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Corporate Performance in Transition: The Role of Business Constrains and Institutions in the South Mediterranean Region

"C. Exports and governance: Is MENA different?"

Directed by: Inmaculada Martínez-Zarzoso
(Institute of International Economics, University Jaume I, Spain)

With Contributions by:

Laura Márquez (Institute of International Economics, University Jaume I, Spain)
Maria Parra (Institute of International Economics, University Jaume I, Spain)
Mona Said (American University, Cairo, Egypt)
Charilaos Mertzanis (American University, Cairo, Egypt)

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CORPORATE PERFORMANCE IN TRANSITION: THE ROLE OF BUSINESS CONSTRAINS AND INSTITUTIONS IN THE SOUTH MEDITERRANEAN REGION

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Inmaculada Martínez-Zarzoso[*], Laura Márquez and Maria Parra, Institute of International Economics, University Jaume I, Spain

Mona Said and Charilaos Mertzanis, American University, Cairo, Egypt

Note: The report comprises three single articles. This is the third article entitled:

"C. Exports and governance: Is MENA different?"

Executive Summary

This report aims at analyzing the recent trends in corporate performance and economic success in Southern Mediterranean countries at the firm and country level. More specifically, it aims at identifying and evaluating the potential factors that may trigger and foster economic changes in the region, focusing in particular on the role played by skill constraints, the business environment and the institutional setting in explaining economic performance, measured as productivity, sales growth rates and exports, as well as quantifying their relative importance. Firstly, we investigate different sources of economic performance steaming from factors that are internal and external to the firm. At the firm level, the business environment encompasses features relative to the work force, legal, regulatory, financial, and institutional system of a country and therefore it has an impact on the performance of firms and industries.

Secondly, since the business environment affects firms and country performance, then we proceed with an empirical investigation at the country level as well. The common underlying assumption is that firms and countries facing 'better' business environments and institutions can be expected to perform better.

The main novelty of this report is to produce empirical evidence covering the transition period on the conditions that influence private sector performance and country level exports in the South Mediterranean region in comparison to other regions/countries that also went through an economic and institutional transition in the past. As a result, the study provides the tools for designing appropriate development policies.

This report is structured into three parts: the first part focuses on skills and resource characteristics of firms and the role of the main perceived constrains to do business at

[*] We would like to thank the *3* anonymous reviewers for their constructive and valuable comments, which have been incorporated into the revised version of the report.

the firm level. Micro survey data is used to explore the impact of labor skills and other firm-specific characteristics on firm performance, measured as sales growth rates, in 135 developing countries. The analysis uses a consistent and large data set from the World Bank's Enterprise Surveys. The results show that labor skills and firm-specific characteristics are significant predictors of firms' performance. However, the predictive power of labor skills and the firm-specific characteristics is significantly affected by national economic and non-economic factors. Indeed, the national levels of economic, financial and human development as well as income inequality, along with domestic conditions of regulatory governance and other institutions as well as legal and social heterogeneity, all have a role to play in determining firms' performance. The results show that the classification of firms as labor skill-constrained or not in developing countries can be better assessed on the basis of both micro-level and macro-level factors.

The second part of the report specifically focus on the main obstacles that MENA firms, and in particular Egyptian enterprises, face to do business in their country and investigates to what extent the constraints affect firm performance. Firm's performance is measured as Total Factor Productivity (TFP) and labour productivity (LP). Our analysis evaluates the effects of the different business indicators, obtained from the World Bank Enterprise Survey using firm level data from manufacturing firms, on TFP/LP. A number of control variables commonly used in the empirical literature are also included in the model. The main results indicate that access and cost to finance, tax rates, regulatory policy uncertainty, the price of land and basic infrastructures, such as access to water and electricity, are among the most relevant factors for Egypt. These findings have important policy implications, in particular for policy makers and will help them decide what sort of specific actions can be taken to reduce the main obstacles and consequently to pave the way for manufacturing Egyptian firms to become more competitive. The analysis is also extended to other countries in the region, namely Lebanon, Jordan, Morocco and Tunisia and the environmental constrains before and after the Arab Spring are compared. The main findings indicate that regulatory and policy uncertainty, corruption and crime have become more important obstacles after 2011 for most firms in these countries.

The third part focuses on the country-level analysis and investigates the role of the quality of institutions and its different dimensions in the selected countries in explaining export performance. It aims at analysing whether higher quality of economic governance rewards economy performance and facilitates the integration of the MENA region in the world economy. A gravity model of trade augmented with governance indicators is estimated using bilateral exports among 189 trading partners and also for 19 MENA exporters over the period from 1996 to 2013. The main results show that, individually, each of the six governance indicators in the exporting and the importing countries considered has a positive effect on bilateral trade. However, the results for MENA exporters slightly differ. Governance in the importing countries seems to be less relevant for MENA exporters than for the rest of exporters. The effect of country pair similarity in governance indicators indicate similar levels of regulatory quality and the rule of law in exporter and importer countries favours exports of MENA countries. Similarities in voice and accountability also foster exports in the average exporter, but it does not seem relevant for MENA exporters.

Résumé

Ce rapport vise à analyser les tendances récentes de la performance de l'entreprise et le succès économique dans les pays situés au Sud de la Méditerranée au niveau de

l'entreprise et du pays. Plus précisément, il vise à identifier et évaluer les facteurs potentiels qui peuvent déclencher et favoriser les changements économiques dans la région, tout en mettant l'accent sur le rôle joué par l'environnement commercial et le cadre institutionnel pour expliquer la performance économique, mesurée par la productivité, la croissance des ventes et les exportations, ainsi que de quantifier leur importance relative. Tout d'abord, nous étudions les différentes sources de la performance économique à partir des facteurs internes et externes à l'entreprise. Au niveau de l'entreprise, l'environnement commercial englobe les caractéristiques du système juridique, réglementaire, financier et institutionnel d'un pays et, par conséquent, il a un impact sur la performance des entreprises et des industries.

Deuxièmement, étant donné que l'environnement commercial affecte la performance des entreprises et des pays, donc, nous procédons à une enquête empirique de ces conjectures au niveau des pays aussi. L'hypothèse sous-jacente commune est que les entreprises et les pays exposés à de «meilleurs» environnements et institutions commerciaux peuvent être tenus d'accomplir mieux.

La principale nouveauté de ce rapport est de développer des données empiriques portant sur la période de transition sur les conditions qui influent la performance du secteur privé et au niveau des pays exportateurs dans la région sud de la Méditerranée par rapport à d'autres régions/pays qui avaient déjà passé par une transition économique et institutionnelle dans le passé. En conséquence, l'étude fournit les outils pour construire les politiques de développement appropriées.

Ce rapport est structuré en trois parties: la première partie se concentre sur les compétences et les caractéristiques des ressources des entreprises et le rôle des principales contraintes perçues pour faire du commerce au niveau de l'entreprise. Des micro données d'enquête sont utilisées pour explorer l'impact des compétences de la main-d'œuvre et d'autres caractéristiques propres à l'entreprise sur sa performance, mesurée par la croissance des ventes, dans 135 pays en voie de développement. L'analyse utilise un ensemble de données cohérentes et grandes à partir des enquêtes auprès des entreprises de la Banque mondiale. Les résultats montrent que les compétences de la main-d'œuvre et des caractéristiques propres à l'entreprise sont des prédicteurs significatifs de la performance des entreprises. Cependant, le pouvoir prédictif des compétences de la main-d'œuvre et des caractéristiques propres à l'entreprise est affecté de manière significative par des facteurs nationaux économiques et non-économiques. En effet, les niveaux nationaux de développement économique, financier et humain, l'inégalité des revenus, les conditions internes de gouvernance réglementaire et d'autres institutions ainsi que l'hétérogénéité juridique et sociale, ont tous un rôle à jouer dans la détermination de la performance des entreprises. Les résultats montrent que la classification des entreprises par les compétences limitées de la main d'œuvre ou leur absence dans les pays en voie de développement peut être mieux évaluée sur la base de facteurs à la fois aux niveaux micro et macro.

La deuxième partie du rapport se concentrer spécifiquement sur les principaux obstacles les entreprises de la région MENA, et notamment les entreprises égyptiennes face afin de réaliser des activités commerciales dans leur pays et examine dans quelle mesure ces contraintes affectent-elles la performance des entreprises. La performance de la firme est mesurée en productivité totale des facteurs (PTF). Notre analyse évalue les effets des différents indicateurs d'activité, obtenus à partir de l'Enquête sur l'entreprise de la Banque mondiale en utilisant des données au niveau des entreprises d'entreprises manufacturières, sur la PTF. Un certain nombre de variables de contrôle utilisées couramment dans la littérature empirique sont également inclus dans le modèle. Pour

vérifier la robustesse de nos résultats, des mesures alternatives de rendement de l'entreprise sont utilisées, tels que les ventes totales et le nombre moyen de travailleurs. Les principaux résultats indiquent que l'accès et le coût de financement, les taux d'imposition, la politique d’incertitude réglementaire, le prix des terrains et des infrastructures de base, comme l'accès à l'eau et l'électricité, sont parmi les facteurs les plus pertinents. Ces résultats ont des implications politiques importantes, en particulier pour les créateurs de politiques et les aideront à décider du type d'actions spécifiques qui pourront être prises afin de réduire les principaux obstacles et par conséquent à encourager les entreprises manufacturières égyptiennes à devenir plus compétitives. L'analyse est également étendue à d'autres pays de la région, à savoir le Liban, la Jordanie, le Maroc et la Tunisie et les contraintes environnementales avant et après le printemps arabe sont comparées. Les principaux résultats indiquent que l'incertitude réglementaire et politique, la corruption et la criminalité sont devenues des obstacles plus aggravés après 2011 pour la plupart des entreprises de ces pays.

La troisième partie porte sur l'analyse au niveau des pays et étudie le rôle de la qualité des institutions et de ses différentes dimensions dans les pays sélectionnés pour expliquer la performance de l'exportation. Elle vise à analyser si une meilleure qualité de gouvernance économique récompense la performance de l'économie et facilite l'intégration de la région MENA dans l'économie mondiale. Un modèle de gravité du commerce accompagné par des indicateurs de gouvernance est estimé à l'aide des exportations bilatérales entre 189 partenaires commerciaux et également 19 MENA exportateurs au cours de la période de 1996 à 2013. Les principaux résultats montrent que, individuellement, chacun des six indicateurs de gouvernance dans les pays exportateurs et importateurs considérés ont un effet positif sur le commerce bilatéral. Cependant, les résultats pour la région MENA exportateur diffèrent légèrement. La gouvernance dans les pays importateurs semble moins pertinente pour les exportateurs de la région MENA que pour le reste des exportateurs. L'effet de similitude des pays par paire dans les indicateurs de gouvernance indiquent des niveaux similaires dans la qualité de la réglementation et la primauté du droit dans les pays exportateurs et importateurs favorise les exportations des pays de la région MENA. Similitudes dans la voix et la responsabilité de même favorisent des exportations dans les pays exportateurs en moyenne, mais cela ne semble pas pertinent pour les exportateurs de la région MENA.

The report comprises three single articles:

A. Labor skills, institutions and firm performance in developing countries

B. Business environmental constraints in MENA countries with a special focus on Egypt

C. Exports and governance: Is MENA different?

C. Exports and governance: Is MENA different?

Abstract

This paper aims at analysing whether higher quality of economic governance rewards economic performance and facilitates the integration of the Middle East and North Africa region in the world economy. A gravity model of trade augmented with governance indicators is estimated using bilateral exports among 189 trading partners and also for 19 MENA exporters over the period from 1996 to 2013. The main results show that each of the six governance indicators in the exporting and the importing countries considered have a positive effect on bilateral trade. However, the results for MENA exporters slightly differ. Governance in the importing countries seems to be less relevant for MENA exporters than for the rest of exporters. The effect of country-pair similarity in governance indicators suggests that a similar level of regulatory quality and the rule of law in exporting and importing countries favours exports of MENA countries. Similarities in voice and accountability also foster exports in the average exporter, but it does not seem relevant for MENA exporters.

JEL Classification: F10, F14

Keywords: exports, governance, MENA, gravity model, panel data

Exports and governance: Is MENA different?

1. Introduction

The business environment in which firms develop their activities not only affect their productivity but also the aggregate performance of the whole economy. The theoretical literature identifies differences in institutions as one of the key sources of cross-country differences in income and economic growth. It has been argued that broadly defined institutional barriers increase the cost of technology adoption and hence reduce long-term income per capita. The literature also suggests that the relationship is not necessarily linear and monotonic. Indicators of institutional quality commonly used in empirical research are: governance (World Bank Governance Indicators), regulatory constraints (Djankov et al., 2002; Botero et al. 2004), the level of economic freedom (Doyle and Martínez-Zarzoso, 2011) and property rights (Hall and Jones, 1999), among others. However, these studies usually estimate the association between features of business environment and macroeconomic performance rather than identifying the causal effects. Acemoglu et al. (2001) try to establish a causal relationship by using mortality rates of European colonialists as an instrument for current institutions and further try to separate the effect of property rights institutions from that of contracting institutions. They find that the former has a first-order effect on performance, while the latter matters only through their impact on financial intermediation.

The quality of institutions is not only a first-order determinant of economic development, it also has a direct effect on trade flows among countries (Levchenko, 2007; Milner and Mukherjee, 2009; Nunn and Trefler, 2013; Berden et al., 2014; Horsewood and Voicu, 2012). In general, there is robust evidence showing that democracy and good institutions foster trade. Nevertheless, there is only one study that goes beyond examining just "democracy" and focuses on governance and on single indicators that capture different dimensions of the institutional process and its effect on trade flows (Berden et al., 2014). Berden et al (2014) evaluates a very short period of time (1998-2004) and focuses mainly on OECD exporters. In this paper, we claim that single governance indicators might affect trade cost differently and some of them could be more relevant for developing countries than for the rest. We advance in this line of research by using up-to-date econometric techniques that will allow us to disentangle causality issues (Gylfason et al., 2015). More specifically, the present research aims at

analysing whether higher quality of economic governance rewards countries economic performance through increasing bilateral trade flows. We focus on Middle East and North Africa (MENA) countries and compare the effects with other regions in the world economy. To the best of our knowledge, there have been only two studies focusing also in MENA countries, namely Méon and Khalid Sekkat (2004) and Ali and Mdhillat (2015). The former focuses on the effect of the quality of institutions on trade in MENA countries in the 1990s using openness as dependent variable and political risk as a proxy for the quality of institutions, whereas the later uses a gravity model approach using data in the 2000s but only focusing on corruption. We depart from these studies in two fronts. Firstly, we use the World Bank Worldwide Governance Indicators (WGIs) and their several dimensions to investigate their specific effect on trade. Secondly, we also investigate whether similarities in governance indicators between countries affect trade flows using a newly developed fuzzy index and apply the model to the most recent data. This allows us to account for the changes occurred after the Arab Spring.

The main results show that, individually, each of the six governance indicators in the exporting and the importing countries considered have a positive effect on bilateral trade. However, the results for MENA exporters differ slightly. Governance in the importing countries seems to be less relevant for MENA exporters than for the rest of exporters. Increasing country-pair similarity in governance indicators –in terms of levels of regulatory quality and the rule of law in the exporting and importing countries– favours exports of MENA countries. Meanwhile, similarities in voice and accountability also foster exports in the average exporter, but it does not seem relevant for MENA exporters.

The main economic policy implications are that requisites for a good business environment at country-level are the protection of property rights, a well-established rule of law, efficient bureaucracy and a corruption-free government. Improvement in governance in MENA countries will therefore be a must in order to favour the business climate and to enter the path of economic development and integration in the world economy. Moreover, the results indicate that similar levels of regulatory quality and rule of law favour exports of MENA countries, hence trade policies directed to liberalize trade could focus on trading partners with similar governance standards in those items.

The rest of the paper is structured as follows. Section 2 describes the background and specifies the empirical model. Section 3 describes the data and variables and presents

the descriptive statistics. Section 4 presents the main results. Finally, section 5 concludes.

2. Background and related literature

The role and importance of institutions has been examined extensively in the economic literature (La Porta et al., 1997 and 1998; and Acemoglu et al., 2001, 2002, 2003). Most authors find that institutions matter for economic performance and that the findings are different across Northern and Southern outcomes. Easterly (2001) outlines that basic institutional requirements to facilitate economic performance include protection of property rights, rule of law, efficient bureaucracy, corruption-free government and political constraint on the executive. Rather than being defined as 'proximate determinants' of economic growth, investment in physical and human capital offer a potential for growth that without supporting institutions – the ultimate causes of growth - cannot be exploited. Over a number of studies, Acemoglu et al. (2001, 2002, 2003) identify that weak institutional quality causes lower per capita income and higher macroeconomic volatility. They mainly focus on the historically determined component of institutions and do not address the potential contributory role of trade to macroeconomic outcomes. Some authors consider institutions as a more significant explanatory variable than geography, the rationale being that once the impact of institutions is included, geography adds little to explaining cross-country difference in income a finding, therefore, at odds with the conclusion of the supremacy of geography in Sachs and Warner (1995, 1999, 2001).

A strand of the literature, more closely related to this paper considers institutional quality as a first-order determinant of trade flows (Levchenko, 2007; Milner and Mukherjee, 2009; Nunn and Trefler, 2013; Berden et al., 2014; Horsewood and Voicu, 2012. Levchenko (2007) proposed a model in which institutional differences are modelled within the framework of incomplete contracts. In this framework, those differences are a source of comparative advantage. The author tests the model using US imports and finds that institutional differences are an important determinant of trade flows. Milner and Mukherjee (2009) present a literature review of the interactions between democracy and globalization, mainly focusing on trade and capital account openness. They conclude that, in general, there is robust evidence showing that democracy fosters trade and capital account liberalization but that empirical support for

the predicted positive effect of economic openness on democracy among developing countries is weak.

Nun and Trefler (2013) review the theoretical and empirical literature supporting the view that domestic institutions can have a profound effect on international trade. They also argue that institutional sources of comparative advantage are quantitatively as important as traditional sources and that operate through fundamentally different channels.

Berden et al. (2014) used the WGIs to estimate the effects of governance on trade and foreign direct investment (FDI) using a state-of-the-art gravity model. Their data are restricted to the period from 1997 to 2004 and to 28 OECD countries as source countries and 124 potential destination countries, mainly due to the lack of FDI data. The WGIs are, however, only available for 5 out of the 8 periods. They point to the problem of collinearity among the single indicators and for this reason add each of them sequentially. Berden et al. (2014) do not take into account exporters' governance indexes and for the sample of importers they also group the WGIs into three main components: process by which governments are selected, monitored and replaced (this indicators includes voice and accountability and political stability); capacity of the government to effectively formulate and implement sound policies (measured with government effectiveness and regulatory quality) and respect of citizens and the state for institutions that govern economic and social interactions (comprising rule of law and control of corruption). They hypothesize that the first category of indicators in the importing country has a negative effect on trade flows, whereas the other two positively affect exports. Their main results concerning trade flows show that whereas voice and accountability is negatively related to trade levels, a positive and statistically significant effect is obtained for the other five WGI variables individually.

Horsewood and Voicu (2012) investigate the role of corruption in bilateral trade. These authors find that corruption hinders trade, although the difference between the ethical standards of the importing and exporting country has a negative impact on international transactions. Therefore, one must take into account the business cultures of both exporter and importer. Specifically, countries with a similar ethical business environment will tend to trade more with each other, suggesting that a shared understanding of what is an acceptable practice is an important factor in cross-border transactions.

Concerning specific regions or levels of development, in the related literature that investigates the effect of the quality of institutions on trade, we find only two studies that focuses on developing countries (Milner and Kubota, 2005 and Yu, 2010) and two studies that focus on the MENA region (Méon and Sekkat, 2004, and Ali and Mdhillat, 2015).

Milner and Kubota (2004) find that the emergence of democracy has a positive and significant effect on trade openness in developing countries, meanwhile Yu (2010) obtains similar findings, with the only exception of exports of labour intensive goods from least developed countries to developed countries. In this specific case, he finds that the importer level of democracy has a negative effect on exports. The theoretical explanation for this finding is based on the Stolper-Samuelson effect.

Focusing on MENA countries, Méon and Sekkat (2004) examine whether ill-functioning institutions disable a greater participation of these countries in the world economy. These authors examine the effect of country risk on both export performance and FDI attractiveness in the 1990s using country-level data for openness and applying panel data methods. The findings indicate that deterioration of the quality of institutions is, in general, associated with low performance in terms of manufactured exports and investments attractiveness.

More recently, Ali and Mdhillat (2015) confirm the negative effect of corrupted behaviour on international trade found by Horsewood and Voicu (2011) for Eastern European countries. They find that corruption hinders trade within the European Union but it has a more pronounced impact in MENA countries. Additionally, these authors also find that similarities in the ethical business environment between trading partners increases the volume of trade.

Also focusing on MENA countries, the present research aims at analysing whether higher quality of economic governance and also similarities between countries in the quality of governance influences bilateral trade flows. We compare the outcomes for all exporters with those for MENA exporters, we use a longer period than Méon and Khalid Sekkat (2004) and Ali and Mdhillat (2015) and a larger sample of countries. Moreover, we consider a broad spectrum of governance indicators than the later paper, which only relies on corruption.

3. Main hypotheses and model specification

Similar to a wide range of recent empirical studies that investigate the determinants of bilateral trade flows, we use the gravity model of trade augmented with governance indicators to analyze its relative importance and to test a number of hypothesis derived from economic theory. The main reason for this election is that the model provides a good statistical fit to most data sets and could be extended with policy variables.[1]

We hypothesize that single governance indicators could have a differential effect on trade and that it is not only governance in the importing country what matters for exporters (as considered in Bergen et al., 2014) but also governance in the exporting country. Therefore, the gravity model will be augmented with governance indicators in the exporting and the importing country, separately. In addition, we also hypothesize that similarity in governance structures, in particular concerning regulatory quality, rule of law and control of corruption could also be influencing exports (Horsewood and Voicu, 2012; Levchenko, 2007) and hence similarity measures will be added as additional regressors in the gravity model.

Finally, concerning the direction of the effects, although Berden et al. (2014) hypothesize that the effect of voice and accountability and political stability in the importer country have an expected negative effect on exports, we hypothesize that these effects mainly depend on the type of products traded and, therefore, when considering aggregate trade on the level of economic development of the exporting and importing countries they could be positive or negative.

The gravity model has been widely used to analyse the impact of various factors on trade, such as the effect trade facilitation measures, regional trade agreements, development aid, etc (Márquez-Ramos et al., 2012; Martínez-Zarzoso et al., 2009; Martínez-Zarzoso et al., 2016). In its basic form, this model assumes that trade between countries is directly related to countries' size and inversely related to the distance between them. Exports from country i to country j, X_{ij}, are explained by their economic sizes (Gross Domestic Products, or GDPs), direct geographical distances and a set of dummies incorporating some common characteristics to specific flows, such as common language, common border or colonial relationships. The specification of the gravity model of trade in its original multiplicative form for a single year is given by,

[1] For a review of the literature using gravity models applied to trade flows, see Anderson (2010) and Martínez-Zarzoso (2013).

$$X_{ij} = \beta_0 GDP_i^{\beta_1} GDP_j^{\beta_2} DIST_{ij}^{\beta_3} A_{ij}^{\beta_4} u_{ij} \quad (1)$$

where GDP_i (GDP_j) indicates the GDP of the exporter (importer), , $DIST_{ij}$ measures the distance between the two countries' capitals (or economic centres). A high level of income in the exporting country indicates a high level of production, which increases the availability of goods for exports. Therefore, β_1 is expected to be positive. The coefficient of Y_j, β_2, is also expected to be positive since a high level of income in the importing country suggests higher imports. The distance coefficient is expected to be negative since it is a proxy of all possible trade cost sources. A_{ij} represents any other factors aiding or preventing trade between pairs of countries and u_{ij} is the error term. Usually, A_{ij} includes dummy variables for trading partners sharing a common language, colonial ties and common border, as well as trading bloc dummy variables that evaluate the effects of preferential trade agreements. The coefficients of all these bilateral variables are expected to be positive.

When the gravity model of trade is estimated using panel data, the time dimension is incorporated into the model and there are a number of econometric issues that have to be taken into account in order to obtain unbiased estimated of the model parameters.

For estimation purposes, equation (1), in log-linear form augmented with governance indicators and with the time dimension added becomes,

$$lnX_{ijt} =$$
$$\beta_0 + \beta_1 lnGDP_{it} + \beta_2 lnGDP_{jt} + \beta_3(lnDIST_{ij}) + \beta_4(CONTIG_{ij}) + \beta_5(COMLANG_{ij}) +$$
$$\beta_6(COLONY_{ij}) + \beta_7 \mathrm{RTA}_{ijt} + \beta_8 \mathrm{WTO}_{ijt} + \beta_9 VA_{it} + \beta_{10} PS_{it} + \beta_{11} GE_{it} + \beta_{12} RQ_{it} +$$
$$\beta_{13} RL_{it} + \beta_{14} CC_{it} + \beta_{15} VA_{jt} + \beta_{16} PS_{jt} + \beta_{17} GE_{jt} + \beta_{18} RQ_{jt} + \beta_{19} RL_{jt} +$$
$$\beta_{20} CC_{jt} + \delta_t + \varepsilon_{ijt} \quad (2)$$

where the variables lnGDP_{it} and lnGDP_{jt} are defined above; DIST_{ij} is the bilateral distance between the economic centres of i and j, as defined above; CONTIG_{ij} is a dummy variable assuming a value of 1 if the two countries share a common land border (and 0 otherwise); $\mathrm{COMLANG}_{ij}$ is a dummy variable that takes a value of 1 if the two countries share a common language; COLONY_{ij} is a dummy variable that takes the value of 1 when countries i and j have ever had a colonial relationship, and 0 otherwise; RTA_{ijt} is a variable that takes the value of 1 if countries i and j belong to the same regional integration agreement; WTO_{ijt} is a variable that takes the value of 1 if countries i and j belong to the World Trade Organization in year t. The rest of variables

are the six individual measures included in the "Worldwide Governance Indicators" from the World Bank: Voice and Accountability (VA), Political Stability (PS), Government Effectiveness (GE), Regulatory Quality (RQ), Rule of Law (RL) and Control of Corruption (CC). Each governance variable is specified in model (2) with the subscripts *it* or *jt* denoting that they vary by exporter-and-time or importer-and-time.

According to Anderson and van Wincoop (2003), Feenstra (2004) and Baier and Bergstrand (2007) among others, the traditional gravity model as specified in (2) is a-theoretical because it does not account for the theoretically-motivated multilateral resistance terms (MRT), which refer to exporter and importer price indices with respect to all trading partners and represent the general equilibrium effects that imply that trade between any given pair of countries also depends on the prices in the rest of the potential trading partners of the given pair of countries. Some authors estimate equation (2) above by adding bilateral or country-pair ("pair") dummy variables, to account for MRT, in this case the coefficients of the bilateral variables that are in specification (2) cannot be directly estimated.[2] The model becomes,

$$lnX_{ijt} = \beta_0 + \beta_1 lnGDP_{it} + \beta_2 lnGDP_{jt} + \beta_3 \mathrm{RTA}_{ijt} + \beta_4 \mathrm{WTO}_{ijt} + \beta_5 VA_{it} + \beta_6 PS_{it} + \beta_7 GE_{it} + \beta_8 RQ_{it} + \beta_9 RL_{it} + \beta_{10} CC_{it} + \beta_{11} VA_{jt} + \beta_{12} PS_{jt} + \beta_{13} GE_{jt} + \beta_{14} RQ_{jt} + \beta_{15} RL_{jt} + \beta_{16} CC_{jt} + \gamma_{ij} + \delta_t + \varepsilon_{ijt} \quad (3)$$

where γ_{ij} is a country-pair fixed effect that captures all time-invariant bilateral factors influencing trade flows, which absorb all effects that are country-pair specific, namely distance, common border, language and colonial links. Thus, these country-pair-specific variables do not appear in equation (3). However, a number of authors (e.g. Baier and Bergstrand, 2007) claim that in a panel-data setting multilateral resistance is time-

[2] One line of research using gravity models of trade deals with the difficulty of obtaining unbiased coefficients of the effect of regional integration on trade flows (Baier and Bergstrand, 2007; Baier et al., 2014). If regional integration variables correlate with the error term of the gravity equation, there is an omitted variable bias due to the (unknown) MRT (Anderson and van Wincoop, 2003). Baier and Bergstrand (2007) refer to an endogeneity problem that is difficult to solve by using instrumental variables, given the difficulty of finding instruments that are correlated with bilateral trade but not with RTA dummy variables. For this reason they propose to use pair dummy variables to mitigate endogeneity. Similarly, an endogeneity problem might arise when the target variable is institutional quality, using fixed effects is a way to deal with ommitted variable biases.

varying because the factors that affect international prices change over time and recommend adding time-variant MRT to the gravity model. We could think of adding origin-and-time and destination-and-time dummy variables that vary every 5 years and account for MRT (as in Gylfason et al, 2015). The main reason for this choice is that the governance indicators vary by country and year and in order to account for their effects on trade we would like to retain its short-run variability, while controlling for other factors that are more persistent, such as tastes, cultural factors and business cycles.

A widely used model specification that accounts for the so-called MRT and also for unobserved heterogeneity that is attached to each bilateral trade flow consists on extending specification (2) with origin-and-time and destination-and-time and with pair-specific dummy variables:

$$lnX_{ijt} = \beta_0 + \beta_1 lnGDP_{it} + \beta_2 lnGDP_{jt} + \beta_3 \mathrm{RTA}_{ijt} + \beta_4 \mathrm{WTO}_{ijt} + \beta_5 VA_{it} + \beta_6 PS_{it} + \beta_7 GE_{it} + \beta_8 RQ_{it} + \beta_9 RL_{it} + \beta_{10} CC_{it} + \beta_{11} VA_{jt} + \beta_{12} PS_{jt} + \beta_{13} GE_{jt} + \beta_{14} RQ_{jt} + \beta_{15} RL_{jt} + \beta_{16} CC_{jt} + \gamma_{ij} + \pi_{i,t5} + \tau_{j,t5} + \delta_t + \varepsilon_{ijt} \quad (4)$$

where the gravity and governance variables and γ_{ij} have been defined above. $\pi_{i,t5} and\ \tau_{j,t5}$ denote origin-and-time and destination-and-time dummy variables that vary every 5 years and account for MRT.

Next, in the following model we add the governance variables as the sum of the indicators for the exporter and the importer. In this sense, we will account for the joint influence of the levels of governance in the exporter and importer countries on exports. The estimation model is given by:

$$lnX_{ijt} = \beta_0 + \beta_1 lnGDP_{it} + \beta_2 lnGDP_{jt} + \beta_3 \mathrm{RTA}_{ijt} + \beta_4 \mathrm{WTO}_{ijt} + \beta_5 VA_{ijt} + \beta_6 PS_{ijt} + \beta_7 GE_{ijt} + \beta_8 RQ_{ijt} + \beta_9 RL_{ijt} + \beta_{10} CC_{ijt} + \gamma_{ij} + \pi_{i,t5} + \tau_{j,t5} + \varepsilon_{ijt} \quad (5)$$

where the gravity variables, $\gamma_{ij}\ and\ \pi_{i,t5} and\ \tau_{j,t5}$ have been defined above. The right-hand-side (RHS) variables of interest have now exporter-importer-time variability, and are computed as the sum of each corresponding WGI for the exporter and the importer in year t. This will also help to avoid collinearity issues with the MRT. The main drawback of this specification is that we will not be able to obtain a separate effect for exporters and importers.

Finally, we consider similarity measures of governance between the origin and the destination of trade flows. Hence, we investigate whether similarity in governance indicators makes a difference. To do so, we use a simple method to construct indicators

of similarity relying on "fuzzy metrics". Fuzzy metrics allow us to model the concept of similarity across origins and destinations. Therefore, in the spirit of Alamá-Sabater et al. (2016), we apply the following equation to construct fuzzy variables of the WGIs indicators:

$$fuzzyWGI_{ijt} = \frac{min(WGI_{it},WGI_{jt})+1}{max(WGI_{it},WGI_{jt})+1} \quad (6)$$

where WGI denotes the corresponding WGI indicator. Fuzzy-WGI lies between 0 and 1 and is maximized if both i and j countries have the same level of governance in year t. For diverging levels of governance between the two countries, the indicator approaches zero. Then we augment specification (5) with these similarity measures for each of the six WGI considered. The corresponding gravity model is given by,

$$lnX_{ijt} = \beta_0 + \beta_1 lnGDP_{it} + \beta_2 lnGDP_{jt} + \beta_3 \mathrm{RTA}_{ijt} + \beta_4 \mathrm{WTO}_{ijt} + \beta_5 VA_{ijt} + \beta_6 PS_{ijt} + \beta_7 GE_{ijt} + \beta_8 RQ_{ijt} + \beta_9 RL_{ijt} + \beta_{10} CC_{ijt} + \beta_{11} fuzzyVA_{ijt} + \beta_{12} fuzzyPS_{ijt} + \beta_{13} fuzzyGE_{ijt} + \beta_{14} fuzzyRQ_{ijt} + \beta_{15} fuzzyRL_{ijt} + \beta_{16} fuzzyCC_{ijt} + \gamma_{ij} + \pi_{i,t5} + \tau_{j,t5} + \varepsilon_{ijt} \quad (7)$$

where fuzzy denotes that the corresponding WGI variable has been transformed according to equation (6).

4. Data and variables

The sample of exporting countries considered in this research is composed by the 19 MENA countries,[3] as defined by the World Bank. As partners we consider 189 countries (see Table A.1 in Appendix 1) and the period under study goes from 1996 to 2013.

Table 1 presents the descriptive statistics for the variables included in the analysis and indicates the expected signs of the estimated coefficients for each RHS variable. The figures show that exporter countries, i.e. MENA, present lower values, on average, than the sample of importers in two out of the three concepts distinguished by Berden, et al. (2014): 1) Process by which governments are selected, monitored and replaced and 2) Capacity of the government to effectively formulate and implement sound policies.

[3] The MENA countries are: Algeria, Bahrain, Djibouti, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, United Arab Emirates, Yemen. For comparative purposes we also estimate the models for all trade flows among the 189 countries.

Finally, the third concept is 3) Respect of citizens and the state of institutions that govern economic and social interactions.

According to Table 1, it is in the category voice and accountability where MENA countries (i.e. exporters) seem to have the greatest drawback in WGIs: while the average in the sample of MENA (as exporters) in this indicator equals 29.56, it equals 55.05 for the sample of 189 importers. Additionally, the maximum value of this indicator for MENA countries is 52.45, this (0-100) standardized value is much lower than the rest of governance indicators in the region over the time period taken into account.

The WGIs, first constructed by Kaufmann et al. (2007) for the World Bank are normalized into a 0-100 scale (as in Berden el al, 2014). The six aggregate indicators are based on 31 underlying data sources reporting the perceptions of governance of a large number of survey respondents and expert assessments worldwide. Details on the underlying data sources, the aggregation method, and the interpretation of the indicators, can be found in Kaufmann et al. (2010). Each of them represents a different dimension of governance:

Voice and accountability measures the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, of association and of media. Of the six WGIs, this variable best captures most individuals' notion of how a democratic institution fostering voice and accountability affects pluralism.

Political stability measures perceptions of the likelihood that the government will not be destabilised or overthrown by unconstitutional or violent means.

Government effectiveness measures the quality of public services, of the civil service (and its degree of independence), of policy formation process and implementation, and of the government's commitment to implementing policies.

Regulatory quality indicates the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

Rule of law measures the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, the police and the courts.

Control of corruption measures the extent to which public power is not exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests.

Berden et al. (2014) grouped the above-described indicators into three different concepts. The first deals with the "process by which governments are selected, monitored and replaced" and it is measured by two indicators: 1) voice and accountability of a country's citizens and 2) political stability. According to these authors, holding constant the influences of other measures of governance, the coefficients for importers associated to this concept are expected to be negative.[4] The second category of the WGIs refers to factors influencing the "capacity of the government to effectively formulate and implement sound policies"; the two WGIs associated with this category are 3) government effectiveness and 4) regulatory quality. Both are expected to be positively associated with trade flows. Finally, the third category refers to factors associated with "respect of citizens and the state for institutions that govern economic and social interactions"; the two WGIs in this category are 5) rule of law and 6) control of corruption. Both are also expected to be positively associated with trade flows. With regards the consequences of MENA's governance indicators in terms of exports, institutions can either directly affect the willingness of agents to trade abroad, or affect economic variables that may in turn lower the propensity of agents to trade (Méon and Sekkat, 2004). On the one hand, an improvement of governance indicators in MENA countries might lead to higher exports arising from MENA due to a better business environment that could facilitate doing business abroad. On the other hand, an improvement of governance indicators might affect comparative and competitive advantages as well as existing trade relationships, having and ambiguous effect on exports arising from MENA countries. Therefore, it is an empirical question whether improved governance indicators in the region lead to higher exports from MENA countries.

[4] In particular, they argue that greater pluralism in an importing country is likely to increase resistance to international trade as larger host country pluralism is like a tax, equivalent to an ad-valorem tariff. Additionally, it is possible that political stability could increase both the probability of and level of FDI. Consequently, if political stability lowers the cost of FDI, and FDI and trade are substitutes in relation to relative investment and trade costs, political stability could have a negative effect on trade.

Table 1. Descriptive statistics

Variable	Description	Expected sign	Obs	Mean	Std. Dev.	Min	Max
lnX	Natural log of the export flows between the two countries		29296	14.34	3.47	0.00	24.87
lnGDP_it	Natural log of the exporter's GDP	+	61992	24.40	1.43	20.02	27.34
lnGDP_jt	Natural log of the importer's GDP	+	61655	23.52	2.48	16.33	30.45
lnPCGDP_it	Natural log of the exporter's GDP per capita in current US$	+/-	61992	8.45	1.34	5.68	11.45
lnPCGDP_jt	Natural log of the importer's GDP per capita in current US$	+/-	61655	8.08	1.60	4.28	11.54
Process by which governments are selected, monitored and replaced							
VAstd_it	Exporter's standardised value (0-100) of Voice and Accountability	+/-	55083	29.56	11.85	2.54	52.45
PSstd_it	Exporter's standardised value (0-100) of Political Stability	+/-	51386	51.58	22.78	0.00	93.63
Capacity of the government to effectively formulate and implement sound policies							
GEstd_it	Exporter's standardised value (0-100) of Government Effectiveness	+/-	55083	43.23	15.49	3.83	77.45
RQstd_it	Exporter's standardised value (0-100) of Regulatory Quality	+/-	55083	46.99	17.18	3.40	79.79
Respect of citizens and the state for institutions that govern economic and social interactions							
RLstd_it	Exporter's standardised value (0-100) of Rule of Law	+/-	55083	47.82	17.14	9.98	79.16
CCstd_it	Exporter's standardised value (0-100) of Control of Corruption	+/-	55083	34.98	17.02	1.97	81.22
Process by which governments are selected, monitored and replaced							
VAstd_jt	Importer's standardised value (0-100) of Voice and Accountability	+/-	53246	55.05	26.07	0.00	100.00
PSstd_jt	Importer's standardised value (0-100) of Political Stability	+/-	49170	62.06	22.24	0.00	100.00
Capacity of the government to effectively formulate and implement sound policies							
GEstd_jt	Importer's standardised value (0-100) of Government Effectiveness	+	52562	49.01	22.24	0.00	100.00
RQstd_jt	Importer's standardised value (0-100) of Regulatory Quality	+	52581	54.44	22.23	0.00	100.00
Respect of citizens and the state for institutions that govern economic and social interactions							
RLstd_jt	Importer's standardised value (0-100) of Rule of Law	+	53246	53.05	23.09	0.00	100.00
CCstd_jt	Importer's standardised value (0-100) of Control of Corruption	+	52562	40.92	23.78	0.00	100.00

5. Estimation results

5.1 Main results

Table 2 shows the results obtained from estimating specifications (2) and (3) of the gravity model of trade. The RHS variables of interest are the WGI variables for the exporting and importing countries. Columns 1-2 present results for all (189) countries obtained from estimating the traditional gravity model with time effects (Equation 2) and the model adding bilateral fixed effects (Equation 3), while columns 3 and 4 present estimations of the same two specifications for MENA exporters.[5]

The first column of Table 2 shows that an increase in both exporter's GDP and importer's GDP increase trade flows, and the coefficients are close to the unitary theoretically-expected magnitude; distance has the expected negative and significant effect on exports, while common language, common border and colonial links positively affect exports. Also the RTA and WTO membership dummies present the expected positive effect on exports. The results concerning these gravity variables differ when the sample of exporters is restricted to MENA countries, as shown in column (3) of Table 2. Income elasticities of MENA exporters are considerably lower than the elasticity of the average exporter and common border is not statistically significant, reflecting the fact that MENA countries does not trade more with neighbouring countries than with the rest. Concerning the common language effect, it is considerably higher than for the whole sample, whereas a colonial relationship shows a lower effect for MENA exporters.

With regards to WGI variables in the traditional gravity model specification estimated for all trading partners, the coefficients obtained in column (1) are all positive and significant for both exporter and importer countries, we claim however that these estimates are biased due to the exclusion of MRT in the model. The same bias affects the estimates in column (3) for MENA exporters. In this column, the coefficients for the importer WGI indicators are all negative and significant, which is unexpected.[6] Results in column (2) of Table 2 show that after controlling for bilateral time-invariant heterogeneity (equation 3) the results differ from column (1) concerning voice and

[5] A model with interactions between a MENA dummy variable and the target variables provides similar outcomes. A separate estimation for MENA countries is preferred given that also elasticities for other variables differ between MENA and the average exporter.

[6] The results in columns (1) and (3) are shown for comparative purposes and also to show the coefficients of the traditional gravity variables for MENA and for the whole sample.

accountability and political stability, the former is not significant for the exporter country and the latter is negative and significant for the exporter and not statistically significant for the importer.

Table 2. Gravity model estimates for governance indicators

	All countries		MENA exporters	
Single WGI	(1)	(2)	(3)	(4)
VARIABLES	Baseline	Pair-FE	Baseline	Pair-FE
lnGDP_it	1.254***	0.561***	0.873***	0.169*
	[0.00675]	[0.0256]	[0.0453]	[0.0919]
lnGDP_jt	0.849***	0.688***	0.926***	0.548***
	[0.00624]	[0.0199]	[0.0231]	[0.0678]
lnDIST_ij	-1.205***		-1.219***	
	[0.0191]		[0.0628]	
CONTIG_ij	1.102***		0.165	
	[0.0908]		[0.284]	
COMLANG_ij	0.735***		1.384***	
	[0.0395]		[0.133]	
COLONY_ij	0.806***		0.562***	
	[0.0563]		[0.131]	
RTA	0.770***	0.0508**	0.283**	0.107
	[0.0381]	[0.0227]	[0.117]	[0.0800]
WTO	0.248***	0.217***	0.665***	0.214**
	[0.0309]	[0.0252]	[0.0883]	[0.0879]
VAstd_it	0.00331***	-0.00120	0.00286	-0.00751**
	[0.000593]	[0.00104]	[0.00415]	[0.00330]
PSstd_it	0.00779***	-0.00121*	0.0171***	0.00302
	[0.000639]	[0.000692]	[0.00251]	[0.00285]
GEstd_it	0.00856***	0.0111***	0.0271***	0.0166***
	[0.000730]	[0.00115]	[0.00396]	[0.00528]
RQstd_it	0.00764***	0.00831***	0.0170***	0.0157***
	[0.000748]	[0.00113]	[0.00337]	[0.00406]
RLstd_it	0.00601***	0.00445***	0.0158***	-0.0195***
	[0.000648]	[0.00130]	[0.00369]	[0.00433]
CCstd_it	0.00442***	0.00489***	0.00850***	0.0209***
	[0.000584]	[0.000909]	[0.00325]	[0.00268]

VAstd_jt	0.00496***	0.00485***	-0.00885***	0.00939***
	[0.000560]	[0.000871]	[0.00193]	[0.00289]
PSstd_jt	0.00357***	0.000195	-0.00876***	0.00402*
	[0.000605]	[0.000607]	[0.00198]	[0.00208]
GEstd_jt	0.00551***	0.00426***	-0.00703***	0.00596
	[0.000713]	[0.00103]	[0.00247]	[0.00379]
RQstd_jt	0.00528***	0.00456***	-0.0105***	0.000608
	[0.000729]	[0.000943]	[0.00251]	[0.00337]
RLstd_jt	0.00513***	0.00493***	-0.00424*	0.00958**
	[0.000637]	[0.00109]	[0.00220]	[0.00394]
CCstd_jt	0.00434***	0.00346***	-0.00579***	0.00520*
	[0.000597]	[0.000834]	[0.00209]	[0.00285]
Time FE	yes	yes	yes	Yes
Observations	245,375	245,375	23,672	23,672
R-squared	0.65	0.163	0.477	0.195

Note: Robust standard errors in brackets. *** p<0.01, ** p<0.05, * p<0.1. WGI included independently in the model.

When the sample is restricted to MENA exporters, the main difference is that voice and accountability and rule of law in the exporter show a negative and significant effect on exports (column 4). Also, for importers, the coefficients associated to voice and accountability, political stability, rule of law and control of corruption are positive and statistically significant.

We now turn to the estimation of an additional specification, as well as we restrict the sample to MENA countries to run additional regressions. Full results are presented in Appendix B, and only results related to governance indicators are presented in the main text.

Table 3 shows the results when the gravity model is estimated adding exporter-and-time and importer-and-time dummy variables that vary every 5 years (equation 4). The results for all countries (in column 1) indicate that higher levels of political stability, rule of law and control of corruption in the exporting countries are associated with higher exports, whereas higher values of voice and accountability, government effectiveness, regulatory quality, rule of law and control of corruption in the importing countries are also positively associated with exports.

Table 3. Results for all countries and for MENA

Single WGI			
VARIABLES:	**All countries**	**MENA**	**Intra-MENA**
VAstd_it	-0.00180	0.0142***	0.00762
	[0.00140]	[0.00469]	[0.00857]
VAstd_jt	0.00339***	-0.00021	0.0118
	[0.00108]	[0.00405]	[0.00728]
PSstd_it	0.00208***	0.00944***	0.000246
	[0.000778]	[0.00256]	[0.00534]
PSstd_jt	0.000923	-0.0019	-0.00292
	[0.000698]	[0.00259]	[0.00488]
GEstd_it	-0.000514	0.0179***	0.0253**
	[0.00138]	[0.00578]	[0.0108]
GEstd_jt	0.00257**	0.00339	0.00165
	[0.00118]	[0.00495]	[0.00888]
RQstd_it	0.00107	0.000193	0.00679
	[0.00123]	[0.00431]	[0.00837]
RQstd_jt	0.00249**	0.000137	-0.01
	[0.00107]	[0.00418]	[0.00687]
RLstd_it	0.00446***	0.0185***	0.0396***
	[0.00158]	[0.00501]	[0.00950]
RLstd_jt	0.00422***	-0.00181	-0.0180**
	[0.00129]	[0.00510]	[0.00841]
CCstd_it	0.00311***	0.0218***	0.0224***
	[0.00102]	[0.00312]	[0.00570]
CCstd_jt	0.00178*	0.00131	0.00204
	[0.000950]	[0.00357]	[0.00559]

Note: Full results are presented in Appendix B. Robust standard errors in brackets. *** p<0.01, ** p<0.05, * p<0.1. WGI included independently in the model. Exporter and time and importer and time FE and pair FE included.

When the sample is restricted to MENA exporters (column 2 in Table 3), it seems surprising that the significance found for the WGIs in the importing countries vanishes, whereas voice and accountability, political stability, government effectiveness, rule of law and control of corruption in MENA exporters are associated with higher exports and the corresponding coefficients are higher than for the sample with all exporters. For instance, and increase in the index of voice and accountability of 10 points is associated to an increase in exports of 0.14 percent. Considering that the average of this item for

MENA countries is 29, doubling the index would increase MENA exports by around 0.5 percent.

When the model is estimated including only intra-MENA trade flows (column 2 in Table 3, full results in Table B.3), only government effectiveness, rule of law and control of corruption in the exporter countries are positively associated to exports, whereas MENA countries export more to MENA importers with lower scores in rule of law.

Table 4 shows the outcomes of regressing export flows on the sum of the exporter (i) and importer (j) governance indicators. In column (1) results are shown for all exporters and in column (3) for MENA exporters, respectively. Results show that whereas higher levels of voice and accountability are associated with lower exports, the higher the indicators of political stability, government effectiveness, regulatory quality and rule of law in (the pair of) trading partners, the higher the trade flows among them. The results are similar for MENA exporters with the only exception of regulatory quality that is not statistically significant, whereas control of corruption becomes statistically significant and is positively related to MENA exports.

Finally, we turn to the importance of analysing the role of similarity in governance indicators across countries. As stated by Horsewood and Voicu (2012): “A nation’s business culture could be a deterrent to international trade and it may be that similarities of ethical standards between countries are an important issue. An international transaction will take place if both the buyer and seller believe the side payment to a government official, or a personal kickback, is perfectly acceptable. Alternatively, if either party comes from a country where backhanders are not the norm, then there is a cultural barrier stopping the exchange of goods and services” (page 5). Therefore, we take into account the similarity of governance across exporters and importers, since it could be that the difference between governance indicators in the two economies (exporter i and importer j) discourages bilateral trade between them.

Table 4. Gravity model with time-variant MTR and pair FE. Adding fuzzy similarity measures

	All countries		MENA exporters	
	(1)	(2)	(3)	(4)
VARIABLES	Govij	Govij,i-j	Govij	Govij,i-j
RTA	0.104***	0.102***	0.282***	0.282***
	[0.0225]	[0.0225]	[0.0749]	[0.0749]
wto2	0.212***	0.212***	0.268***	0.268***
	[0.0289]	[0.0289]	[0.0920]	[0.0920]
VAstd_ijt	-0.00897***	-0.00993***	-0.00802***	-0.00786**
	[0.000794]	[0.000848]	[0.00300]	[0.00309]
PSstd_ijt	0.00714***	0.00307***	0.0107***	0.00182
	[0.000473]	[0.000777]	[0.00153]	[0.00279]
GEstd_ijt	0.00153*	0.00558***	0.00660*	0.0129**
	[0.000840]	[0.00129]	[0.00363]	[0.00518]
RQstd_ijt	0.00491***	0.00501***	0.00203	0.00649
	[0.000718]	[0.00122]	[0.00253]	[0.00455]
RLstd_ijt	0.0181***	0.00588***	0.0235***	0.000531
	[0.000902]	[0.00143]	[0.00302]	[0.00566]
CCstd_ijt	4.04E-05	0.00142	0.00900***	0.00474
	[0.000666]	[0.00100]	[0.00226]	[0.00356]
fuzzyVA		0.202***		-0.0457
		[0.0605]		[0.171]
fuzzyPS		0.124***		0.163
		[0.0476]		[0.154]
fuzzyGE		0.0878		0.0343
		[0.0692]		[0.237]
fuzzyRQ		0.311***		0.557**
		[0.0688]		[0.227]
fuzzyRL		0.255***		0.590**
		[0.0722]		[0.239]
fuzzyCC		0.0729		0.219
		[0.0459]		[0.139]
Bilateral FE	yes	yes	yes	yes
MRT (i,5y,j5y)	yes	yes	yes	yes
Observations	252,429	252,429	24,619	24,619
R-squared	0.204	0.204	0.249	0.249
Number of pairid	24,787	24,787	2,804	2,804

Note: Robust standard errors in brackets. *** p<0.01, ** p<0.05, * p<0.1. WGI included independently in the model.

Columns (2) and (4) in Table 4 display the results of adding the fuzzy metrics for the WGIs for the whole sample and for the sample of MENA exporters, respectively. In this case, whereas four WGIs are statistically significant for the whole sample, namely similarities in voice and accountability, political stability, regulatory quality and rule of law, only two of them stay significant for MENA exporters: regulatory quality and rule of law. This outcome could be interpreted as indicating that more similarities in the capacity of the government to effectively formulate and implement sound policies between two trading countries is associated with higher trade flows between them.

5.2. Robustness checks

As a first robustness, model (3) has been estimated including zero trade flows and controlling for heteroskedasticity by estimating the model using a pseudo Poisson maximum likelihood (PPML) estimation technique with bilateral fixed effects as proposed by a number of authors (see Head and Mayer, 2014). The results are shown in Table A.2 in the Appendix[7]. The results concerning the WGI variables remain similar to those found in Table 2, column 2 with a comparable specification.

As a second robustness check the gravity model was estimated for intra-MENA trade flows including a dummy variable for the Arab Spring, which was also interacted with the WGI for the exporters and importers (see tables A.3 and A.4 in the Appendix). The interaction term was only statistically significant for three out of the six WGI indicators, showing that after the Arab Spring the importance of voice and accountability as a determinant of MENA exports has increased, whereas the importance of political stability and rule of law has decreased.

6. Conclusions and policy implications

This research evaluates the importance of governance indicators for promoting trade and integration of MENA exporters in the global economy. The main results show that governance in the exporter and the importer matters for bilateral export flows in general, and for MENA countries in particular. Interestingly, we find that MENA countries trade more with countries that have similar levels of regulatory quality and rule of law. When MENA exports are sent to other MENA countries, an increase in exporters' government effectiveness, rule of law and control of corruption in the trading countries increases MENA exports. The results also indicate that after the Arab Spring the importance of

[7] We also tried to estimate other specifications with PPML but the model did not converge.

voice and accountability as a determinant of MENA exports has increased, whereas the importance of political stability and rule of law have decreased.

The main economic policy implications are that requisites for a good business environment at country-level are the protection of property rights, a well-established rule of law, efficient bureaucracy and a corruption-free government. Improvement in governance in MENA countries will, therefore, be a must in order to favour the business climate and to enter the path of economic development and integration in the world economy. Moreover, the results indicate that having similar levels of regulatory quality and rule of law favours exports of MENA countries; hence trade policies to liberalize trade could focus on trading partners with similar governance standards in those items.

References

Acemoglu, D., Johnson, S., Robinson, J. and Thaicharoen, Y. (2003) Institutional Causes, Macroeconomic Symptoms: Volatility, Crises and Growth, *Journal of Monetary Economics,* Vol. 50, No. 1, pp. 49-123,

Acemoglu, D., Johnson, S., and Robinson, J.A (2002), Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution, *Quarterly Journal of Economics,* Vol. 107, No. 4, pp. 1231–1294.

Acemoglu, D., Johnson, S., and Robinson, J.A., (2001) The Colonial Origins of Comparative Development: An Empirical Investigation, *American Economic Review*, Vol. 91, No. 5, pp. 1369-1401.

Alamá-Sabater, L., Heid, B., Jiménez-Fernández, E., & Márquez-Ramos, L. (2016). What Drives Interdependence of FDI among Host Countries? The Role of Geographic Proximity and Similarity in Public Debt. Economic Modelling 58, 466-474.

Ali, M. S. B., & Mdhillat, M. (2015). Does Corruption Impede International Trade? New evidence from The EU and the MENA Countries. Journal of Economic Cooperation and Development, 36(4), 107-120.

Anderson, J. E. (2010). The gravity model (No. w16576). National Bureau of Economic Research.

Anderson, J. E., & van Wincoop, E. (2003). Gravity with Gravitas: A Solution to the Border Puzzle. American Economic Review 93(1), 170-192.

Baier, S. L., & Bergstrand, J. H. (2007). Do free trade agreements actually increase members' international trade? Journal of international Economics, 71(1), 72-95.

Baier, S. L., Bergstrand, J. H. and Feng, M. (2014): «Economic integration agreements and the margins of international trade», Journal of International Economics, 93(2), 339-350.

Berden, K., Bergstrand, J. H., & Etten, E. (2014). Governance and globalisation. The World Economy, 37(3), 353-386.

Botero, J. C., Djankov, S., R. La Porta, F. Lopez-de-Silanes, and A. Shleifer, (2002). The Regulation of Labour, *Quarterly Journal of Economics 119(4), 1339-1382*.

Djankov, S., R. La Porta, F. Lopez-de-Silanes, and A. Shleifer, (2002). The Regulation of Entry, *Quarterly Journal of Economics,* CXVII,
1–37.

Doyle, E., & Martínez-Zarzoso, I. (2011). Productivity, Trade and Institutional Quality: A Panel Analysis. *Southern Economic Journal* 77 (3), 726-752.

Easterly, W., (2001). The Middle Class Consensus And Economic Development, Journal of Economic Growth 6 (4), pp. 317-335.

Feenstra, R. (2004). *Advanced International Trade. Theory and Evidence*. Princeton University Press, Princeton, New Jersey.

Gylfason, T., Martínez-Zarzoso, I., & Wijkman, P. M. (2015). Free Trade Agreements, Institutions and the Exports of Eastern Partnership Countries. *Journal of Common Market Studies* 53 (6), 1214-1229.

Hall, R.E. and Jones, C.I. (1999) Why Do Some Countries Produce So Much Output per Worker than Others? *Quarterly Journal of Economics* 114 (1), 83-116.

Head, K., & Mayer, T. (2014), "Gravity equations: Workhorse, toolkit, and cookbook," in Gopinath, G., E. Helpman and K. Rogoff (eds.): *Handbook of International Economics*, Vol. 4, 131-195, Amsterdam, Elsevier-North Holland.

Horsewood, N., & Voicu, A. M. (2012). Does corruption hinder trade for the new EU members? Economics: The Open-Access, Open-Assessment E-Journal, 6(47), 1-28.

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2007). Governance Matters VI: Aggregate and Individual Governance Indicators, 1996–2006. World Bank Policy Research Working Paper No. 4280 (Washington, DC: World Bank).

Kaufmann, D., Kraay, A. & Mastruzzi, M. (2010). The Worldwide Governance Indicators: A Summary of Methodology, Data and Analytical Issues". World Bank Policy Research Working Paper No. 5430 (Washington, DC: World Bank).

La Porta, R., Lopez-De-Silanes, F., Shleifer, A. & Vishny, R. (1997), Legal Determinants of External Finance, *Journal Of Finance*, Vol. 52, No. 3, pp.1131–1150.

La Porta, R., Lopez-De-Silanes, F., Shleifer, A. & Vishny, R. (1998), Law And Finance, *Journal of Political Economy* 106, 6, 1113–1155.

Levchenko, A.A. (2007). "Institutional Quality and International Trade" *Review of Economic Studies* 74 (3), 791-819.

Márquez-Ramos, L., Martínez-Zarzoso, I. & Suárez-Burguet, C. (2012), "Trade Policy versus Trade Facilitation: An Application Using "Good Old" OLS" *Economics: The Open-Access, Open-Assessment E-Journal*. 6, 2012-11. http://dx.doi.org/10.5018/economics-ejournal.ja.2012-11.

Martínez-Zarzoso, I. (2013). The log of gravity revisited. Applied Economics, 45(3), 311-327.

Martínez-Zarzoso, I., Nowak-Lehmann D., F. & Horsewood, N. (2009). Are Regional Trading Agreements Beneficial? Static and Dynamic Panel Gravity Models. *North American Journal of Economics and Finance 20*, 46-65.

Martínez-Zarzoso, I., Nowak-Lehman D., F. and Klasen, S. (2016) "Aid and its Impact on the Donor's Export Industry– The Dutch Case", *European Journal of Development Research*, forthcoming.

Méon, P. G., & Sekkat, K. (2004). Does the quality of institutions limit the MENA's integration in the world economy? The World Economy, 27(9), 1475-1498.

Milner H., & Kubota K. (2005). Why the move to free trade? Democracy and trade policy in the developing countries. International Organizations. 59, 107–43.

Milner, H. V. & B. Mukherjee (2009). Democratization and Economic Globalization, Annual Review of Political Science, 12, 163–81.

Nunn, N. & Trefler, D. (2014). "Domestic Institutions as a Source of Comparative Advantage," in Gopinath, G., E. Helpman and K. Rogoff (eds.): *Handbook of International Economics* 4, 263-315, Amsterdam, Elsevier-North Holland.

Sachs J. D. & Warner, A. M. (1995). "Economic Reform and the Process of Global Integration," *Brookings Papers on Economic Activity*, Economic Studies Program, The Brookings Institution 26 (1, 25th A), 1-118.

Sachs J. D. & Warner, A. M., (1999). "The big push, natural resource booms and growth," *Journal of Development Economics* 59(1), 43-76.

Sachs J. D. & Warner, A. M. (2001). "The curse of natural resources," *European Economic Review* 45(4-6), 827-838.

Wikipedia (2016). Arab Spring, available at https://en.wikipedia.org/wiki/Arab_Spring, retrieved 30 May 2016.

Yu, M. (2010). Trade, Democracy, and the Gravity Equation, Journal of Development Economics, 91,2, 289–300.

Appendix A

Table A.1. List of countries

Afghanistan	Dominican Rep.	Libya	Singapore
Albania	Ecuador	Lithuania	Slovakia
Algeria	Egypt	Madagascar	Slovenia
Angola	El Salvador	Malawi	Solomon Isds
Antigua and Barbuda	Equatorial Guinea	Malaysia	Somalia
Argentina	Eritrea	Maldives	South Africa
Armenia	Estonia	Mali	Spain
Australia	Ethiopia	Malta	Sri Lanka
Austria	FS Micronesia	Marshall Isds	Sudan
Azerbaijan	Faeroe Isds	Mauritania	Suriname
Bahamas	Fiji	Mauritius	Swaziland
Bahrain	Finland	Mexico	Sweden
Bangladesh	France	Mongolia	Switzerland
Barbados	French Polynesia	Morocco	Syria
Belarus	Gabon	Mozambique	TFYR of Macedonia
Belgium	Gambia	Myanmar	Tajikistan
Belize	Georgia	Namibia	Thailand
Benin	Germany	Nepal	Togo
Bermuda	Ghana	Netherlands	Tonga
Bhutan	Greece	New Caledonia	Trinidad and Tobago
Bolivia	Greenland	New Zealand	Tunisia
Bosnia Herzegovina	Grenada	Nicaragua	Turkey
Botswana	Guatemala	Niger	Turkmenistan
Brazil	Guinea	Nigeria	Turks and Caicos Isds
Brunei Darussalam	Guinea-Bissau	Norway	Tuvalu
Bulgaria	Guyana	Oman	USA
Burkina Faso	Haiti	Pakistan	Uganda
Burundi	Honduras	Palau	Ukraine
Cambodia	Hungary	Panama	United Arab Emirates
Cameroon	Iceland	Papua New Guinea	United Kingdom
Canada	India	Paraguay	United Rep. of Tanzania
Cape Verde	Indonesia	Peru	Uruguay
Cayman Isds	Iran	Philippines	Uzbekistan
Central African Rep.	Iraq	Poland	Vanuatu
Chad	Ireland	Portugal	Venezuela
Chile	Israel	Qatar	Viet Nam
China	Italy	Rep. of Korea	Yemen
Colombia	Jamaica	Rep. of Moldova	Zambia
Comoros	Japan	Russian Federation	Zimbabwe
Congo	Jordan	Rwanda	
Costa Rica	Kazakhstan	Saint Kitts and Nevis	
Croatia	Kenya	Saint Lucia	
Cuba	Kiribati	Saint Vincent and the Grenadines	
Cyprus	Kuwait	Samoa	
Czech Rep.	Kyrgyzstan	San Marino	
Côte d'Ivoire	Lao People's Dem. Rep.	Sao Tome and Principe	
Dem. People's Rep. of Korea	Latvia	Saudi Arabia	
Denmark	Lebanon	Senegal	
Djibouti	Lesotho	Seychelles	
Dominica	Liberia	Sierra Leone	

Table A.2. PPML estimations of the gravity model for all countries with country-pair FE

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
lnGDP_it	0.590***	0.597***	0.589***	0.590***	0.581***	0.592***
	[0.0311]	[0.0307]	[0.0312]	[0.0314]	[0.0315]	[0.0311]
lnGDP_jt	0.634***	0.645***	0.628***	0.626***	0.637***	0.633***
	[0.0315]	[0.0340]	[0.0330]	[0.0323]	[0.0338]	[0.0320]
RTA	0.0646**	0.0612**	0.0539*	0.0619**	0.0647**	0.0614**
	[0.0289]	[0.0309]	[0.0291]	[0.0288]	[0.0296]	[0.0292]
WTO	0.250***	0.231***	0.232***	0.245***	0.242***	0.245***
	[0.0340]	[0.0345]	[0.0322]	[0.0332]	[0.0328]	[0.0330]
VAstd_it	1.77e-05					
	[0.00218]					
VAstd_jt	0.00399**					
	[0.00178]					
PSstd_it		0.00327***				
		[0.000979]				
PSstd_jt		0.00106				
		[0.000842]				
GEstd_it			0.00111			
			[0.00189]			
GEstd_jt			0.00430***			
			[0.00156]			
RQstd_it				0.00257		
				[0.00217]		
RQstd_jt				0.00684***		
				[0.00181]		
RLstd_it					0.00496**	
					[0.00241]	
RLstd_jt					0.00135	
					[0.00162]	
CCstd_it						-0.000663
						[0.00157]
CCstd_jt						0.00371**
						[0.00151]
Pair FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	356,573	327,133	353,384	353,630	356,573	353,384
Number of pairid	24,262	24,082	24,159	24,163	24,262	24,159

Note: Robust standard errors in brackets. *** p<0.01, ** p<0.05, * p<0.1.

Table A.3. Starting dates for the Arab Spring, by MENA country

Country	Date started
Tunisia	18 December 2010
Algeria	29 December 2010
Jordan	14 January 2011
Oman	17 January 2011
Egypt	25 January 2011
Syria	26 January 2011
Yemen	27 January 2011
Djibouti	28 January 2011
Somalia	28 January 2011
Sudan	30 January 2011
Palestinian Authority	10 February 2011
Iraq	12 February 2011
Bahrain	14 February 2011
Libya	17 February 2011
Kuwait	19 February 2011
Morocco	20 February 2011
Mauritania	25 February 2011
Lebanon	27 February 2011
Saudi Arabia	11 March 2011
Iranian Khuzestan	15 April 2011
Borders of Israel	15 May 2011

Source: Wikipedia (2016).

Table A.4. Changes in the coefficients after the Arab Spring, MENA exporters

VARIABLES	(1) Govij	(2) Govij	(3) Govij	(4) Govij	(5) Govij	(6) Govij
RTA	0.279***	0.297***	0.300***	0.295***	0.265***	0.297***
	[0.0749]	[0.0769]	[0.0750]	[0.0748]	[0.0746]	[0.0746]
WTO	0.268***	0.294***	0.281***	0.271***	0.263***	0.271***
	[0.0920]	[0.0938]	[0.0930]	[0.0921]	[0.0926]	[0.0923]
dumAS	-0.909	0.346	-0.508	-0.169	0.888	-0.198
	[0.896]	[0.945]	[0.901]	[0.952]	[0.915]	[0.881]
VAstd_ijt	-0.00963***					
	[0.00324]					
VAstd_ijtAS	0.0167**					
	[0.00733]					
PSstd_ijt		0.0114***				
		[0.00163]				
PSstd_ijtAS		-0.00703*				
		[0.00418]				
GEstd_ijt			0.00563			
			[0.00397]			
GEstd_ijtAS			0.00740			
			[0.00859]			
RQstd_ijt				0.00207		
				[0.00261]		
RQstd_ijtAS				-0.000667		
				[0.00912]		
RLstd_ijt					0.0249***	
					[0.00312]	
RLstd_ijtAS					-0.0212*	
					[0.0112]	
CCstd_ijt						0.00867***
						[0.00234]
CCstd_ijtAS						0.00737
						[0.00927]
Constant	15.36***	14.22***	14.32***	15.06***	13.72***	14.12***
	[0.926]	[0.921]	[1.014]	[1.024]	[1.169]	[0.962]
Observations	24,619	22,709	24,594	24,596	24,619	24,594
R-squared	0.249	0.260	0.249	0.249	0.251	0.250
Number of pairid	2,804	2,786	2,793	2,793	2,804	2,793

Note: Robust standard errors in brackets. *** p<0.01, ** p<0.05, * p<0.1.

Appendix B

Table B.1. Gravity model estimates for governance indicators with time-variant MRT and country-pair FE: All countries

	All countries					
Dep. Var: lnX	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	All countries					
lnGDP_it	0.580***	0.555***	0.575***	0.573***	0.554***	0.572***
	[0.0265]	[0.0274]	[0.0264]	[0.0265]	[0.0269]	[0.0264]
lnGDP_jt	0.668***	0.666***	0.670***	0.669***	0.660***	0.678***
	[0.0243]	[0.0251]	[0.0241]	[0.0241]	[0.0242]	[0.0241]
RTA	0.0358	0.0417*	0.0339	0.0343	0.0365	0.0357
	[0.0227]	[0.0232]	[0.0227]	[0.0227]	[0.0227]	[0.0227]
WTO	0.0466	0.0558*	0.0484*	0.0462	0.0440	0.0474
	[0.0291]	[0.0300]	[0.0291]	[0.0291]	[0.0291]	[0.0291]
VAstd_it	-0.00180					
	[0.00140]					
VAstd_jt	0.00339***					
	[0.00108]					
PSstd_it		0.00208***				
		[0.000778]				
PSstd_jt		0.000923				
		[0.000698]				
GEstd_it			-0.000514			
			[0.00138]			
GEstd_jt			0.00257**			
			[0.00118]			
RQstd_it				0.00107		
				[0.00123]		
RQstd_jt				0.00249**		
				[0.00107]		
RLstd_it					0.00446***	
					[0.00158]	
RLstd_jt					0.00422***	
					[0.00129]	
CCstd_it						0.00311***
						[0.00102]
CCstd_jt						0.00178*
						[0.000950]
Pair FE	Yes	Yes	Yes	Yes	Yes	Yes
iyear5, jyear5 FeE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	245,375	226,577	244,365	244,435	245,375	244,365
R-squared	0.215	0.225	0.215	0.215	0.215	0.215
Number of pairid	24,316	24,136	24,214	24,218	24,316	24,214

Note: Robust standard errors in brackets. *** p<0.01, ** p<0.05, * p<0.1. WGI included independently in the model.

Table B.2. Gravity model estimates for governance indicators with time-variant MRT and country-pair FE: MENA exporters

Dep. Var: ln X	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	MENA exporters					
lnGDP_it	0.927***	0.759***	0.905***	0.897***	0.844***	0.855***
	[0.0906]	[0.0942]	[0.0882]	[0.0886]	[0.0884]	[0.0879]
lnGDP_jt	0.528***	0.613***	0.534***	0.529***	0.509***	0.623***
	[0.0852]	[0.0889]	[0.0848]	[0.0852]	[0.0872]	[0.0852]
RTA	0.133*	0.142*	0.141*	0.130*	0.123*	0.139*
	[0.0750]	[0.0770]	[0.0748]	[0.0747]	[0.0747]	[0.0745]
WTO	0.0384	0.0765	0.0731	0.0507	0.0638	0.0234
	[0.0934]	[0.0949]	[0.0937]	[0.0930]	[0.0930]	[0.0930]
VAstd_it	0.0142***					
	[0.00469]					
VAstd_jt	-0.000210					
	[0.00405]					
PSstd_it		0.00944***				
		[0.00256]				
PSstd_jt		-0.00190				
		[0.00259]				
GEstd_it			0.0179***			
			[0.00578]			
GEstd_jt			0.00339			
			[0.00495]			
RQstd_it				0.000193		
				[0.00431]		
RQstd_jt				0.000137		
				[0.00418]		
RLstd_it					0.0185***	
					[0.00501]	
RLstd_jt					-0.00181	
					[0.00510]	
CCstd_it						0.0218***
						[0.00312]
CCstd_jt						0.00131
						[0.00357]
Pair FE	Yes	Yes	Yes	Yes	Yes	Yes
it5,jt5	yes	yes	yes	yes	yes	yes
Observations	23,672	21,768	23,654	23,656	23,672	23,654
R-squared	0.267	0.275	0.267	0.267	0.267	0.269
Number of pairid	2,744	2,719	2,734	2,734	2,744	2,734

Note: Robust standard errors in brackets. *** p<0.01, ** p<0.05, * p<0.1. WGI included independently in the model.

Table B.3. Gravity model estimates for governance indicators with time-variant MRT and country-pair FE: Intra-MENA trade

	INTRA MENA TRADE					
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	All countries					
lnGDP_it	0.694***	0.571***	0.643***	0.616***	0.564***	0.598***
	[0.155]	[0.180]	[0.155]	[0.159]	[0.154]	[0.156]
lnGDP_jt	0.634***	0.719***	0.674***	0.695***	0.647***	0.762***
	[0.139]	[0.158]	[0.137]	[0.140]	[0.142]	[0.140]
RTA	0.217**	0.167*	0.227**	0.192*	0.192**	0.156*
	[0.0965]	[0.0986]	[0.0964]	[0.0983]	[0.0947]	[0.0944]
WTO	-0.00883	0.0242	0.0150	0.00289	0.00239	-0.0248
	[0.115]	[0.115]	[0.116]	[0.116]	[0.118]	[0.115]
VAstd_it	0.00762					
	[0.00857]					
VAstd_jt	0.0118					
	[0.00728]					
PSstd_it		0.000246				
		[0.00534]				
PSstd_jt		-0.00292				
		[0.00488]				
GEstd_it			0.0253**			
			[0.0108]			
GEstd_jt			0.00165			
			[0.00888]			
RQstd_it				0.00679		
				[0.00837]		
RQstd_jt				-0.0100		
				[0.00687]		
RLstd_it					0.0396***	
					[0.00950]	
RLstd_jt					-0.0180**	
					[0.00841]	
CCstd_it						0.0224***
						[0.00570]
CCstd_jt						0.00204
						[0.00559]
Pair FE	Yes	Yes	Yes	Yes	Yes	Yes
iyear5, jyear5 FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,441	3,168	3,441	3,441	3,441	3,441
R-squared	0.442	0.445	0.443	0.442	0.446	0.445
Number of pairid	329	325	329	329	329	329

Note: Robust standard errors in brackets. *** p<0.01, ** p<0.05, * p<0.1. WGI included independently in the model.