



# Task offshoring and organizational form: Theory and evidence from China<sup>☆</sup>

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## ABSTRACT

This paper examines why heterogeneous tasks are offshored in different organizational forms, that is, offshored to multinational subsidiaries (“foreign insourcing”) or to subcontractors (“foreign outsourcing”). We develop a model in which multinational subsidiaries benefit from lower communication costs despite having to pay for an efficiency wage premium compared with subcontractors. The model predicts that offshoring cost reductions increase foreign insourcing shares for industries that have communication intensity levels above a certain threshold, but decrease the shares otherwise. To test this theoretical prediction, we examine how reductions in offshoring costs that are attributed to the establishment of export processing zones affect the organization of Chinese offshoring. This study presents strong evidence supporting the model’s prediction.

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## 1. Introduction

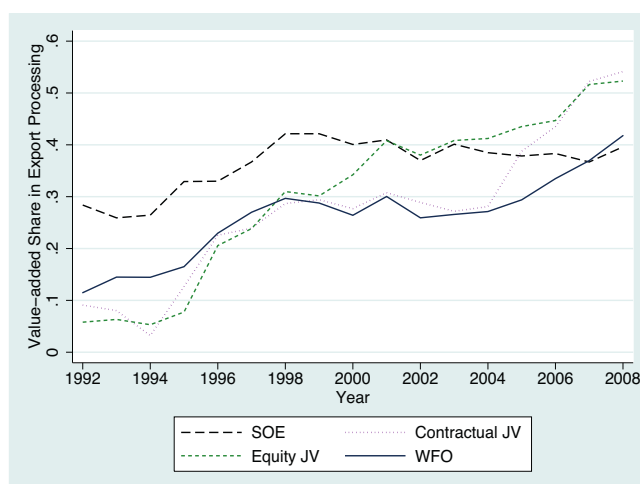
The rapid growth of offshoring has become a dominant feature of the international economy (see [Feenstra and Hanson, 1996, 2005](#); [Hummels et al., 2001](#)). Offshoring takes two prominent organizational forms: tasks may be offshored to multinational subsidiaries (“foreign insourcing”) or to subcontractors (“foreign outsourcing”).

A growing body of literature that adopts the incomplete contract approach (e.g., [Antràs, 2003](#); [Antràs and Helpman, 2004](#); [Grossman and Helpman, 2004](#), among others) sheds light on firms’ choices of organizational forms. However, the literature pays only scant attention to the types of tasks that should be acquired by using each one of these organizational forms ([Helpman, 2006](#)). Task characteristics are important in determining the organizational forms of offshoring. For instance, [Oldenski \(2012\)](#) finds that industries that are more intensive in their use of non-routine tasks are less likely to be offshored. Similarly, [Costinot et al. \(2011\)](#) shows that less routine sectors tend to have higher shares of intra-firm trade.

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**Fig. 1.** Value-added share in processing export by firm ownership. (1) Firms' types are: SOE (state-owned enterprise), contractual JV (contractual joint venture), equity JV (equity joint venture) and WFO (wholly foreign-owned firms). (2) Source: Author's calculation from the dataset.

This paper examines how reductions of offshoring costs will affect firms' choices of offshoring organizational forms depending on the industries' communication intensities. To accomplish this task, we develop a theoretical model for firm's organizational form choices for heterogeneous tasks based on a framework proposed by Grossman and Rossi-Hansberg (2008). The model features a trade-off between communication costs and efficiency wages. Offshoring to multinational subsidiaries has the advantage of lower communication costs compared with offshoring to subcontractors. On the other hand, multinational subsidiaries must pay an efficiency wage premium compared with subcontractors to prevent workers from shirking.

The model predicts that offshoring cost reductions may have two opposite effects on the range of tasks offshored to subcontractors relative to the range of tasks offshored to multinational subsidiaries. The "unit cost reduction effect" lowers the unit labor requirement for each offshored task, decreases employment in multinational subsidiaries, and consequently lowers efficiency wages. This effect tends to decrease the range of outsourced tasks. On the other hand, the "production expansion effect" increases the volume of each task to be performed, consequently increasing employment in multinational subsidiaries and inducing higher efficiency wages paid by the subsidiaries. Thus, the production expansion effect tends to increase the range of outsourced tasks.

The overall effect is generally ambiguous and depends on which of the opposite effects dominates. One key factor affecting the relative dominance is the industry's communication intensity. We show that the production expansion effect would be dominated by the unit cost reduction effect if industries are relatively more communication intensive. Therefore, the relative range of insourced tasks would increase in such industries.

The theoretical model illustrates that offshoring cost reductions have asymmetric effects on industries with different levels of communication intensities. To examine the asymmetric effects empirically, we confront this theoretical prediction with evidence from China. Specifically, we test whether offshoring cost reductions result in larger foreign insourcing shares for industries that are more communication intensive. In the data, we use the wholly foreign-owned firms' share in processing exports in China as a proxy for the foreign insourcing share, whereas the establishment of the export processing zones (EPZs) proxy for lower offshoring costs.

Using a highly disaggregated Chinese customs dataset over the period from 1997 to 2007, we find strong evidence supporting the model's prediction. For example, for the industry with a median level of communication intensity (plastic product industry), the establishment of EPZs increases the wholly foreign-owned firms' share by approximately 1–2.4 percentage points. On the other hand, for the most communication-intensive industry (navigation and electromedical equipments industry), the wholly foreign-owned firms' share increases by approximately 3.6–16.4 percentage points.

This paper provides a framework to understand how and why different tasks are acquired by different organizational forms. Developing such a framework, which emphasizes on heterogeneous tasks, is particularly important in the era of ongoing globalization. Studies show that more sophisticated products have been offshored from developed countries and that more complicated tasks are now being performed in developing countries (Blonigen and Ma, 2007). In the case of China, the value-added share of processing exports has continuously increased from approximately 10 percent to 50 percent over the period from 1997 to 2007, as shown in Fig. 1. All these dynamics affect how offshoring is organized. Thus, the framework of this paper can be adapted to study the new developments in offshoring.

The remainder of this paper is organized as follows: Section 2 constructs a model that introduces different organizational forms into a task-trading framework and studies the effects of offshoring cost reductions on the relative prevalence of

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