table 1: Levels of International Outsourcing in Germany

	1991	1995	2000
Whole Economy	7%	6%	9%
Manufacturing Industry	11%	12%	15%
Low Skill Industries	13%	12%	14%
High Skill Industries	10%	11%	15%
Service Industry	3%	3%	5%

sector bias of International Outsourcing, the activities in the high skill intensive as well as in the low skill intensive industries are of high importance. As the results show, both industries experience different patterns of International Outsourcing activities. In the high skill intensive industries, International Outsourcing started at a lower level in 1991 (10 percent vs. 13 percent) and, due to an enormous increase, reached a higher level in 2000 (15 percent vs. 14 percent). Thus, the biggest increase of International Outsourcing activities in Germany occurred in the high skill intensive industries, as well as in the service sector.

4 Labor Market Effects of International Outsourcing

In order to investigate the sector bias empirically, this section applies several panel data analysis testing the effects of International Outsourcing on the labor market.

Data

The analysis bases on the GSOEP (covering the years 1984-2006) and on input-output tables from the Federal Statistical Office in Germany (covering the years 1991-2000). The input-output tables are used to calculate (i) the VS-index and (ii) the output of each industry, according to the two-digit NACE classification. To estimate labor market effects, the wage differential per industry is calculated using the GSOEP data considering the waves $H/8$ to $Q/17$ (1991-2000). The GSOEP includes information on the wages of around 40,000 individuals. In the sample, wages are observed as averaged real wages per hour, including additional payments like e.g. 13th or 14th month pay, holiday or

Christmas bonuses.[5] Since the GSOEP assigns each individual to the two-digit NACE industry where she works and observes the education of each individual with respect to the international comparable ISCED classification, additional information is provided to aggregate the individual data in order to obtain the desired information on a macro level.[6] To aggregate the individual wages, the mean average within each two-digit NACE industry is calculated, separated for high skilled and low skilled labor.[7] Additionally, the industries' utilization with high skilled labor is calculated as a ratio of high skilled labor to total employment. Thus, with the mean wage of high skilled and low skilled labor in each two-digit NACE industry, with the output as well as the high skilled labor utilization of each industry and with the International Outsourcing activity measured with the VS-index, the wide version of the desired panel data is completed and can simply be rearranged into the long version needed for the econometric analysis below.

Estimation and Results

In order to examine the effects of International Outsourcing on the within industries' wage differential,

$$lnWD_{jt} = \beta_0 + \beta_1 VS_{jt} + \beta_2 Y_{jt} + \beta_3 \frac{H_{jt}}{E_{jt}} + u_j + \epsilon_{jt} \tag{2}$$

is estimated with WD_{jt} as the wage differential between high and low skilled labor in industry j at time t. The explanatory variable of interest is the level of International Outsourcing activity measured with the Vertical Specialization index VS_{jt}. As control variables, the output of each industry Y_{jt} as well as the industries utilization with high skilled labor $\frac{H_{jt}}{E_{jt}}$, with H_j as high skill labor and E_j as total employment in industry j, are

[5] For detailed informations about the structure and the different variables of the GSOEP see Haisken-DeNew and Frick (2005).

[6] The "International Standard Classification of Education" (ISCED) from UNESCO (1997) provides a standardized scheme classifying individuals in (1) primary education, (2) lower secondary education or second stage of basic education, (3) secondary education, (4) post-secondary, non tertiary education, (5) first stage of tertiary education or (6) second stage of tertiary education.

[7] In line with the ISCED, low skill educated workers are defined as individuals with primary, lower secondary or second stage of basic education whereas high skilled labor are individuals with some form of post secondary education.

additionally included. The regression allows for an industry-level effect u_j expected to be correlated with the exogenous variables but not with the error term ϵ_{jt}.[8] The equation is estimated for different levels of industry aggregation using the fixed-effects (FE) panel data estimator. Since the level of International Outsourcing, output, as well as high skilled labor utilization is expected to vary over the industries and thus, the explanatory variables to be correlated with the industry-level effect u_j, it is indicated to use the FE estimator from an economic point of view. To additionally confirm the use of the FE estimator from a statistical point of view, two test statistics are applied. First, the Breusch and Pagan test for unobserved heterogeneity. Highly significant results confirm the presence of unobserved heterogeneity in most of the models. To proof which estimator should be used to capture the unobserved heterogeneity, Hausman tests are applied testing the rejection of the null hypothesis $H0$ assuming orthogonality of the u_j. As results show, $H0$ can be mostly rejected indicating the use of the consistent and efficient FE estimator. Several additional tests for consistency of the estimated error terms, the modified Wald test for groupwise heteroscedasticity as well as the Wooldridge test for autocorrelation show that the error terms of some models are characterized by a heteroscedastic error structure as well as autocorrelation. To solve for these problems, and to consider possible outliers, the variances of all the models are estimated using the the robust Huber / White / Sandwich estimator instead of the traditional calculation. Thus, the consistency and the comparability of the estimation results can be assured. Table (2) presents the estimation results.

As the table shows, International Outsourcing increases the wage differential between high and low skilled workers within the aggregated whole economy. However, not at a statistical significant level. As expected for the aggregate, the R-squares are still at a quite low level. Since in longitudinal analysis much variances influence the error term, the R-squares of the FE-estimator do not have the properties of the OLS R-squares

[8] Equation (2) is similar to a typical wage equation often used in empirical analysis (cf. Feenstra and Hanson (1996b)), however, with a small difference: as endogenous variable the equation focus on the wage differential within an industry, instead of mean wages. This allows us to focus more directly on distributional effects of International Outsourcing and on the sector bias mentioned in the introduction. Due to data constraints, the regression does not control for capital utilization, instead, it contains high skilled labor utilization as control variable.

Table 2: Effects of International Outsourcing on the Wage Gap

	Whole Economy	Manufacturing Industry	Low Skill Industries	High Skill Industries	Service Industry
VS	2.3199	−1.9943	−12.1968**	16.6594**	7.3991
	(0.45)	(−0.29)	(−2.04)	(2.36)	(1.41)
Y	5.95*e*-06*	8.85*e*-06*	0.0000	−6.69*e*-06*	4.44*e*-06
	(1.78)	(1.77)	(1.19)	(1.94)	(1.01)
H / E	0.7299	0.6995	−4.2235	2.6455	1.2964
	(0.63)	(0.41)	(−1.63)	(1.44)	(0.79)
Observations	384	172	86	86	191
Groups	48	20	10	10	23
R^2	0.0248	0.0252	0.1410	0.2861	0.0356
Prob > F	0.0043	0.0286	0.0097	0.0001	0.0287

(t-Statistics in parantheses)
* / ** / *** significant at 10 / 5 / 1 percent

and thus, can be misleading when used as the main gauge for success. Thus, as an additional proof of the goodness of the estimated model, the table presents the F-value being significant at the 1 percent level. Therefore, the model for the aggregated whole economy is well fitted. In the manufacturing industry, International Outsourcing also has only insignificant effects on the wage differential. In this case, with a small declining tendency. However, the effect is far away from the common statistical significant level. This result is in line with the results presented by Geishecker and Görg (2005) showing also insignificant effects of International Outsourcing (measured with another index: imported inputs in gross production) on wages in the overall manufacturing industry. In the service industry, the estimation results show a positive effect of International Outsourcing on the wage differential. The estimated coefficient is still not significant, however, the effect is bigger and, as the t-Statistic shows, not as far away from the statistically significant range compared to the results achieved within the whole economy or the manufacturing sector.

In order to investigate the sector bias, analysis has to leave these aggregated industry structures and to move forward to a more disaggregated level of industry aggregation. As the table shows, when considering low skill intensive and high skill intensive industries, results differ strongly. International Outsourcing increases the wage gap between high and low skilled labor when taking place in high skill intensive industries. By contrast, when the low skill intensive industries relocate production fragments, the wage gap decreases. Both estimation results are highly statistically significant. Also the R-squares increase strongly up to a level of around 30 percent for the high skill intensive

industries. With this clearly differing pattern between high and low skill intensive industries, the results emphasize the importance of the sector bias of International Outsourcing effects and confirm the theoretical findings mentioned above.[9]

This result, that the highly statistically effects in low and high skill intensive industries outperform each other, explain the insignificant effects occurring in the aggregated manufacturing sector. However, adding the positive effect of International Outsourcing on the wage gap in the service industry (even if not within the significant range), a positive pattern can also be achieved for the aggregated whole economy.

5 Conclusions

Since the 1990s, labor market adjustment effects of International Outsourcing are in the focus of many theoretical and empirical investigations. While a lot of effects stated by theory could be confirmed with empirical estimations, there exist some important adjustment effects where empirical contributions failed to confirm theory. As e.g. Arndt (1997, 1998a,b) shows, if International Outsourcing takes place in low skill intensive industries relative wages of the low skilled increase. By contrast, relative wages of the high skilled increase if International Outsourcing takes place in high skill intensive industries. This contribution empirically examines the importance of the so called sector bias of International Outsourcing.

As can be shown within a panel data analysis for Germany (considering the period 1991-2000) the sector bias is an important feature of International Outsourcing effects on labor markets. Showing that the wage gap between high and low skilled labor increases significantly when International Outsourcing takes place in high skill intensive industries and decreases significantly if the low skill intensive industries relocate its production fragments, the empirical results directly confirm the theoretical findings.

[9] Assuming incomplete specialization and labor to be perfectly mobile between industries, Arndt's general equilibrium effects of International Outsourcing on relative wages are valid for the whole economy: relative wages and their change needs to be the same in all industries to achieve positive production patterns. However, this assumption can only hold in theoretical but not in empirical contributions. Since labor can not be assumed to be perfectly mobile between industries, different industries need to get the possibility of achieving different relative wages and wage changes. To take account for this empirical feature, the panel data estimation allows for effects of International Outsourcing on the wage gap within one industry aggregation level. However, ceteris paribus, a change of the within industries' wage gap is in line with the change of the wage gap in the aggregate.

The empirical analysis starts by introducing the vertical specialization index, used to proxy International Outsourcing activities. Afterward International Outsourcing is measured for several levels of industry aggregation within a German case study. In the period 1991-1995, International Outsourcing fluctuated slightly while there occurred a strong increase between 1995 and 2000. However, with huge differences for more disaggregated industries: International Outsourcing increased much more intensively in high skill intensive industries than in low skill intensive ones. In the German service sector, International Outsourcing is still at a very low level but increased sharply. This pattern is in line with the findings of Amiti and Wei (2004) for the UK and the US.

To estimate labor market effects of International Outsourcing, a FE panel data analysis is applied regressing the within industries' wage differential on the International Outsourcing activity measured with VS, as well as the output of each industry and its high skilled labor utilization as control variables. Results provide empirical evidence for the importance of the sector bias in International Outsourcing effects and additionally confirm the above mentioned theoretical findings. Since low skilled labor receives a wage premium and thus, gains from International Outsourcing if it takes place in low skill intensive industries the paper concludes as in Arndt (1997) that concerns about the welfare-reducing implications of offshore sourcing seem to be exaggerated. However, since the increase of International Outsourcing activities in the low skill intensive industries is only small compared to the increase in the high skill intensive ones, the beneficial effect may get outperformed by the harmful one occurring in the high skill intensive industries. To this end, it is possible to calculate the direct effects of International Outsourcing on the wage gap in EURO. Considering the values of the year 2000, a one percentage increase of International Outsourcing in the high skill intensive industries would induce an increase of the wage gap of 1.39 EURO. By contrast, if International Outsourcing increases by one percent in the low skill intensive industries, the wage gap would decrease by 0.60 EURO. Additionally, as theoretically mentioned by Egger and Falkinger (2003), it could also be assumed that there would be a factor bias when considering equilibrium situations where some firms in the outsourcing sector remain to its integrated production structure. This situation, however, can only be tested with micro-level studies as e.g. Geishecker and Görg (2008), but not with the

macro-econometric approach applied in this contribution.

With the panel data analysis presented above, this contribution does not aim to explain or extract the major forces of factor price changes. Therefore, it would be necessary to test a general equilibrium model as e.g. in Harrigan and Balaban (1999) or Tombazos (2003). Instead, this paper empirically investigates the importance of the skill intensity of an industry considering labor market effects of International Outsourcing. The examination of the sector bias of International Outsourcing still leaves enough space for future research. It could e.g. be examined if results differ when focusing on Outsourcing of different parts of production: either high skill or low skill intensive fragments. Additionally, the consideration of situations where only some firms of the sector outsource would allow deeper insights for a comparison of the importance of the sector vs. the factor bias.

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Differentiating between High and Low Skill Intensive Industries

To separate the industries of the manufacturing sector into high skill intensive and low skill intensive ones, the paper refers to a cluster analysis done by Geishecker and Görg (2005). Following a k-means cluster analysis technique (with the use of a standard Euclidean distance measure) they group industries with respect to the education of the workers within a specific industry. Table 3 presents the classification result on the two-digit NACE aggregation level.

Table 3: Classification of high Skill and Low Skill Industries

Source: Geishecker and Görg (2005)

	Industry	NACE
Low Skill Industries	Food products and beverages/tobacco	15
	Textiles	17
	Wearing apparel	18
	Tanning, dressing of leather	19
	Wood products, except furniture	20
	Pups, paper and paper products	21
	Coke, refined petroleum	23
	Rubber and plastic products	25
	Other non metallic mineral products	26
	Fabricated metal products	28
	Furniture; manufacturing n.e.c.	36
High Skill Industries	Publishing, printing and reproduction	22
	Chemicals and chemical products	24
	Basic metals	27
	Machinery and equipment	29
	Office machinery and computer	30
	Electrical machinery and apparatus	31
	Radio, television and communication	32
	Medical, precision and optical instrum.	33
	Motor vehicles, trailer	34
	Other transport equipment	35