



Services trade policy and manufacturing productivity: The role of institutions



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ABSTRACT

We study the effect of services trade restrictions on manufacturing productivity for a broad cross-section of countries at different stages of economic development. Decreasing services trade restrictiveness has a positive impact on the manufacturing sectors that use services as intermediate inputs in production. We identify a critical role of institutions in importing countries in shaping this effect. Countries with high institutional quality benefit the most from lower services trade restrictions in terms of increased productivity in downstream industries. We show that the conditioning effect of institutions operates through services trade that involves foreign establishment (investment), as opposed to cross-border arms-length trade in services.

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1. Introduction

Increasing productivity is an essential feature of economic growth and development. A large fraction of productivity growth originates in the manufacturing sector (Van Ark et al., 2008) and depends, among others, on the availability of high-quality upstream inputs (Jones, 2011). These include machinery and intermediate parts and components, as well as a range of services inputs (Johnson, 2014).¹ Trade is an important channel through which firms can improve their access to services inputs, resulting in lower prices and/or greater input variety. The extent to which policies restrict access to foreign services inputs is therefore likely to be relevant for downstream productivity performance.

Recent research has assessed the impact of reductions in import tariffs on intermediate products and/or the effect of product market regulation affecting tangible goods (non-services) that are used by downstream industries.² A related stream of research has focused on the downstream effects of services trade policies. Using plant-level data, Arnold et al. (2011) find that reducing barriers to services trade has a positive impact on the productivity of manufacturing firms in Czech Republic. Analogous results have been established for the case of Indonesia (Duggan et al., 2013) and India (Arnold et al., 2016; Bas, 2014).³ Whether this effect is observed more generally across countries and how it is affected by differences in economic governance are questions that motivate this paper.

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¹ As an illustration, the average dependence on (use of) transport, telecommunications, finance and business services by US manufacturing industries is around 10%, with significant variation across industries, rising to 25% in ISIC sector 26 ('Manufacture of other non-metallic mineral products').

² See e.g., Amiti and Konings (2007), Bas and Causa (2013), Bas and Strauss-Kahn (2015), Blonigen (2015), Estevadeordal and Taylor (2013), Goldberg et al. (2010).

³ The link between upstream services policies and downstream performance is not limited to trade policy measures. Arnold et al. (2008), Fernandes and Paunov (2011), Forlani (2012), Hoekman and Shepherd (2015) (using firm-level data) and Barone and Cingano (2011) and Bourlès et al. (2013) (using sector-level data) investigate the impacts on economic outcomes (productivity, inward FDI, mark-up) of other forms of regulation and policy regimes affecting upstream services sectors.

Barriers to services trade are high in many countries, but there is substantial variation across economies and sectors.⁴ Countries also differ in other dimensions that may impact on the magnitude and distribution of the gains from services trade liberalization. [Rodriguez and Rodrik \(2001\)](#) have advanced the hypothesis that the effects of trade policy reforms are sensitive to conditioning factors that vary at the country level – in particular, the quality of local institutions. Empirical investigation of this conditionality hypothesis finds that trade openness is more likely to have a positive impact on income and economic growth if the institutional context is supportive (see for instance [Borrmann et al., 2006](#); [Freund and Bolaky, 2008](#)).

Institutions may influence the downstream effects of services trade policy in several ways in the short and medium run.⁵ Reducing barriers to cross-border trade may be largely ineffective if low quality institutions in the importing country – such as pervasive corruption, weak rule of law or the absence of effective regulation – create economic uncertainty and insecurity for traders and investors.⁶ Similarly, removing restrictions on the ability of foreign firms to sell products locally by establishing a commercial presence (foreign direct investment) may fail to have the expected pro-competitive effect if a weak institutional and business environment in the host country inhibits foreign firms to enter the market, or, if they enter, induces them to operate inefficiently.⁷

[Fig. 1](#) presents some descriptive evidence in support of the conjecture that institutional quality matters for the impacts of services trade policy. It plots productivity in manufacturing (vertical axis) on a measure of services trade restrictiveness that takes into account the depth of input-output (IO) linkages for a range of upstream service sectors (*CSTRI*, on the horizontal axis).⁸ Light dots represent manufacturing sectors in countries lying above the sample median of the variable ‘control of corruption’ (a measure of institutional quality); dark dots are manufacturing sectors in countries lying below this sample median. In the case of countries with high institutional quality, the (solid) regression line is negatively sloped, with a statistically significant coefficient of -0.153 . Conversely, for countries with low institutional quality the slope of the (dashed) regression line is not statistically different from zero. This is suggestive that lower barriers to services trade are more likely to be

associated with higher productivity in downstream manufacturing when there are strong local institutions.

In this paper we use data for a sample of 57 countries at all stages of economic development to investigate the effects of upstream services trade policy on downstream manufacturing productivity, and the role of institutions in determining the magnitude of such effects. Given that services can be exchanged through cross-border trade and through establishment in a host country (FDI), both of these channels are considered. We find that the impact of services trade policies depends importantly on the quality of local institutions. Lower barriers to services trade have a statistically significant and economically meaningful effect on productivity of downstream industries in countries with good institutions. The positive effect of lower services trade barriers disappears if institutions are weak. Moreover, we find that the moderating role of institutions is likely to operate through the FDI channel, in which foreign suppliers produce and sell services locally as opposed to trade that occurs cross-border, with producers located in one country selling services to clients in another country without any factor movement occurring.

We contribute to the literature in three respects. First, we extend the empirical assessment of the effect of services trade policy on downstream manufacturing industries to a heterogeneous set of countries. Most extant research in this area comprises firm-level country-specific studies, which by construction preclude an aggregate and comparative perspective. Papers such as [Barone and Cingano \(2011\)](#) and [Bourlès et al. \(2013\)](#) adopt a cross-country empirical framework, but focus on a relatively homogeneous group of developed economies. In contrast, our sample of countries spans 27 nations classified as ‘high income’ by the World Bank, 16 upper middle income countries, 10 lower middle income countries and 4 low income economies. This allows consideration of heterogeneous effects across countries with very different institutional contexts and environments. Moreover, both papers mentioned above focus not on services trade policy, but on the OECD Product Market Regulation (PMR) indicator for non-manufacturing industries. This variable captures mostly domestic policies as opposed to the discriminatory feature of trade policy.⁹

Second, while the structure of the empirical model is not new to the literature, we propose an original instrument for services trade restrictions to account for the endogeneity problems common to specifications at the country-sector level. Third, to the best of our knowledge we are the first to provide a services policy-specific test of the conditionality hypothesis of [Rodriguez and Rodrik \(2001\)](#).

The paper is organized as follows. [Section 2](#) discusses the empirical strategy and the data. [Section 3](#) presents the results of the empirical analysis. [Section 4](#) reports a battery of robustness checks. [Section 5](#) concludes.

2. Empirical strategy and data

The objective of the empirical analysis is to estimate the impact of restrictive service trade policies on productivity in downstream

⁴ The most restrictive policies are observed in the high-income Gulf Cooperation Council (GCC) countries, South and East Asia, the Middle East and North Africa. Policies are relatively more liberal in Latin America, Eastern Europe and OECD countries. Sub-Saharan Africa is somewhere between the restrictive and the more liberal regions. Professional and transportation services tend to be the most protected sectors in all countries.

⁵ In the longer run, the quality of institutions will affect the extent to which resources are (re-)allocated to sectors and activities in which a country has a comparative advantage (see [Fiorini et al., 2015](#)) and ultimately the patterns of comparative development ([Acemoglu et al., 2001](#)).

⁶ [Anderson and Marcouiller \(2002\)](#) and [Ranjan and Lee \(2007\)](#) show empirically that when low quality institutions in the importing country generate insecurity in international transactions, this acts as a hidden tax on trade, reducing trade flows toward that particular destination.

⁷ Macro evidence on the role of institutions as determinants of the effect of FDI on growth is presented by [Busse and Groizard \(2008\)](#) and [Dort et al. \(2014\)](#). At the micro level, a number of studies show that the productivity of firms is linked to the institutional environment in which they operate – see for example [Gaviria \(2002\)](#), [Dollar et al. \(2005\)](#), [Lensink and Meesters \(2014\)](#), and [Borghi et al. \(2015\)](#). [Bernard et al. \(2010\)](#) find that better governance in destination countries is associated with multinational enterprises establishing more affiliates. [Beverelli et al. \(2015\)](#) provide some case-study evidence for the entry channel, using the example of a global telecommunications firm, Vodafone. After controlling for country size (level of GDP) and for the level of services trade restrictiveness in telecommunications, institutional quality is found to have a positive and statistically significant effect on the probability of Vodafone entering a market through establishment of a commercial presence.

⁸ Each data point in [Fig. 1](#) is a country-manufacturing sector combination. The variable *CSTRI* (Composite Services Trade Restrictiveness Index) is constructed using all modes of supply (this is discussed in greater detail in [Section 2.2](#)).

⁹ Our paper complements [Van der Marel \(2016\)](#) and [Hoekman and Shepherd \(2015\)](#). These two studies use sector-level data with a wide country coverage to assess relevant related questions. [Van der Marel \(2016\)](#) finds that countries with a high level of regulatory capacity are better able to export goods produced in industries that make relatively intensive use of services. He uses a world-average trade restrictiveness measure for each service sector, with the sector-level component of the country-sector interaction term representing regulatory capacity, in line with the methodology proposed by [Chor \(2010\)](#), whereas we use country-level policy measures to identify and quantify the impact of services trade reforms on downstream productivity. [Hoekman and Shepherd \(2015\)](#) embed services trade policy into a gravity framework and show that lower restrictions to services trade lead to higher trade in manufactured goods. Our non-gravity methodology focuses on downstream productivity effects, takes into account input-output linkages and allows for heterogeneous impacts across countries.

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