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**GLOBALIZATION AND
THE 'NEW ENTERPRISE'**

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THE 'NEW ENTERPRISE'

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ABSTRACT

Globalization and the 'New Enterprise'*

Many experts have identified globalization as a new way firms organize their activities. This Paper surveys recent work that examines the role of trade integration between similar and dissimilar countries for these changes in corporate organization. It is shown that international competition and international trade both increase the stakes of the firm, which affects the behaviour of agents inside the corporation. This way, trade integration leads to waves of outsourcing and to convergence in corporate cultures across countries.

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1. Introduction

What is new about Globalization? Trade economist agree now that the new feature of globalization is an explosion of world trade in intermediate goods and in foreign direct investment, while the trade exposure of rich countries (as measured by the share of trade in percent of GDP) has not increased over the last 100 years.[1] The increase in trade in intermediate goods and in foreign direct investment are both an expression of the new way firms organize their activities. The value chain has become global. The global firm produces one stage of production in one location and exports the input for refinement to a second location. The refined input gets further refinement in a third location. During this refinement process intermediate goods are traded from one location to the next. This way, the international organization of production leads to the observed increase in trade in intermediate goods and in foreign direct investment. [2]

Parallel to these changes in the world economy the corporate sector in rich economies has gone through an enormous amount of reorganization. The nature of the corporation is changing. Corporate reorganization involves the break up of the conglomerate and the emergence of the 'human capital firm'. Markets have been intolerant towards conglomerates and forced firms to sell pieces which do not naturally belong to their core activity. At the same time firms eliminated layers of middle management by introducing more decentralized decision making inside the corporation and by empowering workers at lower levels of the corporate hierarchy. These developments resulted in flatter hierarchies inside firms.[3]

But perhaps the most dramatic change in the nature of the corporation is that human capital has become the new stakeholder in the firm. Rather than plants and machines, human capital and talent are today the new assets of the firm. In the past it was specialized inanimate assets (its machines) what made the firm unique and gave its owner power in the firm. But with the development of financial capital markets financial capital became widespread available and with

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[1]For the debate on globalization see Feenstra (1998), Krugman (1995), and (2000).

[2]The international organization of production has been discussed under the heading 'slicing the value chain' (Hummels, Ishii, and Yi (2001), Krugman (2000)) and 'outsourcing' (Feenstra and Hanson (1996)) in the trade literature.

[3]For a description of trends in corporate reorganization in the 1980s and 1990s see Holmstrom and Kaplan (2001).

it the capital intensity of the firm has stopped to be the critical asset. As human capital cannot be owned by the firm the central focus of corporate governance today is how to provide incentives for talent to prevent it from leaving the firm.[4]

What accounts for these changes in the world economy on the one hand and in the nature of the enterprise on the other? An answer to this question requires the introduction of the theory of the firm into international trade theory. International trade theory explains the international organization of production by firm and country characteristics, but the firm remains a black box. The theory of the firm focuses on a single firm but neglects the market environment in which the firm operates. In Marin and Verdier (2001, 2002) (henceforth MV) we introduce the Aghion and Tirole (1997) theory of the firm into the Helpman and Krugman (1985) theory of international trade to examine the interaction between the firm's mode of organization on the one hand and international trade on the other.[5] More specifically, after introducing the basic framework (section 2) we examine how the trend to flatter corporate hierarchies and the empowerment of human capital are related to an increase in international competition (section 3) on the one hand and to an increase in international trade (section 4) on the other. Section 4 shows also how competition and trade can lead to outsourcing and to convergence in corporate cultures across countries.

2. 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. Consumers preferences over varieties are

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

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.

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[4]For an argument along this line see Rajan and Zingales (1998).

[5]Grossman and Helpman (2002) and Antràs (2002) introduce the Hart and Moore-firm into trade.

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 infomation about profitable projects which can be produced by the firm. However, we assume that the CEO has managerial overload (her costs of infomation collection are convex, while the costs of information collection of the division manager are linear) 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.[6]

The CEO/owner and the division manager's expected payoff under the CEO's formal power are

$$
\begin{aligned}
u_P &= EB + (1-E)e\alpha B - g\frac{E^2}{2} - w \\
u_A &= E\beta b + (1-E)eb - ke
\end{aligned}
$$

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. $g\frac{E^2}{2}$ and ke are the costs of information collection of the CEO and her manager, respectively.[7]

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

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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 intitiative 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 $c_B < c_b = \varphi c_B$ with $\varphi > 1$ 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.

3. Competition and Corporate Reorganization

We examine now the question which mode of organization the firm will choose in response to changes in the degree of international competition. We capture changes in the degree of international competition by changes in profits B. In Marin and Verdier (2001) we endogenize the firms' profits by free market entry. Firms enter the market until operating profits are driven down to the level to cover the fixed costs. In MV (2001) we show that free entry profits B are a monotonously increasing function of the degree of international competition γ. With an increase in 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 since the power struggle translates in a larger loss in profits. The monotonously increasing relationship between B and γ reflects the fact that international competition increases the stakes of the firm thereby affecting the behavior of agents inside the firm. Does an increase in profits B (an increase in the degree of international competition γ) 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 1 for an answer.[8]

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[8]For details of the model see Marin and Verdier (2001).

Table 1: Incentives Inside the Firm and Profit Levels

	P-organization	A-organization
$B \leq \widetilde{B}_P(\gamma)$	$E_P^* = \frac{B(1-\overline{e}\alpha)}{g}$ $e_P^* = \overline{e}$	$E_A^* = \frac{B(1-\overline{e})}{g}$ $e_A^* = \overline{e}$
$\widetilde{B}_P(\gamma) < B \leq \widetilde{B}_A$	$E_P^* = \frac{B}{g}$ $e_P^* = 0$	$E_A^* = \frac{B(1-\overline{e})}{g}$ $e_A^* = \overline{e}$
$\widetilde{B}_A < B$	$E_O^* = \frac{B}{g}$ $e_O^* = 0$	$E_A^* = \frac{B}{g}$ $e_A^* = 0$

In Table 1 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 manager's optimal effort levels E^* and e^* respond when profits gradually increase from low levels $B \leq \widetilde{B}_P(\gamma)$ (weak competition), to intermediate levels $\widetilde{B}_P(\gamma) < B \leq \widetilde{B}_A$ (moderate competition), to large levels $\widetilde{B}_A < B$ (intense competition) when the principal runs the firm and when the CEO delegates power to her manager, respectively. $\widetilde{B}_P(\gamma)$ and $\widetilde{B}_A$ 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 as is the case in a single Aghion-Tirole-firm when the market environment is ignored. 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 $e_P^* = \overline{e}$. 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 under the A-organization $e_A^* = 0$. Therefore, she might as well keep control by choosing the P-organization. At intermediate levels of profits there is a trade-off between control and initiative (under the A-organization the manager's initiative is kept

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alife $e_A^* = \overline{e}$ while it is lost under the P-organization $e_P^* = 0$). At this profit level the principal delegates formal power to her manager to keep his initiative and the A-firm emerges as the optimal mode of organization. Thus, with an increase in international competition (with an increase in B) the optimal firm organization moves from centralization of power at the top of the firm (P-organization) to decentralization of power to lower management (A-organization) and finally to a single managed O-firm without an internal hierarchy in which the CEO/owner runs the firm herself and looses the agent's initiative $e_O^* = 0$.

4. Trade and the "Human Capital Firm"

4.1. The Human Capital Constraint

We now analyze how international trade can explain the emergence of human capital as the new stakeholder in the firm. Consider a human capital rich North and a labor 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 over the two goods Y and X are

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

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. Because of page limits, we illustrate this with the help of Figure 1.[9]

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[9]For the model see Marin and Verdier (2002).

Figure 1: Corporate Organization and Factor Endownment
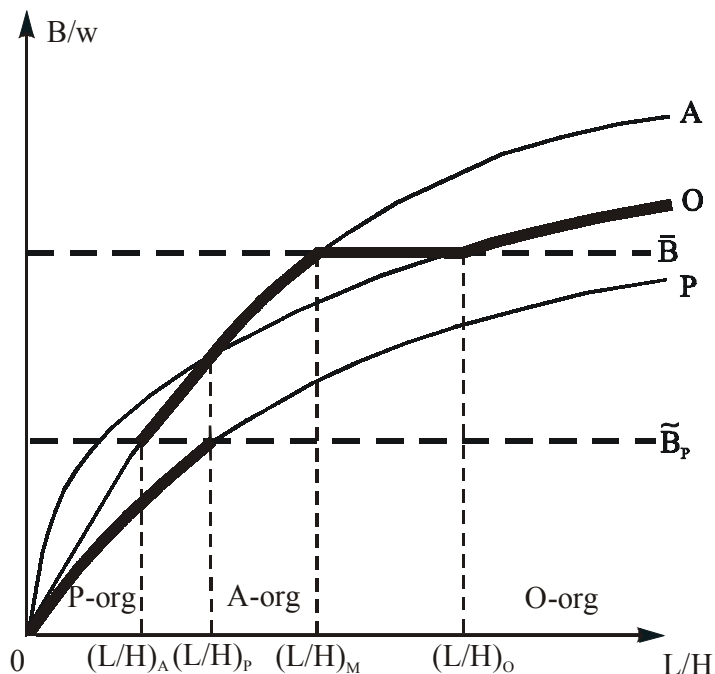
In Figure 1 the two horizontal lines $\tilde{B}_P$ and $\overline{B}$ capture the cost and benefit of control inside the firm determining the firm's mode of organization. $\tilde{B}_P$ gives the threshold level of profits at which the agent's initiative is killed under the P-organization. $\overline{B}$ gives the threshold level of profits at which the CEO is indifferent between the O-firm in which she runs the firm without her manager's cooperation and the A-firm in which the CEO delegates power to her manager. Below the $\tilde{B}_P$-line the benefit of control outweights its costs and firms choose the P-organization, inbetween the $\tilde{B}_P$ and $\overline{B}$ lines the cost of control outweights the benefit and firms go for the A-organization, and above the $\overline{B}$-line the benefit of control again outweights its costs and firms choose the O-organization. The three curves P, A and O give real profits in terms of unskilled labor 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 labor 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

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demand for unskilled labor 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 endownment of a country has a direct influence on the behavior 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 H 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 1 gives the organizational equilibria as a function of a country's relative factor endowment. When the country becomes more labor 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.

4.2. Organizational Convergence

We are now ready to determine a country's corporate organization depending on its trading environment. Consider a human capital rich North located in the interval $[0, (L/H)_A]$ and a labor rich South located in the interval $[(L/H)_O, \infty]$ in Figure 2. Under autarky, North's firms will choose a P-organization and South's firms will decide for an O-organization. Consider now what happens when these two economies start to trade. We know that the factor endownment of the integrated world economy will be somewhere in between those of the North and the South. In Marin and Verdier (2002) we give conditions that the factor endownment of the integrated world economy is in the interval $[(L/H)_P, (L/H)_M]$. Thus, trade integration will make both North' and South' corporations to converge to an A-organizational equilibrium empowering human capital. This results in waves of outsourcing when the corporate sector in the North and South reorganizes from a P-organization and an O-organization, respectively to an A-organizational equilibrium.[10] Furthermore, we show in MV (2002) that the more dissimilar the North

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[10]A move from a P-organization to an A-organization in which the skilled manager runs the firm can be thought of as the firm outsourcing the division to her manager.

and the South are with respect to their factor endownment, the larger will be their trade volume, and the more likely is organizational convergence.

Note that organizational convergence in response to trade will occur also between identical countries. In the 1x1 model of section 3 we have multiple equilibria at intermediate levels of competition. The country's corporate organization will depend on what firms expect other firms will choose. Therefore, two identical countries may differ in their corporate cultures under autarky. Trade will lead to convergence in corporate cultures across identical countries. To which equilibrium organization the integrated world economy converges remains, however, undetermined.

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