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# US policy spillover(?) – China's accession to the WTO and rising exports to the EU

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ABSTRACT

The paper analyzes transmission of bilateral trade policies on multilateral exports, due to existence of a global component in fixed export entry costs. Liberalization in one destination market induces redistribution of this global burden across multiple export destinations, thereby lowering the entry threshold in each of them. The empirical analysis exploits reduced US tariff uncertainty upon China's WTO accession, and examines its effect on China's EU exports. The main results reveal that: (i) the structure of China's export boom to the EU conforms to patterns of US tariff uncertainty; (ii) the adjustment takes place at the extensive margin; and (iii) the effect phases out after a few years. Evidence in support of a fixed-cost redistribution is also presented. The findings have implications for the scope of international policy negotiations and provide suggestive evidence on the nature of fixed costs faced by manufacturing firms in low-wage countries.



## 1. Introduction

Understanding the consequences of international trade policies is not only of academic interest, but relevant also for policy makers, firms, and their stakeholders. In this context, theoretical and empirical work by Handley (2014) and Handley and Limão (2015) emphasizes the importance of economic uncertainty as a major impediment to international trade and business development. A series of recent studies makes efforts to isolate the effect of uncertainty about US tariffs applicable to goods imported from China (Feng et al., 2017; Handley and Limão, 2016; Pierce and Schott, 2016). Exploiting the reduction of this uncertainty in conjunction with China's WTO entry, they find strong ties to a subsequent expansion of Chinese exports to the US, and to a contraction of US manufacturing employment.

The US policy change has been considered an event that impacted trade relations exclusively between China and the US, mainly because other high-income markets – such as the EU – had reduced tariff uncertainty much earlier. This view leaves open the question why China's exports to the EU (and other destinations) increased by about the same proportion.[1] In an increasingly integrating world economy it would be surprising, if an event affecting two of the largest economies in the world has no repercussions for third countries.

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[1] UN Comtrade data suggests that China's commodity exports to both the US and the EU quadrupled between 2001 and 2006. The increase was only half that size in the preceding period (1996–2001).

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An explanation for this isolated view could be that conventional theories of firms in international trade provide few reasons to expect a direct spillover from trade policies of an individual country to the targeted country's trade with third parties. Most models separate firms into exporters and non-exporters through an upfront fixed entry cost that is specific to the destination the firm wishes to ship its goods to (e.g. Melitz, 2003; Chaney, 2008; Handley and Limão, 2016). However, exporting decisions become interdependent once a global component of this fixed cost is assumed. This is because a firm will consider the revenues from all markets it can potentially serve. As a consequence, a trade liberalization in any single one country increases the size of the firm's total export market and may, thereby, raise its exports also to destinations where policies did not change.

Yet, assuming global fixed costs requires justification. Although there exists little systematic evidence on the structure of fixed costs, global fixed costs are typically found to be more relevant for services trade (e.g. Hanson and Xiang, 2011). Firm-level studies in France, Norway, and the US suggest that global fixed costs play an inferior role for manufacturing exporters (Eaton et al., 2004; 2011; McCallum, 2015; Moxnes, 2010). On the other hand, Albornoz et al. (2012) emphasize global fixed costs to rationalize frequent entry and exit of newly exporting Argentinian firms in a dynamic framework. Moreover, evidence reported by Manova and Zhang (2009) suggests that privately owned Chinese enterprises produce and export different – more standardized – versions of a good than foreign-invested firms. As opposed to customization, standardization is typically associated with higher fixed costs (Holmes and Stevens, 2014; Thesmar and Thoenig, 2000).

The present paper provides formal intuition for a spillover from bilateral US tariff policies to China's multilateral export performance, by using a model of international trade in which heterogeneous firms face separable destination-specific and global fixed costs. Existence of the latter is justified by viewing Chinese firms as exporters of "labor services". The framework suggests that transmission of a US policy change operates through redistribution of the global fixed cost burden across destination markets. It induces selection of (additional) firms into exporting which is reflected in higher exports also to non-US destinations. As long as new exporters do not permanently outperform incumbent exporters, the spillover is expected to induce a transitional growth effect, which converges back to its pre-policy rate after a reasonable period of time.

To test these predictions, the paper uses product-level data on Chinese manufacturing exports to the EU for the years 1995–2005. Following previous studies, the effect of reduced US tariff uncertainty is evaluated using a difference-in-difference (DID) strategy. It exploits cross-product differences of the US "tariff threat" and compares years before and after China's WTO entry. Results suggest that the removal of US tariff uncertainty towards China had a positive impact on its exports to the EU. The effect is quantitatively and statistically robust, and appears in a reasonable order of magnitude. It is also confirmed that trade increases through the establishment of new trade relationships (i.e., the extensive margin), and that the effect phases out after a few years.

In line with the theory, the spillover is not exclusive to the EU. Similar patterns can be observed for other non-US high-income destinations, while the policy's direct impact (on China's US exports) is quantitatively larger. Empirical support is also found for redistribution of the fixed costs, for instance, by showing that the estimated policy effect is larger whenever simultaneous or slightly previous entry into US markets can be observed. Further analyses indicate presence of product heterogeneity in their elasticity to a policy spillover. Homogeneous goods are more likely to exhibit spillovers, while they cannot be observed for capital goods. Counterfactual calculations suggest that, during first years after WTO entry, China's average annual manufacturing exports to the EU would have been 9–13 percent lower, if US tariff uncertainty had not been resolved.

In providing empirical support for a spillover of US trade policies on China's multilateral export performance, the paper expands on research studying the mechanisms of trade creation during recent liberalization episodes (e.g. Handley, 2014; Handley and Limão, 2015, 2016; Pierce and Schott, 2016; Feng et al., 2017). Such spillovers have important implications for the scope of international policy negotiations, especially if large economies are involved. The suggested mechanism – a global fixed cost component – constitutes one specific transmission channel, but other mechanisms are possible as well. The "extended gravity" approach of Morales et al. (2014), for instance, would suggest that spillovers concentrate in culturally or geographically proximate markets. Similar ideas are pursued by Chaney (2014) and Defever et al. (2015). The present paper suggests similar-sized spillovers for exports to distant high-income markets, and provides suggestive evidence on the nature of exporting fixed costs faced by firms in low-wage countries.

The rest of the paper is organized as follows. Section 2 presents a simple model in which a change in bilateral trade relations may affect trade with third countries. Some testable predictions are derived from this framework. Section 3 presents the setting which is used to evaluate these predictions, and describes the empirical strategy and the data that is used in the estimation. Section 4 shows and discusses the main results, robustness checks, and further findings. Section 5 concludes.

## 2. Building intuition

Previous studies on reductions of trade policy uncertainty (TPU) focused on the bilateral relationship between the policy-making and the policy-"receiving" countries (e.g., Handley, 2014; Handley and Limão, 2015; 2016; Feng et al., 2017). The extension to a multilateral setting presented here will be based on a similar setup to ensure comparability. Heterogeneous firms face monopolistic competition and productivity is randomly drawn from a Pareto distribution (Chaney, 2008; Melitz, 2003). Economies of scale result from the existence of fixed costs. Typically, they are modeled as a single term, $f_{Jn}$, which varies across products $J$ and destinations $n$. This paper imposes separable fixed costs: $f_n$ is a destination-specific fixed cost, and $f_J$ is a product-specific ("global") fixed cost. Very similar settings are analyzed by Moxnes (2010) and Hanson and Xiang