

The „New Corporation“ in Europe¹

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Abstract

In the last 15 years the nature of the corporation has been changing. These organizational changes involve a change in management style to more decentralized less hierarchical decision making, a stronger focus on “core competences”, the emergence of talent as the “new stakeholder” in the firm, and the organization of the corporation in an international value chain in which different stages of production are taking place in different countries. At the same time the firm boundaries have been shifting leading to outsourcing of firm activities on the one hand and merger activities on the other. This paper explores the role of international trade and foreign direct investment and the opening up to the former communist countries as the driving forces behind the emergence of the “new corporation” in Europe. Furthermore, I examine the challenges these changes in corporate organization may pose in particular in the areas of trade policy and human resource policies.

1. Introduction

In the last 15 years the world economy has gone through a dramatic change. The reorganization of the world economy is characterised by an increase in world trade in input goods, a rise in intra-firm trade - international trade that takes place inside the multinational corporation, and by an explosion of foreign direct investment. These features are an expression of the fundamental changes that are taking place in corporations. These changes involve the decentralization of decision making in corporations, the breakup of conglomerates, and the emergence of talent as the “new stakeholder” in the firm as well as the organization of the corporation in an international value chain in which different stages of production are taking place in different countries. At the same time, the firm boundaries are shifting with offshoring and outsourcing of firm activities on the one hand and merger activity on the other. The international organization of production is also discussed in the literature under ‘slicing the value chain’, ‘vertical specialization’ or ‘trade in tasks’. According to an estimate such vertical specialization accounts for a third of the increase in world trade since 1970 (see Hummels et al 2001) and intra-firm imports account between 22 to 69 percent of total imports between old and new Europe. World investment outflows increased 4,5 times between 1990 and 2005 from 202 billion US\$ to 916 billion US\$ (see World Investment Report 2006, UNCTAD).²

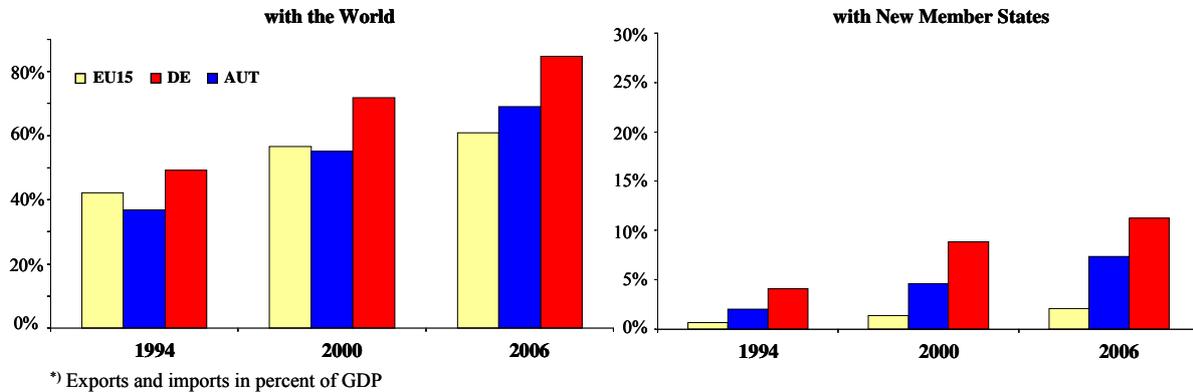
Why are firms changing their organization? Why is human capital becoming the “new stakeholder” in firms? This paper explores the role of international trade and foreign direct investment and the opening up to the former communist countries as the driving forces behind the emergence of the “new corporation” in Europe. Section 2 documents that Austria and Germany are at the forefront of European firms and hence the transformation of European corporations in response to trade and investment integration can be best studied by looking at these two countries. Section 3 describes how European firms have reorganized their international value chain after the collapse of communism. Section 4 explores how European firms have introduced corporate changes in response to more international competition and trade. Finally, section 5 asks why it matters how firms organize and examines the challenges these organizational changes pose for policy makers, in particular in the areas of trade policy and human resource policies.

² For the new features of globalization see Krugman (1995), Hummels, Ishii and Yi (2001), Feenstra (1998), Grossman and Rossi-Hansberg (2008), for the new corporation see The Economist 2006

2. Why Austria and Germany?

I document these changes in corporate organization among European firms with detailed firm level data of 660 global corporations in Austria (200 firms) and in Germany (460 firms). The sample consists of 2200 investment projects of German and Austrian investors in Eastern Europe during the period 1990 to 2001. In terms of value the sample of German investments represents 80 percent of German outgoing foreign direct investment to Eastern Europe and the sample of Austrian investments are 100 percent of Austrian outgoing foreign investment to Eastern Europe.

Corporations in Austria and Germany are at the forefront of European firms for several reasons (see Figure 1). First, Austria and Germany are among the European countries most integrated into the world economy. Their trade exposure (exports and imports in percent of GDP) in 2006 is 85 and 69 percent, respectively compared to Europe as a whole of 61 percent. Second, in the last 15 years, these two countries were among those most rapidly integrating into the world economy. In Germany the openness ratio increased from 37 percent in 1994 to 69 percent in 2006, while Austria's trade share increased from 49 percent to 85 percent in the same period. Third, as direct neighbours of Eastern Europe firms in these two countries have been most affected by the opening up to the former communist countries. Exports and imports to the New Member States in percent of GDP increased from 2 percent to 7.4 percent in Germany and from 4.1 percent to 11.3 percent in Austria during 1994 and 2006. Furthermore, in 2000-2001 Eastern Europe (including Russia and Ukraine) accounted for 64 percent of Austrian foreign direct investment. German investment-led integration with Eastern Europe started later but nevertheless accounted for 32 percent of German foreign direct investment in 2003-2005 (see Table 1). Hence, how trade and investment integration are transforming European corporations can be best studied by looking at these two countries.

Figure 1: Trade Openness: Austria, Germany, EU15*)**Table 1: Foreign Direct Investment to Eastern Europe**

Outgoing FDI to Eastern Europe ¹⁾		
	Austria	Germany
	in percent	
1992-1994	37.5	8.4
2000-2002	64.4	6.4
2004-2006 ²⁾	60.7	32.2

Source: Österreichische Nationalbank, Deutsche Bundesbank

¹⁾ in percent of total outgoing foreign direct investment (FDI) flows to Eastern Europe

²⁾ calculations for Germany from 2003-2005

3. The International Organization of Production

In this section I turn to how the fall of communism and the opening of markets to Eastern Europe including Russia and Ukraine have provided European firms with the opportunity to organize themselves in a global value chain. In an international value chain firms separate geographically different production stages across the world economy to exploit differences in

production costs. With Eastern Enlargement European firms have reorganized the international value chain and have offshored production to Eastern Europe.

3.1 Why Offshoring?

European firms decide over two things. First, how much control do they want over the firm activity? Should they produce inside or outside of firms' boundaries? Second, where should they locate production, in "Old Europe" or in "New Europe"? These two decisions lead to the phenomenon of offshoring. Offshoring is a relocation of activity to Eastern Europe. The activity can be offshored inside the firm (foreign direct investment) or outside the firm to an independent input supplier located in Eastern Europe (outsourcing).³

The benefit of organizing an activity inside the firm is that headquarters has more control over the activity and stronger incentives to provide headquarter services like R&D. The costs of hierarchies, however, are the loss of the initiative of managers and workers. The benefit of organizing an activity outside the firm by offshoring to an independent input supplier is that it promotes the incentives and the initiative of the input supplier. However, it involves the cost of hold-up due to incomplete contracting, e.g. it creates a dependency of the parties that each may exploit. The European firm chooses to offshore inside of firm boundaries and to vertically integrate its supplier in Eastern Europe when the net gain from organizing the activity inside the firm outweighs the costs, i.e. when headquarter services are more important than the incentives of the input supplier for profits generated by the relationship and the headquarters firm in Europe needs to have control to do so. The firm chooses to offshore outside of firm boundaries to an independent input supplier (outsourcing) when the reverse is the case. Furthermore, firms choose the location with lowest production costs, including wages, transport costs and the cost of contracting.

3.2 Going East - How Much can be saved in terms of Labour Costs?

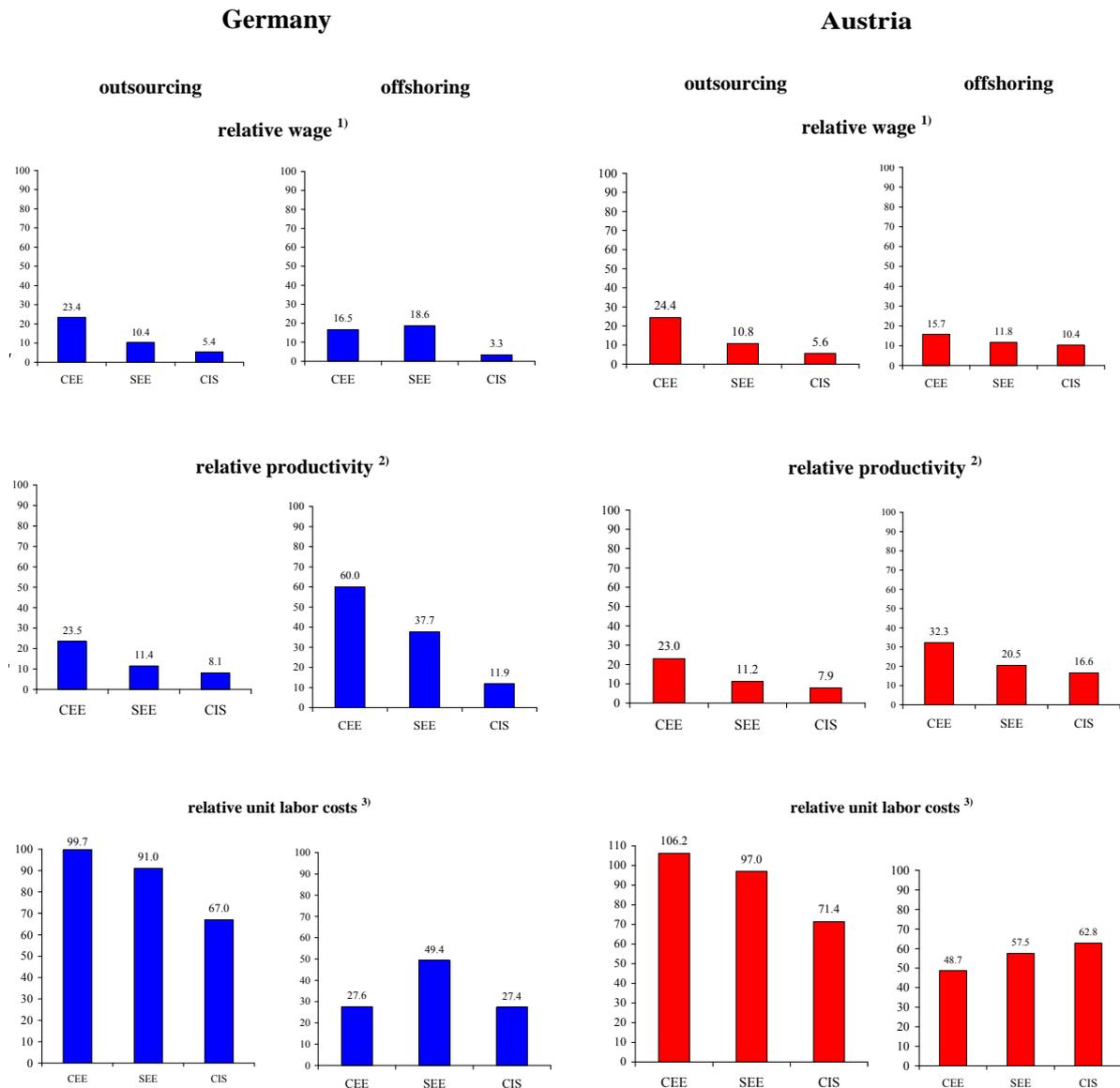
In Figure 2 I assess whether moving to Eastern Europe helps to cut costs for German and Austrian firms. I compare relative wages, relative productivity, and relative unit labour costs between Austria and Germany on the one hand and the New Member States of the first Round (CEE), the New Member States of the Second Round including the former Yugoslavia

³ See Antras and Helpman 2004, Marin 2006, Nunn and Trefler 2008.

(SEE), and the countries of the former Soviet Union (CIS) on the other. I consider the labour costs savings under two modes of organizations: offshoring of firm activities to an affiliate in Eastern Europe and outsourcing of firm activities to independent input suppliers in Eastern Europe. It appears from the left panel of Figure 2 that wages in CEE are 23.4 percent of those in Germany, while CEE's productivity has reached about 23.5 percent of Germany's productivity level. As a result, labour unit costs in CEE are the same as in Germany. Thus, in 1997-2000 German firms did not save in labour costs when purchasing inputs from suppliers of this region. However, Figure 2 reveals that German multinationals can reduce labour costs substantially by opening up a subsidiary in CEE. German firms bring organizational capital as well as new technology which combined with Eastern labour has boosted productivity in affiliates in CEE. German affiliates in CEE pay 16.5 percent of German parents' wages but are increasing their productivity to 60 percent of parent firms' productivity level. Therefore, their unit labour costs are 27.6 percent of parent firms' costs in Germany allowing a cost reduction of 72 percent.

In SEE both wages and productivity are low and hence unit labour costs in SEE are 91 percent of Germany's unit labour costs. These costs can be reduced to 49.4 percent of German parent firms when these firms offshore production to SEE inside of multinationals' boundaries and produce locally. In the CIS German firms can reduce the unit labour costs to 67 percent of German cost with outsourcing and to 27.4 percent with offshoring. The right panel of Figure 2 gives the same information for Austria with a similar pattern of costs.

Figure 2: Comparative Advantage with Eastern Europe



Source: The Vienna Institute for International Economic Studies (wiiw); Statistisches Bundesamt; Statistik Austria; Chair of International Economics, University of Munich, firm survey of 2200 investment projects in Eastern Europe by 660 firms

¹⁾ outsourcing: average wage (wage bill per employee) in Eastern Europe relative to Germany and Austria, respectively, in 2001

offshoring: average wage (wage bill per employee) of affiliates in Eastern Europe relative to parent firms in Germany and Austria, respectively; for Austria in 1999-2000 and for Germany in 1997-2000

²⁾ outsourcing: GDP per employment in Eastern Europe relative to Germany and Austria, respectively, in 2001

offshoring: sales per employee of affiliates in Eastern Europe relative to parent firms in Germany and Austria, respectively; for Austria in 1999-2000, and for Germany in 1997-2000

³⁾ outsourcing: wage bill divided by GDP in Eastern Europe relative to Germany and Austria, respectively, in 2001

offshoring: wage bill divided by sales of affiliates in Eastern Europe relative to parent firms in Germany and Austria, respectively; for Austria in 1999-2000; for Germany in 1997-2000

CEE includes Estonia, Latvia, Lithuania, Poland, Slovakia, Slovenia, Czech Republic, Hungary; SEE includes Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Republic of Macedonia, Romania; CIS includes Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Moldavia, Russia, Tadjikistan, Turkmenistan, Ukraine, Uzbekistan, Belarus

3.3 How Important is Offshoring to Eastern Europe?

One way to answer this question is to look at intra-firm trade - international trade that takes place inside the multinational corporation between parent firms in Europe and their affiliates in Eastern Europe. Table 2 shows estimates of the share of intra-firm trade in total trade with Eastern Europe between 1997 and 2000. Intra-firm trade with Eastern Europe is a dominant phenomenon in Austria's trade with Eastern Europe, while less so in Germany. 68.5 percent of Austria's imports from Eastern Europe are goods from Austrian affiliates in Eastern Europe. In Germany 21.6 percent of imports from Eastern Europe are trade within the multinational corporation. However, there is considerable variation across individual countries with a share of 65 percent and 40 percent of Germany's imports from Slovakia and Hungary, respectively as intra-firm. In sum, the pattern of intra-firm trade that has emerged between some of the old member countries with Eastern Europe clearly suggests that offshoring has become an important phenomenon among European firms.

Table 2: Intrafirm Trade as Percentage of Total Trade with Eastern Europe (1997-2001)

	Austria ¹⁾		Germany ²⁾	
	share of intra-firm exports in total exports to Eastern Europe ³⁾	share of intra-firm imports in total imports from Eastern Europe ⁴⁾	share of intra-firm exports in total exports to Eastern Europe ³⁾	share of intra-firm imports in total imports from Eastern Europe ⁴⁾
in percent				
CEE				
Baltic states	13.95	n.a.	5.19	14.41
Czech Republic	19.67	42.17	6.83	15.64
Hungary	20.03	136,47 ⁵⁾	11.95	40.46
Poland	41.08	64.91	17.77	15.34
Slovak Republic	26.11	54.71	34.01	64.98
Slovenia	18.70	48.36	3.32	9.38
SEE				
Bulgaria	3.36	11.32	2.30	4.20
Croatia	16.08	40.40	1.78	1.95
Romania	22.72	57.46	3.86	7.17
CIS				
Russia	34.57	26.70	4.94	1.67
Ukraine	12.00	21.52	4.51	2.44
total	22.40	68.52	11.67	21.56

Source: Chair of International Economics, University of Munich, firm survey of 2200 investment projects in Eastern Europe by 660 firms, Statistik Austria, Statistisches Bundesamt

¹⁾ For Austria total trade with Eastern Europe is the average of 1999-2000, since the numbers of intrafirm exports and imports from the firm survey are from these years. The survey information on intrafirm exports and imports varied greatly for individual countries in Eastern Europe due to missing cases. In order to make the intrafirm trade numbers comparable with total trade with Eastern Europe, we artificially reduced total exports and imports by the number of missing cases of intra-firm exports and imports for individual Eastern European countries. Exports and imports from Eastern Europe, respectively, are reduced by a factor of (0.17, 0.10) for the Czech Republic, by (0.51, 0.39) for Hungary, by (0.26, 0.24) for Poland, by (0.58, 0.30) for the Slovak Republic, by (0.55, 0.20) for Slovenia, by (0.48, 0.47) for Bulgaria, by (0.38, 0.11) for Croatia, by (0.62, 0.47) for Romania, and by (0.74, 0.62) for Russia. For the Baltic States and for Ukraine total trade is not reduced because of no missing cases.

²⁾ For Germany total trade with Eastern Europe is the average of 1996-2000, since the numbers of intrafirm exports and imports from the firm survey are from these years. The survey information on intrafirm exports and imports varied greatly for individual countries in Eastern Europe due to missing cases. In order to make the intrafirm trade numbers comparable with total trade with Eastern Europe, we artificially reduced total exports and imports by the number of missing cases of intra-firm exports and imports for individual Eastern European countries. Exports and imports from Eastern Europe, respectively, are reduced by a factor of (0.63, 0.50) for the Baltic States, by (0.13, 0.00) for the Czech Republic, by (0.60, 0.40) for Hungary, by (0.87, 0.52) for Poland, by (0.10, 0.00) for the Slovak Republic, by (0.57, 0.35) for Romania, by (0.64, 0.34) for Russia, and by (0.75, 0.00) for Ukraine. For Slovenia, Bulgaria, and Croatia total trade is not reduced because of no missing cases.

³⁾ intermediate inputs delivered by parent firms to Eastern European affiliates

⁴⁾ intermediate or final goods delivered by Eastern European affiliates to parent firms for marketing or further reprocessing

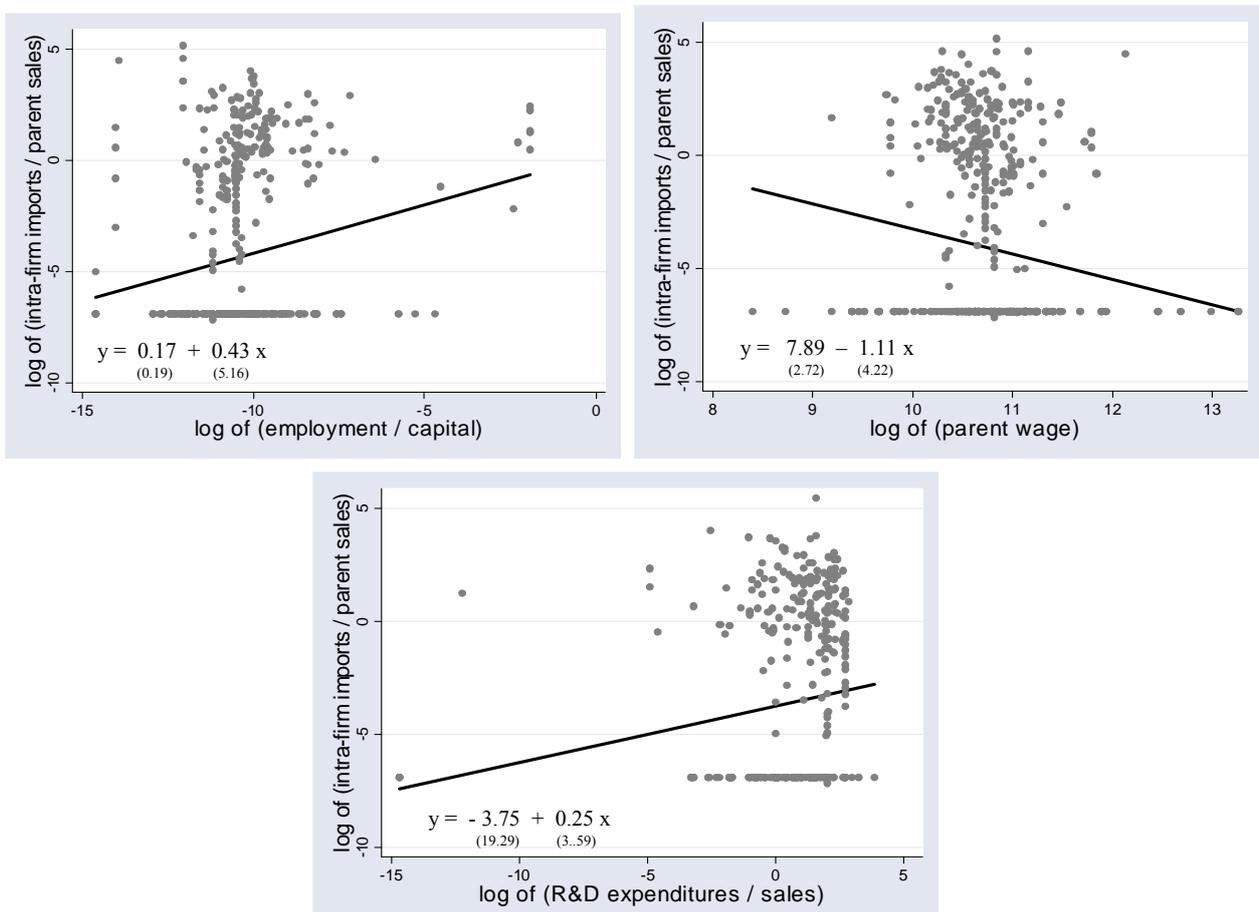
⁵⁾ Austria's share of of intra-firm imports in total imports from Hungary exceeds 100% due to one particular large investment for which we could not disentangle goods delivered to the parent firm in Austria from those goods delivered to the parent firm in Singapore.

3.4 Who are the Offshorers?

Offshoring Firms

In section 3.2 I showed that offshoring allows firms to cut costs considerably by relocating activities to Eastern Europe. Is offshoring then primarily undertaken by firms with a large share of labour in production? The data in Figure 3 indeed show that the more labour intensive firms and the firms with lower wages in Germany are offshoring production to Eastern Europe. Offshoring is measured here by the share of inputs imported by German multinationals from their subsidiaries in Eastern Europe in percent of German parent firms' sales. But the picture is more complex. As predicted by the theory (Antras and Helpman 2004), offshoring tends also to be undertaken by R&D intensive firms in Germany. Research intensive multinationals need to be incentivized to provide R&D services and seek control in their activity in Eastern Europe to do so.

Figure 3: Offshoring Firms



Offshoring Sectors

Table 3 examines which sectors in Austria and Germany are engaged in offshoring to Eastern Europe. Almost 60 percent of total German investment to Eastern Europe is undertaken by the manufacturing sector of which machinery and transport is the most important sector. Austrian investment to Eastern Europe is predominantly involved in services (more than 70 percent of total investment to Eastern Europe) in particular in banking and financial intermediation. The sectoral pattern can be illustrated by the importance of one single multinational firm in each of these countries. Both Siemens, a manufacturing firm, and Bank Austria each account for about 10 percent of Germany's and Austria's investment to Eastern Europe.

Table 3: Multinationals' Investments to Eastern Europe by Sector

	Austrian Multinationals	German Multinationals
	in percent ¹⁾	in percent ¹⁾
manufacturing ³⁾	28.34	56.45
0 - 1 food and beverages	1.91	4.89
2 - 4 raw materials	1.39	6.24
5 chemicals and related products	7.45	3.64
6 + 8 manufactured goods	15.15	11.95
7 machinery and transport	2.45	29.74
services ⁴⁾	71.66	43.55
construction	5.87	0.77
wholesale and retail trade	9.37	7.93
transport, storage and communications	5.12	21.71
financial intermediation	32.33	10.94
real estate, renting and business activities	13.24	1.11
all sectors	100.00	100.00

Source: Chair of International Economics, University of Munich, firm survey of 2200 investment projects in Eastern Europe by 660 firms

¹⁾ of total foreign direct investments in Eastern European.

²⁾ of total foreign direct investment in respective sector. Outsourcing is defined as parent firms export intermediate goods as well as import intermediate or final goods from their affiliates in Eastern Europe.

³⁾ For manufacturing the Standard International Trade Classification (SITC) is used as sector classification.

⁴⁾ For services the International Standard Industrial Classification (ISIC) is used as sector classification. The service sub-sectors do not add up to total services, because the most important service sectors are shown only.

3.5 What Do they Offshore?

I show the pattern of specialization of European firms' international value chain in Table 4. The table gives the share of personnel engaged in R&D or engineering activities in percent of firms' total employment in parent firms in Austria and Germany, respectively and their affiliates in Eastern Europe. I focus first on German firms given in the last three columns of Table 4. The share of workers engaged in R&D and engineering in parent firms in Germany range between 3.81 percent (Ukraine) and 20.97 percent (Romania) with an average R&D personnel ratio for all German parent firms of 13.6 percent. The R&D personnel ratios of affiliates in Eastern Europe range between 3.97 percent (Slovakia) and 28.5 percent (Croatia) with an average R&D personnel share of all affiliates in Eastern Europe of 15.6 percent. Hence, German affiliates in Eastern Europe are on average more R&D intensive (1.12 times as R&D intensive) compared to their parent firms in Germany. There is, however, a wide variation across individual countries. German affiliates in Russia are 2.9 times as R&D intensive compared to their German parent firms, affiliates in Croatia 1.8 times as R&D intensive, and affiliates in the Czech Republic 1.7 times as R&D intensive. Hence, German firms offshore the more R&D intensive part of the value chain to these countries. Besides the affiliates in Russia, none of the Austrian affiliates in Eastern Europe have higher R&D personnel ratios compared to their parent firms in Austria.⁴

⁴ Marin 2004 argues that the much larger R&D personnel ratios in Austrian parent firms compared to German parent firms can be explained by government subsidies to R&D in Austria. For the labour market effects of the pattern of offshoring and outsourcing, see Lorentowicz, Marin, Raubold 2008.

Table 4: R&D Offshoring

	Austria			Germany		
	R&D Personnel					
	Parents' R&D Personnel Ratio ¹⁾	Affiliates R&D Personnel Ratio ²⁾	Affiliate to Parent R&D Personnel Ratio ³⁾	Parents' R&D Personnel Ratio ⁴⁾	Affiliates R&D Personnel Ratio ⁵⁾	Affiliate to Parent R&D Personnel Ratio ⁶⁾
CEE	27.21	12.65	0.47	12.98	11.10	0.85
Baltic states	22.10	3.78	0.17	10.81	5.24	0.48
Czech Republic	32.89	12.14	0.37	10.75	17.88	1.66
Hungary	21.01	20.40	0.97	15.16	9.85	0.65
Poland	30.98	5.45	0.18	13.61	6.48	0.48
Slovak Republic	26.59	12.43	0.47	9.93	3.97	0.40
Slovenia	24.13	11.41	0.47	16.13	17.07	1.06
SEE	29.35	15.39	0.52	15.51	10.10	0.65
Bulgaria	25.14	6.68	0.27	11.28	8.53	0.76
Croatia	34.06	29.72	0.87	16.00	28.50	1.78
Romania	25.66	10.86	0.42	20.97	6.91	0.33
CIS	42.41	10.40	0.25	13.43	25.02	1.86
Russia	45.33	45.77	1.01	9.65	27.82	2.88
Ukraine	27.68	3.92	0.14	3.81	5.17	1.36
Total	28.33	12.78	0.45	13.59	15.28	1.12

Source: Chair of International Economics, University of Munich, firm survey of 2200 Austrian and German investment projects in Eastern Europe by 660 firms

¹⁾ Number of employees engaged in R&D or engineering in percent of parents' employment. The personnel ratios have been computed by adding up all employees engaged in R&D or engineering in Austrian parent firms in a particular Eastern European country divided by total parents' employment.

²⁾ Number of employees engaged in R&D or engineering in percent of affiliates' employment. The R&D personnel ratios have been computed by adding up all employees engaged in R&D or engineering in affiliates in a particular Eastern European country divided by total affiliates' employment in that particular Eastern European country.

³⁾ Affiliates' R&D personnel ratio relative to parents' R&D personnel ratio. The parent R&D personnel ratios have been computed by adding up all employees engaged in R&D or engineering in Austrian parent firms divided by total parent employment in Austria. The affiliate to parent R&D ratios in column (2) are calculated relative to the parent R&D personnel ratios of those Austrian parent firms only that have invested in the particular Eastern European country. Therefore, the R&D personnel ratio of 12.14 of the Czech Republic, for example, divided by the R&D personnel ratio of all Austrian parent firms of 28.33 does not result in 0.37.

⁴⁾ Number of employees engaged in R&D or engineering in percent of parents' employment. The personnel ratios have been computed by adding up all employees engaged in R&D or engineering in German parent firms in a particular Eastern European country divided by total parents' employment.

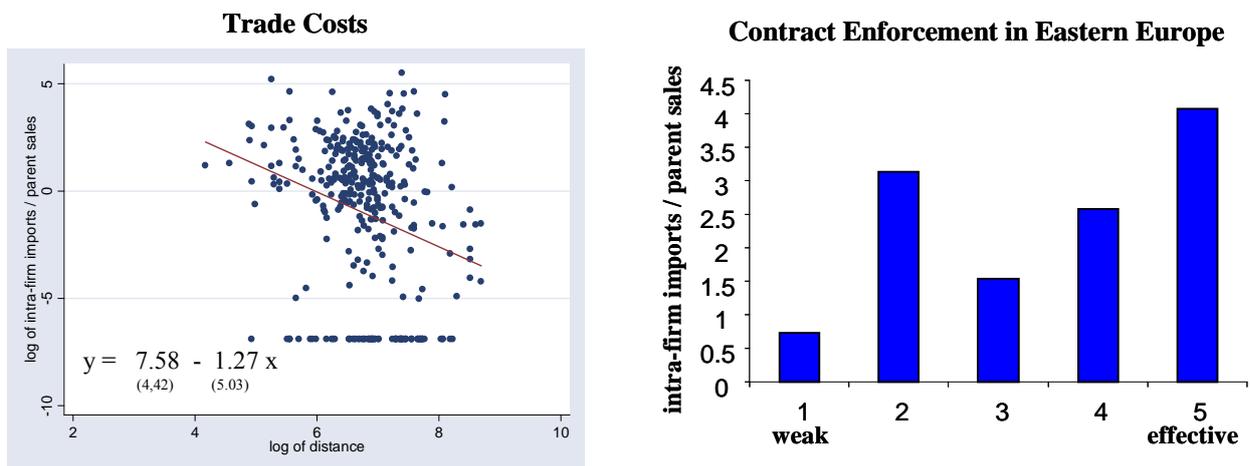
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⁶⁾ Affiliates' R&D personnel ratio relative to parents' R&D personnel ratio. The parent R&D personnel ratios have been computed by adding up all employees engaged in R&D or engineering in German parent firms divided by total parent employment in Germany. The affiliate to parent R&D ratios in column (2) are computed relative to the parent R&D personnel ratios of those German parent firms only that have invested in the particular Eastern European country. Therefore, the R&D personnel ratio of 17.88 of the Czech Republic, for example, divided by the R&D personnel ratio of all German parent firms of 13.59 does not result in 1.66.

3.6 The Drivers of Offshoring

We have just seen that offshoring has become a dominant phenomenon in some of the European countries. But what has contributed to its rise? The main drivers of offshoring are shown in Figure 4. Offshoring to Eastern Europe has been driven by a fall in transport and trade costs (measured by distance) as a result of the fall of the Berlin wall, and an improvement in contract enforcement in Eastern Europe. A fall in trade and transport costs reduces the costs of a global organization of production providing incentives for firms to go global. An improvement in the contract environment in Eastern Europe makes offshoring inside of firm boundaries attractive and with it the share of intra-firm imports increases. As the inputs of suppliers in Eastern Europe can rely more on contracts, the relationship has to give relatively more incentives to European headquarters to supply R&D services which is achieved by vertically integrating with input suppliers in Eastern Europe.⁵ In sum, offshoring by European firms is driven by falling trade costs, to save labour costs and by improved contract enforcement in Eastern Europe.

Figure 4: The Drivers



⁵ See Antras and Helpman 2008.

4. International Trade as a Driver of Corporate Change

So far I have looked at how the opening of markets to the former communist countries has provided European firms with the opportunity to organize themselves in a global value chain. I turn now to how international trade and international competition are affecting the internal organisation of firms.

Corporate transformation to more decentralised hierarchies among Austrian and German firms can be seen in Figures 5 and 6. Figure 5 shows that 26 percent of Austrian and 16 percent of German corporations operate with a new form of organisation of less than two years' duration. Moreover, 20 percent of Austrian and 25 percent of German firms exhibit decision-making which is decentralised to the divisional level of the corporation. 41 percent of Austrian and 50 percent of German corporations report sharing decision-making between CEO level and middle managers at the divisional level (level of decentralisation of 2.51 - 3.5 in Figure 6).

Figure 5: Organizational Change

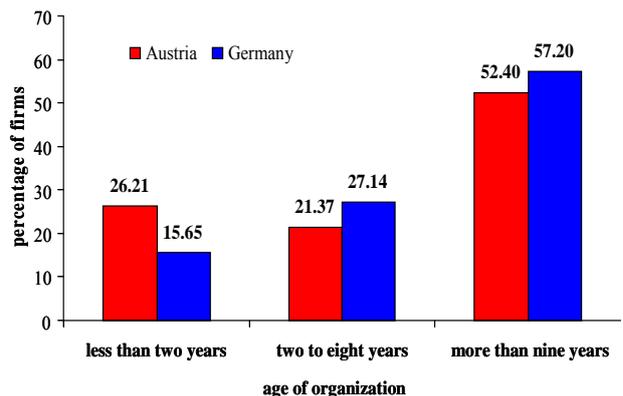
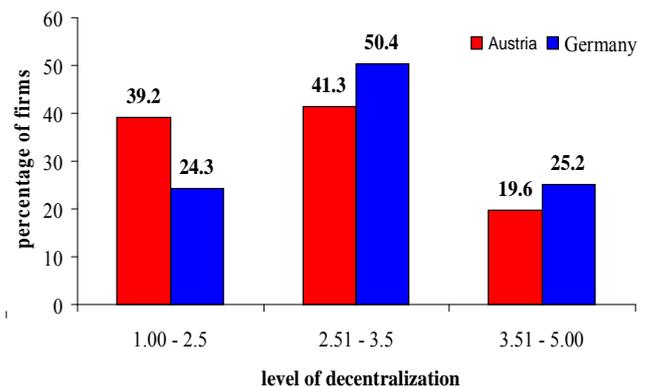


Figure 6: Level of Decisions Making in Corporations



4.1 Why change the organization?

There are three candidate explanations. First, firms introduce less hierarchical organizations because hierarchies are inflexible and inefficient. Hierarchies are bad because decisions have to be approved by several people before they can pass. Second, hierarchies leave little room for initiative to individual workers leading to inefficient production. The lack of initiative of the firm's workforce has a particular strong negative impact on the firm's performance when it moves into new activity with less experience. The trend to workers empowerment is then a way to tackle these inefficiencies. Third, the firm's growth via diversification might have resulted in greater conflict of interest between different divisions of the corporation. Division managers engage in influence activities for more resources rather than in producing. Financial markets have been intolerant towards conglomerates and forced firms to sell pieces that do not belong to their "core activity". Those firms which have not obeyed have been charged with a "conglomerate discount". The trend to more specialization within firms is then a way to avoid these costs of internal politics. These explanations focus on possible weaknesses in the internal control mechanisms of firms, but they neglect the market environment in which firms operate. Moreover, they fail to explain why firms change now.

However, the last 15 years have witnessed a surge in deregulation, both at the European as well as at the international level. The resulting increase in competitive pressures might have been the driving force behind the search for modes of organizations which are "mean and lean". Furthermore, the fall of communism and the opening up of Eastern Europe have resulted in a larger European market with new growth opportunities for European firms. These changes in the market environment have put an emphasis on a corporate culture that cuts costs as well as that adapts to finding new products and new markets which have led to the radical changes in the way firms organize.

4.2 Less Hierarchical Firms

Recently, a new theory of international trade has evolved which offers a new understanding of the mechanism by which international trade may affect corporate organization.⁶ The theory opens the "black box" of the firm and introduces 'real firms' into international trade. By

⁶ For a survey, see Marin and Verdier 2003, Helpman, Marin, Verdier 2008.

doing so, the theory explains why firms introduce less hierarchical organizations and why they pursue a more focussed strategy in response to an increase in trade exposure. Consider a firm with a simple hierarchy of a CEO and a division manager. The CEO is overloaded and relies on her division manager to suggest new projects that the firm may undertake. This way the division manager obtains “real power” in the firm even though “formal power” is assigned to the CEO (P-firm). When the CEO decides to delegate “formal power” to the division manager (A-firm) she loses control, but she gains the initiative of the division manager to find good projects for the firm. This trade-off between the CEO’s control and the initiative of the division manager determines the optimal choice of firm organization.

The Basic Framework

We consider an economy with L workers and n firms. Firms engage in monopolistic competition of the Dixit and Stiglitz type. Each firm has market power because consumers have a preference for variety. Consumer’s preferences over varieties are

$$U = \left[\int_0^n y(i)^\gamma di \right]^{\frac{1}{\gamma}} \text{ with } 0 \leq \gamma \leq 1$$

where $y(i)$ is consumption of variety i . The parameter γ measures the degree of product differentiation. The larger γ the more similar goods are and the less market power firms have.

In each firm a CEO/owner (the principal) hires a division manager (the agent) to start a firm and employs workers to produce. Both, the CEO and her division manager, may acquire information about profitable projects which can be produced by the firm. However, we assume that the CEO has managerial overload and thus the more information the CEO collects, the higher is the marginal cost of further information. Each uninformed party prefers to rubber-stamp the other informed party's suggestion if either decides to stay uninformed. This gives decision control to the informed party. In this case, the informed party has "real power" rather than "formal power" in the firm.

The CEO/owner and the division manager's expected payoff under the CEO's formal power (P-firm) are

$$u_p = EB + (1 - E)e\alpha B - g \frac{E^2}{2} - w$$

$$u_A = E\beta b + (1 - E)eb - ke$$

With probability E , the CEO becomes fully informed and picks her preferred project with monetary payoff B , while the agent receives only the expected private benefit βb . With probability $1-E$, the CEO remains uninformed. The division manager may then learn with probability e and suggest his best project to the CEO (who accepts it). The CEO/owner receives a monetary payoff αB while the agent gets his best private benefit b . Or the agent may remain also uninformed in which case, no project is undertaken. Note that αB is the CEO's expected benefit when the agent's preferred project is implemented with ($0 \leq \alpha \leq 1$). Similarly, βb is the division managers's expected benefit when the CEO's preferred project is implemented with ($0 \leq \beta \leq 1$). α and β are congruence parameters between the CEO and her manager capturing the degree of trust between them. $g((E^2)/2)$ and ke are the costs of information collection of the CEO and her manager, respectively.

The first order conditions of the payoff functions with respect to efforts E and e (not shown) highlight the trade-off between control and initiative in the firm. The CEO controls the more the higher her stakes (the larger B), the larger the conflict of interest between her and the manager (the lower α) and the lower the manager's initiative e . The division manager, in turn, has more initiative the higher his stake (the larger b) and the lower the CEO's interference (the lower E). Thus, hierarchical control comes with the cost of the loss of initiative of lower management.

We assume that P-firms under the CEO's formal control have lower marginal costs than A-firms under the division manager's formal control $c_B < c_b = \rho c_B$ with $\rho < 1$ so that there is no perfect congruence between the firm and her agent. The idea here is that when the agent has control in the firm he may choose a project which generates high perks for him or which advances his career rather than a project which minimizes the costs of the firm.

How is international trade affecting the trade-off between control and initiative in the firm? An increase in international trade leads to a larger market and to an increase in profits. Firms expand and become larger. The increase in profit opportunities induces new firms to enter the

market. With increased foreign competition it matters more for profits who runs the firm. Hence, delegating power to lower levels of the corporate hierarchy becomes more costly to firms, since firms lose control. However, with increased foreign competition it also becomes more important to generate new ideas for the firm. As the stakes rise, CEOs in corporations start to control more potentially destroying the initiative of middle managers. When international competition is weak, the CEO controls little and she does not destroy the initiative of the division manager. Hence, she chooses to centralize power. When international competition intensifies the CEO starts to control more potentially destroying the initiative of her middle manager. She then delegates power to the middle manager to encourage him to bring new ideas for the firm. The less hierarchical firm with decisions delegated to middle managers becomes the optimal organization. When international competition becomes very tough, the stakes are so large that the CEO wants control and the firm recentralizes power to the top of the organization.⁷

In Marin and Verdier 2008a we capture changes in international competition by changes in profits B . We show that free entry profits B are a monotonously increasing function of the degree of international competition. Firms require a larger profit to enter the market as the conflict of interest between the CEO and her manager becomes more costly to the firm as the power struggle translates in a larger loss in profits. The monotonously increasing relationship between B and international competition reflects the fact that international competition increases the stakes of the firm thereby affecting the behaviour of agents inside the firm. Does an increase in profits B make it more likely that a P-firm with centralized power at the top of the organization or an A-firm in which the CEO delegates formal power to her division manager emerges in equilibrium? We turn to Table 5 for an answer.

⁷ See Marin and Verdier 2008b.

Table 5: Incentives Inside the Firm and Profit Levels

	P - organization	A – organization
$B \leq \tilde{B}_p(\gamma)$	$E_p^* = \frac{B(1-\bar{e}\alpha)}{g}$ $e_p^* = \bar{e}$	$E_A^* = \frac{B(1-\bar{e})}{g}$ $e_A^* = \bar{e}$
$\tilde{B}_p(\gamma) < B \leq \tilde{B}_A$	$E_p^* = \frac{B}{g}$ $e_p^* = 0$	$E_A^* = \frac{B(1-\bar{e})}{g}$ $e_A^* = \bar{e}$
$\tilde{B}_A < B$	$E_o^* = \frac{B}{g}$ $e_o^* = 0$	$E_A^* = \frac{B}{g}$ $e_A^* = 0$

In Table 5 we summarize how changes in the level of profits affect the incentives for information collection inside the firm under the P-organization and under the A-organization, respectively. We examine how the CEO's and her managers optimal effort levels E^*, e^* respond when profits gradually increase from low levels $B \leq \tilde{B}_p$ (weak competition), to intermediate levels $\tilde{B}_p < B \leq \tilde{B}_A$ (moderate competition), to large levels $\tilde{B}_A < B$ (intense competition) when the principal runs the firm and when the CEO delegates power to her manager, respectively. \tilde{B}_p and \tilde{B}_A are the threshold levels of profits of the firm at which the agent's initiative is killed under the P-organization and under the A-organization, respectively. Recall that as profits increase the stakes of the CEO/owner rises and she controls more potentially destroying the agent's initiative.

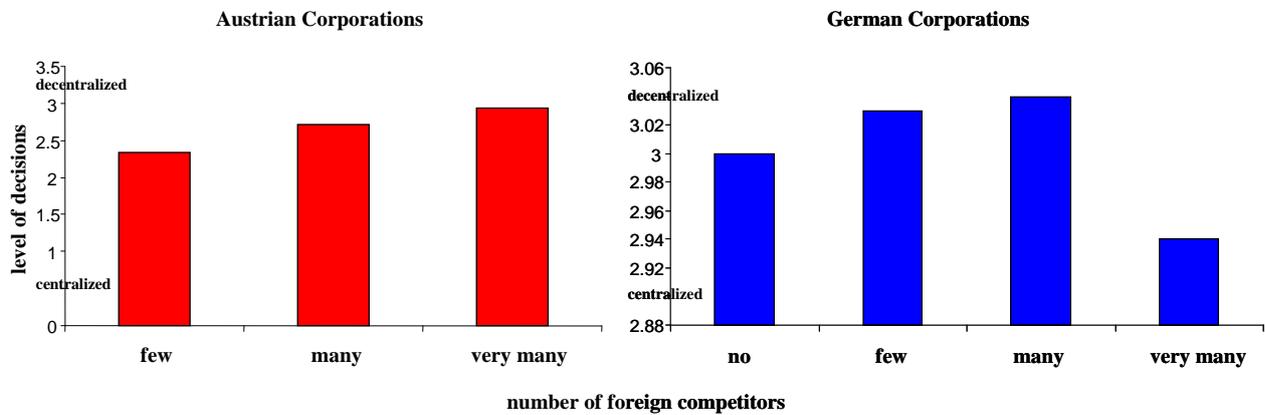
As can be seen from the table the mode of organization matters for incentives inside the firm at intermediate levels of profits only. At low and high profit levels there is no trade-off between control and initiative. At low profits, the principal monitors and intervenes little because her stakes are small and she cares little. Therefore, the principal chooses the P-

organization as it gives sufficient initiative to the manager. The agent exerts maximum effort under the P-organization $e_p^* = \bar{e}$. At high profits, the CEO's stakes are so large that she kills the initiative of the agent even under the A-organization leading to minimum effort by the agent $e_A^* = 0$. Therefore, she might as well keep control. At intermediate levels of profits there is a trade-off between control and initiative. At this profit level the principal delegates formal power to the agent to keep his initiative alive and the A-firm emerges as the optimal mode of organization. Thus, with an increase in B the optimal firm organization moves from centralization of power (P-organization) to decentralization of power to middle managers (A-organization) and finally to a single managed O-firm in which the CEO/owner runs the firm without the cooperation of the manager.

Evidence

I find evidence for this behaviour in Figure 7 which shows a strong relationship between the number of foreign competitors and the level of decision making in corporations in Austria and Germany. Firms are ranked by their level of decentralization of decision making for 16 corporate decisions with 1 as the decision taken by the CEO at the top of the organization (centralized firm) and 5 as the decision taken at the divisional level (decentralized firm).

In both countries, firms decentralize decision power to lower levels of the corporation when faced with more foreign competitors. However, as predicted by the theory, German firms which tend to be much larger than Austrian firms - they come from the larger market - have recentralized corporate decisions to headquarters when faced with very intense competition. When the firm loses power on the market when competition becomes very intense, it wants more control inside the corporation. When competition becomes very intense it becomes more important to have an organization that controls costs rather than one that empowers the workforce.

Figure 7: Decentralization and International Competition

4.3 More Focussed Firms

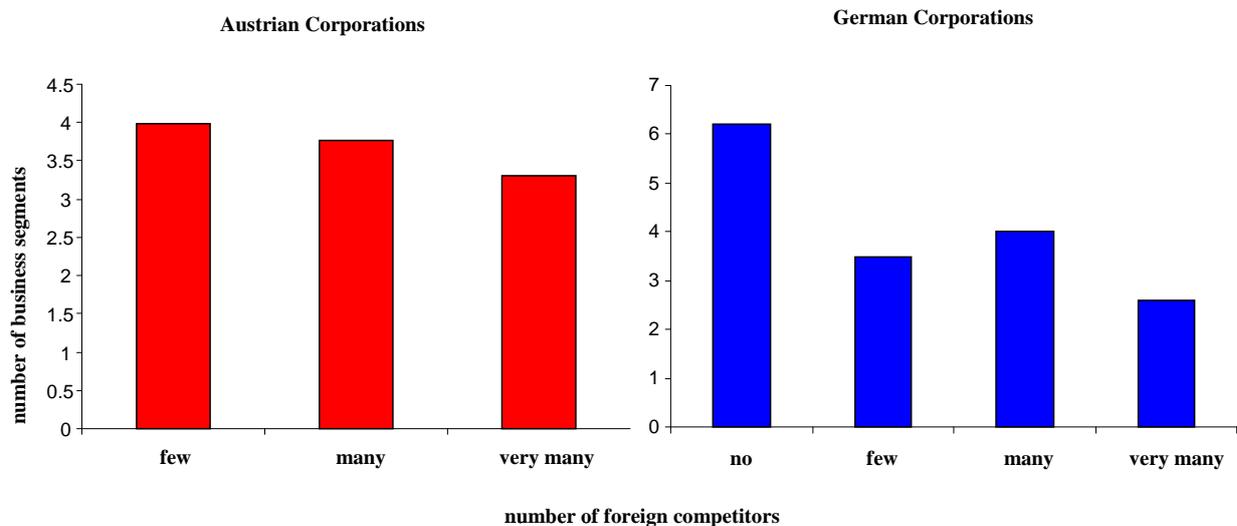
The theory also suggests why international trade will force conglomerates to give up diversification and to focus more on their “core” activity. International trade, by opening up new markets, allows firms to grow. However, there are limits to firm growth in the same business segment. When this limit is reached and the firm wants to grow further, it has to add new business segments. As the firm becomes more diversified, the conflict of interest between CEOs and middle managers in corporations becomes larger. Middle managers will care more for their divisions and less for overall profits of the firm. However, international trade also intensifies competition and with it the power struggle between CEOs and middle managers in firms. With increased exposure to international competition it matters more for overall profits that CEOs and middle managers in corporations pursue the same goal. To regain control over profits CEOs in corporations then divest business segments and the firm becomes more specialized.⁸

I find evidence for this in Figure 8 which shows a strong relationship between the number of foreign competitors and how diversified firms are in Austria and Germany. In both countries, firms specialize more on their core activity by reducing the number of business segments in response to more foreign competition. Not surprisingly, however, the larger German firms respond much stronger with a more focussed strategy in response to an increase in the number

⁸ See Marin and Verdier 2008b and for an explanation based on market competition see Feenstra and Ma (2008).

of foreign competitors than Austrian firms do. The much larger German firms face a much more pronounced “control problem” when foreign competition intensifies than the smaller Austrian firms.

Figure 8: The Focus on the “Core”



4.4. The Talent Firm

Perhaps the most dramatic change in the last 15 years is that the nature of the corporation itself is changing. Human capital has become the “new stakeholder” in the firm. The enterprise of the past was well defined by the ownership of physical assets. Ownership of physical capital was the primary source of power in the enterprise. In contrast, in the enterprise today human capital and talent rather than its plants and machines are the critical assets. Innovative and customized deals are the source of profits today. Thus, the enterprise’s talented workforce has become an important source of value to the firm. At the same time, however, human capital and talent have more outside opportunities than before partly due to the corporations’ flatter hierarchies which are giving fewer opportunities for promotion inside. Thus, the central focus of corporate governance today is how firms can prevent their talented workforce from leaving the firm. The challenge is how firms can obtain power over their human capital when they cannot own it like a machine?

Has globalization contributed to this fundamental change in the nature of the corporation? Recent theories of international trade suggest yes.⁹ Opening of markets to international competition leads to a ‘war for talent’ which induces firms to change the organization to empower their talented workforce. When a country opens up to international trade firm profits rise and new firms enter the market. However, firms need to hire a manager to start a firm. Newly entering foreign firms compete with incumbent firms for scarce manager talent. They compete in two dimensions, by offering higher wages as well as by offering power and autonomy to potential managers. As the ‘war for talent’ intensifies firms choose organizations in which power is delegated to skilled managers. This way talent becomes the new stakeholder in the firm.

The Basic Framework

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 labour 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. Consumer’s preferences over the two goods Y and X are

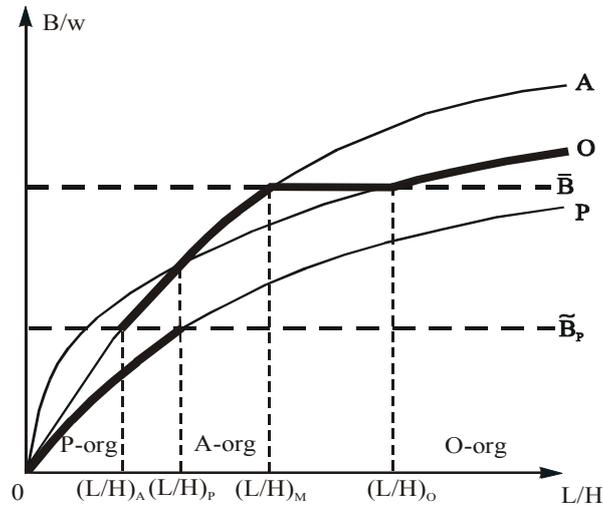
$$U(X, Y) = X^\alpha Y^{1-\alpha} \text{ with } X = \left[\int_0^n y(i)^\gamma di \right]^{\frac{1}{\gamma}} \text{ and } 0 \leq \gamma \leq 1$$

In the X-sector firms can choose between three types of organizations, 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 firm managed by the owner herself without an internal hierarchy. To start a firm the unskilled owner has to hire a skilled manager. The question we address now is how a country's relative factor endowment L/H affects the mode of organization firms choose in the X-sector. We illustrate this with the help of Figure 9.¹⁰

⁹ See Marin and Verdier 2004.

¹⁰ For more details see Marin and Verdier 2004.

Figure 9: Corporate Organization and International Trade

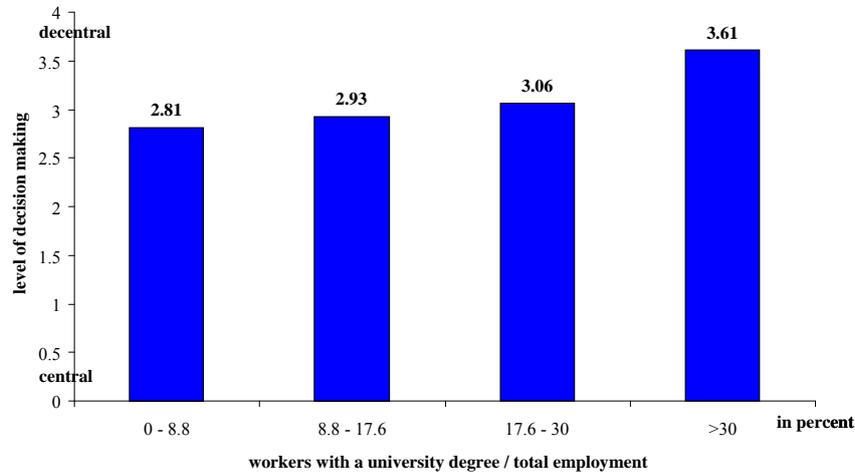


In Figure 9, the two horizontal lines \tilde{B}_p and \bar{B} capture the cost and benefit of control inside the firm determining the firm's mode of organization. \tilde{B}_p is the threshold level of profits at which the agent's initiative is killed under the P-organization. \bar{B} is the threshold level of profits at which the CEO is indifferent between the O-firm in which she runs the firm without the manager's cooperation and the A-firm in which she delegates power to her manager. Below the \tilde{B}_p and \bar{B} -lines firms choose the P-organization, in-between the \tilde{B}_p and \bar{B} -lines they go for the A-organization, and above the \bar{B} -line firms choose the O-organization. The three curves P, A and O give real profits in terms of unskilled labour B/w of P-firms, A-firms, and O-firms, respectively which are consistent with factor market clearing. The three curves are upward sloping in L/H , because as the country becomes relatively more labour rich the relative wage w/q falls and real profits B/w have to increase to restore factor market equilibrium. An increase in real profits increases the demand for unskilled labour for two

reasons. First, production in the X- and Y-sector expands, and this expansion is biased towards the less skill intensive Y-sector. This is a standard Rybczynsky effect on the output mix. Second, the unskilled principal monitors more, because her stakes rise with an increase in real profits. Via this channel the factor endowment of a country has a direct influence on the behaviour inside the firm. With an increase in L/H and in real profits B/w market entry becomes attractive. However, firms can enter and run a firm only by hiring a skilled agent. Thus, market entry is constraint by the amount of available human capital in the country. Firms compete for the scarce talent of agents and bid up the relative wage for human capital. As the start up costs of firms increase, firms require a larger real profit B/w to enter the market.

The bold line in Figure 9 gives the organizational equilibria as a function of a country's relative factor endowment. When the country becomes more labour rich the equilibrium mode of organization moves from the P-firm with centralized power, to the A-firm empowering human capital, and finally to a single managed O-firm. To determine a country's corporate organization depending on its trading environment we consider a human capital rich North located in the interval $[0, (L/H)_A]$ and a labour rich South located in the interval $[(L/H)_O, \infty]$ in Figure 9. Under autarky, North's firms will choose a P-organization and South's firms will decide for an O-organization. When these two economies start to trade, we know that the factor endowment of the integrated world economy will be somewhere in between those of the North and the South. Thus, trade integration will make both North' and South' corporations to converge to an A-organizational equilibrium empowering human capital.

Figure 10 gives some evidence that such a mechanism is at work. The figure shows that more human capital intensive corporations in Germany - corporations with a larger share of workers with a university education - tend to have more decentralized corporate hierarchies with power delegated to the divisional level in order to empower their human capital.

Figure 10: The “New Stakeholder”: Human Capital

5. Conclusions

Why does it matter how firms organize? It matters for several reasons. First, recent research suggests that organizations are an important source of competitive advantage. Firms with “better” organizations tend to introduce IT faster and tend to show a better performance in productivity, market shares, and profits. The difference in organizational capital between US and European firms might explain why Europe has been lagging recently in productivity growth relative to the US.¹¹

Second, how successful European firms reorganize their international value chain may determine how well they adjust to an increased competitive global environment. The best example of this is how Eastern Europe has saved Germany. In the course of Europe’s enlargement to the East after the fall of communism German firms have offshored firm activities to Eastern Europe which helped these firms to lower their global production costs by circumventing rigid labour markets on the one hand and by dealing with a skill shortage in Germany on the other. The adjustment to the shock of the fall in communism took place inside corporations rather than across sectors. As a result, German firms became more competitive in all sectors and increased their market share in export markets with only a small

¹¹ See N. Bloom and J. Van Reenen 2006.

rise in unemployment. According to an estimate job losses due to offshoring to Eastern Europe have remained below 1 percent of total employment in Germany.¹²

Third, the described changes in the organisation of the corporate sector may influence the design and effectiveness of future trade policy. With the international organization of production of European firms the conflict of interest with respect to the design of trade policy is no longer across sectors (import-competing versus export sectors) or across groups (capital versus labour) like in the old days, but rather takes place within sectors at the level of firms depending on how they are organized (input importing firms versus import competing firms) or within groups (tasks undertaken by workers which are easily transferable to other countries versus tasks not easily transferable). Hence, firm boundaries may become more important than country boundaries for the design of future trade policy.

Two recent examples illustrate how the global organization of European firms is affecting European trade policy with China. One example is the battle between the German light bulbs producing firm Osram and Philips, a company from the Netherlands. Osram opposes lifting tariffs on imports of energy saving lights bulbs from China, while Philips - who offshores to China – is in favour of it. Another example is the conflicting interests between the European Confederation of Iron and Steel Industries (Eurofer) which are asking the European Commission to impose a 25 to 40 percent tariff on cold-rolled and galvanized steel imports from China and Orgalime, representing the engineering industries who oppose the tariff by arguing that they have difficulties sourcing raw materials including steel.

Fourth, due to the fundamental changes taking place in European corporations in the last 15 years - changes which I have argued have themselves been driven by the opening of markets to international competition - human capital and talent have become much more mobile than they used to be. European countries can shift the comparative advantage in their favour by attracting skilled workers. The challenge is how can Europe attract and retain human capital? The race for talent determines where in the world European firms will locate their R&D activities. Will it be Europe including Eastern Europe? India? China? For the first time in history the rich world is faced with low income countries which are rich in skills. With a global “war for talent” trade policy is shifting from the goods side to the factor side. The policy instruments of the new era are immigration policy and “tax incentives” for skilled

¹² See Marin 2004.

mobile workers rather than for mobile firms.

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