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Do Exporters Share Part of their Rents with their Employees? Evidence from Austrian Manufacturing Firms

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Sandra M. Leitner and Robert Stehrer

Do Exporters Share Part of their Rents with their Employees? Evidence from Austrian Manufacturing Firms



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and Robert Stehrer*

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Abstract

This paper looks at the influence globalization exerts on wage negotiation processes and outcomes. Specifically, it establishes whether, compared to their purely domestically oriented counterparts, exporters share a higher fraction of the rents they generate with their employees. The analysis uses a panel of Austrian manufacturing firms between 2002 and 2006 and demonstrates that, in general, Austrian exporters do not share a higher part of their rents with their employees. Moreover, the analysis also takes into account that exporters are a very heterogeneous group, broadly differing in terms of the degree to which they trade internationally or to which they earn rents from their export activities. Against that backdrop, it determines whether rent-sharing systematically differs by the degree of internationalization of exporters. The results emphasize that particularly the most export-oriented firms are able to cut down on rent-sharing which corroborates the idea that exporters can credibly and effectively exploit their threat-points of either outsourcing or offshoring part of their production which induces employees to concede to more moderate wage changes so as to avert the potential loss of employment.

Keywords: *wage determination, rent-sharing, internationalization, firm-level analysis*

JEL classification: *F16, J31, L6*

Do exporters share part of their rents with their employees? Evidence from Austrian manufacturing firms

1. Introduction

Theoretically, the observable growing global integration of economies has strong potentials to fundamentally alter wage negotiation processes and dynamics between employers and employees and to reframe and change the associated wage outcomes.

Firstly, globalization can be decisive for the relative bargaining position of employees and employers. It may initiate a redistribution of *bargaining power* to the employers' advantage thereby harming employees' bargaining position which limits the wage claims they can realize and the share of rents they can siphon off.

Secondly, globalization may directly affect the *threat-points* both employees and employers have at their disposal during wage negotiations. On the one hand, employees may use unemployment benefits to temporarily tide over unemployment spells or find alternative employment in other firms should wage negotiations break down. These outside options provide them with a strong position during negotiations. On the other hand, employers may look for alternative outside options and may threaten their employees to source from abroad (outsourcing) or even move production abroad (offshoring) should they fail to concede, thereby depriving them of their jobs. These threats are particularly credible if realistic and feasible outside options exist. Moreover, they are especially effective should employees lack attractive fallback positions which further strengthens employers' bargaining positions. However, employees may also benefit from associated hold-up effects of imports since imports of intermediates need to be specified in advance. This buys employees time and provides them with sufficient leverage during wage negotiations to claim a share of their employers' rents.

Finally, globalization can also impinge on the *size of profits* firms are able to realize in light of intense global competition. And smaller or shrinking profits are expected to reduce employers' willingness to share and to limit the degree of rent-sharing between employers and employees.

And while the theoretical links between globalization, wage negotiation processes and rent-sharing are well established, empirical evidence is still meager. This study contributes to the slowly burgeoning literature on rent-sharing in open economies by analyzing the prevalence and degree of rent-sharing among Austrian exporters between 2002 and 2006. Generally, exporters which operate internationally are better informed about potential outsourc-

ing or offshoring options - their threat-points – and can therefore apply them during wage negotiations to limit or reduce the degree of rent-sharing employees bargain for. Hence thematically, the current study contributes to the second channel between globalization and wage outcomes outlined above.

The analysis shows that, in general, exporters do not share part of their rents with their employees. This finding is however qualified if a more refined classification scheme is applied that accounts for the strong heterogeneity among exporters. It demonstrates that only the most export-oriented exporters which earn more than 50 percent of their sales from their export activities can effectively exploit their threat-points of outsourcing or offshoring which translates into lower rent-sharing between employees and their employers. Moreover, evidence is found that larger and more skill or technology-intensive firms also pay extra premia to their employees.

The remainder of the paper is structured as follows: section 2 provides a brief discusses of related empirical results. Section 3 outlines wage-bargaining models in closed and open economies to demonstrate how globalization may affect the wage determination process theoretically. The methodological approach is highlighted in section 4 while section 5 highlights why Austria is an interesting case to study. Section 6 discusses the data used in the empirical analysis. The results are presented and discussed in section 7 while, finally, section 8 summarizes and concludes.

2. Related literature and previous results

Whether workers are able to appropriate some of their employers' surplus has been a hotly debated and controversial issue among economists for decades. Theoretically, the question is of enormous explosiveness as considerable doubt is cast on the validity of conventional competitive models to properly represent labor markets should evidence of rent-sharing manifest. Consequently, on economic-political grounds, it is of great significance as a correction of macroeconomic and labor market policies becomes inevitable. In general, empirical analyses find a robust and significant positive correlation between profitability and wages which is taken as conclusive evidence that employers indeed share part of their rents with their employees.

Following the seminal work of Slichter (1950) for the US manufacturing sector, a rich strand of literature strongly confirms that industry profitability is of significant importance for industry wage determination. For example, Dickens and Katz (1986) or Katz and Summers (1989) for the US, Kouwenberg and van Opstal (1999) for the Netherlands or Benito (2000) for the UK demonstrate that more profitable industries pay higher wages. In the same vein, Esteveao and Tevlin (2000) confirm that the lion's share of observed wage dispersion in the US manufacturing sector results from industry financial conditions.

More recently, the widespread availability of firm-level data rendered the estimation of more direct measures of rent-sharing between employers and employees possible and paved the way for a rich strand of literature that again consistently confirms that workers' wages are not independent of diverse measures of employer's ability to pay. This wage-ability-to-pay nexus is typically expressed in terms of the Lester range which captures the change in wages should employees hypothetically switch jobs from low to a high-rent firms¹. In that respect, Blanchflower et al. (1996) highlight that the mere switch of jobs of employees from a low-profit to a high-profit US firm would increase their wages by about 24 percent. Similarly, Hildreth and Oswald (1997) use small sets of UK company and establishment data to emphasize that employees would experience a 16 percent rise in wages should they move from low to high-profit entities. In contrast, a wage-surge of around 60 percent is reported by Goos and Konings (2000) should employees shift from low to high-profit Belgian firms. Moreover, that unions can capture approximately 20 percent of total quasi-rents is emphasized by Abowd and Lemieux (1993) in their study on Canadian contract data.

However, empirical analyses based on either industry or firm-level data came under severe criticism for their lack of controlling for worker characteristics. Remedy came in the form of matched employer-employee data which become available for an increasing number of countries. With the exception of France (Margolis and Salvanes, 2001), numerous empirical studies consistently demonstrate that rent-sharing plays a central role in wage determination and that it is of comparable magnitude across countries considered (see e.g. Arai (2003) for Sweden, Hildreth (1998) for the UK, Martins (2003) for Portugal or Piekola and Kauhanen (2003) for Finland). These countries are characterized by different institutional settings or bargaining structures. For example, bargaining is least centralized in Canada, the US or more recently also the UK, intermediate in continental European countries and traditionally most centralized in Nordic countries (OECD, 2004). Consequently, above results appear to suggest that the phenomenon of rent-sharing is independent of prevailing institutional bargaining structures. Additionally, these studies also shed light on the significance of other firm characteristics for wage determination or rent-sharing processes. They emphasize that workers typically benefit from working in larger, more R&D intensive or innovative, more capital-intensive firms or in firms whose owners have invested in new process technologies.

Surprisingly, however, even though the last decades witnessed growing global integration of economies in terms of foreign direct investments (FDI), trade, migration or the diffusion of technology, none of the above-mentioned studies explicitly accounted for the effects of globalization on labor markets in general or rent-sharing in particular. But the degree of internationalization of activities is pivotal to employees' and employers' bargaining posi-

¹ The Lester range is defined as the elasticity of wages with respect to profits multiplied by four times the ratio between the standard deviation of profits and mean profits.

tions during wage negotiations which in turn determines the extent of rent-sharing between them. Specifically, the idea that globalization may directly affect employees' *bargaining power* is taken up by Brock and Dobbelaere (2006). They use a panel of Belgian manufacturing firms and provide first empirical evidence that neither intense import competition, strong export-orientation, outsourcing of the production of intermediates or high inward FDI exert much impact on employees' bargaining power. Surprisingly though, tariffs which protect domestic markets from foreign competition and are expected to strengthen employees' bargaining position turn out to have a negative impact, significantly reducing their ability to siphon off a share of their employers' rents.

Furthermore, globalization may also affect firm's and workers' *threat-points* since employers may threaten to source from abroad or move production abroad, depriving workers of their jobs or outside employment options. In contrast, workers may benefit from hold-up effects of imports when the need to pre-specify intermediate imports buys workers sufficient time to negotiate for a share of rents realized by their employers. In a study on French employer-employee data Kramarz (2003) shows that the positive hold-up effect is more than compensated by the negative threat-effect of sourcing or producing abroad, leaving most employees which work in strongly import-oriented industries with on average lower wages. Similarly, Choi (2001) focuses on the effect outward FDI has on union wage premia in the US manufacturing sector. He finds evidence of an effective threat-effect such that the fear of losing their jobs tends to induce employees to accept lower shares of their employers' rents.

Finally, globalization and with it more intense competition may affect the size of the rents firms are able to make and employees are able to appropriate. Abowd and Lemieux (1993) use Canadian contract data and highlight that increased foreign competition, for example in terms of lower import prices, reduces both wages as well as quasi-rents per worker.

Apparently, empirical evidence on rent-sharing in a global economy is rather scarce, a shortcoming the ensuing analysis seeks to tackle.

3. Models of wage bargaining in closed and open economies

3.1 Bargaining in a closed economy

In what follows, a Right-to-Manage (RTM) approach is applied that strongly rests on the model developed by Blanchflower et al. (1996). In contrast to an efficient bargaining approach (EB), the Right-to-Manage approach is more suitable to the Austrian case since during wage negotiations workers bargain over wages or working hours only but have no say in determining the overall level of employment.

Specifically, at time t , firm i uses the following production technology to generate its output Y_{it} :

$$Y_{it} = A_{it}f(n_{it}, k_{it}), \quad (1)$$

where A_{it} captures total factor productivity, n_{it} is total employment and k_{it} refers to capital input. In the presence of short-run capital quasi-fixity, firm i equates its utility to its short-run profits π_{it} , where $\pi(w_{it}, n_{it}) = R(n_{it}) - w_{it}n_{it}$ and w_{it} is the wage. $R_{it} = p_{it}Y_{it}$ refers to total revenues, p_{it} is the output price and Y_{it} is total output. Above specification implies that if no consensus is reached during collective wage negotiations, firm i 's profits turn out to be zero as workers refuse to work.

The trade union is assumed to be risk-neutral. It represents the interests of a pool of homogenous members and has a 'utilitarian' objective in that it maximizes the utility of all its members as captured by the following objective function:

$$U = [u(w_{it}) - u(\bar{w}_{it})]n_{it}, \quad (2)$$

where $u(w_{it})$ is a single union member's utility from wage income w_{it} and \bar{w}_{it} is the wage available from alternative employment in the event of a breakdown of collective wage negotiations and represents the union's single threat-point.

In the course of collective bargaining, wages are determined by maximizing the following Nash bargaining problem:

$$N = \max \theta \log[(u(w_{it}) - u(\bar{w}_{it}))n_{it}] + (1 - \theta) \log[\pi_{it}], \quad (3)$$

where $\theta \in [0, 1]$ refers to the bargaining power of employees while $1 - \theta$ captures employers' bargaining power.

The maximization of N with respect to the wage rate w_{it} gives the familiar expression:

$$w_{it} \cong \bar{w}_{it} + \left(\frac{\theta}{1 - \theta} \right) \left(\frac{\pi_{it}}{n_{it}} \right). \quad (4)$$

Hence, equilibrium wages are determined by workers' bargaining power θ , the 'outside' wage \bar{w}_{it} and a firm's profits per employee. Following Blanchflower et al. (1996), the 'outside' wage \bar{w}_{it} is typically assumed to be a function $b(w_{it}^o, UB_t, U_t)$ of three determining factors: the going wage rate w_{it}^o in other sectors of the economy, the level of unemployment benefit UB available to the temporary unemployed as well as the economy-wide unemployment rate U . The significance of these factors is corroborated by Christofides and Oswald (1992) who analyze the effect of pressures from the outside market on wage determination. They find robust empirical evidence that both the going wage rate w_{it}^o as well as the level of unemployment benefit UB have a positive and significant effect on wages but that higher rates of unemployment U are associated with lower wages.

Hence, above expression becomes:

$$w_{it} \equiv b(w_{it}^o, UB_t, U_t) + \left(\frac{\theta}{1-\theta} \right) \left(\frac{\pi_{it}^o}{n_{it}^o} \right). \quad (5)$$

3.2 Bargaining in an open economy

However, with globalization and an opening-up of domestic markets to international activities, firms are no longer confined to purely domestic factors or conditions. More specifically, instead of sourcing production factors or intermediate goods from domestic suppliers or producing them themselves, firms may now alternatively source from abroad (outsourcing). Moreover, firms may now relocate part or all of their production abroad to exploit economically more favorable foreign conditions (offshoring). Both options of either outsourcing or offshoring crucially affect wage negotiation processes between employers and employees. In contrast to the closed-economy scenario in which a breakdown of wage negotiations leaves firms with zero profits, firms operating in open economies can take advantage of outside options and therefore still realize positive profits even if no consensus is reached during wage negotiations. Hence, provided that the threat of outsourcing or offshoring can be credibly made, the emerging improved fallback position strengthens employers' position during wage negotiations, limiting the share of rents employees may be able to appropriate.

Outsourcing: Following Kramarz (2003), if negotiations break down and production is stopped, firms can still import intermediate goods l_{it} and employ temporary workers n_{it}^{tmp} to generate the following profits:

$$\pi_{it}^l = R(n_{it}^{tmp}, l_{it}) - w_{it}^{tmp} n_{it}^{tmp} - p_{it}^l l_{it}, \quad (6)$$

where w_{it}^{tmp} refers to temporary workers' wage and p_{it}^l denotes the price of imported intermediates².

Offshoring: On the other hand, following Rodrik (1999), production can be moved abroad to realize profits π_{it}^* with foreign employment n_{it}^* at the going wage rate w_{it}^* :

$$\pi_{it}^* = R(n_{it}^*) - w_{it}^* n_{it}^*. \quad (7)$$

Both outside options, π_{it}^l or π_{it}^* become crucial threat-points during wage negotiations which can be exploited to the employer's advantage. With π_{it}^o denoting a firm's profits from utilizing its outside options (i.e. outsourcing or offshoring), an alternative Nash bargaining problem can be specified

$$N = \max \theta \log[u(w_{it}) - u(\bar{w}_{it})] n_{it} + (1-\theta) \log[\pi_{it} - \pi_{it}^o] \quad (8)$$

² According to Blanchflower et al. (1996), outside wages for temporary workers are defined as: w_{it}^o (see above).

that gives the following solution for wages in an open-economy scenario:

$$w_{it} \cong b(w_{it}^o, UB_{it}, U_{it}) + \left(\frac{\theta}{1-\theta} \right) \left(\frac{\pi_{it} - \pi_{it}^o}{n_{it}} \right) \quad (9)$$

This implies that

$$\frac{\partial w_{it}}{\partial \pi_{it}^o} < 0 \quad (10)$$

Hence, equation (9) highlights that the more profitable are the outside options of employers π_{it}^o and the more credible are employers' threats to actually realize them, the lower will be the wage w_{it} agreed upon during wage negotiations.

4. Econometric specification

Not all firms operating in open economies can credibly threaten their employees with either outsourcing or offshoring part of their production, though. Firms that already move on the international scene and intensely export to international markets, import from foreign suppliers or already produce abroad are generally better informed about their outside options. They are usually more familiar with alternative sources or suppliers for their intermediate goods and more knowledgeable about prevailing foreign production capabilities and capacities which could be harnessed should production be relocated abroad. In contrast, purely domestically oriented firms which source, produce and supply domestically only usually lack comparable information on potential outside options or fallback positions which severely undermines the credibility of their threats and drastically weakens their bargaining position. Hence, in general, firms which operate internationally can more effectively exploit their threat-points which, in turn, significantly strengthens their bargaining position and limits or lowers the rents they share with their employees.

The ensuing analysis is particularly interested in the rent-sharing behavior of Austrian exporters which earn from exporting tradable goods and services to different degrees. Martins and Opromolla (2010) for Portuguese firms as well as Bernard et al. (2005) in their study on US-based firms emphasize that a firm's export status strongly correlates with its import status, rendering the export status of a firm a good proxy for its overall international trade activities. Hence, the analysis implicitly also accounts for firms' imports activities.

From equation (9) in section 3, the following econometric specification is derived:

$$w_{ijt} = \alpha_i + \theta \left(\frac{R}{n} \right)_{ijt} + \beta \mathbf{X}_{ijt} + \gamma EXP_{ijt} + \delta EXP_{ijt} \times \left(\frac{R}{n} \right)_{ijt} + \alpha_j + \alpha_t + \varepsilon_{ijt}, \quad (11)$$

where w_{ijt} is the log of nominal gross wage costs per employee in firm i and industry j . The wage costs are the sum of all gross wages and salaries of all manual and non-manual workers, respectively (including gross compensations for all apprentices and home-workers) plus all legal social security contributions and other social expenditures of the employer.

$(R/n)_{ijt}$ is the log of labor productivity defined as sales per employee and is used as a proxy for a firm's financial position, or equivalently, its ability-to-pay. θ is the rent-sharing coefficient the analysis seeks to identify.

X_{ijt} captures additional firm characteristics like size, R&D efforts or technology intensity. Firm size is proxied by the log of the number of employees and included to capture potential size-wage premia. Empirical results as to the significance of size-wage premia are mixed and inconclusive, however. And while Arai (2003), Fakhfakh and FitzRoy (2004) or Piekkola and Kauhanen (2003) for Swedish, French and Finnish matched employer-employee datasets stress that, on average, larger Swedish, French or Finnish firms, respectively, pay higher wages to their workforces, Korösi (2010) shows that a significant negative size-wage effect prevailed for a representative sample of Hungarian firms in the period spanning from 1998 to 2006. Furthermore, no significant effect emerges in the study of Hildreth and Oswald (1997) for a small and unbalanced UK firm panel of about 300 firms.

R&D efforts enter in terms of the ratio of R&D personnel to overall firm employment and are included to account for a firm's innovative efforts aimed at developing productivity-enhancing product and/or process innovations that warrant temporary monopoly positions and allow for a temporary siphoning off of above-normal monopoly profits. These extraordinary profits may be shared with the firm's personnel, irrespective of skill-level, which then translates into higher wages. This positive effect is corroborated by the studies of Korösi (2010) for a sample of Hungarian firms and Piekkola and Kauhanen (2003) for a sample of Finnish matched employer-employee data which both highlight that innovative firms indeed pay an extra premium to their workforce. The latter study furthermore highlights that more educated employees receive a higher premium, on average, than less educated ones.

A firm's technology intensity is captured by the log of total software expenditures per employee and is used as a control variable for worker characteristics that are generally absent in the available firm-level data set. Specifically, following Bronars and Famulari (2001) it can be argued that if technology and skilled labor are strategic complements, technology intensive firms hire workers with higher observable and unobservable skills. Hence, if left unaccounted for, the rent-sharing coefficient might simply be picking up the effects of higher unobserved ability, biasing the rent-sharing coefficient upwards. Empirical analyses conducted with matched employer-employee data by Arai (2003) for Sweden, Fakhfakh

and FitzRoy (2004) for France, Martins (2003) for Portugal or with firm-level data by Brock and Dobbelaere (2006) for Belgium demonstrate that a firm's capital intensity has a significant positive effect on average firm wages which can be taken as conclusive evidence that high skilled employees indeed sort into high-technology, high-wage firms. However, with the exception of Arai (2003), all of the above-mentioned studies refute the Bronars and Famulari hypothesis as the rent-sharing coefficients remain unresponsive to the inclusion of a firm's capital-intensity proxy.

EXP_{ijt} is a proxy for a firm's export status, included in terms of export dummies. The ensuing analysis looks at two different export classification schemes: a general scheme that differentiates between exporters with positive export shares on the one hand and non-exporters with zero export shares on the other. Hence, it can be established whether, on average, exporters pay higher wages than non-exporters which might be necessary if workers demand premiums due to the potentially riskier or more demanding activities performed in exporting firms. However, exporters are a very heterogeneous group so that lumping them together might dwarf or obscure more disaggregated effects. Hence, the analysis also seeks to show whether wages systematically differ by the degree of internationalization of firms. Therefore, a more refined scheme is used that classifies exporters into four different groups, depending on the reported export shares: firms with export shares of less or equal to 5 percent, firms with export shares of more than 5 but less or equal to 30 percent, firms with export shares between 30 and 50 percent and finally, firms with reported export shares exceeding 50 percent. Previous empirical studies find conclusive evidence of a significant positive export premium, even after controlling for observed and unobserved firm and worker characteristics (see e.g. Martins and Opromolla (2010) for Portugal, Munch and Skaksen (2008) for Denmark, Schank et al. (2007) for Germany or Tsou et al. (2006) for Taiwan).

Furthermore, interaction terms $EXP_{ijt} \times (R/n)_{ijt}$ between a firm's export status and labor productivity are included to capture whether rent-sharing is more or less pronounced in exporting firms as compared to non-exporting firms or whether the extent of rent-sharing systematically differs across exporting firms with different export shares. Generally, the expected effects are unclear a priori. On the one hand, exporting firms may exploit the threat-point they gain from the internationalization of their operations and the potential change in their sourcing strategies of intermediate or finished products. Specifically, instead of sourcing and producing domestically, they can either source from abroad or even move part of their production process abroad. In that case, foreign products become close substitutes for domestic workers, weakening workers' bargaining position. Moreover, this effect is compounded when due to foreign sourcing strategies workers' outside options deteriorate. On the other hand, workers' bargaining position may improve due to the positive hold-up effect that emerges if intermediate products need to be specified and purchased in advance. Some empirical evidence is provided by Kramarz (2003) for a unique

French matched employer-employee dataset. All in all, he finds a negative wage effect for most workers, with the negative effect of outsourcing outweighing any positive hold-up effect.

Moreover, a firm's sourcing strategy may vary with the degree of internationalization, as captured by its export share. Specifically, more export-oriented and international firms may have a higher willingness to source from abroad or to move production abroad, which strengthens their threat-points and potentially reduces their willingness to share rents.

The right-to-manage rent-sharing model discussed above (see equations (5) and (9)) also highlights the role attributed to the going wage rate w_{it}^o , the level of unemployment benefit UB as well as the overall unemployment rate U in determining equilibrium wages. And while the former is captured by a set of 2-digit industry dummies (α_j), the latter two are controlled for by year dummies (α_t).

Finally, firm fixed effects are included (α_i) to account for unobserved firm heterogeneity which may systematically affect firm wages or wage policies. Such unobserved firm characteristics could be related to very specific production processes or systems of work organization. Specifically, production processes that involve dangerous work which necessitate the payment of compensation or risk premia but also provide the firm with higher profits or a specific organization of work which rests on the payment of efficiency wages instead of active supervision to spur productivity and consequently profitability may systematically bias the rent-sharing coefficient upwards (Margolis and Salvanes, 2001).

In what follows, a brief description of the Austrian collective bargaining system as well as a general characterization of the Austrian economy and her development during the last three to four decades is given as a thematic frame for the ensuing empirical analysis which will follow in section 7 below.

5. The Austrian economy

5.1 The Austrian labor market – the system of collective wage bargaining

In Austria, with a predominantly sectoral wage bargaining system, a relatively centralized system is in place (Du Caju et al., 2008). Every year, about 400 collective agreements are reached between the different sector-specific trade associations of the Austrian Federal Economic Chamber (Wirtschaftskammer Österreich), as representatives of employer interests on the one hand, and sectorally organized trade unions, as representatives of employee interests, on the other. These agreements are generally valid throughout Austria but in some sectors, like the food, beverage and tobacco industry, collective bargaining is organized regionally, leading to regionally differentiated agreements. Furthermore, wage

bargaining also takes place at the occupational level, separately for manual and non-manual workers. Generally, collective wage negotiations in Austria are highly consensual, as evidenced by the historically low strike incidence. Specifically, since 2005, no single strike has occurred in Austria (WKÖ, 2009).

The average length of collective bargaining agreements is one year. Wage negotiations are highly seasonal, peaking in January and in May, and are strongly coordinated across the economy due to the practice of 'pattern bargaining'. Specifically, annual collective wage negotiations typically start with the metal industry in November, whose outcomes set a benchmark for ensuing negotiations and therefore have a leading role in the overall annual bargaining process (Knell and Stiglbauer, 2009). And like in some Nordic countries, minimum wages in Austria are part and parcel of collective wage agreements and are negotiated separately for each sector. During wage negotiations, trade unions traditionally demand the compensation of the inflation rate plus part of the productivity increases.

Just like in many other OECD countries, trade union density, defined as the percentage of workers who are members of a trade union, continuously declined in Austria from 63 percent in 1970 to only 37 percent in 2000 (OECD, 2004). However, despite the declining trade union density, trade union coverage is extraordinarily high at about 98 to 99 percent (OECD, 2004). This apparent discrepancy may be explained by the widespread use of extension procedures for wage agreements or the voluntary application of wage agreements to non-union members, rendering trade-union membership less attractive or less advantageous.

5.2 The Austrian economy – a general characterization

Austria is considered an economically stable small and very open economy with relatively low and stable inflation rates ranging between 2 to 4 percent annually since the 1980s and low unemployment rates with on average 4 percent per year between 1990 and 2009.

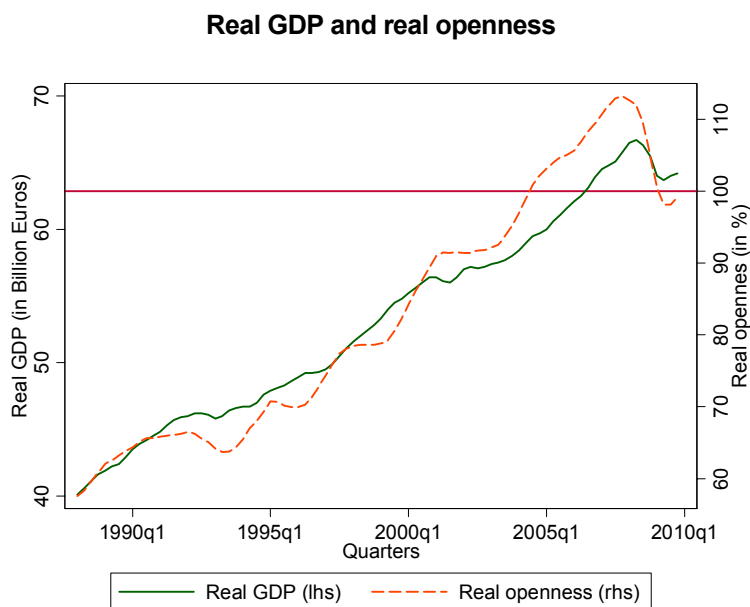
Austria is one of the richest countries, ranking 11th in 2009 worldwide and 4th in 2009 in the EU (in terms of GDP per capita).³ And except for the slump in 1993 and the more pronounced recession between 2001 and 2003, over the last three decades, the Austrian economy has steadily been growing by about 2 percent annually, on average (Figure 1). And between 1988 and 2009, Austrian real GDP almost doubled from about 160 to approximately 260 Billion Euros.

As a small economy, Austria is very outward-oriented and open to international business relations in order to compensate for any technological and endowment-specific shortcom-

³ World Economic Outlook Database-April 2010, International Monetary Fund.

ings. In that respect, real openness, defined as the sum of real exports and imports over real GDP, was 70 percent in 1995. And only five years later, in 2000, it already reached 90 percent. In 2004 it finally crossed the 100 percent line and peaked at 113 percent in 2007, before it plunged below 100 percent in 2009 due to the global recession (Figure 1).

Figure 1



Source: own calculations

In terms of the source of Austrian imports or the destination of Austrian exports, multilateral trade relations are deep seated within the European Union as more than 60 percent of both Austrian exports and imports are destined for or originate from within the European Union. More specifically, from 1980 to 2008, the share of Austrian imports coming from members of the European Union increased from about 68 percent to 78 percent (see Table 8 in the Appendix). Furthermore, within the same period, the share of Austrian exports destined for economies within the European Union grew from 67 percent in 1980 to 72 percent in 2008 (see Table 9 in the Appendix).

Historically, Germany has been Austria's major trading partner. Specifically, between 40 to 46 percent of Austrian imports originate from Germany while between 30 to 39 percent of all Austrian exports are destined for the German market. Furthermore, Italy has been Austria's second most important trading partner, providing around 7 to 9 percent of her imports and absorbing approximately 10 percent of her exports. Moreover, Austria obtains 4 to 5 percent of her imports from Switzerland and the Netherlands and around 3 percent from France and the Czech Republic. The latter has become an increasingly important country of origin for Austrian imports. Specifically, between 1995 and 2008, the share of imports originating in the Czech Republic doubled. Finally, imports from China almost quadrupled from only around 0.7 percent in 1980 to around 2.5 percent in 2008 while the US has lost

ground as the share of imports from the US has halved from around 4 percent in the 1990s to only 2 percent in 2000. Moreover, particularly over the last decade, the relative importance of Austria's major export markets has shifted and the New Member States have become increasingly more important, not just in terms of exports, but also in terms of imports. And given the relatively low labor costs, neighboring New Member States have become attractive destinations for outsourcing or offshoring activities of Austrian firms.

Finally, Austria's main import products are machinery and equipment, motor vehicles, chemicals, metal goods, oil and oil products and foodstuffs and her main export products are machinery and equipment, motor vehicles and parts, paper and paperboard, metal goods, chemicals, iron and steel, textiles and foodstuffs.

6. Data

The analysis uses data provided by Statistics Austria via 'remote execution'. The core dataset is the Austrian 'Performance and Structure Survey' (Leistungs- und Strukturhebung) for the period 1997-2006 and NACE categories C to F.⁴ The current analysis uses data for the manufacturing sector (NACE D) only and, due to some fundamental methodological changes in 2002, focuses on the period from 2002 to 2006. The dataset provides annual firm-level information on numerous performance and structure indicators like the production value, sales, gross value-added, employment, total investment, R&D expenditures, R&D employment and wages and salaries, among other things.

However, the 'Performance and Structure Survey' does not collect information on a firm's export behavior and status. Therefore, the 'Performance and Structure Survey' was matched with the Austrian 'Business and Consumer Survey' (Konjunkturstatistik) which is a monthly survey that, apart from domestic sales, also collects information on export sales. A firm's export sales (as a share of overall sales) were used to derive export indicator variables or export markers which allow for distinguishing between non-exporters and exporters in general and exporters with different export shares in particular. Particularly, a firm was considered to be an exporter if in any particular year it reported positive export sales, while zero export sales were taken as an indication of a non-exporter. Furthermore, depending on their export shares (defined as export sales as a percentage of overall firm sales), exporters were categorized into four groups: 'marginal exporters' with export shares of equal to or less than 5 percent, 'low to medium exporters' with export shares of more than 5 but less or equal to 30 percent, 'high exporters' with export shares between 30 and 50 percent, and finally, 'very high exporters' with export shares exceeding 50 percent.

⁴ In 1996, The Austrian Performance and Structure Survey replaced its predecessor, the Austrian Industry Statistics Survey (Industriestatistik), and was first conducted by Statistics Austria in 1997.

Table 1

Sample overview, Austrian manufacturing: 2002-2006

Year	Total number of firms	Firms with known export status	Exporters	Non-Exporters	Share of exporters (in %)
2002	27,572	5,973	3,218	2,755	53.88
2003	28,581	6,054	3,303	2,751	54.56
2004	28,609	5,949	3,340	2,609	56.14
2005	28,374	5,719	3,248	2,471	56.79
2006	28,712	6,326	3,537	2,789	55.91

Exporter groups are defined as follows: 'marginal exporters' with export shares of equal to or less than 5 percent, 'low to medium exporters' with export shares of more than 5 but less or equal to 30 percent, 'high exporters' with export shares between 30 and 50 percent, and finally, 'very high exporters' with export shares exceeding 50 percent.

Source: own calculations

Table 2

Relative shares of exporters, Austrian manufacturing: 2002-2006

NACE	Industry	2002	2003	2004	2005	2006	Average growth rates
15	Food and beverages	23.60	24.31	25.48	26.67	27.93	4.30
16	Tobacco products	-	-	-	-	-	-
17	Textiles	84.38	86.84	85.53	85.23	85.42	0.32
18	Wearing apparel	74.49	78.89	77.22	77.03	75.61	0.43
19	Leather	86.11	88.46	87.50	85.71	83.33	-0.79
20	Wood	50.00	53.23	53.14	54.71	50.99	0.61
21	Pulp and paper	87.95	89.02	88.61	90.79	91.46	0.99
22	Publishing and printing	59.18	59.91	64.82	65.99	66.37	2.95
23	Refined petroleum	66.67	50.00	50.00	50.00	50.00	-6.25
24	Chemicals	86.96	92.04	91.07	89.29	89.76	0.84
25	Rubber and plastic products	85.27	87.32	89.25	87.92	89.69	1.28
26	Non-metallic mineral products	37.91	40.95	40.06	41.62	41.54	2.39
27	Basic metals	96.77	98.94	97.83	95.79	97.87	0.30
28	Fabricated metal products	51.80	51.66	53.73	54.36	53.84	0.99
29	Machinery and equipment	84.25	87.95	89.58	89.63	89.61	1.57
30	Office machinery and computers	83.33	62.50	77.78	66.67	66.67	-3.71
31	Electrical machinery	83.72	83.45	84.17	85.61	80.56	-0.91
32	Radio, TV, communication	93.02	90.70	89.36	93.48	90.20	-0.72
33	Precision & optical instruments	50.26	48.57	53.14	53.96	49.22	-0.30
34	Motor vehicles	83.78	86.84	87.95	90.36	89.13	1.58
35	Other transport equipment	93.75	88.89	89.47	85.71	85.71	-2.18
36	Manufactures n.e.c.	43.32	44.16	45.53	44.50	39.43	-2.15
37	Recycling	77.78	78.95	80.95	80.95	80.77	0.95
15-37	Total manufacturing	53.88	54.56	56.14	56.79	55.91	0.94

Source: own calculations

Due to the smaller sample size of the 'Business and Consumer Survey' and restrictive confidentiality requirements that leave cells with less than 4 observations unaccounted for, the overall sample size of 27,572 in 2002 and 28,712 in 2006 was reduced to between 5,973 in 2002 and 6,326 in 2006 (Table 1). Between 2002 and 2006, the share of exporters in the sample remained relatively stable, with only a slight increase from 54 percent in 2002 to 56 percent in 2006.

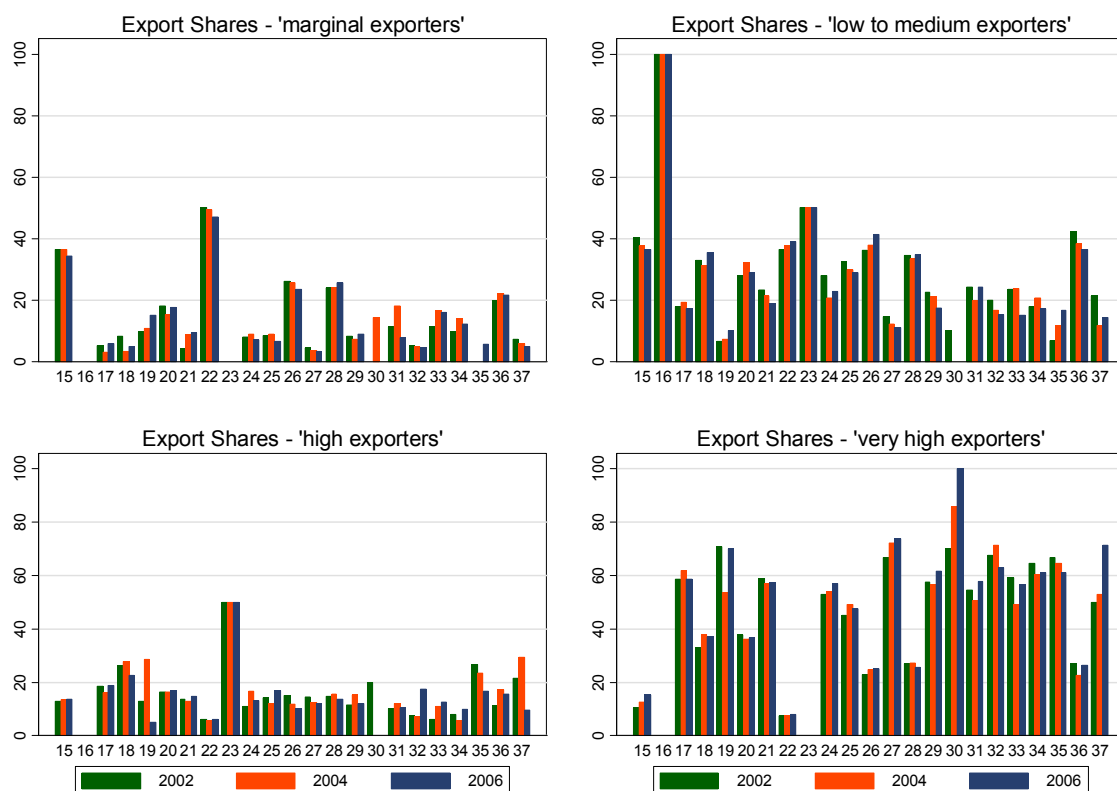
Table 2 reports the relative shares of exporters by two-digit NACE category for the period 2002 to 2006. On average, between 2002 and 2006, about 55 percent of all firms in manufacturing were exporters. A closer look at the more disaggregated 2-digit level furthermore reveals that only 3 out of 23 2-digit industries are characterized by relative exporter shares below 50 percent: Food and beverages (NACE 15), Non-metallic mineral products (NACE 26) and Manufactures n.e.c. (NACE 36). On the other hand, in 12 out of 23 2-digit industries, more than 80 percent of all firms are exporters: Textiles (NACE 17), Leather (NACE 19), Pulp and paper (NACE 21), Chemicals (NACE 24), Rubber and plastic products (NACE 25), Basic metals (NACE 27), Machinery and equipment (NACE 29), Electrical machinery (NACE 31), Radio, TV, communication (NACE 32), Motor vehicles (NACE 34), Other transport equipment (NACE 35), Recycling (NACE 37). Finally, between 2002 and 2006, the three industries which experienced the highest average increases in the relative number of exporters are Food and beverages (NACE 15), Publishing and printing (NACE 22) and Non-metallic mineral products (NACE 26). In contrast, the three industries with the highest losses in the relative number of exporters are Refined petroleum (NACE 23), Office machinery and computers (NACE 30) and Other transport equipment (NACE 35).

A more refined and detailed representation of the share of exporters in each 2-digit NACE industry is provided in Figure 2 which depicts relative shares of exporters by exporter groups, differentiating between 'marginal exporters', 'low to medium exporters', 'high exporters', and 'very high exporters'. Apparently, most industries are dominated by exporters with export shares of more than 5 but less or equal to 30 percent (i.e. 'low to medium exporters') on the one hand, and of export shares exceeding 50 percent (i.e. 'very high exporters'), on the other.

Finally, Table 3 presents weighted means of the overall set of variables used throughout the empirical analysis, separately for exporters and non-exporters as well as for the four exporter-groups considered. It shows that in general, exporters outperform non-exporters. Specifically, in contrast to non-exporters, exporters pay higher wages per employee, have higher labor productivities, report higher software expenditures per employee, employ a higher fraction of R&D personnel and are, on average, larger. More specifically, exporters are almost twice as productive as non-exporters and have software expenditures per employee that are almost three times as high as those reported by non-exporters, employ ten times as many R&D employees and are four times larger than non-exporters.

Figure 2

Export shares by exporter groups, Austrian manufacturing: 2002, 2004 and 2006



Exporter groups are defined as follows: 'marginal exporters' with export shares of equal to or less than 5 percent, 'low to medium exporters' with export shares of more than 5 but less or equal to 30 percent, 'high exporters' with export shares between 30 and 50 percent, and finally, 'very high exporters' with export shares exceeding 50 percent.

Source: own calculations

Table 3

Firm-level indicators, weighted means 2002-2006, total manufacturing (NACE 15-37)

Variable	Non-exporters	Exporters	Marginal exporters	Low to medium exporters	High exporters	Very high exporters
Wage/employee ¹	22.2	30.1	27.1	28.6	29.5	32.9
Labor productivity ¹	102.0	195.1	142.6	148.8	181.2	262.0
Software expenditures/employee ¹	0.085	0.224	0.209	0.174	0.211	0.276
R&D personnel/total employment	0.002	0.020	0.004	0.009	0.018	0.038
Size (total employment/firm)	32	132	62	76	119	215

Exporter groups are defined as follows: 'marginal exporters' with export shares of equal to or less than 5 percent, 'low to medium exporters' with export shares of more than 5 but less or equal to 30 percent, 'high exporters' with export shares between 30 and 50 percent, and finally, 'very high exporters' with export shares exceeding 50 percent.

¹ expressed in thousand EUR.

Source: own calculations

Furthermore, a comparison across exporter groups reveals that, in general, the performance improves from lower to higher exporter groups. The only exception is software expenditures per employee which turns out to be lowest for the second exporter group of 'low to medium exporters'. In general, the group of 'very high exporters' outperforms all other groups. The most dramatic differences are found for firm size and R&D efforts in that 'very high exporters' are almost four times larger and employ almost ten times as many R&D employees as 'marginal exporters'. This finding is consistent with predictions of the workhorse model in international trade (Melitz, 2003) which emphasizes that more export-oriented firms are more productive and profitable.⁵

7. Results

The following two sub-sections present empirical results on the prevalence and significance of rent-sharing in Austrian manufacturing and the role a firm's export status plays in its willingness to share part of its rents with its employees. More specifically, whether, exporters are willing to share a higher fraction of their rents with their workers is subject of subsection 7.1 while sub-section 7.2 looks at differences in the extent of rent-sharing across exporter groups with varying degrees of export-orientation, or equivalently, internationalization.

7.1 Exporters versus non-exporters

In Table 4 a random effects model with a one-year lag is estimated to account for unobserved firm heterogeneity. Column [1] in Table 4 shows that the wage bargaining process in Austrian manufacturing is indeed characterized by rent-sharing between employers and employees, even after controlling for observed and unobserved firm characteristics. Hence, in line with related studies, evidence is provided that employees are able to claim part of the rents or profits made by their employers.

Moreover, in line with recent empirical results, exporters are found to pay significantly higher wages on average, possibly in order to compensate for potentially riskier or more demanding activities carried out in exporting firms.

Furthermore, similar to evidence provided by Arai (2003) for Sweden, Fakhfakh and FitzRoy (2004) for France or Piekkola and Kauhanen (2003) for Finland, the analysis corroborates the existence of a significant size-premium in that larger firms indeed pay extra premia to their employees. Interestingly, the effect of firm-size only pushes through with a one-year lag.

⁵ More detailed descriptive statistics and econometric estimations of export premia are found in Stöllinger et al. (2010).

Table 4

**Random effects model with 1-year lag
exporters versus non-exporters**

Variable	[1]	[2]
Constant	1.707*** (53.139)	1.503*** (30.637)
Labor productivity t	0.244*** (34.301)	0.290*** (26.413)
Labor productivity t_{-1}	-0.001 (-0.208)	-0.002 (-0.227)
Firm size t	0.002 (0.164)	0.003 (0.271)
Firm size t_{-1}	0.058*** (6.136)	0.057*** (6.038)
Software expenditures per employee t	0.006*** (4.335)	0.006*** (4.334)
Software expenditures per employee t_{-1}	0.003* (1.948)	0.002* (1.859)
R&D personnel/total employment t	0.093** (2.186)	0.099** (2.325)
R&D personnel/total employment t_{-1}	0.174*** (3.894)	0.177*** (3.963)
Export status (exporter=1)	0.022*** (2.864)	0.304*** (5.845)
Export status*labor productivity		-0.060*** (-5.479)
chi2	5967.243	6050.732
R-squared	0.599	0.604
No. of observations	6,236	6,236

The dependent variable is the log of nominal gross wage costs per employee. With the exception of R&D personnel/total employment, all variables are in logs. All estimations include 2-digit industry dummies and year dummies.

The estimations are based on a random-effects procedure with a one-year lag.

Absolute value of t-statistics in parentheses

* significant at 10%

** significant at 5%

*** significant at 1%

Extra premia are also paid by more skill or technology-intensive firms operating in Austrian manufacturing. Specifically, as highlighted by Korösi (2010) for a set of Hungarian firms or Piekkola and Kauhanen (2003) for Finnish firms, innovative Austrian firms which devote non-negligible resources to the development of product and/or process innovations also pay extra innovation premia to their employees. Hence, even though typically only a relatively small fraction of a firm's employees are involved in R&D activities, the entire workforce benefits from its employers' research efforts in terms of significantly higher wages. Interestingly, both skill-intensity and R&D efforts exert a rather persistent effect on workers' wages.

Column [2] in Table 4 furthermore highlights that, in contrast to non-exporters, exporters share a significantly smaller part of the rents they are able to realize with their workers. This is consistent with the idea that, in contrast to non-exporters, exporters can successfully exploit their threat-points of sourcing or producing abroad which weakens workers' bargaining position and reduces the share of the rents workers are able to cream off.

Table 5

**GMM estimation with 1-year lag
exporters versus non-exporters**

Variable	[1]	[2]
Constant	0.020*** (10.230)	0.024*** (6.096)
Wages $_{t-1}$	0.287*** (7.666)	0.285*** (7.665)
Labor productivity $_t$	0.209*** (17.549)	0.225*** (11.868)
Labor productivity $_{t-1}$	-0.085*** (-5.855)	-0.084*** (-5.811)
Firm size $_t$	-0.025 (-1.564)	-0.024 (-1.516)
Firm size $_{t-1}$	0.035** (2.511)	0.034** (2.481)
Software expenditures/employee $_t$	0.005*** (3.132)	0.005*** (3.130)
Software expenditures/employee $_{t-1}$	0.002 (1.132)	0.002 (1.104)
R&D personnel/total employment $_t$	0.045 (0.744)	0.045 (0.753)
R&D personnel/total employment $_{t-1}$	0.063 (0.939)	0.063 (0.933)
Export status (exporter=1)	0.035** (2.444)	0.128 (1.407)
Export status*labor productivity		-0.020 (-1.043)
chi2	388.239	389.043
No. of observations	3,485	3,485

The dependent variable is the log of nominal gross wage costs per employee. With the exception of R&D personnel/total employment, all variables are in logs. All estimations include 2-digit industry dummies and year dummies.

The estimations are based on the first-difference GMM estimation procedure as suggested by Arellano and Bond with a one-year lag.

* significant at 10%

** significant at 5%

*** significant at 1%

Moreover, the generalized methods of moments estimation (GMM) as suggested by Arellano Bond (1991) is applied which generally gives more robust and efficient estimators.

The procedure purges prevailing fixed effects by first-differencing and instruments the endogenous variable with its lagged values in levels.

Consistent with results presented in Table 4 above, column [1] in Table 5 again demonstrates that rent-sharing is an integral element of the wage-determination process in Austrian manufacturing. More specifically, the major effect on workers' wages actually stems from rent-sharing.

That exporters pay higher wages is again confirmed by the results. Hence, strong evidence of a positive export-premium is present.

Consistently, employees profit from working in larger firms by receiving significantly higher wages and salaries. A significant one-year lagged size-effect is again apparent. Moreover, more skill or technology-intensive Austrian firms pay extra premia to their employees, irrespective of skill-level. Hence, both low as well as high skilled employees profit from working in high-skilled, technology-intensive firms. In contrast to above results, however, effects are rather short-lived as only the current skill or technology-level matters for workers' wages. The overall effect on workers' wages is again rather small.

Finally, in stark contrast to the above findings of a positive innovation-premium, more innovative firms which seek to develop new products and/or processes are not found to pay significantly higher wages to their employees.

Column [2] in Table 5 also accounts for the potential role the threat-point of sourcing or producing abroad has for wage negotiations, and consequently, for rent-sharing between exporting firms and their employees. However, no evidence is found that exporters share a higher part of their rents with their workers which indicates that exporters are in general not able to exploit their threat points to induce their workers to concede to lower wages.

7.2 Across exporters with different exporter groups

Similar and comparable analyses are also carried out for exporters with different export shares as proxies for their degree of internationalization in order to establish whether above results also hold across exporter groups or whether systematic differences, particularly in terms of observed rent-sharing, can be observed across groups.

Table 6 presents results from random effects models with a one-year lag to account for unobserved firm heterogeneity. Column [1] again points at the central and pivotal role rent-sharing plays for the level of wages paid to employees in the Austrian manufacturing sector. Moreover, consistent with above results reported in Table 4, larger, more innovative and more skill or technology-intensive firms pay extra premia to their employees.

With respect to potential export premia, interesting differences emerge across exporter groups. Specifically, only the group of 'low to medium exporters' with export shares ranging between 5 to 30 percent pays significantly higher wages to their employees.

Table 6

**Random effects model with 1-year lag
Across exporter groups**

Var	[1]	[2]
Constant	1.701*** (51.264)	1.479*** (34.401)
Labor productivity $_t$	0.245*** (34.239)	0.308*** (33.523)
Labor productivity $_{t-1}$	-0.001 (-0.129)	0.001 (0.099)
Firm size $_t$	0.002 (0.167)	0.006 (0.602)
Firm size $_{t-1}$	0.059*** (6.252)	0.054*** (5.790)
Software expenditure/employee $_t$	0.006*** (4.332)	0.005*** (4.212)
Software expenditure/employee $_{t-1}$	0.003** (1.994)	0.002* (1.800)
R&D personnel/total employment $_t$	0.094** (2.209)	0.105** (2.477)
R&D personnel/total employment $_{t-1}$	0.177*** (3.965)	0.180*** (4.071)
Low to medium exporter (>5-30 %)	0.020*** (2.695)	0.306*** (5.424)
High exporter (>30-50 %)	0.014 (1.527)	0.398*** (5.972)
Very high exporter (>50 %)	0.009 (0.908)	0.668*** (11.802)
Low to medium exporter*labor productivity		-0.060*** (-5.261)
High exporter*labor productivity		-0.080*** (-6.013)
Very high exporter*labor productivity		-0.133*** (-11.808)
chi2	5958.561	6244.378
R-squared	0.599	0.609
N	6,236	6,236

The dependent variable is the log of nominal gross wage costs per employee. With the exception of R&D personnel/total employment, all variables are in logs. All estimations include 2-digit industry dummies and year dummies.

The estimations are based on a random-effects procedure with a one-year lag.

Exporter groups are defined as follows: 'marginal exporters' with export shares of equal to or less than 5 percent, 'low to medium exporters' with export shares of more than 5 but less or equal to 30 percent, 'high exporters' with export shares between 30 and 50 percent, and finally, 'very high exporters' with export shares exceeding 50 percent.

* significant at 10%

** significant at 5%

*** significant at 1%

Column [2] in Table 6 also accounts for the potential role the threat-point of sourcing or producing abroad plays for the outcome of wage negotiations. Consistent evidence is found that Austrian manufacturing firms can effectively exploit their threat-points of sourcing or producing abroad so that, compared to their purely domestically oriented counterparts, they only share a significantly smaller part of their rents with their employees. But firms' ability to make use of their threat-points clearly differs and strongly hinges on the degree of their exposure to international markets. Specifically, more export-oriented firms can most credibly threaten to offshore or outsource activities which obviously puts them in a better bargaining position and therefore enables them to further cut down on the share of the rents their employees can claim.

Column [1] in Table 7 again applies a generalized methods of moment estimation (GMM) procedure and confirms that Austrian firms share part of the rents they realize with their employees. All in all, this rent-sharing effect appears to be dominant in the overall wage-determination process.

But interestingly, exporters pay significantly higher wages to their employees. Hence, employees profit from being employed by firms which actively and successfully supply foreign markets by receiving higher wages and salaries. However, the size of the export-premium employers are willing to pay varies with the degree of internationalization. Specifically, more export-oriented and international firms pay relatively lower export premia compared to firms whose returns from exporting only accounts for a relatively small fraction of their overall returns. Hence, employees benefit more from working in less international and export-oriented firms.

Whether the extent of rent-sharing systematically differs across exporter groups is subject of column [2] in Table 7. In contrast to above findings (see Table 6), the results demonstrate that *only* the group of 'very high exporters' with export shares exceeding 50 percent is able to take advantage of the threat-point effect of internationalization thereby inducing workers to accept lower wages.

Table 7

**GMM estimation with 1-year lag
across exporter groups**

Var	[1]	[2]
Constant	0.020*** (10.300)	0.024*** (6.274)
Wages t_{-1}	0.282*** (7.554)	0.275*** (7.437)
Labor productivity t	0.211*** (17.683)	0.247*** (14.096)
Labor productivity t_{-1}	-0.084*** (-5.776)	-0.077*** (-5.347)
Firm size t	-0.025 (-1.581)	-0.020 (-1.250)
Firm size t_{-1}	0.036*** (2.588)	0.036*** (2.595)
Software expenditure/employee t	0.005*** (3.102)	0.005*** (3.071)
Software expenditure/employee t_{-1}	0.002 (1.169)	0.002 (1.090)
R&D personnel/total employment t	0.046 (0.774)	0.048 (0.801)
R&D personnel/total employment t_{-1}	0.067 (1.005)	0.069 (1.038)
Low to medium exporter (>5-30 %)	0.035*** (2.788)	0.111 (1.203)
High exporter (>30-50 %)	0.033** (1.984)	0.153 (1.368)
Very high exporter (>50 %)	0.022 (1.128)	0.375*** (3.486)
Low to medium exporter*labor productivity		-0.016 (-0.835)
High exporter*labor productivity		-0.024 (-1.099)
Very high exporter*labor productivity		-0.069*** (-3.290)
chi2	393.803	407.385
N	3,485	3,485

The dependent variable is the log of nominal gross wage costs per employee. With the exception of R&D personnel/total employment, all variables are in logs. All estimations include 2-digit industry dummies and year dummies.

The estimations are based on the first-difference GMM estimation procedure as suggested by Arellano and Bond with a one-year lag.

Exporter groups are defined as follows: 'marginal exporters' with export shares of equal to or less than 5 percent, 'low to medium exporters' with export shares of more than 5 but less or equal to 30 percent, 'high exporters' with export shares between 30 and 50 percent, and finally, 'very high exporters' with export shares exceeding 50 percent.

* significant at 10%

** significant at 5%

*** significant at 1%

8. Summary and conclusion

Whether globalization - an umbrella-term that captures the growing global integration of economies through trade, FDI, migration or the diffusion of technology – is a crucial determining factor during wage negotiations has aroused growing interest. Theoretically, it may lead to a redistribution of bargaining power between employers and employees, affect workers' and firms' threat-points or mold the size of profits firms are able to realize, therefore co-determining the wage employees are able to bargain for. And while interest for the subject is growing, evidence is still scarce and scattered though.

This paper contributes to the ongoing discussion and seeks to establish whether firms which operate internationally, more specifically, whether exporters share a higher part of their rents with their employees. The analysis focuses on Austria which is particularly suitable since Austria is a very open and outward oriented economy with a high share of firms exporting and importing tradable goods and services.

The analysis uses a panel of Austrian manufacturing firms for the period 2002 to 2006 and demonstrates that, in general, exporters do not share a higher fraction of their rents with their employees.

However, exporters are a very heterogeneous group, comprising firms with different degrees of export-orientation, different degrees to which they engage in international activities and different degrees to which they earn rents from their export activities. Hence, a more refined classification scheme was applied to account for within-group heterogeneity. The results highlight that some exporting firms are actually able to reduce the part of the rents they have to share with their workers. Specifically, the most international and export-oriented group of exporters with export shares above 50 percent shares a *smaller* fraction of its rents with its employees. This is consistent with the idea that more international firms are able to use their threat-points to their advantage as suggested by Kramarz (2003). Specifically, this particular group of exporters which is generally better informed about their outside options can more credibly threaten to outsource or offshore part of their production. This in turn induces employees to concede to more moderate or low wage rises and reduces the share of rents they are able to appropriate so as to avert the potential loss of employment.

Moreover, in line with other empirical results, evidence is found that other firm-characteristics also matter for employees' pay. In that respect, larger firms consistently pay higher wages to their employees. Additionally, employees benefit from working in more skill or technology-intensive Austrian firms which also pay extra premia, irrespective of an employee's skill level. In contrast, however, more R&D intensive firms do not appear to pay significantly higher wages to their employees.

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10. Appendix

Table 8

Major trading partners for Austrian imports: import shares, 1980-2008

Year	EU	Germany	Italy	Switzer- land	Nether- lands	Czech Republic	France	China	USA
1980	68.48	40.85	9.10	5.00	2.70		3.95	0.67	3.38
1985	68.27	41.00	8.24	4.54	2.65		3.63	0.71	3.68
1990	73.56	43.89	9.01	4.51	2.82		4.19	1.27	3.64
1995	78.89	43.59	8.76	3.89	3.43	1.89	4.91	1.64	4.24
2000	80.19	43.78	6.84	4.74	4.30	2.47	3.76	1.21	4.08
2001	80.52	43.43	6.71	4.70	4.56	2.60	3.81	1.66	3.84
2002	80.80	42.58	6.62	4.79	4.44	2.79	3.68	1.52	3.48
2003	81.85	43.36	6.72	5.04	4.24	3.08	3.78	1.87	2.23
2004	82.74	46.33	6.82	4.29	3.88	3.05	3.85	1.66	1.93
2005	80.50	45.84	6.64	4.52	3.75	3.08	3.76	2.15	2.23
2006	79.65	45.44	6.98	4.48	4.09	3.05	3.16	2.37	2.24
2007	79.31	45.51	7.09	4.99	4.32	3.07	3.12	2.54	2.22
2008	78.10	44.47	7.07	5.17	4.13	3.42	3.07	2.61	1.79

Note: The countries are ranked according to prevailing import shares in 2008.

Source: Direction of Trade Statistics, IMF

Table 9

Major trading partners for Austrian exports: export shares, 1980-2008

Year	EU	Germany	Italy	USA	Switzer- land	Czech Republic	France	Hungary	UK
1980	66.50	30.90	10.98	2.18	7.54		3.47	2.18	3.67
1985	63.80	30.13	8.95	4.63	6.76		3.96	2.58	4.60
1990	71.50	37.53	9.73	3.19	7.18		4.71	2.25	3.84
1995	77.18	38.35	8.87	2.97	5.85	2.74	4.44	3.64	3.30
2000	74.78	33.33	8.83	4.98	6.72	2.76	4.47	4.99	4.30
2001	74.88	32.33	8.69	5.14	5.42	2.77	4.94	4.55	4.79
2002	74.95	31.47	9.31	4.95	5.39	2.73	4.65	4.32	4.94
2003	75.27	31.51	9.70	4.89	5.18	2.87	4.72	3.98	4.74
2004	73.55	31.96	8.87	5.97	4.79	2.94	4.24	3.65	4.24
2005	71.83	31.06	8.65	5.82	5.14	2.94	4.14	3.33	3.96
2006	71.99	30.08	9.00	5.79	4.69	3.17	3.76	3.41	3.80
2007	72.55	29.80	8.84	4.90	4.33	3.57	3.59	3.65	3.57
2008	72.24	29.51	8.57	4.29	4.17	3.95	3.71	3.68	3.16

Note: The countries are ranked according to prevailing export shares in 2008.

Source: Direction of Trade Statistics, IMF

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