

EU Services Trade Liberalization and Economic Regulation: Complements or Substitutes?

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Abstract

This paper investigates how national economic regulation shape the impacts of reducing external barriers to services trade for a sample of European countries. Notwithstanding far-reaching integration of services markets there is significant heterogeneity in domestic regulation and governance across European economies. We show this affects the potential downstream productivity effects of external services trade policy. In some cases, liberalization can substitute for weak regulation; in others there is a complementary relationship. Thus, the productivity effects associated with services market access liberalization depend on the quality of domestic economic regulation. EU-specific measures to promote internal trade in services – proxied by implementation of the Services Directive – are found not to have such moderating effects. An implication of our findings is that EU governments should do more to assess how specific dimensions of domestic regulatory regimes influence the size and distribution of the effects of services trade reforms.

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1. INTRODUCTION

Major changes in the organization of international production, exemplified by the rise of global value chains and intra-firm trade (Baldwin, 2016) have changed trade policy preferences of businesses (Eckhardt and Poletti, 2016; Madeira, 2016; Young, 2017). Increasingly, firms lobby for trade and investment facilitation and support negotiation of ‘deep’ trade agreements that encompass disciplines on regulatory policies. One result has been an expansion in the coverage and depth of trade agreements (see e.g. Dür, Baccini, and Elsig, 2014; Hofmann, Osnaga and Ruta, 2018). Such agreements generally include disciplines on protection of intellectual property rights (IPRs), foreign investment policy, investor-state dispute settlement (ISDS) mechanisms, and provisions on protection of human rights, labor standards and the environment. These features of deep trade agreements have attracted substantial attention in the international relations literature – e.g., Lechner (2016), Van den Putte and Orbis (2015), Donno and Neureiter (2017); Young (2016) – in part reflecting public opposition to ISDS, concerns regarding the effects of strong protection of IPRs and electorate pressure that trade agreements conform to (support) EU norms and values.

Issues relating to external trade in services have attracted less attention, despite services becoming a core element in recent vintage trade agreements negotiated by the EU.¹ The reason why trade negotiators devote more attention to services is clear: economic activity and employment in the EU increasingly revolves around services. Even traditional manufacturing sectors and agriculture are undergoing ‘servicification’, with companies increasing the share of value added (and profits) from services (National Board of Trade Sweden, 2016). As EU countries have a comparative advantage in a wide variety of services, European services firms are keen to improve their access to foreign markets and lobby for trade agreements to do so.

Services trade differs from trade in goods. The nonstorability of many services often requires proximity in space and/or time between sellers and buyers for trade to occur (Sampson and Snape, 1985). An implication is that trade policies for services include measures affecting cross-border movement of service suppliers. Visa, work permit and licensing requirements will affect the ability of suppliers to temporarily cross borders to provide services, as will investment policies that restrict foreign firms from establishing a commercial presence to engage in so-called Mode 3 services trade.² Compared to merchandise trade policy, matters are further complicated because domestic regulatory policies may play a significant role in determining the conditions of competition confronting foreign firms. Thus, the quality of regulation of markets may influence the effects of services trade policies and the magnitude and distribution of the potential benefits of services trade liberalization.

The aim of this paper is to contribute to understanding how regulation may impact on the gains from services liberalization. More specifically, we investigate how differences in the quality of domestic regulation and governance shape the potential impact of removing barriers to FDI in services (i.e., Mode 3 trade liberalization) on productivity in the manufacturing sectors that use services as intermediate inputs.

¹ An exception is analysis of the possible implications of trade agreements for public services (education, health) and audio-visual services). See Pedreschi (2018) for discussion and references to the related literature. More generally, see Delimatis (2017) for an overview of services-related provisions in EU trade agreements.

² The WTO defines four ‘modes of supply’: Mode 1: cross-border exchange of services via ICT networks; Mode 2: the movement of a buyer or consumer of a services to the (exporting) country where the service is performed; Mode 3: sales of services through establishment of a commercial presence (i.e., foreign direct investment); and Mode 4: temporary cross-border movement of natural persons (services suppliers). See Francois and Hoekman (2010).

The economic literature has pointed to the importance of considering the interaction between regulation and services trade policy, arguing that benefits of more open trade may be conditional on the quality of regulation (e.g., Eschenbach and Hoekman, 2006; Copeland and Mattoo, 2008). Recent cross-country empirical analysis of the relationship between domestic regulatory institutions and services trade has found that the magnitude of the gains from services liberalization depends on the quality of economic governance, as measured by broad, cross-cutting indicators such as the rules of law and control of corruption (Beverelli, Fiorini and Hoekman, 2017). This is consistent with previous findings that governance quality affects the potential gains from liberalization of trade in goods (e.g., Rodriguez and Rodrik, 2001; Ahsan, 2013).

Determining how different types of regulatory policies interact with services trade policy (defined here as explicitly discriminatory market access barriers) is an important policy-relevant research agenda. Understanding how prevailing regulatory institutions can influence the magnitude and distribution of the productivity effects of trade policy changes matters for policymakers as well as analysts seeking to understand and model such effects. In the case of the EU, the focus of this paper, this question is particularly salient, as interactions between national regulatory regimes, EU law pertaining to services regulations, and EU trade policy may influence the distributional effects of (changes in) EU external services trade policy across the member states, and thus help to better understand the politics of services trade policy.

The extant literature on economic governance/regulation and trade liberalization tends to focus on cross-cutting indicators of governance such as rule of law and control of corruption and their effects on broad measures of economic activity, such as aggregate growth or export performance. We contribute to the literature by differentiating between sector-specific regulation and horizontal regulation that affects many (or all) sectors. We restrict attention to Mode 3 services trade policy as this was the dominant mode of supply in the period we investigate (1989-2009)³ and a focus on Mode 3 permits a sharp distinction to be made between explicit discriminatory (trade) policies and different types of domestic regulation. This distinction is much more difficult to make for Mode 1 trade policies as these tend to be regulatory in nature. From a more pragmatic perspective, we focus on Mode 3 policies because the time series data needed for our identification strategy are not available for policies applying to other modes.

The focus of the empirical analysis is on whether and how services trade policy affects the productivity of manufacturing sectors that use services as intermediate inputs. We therefore restrict the scope of the analysis to just one channel through which market opening may affect economic performance. We do so in part because this has been the focus of the recent economic and political science literature analyzing the effects of trade policies (e.g., Barone and Cingano, 2011; Mansfield and Milner, 2012; Ciuriak et al. 2014; Osgood, 2018), reflecting the theoretical prediction that trade policy will affect the productivity performance of firms and sectors by impacting on the cost and quality of available intermediate inputs. Another reason is that input-output linkages (from upstream services to downstream manufacturing) allow us to exploit disaggregated data on manufacturing sectors, permitting the use of demanding batteries of fixed effects to minimize potential endogeneity due to observable or unobservable omitted variables.

³ Although Mode 1-type trade in services occurring through ICT networks is becoming increasingly important, available data suggest Mode 3 remains the dominant mode of supply for EU countries, accounting for some 70 percent of total extra-EU services trade in 2013 (Rueda-Cantuche et al., 2016).

We exploit an unbalanced panel dataset covering 13 European countries, spanning 12 EU Member States and Norway and the period 1989-2009. The EU is an interesting focal point for research on services trade policy because of the far-reaching effort to create an integrated single market. This includes disciplines on services sector-specific domestic regulation that may impede internal trade, exemplified by the 2006 Services Directive. At the same time there remains substantial discretion for countries to pursue domestic regulation. Moreover, before the entry into force of the Lisbon Treaty (1 December 2009) this discretion extended to policies towards foreign direct investment (FDI) by services firms from third countries.⁴ Post-Lisbon, the EU common commercial policy covers trade in services and FDI policy, so that heterogeneity across EU countries in these areas will be reduced over time, in part through negotiating trade agreements with non-EU countries that span these policy areas.

Variation across the sample countries in the degree of market openness to Mode 3 services trade, and domestic economic regulatory policies is used to assess how different types of regulation moderate the effects of external services liberalization. Conceptually, this relationship may be complementary, with the productivity effects of greater market access depending on the quality of domestic economic governance. Alternatively, foreign access to services markets may be a substitute for pro-competitive domestic regulation. We find evidence for both possibilities, illustrating the importance of differentiating between types of economic regulation when assessing the potential economic effects of market access liberalization.

The plan of the paper is as follows. Section 2 discusses the relationship between external services trade policy and the productivity performance of industries using services as inputs into production, and how economic regulation may moderate this relationship. Section 3 describes the econometric framework and the data. Section 4 presents the results of the empirical analysis. Section 5 discusses some potential implications of our results for policy and research on the politics of trade. Section 6 concludes.

2. SERVICES POLICIES AND DOWNSTREAM PRODUCTIVITY PERFORMANCE

Services such as finance, insurance, telecommunications, transport and logistics are inputs into many production processes. As a result they are often referred to as producer services. They differ from manufactured intermediate inputs (parts and components) as they play a role in coordinating and controlling complex production activities that are distributed over time and space (Francois, 1990). Such services have become more important as businesses engage in international production and participate in global value chains (GVCs) that require the coordination of activities of plants and firms located in different geographical regions. Restrictive trade and investment policies will reduce the availability and/or raise the cost of service inputs available on the market and thus have adverse consequences for the performance of downstream manufacturing sectors (see e.g., Arnold et al., 2011, 2016).⁵ The price and the quality of producer services available to downstream producers is also influenced by regulatory policies that may affect competition on services markets. Numerous studies have found that domestic regulation of services markets can have sizable impacts on downstream productivity and/or merchandise export performance (Barone and Cingano, 2011; Bourlès et al., 2013).

⁴ Prior to Lisbon member states did not necessarily pursue identical external policies in these areas. As a result, EU countries differ substantially in their external (extra-EU) policy towards FDI, reflected, *inter alia*, in differences in the number of bilateral investment treaties with non-EU countries, the restrictiveness of FDI policy, and the treatment of foreign (non-EU) service providers. Meunier (2017) describes the process leading up to FDI becoming part of the common commercial policy in the Lisbon treaty.

⁵ This research on the effects of services trade policy is consistent with the empirical literature on liberalization of import tariffs that stresses the downstream effects of tariff reductions on intermediate inputs (e.g., Amiti and Konings, 2007; Goldberg et al., 2010; and De Loecker et al., 2016).

There is substantial evidence that the benefits from liberalization of trade in goods depend on country-specific conditioning factors, notably the quality of local governance institutions (e.g., Rodriguez and Rodrik, 2001; Freund and Bolaky, 2008; Ahsan, 2013). The quality of economic governance institutions can also be expected to affect the effects of services trade reforms on downstream sectors. Beverelli et al. (2017) find that removing barriers to Mode 3 services trade in countries with weak governance will have less beneficial effects on downstream productivity performance. They argue there is a *prima facie* presumption that domestic governance institutions should moderate the effects of removing Mode 3 barriers to trade more than the main alternative mode of supply – cross-border exchange via Mode 1 – because firms are more exposed to the economic environment prevailing in the ‘importing’ country as they produce there.⁶ An implication is that eliminating restrictions on inward foreign direct investment (FDI) in services sectors may fail to generate positive downstream performance effects if weak governance institutions in the host country discourage entry by foreign firms following the liberalization, or, if they enter, induces them to operate inefficiently, use outdated technology, etc. This is consistent with the literature on the determinants of FDI – e.g., Busse and Hefeker, 2007; Dreher and Gassebner, 2013; and Dort, Méon, and Sekkat, 2014).

Complementarity vs. substitutability between services trade policy and regulation

The literature analyzing the interaction between measures of governance such as control of corruption and rule of law suggests there is a complementary relationship between the quality of domestic governance and trade liberalization in the sense that better governance increases the magnitude of the positive economic effects of improving access to markets. The question of interest in what follows is whether the complementarity relationship between broad governance variables and services trade reforms found in previous studies holds across a range of specific (more narrowly defined) dimensions of economic governance. This is a policy relevant question. If the economic benefits of services trade liberalization can be increased substantially by regulatory reform in a specific area, it may be desirable to condition trade liberalization on such reforms. A necessary condition for designing and implementing such conditioning is specific knowledge of what type of regulation/economic governance has a strong complementarity relationship with trade opening.

In principle there can be substitutability as well as complementarity between trade policy and domestic regulation. To illustrate, consider the case of barriers to entrepreneurship captured by the degree of complexity and transparency of the regulatory requirements pertaining to the establishment and operation of firms in a market. Complex regulations may generate uncertainty and a need to plan for unpredictable shocks to production processes, deterring investment by firms. Large foreign services providers, potentially equipped with superior technology and greater resources than domestic (national) competitors may be better placed to deal with such a regulatory environment. If so, this gives rise to a substitution relationship between domestic governance and market access: opening the market to foreign providers may be a substitute for better (good) domestic governance in improving the cost and availability of services inputs for downstream firms.

The relationship between the performance of domestic regulatory institutions and changes in services trade barriers will be determined in part by whether and how much regulatory measures constrain new entry and/or reduce the ability of firms to operate profitably once they have established, and in part by whether and what types of market failure motivate regulation. In assessing the possible relationship it

⁶ Their cross-sectional empirical analysis finds no evidence that economy-wide governance indicators play a role in shaping the downstream effect of Mode 1 services trade policies.

is important to distinguish further between horizontal (cross-sectoral, cross-cutting) regulatory institutions and sector-specific forms of regulation.

Table 1 offers a schematic representation of a conceptual framework that captures key dimensions of economic regulation that are relevant for purposes of determining the likelihood of complementarity or substitutability. It distinguishes between horizontal and sector-specific types of economic regulation and for each of these differentiates between policy measures based on degree of implied restrictions on competition (significant vs. limited) and the two most common types of market failure that may motivate regulation of services activities—information asymmetries and network externalities.⁷ The resulting matrix characterizes the possible relationship between services market access and domestic governance for the type of economic regulation captured by each cell. Each cell includes an example for illustrative purposes. We assume that the relevant market failure always has a sectoral dimension and therefore do not consider general market failures that may motivate horizontal regulation.⁸

Focusing on the first two rows in Table 1 characterizing the potential effects of competition-restricting domestic regulation, some types of intervention, e.g., a registration requirement, will give rise to a relatively small burden on operators. Other measures may give rise to more substantial or even prohibitive entry costs. Examples are restrictive economic needs tests that must be satisfied as a precondition for being permitted to offer a service, or regulation that reserves certain types of activities to a state-owned enterprise (SOEs). The benefits of lower services trade barriers (reducing discrimination against foreign providers of services) will be affected by the applicable measures regulating entry. If these are not prohibitive, more efficient foreign providers can be expected to be able to satisfy the regulatory requirements. The regulation will increase costs, but some level of trade (investment) can be expected to occur, raising the quality-to-price ratio of services inputs available to domestic manufacturing sectors. In this case, market access can substitute for regulatory reform. If, however, regulation is such as to essentially preclude entry, because for example, state control of prices or the existence of SOEs that dominate the market, services trade liberalization may not have much of an effect in changing incentives to enter the market. There is then more likely to be a complementary relationship between services trade policy and regulation: to generate pro-competitive dynamics, reforms will need to target both policy areas.⁹ The patterns described above apply to domestic regulation that is horizontal in scope as well as to sector-specific domestic regulation.

In the case of sector-specific regulation motivated by market failure considerations there is likely to be an additional dimension. For example, in the case of services sectors with significant network externalities such as transport (rail, pipelines, or electricity transmission) and telecommunications services, there may be a rationale for regulation of the relevant network to ensure interconnection and access. Sectoral regulatory regimes that permit exploitation of market power by incumbent operators can prohibit entry by new operators. This cannot be offset by services trade liberalization if it is prohibitively expensive for new entrants to develop their own network infrastructure. The implication is that liberalization will not allow foreign firms to overcome weakness in regulation (absence of pro-

⁷ Copeland and Mattoo (2008) discuss different market failure rationales for regulation of services.

⁸ We abstract from economy-wide policies addressing anticompetitive practices and state aid (subsidies). Other research has found a complementary relationship between market access and competition law enforcement. For example, using time series data for 42 countries, Kee and Hoekman (2007) investigate empirically the contribution of competition law relative to import competition (openness) and regulation affecting entry and exit of firms. They find that domestic and foreign competition is an important direct source of market discipline in concentrated markets that is complemented by competition policy, which indirectly reduces equilibrium mark-ups by promoting a larger number of domestic firms.

⁹ The logical subject here is regulation, so that the relationship is limited to one-way complementarity: good regulation enables and magnifies the effect of trade reforms. We are agnostic on the effect of regulatory reform in the absence of trade openness.

competitive regulation). There is then complementarity between the quality of regulation and the magnitude of the potential benefits of services trade liberalization.

Table 1. Potential relationships between economic regulation and services market access

Attribute of economic regulation	Type of attribute	Scope of economic regulation	
		Horizontal (cross-cutting)	Sector-specific
Competition-restricting regulation resulting in:	limited additional costs on entry and operations	Substitutability <u>Example:</u> degree of complexity and clarity of general requirements pertaining to establishment and operation of firms	<u>Example:</u> sector specific regulatory requirements pertaining to the licensing of professional services suppliers
	substantial entry and/or operations costs	Complementarity <u>Example:</u> state control of an economic activity (e.g., advertising)	<u>Example:</u> Nationality requirement or restrictive economic needs test for entry/operation
Addressing market failures	Information asymmetries	Not applicable	Substitutability <u>Example:</u> regulation of professional services
	Network externalities	Not applicable	Complementarity <u>Example:</u> regulation of infrastructure services (telecom interconnectivity)

Such complementarity is less likely to arise in cases where information asymmetries motivate regulation. In the case of producer services, for example, network externalities are relatively unimportant or do not figure at all. The main rationale for regulation is to deal with problems of asymmetric information. If domestic regulation is ineffective in addressing such problems in the sense of not preventing low quality providers to operate or addressing moral hazard, liberalization of market access for foreign providers may allow such regulatory failures to be overcome to some extent. For instance, foreign firms may establish a reputation for quality by leveraging brand names or international certification (such as compliance with ISO standards). If domestic regulation does not take the form of a binding quantitative restriction on entry, the result is likely to be a substitution relationship between domestic sectoral regulation/governance and market access reform. Trade reforms will not make a significant improvement in the availability of inputs (and therefore on downstream productivity performance) where regulations are good. They are more likely to trigger positive productivity effects in environments where governance institutions are weak. In those cases a trade reform can substitute a for economic governance reform as a policy tool for improving economic performance.

A distinctive feature of EU countries is that economic regulation of services is to some extent defined (constrained) by EU law. In the case of services there are numerous directives that seek to ensure that domestic regulation not be used to restrict intra-EU movement of firms and supply of services. Much if not most of the Services Directive, for example, addresses services-specific domestic regulation that may act to restrict internal trade in services. Thus, for EU countries both horizontal and sector-specific regulation affecting services is subject to constraints. Of relevance to our analysis is whether and how these constraints – or, in other words, the EU dimension of domestic regulations reflected in the adoption and implementation of EU law – moderate the effect of removing discriminatory barriers in services trade.

One possibility is that EU services legislation increases the potential gains from external services trade liberalization. If so, EU member states that do more (or better) in incorporating services-related EU norms in domestic regulation may experience larger economic gains from market access opening than other EU countries. Alternatively, in the substitutability case, there may be greater potential for realizing gains from services liberalization in EU member states that are lagging in terms of implementing EU services-related regulatory norms. Consideration of the possible asymmetric distribution of the EU-wide gains from external services trade reform may be important from both a policy and trade politics perspective. In the Online Appendix we use indicators of the extent of implementation of the provisions of the EU Services Directive by member states to investigate whether EU-wide disciplines on services policies influence the downstream effects of EU external services trade policy.

3. EMPIRICAL FRAMEWORK

Given the conceptual background discussed above, this Section presents the empirical specification and data used to investigate the moderating role of different dimensions of governance institutions in shaping the downstream effects of trade policies targeting producer services.

We use as dependent variable a measure of labor productivity, y_{ijt} , that varies at the country i , manufacturing sector j and time t level. To capture the impact of the restrictiveness of services trade policies on downstream sectors we define a composite (services) trade restrictiveness index as:

$$CRI_{ijt} = \sum_s RI_{ist} \times w_{isj} \quad (1)$$

where RI_{ist} is a restrictiveness index for Mode 3 imports (inward FDI) of service s in country i at time t . RI_{ist} is the policy component of CRI_{ijt} . It captures the scope and intensity of discriminatory barriers to investment by foreign providers in four services sectors: transport and storage; post and telecommunication; finance and insurance; and business services. The other component of CRI_{ijt} , w_{isj} , measures how much downstream sector j in country i uses service s as an intermediate input to produce its output.¹⁰

Data for RI_{ist} are sourced from the OECD FDI Restrictiveness Index Database (Kalinova, Palerm, and Thomsen, 2010). This measures statutory restrictions on inward FDI and is available for 1997, 2003,

¹⁰ The construction of such a composite policy indicator is standard in the economic literature assessing the effects of sector-specific policies on the productivity performance of downstream sectors/firms (see, e.g., Amiti and Konings, 2007).

2006 and on an annual basis for the post 2010 period.¹¹ The barriers covered in the index include limits on foreign equity; discriminatory screening mechanisms and prior approval requirements; restrictions on key foreign personnel; restrictions on the establishment of branches; reciprocity requirements; restrictions on repatriation of profits or capital; restricted access to local finance; and limitations on land ownership.

The main focus of our analysis is on an empirical specification for manufacturing labor productivity that includes as key regressor of interest the interaction between CRI_{ijt} and different measures of country-level regulatory institutions that capture specific dimensions of economic governance indexed by d ($GI_{d;it}$), as follows:

$$y_{ijt} = \beta CRI_{ij(t-1)} + \mu(CRI_{ij(t-1)} \times GI_{d;i(t-1)}) + \gamma x_{ij(t-1)} + \delta_{it} + \delta_{jt} + \varepsilon_{ijt} \quad (2)$$

where $x_{ij(t-1)}$ is the capital-labor ratio, a relevant determinant of productivity that is potentially correlated with $CRI_{ij(t-1)}$; δ_{it} are country-time fixed effects which, among other things, subsume the term $GI_{d;i(t-1)}$ characterized by country-time variability; δ_{jt} are sector-time fixed effects; and ε_{ijt} is the error term.

The downstream productivity effects of Mode 3 barriers to foreign producer services is given by the estimated marginal effects of CRI on y :

$$\widehat{\frac{\partial y}{\partial CRI}} = \hat{\beta} + \hat{\mu} \times GI_d \quad (3)$$

This marginal effect depends on country-level regulatory institutions captured by the variable GI_d . The sign of $\hat{\mu}$ will identify the nature of the moderating role of institutions (complement or substitute) in influencing the marginal effect of CRI . For each dimension, d , the respective version of equation (2) is estimated.

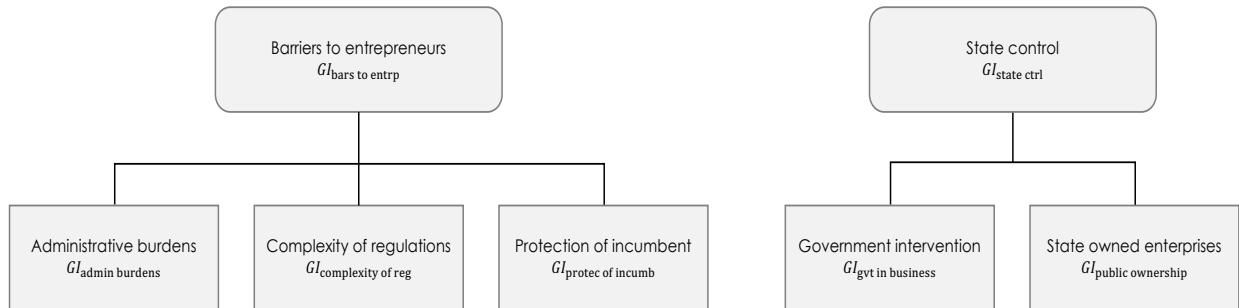
In a baseline model without the interaction term $CRI_{ijt} \times GI_{d;it}$, the marginal effect of CRI on downstream sector productivity is given by the estimated coefficient, $\hat{\beta}$. Based on the empirical evidence in the literature discussed above we expect $\hat{\beta}$ to be negative and statistically significant. Thus, reducing restrictions to trade in producer services (i.e., a decrease in the value of RI , reflected in a proportional decrease in CRI) is expected to increase the labor productivity of downstream manufacturing sectors. A positive sign for the point estimate $\hat{\mu}$ in the interaction model (2) would then suggest that a lower value of the moderating governance variable GI_d is associated with a larger positive impact of reducing services trade restrictions on downstream manufacturing performance.

The variable GI_d used to assess the moderating role of regulatory institutions encompasses different indicators and is not uniform across estimation models. We use both horizontal (multi-sector, cross-cutting) governance indicators and sector specific ones. Horizontal dimensions of regulatory policy are sourced from the OECD Product Market Regulation (PMR) Economy Wide Database. They comprise two composite indicators, one reflecting barriers to entrepreneurship and one reflecting the extent of state control. Each of these composites has sub-categories which define five additional indicators (Figure 1). The composite indicator on barriers to entrepreneurship has three sub-categories: the level of administrative burdens; complexity of regulations; and protection of incumbent operators against

¹¹ More detailed data on Mode 3 policies have been compiled by the OECD. However, these services trade restrictiveness indicators are only available starting in 2014. See <http://www.oecd.org/tad/services-trade/services-trade-restrictiveness-index.htm>.

competition. The state control indicator has two subcategories: a measure of the extent of government intervention in business; and the relative importance of SOEs in the economy.

Figure 1. Horizontal dimensions of economic governance



Source: Adapted from OECD Product Market Regulation, Economy Wide Database Schemata

Three sector-specific regulatory governance measures are used. Indicators for regulation of transport ($GI_{transport}$) and posts and telecommunications ($GI_{telecom}$) are sourced from the energy, transport and communications regulations (ETCR) component of the OECD PMR database. A third indicator on business services ($GI_{business}$) is sourced from the OECD PMR Professional Services Database. $GI_{transport}$ aggregates information on the extent (share) of public ownership in air and rail transports sectors, the prevalence of price regulation in road transport, and the market structure and degree of vertical integration in the rail transport sector. $GI_{telecom}$ is constructed using information on the scope of public ownership and market structure of the postal and telecommunication sectors in a country. $GI_{business}$ is a measure of the extent of prevailing conduct regulation of professional services – accountancy, architects, engineers and legal service providers.

PMR indicators that entail discrimination against foreign providers such as trade and FDI-related policies are not used in the analysis as market access policy is captured by the FDI restrictiveness indicator. Similarly, regulatory measures that entail discriminatory barriers to entry are systematically excluded from the construction of the sector specific regulatory variables.

The GI_d variables range between 0 and 1. The lower the value, the higher the quality of the associated governance institutions in a pro-competitive sense. This implies a positive sign for $\hat{\mu}$ is suggestive of a complementarity role of domestic governance with respect to market access liberalization: reducing barriers to services trade has a stronger positive effect on downstream manufacturing sectors given higher quality of domestic economic governance. Conversely, a negative sign for the estimate of $\hat{\mu}$ suggests substitutability between domestic regulation and market access liberalization: when economic governance is weak, opening markets for producer services to international trade and investment has a substantial positive effect on the productivity of downstream manufacturing sectors.

Our empirical analysis uses data for a sample of 13 European countries, 12 of which are EU member states. A feature of the domestic regulation-external market access relationship that is important in the EU context is the role of common EU institutions and EU law. EU membership implies obligations to apply EU law and regulations. In the case of services, the Single Market Strategy and associated EU directives, combined with monitoring and enforcement of their implementation by the European Commission and the Court of Justice are features of EU membership that may influence the economic effects of external services trade liberalization.

Endogeneity resulting from observable and/or unobservable heterogeneity is not a major concern for the chosen specification. Country-time and sector-time fixed effects control for any country- or sector-specific time contingent shock that has the property of affecting both labor productivity and the regressors of interest. These include the country-specific factors determining the productivity of the domestic service providers, the average trade policy for manufacturing, and the sector-specific factor intensity. The latter is likely to vary across countries, which is fully controlled for by the capital-labor ratio term in our specification.

In a very similar setup using cross section data Beverelli et al. (2017) use an instrumental variable approach to address concerns of potential reverse causality. It might be that more (less) productive downstream sectors have the incentives and/or the capacity to lobby for more (less) restrictive market access for foreign services providers or vice versa. In the former case (more productive industries lobbying for more restrictions) an estimated negative effect of CRI would have to be interpreted as a lower bound of the true effect (see also Bourlès et al., 2013). In the opposite scenario (more productive industries lobbying for less restrictions) the sign of the bias cannot be determined a priori. The Beverelli et al. (2017) IV estimation indicates that OLS estimates are unlikely to suffer from simultaneity bias. This finding, together with the time lag introduced between the dependent variable and the policy regressor of interest in our specification, alleviates potential reverse causality concerns.

Possible endogeneity of input-output weights is addressed in a standard way by using input-output measures that reflect the properties of each manufacturing sector's production function rather than country-specific factors. This is done by applying to each country the input-output weights of a reference economy where input-output linkages can be expected to be accurate proxies of the technological relationships between upstream services and downstream manufacturing. We follow the literature and take the US as the reference economy.¹² As a consequence, the country-level dimension of variability in the term w_{isj} in equation (1) is eliminated and the country-time variability in the composite restrictiveness indicator CRI_{ijt} reflects exclusively its services trade policy component, RI_{ist} .

Data on sectoral labor productivity are sourced from the OECD STAN Database. Labor productivity in manufacturing sectors is measured as the natural logarithm of the ratio between value-added and total number of employed persons at the 2-digit level of the ISIC Rev 3 classification. Capital (measured as net capital stock) and labor measures used to construct the capital-labor ratio come from the same database. The need for time series data for the net capital stock reduces the estimation sample: data are consistently reported at the 2-digit manufacturing sector level for only 13 European countries (Austria, Belgium, Czech Republic, Germany, Denmark, Spain, Finland, France, UK, Italy, Netherlands, Norway and Sweden). This data limitation implies there is a trade-off between greater country coverage and a sharper specification that controls for the capital-labor ratio at the country-sector-time level. We opt for the more demanding specification as our preferred approach.¹³ Proxies for input-output weights w_{isj} are given by the technical coefficients of IO matrices. We use US input-output (IO) coefficients for the mid-1990s. The IO data are from the OECD STAN IO Database.

Some of the data series used in the analysis are not reported annually but span only a number of years. This is the case for the PMR Economy Wide Database, the FDI Regulatory Restrictiveness Database

¹² For discussion and assessments of the appropriateness of using US input-output weights as an indicator of the technological linkages between industries see Rajan and Zingales (1998) and Barone and Cingano (2011).

¹³ When the analysis is conducted without controlling for the capital-labor ratio, the sample expands to include seven additional EU Member States (Estonia, Greece, Hungary, Luxembourg, Portugal, Slovakia, and Slovenia) plus Switzerland. Using this larger sample of countries generates results that are very consistent with those for the smaller sample. Estimation exercises that do not control for the capital-labor ratio are available upon request.

and the Services Directive Database. In these cases, we construct a panel by imputing the missing value at time t with the non-missing value at time $t - 1$. In those cases where the series does not start in 1989 we take the first non-missing value and hold it constant backward to the beginning of our sample. Alternative imputation strategies as well as a conservative approach that uses only the reported data points do not substantially change the main results.¹⁴

Merging all variables, we obtain an estimation sample consisting of 2,840 observations covering the 13 countries noted above; up to 18 manufacturing sectors defined according to the ISIC Rev 3 (2 digit) specification; and 21 years, 1989-2009.¹⁵ Annex Table 1 reports summary statistics for all the variables used in the empirical analysis. Annex Table 2 provides data on the distribution of Mode 3 services trade policy for the countries in the estimation sample. As can be seen there is substantial heterogeneity across countries in applied policies towards FDI in different services sectors and in the change in policy over time. What is apparent from the FDI policy data is that the EU does not yet have a uniform external services trade policy when it comes to Mode 3. As noted in the Introduction, FDI policy only became part of the common commercial policy with the entry into force of the Lisbon treaty in 2009.

4. RESULTS

Estimation results are organized by type of domestic governance indicator.¹⁶ Column (1) in Table 2 reports the benchmark estimates from a regression without the interaction term. The other columns present point estimates and standard errors for the coefficients in equation (2) when proxies for horizontal governance are interacted with the composite reform indicator.

The estimated coefficient for *CRI* in column (1) is negative and statistically significant. This replicates the finding in the literature of a positive downstream effect of lowering market access barriers for services. The point estimate of -0.815 implies that a one standard deviation reduction in the composite reform indicator (-0.048) increases downstream labor productivity on average by 3.9%.¹⁷ Turning to the interaction models in columns (2)-(8), several findings emerge. When the marginal effect of *CRI* is allowed to change linearly with the quality of regulatory/governance institutions, the relationship varies across the proxies for horizontal governance. This illustrates the salience of ‘unpacking’ regulatory regimes in assessments of the moderating role of governance quality on the effects of services trade policy: this heterogeneity is not apparent when only macro measures of governance such as rule of law are used.

The negative and statistically significant coefficients for the interaction term in columns (2) and (4) suggest that greater external market access for services inputs can act as a substitute for reducing regulatory barriers to entrepreneurship. It also suggests that of the elements that make up this composite

¹⁴ Our imputation methodology follows Bourlés et al (2013), who use many of the PMR indicators we focus on in this article. Their sample starts in 1984. Results from alternative methodologies are available upon request.

¹⁵ For each specification observations vary across downstream manufacturing sectors (j), countries (i) and years (t). The dimension of variability that reflects to which and how many services a given moderator variable (GI_d) applies to does not affect sample size.

¹⁶ All the variables have the same country coverage, i.e., the estimation sample remains constant across all regression exercises.

¹⁷ More detailed quantification of the downstream effects of trade policy changes is beyond the scope of this paper. Our empirical methodology implies that quantification of the effects of changes in the policy variables alone can only be conducted at the manufacturing sector level. We adopt the simpler approach of looking at the effects of changes in the composite policy indicator (de facto treating it as a policy variable in itself) given our focus on analyzing the potentially heterogeneous role of different dimensions of regulatory governance in moderating the downstream effects of services trade policy as opposed to quantification of the magnitude of these effects. Analogous quantification approaches are used in the literature looking at the impact of import tariff reforms for downstream firms or industries—see for instance Amiti and Konings (2007).

indicator, the complexity of regulatory regimes is particularly important (column 4). This is consistent with the hypothesis advanced previously that foreign providers, once granted better market access, can offer better quality, variety and/or prices than domestic providers by successfully overcoming prevailing barriers to entrepreneurship. Results are plotted in Figure 2, panels *a* and *b*: the estimated marginal effect of *CRI* decreases with *GI* and is always negative and statistically different from 0 at the mean value of the respective *GI* variable (i.e., there is a positive downstream effect of reducing trade restrictions) when barriers to entrepreneurship are too high.

Table 2. **The moderating role of governance institutions: horizontal dimensions**

Dependent variable: log of downstream labor productivity	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>CRI</i>	-0.815*** (0.271)	1.079 (1.037)	-0.552 (0.747)	-0.264 (0.382)	-0.458 (0.703)	-2.504*** (0.748)	-0.413 (0.602)	-4.954*** (0.773)	-1.482 (1.321)
<i>CRI</i> × <i>GI</i> _{bars to entrp}		-4.846** (2.349)							
<i>CRI</i> × <i>GI</i> _{admin burdens}			-0.441 (1.126)						-4.934** (2.090)
<i>CRI</i> × <i>GI</i> _{complexity of reg}				-1.895** (0.919)					-4.463*** (1.599)
<i>CRI</i> × <i>GI</i> _{protec of incumb}					-0.784 (1.275)				-4.030** (1.650)
<i>CRI</i> × <i>GI</i> _{state control}						3.288** (1.271)			
<i>CRI</i> × <i>GI</i> _{gvt in business}							-1.099 (1.302)		1.833 (1.919)
<i>CRI</i> × <i>GI</i> _{public ownership}								7.251*** (1.230)	10.630*** (1.603)
<i>logK/L</i>	0.137*** (0.028)	0.135*** (0.028)	0.137*** (0.028)	0.137*** (0.028)	0.136*** (0.028)	0.136*** (0.028)	0.136*** (0.029)	0.131*** (0.028)	0.125*** (0.029)
Observations	2840	2840	2840	2840	2840	2840	2840	2840	2840
Adj. R-squared	0.782	0.782	0.782	0.782	0.782	0.782	0.782	0.784	0.785

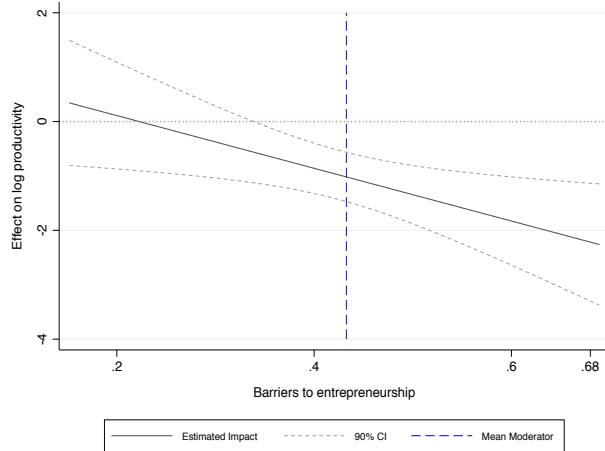
Note: All specifications include country-time and sector-time fixed effects. Robust standard errors clustered at the country-time level reported between parentheses. Statistical significance: * p<0.1; ** p<0.05; *** p<0.01.

The alternative measure of horizontal economic governance that captures policies that limit the ability to enter into or operate on a market – captured by the scope of state control in the economy – appears to operate as a necessary condition for a positive downstream productivity effects coefficient of the interaction term in columns (6) and (8). The corresponding estimated marginal effects of *CRI* are reported in panels *c* and *d* of Figure 2. The effect is increasing in the moderator. Moreover, of services trade liberalization. This is suggested by the positive and statistically significant estimated it is negative and statistically significant (meaning a positive downstream effect of reducing trade restrictions) when the barriers implied by state control or by the scope of prevailing SOEs are low enough (i.e., the quality of governance in this dimension is high). This finding is consistent with the discussion in Section 2 and suggests competitive restrictions associated with public ownership affect market conditions in a way

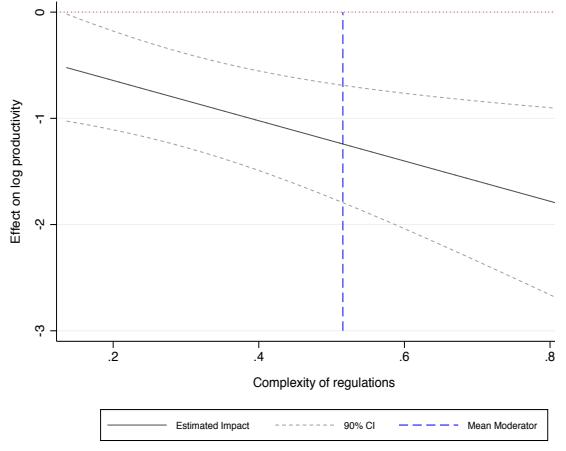
that cannot be overcome by facilitating market access for foreign services providers. Better market access in producer services is ineffective in increasing downstream productivity when barriers associated with the scope of state control are high.

Figure 2. Marginal effects of *CRI* as a function of horizontal *GI* measures

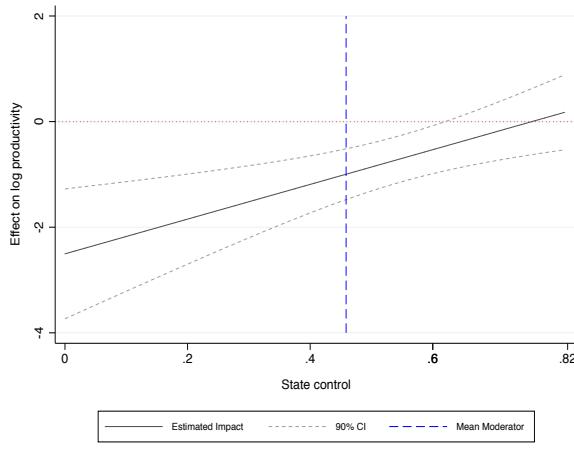
Panel a. Marginal effects of *CRI* as a function of $GI_{\text{bars to entrp}}$



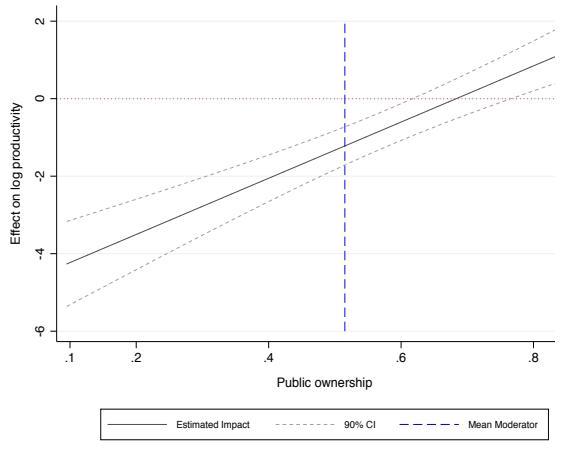
Panel b. Marginal effects of *CRI* as a function of $GI_{\text{complexity of reg}}$



Panel c. Marginal effects of *CRI* as a function of $GI_{\text{state control}}$



Panel d. Marginal effects of *CRI* as a function of $GI_{\text{public ownership}}$



Note: Marginal effects are estimated based on specifications (2), (4), (6) and (8) in Table 2. For all these specifications the point estimate of the interaction term is statistically significant. For each *GI* variable, the horizontal axis in the figures report the full sample support.

The empirical patterns emerging from our baseline specification are robust to estimating a horse-race model where all five interaction terms featuring the sub-categories of horizontal domestic governance are included. Estimation results are reported in column (9). The two composite categories of barriers to entrepreneurship and state control are not included given collinearity between a composite category and its sub-categories. In the horse-race model, the estimated coefficients for both $CRI \times GI_{\text{admin burdens}}$ and $CRI \times GI_{\text{protec of incumb}}$ gain in statistical significance.

Table 3 reports results for the interaction model when the regulatory variable is sector-specific, for three sectors: transport, telecommunications and business services. As with the horizontal economic governance measures, the moderating role of sector-specific regulatory variables differs across sectors, suggesting it is important to differentiate between sectoral regulatory regimes in terms of how they interact with (changes in) services trade policy. Good regulation of transport and telecommunications, as defined by the OECD, appears to be a necessary condition for positive downstream productivity effects of services trade reforms. This is suggested by the positive and statistically significant coefficients of the interaction term in columns (2) and (3) of Table 3 and the corresponding plots of the marginal effect of *CRI* for all values of the *GI* variables in panels *a* and *b* of Figure 3. The opposite relationship is observed for business services regulation (column 4 of Table 3 and panel *c* of Figure 3).

Table 3. The moderating role of governance institutions: sector-specific dimensions

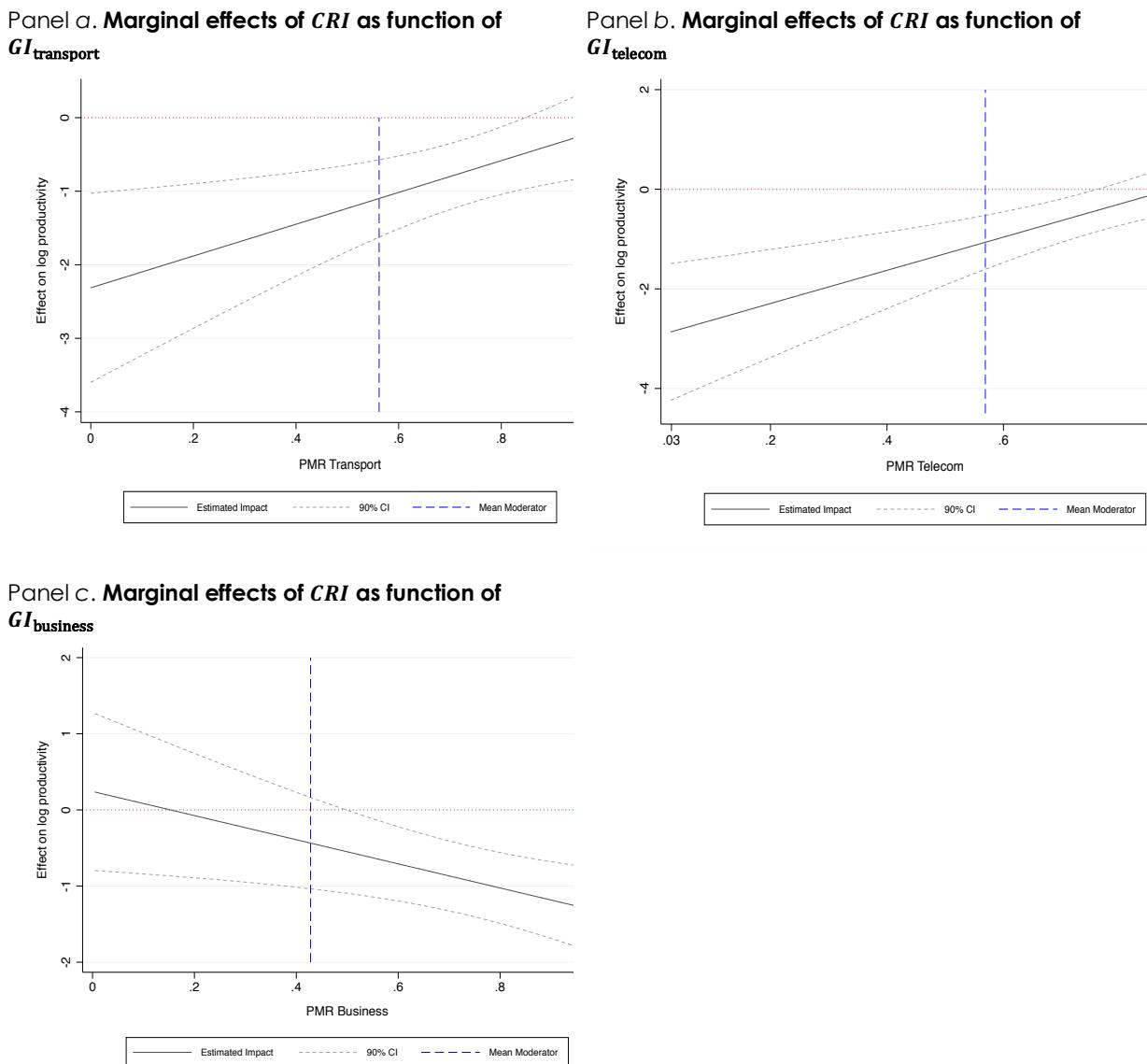
Dependent variable: log of labor productivity	(1)	(2)	(3)	(4)	(5)
<i>CRI</i>	-0.815*** (0.271)	-2.313*** (0.782)	-2.960*** (0.864)	0.242 (0.630)	-3.103*** (0.931)
<i>CRI</i> \times <i>GI</i> _{transport}		2.161** (1.002)			4.040** (1.689)
<i>CRI</i> \times <i>GI</i> _{telecom}			3.332*** (1.089)		2.383* (1.270)
<i>CRI</i> \times <i>GI</i> _{business}				-1.584** (0.770)	-3.067*** (1.003)
log <i>K/L</i>	0.137*** (0.028)	0.137*** (0.028)	0.136*** (0.028)	0.134*** (0.029)	0.130*** (0.029)
Observations	2840	2840	2840	2840	2840
Adj. R-squared	0.782	0.782	0.783	0.782	0.784

Note: All specifications include country-time and sector-time fixed effects. Robust standard errors clustered at the country-time level are reported between brackets. Statistical significance: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

These results are consistent with the hypothesis discussed in Section 2 that the entry and/or conduct regulation in sectors that involve access to network infrastructure may condition the ability of foreign services providers to operate efficiently and therefore improve the quality, variety or prices of services available on the market in more open trade policy environments. Absent high quality (pro-competitive) sectoral regulation, downstream productivity benefits of market access reforms are attenuated and may not materialize. Conversely, low quality regulation of business services appears to have less of an inhibiting effect on foreign services providers. The negative estimated coefficient for business services in column 4 of Table 3 indicates, in contrast, that a substitution relationship may also obtain. It suggests that opening access to the market for foreign suppliers has the potential to trigger positive downstream productivity effects in countries with lower quality business sector regulation.

As with the results presented in Table 2, the empirical patterns emerging from the baseline specifications given in columns (2)-(4) of Table 3 are qualitatively robust to a horse-race model where the three interaction terms are included simultaneously. Estimation results are reported in column (5).

Figure 3. **Marginal effects of *CRI* as functions of sector-specific *GI* measures**



Note: Marginal effects are estimated based on the specifications reported in Table 3 for which the point estimate of the interaction term is statistically significant. For each *GI* variable the horizontal axis in the figures report the full sample support.

As noted in Section 2, in principle EU-wide services legislation will have a bearing on applied domestic regulation in Member States. If the adoption of common EU disciplines on regulatory measures towards services affects the potential gains from external services trade liberalization, the question arises whether countries that do more (or better) in attaining EU norms may experience larger economic gains from market access opening, or alternatively, whether there may be greater potential for realizing gains from services liberalization in countries that have done less to implement EU directives. In the Online Appendix we investigate the effect of the degree of implementation of the provisions of the Services Directive as a proxy for the potential impact of EU-specific measures to promote internal trade in services. We find no evidence this gives rise to moderating effects.

5. DISCUSSION

The empirical analysis indicates that sector-specific and horizontal economic governance variables may affect the magnitude of the downstream productivity effects of Mode 3 services policy and thus trade liberalization. The findings suggest that the magnitude of the effects of external services liberalization – and their distribution across downstream sectors and, indirectly, citizens – may be conditional on the type and quality of regulatory governance. A corollary of our findings is that liberalization negotiated as part of a trade agreement may not have the expected productivity-enhancing effects if domestic regulation acts to restrict entry or constrains operations of new entrants. More generally, the benefits of a more liberal services trade policy may be augmented by actions to improve the quality of economic regulation.

Research has shown that restrictions on external services trade are higher than for goods trade (Jafari and Tarr, 2017). Moreover, assessments of what has been achieved in trade agreements generally find that they do (much) less to discipline (liberalize) trade in services than they do trade in goods (Roy, 2016). These observations also apply to EU services trade policy. To date, EU trade agreements have not done much to open access to European services markets for non-EU firms. Instead, trade agreements are mostly commitment devices, i.e., they establish an upper bound on the level of protection that can be applied to covered services sectors (Egger et al., 2015).

The limited use of trade agreements to liberalize trade in services is something of a puzzle given the finding of the empirical economics literature and this paper that services trade barriers are negatively associated with the productivity performance of downstream sectors. Domestic downstream sectors have an interest in greater competition in the upstream services sectors they source from and thus should have incentives to lobby governments to use trade agreements to reduce barriers to services trade. Given the trend towards outsourcing of services and servicification, manufacturing industries should be concerned not only with the tariffs they pay on the intermediate components they use, but also with the cost, quality and variety of services they can source. An implication is alignment in the incentives confronting foreign services suppliers seeking better access to markets and those of domestic users of services.

Analysts that have noted the policy implications of servicification of manufacturing such as Lodefalk (2017) do not consider the endogeneity of services trade policy, i.e., that trade negotiations presumably reflect domestic political economy forces. It is an open question to what extent downstream firms and sectors engage in pro-services market opening lobbying and more generally what role upstream-downstream services linkages play in trade politics. The stylized fact that trade agreements do little to open access to services markets suggests that pro-reform dynamics either do not materialize in practice or are too weak to overcome domestic opposition to liberalization.

Many hypotheses have been put forward to explain the puzzle why trade agreements do little to liberalize services. A common element often is that some dimension of regulation is argued to play a role. Economists tend to focus on standard political economy forces: incumbent services firms defend rents that are generated by a mix of restrictive trade policies and domestic regulation. They also point to the possibility that governments may worry that greater foreign participation can result in capture and transfer abroad of rents or that foreign entry may increase risks of destabilization of markets.¹⁸ Political scientists have focused more on the role of concerns by civic interest groups, e.g., that entry by foreign firms could lead to erosion of social norms and regulatory standards (Young, 2016). Both economic and

¹⁸ Francois and Hoekman (2010) provide references to some of the literature.

social/civic concerns may be valid if domestic regulatory regimes are not capable of preventing the feared adverse outcomes from materializing in reasonably likely states of the world.

While the relationship between domestic regulation and services trade policy as a factor influencing the politics of trade is not the subject of this paper, our empirical findings suggest that arguments in the literature regarding the need to attain (maintain) certain levels of regulation as a precondition for services trade liberalization (Hoekman and Mattoo, 2013) may need to be enriched with greater focus on how domestic regulation affects the size and distribution of the potential gains from services trade liberalization.

Our findings are also relevant for analysis of EU services trade policy post-Lisbon. In part this will revolve around adopting an EU-wide set of external policies towards FDI and (gradual) convergence across EU members over time. What our analysis suggests is that the economic effects of changes in external trade policy – whether they imply a move towards greater average restrictiveness or greater openness – will depend on prevailing domestic regulatory policies and institutions. In turn, these will have consequences for the distribution of the overall effects of changes in EU-wide services trade policy. Key questions in this regard are (i) whether and how measures to improve domestic regulation should be pursued; (ii) how these should be sequenced relative to changes in trade policy (in parallel or in advance of services trade reforms); and (iii) whether consideration should be given to incorporating provisions into trade agreements pertaining to domestic regulatory measures/governance institutions that condition the effects of market access opening.

The first two of these questions are relevant for the design of market opening initiatives, and call for analysis to assess the interplay between different dimensions of domestic regulation and trade policy along the lines of the analysis in this paper. The answer to the third question depends on whether and how trade agreements can help governments implement welfare-enhancing domestic regulatory reforms.¹⁹ Insofar as governments can identify and implement changes to domestic regulation that will enhance the aggregate benefits of trade reforms and/or improve their distribution there may be no need to address regulatory matters in trade agreements. However, doing so could be beneficial in identifying potential reforms and areas where cooperation can improve outcomes.

Regulatory cooperation, e.g., the inclusion of commitments to adopt internationally agreed good regulatory practices, could make trade agreements more relevant from the perspective of improving domestic regulatory institutions (Basedow and Kauffmann, 2016). Some steps in this direction have been taken in a number of recent EU trade negotiations, but to date the major thrust of EU agreements has been on provisions to support human rights, labor standards and protection of the environment in partner countries.²⁰ A greater focus on domestic economic governance/regulation in the design of trade agreements could increase the magnitude of net welfare gains from liberalizing trade and investment in services (Fiorini and Hoekman, 2018). Whether this is feasible, however, is an open question given that

¹⁹ For example, Baccini and Urpelainen (2014) investigate the hypothesis that governments use trade agreements to support reforms they cannot implement without external assistance. However, their empirical analysis focuses on recently democratized states (developing nations), consistent with the specific theory they develop, and does not specifically highlight services.

²⁰ Interest groups have sought to include disciplines relating to social, political and human rights into trade agreements as well as provisions relating to environmental regulation. This reflects different considerations, including a desire to ‘level the playing field’, address nonpecuniary negative spillovers, export ‘good practice’ norms and internationally agreed standards, and to safeguard the ability of governments to regulate economic behaviour. In the case of the EU, see e.g., Lavenex (2014), Lechner (2016) and Young (2015) on the export of norms and values; Van Den Putte and Orbie (2015) on the substance and drivers of inclusion of labor and related rights into EU agreements, and Spilker et al. (2018), Postnikov and Bastiaens (2014) and Donno and Neureiter (2017) for empirical assessments of whether they have an impact.

many of the areas of domestic regulation that affect the gains from services trade are not included in trade agreements. EU member states retain substantial discretion over domestic regulatory policy as long as this does not impede the realization/operation of the Single Market. It is very unlikely that areas of national regulation that have been left unconstrained in the context of the European integration process will be included in EU trade agreements. The main implication of our results is therefore that governments should devote greater attention to how domestic regulatory regimes affect the outcomes of services trade liberalization initiatives.

6. CONCLUDING REMARKS

There are substantial differences across EU countries when it comes to services trade policies towards the rest of the world. These are in part a legacy of the pre-Lisbon treaty situation in which FDI policy was not an element of the common commercial policy of the EU. Although member states will continue to differ in their treatment of foreign firms as they retain discretion over some policy areas that have implications for foreign investment (e.g., takeovers, national security considerations, etc.), differences in external services trade policy will be reduced as common approaches to the treatment of foreign investors are implemented by the European Commission. Trade agreements are one instrument through which this will be done.

Assessing the effects of services trade policy and services trade liberalization is not just a matter of modeling the effects of imposing/reducing discrimination against foreign suppliers. Research in both economics and political science/international relations has argued that regulatory considerations will play a role. Our empirical analysis of the potential downstream productivity effects of services trade policy reforms supports the hypothesis that domestic regulatory regimes are likely to influence their magnitude and distribution. In some cases, the competition-impeding or cost-raising effects of economic regulation can be reduced by Mode 3 services market access liberalization. In effect, opening access to foreign providers can substitute for pro-competitive regulatory reforms. In other cases, regulatory reforms are a necessary condition for market access liberalization to improve productivity in downstream industries. The latter case is found to prevail in instances where regulation significantly impedes entry or operations. We find evidence for both types of effects across horizontal and sector-specific economic governance institutions.

The findings suggest that analysis of services trade policy and potential reforms should consider the effects of domestic regulatory regimes. In doing so it is important to go beyond broad economy-wide measures of governance. The specifics of economic regulatory institutions matter. Different types of regulation will have different effects on the benefits of services trade reform. This has potential policy implications. Countries with economic governance institutions that substantially reduce the benefits of services liberalization should prioritize reforms to improve governance performance. Areas of regulation/governance where this may be the case include public ownership and conduct regulation in transport and telecommunication sectors. Conversely, in cases where market access can (partially) offset the effects of low quality regulation, the benefits of services trade liberalization are less dependent on pursuit of regulatory reform. The empirical results suggest that this may apply to policies that create barriers to entrepreneurship and regulation of business/professional services.

Assessing the effects of specific forms of regulation and economic governance institutions can help inform policymakers in designing trade policy and trade reforms—including trade agreements. Economic regulation of the type captured by the PMR variables used in this paper are not the focus of trade agreements. The fact that EU member states display significant heterogeneity in the domestic economic governance indicators used in the analysis suggests they are unlikely to feature in EU trade

agreements. These are areas where national sovereignty prevails. They are not affected by measures such as the Services Directive that have been adopted by the EU to support the single market. To a significant extent, the regulatory reform that our analysis suggests can affect the size and distribution of the downstream productivity effects of EU external services trade policy will remain a national matter.

National regulatory policies are likely to affect the political economy of EU external services trade policy formation and thus be a factor in national as well in EU-level trade politics. We hope our findings on the interdependence between domestic regulation and the effects of FDI policy, a key component of services trade policy, will stimulate research on how these relationships enter into the political economy of services trade policy. Of particular interest in this regard is analysis of the political role of domestic services providers vs. downstream sectors in shaping domestic regulatory governance arrangements that might be instrumental in limiting the effects of market opening, and in determining market opening choices themselves. Also of interest are the distributional consequences of trade agreements for domestic services providers and the ways these groups articulate their preferences with respect to different configurations of domestic/trade policy reforms. Research on these topics will need to be country/sector specific, given that prevailing economic governance institutions will reflect idiosyncratic underlying political drivers.

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ANNEX

Annex Table 1. Summary statistics

Variable name	Mean	Median	SD	Min	Max
Labor productivity	10.924	10.865	0.586	7.696	14.142
<i>CRI</i>	0.063	0.051	0.048	0.006	0.338
<i>GI_{bars to entrp}</i>	0.433	0.436	0.135	0.152	0.689
<i>GI_{admin burdens}</i>	0.448	0.415	0.185	0.138	0.827
<i>GI_{complexity of reg}</i>	0.515	0.541	0.184	0.137	0.857
<i>GI_{protec of incumb}</i>	0.383	0.374	0.164	0.064	0.718
<i>GI_{state ctrl}</i>	0.459	0.436	0.178	0	0.815
<i>GI_{gvt in business}</i>	0.34	0.3	0.209	0	0.915
<i>GI_{public ownership}</i>	0.515	0.533	0.177	0.096	0.873
<i>GI_{transport}</i>	0.562	0.6	0.202	0	0.972
<i>GI_{telecom}</i>	0.569	0.575	0.201	0.03	0.902
<i>GI_{business}</i>	0.428	0.305	0.311	0.005	1
<i>logK/L</i>	12.136	11.897	1.225	9.331	16.153

Note: Summary statistics are computed on the estimation sample of 2840 observations used in all regressions.

Annex Table 2. FDI Regulatory Restrictiveness Index

Country	Transport		Telecom		Finance		Business	
	1997	%Δ(2010)	1997	%Δ(2010)	1997	%Δ(2010)	1997	%Δ(2010)
AUT	1	-81,800	0	0	0,050	-96,000	0,516	-37,597
BEL	0,318	-64,151	0,135	-82,963	0,152	-84,211	0,135	83,704
CZE	0,333	-77,477	0	0	0,175	-94,286	0	0
DEU	0,292	-31,507	0,013	0	0,020	-75,000	0	0
DNK	0,158	-47,468	0	0	0,017	-88,235	0,363	0
ESP	0,150	-50,000	0,169	-33,432	0,047	-95,745	0,113	0
FIN	0,450	-79,556	0,150	-94,000	0,185	-94,054	0,285	-83,860
FRA	0,150	0	0,137	-82,418	0,054	0	0,003	0
GBR	0,223	-48,879	0,176	-22,792	0,106	-77,358	0,023	0
ITA	0,292	-31,507	0,182	0	0,033	-45,455	0	0
NLD	0,183	-54,645	0	0	0,002	0	0	0
NOR	0,350	0	0,063	0	0,133	-49,624	0,313	0
SWE	0,483	-39,545	0,200	0	0,002	0	0,051	0

Note: 1 = maximum restrictions; 0 = no restrictions. %Δ(2010) refers to the percentage change from 1997 to 2010.

Source: OECD FDI Regulatory Restrictiveness Database.

ONLINE APPENDIX for
EU Services Trade Liberalization and Economic Regulation:
Complements or Substitutes?

November 1, 2018

INTRODUCTION

In this Online Appendix we explore whether dimensions of domestic regulation addressed by services-related EU legislation moderate the potential effects of potential removal of services trade restrictions on trade with extra EU countries. As noted in Section 2 of the article, one possibility is that implementation of EU services legislation increases the potential gains from liberalizing services markets. If so, EU member states that do more (or better) in terms of incorporating services-related EU norms into domestic regulation may experience larger economic gains from market access liberalization than other EU countries. Alternatively, in the substitutability case, there may be greater potential for realizing gains from services liberalization in the short run in EU member states that are lagging in terms of implementing EU services-related policy disciplines. Consideration of the possible asymmetric distribution of the EU-wide gains from external services trade reform may be important from both a policy design and trade politics perspective.

EMPIRICAL STRATEGY

To assess the potential moderating function of governance variables that reflect the role of EU institutions we use data on implementation of the EU Services Directive (SD). The SD was ratified in 2006, with transposition to have been completed by 2009. The SD covers business and other non-producer service sectors that jointly account for some 45 percent of EU GDP. We use measures of compliance by EU country i at time t with seven provisions of the SD that are likely to directly affect the quality of services-related regulation. Six of these requirements are contained in SD Art. 15, which imposes disciplines on potentially competition-restricting regulatory measures. Specifically, countries may not: (i) make the operations of any service provider conditional on quantitative or territorial limitations; (ii) restrict the legal form of an entity; (iii) impose restrictions concerning equity holdings; (iv) prohibit entities from having more than one establishment; (v) require a minimum number of employees; and (vi) set minimum and/or maximum tariffs.¹ A last requirement is taken from SD Art. 25, which specifies that service providers not be subject to restrictions on the type and number of exercised services activities.

We define three variables. First, a dummy SD_{it} that takes value 1 if the Services Directive is in force in country i at time t . In addition, we create two continuous variables – $SDR_{all;it}$ and $SDR_{business;it}$ – that measure the level of compliance by country i at time t with the seven provisions of the Services Directive discussed above. $SDR_{all;it}$ includes all service sectors covered by the SD for which we have data (this includes business services and several non-producer services such as hotels, restaurants, travel agencies). $SDR_{business;it}$ covers only business services. Both variables range between 0 and 1, with 0 (1) representing minimum (maximum) compliance. We then re-estimate equation (2) presented in Section 3 of the article, replacing $GI_{d,i}$ with each of these three proxies for EU disciplines on domestic

¹ Art. 15 makes allowance for the possibility that restrictions might be justified by an overriding reason relating to the public interest and establishes both a necessity test and a proportionality test: measures must be necessary and may not go beyond what is needed to attain the public interest objective.

services-related regulation. The interpretation of the estimated sign for the coefficient μ is consistent with the definition of each EU-related governance variable. In general, a value of 1 for these moderators means that the associated dimension of governance is active/present, mainly in the form of applicability of/compliance with the SD requirements. Therefore, a negative sign for the point estimate $\hat{\mu}$ reflects a relationship between external market access liberalization and EU-level regulation such that the positive downstream effects of greater access for non-EU services providers are amplified where EU norms are more deeply embedded in domestic economic governance of services, as measured by implementation of the SD provisions. We interpret implementation of the Services Directive as a proxy for dimensions of domestic services regulation that are not explicit market access barriers but that have been determined by EU member states collectively to have a bearing on the contestability of services markets.

Two main concerns limit the scope of this exercise. The most important one is related to the nature and objectives of the SD. The directive aims at deeper integration of services markets across EU member states and, as such, it strongly affects the discriminatory aspects of services trade policy. Even though we take care to select the requirements to minimize the relevance of discriminatory policy dimensions, these might still be relevant in the way countries implement each of the SD requirements. This implies that the empirical measures derived from SD data are less powerful moderators for the effects of services trade liberalization than we would like: they are much closer to the policy treatment itself (removal of discriminatory barriers) than the other moderators used in the body of the article. Secondly, the SD covers only a subset of the producer services that are relevant for downstream production, i.e., professional services. For these services, Mode 4 (temporary cross-border movement of services suppliers) is often the means through which markets are contested. Our focus on Mode 3 liberalization will potentially miss some important policy dimensions associated with the use of Mode 4.²

The construction of a more appropriate measure of EU dimensions of domestic governance goes beyond the scope of the present work. We hope the illustrative exercise below will be improved upon by future research on this topic.

DATA

The measure for compliance with SD requirements is constructed from the database presented in Monteagudo, Rutkowski, and Lorenzani (2012). That database contains information on compliance with the main requirements of the Services Directive for fifteen services sectors. For each country-sector pair, the database identifies up to 20 requirements included in five key SD provisions, including Articles 15 and 25.³ The database permits the construction of an indicator of the distance between the policy regime prevailing in country c , sector s , at time t and the objective specified by the Services Directive embodied in requirement r . This measure of ‘convergence’, CL_{csrt} , takes four discrete values between 0 or 1, with 0 (1) indicating minimum (maximum) convergence with the Services Directive requirements. Intermediate values of 0.2 and 0.8 are defined to account for partial compliance with the requirements.⁴ Starting from this convergence variable, SDR_{all} is computed as the simple average of CL_{csrt} across all sectors and across the requirements reflecting the 7 provisions discussed above.

² We are grateful to an anonymous referee for stressing the limitations of the analysis of the SD that follows.

³ The relevant SD provisions covered in the database are Articles 9, 14, 15, 16 and 25. The requirements in Articles 9, 14 and 16 aim to correct discriminatory barriers to market access and therefore are less appropriate for the construction of our proxies of domestic economic governance as moderator for the effects of services trade liberalization. Monteagudo, Rutkowski, and Lorenzani (2012) and Canton, Ciriaci and Solera (2014) provide economic impact assessments of liberalization of services covered by the SD.

⁴ Monteagudo, Rutkowski, and Lorenzani (2012) describe the database and the reasoning for the choice of the intermediate values.

Similarly, $SDR_{business}$ is given by the simple average of CL_{csrt} across the same requirements but only for business services (accounting, architectural, engineering, legal, and tax advisory services).

Summary statistics for these measures as well as for the other variables used in the regression analysis below are reported in Table 1 of this Online Appendix.

Online Appendix Table 1. **Summary statistics**

Variable name	Mean	Median	SD	Min	Max
Labor productivity	10.924	10.865	0.586	7.696	14.142
CRI	0.063	0.051	0.048	0.006	0.338
SD	0.181	0	0.385	0	1
SDT_{all}	0.163	0	0.347	0	0.981
$SDT_{business}$	0.139	0	0.302	0	0.952
$\log K/L$	12.136	11.897	1.225	9.331	16.153

Note: Summary statistics are computed on the estimation sample of 2840 observations used in all regressions.

RESULTS

Table 2 of this Online Appendix reports the estimation results. The dummy variable controlling for the entry into force of the SD and the finer-grained country-specific compliance indicators do not appear to influence downstream sector productivity. This may be because the focus of the SD is on a broad range of services, many of which enter final demand as opposed to being inputs into production (e.g., hotels, restaurants, tourist agencies). However, the same finding holds if the focus is limited to SD compliance for business services only. More generally the lack of statistical significance might reflect the serious criticalities discussed above and that are embedded in this empirical approach.

Our results do not imply that the SD has not had effects. Monteagudo, Rutkowski, and Lorenzani (2012) for example find that implementation of the SD has a sizable direct positive effect on the productivity of the targeted services sectors. More recently, Papaioannou (2018) concludes that the SD is associated with increasing TFP growth, especially in more dynamic services sectors. What these results suggest is that the SD does not address factors that matter in terms of the magnitude of the effects of removing extra-EU market access barriers. That is, compliance with EU law (proxied by implementation of SD provisions) appears to be largely orthogonal to the type of regulatory measures captured by the OECD regulatory indicators. Correlation coefficients between SD implementation variables and the PMR indicators of domestic governance used in the empirical analysis are reported in Table 3 of this Online Appendix. These reveal there is always a negative correlation between each of the three SD-based variables (all highly correlated themselves) and the domestic PMR indicators.

Online Appendix Table 2. **The moderating role of governance institutions: the Services Directive**

Dependent variable: log of labor productivity	(1)	(2)	(3)	(4)
<i>CRI</i>	-0.815*** (0.271)	-0.884*** (0.267)	-0.931*** (0.268)	-1.006*** (0.271)
<i>CRI</i> \times <i>SD</i>		0.376 (0.693)		
<i>CRI</i> \times <i>SDT_{all}</i>			0.734 (0.842)	
<i>CRI</i> \times <i>SDT_{business}</i>				1.541 (1.159)
<i>logK/L</i>	0.137*** (0.028)	0.137*** (0.028)	0.137*** (0.028)	0.137*** (0.028)
Observations	2840	2840	2840	2840
Adj. R-squared	0.782	0.782	0.782	0.782

Note: All specifications include country-time and sector-time fixed effects. Robust standard errors clustered at the country-time level are reported between brackets. Statistical significance: * p<0.1; ** p<0.05; *** p<0.01.

Online Appendix Table 3. **Correlations between SD implementation and PMR indicators**

	<i>SD</i>	<i>SDT_{all}</i>	<i>SDT_{business}</i>
<i>SD</i>	1		
<i>SDT_{all}</i>	0.9965	1	
<i>SDT_{business}</i>	0.9742	0.9883	1
<i>GI_{admin burdens}</i>	-0.1723	-0.1849	-0.1890
<i>GI_{complexity of reg}</i>	-0.2112	-0.1993	-0.1739
<i>GI_{protec of incumb}</i>	-0.4053	-0.4154	-0.4302
<i>GI_{gvt in business}</i>	-0.2684	-0.2837	-0.2879
<i>GI_{public ownership}</i>	-0.1966	-0.2008	-0.2083
<i>GI_{transport}</i>	-0.2862	-0.2884	-0.2831
<i>GI_{telecom}</i>	-0.5150	-0.5159	-0.5132
<i>GI_{business}</i>	-0.1463	-0.1674	-0.1869

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