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THE BATTLE FOR TALENT:
GLOBALISATION AND THE RISE OF
EXECUTIVE PAY

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The Battle for Talent: Globalisation and the Rise of Executive Pay

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Abstract

Recent long-run time series evidence for the US suggests that popular explanations for the surge in executive pay are not supported by the data. This paper explores the role of globalization for the rise in executive pay based on new firm survey data on executives and their pay in Austria and Germany. I find that firms more exposed to international competition engage in talent fairs to search and attract skilled workers. Furthermore, I find that seniority related pay varies for different levels of foreign competition suggesting that firms increase CEO pay when faced with the threat of losing their senior executives to foreign competitors, while seniority in office itself does not lead to higher pay. These findings support the idea of a 'war for talent' that is triggered by international trade, as suggested by recent theories of international trade and organisations.

1. Non Technical Summary

Recent long-run time series evidence for the US suggests that popular explanations for the surge in executive pay are not supported by the data. The manager-ent seeking hypothesis put forward by Bebschuk and Fried 2004 appears to be implausible because both the level of pay and the use of options were lower in the 1950s to the 1970s than in more recent years even though corporate governance was weaker in the earlier period. Furthermore, the explanation put forward by Gabaix and Landier (2008) that the rise in executive pay is due to increases in firm size appears to be only weakly supported by evidence for the period prior to the mid-1970s.

This paper explores the role of globalisation in the rise in executive pay based on new firm survey data on executives and their pay in Austria and Germany. A proper understanding of the rise in executive pay entails integrating the theory of the firm with international trade theory. We look at rising executive pay from the perspective of two important changes that have happened in the last two decades: the changing nature of the corporation on the one hand and the stronger integration of rich economies into the world economy on the other. Rising CEO pay is an expression of both: a new way firms empower their managers as well as an increase in the importance of international trade in rich countries. We argue that an increase in trade exposure in rich countries in the last two decades has led to a 'war for manager talent' which has changed the nature of the corporation. Rather than machinery and the factory, managerial talent has become the new asset of the firm. The challenge for firms is how can they prevent managers from leaving the firm when international trade creates new career opportunities for them outside the firm.

In this paper I test the hypothesis whether international trade has triggered a competition for managers - a 'war for talent' - through the entry of foreign firms. I use new survey data on German and Austrian executives, their characteristics and the human resource policies of their firms combined with other data sources to test this hypothesis in two ways. First, I examine whether more foreign competition leads firms to increase their participation in talent fairs to search and attract talent. Second, I examine whether seniority-related CEO pay varies for different levels of foreign competition. Do firms increase CEO pay when faced with the threat of losing their senior executives to foreign competitors? I find that firms

more exposed to international competition engage in talent fairs to search and attract skilled workers. Furthermore, I find that seniority related pay varies for different levels of foreign competition suggesting that firms increase CEO pay when faced with the threat of losing their senior executives to foreign competitors, while seniority in office itself does not lead to higher pay. These findings support the idea of a 'war for talent' that is triggered by international trade, as suggested by recent theories of international trade and organisations.

2. Introduction

Several explanations for the rise in executive pay have been put forward in the literature. First, it has been argued that the adoption of compensation packages with stock options, performance bonuses and other forms of incentive pay have contributed to the increase in executive pay. Second, CEO compensation is seen to have been driven by an increase in managerial entrenchment. According to this view managers operate with little effective oversight in part due to the explosion of stock-option pay and the boards' inability to evaluate the true costs of this form of compensation (Bebschuk and Fried 2004). Third, the rise in CEO compensation is seen as the result of the substantial growth in the size and market value of US firms (Gabaix and Landier 2008).

This paper explores the role of globalisation in the rise in executive pay. Why is international trade a possible explanation for the rise in executive pay? Recent long-run time series evidence for the US in the period 1936 - 2005 (Frydman and Saks 2007) suggests that the above explanations for the surge in executive compensation are not supported by the data. The manager-rent seeking hypothesis put forward by Bebschuk and Fried 2004 appears to be implausible because both the level of pay and the use of options were lower in the 1950s to the 1970s than in more recent years even though corporate governance was weaker in the earlier period. Furthermore, the explanation put forward by Gabaix and Landier (2008) that the rise in executive pay is due to increases in firm size appears to be only weakly supported by evidence for the period prior to the mid-1970s. Frydman and Saks (2007) show that even the strong correlation between compensation and firm size in more recent decades may be spurious.

This suggests that increases in firm size and manager pay may have both been driven by a third variable namely increases in international trade due to the stronger integration of rich economies into the world economy in the last two decades. Two recent studies identify trade as a driver behind the changes in executive pay. Frydman and Saks (2007) document a stronger sensitivity of managerial pay to firm performance since the early 1970s in the US. Cunat and Guadalupe (2006) show that increases in the sensitivity of managerial pay to firm performance have been driven by a stronger exposure of US firms to import competition. Adding import penetration as a further regressor in an OLS regression on executive compensation explains 35 percent of the overall increase in performance-pay sensitivities.

A proper understanding of the rise in executive pay entails integrating the theory of the firm with international trade theory. Most of the explanations on executive pay (except Gabaix and Landier 2008) have in common that they focus on failures in the internal control mechanism of firms but they neglect the market environment in which firms operate, in particular the market for executives. Recent research on trade and organisations which is known as the 'new new theory of international trade' examines both the incentives inside firms as well as how these incentives interact with the trade environment firms face. Hence, this theory is particularly suited to explain the rise in executive pay.¹

In Marin and Verdier (2004) (MV) we look at rising executive pay from the perspective of two important changes that have happened in the last two decades: the changing nature of the corporation on the one hand and the stronger integration of rich economies into the world economy on the other. According to this theory rising CEO pay is an expression of both: a new way firms empower their managers as well as an increase in the importance of international trade in rich countries. In MV we argue that increases in trade exposure in rich countries in the last two decades has led to a 'war for manager talent' which has changed the nature of the corporation.² Rather than machinery and the factory, managerial talent has become the new asset of the firm. The challenge for firms is how they can prevent managers from leaving the firm when international trade creates new career opportunities for them outside the firm.

In this paper I test the hypothesis whether international trade has triggered a competition for managers - a 'war for talent' - through the entry of foreign firms as predicted by Marin and Verdier 2004. I use new survey data on German and Austrian executives, their characteristics and the human resource policies of their firms combined with other data sources to test this hypothesis in two ways. First, I examine whether more foreign competition leads firms to increase their participation in talent fairs to search and attract talent. Second, I examine whether seniority-related CEO pay varies for different levels of foreign competition. Do firms increase CEO pay when faced with the threat of losing their senior executives to foreign competitors? The paper is organised in five sections. Section

¹For a review of the 'new new theory of international trade', see Marin and Verdier (2003), Spencer (2005), Helpman (2006), and Helpman, Marin, Verdier (2008).

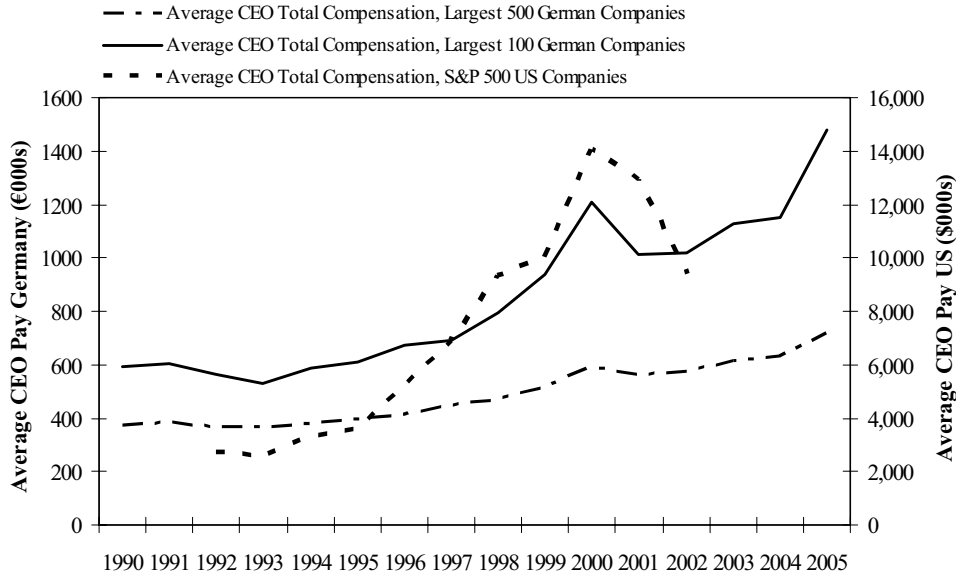
²Peter Drucker, a well known author of managerial books and Mc Kinsey, a consultancy, have both argued that the key battle of this century is what they call the 'war for talent'. For recent corporate reorganisation in Europe, see Marin (2008).

3 presents some facts about executive pay in Germany and Austria. Section 4 presents an international trade theory of executive pay. Section 5 describes the firm survey and the data. Section 6 presents the empirical results and section 7 concludes.

3. Some Facts about CEO Compensation in Germany and Austria

Figure 1 provides average CEO total remuneration for the US and Germany. German CEO pay is substantially smaller than US CEO pay and the rise is much less pronounced in Germany. CEO pay at constant 2002 prices increased by a factor of 3,5 in the US (from \$ 2.7 million in 1992 to \$ 9.4 million in 2002) and by a factor of 2,5 among the top 100 German firms (from € 590000 in 1990 to € 1.5 million in 2005). Trade openness (exports plus imports in percent of GDP) in Germany increased by 86,4 percent (from 37 percent in 1994 to 69 percent in 2006) and in the US by 41,7 percent (from 20,4 percent in 1990 to 28,9 percent in 2007).

Fig. 1 Average CEO Total Compensation, Germany and US



Sources: Germany: Kienbaum, Management Consultants. Compensation, reported in inflation-adjusted 2002 Euros, is defined as fixed salary, fringe benefits, long-, mid- and short-term incentives (including stock options).
 US: Average pay level, reported in inflation-adjusted 2002 Dollars, is based on Execucomp Data for S&P 500 CEOs. Compensation is defined as the sum of fixed salaries, bonuses, benefits, stock options, stock grants, and other compensation (Jensen, Murphy and Wruck 2004).

Table 1 offers additional information on the profile of German and Austrian executives. CEOs in Germany and Austria tend to be above 50 years of age, are males and both countries tend to hire their own nationals as executives (in more than 90 percent of firms). If firms in these two countries hire managers from outside the country they mostly hire their own nationals from other countries or non-nationals from other German speaking countries. The dominance of Germans on German boards and Austrians on Austrian boards indicates that the market for managers in Austria and Germany is still very segmented. This suggests that executive pay in these two countries is not driven by a global competition for executives. Given these numbers, the potential role of globalisation in the rise of executive pay must come from international trade rather than from a global labour market in executives.

Table 1**Managers' Profile**

| | Germany | Austria |
|------------------------------------|---------------------|---------|
| | percentage of firms | |
| age below 50 | 24.3 | 31.6 |
| females | 2.0 | 6.9 |
| CEO is national of country | 91.1 | 92.0 |
| college degree | 88.1 | 92.9 |
| technical degree | 29.3 | 29.6 |
| CEO hired from outside the country | 30.7 | 26.7 |
| of which are nationals | 76.5 | 50.0 |

Source: Chair of International Economics, University of Munich, Firm survey of 430 German firms.

4. An International Trade Theory of Executive Pay

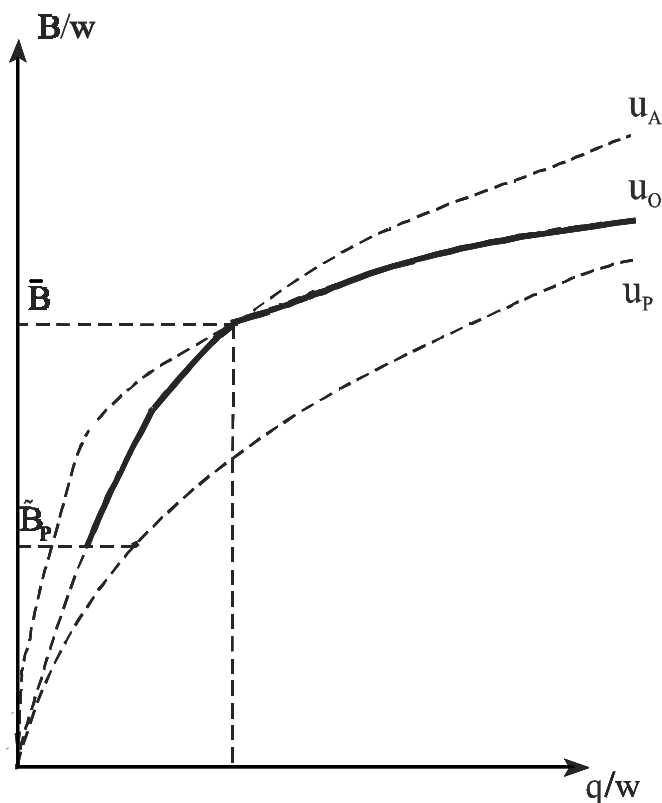
In Marin and Verdier (2004) we consider a human capital rich North and a labour rich South. Each of these economies produces the two goods Y and X with the two factors of production labor L and human capital H with wage rates w and q . We assume that good X is more skill intensive than good Y. Good Y is homogenous and produced under perfect competition. Good X is differentiated and produced under monopolistic competition. Consumers' preferences regarding the two goods Y and X are

$$U(X, Y) = X^{\alpha} Y^{1-\alpha} \quad \text{with} \quad X = \left[\int_0^n y(i)^{\gamma} di \right]^{\frac{1}{\gamma}} \quad \text{and} \quad 0 \leq \gamma \leq 1$$

In the X-sector firms can choose between three types of organisations, a P-firm in which the owner has formal power, an A-firm in which the owner delegates power to the division manager, and a single managed O-firm run by the owner herself. The profit-maximising choice of organisation is driven by the trade-off between control and initiative in the firm. To start a firm the unskilled owner has

to hire a skilled manager. The question I address now is how trade liberalisation in the North leads to a rise in manager pay. I illustrate this with the help of Figure 2.

Fig. 2 International Trade and the "War for Manager Talent"



In Figure 2 the three curves u_P^* , u_A^* and u_O^* are the free entry conditions for firms with a *P*-, *A*-, and *O*-organisation, respectively, which relate the firms' real operating profits in terms of unskilled labour B/w to the start-up costs of a firm which consists of hiring a skilled manager who is paid the wage q/w in terms of unskilled labour. The free entry curves u_P^* , u_A^* and u_O^* may be called the "war for talent" curves. They are upward sloping in B/w because when B/w increases as a result of trade liberalisation in the North, new firms want to enter the market. However, firms can enter and run a firm only by hiring a skilled manager. Hence, market entry is constrained by the amount of managers available in the North.

Newly entering firms compete with incumbent firms for scarce manager talent and bid up the relative wage for managers. The bold line in Figure 2 gives the organisational equilibria as a function of the start-up costs of firms q/w . As the startup costs and the stakes rise, firms start to monitor more, thus potentially destroying the initiative of their managers. To empower their managers, owners delegate power to them and the 'talent firm' emerges as an equilibrium.³

5. Data

We conducted a survey among 430 German and Austrian firms to collect information on the CEO's profile and the firms' human resource policies. The selection of firms were guided by the availability of data on CEO compensation. We gathered information on seniority in office, citizenship, education, sex and age of the top CEO as well as information on firms' human resource policies, such as whether the firm has an ongoing recruitment policy, whether human resources is represented on the board of management as well as whether the firm actively searches for talent by participating in talent fairs. The German data on CEO compensation are from Kienbaum Management Consultants which consists of a sample of 1500 German corporations. In addition we have collected executive compensation data for Austria via the internet. CEO compensation includes fixed salary, bonuses, short- and long-term bonus payments including stock options. The compensation data are average compensation per board member. We then merged the survey data and the CEO wage data with previous survey data of 660 German and Austrian global corporations described in Marin (2006) and Marin and Verdier (2008). After merging these data sets 130 firms (100 German and 30 Austrian firms) for the year 1999 and 2000 remain for which information on executive compensation as well as on other firm characteristics are available. A description of the list of variables used in this paper is given in Table 2.

³For more details on how the factor endowment of a country affects the mode of organisation firms choose, see Marin and Verdier 2004.

Table 2 **Data Description**

| Variable | Observations | Description | Mean | Minimum | Maximum | Stand. Dev. |
|-----------------------|--------------|---|--------|---------|-----------------------|-------------|
| foreign competition | | foreign competition as perceived by firms | | | | |
| very many competitors | 599 | dummy variable equal to 1 and 0 otherwise when firm does not enter the market | | | D=1, 47 observations | |
| many competitors | 599 | dummy variable equal to 1 and 0 otherwise when firm faces many foreign competitors | | | D=1, 440 observations | |
| few or no competitors | 599 | dummy variable equal to 1 and 0 otherwise when firm faces few or no foreign competitors | | | D=1, 112 observations | |
| CEO pay | 107 | CEO compensation per board member in EUR. It is the total compensation of executive board divided by the number of board members. It includes fixed salary, short- and long-term bonus payments, and stock options. | 650042 | 17767 | 4842604 | 703493 |
| Germany | 83 | | 650126 | 17767 | 4842604 | 769979 |
| Austria | 24 | | 649751 | 194575 | 1823600 | 408839 |
| manager age | 319 | age of the CEO in years | 54.2 | 37 | 73 | 6.5 |
| manager sex | 377 | dummy variable equal to 1 if manager is female | | | D=1, 9 observations | |
| citizenship | | dummy variable equal to 1 if manager has | | | | |
| German citizenship | 336 | | | | D=1, 306 observations | |
| Austrian citizenship | 25 | | | | D=1, 23 observations | |
| manager education | | dummy variable equal to 1 if manager has | | | | |
| technical degree | 324 | | | | D=1, 95 observations | |
| college degree | 348 | | | | D=1, 308 observations | |

Table 2 **Data Description continued**

| Variable | Observations | Description | Mean | Minimum | Maximum | Stand. Dev. |
|--------------------------------|--------------|---|------|-------------------------|---------|-------------|
| CEO hired from outside country | 295 | dummy variable equal to 1 if CEO hired from outside Germany or Austria | | D=1, 90 observations | | |
| talentfair ratio | 638 | number of talentfairs the firm actively participates in to search for students graduating from universities. The number of talentfairs the firm visits is normalised by dividing it by the 8 largest German (2 largest Austrian) talentfairs taking place in th | 0.03 | 0 | 1 | 0.12 |
| manager in job | 354 | number of years the CEO is in office | 5.1 | 0 | 33 | 5.2 |
| export ratio | 495 | ratio of firm's export to firm's sales | 0.4 | 0 | 15 | 0.8 |
| academics / employment | 241 | ratio of the number of workers with an academic degree to the total number of workers *100 | 15.4 | 0 | 334.7 | 27.3 |
| employment | 620 | firm's number of workers. | 3564 | 1 | 233000 | 16422 |
| # affiliates | 652 | firm's number of subsidiaries in Eastern Europe | 3.3 | 1 | 41 | 3.8 |
| price-cost margin | 296 | firm's cash flow divided by firm's sales. | 12.9 | -51.2 | 1497.1 | 94.4 |
| cashflow/capital | 309 | firm's cash flow to physical capital stock. | 5.6 | -133.1 | 1014.2 | 60.2 |
| country | 652 | dummy variable equal to 1 if the country is Germany and 0 if it is Austria | | D = 1, 449 observations | | |

6. Evidence

The theory generates two predictions. First, an increase in international trade in the North (given in Figure 2 by a rise in profits B/w) is expected to trigger a competition for managers - a 'war for talent'- through the entry of foreign firms as described by the free entry curves u_P^* , u_A^* and u_0^* in Figure 2. I proxy the 'war for talent' by the efforts firms make to attract and search for talent. Second, international competition is expected to lead to a rise in manager pay given by q/w in Figure 2 through a competition for managers. I now test each of these predictions in the following sections.

6.1. International Competition and the Search for Talent

I first examine the influence of foreign competition on the intensity with which firms engage in activities to search and attract talent. I use as the dependent variable *talentfairs* which measures the intensity of search for talent. I consider the largest talent fairs taking place each year in the respective country (8 in Germany and 2 in Austria) as possible venues for this search activity. I then calculate the intensity of search for talent by dividing the number of talentfairs firms participate in by the number of the 8(2) talent fairs taking place in the respective country. My main indicator for foreign competition is a subjective measure of the number of foreign competitors as perceived by firms. *Foreign competition* is a set of dummy variables taking the value 1 and zero otherwise when firms face very many, many, few or no foreign competitor, respectively. As the number of competitors does not always capture the intensity of competition in a market (competition can be tough among two firms) I use as an alternative measure the price cost margin (*markup*).

Table 3 presents the results. The first column estimates the basic specification controlling for firm size (*employment*), a country dummy for Germany as well as for sector fixed effects. The estimated coefficients on *foreign competition* are all positive and significant at the 1 percent level suggesting that firms faced with more competition search more for talent by visiting more talent fairs. However, an F-test rejects the null that the coefficients of *many = verymany* and of *few = verymany*, while it does not reject the null that *few = many*. This indicates that the relation is non-monotonic. When faced with very many foreign competitors firms tend to visit talent fairs less often than with many competitors. Marin and Verdier 2004 explain this non-monotonic relation in the following way. When there is not much foreign competition the start-up costs of hiring a manager are low and owners run the firm themselves. When new firms enter the market, they have to hire a manager to start a firm. Newly entering firms compete with incumbent firms for managers, driving up wages for managers and the start-up costs of firms. Firms delegate power to their managers to encourage their initiative. When competition keeps increasing, however, at some point the start-up costs of firms become so large that owners again take control and rely less on their managers to run the firm.

Also, larger firms tend to engage more in talent fairs. Column 2 examines in addition whether more skill intensive firms (*academics/employment*) are more

engaged in the search for talent. Not surprisingly, this is supported by the data. The relationship is significant at the 5 percent level. Column 3 includes the number of subsidiaries in eastern Europe of these firms (*#affiliates*) as an alternative measure for the international exposure of firms. The relationship is significant and positive at the 10 percent level.

Columns 4 and 5 include the *price cost margin* as an alternative measure of competition. Column 4 estimates the basic specification allowing for the possibility that the relation between talent fairs and competition is non-monotonic. The estimated coefficient on *price cost margin* is positive and highly significant suggesting that firms with larger profit margins (less competition) visit talent fairs more frequently. The test of non-linearity in the relation is rejected by the data. The profit margins of firms reflect domestic as well as foreign competition. To capture the effect of foreign competition, I include firms' exposure to exports in column 5. As expected, firms more exposed to export competition tend to increase their participation in talent fairs. I also find that the effect of firm size and of competition (measured by the profit margin) varies for different levels of exposure to exports. Larger firms and firms with larger price cost margins will engage less in talent fairs when more exposed to export competition. The results suggest that the search for talent is driven by trade rather than competition as such.

Table 3

Determinants of a "War for Talent"

| Dependent Variable (mean=0.03) | Participation in Talentfairs | | | | |
|----------------------------------|------------------------------|---------------------|---------------------|---------------------|---------------------|
| | (1) | (2) | (3) | (4) | (5) |
| <u>foreign competition</u> | | | | | |
| few competitors | 0.057*** [4.670] | 0.109*** [4.046] | 0.067*** [4.913] | | |
| many competitors | 0.044*** [4.427] | 0.069** [2.547] | 0.055*** [4.310] | | |
| very many competitors | 0.032*** [3.136] | 0.056** [2.093] | 0.040*** [3.365] | | |
| employment | 0.018*** [4.764] | 0.029*** [3.046] | 0.017*** [4.506] | 0.022*** [3.636] | 0.019*** [2.676] |
| # affiliates | | | 0.009* [1.895] | | |
| academics / employment | | 0.014** [2.517] | | | |
| price-cost margin | | | | 0.008** [2.086] | 0.013** [2.481] |
| price-cost margin squared | | | | 0.000 [0.206] | 0.001 [0.803] |
| export ratio | | | | | 0.116** [2.179] |
| employment * export ratio | | | | | -0.011** [1.976] |
| price-cost margin * export ratio | | | | | -0.022* [1.656] |
| country | 0.012 [1.429] | 0.005 [0.216] | 0.018* [1.901] | 0.023 [1.622] | 0.011 [0.623] |
| Industry fixed effects | yes | yes | yes | yes | yes |
| Observations | 568 | 219 | 568 | 213 | 168 |
| Adjusted R-squared | 0.364 | 0.484 | 0.366 | 0.531 | 0.601 |

* significant at 10%; ** significant at 5%; *** significant at 1%

Notes: All coefficients are marginal effects from ordinary least squares estimations. The numbers in brackets are robust t-values corrected for arbitrary variance-covariance matrix at the firm level. All continuous variables are transformed in logs. The F-test does not reject the null that the coefficients of few=many (F=0.86, p-value=0.355) and rejects the null of many=very many (F=3.51, p-value=0.061) and the null of few=very many (F=3.67, p-value=0.055)

6.2. International Competition and CEO Pay

I now turn to test whether firms change their CEO pay when faced with the threat of losing their executives to foreign competitors. To estimate the influence of foreign competition on CEO pay I use average compensation per board member as the dependent variable. I use the same subjective measure of foreign competition as before. However, since I lose many observations when the data are merged with the CEO pay data from Kienbaum, I use 'no and few foreign competitors' as the omitted category rather than 'no foreign competitor'.⁴ Table 4 presents

⁴I do not have enough observations to use the price-cost margin as an alternative measure of competition in the CEO pay estimation.

the results. The specification in column 1 estimates the sensitivity of CEO pay to foreign competition and to the firms' profitability (cashflow/physical capital stock) controlling for firm size (*employment*), a country dummy for Germany, and sector fixed effects. In addition, I include the interaction between firm size and the profit rate (*employment*cashflow/capital*) allowing performance pay to vary with firm size, as the sample includes large as well as smaller firms.

Foreign competition does not appear to influence the level of pay, while firm size as well as firm performance lead to a statistically significant increase in compensation. Depending on specification, a 10 percent rise in firm size increases CEO pay between 1.4 percent and 2.5 percent and a 10 percent rise in the profit rate increases pay in the range of 3.5 percent and 4.6 percent. The estimated coefficient on *employment*cashflow/capital* is significant and negative suggesting that the proportion of profits devoted to performance-related pay of executives appears to be larger among smaller firms.⁵

Cunat and Guadalupe 2006 emphasise in their paper the role of foreign competition for the importance of incentive related CEO pay for US firms. I control for the same effect here by interacting profits with foreign competition in column 2 to test whether the slope of performance-related pay varies for different levels of foreign competition. When foreign competition is very tough (*very many competitors*) the variable component of pay becomes somewhat more sensitive to firm performance (the relationship is significant at the 12 percent level).

Finally, in column 3 I test for whether seniority related CEO pay varies for different levels of foreign competition. Surprisingly, I find that the number of years in office does not appear to increase executive pay. The coefficient on *manager in job* is negative and significant at the 5 percent level. Furthermore, I find that firms faced with more foreign competitors indeed appear to increase the compensation of their senior executives. The effect is significant and sizeable. Apparently, firms faced with the threat of losing their experienced executives to their competitors raise wages to prevent them from leaving the firm. Note that the inclusion of *manager in job* and its interaction with *foreign competition* improves the overall statistical properties of the regression. In column 4 I revisit the question of whether

⁵The more prevalent use of performance pay among smaller firms is found in several studies and is consistent with optimal contracting, see Edmans and Gabaix (2008).

an increase in foreign competition leads firms to switch more to performance-related pay. The coefficient on *very many competitors*cashflow/capital* indeed now becomes significant and substantially increases in size.

7. Conclusion

In this paper I find support for the hypothesis that globalisation induces competition for managers, resulting in a rise of CEO pay as suggested by Marin and Verdier 2004. I find that more foreign competition leads firms to increase their participation in talent fairs to search and attract talent. Furthermore, I find that firms increase CEO pay when faced with the threat of losing their senior executives to foreign competitors while seniority in office itself does not lead to higher pay. I interpret these results as evidence for a 'war for talent'.

Table 4 **Determinants of CEO Pay**

| Dependent Variable (mean=13.07) | average CEO compensation per board member | | | |
|---|---|----------------------|----------------------|----------------------|
| | (1) | (2) | (3) | (4) |
| <u>foreign competition</u> | | | | |
| many competitors | 0.12 [0.485] | 0.07 [0.203] | -0.388 [0.883] | |
| very many competitors | 0.001 [0.002] | 0.378 [0.938] | -0.336 [0.668] | |
| employment | 0.138*** [3.915] | 0.141*** [3.934] | 0.249*** [4.105] | 0.244*** [3.894] |
| cashflow/capital | 0.346*** [3.011] | 0.372** [2.468] | 0.456*** [3.341] | 0.358*** [2.805] |
| employment*cashflow/capital | -0.041*** [3.147] | -0.042*** [2.862] | -0.040* [1.794] | -0.034 [1.583] |
| <u>foreign competition*cashflow/capital</u> | | | | |
| many competitors | | -0.021 [0.377] | | 0.05 [0.543] |
| very many competitors | | 0.144 [1.658] | | 0.219** [2.208] |
| manager in job | | | -0.459** [2.190] | -0.402** [2.175] |
| <u>foreign competition*manager in job</u> | | | | |
| many competitors | | | 0.532** [2.223] | 0.408** [2.232] |
| very many competitors | | | 0.595** [2.485] | 0.678** [2.493] |
| country | -0.385** [2.057] | -0.405* [2.018] | -0.720*** [3.433] | -0.774*** [3.637] |
| Industry fixed effects | yes | yes | yes | yes |
| Observations | 58 | 58 | 42 | 42 |
| Adjusted R-squared | 0.308 | 0.286 | 0.37 | 0.358 |

* significant at 10%; ** significant at 5%; *** significant at 1%

Notes: All coefficients are marginal effects from ordinary least squares estimations. Robust t-values corrected for arbitrary variance-covariance matrix at the firm level in brackets. All continuous variables are transformed in logs.

References

- [1] Lucian A. Bebchuk and Jesse M. Fried. 2004. *Pay without Performance: The Unfulfilled Promise of Executive Compensation*. Cambridge: Harvard University Press
- [2] Vincente Cunat and Maria Guadalupe. 2006. *Globalization and the Provision of Incentives Inside the Firm: The Effect of Foreign Competition*. University of Columbia. Mimeo.
- [3] Carola Frydman and Raven E. Saks. 2007 *Executive Compensation: A New View from a Long-Term Perspective, 1936-2005*. NBER Working Paper No 14145.
- [4] Xavier Gabaix and Augustin Landier. 2008. *Why has CEO Pay Increased so Much?* *Quarterly Journal of Economics*, Vol 123/1, p 49-100.
- [5] Edmans, Alex and Xavier Gabaix. 2008. *Is CEO pay really inefficient? A survey of new optimal contracting theories*. Mimeo.
- [6] Elhanan Helpman. 2006. *Trade, FDI, and the Organization of Firms*. *Journal of Economic Literature* 44(3), p. 589-630.
- [7] Elhanan Helpman, Dalia Marin, Thierry Verdier (Eds.). 2008. *The Organization of Firms in a Global Economy*. Cambridge: Harvard University Press.
- [8] Michael C. Jensen, Kevin J. Murphy and Eric G. Wruck. 2004. *Remuneration: Where we've been, how we got to here, what are the problems, and how to fix them*. European Corporate Governance Institute. ECGI Working Paper Series in Finance No 44/2004, July.
- [9] Dalia Marin. 2006. *A New International Division of Labour in Europe: Outsourcing and Offshoring to Eastern Europe*, *Journal of the European Economic Association*, April-May(4), 2-3, p.612-622.
- [10] Dalia Marin. 2008. *The New Corporation in Europe*. Bruegel Policy Brief. Issue 2008/07. Brussels, September 2008.
- [11] Dalia Marin and Thierry Verdier. 2003. *Globalization and the New Enterprise*, *Journal of the European Economic Association*, April-May(1), 2-3, p.337-344.

- [12] Dalia Marin and Thierry Verdier. 2004. Globalization and the Empowerment of Talent, Sonderforschungsbereich Governance and Efficiency of Economic Systems GESY, SFB/TR15 Discussion Paper No 1.
- [13] Dalia Marin and Thierry Verdier. 2008. Corporate Hierarchies and the Size of Nations: Theory and Evidence, CEPR Discussion Papers Series No 6734, London.
- [14] Barbara Spencer. 2005. International Outsourcing and Incomplete Contracts, Canadian Journal of Economics 38, p.1107-1135.