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Trade in tasks and the organization of firms

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ABSTRACT

In this paper, we incorporate trade in tasks into Marin and Verdier (2012) to examine how offshoring affects the way firms organize. We show that offshoring of production tasks and of managerial tasks can lead to more decentralized management and to larger executive wages in open economies. We study the predictions of the model with original firm level data and find that offshoring firms are 18% more decentralized than non-offshoring firms. We also find that offshoring of managers increases the level of decentralized management in open industries, but reduces the level of decentralized management in sufficiently closed industries.

1. Introduction

In the last two decades the world economy has been characterized by several new features. First, firms have organized their production in international value chains to cut costs. At the same time, they have decentralized their system of command in flatter corporate hierarchies to incentivize workers. Third, human capital has become a new stakeholder within firms in response to a competition for talent. Finally, firms have started to compensate their executives with skyrocket earnings. In this paper, we ask: have offshoring and "trade in tasks" been the driving forces behind these observed changes in the corporation?[1]

In an international value chain or "trade in tasks", firms geographically separate different production stages across the world economy to exploit differences in production costs.[2] 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 intrafirm imports account between 22% and 69% of total imports between Western and Eastern Europe (see Marin, 2006).[3]

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[1] For the new corporation, see Economist (2006) and Marin (2008).

[2] Trade in tasks is also discussed in the literature under the heading "slicing the value chain", "vertical specialization", "fragmentation", or "offshoring".

[3] For the new features of globalization, see Hummels et al. (2001), Feenstra (1998), and Grossman and Rossi-Hansberg (2008). For the new international division of labour in Europe, see Marin (2006). For a recent estimate on global value added chains, see Johnson and Noguera (2017).

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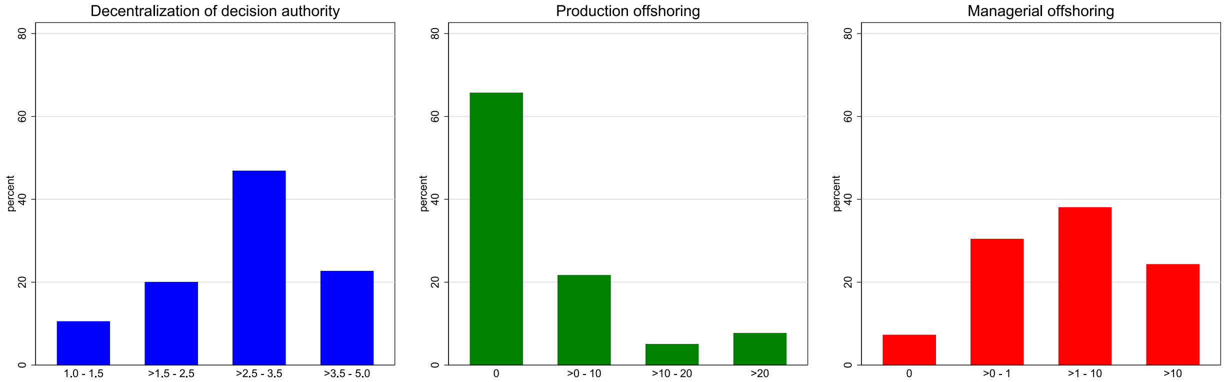

Fig. 1. Decentralization and trade in tasks in multinational firms. *Notes:* The figure shows the distribution of *(i) decentralization of decision authority, (ii) intrafirm imports* and *(iii)managerial offshoring* for a sample of German and Austrian multinationals with foreign direct investments in Eastern Europe. *(i)* The variable *Decentralization of decision authority* is an index that measures the degree of decentralization in decision making, with values between 1 (decisions are taken by the CEO) and 5 (decisions are taken at the divisional level). *(ii)* The variable *Sum of intrafirm imports / parental sales* is defined by the sum of intrafirm imports that a parent firm sources from its affiliates normalized by the parent's domestic sales multiplied by 100%. *(iii)* The variable *Managerial offshoring* is measured by the *Sum of # offshored managers / parent firm employment* which corresponds to the total number of offshored managers relative to employment within the parent. See Tables 1 and 9 and Section 4.1 for more details on the data.

Data on the changing nature of the corporation have become available only recently. Rajan and Wulf (2006) and Marin and Verdier (2014) document that firms in the US, Germany, and Austria shifted to a more decentralized organization over time. Marin (2008) and Marin and Verdier (2014) show that firms in the larger economy, Germany, are more decentralized compared to firms in the smaller economy, Austria. Bloom et al. (2010) report that firms in the US, UK, and Northern Europe have the most decentralized organization, while firms in Asian countries are most centralized.

In Fig. 1, we document the pattern of decentralization in corporate decision-making, offshoring of production and management activities among multinational firms. Based on original survey data of German and Austrian multinationals with direct investments in Eastern Europe, we find that there is a substantial variation across all three dimensions and make the following observations. First, the majority of multinationals has an organization with at least partially decentralized decision-making between CEO/owners and middle managers inside the firms. Second, while the majority of multinationals (>60%) do not report any intrafirm imports from their East European affiliates, roughly 10% of the firms import more than 10% in terms of the parent firm's sales.[4] Third, the majority of multinational firms also offshore managerial tasks by hiring managers on local labour markets in affiliate countries.

To study the interplay between firm organization and offshoring, we construct a model that incorporates trade in tasks à la Grossman and Rossi-Hansberg (2008) (hereinafter referred to as GRH) into a small open economy version of the theory of firm organization of Marin and Verdier (2012) (hereinafter referred to as MV). Using our model, we then explore how offshoring of production and managerial tasks affects the internal organization of Northern firms. We assume that a firm in the North consists of an owner and a manager. The skilled manager performs two different activities. As in Aghion and Tirole (1997), the manager can participate in running the firm by searching for projects that can be implemented by the firm. In addition, we assume that there are a number of managerial tasks that have to be conducted to keep the firm active. Finally, the firm employs unskilled labour to produce. The owner decides whether to decentralize authority to the manager and faces the following trade-off. On the one hand, keeping formal authority crowds out the manager's effort to search for projects. On the other hand, in a decentralized firm where the manager has the formal authority to make decisions, there is the possibility that the second best project is implemented. This trade-off between a centralized organization and a decentralized organization depends on the firm's profits. In the paper, we assume that production and managerial tasks can be offshored. While, as in GRH, offshoring of production tasks reduces firms' marginal costs of production, offshoring of managerial tasks reduces the mass of tasks that need to be performed by the Northern manager to keep the firm active. In both cases, offshoring affects profit levels and, thereby, the owner's decision regarding decentralization.

We gain several insights from merging GRH with MV. First, we show that the offshoring of production tasks by Northern firms to the South unambiguously increases firms' profits and, thereby, induces firms to reorganize to decentralized management, in which power is allocated to the skilled manager in Northern firms.[5] The offshoring of production workers has two

[4] Also Atalay et al. (2014) find for US firms that roughly 50% of upstream establishments report no shipments to downstream establishments within the same firm.

[5] In GRH this effect is absent, as they do not consider firms' choice of organizational form. However, relocating tasks to other countries typically involves major reorganization in offshoring firms resulting in productivity gains that go above and beyond the mere discovery of cheap production opportunities in the South. The latter effect is considered by GRH, which they call labour-augmenting technological change. Marin (2009) shows that the discovery of cheap labour in Eastern Europe by German multinational firms has allowed German affiliate firms in Eastern Europe to cut unit labour costs relative to German parent firms by over 70%. Amiti and Konings (2007) and Halpern et al. (2015) quantify the productivity effect from offshoring for Indonesia and Hungary, respectively.