



ISSN 2443-8022 (online)

Services Trade Policy, Domestic Regulation and Economic Governance

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FELLOWSHIP INITIATIVE
“Challenges to Integrated Markets”

DISCUSSION PAPER 058 | JULY 2017

EUROPEAN ECONOMY



Economic and
Financial Affairs

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Luxembourg: Publications Office of the European Union, 2017

KC-BD-17-058-EN-N (online)

ISBN 978-92-79-64907-3 (online)

doi: 10.2765/157792 (online)

KC-BD-17-058-EN-C (print)

ISBN 978-92-79-64908-0 (print)

doi:10.2765/148318 (print)

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Matteo Fiorini and Bernard Hoekman

Abstract

This paper empirically investigates the role of governance institutions in shaping the economic impact of services trade reform. The analysis focuses on the effects of services trade policy on the productivity of manufacturing sectors that use services as intermediate inputs. We find that these effects depend on the quality of governance institutions in the country implementing trade and investment reform. The moderating effects of horizontal (cross-cutting) and services sector-specific dimensions of economic governance institutions are found to differ. For some services activities market access opening can substitute for weak regulation/governance; in others bad regulatory governance is a binding constraint and needs to be addressed directly for market opening to have the greatest benefits. Our empirical findings suggest these complementarity and substitution relationships may be associated with the types of market failure that arise in different services sectors and the effectiveness of regulatory regimes in addressing them. We also find that positive effects of services trade and investment reforms are higher in EU member states.

JEL Classification: F61, L8, O43.

Keywords: services reforms, institutions, governance, productivity, EU.

Acknowledgements: We would like to thank the participants to the ECFIN Fellowship Kick-off Meeting and Annual Research Conference in Brussels for their helpful comments. We are particularly indebted to Josefa Monteagudo for her precious suggestions and for sharing the Services Directive assessment data with us.

This version: May 8, 2017

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1. INTRODUCTION

Recent research has demonstrated that the cost, quality and variety of services available to firms across all sectors is an important determinant of their productivity, and that services trade is a channel through which firms' access to services can be improved. The effects of policies restricting access of foreign producers to services markets on downstream productivity performance have been estimated in country case studies using firm level data (e.g., Arnold et al. 2011 for Czech Republic; Arnold et al. 2016 for the case of India) and across countries using both firm- and industry-level data (e.g., Hoekman and Shepherd, 2017 and Beverelli et al., 2017). This paper builds on the findings of Beverelli et al. (2017) which shows that the downstream effect of services trade policies are moderated by the quality of economic governance institutions in the importing country as measured by indicators of the control of corruption and rule of law. Lower services trade restrictiveness is found to increase downstream manufacturing productivity only in countries with good economic governance. This moderating effect prevails with respect to policies that target services provision through foreign establishment (FDI) (mode 3 of the GATS) as opposed to cross-border trade in services (mode 1), a result that may reflect the lower incidence of barriers to mode 1 trade as well as the intangibility and nonstorability of services, which imply that at least some share of the value added must be generated locally.

While it is important to know that domestic economic governance institutions affect the impact of services trade policy, this leaves open the question whether the effect of services trade policies is simply conditional on horizontal, country-wide governance quality – the types of variables reported in the World Bank's World Governance Indicators and Doing Business databases – or whether such broad measures of economic governance are in fact capturing sector-specific regulation and related institutions as well as general investment climate factors. This is both a salient research and policy question: if there is a significant sectoral dimension to the result that governance matters for the impact of services trade liberalisation, policy efforts should go further than seeking to bolster the rule of law or control corruption. The fact that the performance of economies over time is very heterogeneous, with some countries with weak (strong) governance experiencing relatively strong (weak) economic growth suggests economy-wide governance performance is not the whole story.

Governance variables can be 'unpacked' across horizontal and sectoral dimensions. Horizontal components of economic governance include barriers to entrepreneurship – such as complex and cumbersome administrative burdens on start-ups – and the extent of state-ownership and control of the economy. Sectoral dimensions comprise the specific regulatory regimes that apply to services industries (e.g., to ensure access to network infrastructure, bottleneck facilities or interconnection; existence of an independent regulatory body; dedicated mechanisms to contest regulatory decisions; whether the industry is permitted to regulate itself and define/control the conditions of entry).

Effective regulatory and governance institutions may be necessary for positive downstream performance effects of low services trade restrictions and thus complement a liberal trade regime. Conversely, services trade openness may substitute for good domestic (horizontal and/or sectoral) governance and therefore be more effective in countries where the latter is weak. Understanding the complementarity and/or substitutability between services trade openness and different types of governance institutions may have important implications for the timing and design of services trade reforms and trade agreements and flanking measures targeting regulatory reforms.

In this paper we assess empirically the role of horizontal and sector-specific governance institutions in shaping the downstream effects of trade policies for producer services. The empirical results contribute to our understanding of the relationship (complementarity versus substitutability) between trade openness and governance institutions affecting producer services markets. There is significant heterogeneity among EU member states (MS) in the quality of domestic economic governance. This affects the impact of services trade reforms enacted at the EU level and can result in significant

asymmetry in the magnitude of the potential net benefits of services liberalisation. Such distributional effects may have implications for political support for trade agreements across the EU and may help explain some of the recent opposition in the EU to trade integration initiatives with third countries such as Canada and the United States.

The rest of the paper is organised as follows. Section 2 discusses the relationship between upstream services trade policy and downstream industry performance and the different roles regulatory governance institutions may have in moderating the effects of services trade policy. We also present descriptive evidence on relevant dimensions of economic governance in the EU. Section 3 presents the econometric framework and the data. Section 4 discusses the results of the empirical analysis. Section 5 concludes.

2. BACKGROUND

2.1. SERVICES TRADE REFORMS, SUPPLY CHAINS AND PRODUCTIVITY

Services such as finance, insurance, ICT services, transport and logistics are inputs into many production processes. Because of their relevance as inputs for downstream producers they are often referred to as producer or business services. Such services differ from manufactured intermediate inputs (parts and components). A key economic feature of producer services inputs is the role they play in coordinating and controlling complex production activities that are distributed over time and space. For instance, ICT, transport and logistics services connect workers and/or capital units across space; financial services allow firms to fund and manage the risk of routine as well as complex production operations over time. These services have become even more important as businesses engage in international production and participate in global value chains (GVCs) that require the coordination of activities of different firms located in different geographical regions. As “facilitators” of unbundled and fragmented production processes, producer services inputs directly affect the feasibility of the associated specialisation and the scale of downstream economic activity (Francois, 1990; Francois and Hoekman, 2010).

Using linked input-output tables for OECD countries, Miroudot et al. (2009) find that 73% of all services trade between 1995 and 2005 was accounted for by trade in services inputs. This is a much bigger figure than in the case of trade in goods, where manufactured intermediate inputs accounted for 56% of total trade flows in the same period. These patterns suggest that international trade in services is an important channel for firms to gain access to the cheapest and most efficient services inputs and that restrictive trade and investment policies that reduce the degree of competition on services markets will have adverse consequences for the performance (competitiveness) of downstream manufacturing sectors.

This argument is consistent with the recent literature on input tariff liberalisation, which focuses on the downstream effects of tariffs that apply to manufactured goods used as intermediate inputs in production. Amiti and Konings (2007) show that reducing input tariffs by 10% increases productivity of Indonesian firms importing these inputs by 12%. Lower input tariffs can have a positive causal effect on downstream firms’ productivity by giving them access to more varieties or higher quality inputs and by allowing firms to learn from the foreign technology embedded in imported inputs. Analogous evidence comes from research on Indian firms. Goldberg et al. (2010) find that lowering input tariffs in India accounted for 31% of the new products introduced by Indian firms in the 1987-97 period. De Loecker et al. (2016) show that input tariff liberalisation reduced marginal costs of downstream Indian producers. Similar empirical research on services trade restrictions identify sizable positive effects of services trade liberalisation for the productivity and export performance of firms operating in downstream industries (notably manufacturing) – see, e.g., Arnold et al. (2011) for the

case of Czech Republic; Duggan et al. (2013) for Indonesia; and Bas (2014) and Arnold et al. (2016) for India.

Market access policies for producer services impact on the productivity of downstream firms or sectors by affecting services sectors' performance. The performance of services sectors is also influenced by regulatory policies that affect the degree of competition in the relevant markets. The impact of domestic regulatory frameworks on downstream productivity has been investigated in many studies, including Fernandes and Paunov (2011) for Chile, Forlani (2012) for France, and Hoekman and Shepherd (2015) for a large set of developing economies. Empirical exercises for OECD countries using sector-level data include Barone and Cingano (2011) and Bourlès et al. (2013). The general finding of this literature is that domestic regulation of services markets can have sizable impacts on downstream productivity and/or export performance.

2.2. THE ROLE OF GOVERNANCE INSTITUTIONS

It is well established in the economic literature that, in the long run, the quality of institutions will affect the level of comparative development (Acemoglu, Johnson, and Robinson, 2001). It has also long been known that economic governance and related institutions represent an important source of comparative advantage in certain industries, notably the ones where economic governance is more important such as those that are more contract-intensive (see Nunn and Trefler, 2014 for a review). Finally, there exist some consensus and evidence in the literature that the benefits from trade liberalisation depend on country-specific conditioning factors, such as the quality of local governance institutions (see Rodriguez and Rodrik, 2001 and Freund and Bolaky, 2008).

Governance institutions can also be expected to moderate the downstream effect of services trade reforms. Beverelli et al. (2017) find that in the short and medium run, governance variables such as the strength of the rule of law, control of corruption and the quality of domestic regulation can shape the downstream effects of services trade policies. They conclude that removing barriers to cross-border services trade may be largely ineffective in cases where pervasive corruption and weak rule of law generates excessive economic uncertainty and insecurity. This is consistent with Anderson and Marcouiller (2002) and Ranjan and Lee (2007) who find that low low-quality-institutions reduce inward trade flows. An implication is that eliminating restrictions on inward foreign direct investment (FDI) may fail to induce any positive downstream effect if weak governance institutions in the host country discourage foreign firms to enter the market (in the expectation of too many institutions-drive frictions to their economic activity), or, if they enter, forces them to operate inefficiently (see for instance Dort, Méon, and Sekkat, 2014 and Dollar, Hallward-Driemeier, and Mengistae, 2005).

The literature analysing the interaction between governance indicators such as control of corruption, regulatory quality and rule of law as defined in the Worldwide Governance Indicator (WGI) Database suggests there a complementarity relationship between the quality of domestic governance and the benefits of market access liberalisation, i.e., better governance enhances the positive downstream effects of liberalisation. These measures of governance are proxies for the quality of the investment climate in a country. They are horizontal in nature, affecting activities in all sectors. They are likely to capture to a greater or lesser extent the effects of more specific dimensions of economic governance that determine the conditions of entry into a market. Examples include the scope of state owned enterprises (SOEs) in the economy, government involvement in price setting (price controls), licensing and permit systems, and services sector specific regulation. Determining the extent to which the latter types of economic governance and regulatory policies impact on the benefits of services trade liberalisation is important from a policy perspective as it may be both easier to change sector or activity-specific regulation than it is to improve the rule of law or to combat corruption and, as important, more feasible to do so in the short run.

Broad governance variables and associated institutions that determine the extent to which the rule of law prevails are entrenched in the economic system and effectively are exogenous to short and even

medium term economic policy reforms such as market access opening. Improving rule of law and controlling corruption requires time as it calls for general systemic reforms in public administration, the civil service and political institutions. This is less the case for sector-level regulation or regulatory measures that affect entry or conduct of firms. Insofar as the complementarity relationship found in Beverelli et al. (2017) between broad governance variables and services trade reforms holds for narrower types of economic governance this would imply policy reforms should center on the latter so as to complement services trade liberalisation initiatives. Alternatively, it may be the case that market opening can substitute for sectoral governance reforms. If so, policy should prioritise services trade liberalisation. To illustrate, consider the case of barriers to entrepreneurship captured by the degree of complexity and clarity of the regulatory regime. Low quality economic governance reflected in complex and ambiguous regulations that are difficult to account for in business plans may generate uncertainty, a need to plan for unpredictable shocks to production processes and deter investment by firms. Large foreign services providers, equipped with a superior technology and greater resources than domestic providers, may be better able to deal with such a regulatory environment than many domestic incumbents. If so, there would be a substitutability relationship between domestic governance and market access reforms: opening the market to foreign providers can substitute for good domestic governance in terms of increasing the quality and decreasing the price of services inputs for domestic manufacturing firms.

The extent to which good domestic economic governance is a necessary condition for a strong positive downstream effect of market access reforms for producer services (that is, for there to be complementarity relationship), as opposed to market access acting as a substitute for good economic governance – and therefore having relatively greater positive effects in situations characterised by low quality governance institutions – is an empirical question. The relationships will be determined in part by how restrictive horizontal (cross-cutting) regulatory measures are in constraining new entry and being able to operate profitably, and in part by the type of market failure that is likely to prevail in a given service sector and call for regulation.¹

Focusing on the first dimension, the impact on regulation on entry and/or operating costs will vary. Some types of regulation – e.g., a simple registration requirement – will only impose a small burden on operators. Other types of regulation may be very difficult for new entrants to overcome and can even prohibit entry – e.g., a ban on investment in complementary infrastructure facilities such as a warehouse/logistics center; highly restrictive economic needs tests; or regulation reserving certain types of transactions to a SOE. The benefits of removal of services trade barriers (discriminatory measures) will be affected by the applicable measures regulating entry. As long as they are not prohibitive, the most (more) efficient foreign providers can be expected to be able to satisfy the regulatory requirements. These may raise costs above what they would be if, for example, regulatory cooperation allowed mutual recognition or equivalence, but some level of trade can be expected to occur. In this case market access can be a substitute for regulatory reform. If, however, regulation is such as to essentially preclude entry – e.g., because of state control of prices or the existence of SOEs that dominate (segments of) the market – services trade liberalisation may not have much of an effect on incentives to enter the market. In this case there is more likely to be a complementary relationship between services trade policy and sector-level regulation: reforms will need to target both policy areas.

Moving to sector specific economic governance, similar dynamics may arise as with cross-sectoral regulatory regimes but there is likely to be an additional dimension: the extent to which different types of market failures motivate (or should motivate) regulation. For some services sectors where there are significant network externalities there is a rationale for both public investment in infrastructure and regulation of the relevant network to ensure interconnection and access. In other sectors the primary source of market failure is information asymmetries. In case of transport and telecommunications, network infrastructures are central. Weak regulatory regimes that permit exploitation of market power by incumbent operators can prohibit entry by new operators. This feature of regulation cannot be offset by services trade liberalisation. In practice it will often be prohibitively expensive for new

¹ See Copeland and Mattoo (2008) for a discussion of different rationales for regulation of services activities.

entrants to develop their own network infrastructure – they will not be able to overcome a government’s failure to put in place and enforce pro-competitive regulation. Absent effective pro-competitive regulation, market access liberalisation can be expected to have smaller positive downstream productivity effects. There is strong complementarity between good regulation and the potential benefits of services trade liberalisation.

Such complementarity is less likely to apply for producer services where network externalities are less prevalent or do not figure at all. In the case of business services, for example, the main rationale for regulation is to deal with problems of asymmetric information. In cases where domestic regulation is ineffective in addressing this problem it is relatively easier for foreign providers to address such regulatory failure and take action to offset at least to some extent the underlying market imperfection – e.g., establishing a reputation for quality by leveraging foreign regulatory certification and/or international certification (such as compliance with ISO standards). In this example the result is likely to be a substitution relationship between domestic sectoral regulation/governance and market access reform.

In addition to the horizontal and sector-specific dimensions of economic regulation, another feature of the governance—market access relationship that is relevant in the EU context is the role of common EU institutions. EU membership (and accession) is associated with a set of obligations to apply EU law and regulation and to pursue shared values. In the case of services the Single Market Strategy and associated EU directives, combined with monitoring of implementation by the European Commission, the possibility of infringement procedures and challenging specific policies before the Court of Justice of the European Union, and, ultimately, penalties for non-compliance are likely to affect the extent to which governance affects market access liberalisation across EU member states. Understanding whether these EU-specific dimensions of governance have a complementary or substitution relationship with market access reforms has important policy implications. In the case of complementarity, EU accession and/or full implementation of EU Directives could be a tool to maximise the gains from opening services markets and therefore be prioritised as a policy objective before or in parallel with further market access reform in services markets – e.g., in the context of free trade agreements such as TTIP. In the substitutability case, countries outside the EU as well as EU member states with the lowest level of compliance with the EU Service Directive would be the ones with the highest potential for short-run downstream gains from services liberalisations, with associated implications for the distributional effects of trade reforms.

2.3. SERVICES TRADE POLICY AND GOVERNANCE IN EU MEMBER STATES

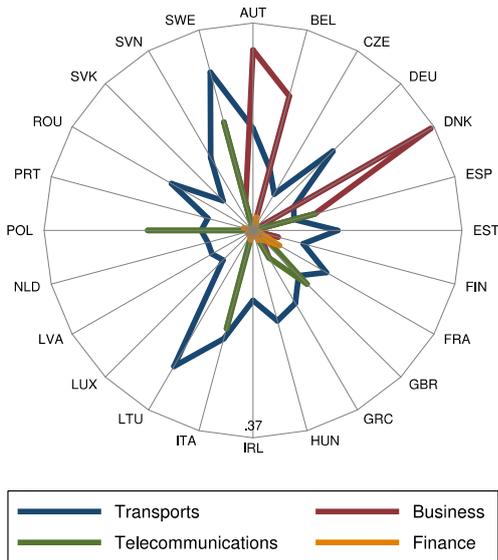
The EU does not (yet) have a common external services trade and investment policy. Nor do the EU member states have the same quality of economic governance or service-sector specific regulatory regimes.² Graph 2.1 plots an indicator of applied discriminatory barriers to FDI in services – what is called mode 3 services trade barriers in WTO speak – for four producer services sectors and 24 member states in 2010. This is a good proxy for countries’ services trade restrictiveness as FDI is the most important mode through which foreign providers can contest markets and supply services (Francois and Hoekman, 2010). The data reveal substantial heterogeneity across EU members and sectors.

FDI restrictions for financial services appear to be minimal everywhere in the EU, whereas barriers in transport, telecommunications and business services are relatively significant for several member states. FDI restrictions in the transport sector tend to be the highest for many countries. Graphs 2.2 and 2.3 report data on four horizontal or cross-cutting dimensions of economic governance across EU member states and time. The indicators reported are from the OECD Product Market Regulation (PMR) database and span barriers to entrepreneurship, the extent of state control of the economy, a composite measure of the complexity of regulatory regimes, and the governance of state-owned

² The measures and the data sources introduced in this Section are discussed in more detail in Section 3.

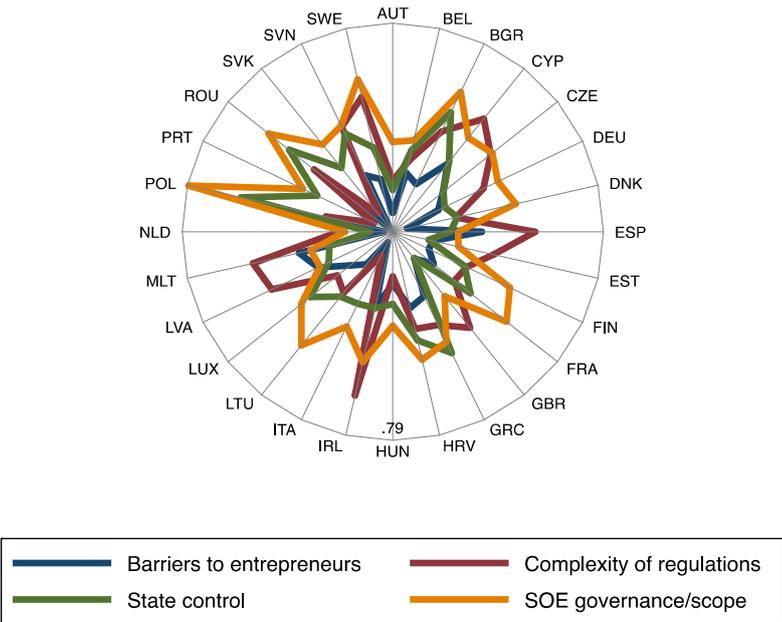
enterprises. The PMR indicators suggest substantial heterogeneity in these governance-related variables in the EU (Graph 2.2) and a positive trend toward better quality economic governance over time, especially for barriers to entrepreneurship (Graph 2.3). Graphs 2.4 and 2.5 suggest very similar conclusions can be drawn from data on sector-specific dimensions of economic governance for transportation services, telecommunications and business services.

Graph 2.1. Applied discriminatory barriers to services trade (Mode 3)



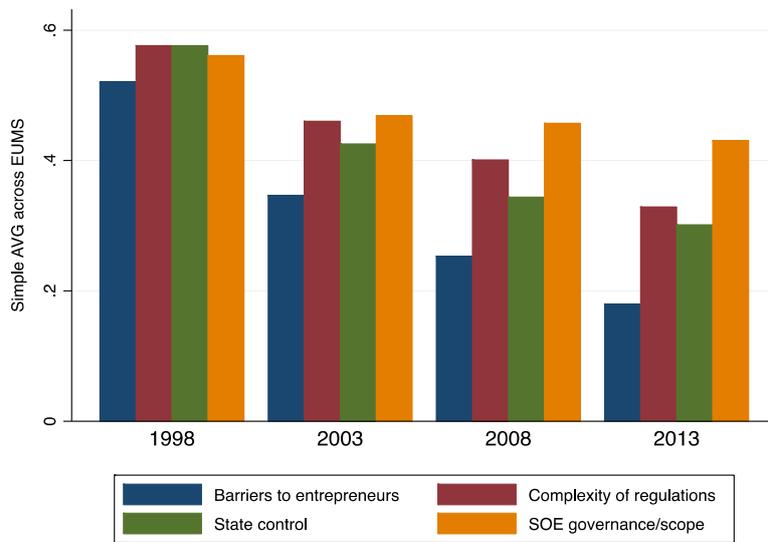
Note: 1 = maximum restrictions; 0 = no restrictions. Data refer to the applied policy stance in 2010. Source: OECD FDI Regulatory Restrictiveness Database.

Graph 2.2. Governance: horizontal dimensions across EU Member States



Note: 1 = highest barriers/minimum quality. Data refer to the quality of governance in 2013. Source: OECD Product Market Regulation, Economy Wide Database

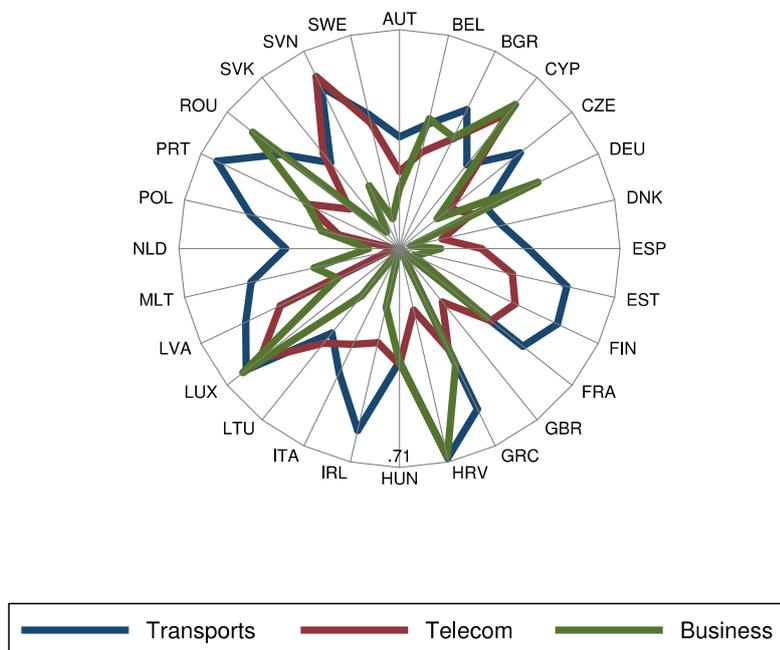
Graph 2.3. Governance: horizontal dimensions over time



Note: 1 = highest barriers/minimum quality. Data refer to the quality of governance in 2013.

Source: OECD Product Market Regulation, Economy Wide Database

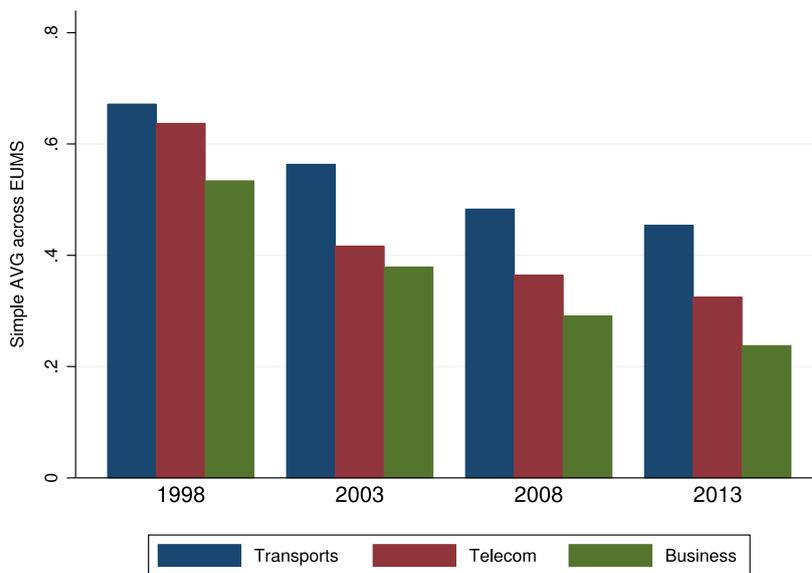
Graph 2.4. Governance: sector-specific dimensions across EU Member States



Note: 1 = highest barriers/minimum quality. Data refer to the quality of governance in 2013.

Source: OECD Product Market Regulation, ETCR and Professional Services Database.

Graph 2.5. Governance: sector-specific dimensions over time



Note: 1 = highest barriers/minimum quality. Data refer to the quality of governance in 2013.

Source: OECD Product Market Regulation, ETCR and Professional Services Database.

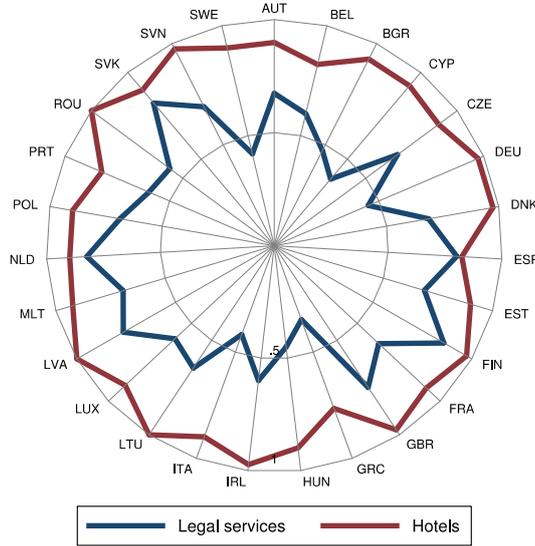
More detailed measures of policy can be constructed for EU member states than for OECD countries based on the degree of compliance with EU Directives which contain requirements pertaining to the governance of services sectors. A key measure is the Services Directive which was adopted in 2006, with transposition to have been completed by 2009. This directive covers services sectors accounting for some 45 percent of EU GDP. It imposes disciplines on the use of prior authorisations for provision of services, licensing for retail stores, specific authorisations for the sale of certain products at retail level and economic needs tests for retail outlets (Art. 9). It requires the removal of explicitly discriminatory policies such as nationality tests, requirements that a provider establish or join a professional body if this has already been done in an EU member state, that the firm's headquarters be located in the country, conditioning operations on economic needs tests, requiring financial guarantees or insurance from a host country provider, and involvement of (domestic) competitors in the process of granting authorisation to operate (Art. 14). It also imposes disciplines on non-discriminatory regulatory requirements that may impede market access— e.g., limits on the number of establishments that are permitted or requirements that a firm employ a minimum number of employees (Art. 16).

Art. 15 SD imposes disciplines on countries maintaining potentially competition-restricting regulatory measures justified on public interest grounds. Such measures— e.g., quantitative or territorial limitations, restrictions on the legal form of an entity, requirements concerning equity holdings, or price controls – must be transparent. To help assure this, governments are required to establish Points of Single Contact – “one-stop shops” where firms can obtain all necessary information on requirements that need to be satisfied to provide services in a country. Art. 15 also imposes specific substantive disciplines. Measures may not directly or indirectly discriminate according to nationality and/or, in the case of companies, on the basis of the location of the registered office; they must be justified by an overriding reason relating to the public interest (a necessity test) and not go beyond what is necessary to attain that public interest objective (a proportionality test). An important dimension of implementation of Art. 15 is a mutual evaluation process. Member states are tasked with assessing for themselves whether their regulatory requirements satisfy the substantive criteria of Art. 15 (necessity, proportionality) and must share their reasoning with other member states.

Graph 2.6 reports descriptive evidence on EU Member State compliance with the 2006 Services Directive in two sectors: hotels and legal services. Looking at the hotels sector, the graph shows

almost complete compliance (full transposition) across all member states. This contrasts with the situation for legal services, a key component of the producer services sector and an important input into manufacturing production. The data suggest that many countries are not fully complying with the requirements of the Services Directive.

Graph 2.6. EU Services Directive transposition



Note: Simple average of implementation of the Services Directive across requirements. 1 = complete implementation; 0 = no implementation. Data capture extent implementation in 2009.

Source: Montegudo et al. (2012)

3. EMPIRICAL SPECIFICATION AND DATA

The object of the empirical analysis that follows is to assess the role of different dimensions of governance institutions in shaping the downstream effects of trade policies targeting producer services. The results will inform the above discussion of the mechanics governing the relationship (complementarity versus substitutability) between trade openness and governance institutions in the context of producer services markets. We follow the methodology developed in Beverelli et al. (2017) and use a measure of labour productivity varying at the country i and manufacturing sector j level (y_{ij}) as dependent variable. To capture the impact of services trade restrictiveness on downstream sectors we define a composite trade restrictiveness index defined as:

$$CRI_{ij} = \sum_s RI_{is} \times w_{isj}$$

where RI_{is} is a restrictiveness index for imports (foreign sales) of service s in country i , and w_{isj} is a measure of how much downstream sector j in country i uses service s as an intermediate input to produce its output. The main focus of the analysis will be on the interaction between CRI_{ij} and detailed measures of country-level governance institutions capturing the specific dimension of governance d ($GI_{d,i}$), as follows:

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

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} and δ_{jt} are country-time and sector-time fixed effects, respectively; and ε_{ijt} is the error term.

The estimated marginal effects of CRI on y are given by:

$$\frac{\widehat{\partial y}}{\partial CRI} = \hat{\beta} + \hat{\mu} \times GI_{d,i}$$

and depend on country-level institutions captured by the variable $GI_{d,i}$. The sign of $\hat{\mu}$ will identify the nature of the moderating role of institutions (complement or substitute) in influencing the downstream productivity effects of producer services trade policy. For each dimension d , the respective version of equation (1) is estimated.

In a baseline model without the interaction term $CRI_{ij} \times GI_{d,i}$, the marginal effect of CRI on labour 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. 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 (1) 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.

We assess the moderating role of seven horizontal dimensions of governance and three sector specific ones using OECD data (see below). Horizontal dimensions consist of two aggregate composite categories, barriers to entrepreneurs ($GI_{\text{bars to entrp}}$) and state control ($GI_{\text{state ctrl}}$), and five sub-categories. Three of these are elements of the composite measure of barriers to entrepreneurship – (i) administrative burdens ($GI_{\text{admin burdens}}$); (ii) complexity of regulations ($GI_{\text{complexity of reg}}$); and (iii) regulatory protection of incumbent operators ($GI_{\text{protec of incumb}}$). The other two sub-categories are elements of the composite indicator of state control: (iv) a measure of the extent of government intervention in business ($GI_{\text{gvt in business}}$); and (v) the relative importance of state owned enterprises ($GI_{\text{public ownership}}$). The three sector-specific regulatory governance measures pertain to transport ($GI_{\text{transport}}$), post and telecommunications (GI_{telecom}), and business services (GI_{business}). $GI_{\text{transport}}$ is the simple average of five indicators: scope of public ownership in air transports, scope of public ownership in rail transport, price regulation in road transport, market structure in the rail transport sector, and vertical integration in rail transport. GI_{telecom} is the simple average of four indicators: scope of public ownership in the postal sector, market structure of the postal sector, scope of public ownership in the telecommunications, and market structure of the telecommunication sector. GI_{business} is the simple average of four conduct regulation indicators for accountants, architects, engineers and legal service providers.

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

To test empirically the moderating function of governance dimensions that reflect the role of EU institutions we define the following four variables. A dummy EU_{it} taking value 1 if the country i is a member of the European Union at time t ; a dummy SD_{it} taking value 1 if the Services Directive is in force in country i at time t ; two continuous variables – $SDT_{all,it}$ and $SDT_{business,it}$ – that measure the level of compliance of country i at time t with the requirements of the Services Directive. The first of these captures all service sectors covered by the directive and recorded in our data (including business services and several non-producer services such as hotels, restaurants, travel agencies). The second variable spans business services only. Both variables vary between 0 to 1 with 0 (1) representing minimum (maximum) compliance.

We then re-estimate equation (1), replacing $GI_{d,i}$ with each of these four proxies of EU related governance institutions. 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, either in the form of EU membership, or applicability of/compliance with the requirements of the Services Directive. Therefore, a negative sign for the point estimate $\hat{\mu}$ reflects a relationship between market access liberalisation and EU-based domestic governance such that the positive downstream effects of the former are amplified where EU institutions are more deeply embedded in domestic governance (either through EU membership, or through applicability of/compliance with the Services Directive).

Endogeneity resulting from observable and/or unobservable heterogeneity is not a serious 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 labour productivity and the regressors of interest. Endogeneity of input-output weights is addressed in a standard way as discussed below.

Data on labour productivity are sourced from the STAN Database managed by the OECD. Concretely, we measure labour productivity as the natural logarithm of the ratio between value added and total employed persons. Capital and labour measures used to construct the capital-labour ratio come from the same database. Services trade policy is measured with the OECD FDI Regulatory Restrictiveness Index. This is available for multiple years, in contrast to the recent World Bank and OECD services trade restrictiveness indicators. Given the findings of empirical work in this area that FDI policies (affecting mode 3) are what matters (see Beverelli et al., 2017 for a discussion), the focus on mode 3 (FDI) policies is not a major limitation. Horizontal governance variables come from the OECD Product Market Regulation – Economy Wide Database. Indicators reported in the PMR database that entail discrimination against foreign providers such as trade and FDI related policies are not used as market access policy is captured by the FDI restrictiveness indicator. Similarly, measures that entail discriminatory barriers to entry are systematically excluded from the construction of the sector specific regulatory variables. Proxies for the input-output weights w_{isj} are given by the technical coefficients of IO matrices. To minimise the potential endogeneity of this component of the composite reform indicator we use US IO coefficients for the mid-1990s and apply these across all countries in our estimation sample.³ The IO data is drawn from the OECD STAN IO Database. The measures of transport- and telecommunication-specific governance are sourced from the OECD PMR – ETCR Database. The business-services specific governance variable is built from indicators in the OECD PMR Professional Services Database.

The proxy for compliance with the requirements in the Services Directive is constructed from the database presented in Montegudo et al. (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 a number of key policy areas embedded in 20 requirements across

³ For discussion and assessments of the appropriateness of using US weights as an indicator of the technological linkages between industries see Rajan and Zingales (1998) and Barone and Cingano (2011).

five key articles of the Services Directive.⁴ 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.⁵ Starting from this convergence variable, SDT_{all} is computed as the simple average of CL_{csrt} across all requirements and sectors. Instead $SDT_{business}$ is given by the simple average of CL_{csrt} across all requirements but only for those business services covered in the data (accounting, architectural, engineering, legal, and tax advisory services).

Some of the data series used in the analysis are not annual but span a selection of years. This is the case for the PMR Economy Wide Database, the FDI Regulatory Restrictiveness Database and the SD Database. In these cases we construct a panel by imputing the missing value at time t with the non-missing value at time $t - 1$. Alternative imputation strategies as well as a conservative approach that uses only the reports data points do not substantially change the main results presented in the next section.

Merging all variables together, we obtain an estimation sample consisting of 2888 observations which cover 12 EU countries (Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Italy, the Netherlands, Spain, Sweden and the UK) plus Norway and New Zealand; up to 18 manufacturing sectors defined according to the ISIC Rev 3 (2 digit) categories; and 21 years, from 1989 to 2009. Table I.1 in Annex I reports summary statistics for all the variables used in the empirical analysis.

4. RESULTS

Estimation results are organised per type of domestic governance variable. Column (1) in Table 4.1 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 (1) when proxies of 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 removing market access barriers for services. The point estimate of -0.9 implies that a one standard deviation decrease in the composite reform indicator (-0.048) increases downstream labor productivity on average by 4.3%.⁶ Turning to the interaction models in columns (2)-(8), a number of findings emerge. First, when the marginal effect of CRI is allowed to change linearly with the quality of regulatory/governance institutions, the relationship varies across the horizontal governance proxies. This illustrates the salience of ‘unpacking’ regulatory regimes in assessments of the moderating role of governance quality: this heterogeneity is lost when macro measures of institutions are used. Second, the negative and statistically significant coefficients of the interaction term in columns (2) and (4) suggest that greater 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 indicator, the complexity of regulatory regimes is particularly important (column 4). This is consistent with the hypothesis advanced above that foreign providers, once granted better market access, can offer better

⁴ The relevant SD provisions are Articles 9, 14, 15, 16 and 25. Monteagudo et al. (2012) and Canton, Ciriaci and Solera (2014) provide economic impact assessments of liberalization of services covered by the SD.

⁵ See Monteagudo et al. (2012) for a detailed description of the database.

⁶ Quantifications of the downstream effects of trade policy changes is beyond the scope of this paper. The empirical methodology implies that quantification can only be conducted at the manufacturing sector level. This is not a problem 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.

quality, variety and/or prices than domestic providers by successfully overcoming prevailing barriers to entrepreneurship. These results are plotted in Annex I Graphs I.1 and I.2, which show that the estimated marginal effect of *CRI* decreases with *GI* and is always negative and statistically different from 0 (meaning a positive downstream effect of reducing trade restrictions) when barriers to entrepreneurship are high (the quality of governance captured by this variable is low).

Table 4.1. The moderating role of governance institutions: horizontal dimensions

Dep var: log of labour productivity	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>CRI</i>	-	1.339	-0.266	-0.337	-0.426	-1.728**	-0.312	-3.797***
	(0.270)	(1.034)	(0.745)	(0.386)	(0.703)	(0.726)	(0.599)	(0.776)
<i>CRI</i> × <i>GI</i> _{bars to entrp}		-5.700**						
		(2.307)						
<i>CRI</i> × <i>GI</i> _{admin burdens}			-1.060					
			(1.130)					
<i>CRI</i> × <i>GI</i> _{complexity of reg}				-1.931**				
				(0.918)				
<i>CRI</i> × <i>GI</i> _{protec of incumb}					-1.037			
					(1.273)			
<i>CRI</i> × <i>GI</i> _{state control}						1.600		
						(1.250)		
<i>CRI</i> × <i>GI</i> _{gvt in business}							-1.593	
							(1.293)	
<i>CRI</i> × <i>GI</i> _{public ownership}								5.043***
								(1.287)
log <i>K/L</i>	0.148***	0.145***	0.147***	0.147***	0.147***	0.148***	0.146***	0.144***
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.029)	(0.029)
Observations	2888	2888	2888	2888	2888	2888	2888	2888
Adj. R-squared	0.780	0.781	0.780	0.781	0.780	0.781	0.781	0.781

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: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Third, the alternative measure of horizontal economic governance – captured by the scope of SOEs in the economy – tends to operate as a necessary condition for a positive downstream effect of services trade liberalisation. This is suggested by the positive and statistically significant estimated coefficient of the interaction term in column (8). The corresponding estimated marginal effects of *CRI* are reported in Annex I Graph I.3. The effect is increasing in the moderator. Moreover, it is negative and statistically significant (meaning a positive downstream effect of reducing trade restrictions) when the

barriers implied by the scope of prevailing SOEs are low enough (i.e., the quality of governance in this dimensions is high). This finding is consistent with the discussion in section 2.2 and indicates that bad governance in terms of public ownership affects market conditions in a way that cannot be overcome by foreign services providers. Better market access in producer services is ineffective in increasing downstream productivity when the barriers implied by the scope and governance of SOEs are too high.

Table 4.2. The moderating role of governance institutions: sector-specific dimensions

Dep var: log of labour productivity	(1)	(2)	(3)	(4)
<i>CRI</i>	-0.900*** (0.270)	-2.229*** (0.778)	-3.109*** (0.882)	0.181 (0.630)
<i>CRI</i> × <i>GI</i> _{transport}		1.914* (1.001)		
<i>CRI</i> × <i>GI</i> _{telecom}			3.429*** (1.110)	
<i>CRI</i> × <i>GI</i> _{business}				-1.618** (0.771)
log <i>K/L</i>	0.148*** (0.028)	0.147*** (0.028)	0.146*** (0.028)	0.145*** (0.029)
Observations	2888	2888	2888	2888
Adj. R-squared	0.780	0.781	0.781	0.781

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.

Table 4.2 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 differs across sectors, suggesting it is important to differentiate between sectoral regulatory regimes. High quality regulation of transport and telecommunications appears to be a necessary condition for positive downstream effects of services trade reforms. This is shown by the positive and statistically significant coefficients of the interaction term in columns (2) and (3) (for the graphical counterpart, see the corresponding plots of the marginal effect of *CRI* in Annex I, Graphs I.4 and I.5). The opposite relationship (substitutability) holds for business services. These results are consistent with reasoning in section 2.2 that the quality of conduct regulation in sectors that rely heavily on access to network infrastructure (especially the case for telecommunication services) may be condition the ability of foreign services providers to operate efficiently and therefore improve the quality, variety or prices of services available on the market. Absent effective pro-competitive sectoral regulation downstream productivity benefits of market access reforms do not materialise. Conversely, low quality sectoral regulation of business services appears to inhibit foreign services providers less. The negative coefficient estimate for business services in column 4 of Table 4.2 suggests a substitution relationship: market access reforms have the potential to trigger positive downstream effects in countries where the business sector is badly regulated.

Table 4.3 presents the results of the interaction model using the proxies for EU-related governance institutions. The only dimension of EU-based governance that seems to have a significant impact in

moderating the downstream effects of services trade policy is that captured by EU membership. The negative sign and high level of statistical significance of coefficient of $CRI \times EU$ in column (2) suggests EU law and institutions amplify the gains from opening services markets. More narrowly defined measures of economic governance such as the Services Directive and the country-specific compliance measures do not seem to have any effect on downstream sectors. This may reflect the focus of the Services Directive, which spans a wide range of services, many of which enter into 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 compliance for business services only. Of course this does not mean that the SD has not had effects. Monteagudo et al. (2012) for example find that the SD and compliance with its requirements has an sizable direct positive effect on the productivity of the targeted services sectors.

Table 4.3. The moderating role of governance institutions: EU dimensions

Dep var: log of labour productivity	(1)	(2)	(3)	(4)	(5)
<i>CRI</i>	-0.900*** (0.270)	-0.022 (0.409)	-0.945*** (0.266)	-0.940*** (0.268)	-0.961*** (0.272)
$CRI \times EU$		-1.153*** (0.369)			
$CRI \times SD$			0.249 (0.707)		
$CRI \times SDT_{all}$				0.267 (0.859)	
$CRI \times SDT_{business}$					0.485 (1.047)
$\log K/L$	0.148*** (0.028)	0.143*** (0.029)	0.148*** (0.028)	0.148*** (0.028)	0.148*** (0.028)
Observations	2888	2888	2888	2888	2888
Adj. R-squared	0.780	0.781	0.780	0.780	0.780

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

The results of our analysis suggest that countries that underperform in terms of domestic economic governance variables that are likely to have complementary relationship with market access liberalisation should prioritise 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. However, in cases where market access can substitute for regulatory improvement the policy implication of our analysis is that there is no need to be concerned with sequencing or coordination between services trade liberalisation and pursuit of regulatory reform and improving economic governance. Instead, countries that underperform in domestic governance dimensions where there is a substitution relationship with market access liberalisation, are likely to obtain the highest short term positive effects of services trade liberalisation. Our results suggest that substitutability may prevail in cases where countries perform poorly with respect to barriers to entrepreneurship and conduct regulation in business services.

5. CONCLUSIONS

Services comprise a substantial share of all inputs used by firms. The cost, quality and variety of services available to firms is one determinant of their competitiveness. Sector-specific restrictive trade policies will impact on the degree of competition on services markets, and thus markups and sectoral efficiency. Recent compilations of prevailing policies across countries by the OECD and the World Bank have shown that barriers to trade in services are often significant, translating into estimates of ad valorem tariff equivalents that are substantially higher than trade barriers for goods (Jafari and Tarr, 2017). There is therefore a presumption that liberalisation will lower average prices and expand the variety of services on the market. An expanding body of empirical research analysing the linkages between services trade policies and downstream productivity performance has identified sizable positive effects of liberalising services trade on the productivity and export performance of firms. Because producer services are regulated, liberalisation of trade in services is more complex than opening up markets for goods. In the TTIP context, for example, civil society groups made clear their concerns that opening up services sectors to greater foreign competition might erode regulatory standards (Young, 2016).

The analysis in this paper is motivated by recent findings in the literature that weak governance may substantially reduce the magnitude of the potential benefits of services trade policy reforms. There are substantial differences across EU member states both when it comes to services trade policies towards the rest of the world. There is also great variability in regulatory regimes, whether horizontal in nature (affecting the economy as a whole) or services-sector specific. Our premise is that it is important to pay more attention to how different dimensions of economic governance interact with services trade policies and that doing so can help inform policy reform efforts. Insofar as more narrowly defined measures of regulatory governance are shown to reduce the potential benefits of services liberalisation, these may be easier to address than broader dimensions of governance such as control of corruption or the rule of law. The finding that in some circumstances trade policy reforms (services liberalisation) need to be accompanied by action to improve domestic regulatory governance whereas in other situations market access liberalisation can act as a substitute for regulatory improvement suggests that greater effort to ‘unpack’ the effects of regulatory institutions on services trade reforms is needed. Our results also have implications for model-based efforts to assess the impacts of services liberalisation initiatives in trade agreements as these may overestimate the potential benefits if account is not taken of the moderating effect that regulatory regimes may have.

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ANNEX

Summary statistics

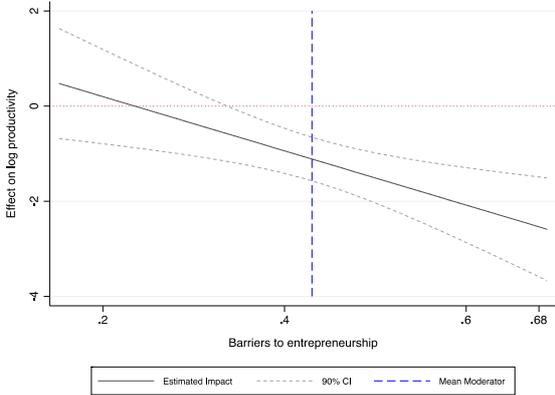
Table I.1. Summary statistics

Variable name	Mean	Median	SD	Min	Max
Labour productivity	10.921	10.865	0.585	7.696	14.142
<i>CRI</i>	0.064	0.052	0.048	0.006	0.338
<i>GI</i> _{bars to entrp}	0.43	0.436	0.135	0.152	0.689
<i>GI</i> _{admin burdens}	0.444	0.415	0.186	0.053	0.827
<i>GI</i> _{complexity of reg}	0.516	0.556	0.182	0.137	0.857
<i>GI</i> _{protec of incumb}	0.38	0.374	0.164	0.064	0.718
<i>GI</i> _{state ctrl}	0.452	0.436	0.185	0	0.815
<i>GI</i> _{gvt in business}	0.336	0.3	0.211	0	0.915
<i>GI</i> _{public ownership}	0.509	0.533	0.182	0.096	0.873
<i>GI</i> _{transport}	0.559	0.6	0.202	0	0.972
<i>GI</i> _{telecom}	0.569	0.572	0.2	0.03	0.902
<i>GI</i> _{business}	0.426	0.305	0.309	0.005	1
<i>EU</i>	0.758	1	0.429	0	1
<i>SD</i>	0.178	0	0.383	0	1
<i>SDT</i> _{all}	0.145	0	0.313	0	0.928
<i>SDT</i> _{business}	0.131	0	0.29	0	0.922
logK/L	12.126	11.891	1.22	9.331	16.153

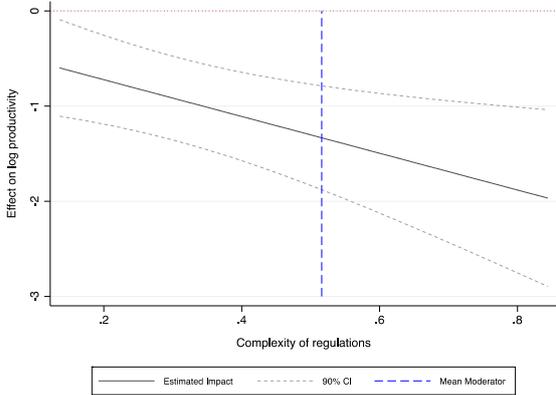
Note: Summary statistics are computed on the estimation sample of 2888 observations used in all regressions.

Estimated marginal effects of CRI in interaction models with horizontal economic governance variables

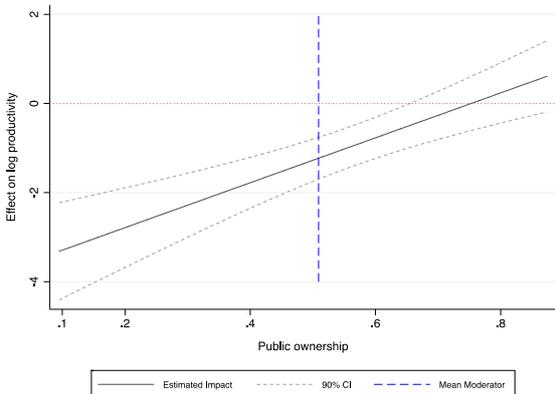
Graph I.1. Marginal effects of CRI as function of $GI_{\text{bars to entrp}}$



Graph I.2. Marginal effects of CRI as function of $GI_{\text{complexity of reg}}$



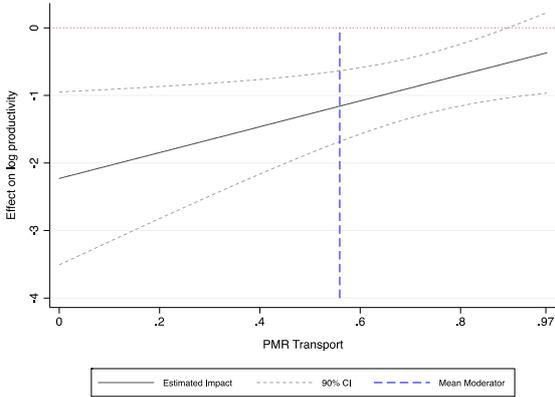
Graph I.3. Marginal effects of CRI as function of $GI_{\text{public ownership}}$



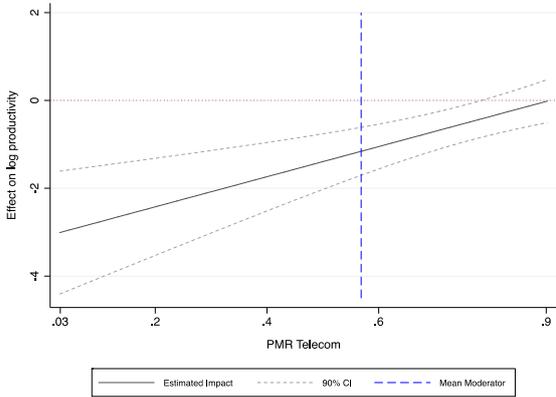
Note: Marginal effects are estimated based on the specifications reported in Table 4.1 for which the point estimate of the interaction term is statistically significant.

Estimated marginal effects of CRI in interaction models with sector-specific regulatory governance

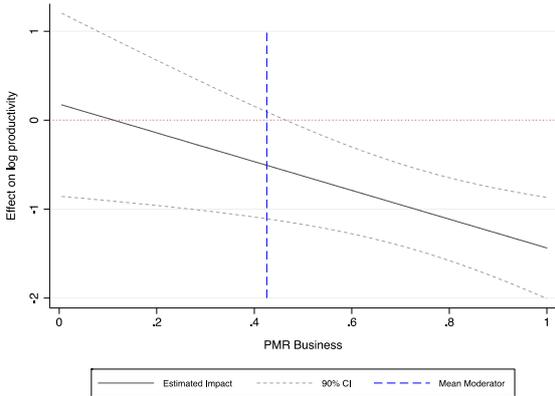
Graph I.4. Marginal effects of CRI as function of $GI_{transport}$



Graph I.5. Marginal effects of CRI as function of $GI_{telecom}$



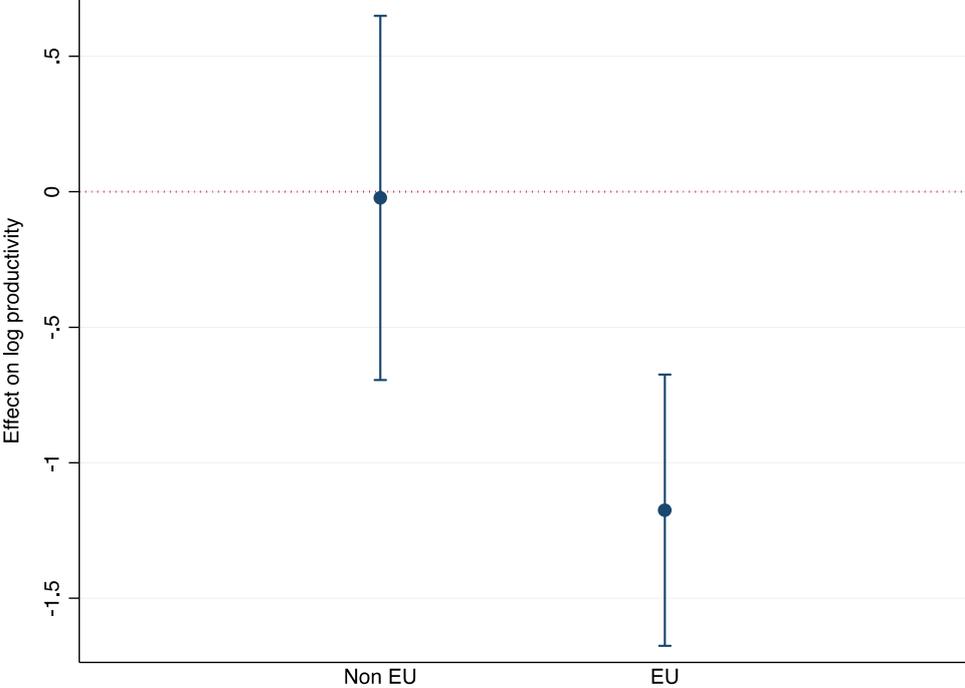
Graph I.6. Marginal effects of CRI as function of $GI_{business}$



Note: Marginal effects are estimated based on the specifications reported in Table 4.2 for which the point estimate of the interaction term is statistically significant.

Estimated marginal effects of CRI in interaction models with EU institutions

Graph I.7. Marginal effects of CRI as function of EU



Note: Marginal effects are estimated based on the specifications reported in Table 4.3 for which the point estimate of the interaction term is statistically significant.

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