How much does trade facilitation matter in total trade costs?

Estimates based on GTAP data¹

Exporting entails costs. These are costs due to the need to acquire information about the destination country's rules and regulations as well as costs related to border-crossing processes and procedures. An exporter is required to supply the correct documentation, comply with customs procedures, and be subject to clearance and inspections. These requirements entail costs also in terms of time and uncertainty about the outcome of the procedure. A firm that fails to satisfy all requirements risks have its product rejected at the border of the destination country.

The WTO Trade Facilitation Agreement (TFA), in force since 2017, aims at reducing these costs. It contains provisions for expediting the movement, release and clearance of goods, including goods in transit. It also sets out measures for effective cooperation between customs and other appropriate authorities on trade facilitation and customs compliance issues. It further contains provisions for technical assistance and capacity building in this area.

The OECD developed a set of 11 Trade Facilitation Indicators² -consistent with the WTO TFA, that provide information on several aspects of trade facilitation: whether documents and forms are directly available on the customs website, whether procedures are automizes, whether advance ruling (concerning the tariffs classification, the origin and the valuation method) is foreseen, etc. Each indicator can take values from 0 to 2, where 2 reflects the best performance that can be achieved. These Trade Facilitation Indicators have been widely used in the literature to investigate the effect of facilitation on trade (Moïse et al., 2011; Fontagné et al., 2020; Beverelli et al., 2015).

Using Principal Component Analysis, we build an aggregate index of trade facilitation that summarises the OECD indicators while maintaining trends.³ This aggregated TFI (ATFI) ranges between -4 and 4 and increases for countries that apply more trade facilitating measures. It is highly correlated with the average of the 11 OECD indicators (correlation coefficient is 0.96). Its distribution is skewed towards the right, meaning that a large share of countries has a high level of trade facilitation (Figure 1). The index is higher for high-income than for low-income economies.

¹ The note has been developed by Roberta Piermartini and Federica Maggi.

 $^{^{2}}$ See Appendix A for the complete list of indicators.

³ Note that we apply the principal component analysis to the subset OECD TFI indicators from A to H as these are the indicators for which information available has wider coverage.

Tigure 1. Kerner density of the ATT, 2017

Figure 1: Kernel density of the ATFI, 2017

Using the latest version of the GTAP database, we estimate trade costs for a sample of 118 economies⁴. As shown in Figure 2, there is a clear negative correlation between trade costs and the Aggregate TFI. That is, countries with a lower level of trade facilitation face higher costs for trading internationally.

Aggregated TFI

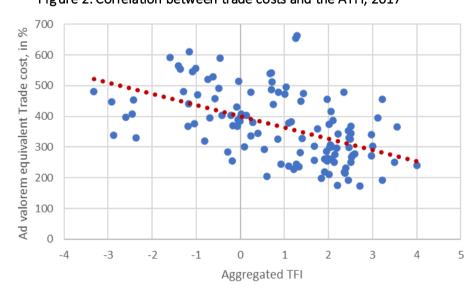


Figure 2: Correlation between trade costs and the ATFI, 2017

⁴ See Appendix B for the full list of economies included in the GTAP database. To calculate trade costs, we first use the directional, bilateral pair fixed effects (τ) obtained from a gravity model estimation of international versus domestic trade flows as a measure of trade costs. Then, we compute partial equilibrium trade costs using the sectoral elasticities on the basis of the formula: PETC = $\tau^{-1/\theta}$. The values used are: 4.8 for agriculture, 4.7 for manufacturing and 4.5 for services (see WTO 2021 for additional information on their derivation).

In particular, when we regress trade costs on their determinants (including Aggregated TFI, Transport and travel costs, Information and transaction costs, ICT connectedness, Tariffs, Non-Tariffs Measures (such as SPS and TBT) and Governance Quality),⁵ we find that in the manufacturing sector, an increase of 10% in the Aggregated TFI leads to a decrease of 5% in the partial equilibrium trade costs.

Using the Shapley decomposition to assess the importance of trade facilitation measures in explaining difference of trade costs across countries,⁶ we find that the Aggregated TFI explains 5 per cent of these differences (Figure 3).

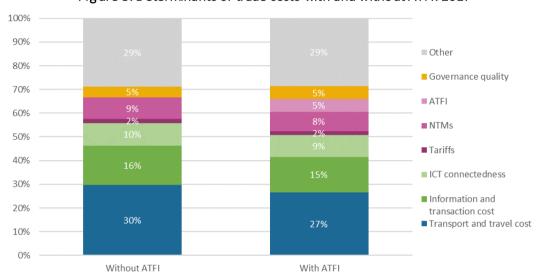


Figure 3: Determinants of trade costs with and without ATFI. 2017

Splitting trading partners according to their level of income, we estimate that the Aggregated TFI explains 11 per cent of the differences in trade costs in the high-income countries⁷, but its weight decreases to 3 per cent and 4 per cent as determinant of trade costs differences in trade between a high- and a low-income country or, respectively, between low-income countries (Figure 4).

⁵ Appendix C describes in detail the variables used in our analysis of the determinants of trade costs. Appendix D provides the results of the regressions. In order to estimate trade costs, we first use the directional, bilateral pair fixed effects (τ) obtained from a gravity model estimation of international versus domestic trade flows as a measure of trade costs. Then, we compute partial equilibrium trade costs using the sectoral elasticities on the basis of the formula: PETC = $\tau^{-1/\theta}$. The main difference with WTO (2021)'s methodology is that we are using the sector specific elasticities already computed using the World Input Output Database (WIOD). The values used are: 4.8 for agriculture, 4.7 for manufacturing and 4.5 for services (see WTO 2021 for additional information).

⁶ Rubinova and Sebti (2021)

⁷ Countries have been classified according to their gross national product and income thresholds of 2016 from the World Bank. Economies with a gross national income of more than 12,235 USD in 2016 are classified as high-income countries. See Appendix B for the full list.

100% 90% Other 80% Governance quality 70% ATFI 60% ■ NTMs 50% ■ Tariffs 40% ■ ICT connectedness 30% ■ Information and 20% transaction cost 28% ■ Transport and travel 10% 0% Low - Low Income High - High Income High - Low Income Economies

Figure 4: Trade costs determinants for high and low income economies. 2017

At the sectoral level, we found that the Aggregated TFI matters more for the manufacturing sector (7 per cent) than for agriculture and services. Note that we estimate a sizeable effect of the Aggregated TFI (3 per cent) also in service trade. This is likely to be the effect of the Aggregated TFI on service sectors that are related to goods trade such as retail and wholesale trade, and transport.

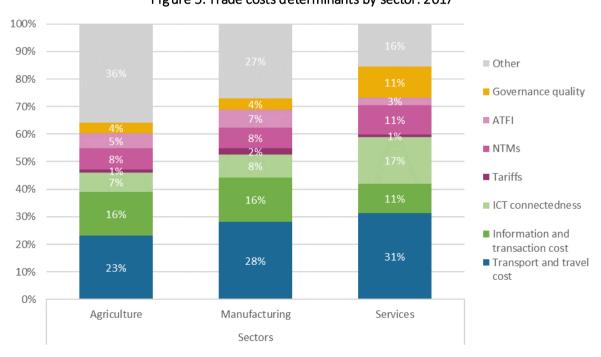


Figure 5: Trade costs determinants by sector. 2017

Bibliography

Beverelli, C., Neumueller, S. and Teh, R. (2015). Export diversification effects of the WTO trade facilitation agreement. World Development, 76, 293–310.

Egger, P., Larch, M., Nigai, S. and Yotov, Y. (2021). Trade costs in the global economy: Measurement, aggregation and decomposition (No. ERSD-2021-2). WTO Staff Working Paper.

Fontagné, L., Orefice, G. and Piermartini, R. (2020) Making small firms happy? The heterogeneous effect of trade facilitation measures. Review of International Economics, 28(3), 565-598.

Gervais, A. (2019). Indirect measures of trade costs: limitations and caveats. Economics Letters, 176, pp. 96-102

Laengle, K. and Piermartini R (2022). Trade costs for Landlocked and Costal Economies: Estimates based on GTAP data. WTO Background Note.

Moïsé, E., Orliac, T. and Minor, P. (2011). Trade facilitation indicators: The impact on trade costs (OECD Trade Policy Working Papers, No. 118). Paris: OECD.

Rubinova, S. and Sebti, M. (2021). The WTO Global Trade Costs Index and its determinants (No. ERSD-2021-6). WTO Staff Working Paper.

World Trade Organization (2021). WTO Trade Cost Index: Evolution, Incidence and Determinants. WTO Background Note

World Trade Organization (2015). World Trade Report 2015: Speeding up trade: benefits and challenges of implementing the WTO Trade Facilitation Agreement. Geneva: WTO.

Appendix A: Structure of the OECD Trade Facilitation Indicators

 $From \ https://www.oecd.org/trade/topics/trade-facilitation/documents/trade-facilitation-indicators-methodology.pdf$

| Indicator | D escription |
|---|--|
| (a) Information availability | Enquiry points; publication of trade information, including on Internet |
| (b) Involvement of the Trade Community (Consultations) | Structures for consultations; established guidelines for consultations; publications of drafts; existence of notice-and-comment frameworks |
| (c) Advance rulings | Prior statements by the administration to requesting traders concerning the classification, origin, valuation method, etc., applied to specific goods at the time of importation; the rules and process applied to such statements |
| (d) Appeal procedures | The possibility and modalities to appeal administrative decisions by border agencies |
| (e) Fees and charges | Disciplines on the fees and charges imposed on imports and exports; disciplines on penalties |
| (f) Formalities – documents | Acceptance of copies, simplification of trade documents; harmonisation in accordance with international standards |
| (g) Formalities – automation | Electronic exchange of data; use of automated risk management; automated border procedures; electronic payments |
| (h) Formalities – procedures | Streamlining of border controls; single submission points for all required documentation (single windows); post-clearance audits; authorised operators |
| (i) Internal co-operation | Control delegation to Customs authorities; co-operation between various border agencies of the country |
| (j) External co-operation | Co-operation with neighbouring and third countries |
| (k) Governance and impartiality | Customs structures and functions; accountability; ethics policy |

Note: The area of governance and impartiality (indicator (k)) is outside the remit of the TFA

For the Trade Cost analysis, we applied the principal component methodology to the indicators ranging from A to H. The decision to drop the indicators from I to K is due to the fact that there are too many missing values.

Appendix B - Economies included in the GTAP database

| Country name | н | LI | (|
|----------------------|---|----|----------|
| Albania | 0 | 1 | (|
| United Arab Emirates | 1 | 0 | (|
| Argentina | 0 | 1 | (|
| Armenia | 0 | 1 | Ī |
| Australia | 1 | 0 | Ī |
| Austria | 1 | 0 | (|
| Azerbaijan | 0 | 1 | Ī |
| Belgium | 1 | 0 | ī |
| Benin | 0 | 1 | ī |
| Burkina Faso | 0 | 1 | ī |
| Bangladesh | 0 | 1 | ī |
| Bulgaria | 0 | 1 | ī |
| Bahrain | 1 | 0 | ī |
| Belarus | 0 | 1 | J |
| Bolivia | 0 | 1 | <u> </u> |
| Brazil | 0 | 1 | |
| Brunei Darussalam | 1 | 0 | ī |
| Botswana | 0 | 1 | <u> </u> |
| Canada | 1 | 0 | <u> </u> |
| Switzerland | 1 | 0 | (|
| Chile | 1 | 0 | Ī |
| China | 0 | 1 | <u> </u> |
| Cote d'Ivoire | 0 | 1 | I |
| Cameroon | 0 | 1 | |
| Colombia | 0 | 1 | <u> </u> |
| Costa Rica | 0 | 1 | <u> </u> |
| Cyprus | 1 | 0 | |
| Czech Republic | 1 | 0 | <u>_</u> |
| Germany | 1 | 0 | <u>_</u> |
| Denmark | 1 | 0 | |
| Dominican Republic | 0 | 1 | |
| Ecuador | 0 | 1 | |
| Egypt, Arab Rep. | 0 | 1 | |
| Spain | 1 | 0 | <u>_</u> |
| Estonia | 1 | 0 | <u> </u> |
| Ethiopia | 0 | 1 | <u> </u> |
| Finland | 1 | 0 | <u> </u> |
| France | 1 | 0 | <u> </u> |
| United Kingdom | 1 | 0 | <u> </u> |
| Georgia | 0 | 1 | <u> </u> |
| Ghana | 0 | 1 | |

| Country name | н | LI |
|----------------------|---|----|
| Guinea | 0 | 1 |
| Greece | 1 | О |
| Guatemala | 0 | 1 |
| Hong Kong SAR, China | 1 | О |
| Honduras | 0 | 1 |
| Croatia | 1 | С |
| Hungary | 1 | С |
| Indonesia | 0 | 1 |
| India | 0 | 1 |
| Ireland | 1 | 0 |
| Iran, Islamic Rep. | 0 | 1 |
| Israel | 1 | 0 |
| Italy | 1 | 0 |
| Jamaica | 0 | 1 |
| Jordan | 0 | 1 |
| Japan | 1 | 0 |
| Kazakhstan | 0 | 1 |
| Kenya | 0 | 1 |
| Kyrgyz Republic | 0 | 1 |
| Cambodia | 0 | 1 |
| Korea, Rep. | 1 | О |
| Kuwait | 1 | 0 |
| Lao PDR | 0 | 1 |
| Sri Lanka | 0 | 1 |
| Lithuania | 1 | 0 |
| Luxembourg | 1 | 0 |
| Latvia | 1 | О |
| Morocco | 0 | 1 |
| Madagascar | 0 | 1 |
| Mexico | 0 | 1 |
| Malta | 1 | О |
| Mongolia | 0 | 1 |
| Mozambique | 0 | 1 |
| Mauritius | 0 | 1 |
| Malawi | 0 | 1 |
| Malaysia | 0 | 1 |
| Namibia | 0 | 1 |
| Nigeria | 0 | 1 |
| Nicaragua | 0 | 1 |
| Netherlands | 1 | О |
| Norway | 1 | С |

| Country name | НІ | LI |
|-------------------|----|----|
| Nepal | 0 | 1 |
| New Zealand | 1 | 0 |
| Oman | 1 | 0 |
| Pakistan | 0 | 1 |
| Panama | 1 | 0 |
| Peru | 0 | 1 |
| Philippines | 0 | 1 |
| Poland | 1 | 0 |
| Portugal | 1 | 0 |
| Paraguay | 0 | 1 |
| Qatar | 1 | 0 |
| Romania | 0 | 1 |
| Russia | 0 | 1 |
| Rwanda | 0 | 1 |
| Saudi Arabia | 1 | 0 |
| Senegal | 0 | 1 |
| Singapore | 1 | 0 |
| El Salvador | 0 | 1 |
| Slovak Republic | 1 | 0 |
| Slovenia | 1 | 0 |
| Sweden | 1 | 0 |
| Togo | 0 | 1 |
| Thailand | 0 | 1 |
| Tajikistan | 0 | 1 |
| Trinidad & Tobago | 1 | 0 |
| Tunisia | 0 | 1 |
| Turkey | 0 | 1 |
| Tanzania | 0 | 1 |
| Uganda | 0 | 1 |
| Ukraine | 0 | 1 |
| Uruguay | 1 | 0 |
| United States | 1 | 0 |
| Vietnam | 0 | 1 |
| South Africa | 0 | 1 |
| Zambia | 0 | 1 |
| Zimbabwe | 0 | 1 |

${\bf Appendix}\,{\bf C}-{\bf Trade}\,costs\,determinants\,detailed\,proxy\,variables$

| | | i) Population weighted distance |
|------------------------|-----------------------|--|
| 1 | Transport and travel | ii) landlocked, |
| costs | | iii) contiguity |
| | | iv) Quality of transport infrastructure |
| - | | i) common language |
| | | ii) common colonizer post 1945, |
| | Information and | iii) Religious proximity index |
| 2 | transaction costs | iv) Previously same country |
| | | v) common legal origins after 1991 |
| | | vi) Number of migrants from the exporter to the importer and vice versa |
| 3 | ICT Connectedness | i) Broadband coverage |
| J | TO T COMMEDICATIONS | ii) Mobile coverage |
| 4 | Tariffs | i) Applied tariffs imposed by the importer |
| | | i) in a regional trade agreement |
| | | ii) EU Member, |
| 5 Non-Tariffs Measures | | iii) same currency, |
| | | iv) Number of STC raised in the SPS Committee and in the v) TBT Committee. |
| 6 | Facilitation | i) Distance weighted facilitation indicator of importer |
| 7 | Governance Quality | i) Distance weighted governance quality of exporter/importer |
| | 1 227 Cilianoc Quanty | ii) Difference in governance quality |

Note: Following Rubinova and Sebti (2021), Tariffs, SPS and TBT are sector specific variables in the regressions for trade in goods, whereas they are country averages in regressions for services.

Appendix D.1- Regression results with and without the Trade Facilitation variable.

| | (1) | (2) Without TFI | (3) | (4) | (5) With TFI | (6) |
|---|---------------------|-----------------------|--------------------|---------------------|-----------------------|--------------------|
| | Agriculture | Manufacturing | Services | Agriculture | Manufacturing | Services |
| VARIABLES | | | | | | |
| Distance | 0.163*** | 0.571*** | -0.011 | 0.355 | 1.369*** | -0.248 |
| | (0.0487) | (0.0443) | (0.0193) | (0.3999) | (0.4639) | (0.1727) |
| Common Border | -0.184*** | -0.108*** | -0.118*** | -0.184*** | -0.109*** | -0.118*** |
| | (0.0256) | (0.0190) | (0.0193) | (0.0255) | (0.0188) | (0.0193) |
| Landlocked | 0.124*** | 0.095*** | 0.035*** | 0.124*** | 0.094*** | 0.036*** |
| | (0.0252) | (0.0295) | (0.0125) | (0.0253) | (0.0295) | (0.0125) |
| I-Infrastr x Dist (in log) | -0.140*** | -0.244*** | 0.002 | -0.139*** | -0.238*** | 0.001 |
| Finfuncture Dist (in las) | (0.0476) | (0.0506) | (0.0193) | (0.0472) | (0.0469) | (0.0192) |
| E-Infrastr x Dist (in log) | 0.107** | -0.126*** | -0.007 (0.0177) | 0.107** | -0.126*** | -0.007 (0.0180) |
| Common Languago | (0.0448) -0.029* | (0.0425) -0.070*** | (0.0177) -0.000 | (0.0447) -0.029* | (0.0419) -0.070*** | (0.0180) -0.000 |
| Common Language | (0.0156) | (0.0171) | (0.0058) | (0.0156) | (0.0170) | (0.0058) |
| Colonial Rel | -0.081*** | -0.014 | -0.017* | -0.081*** | -0.016 | -0.017* |
| Colonial Rei | (0.0259) | (0.0174) | (0.0093) | (0.0258) | (0.0171) | (0.0091) |
| Common Religion | -0.047* | -0.002 | -0.003 | -0.046* | 0.002 | -0.004 |
| common neingron | (0.0276) | (0.0236) | (0.0102) | (0.0272) | (0.0237) | (0.0099) |
| Prev Same Ctry | -0.059 | -0.026 | -0.073** | -0.061 | -0.033 | -0.071** |
| | (0.0561) | (0.0281) | (0.0316) | (0.0560) | (0.0277) | (0.0313) |
| Common Legal Orig | -0.022*** | -0.022*** | -0.001 | -0.022*** | -0.023*** | -0.001 |
| 3 20 3 0 | (0.0082) | (0.0068) | (0.0030) | (0.0082) | (0.0068) | (0.0030) |
| Migrants from E in I | -0.012*** | -0.011*** | -0.002** | -0.012*** | -0.011*** | -0.002** |
| | (0.0020) | (0.0020) | (0.0008) | (0.0020) | (0.0020) | (0.0008) |
| Migrants from I in E | -0.010*** | -0.008*** | -0.001 | -0.009*** | -0.008*** | -0.001 |
| _ | (0.0023) | (0.0019) | (0.0008) | (0.0023) | (0.0019) | (0.0008) |
| Broadband | 0.008 | 0.011 | 0.003 | 0.008 | 0.011 | 0.003 |
| | (0.0112) | (0.0137) | (0.0063) | (0.0111) | (0.0136) | (0.0063) |
| Mobile | 0.060 | 0.001 | 0.008 | 0.062 | 0.008 | 0.006 |
| | (0.0453) | (0.0502) | (0.0130) | (0.0456) | (0.0497) | (0.0132) |
| In_tariff | 0.013 | 0.271 | -0.005 | 0.012 | 0.244 | 0.001 |
| | (0.0714) | (0.2261) | (0.0530) | (0.0714) | (0.2198) | (0.0536) |
| RTA | -0.054*** | -0.026 | 0.009 | -0.054*** | -0.028 | 0.010 |
| | (0.0169) | (0.0288) | (0.0066) | (0.0169) | (0.0281) | (0.0065) |
| EU | -0.209*** | -0.106*** | -0.030** | -0.212*** | -0.116*** | -0.026* |
| | (0.0367) | (0.0286) | (0.0139) | (0.0377) | (0.0292) | (0.0142) |
| Common Currency | 0.059** | -0.018 | 0.015 | 0.059** | -0.017 | 0.015 |
| | (0.0282) | (0.0232) | (0.0109) | (0.0282) | (0.0217) | (0.0110) |
| I-SPS STCs (cum.) | 0.018* | 0.007 | -0.006 | 0.017* | 0.007 | -0.005 |
| 1 TDT CTC / | (0.0093) | (0.0072) | (0.0056) | (0.0092) | (0.0073) | (0.0055) |
| I-TBT STCs (cum.) | -0.005 | 0.006 | 0.004 | -0.005 | 0.007 | 0.004 |
| L Covernance quality y Dist (in leg) | (0.0061) | (0.0049) | (0.0039) | (0.0060) | (0.0050) | (0.0039) |
| I-Governance quality x Dist (in log) | 0.015 | -0.013 | 0.020 | 0.023 | 0.021 | 0.010 |
| E Covernance quality y Dist (in leg) | (0.0339) | (0.0325) | (0.0146) | (0.0362) | (0.0350) | (0.0181) |
| E-Governance quality x Dist (in log) | -0.028 (0.0272) | 0.012 | 0.002 | -0.028 | 0.011 | 0.003 |
| Dif in Governance quality | (0.0373) -0.067 | (0.0363) -0.135 | (0.0120) -0.060 | (0.0373) -0.067 | (0.0357) -0.135 | (0.0121) -0.060 |
| bit in Governance quarity | (0.1506) | (0.1303) | (0.0608) | (0.1505) | (0.1307) | (0.0606) |
| I-Trade Facilitation Index x Dist (in log | | (0.1303) | (0.0008) | -0.118 | -0.490* | 0.146 |
| Traderaemaaton maex x bist (m log | , | | | (0.2416) | (0.2829) | (0.1049) |
| Dif in GDPpCap | -0.044* | -0.047* | 0.007 | -0.045* | -0.048* | 0.007 |
| | (0.0262) | (0.0248) | (0.0109) | (0.0262) | (0.0249) | (0.0108) |
| Dif Tertiary Educ | -0.025 | 0.044 | 0.001 | -0.026 | 0.041 | 0.002 |
| | (0.0438) | (0.0405) | (0.0158) | (0.0441) | (0.0404) | (0.0156) |
| Constant | 0.497* | -0.039 | 1.538*** | 0.491* | -0.066 | 1.546*** |
| | (0.2526) | (0.2726) | (0.0796) | (0.2537) | (0.2709) | (0.0788) |
| | () | (/ | () | (| () | () |
| Observations | 8,976 | 8,976 | 8,976 | 8,976 | 8,976 | 8,976 |
| Sample | All countries | All countries | All countries | All countries | All countries | All countries |
| R-squared | 0.769 | 0.808 | 0.916 | 0.769 | 0.809 | 0.916 |

Robust standard errors in parentheses

^{***} p<0.01, ** p<0.05, * p<0.1

Appendix D.2 - Regression results by sector and income level

| | (1) High - High income | (2) Low - Low Income | (3) High - Low Income | (4) High - High income | (5) Low - Low Income | (6) High - Low Income | (7) High - High income | (8) Low - Low Income | (9) High - Low Income |
|--|------------------------------|----------------------------|-----------------------------|------------------------------|----------------------------|-----------------------------|------------------------------|----------------------------|-----------------------------|
| VARIABLES | Agr. | Agr. | Agr. | Man. | Man. | Man. | Serv. | Serv. | Serv. |
| VARIABLES | | | | | | | | | |
| Distance | 0.549 | 0.288 | 0.590 | 0.744 | 2.184*** | 0.510 | -0.477 | 0.191 | -0.294** |
| Common Border | (0.7838) -0.192*** | (0.4504) -0.174*** | (0.4773) -0.188*** | (0.7995) -0.101*** | (0.5578) -0.125*** | (0.4594) -0.116*** | (0.3633) -0.138*** | (0.2211) -0.088*** | (0.1329) -0.108*** |
| | (0.0374) | (0.0469) | (0.0414) | (0.0251) | (0.0389) | (0.0335) | (0.0233) | (0.0281) | (0.0303) |
| Landlocked | 0.089 | 0.100** | 0.124*** | 0.089*** | 0.081** | 0.085** | 0.021 | 0.010 | 0.039** |
| I-Infrastr x Dist (in log) | (0.0606) -0.260** | (0.0489) | (0.0232) | (0.0211) | (0.0383) | (0.0358) | (0.0248) -0.114* | (0.0150) | (0.0165) 0.032* |
| E-Infrastr x Dist (in log) | (0.1034) -0.107 | (0.0758) 0.194*** | (0.0641) 0.110* | (0.0955) -0.282*** | (0.0703) -0.049 | (0.0539) -0.070* | (0.0676) -0.113** | (0.0344) -0.004 | (0.0174) 0.009 |
| 2 miles x 213t (m 10g) | (0.1159) | (0.0720) | (0.0634) | (0.0584) | (0.0838) | (0.0408) | (0.0528) | (0.0300) | (0.0159) |
| Common Language | -0.036 | -0.022 | -0.021 | -0.012 | -0.115*** | -0.046** | 0.004 | -0.002 | -0.004 |
| | (0.0234) | (0.0224) | (0.0219) | (0.0251) | (0.0242) | (0.0181) | (0.0116) | (0.0068) | (0.0068) |
| Colonial Rel | -0.059* | 0.103 | -0.109*** | -0.038 | 0.148* | -0.051*** | 0.013 | -0.013 | -0.011 |
| | (0.0346) | (0.0837) | (0.0323) | (0.0245) | (0.0809) | (0.0187) | (0.0127) | (0.0358) | (0.0095) |
| Common Religion | -0.070 | -0.079** | -0.003 | 0.019 | -0.087*** | 0.034 | 0.018 | 0.008 | 0.002 |
| | (0.0455) | (0.0375) | (0.0370) | (0.0310) | (0.0324) | (0.0257) | (0.0237) | (0.0160) | (0.0118) |
| Prev Same Ctry | -0.188*** | -0.007 | 0.147 | -0.024 | -0.009 | -0.010 | -0.144*** | -0.057 | 0.070*** |
| | (0.0630) | (0.0715) | (0.0976) | (0.0358) | (0.0579) | (0.0492) | (0.0389) | (0.0421) | (0.0239) |
| Common Legal Orig | -0.030** | -0.000 | -0.018** | -0.021 | -0.013 | -0.023*** | 0.002 | 0.005 | -0.008** |
| | (0.0126) | (0.0111) | (0.0087) | (0.0126) | (0.0136) | (0.0088) | (0.0080) | (0.0047) | (0.0038) |
| Migrants from E in I | -0.004 | -0.014*** | -0.012*** | -0.007** | -0.017*** | -0.007*** | -0.004*** | -0.002* (0.0013) | -0.001 |
| Migrants from I in E | (0.0041) -0.009** | (0.0040) -0.011*** | (0.0025) -0.009*** | (0.0032) -0.006* | (0.0032) -0.010*** | (0.0019) -0.008*** | (0.0014) -0.004** | (0.0012) -0.000 | (0.0009) -0.000 |
| IVIIgiants II OIII I III E | (0.0034) | (0.0039) | (0.0030) | (0.0032) | (0.0031) | (0.0025) | (0.0017) | (0.0011) | (0.0007) |
| Broadband | 0.0034) | -0.006 | -0.080*** | 0.083 | -0.009 | -0.074*** | 0.066** | -0.006 | 0.015 |
| 21 odd Saria | (0.0645) | (0.0146) | (0.0254) | (0.0641) | (0.0153) | (0.0240) | (0.0301) | (0.0079) | (0.0125) |
| Mobile | 0.139 | 0.136** | 0.048 | -0.053 | -0.008 | 0.049 | 0.085** | 0.035*** | 0.012 |
| | (0.1251) | (0.0506) | (0.0774) | (0.1060) | (0.0695) | (0.0598) | (0.0341) | (0.0097) | (0.0255) |
| In_tariff | 0.132 | -0.022 | 0.072 | -0.453 | -0.132 | -0.016 | -0.031 | -0.049 | 0.009 |
| _ | (0.1146) | (0.2872) | (0.0672) | (0.4046) | (0.2972) | (0.2241) | (0.1143) | (0.0998) | (0.0595) |
| RTA | -0.048 | -0.090** | -0.039** | -0.143** | -0.137*** | -0.016 | 0.000 | -0.011 | 0.010 |
| | (0.0460) | (0.0357) | (0.0196) | (0.0609) | (0.0451) | (0.0283) | (0.0171) | (0.0089) | (0.0070) |
| EU | -0.156*** | -0.383*** | -0.280*** | -0.086 | -0.142 | -0.148*** | 0.025 | -0.377*** | -0.083*** |
| | (0.0571) | (0.0885) | (0.0562) | (0.0529) | (0.0954) | (0.0475) | (0.0234) | (0.0636) | (0.0188) |
| Common Currency | 0.031 | 0.172** | 0.031 | 0.009 | -0.284*** | -0.172*** | -0.005 | 0.035 | -0.142*** |
| / | (0.0338) | (0.0719) | (0.0861) | (0.0200) | (0.0903) | (0.0347) | (0.0145) | (0.0291) | (0.0437) |
| I-SPS STCs (cum.) | 0.021 | 0.012 | 0.004 | 0.000 | 0.019 | 0.013 | 0.000 | 0.001 | 0.005 |
| L TDT CTCs (sum) | (0.0169) | (0.0240) | (0.0092) | (0.0109) | (0.0130) | (0.0100) 0.012* | (0.0061) | (0.0153) | (0.0052) |
| I-TBT STCs (cum.) | -0.009 (0.0126) | -0.005 (0.0136) | 0.001 (0.0068) | -0.005 (0.0116) | 0.005 (0.0103) | (0.0069) | 0.003 (0.0066) | 0.000 (0.0051) | 0.002 (0.0026) |
| I-Governance quality x Dist (in log) | -0.022 | 0.0130) | -0.016 | 0.0110) | 0.068 | -0.133*** | 0.029 | 0.031) | -0.049*** |
| 1-dovernance quanty x bist (iii log) | (0.0735) | (0.0535) | (0.0446) | (0.0689) | (0.0751) | (0.0235) | (0.0455) | (0.0175) | (0.0108) |
| E-Governance quality x Dist (in log) | 0.028 | -0.070 | -0.073 | 0.037 | -0.009 | -0.052 | 0.020 | -0.013 | -0.027*** |
| (| (0.0678) | (0.0590) | (0.0530) | (0.0415) | (0.0560) | (0.0329) | (0.0256) | (0.0204) | (0.0100) |
| Dif in Governance quality | -0.246 | 0.188 | -0.212 | 0.079 | -0.281 | -0.333 | -0.046 | -0.078 | -0.178 |
| | (0.5043) | (0.3021) | (0.2097) | (0.3235) | (0.2945) | (0.2404) | (0.2398) | (0.1181) | (0.1171) |
| I-Trade Facilitation Index x Dist (in lo | 0.051 | -0.062 | -0.221 | 0.046 | -1.039*** | 0.060 | 0.432* | -0.107 | 0.189** |
| | (0.4582) | (0.2611) | (0.2908) | (0.4846) | (0.3344) | (0.2751) | (0.2180) | (0.1321) | (0.0838) |
| Dif in GDPpCap | 0.064 | -0.108* | 0.045 | 0.002 | -0.112* | 0.474*** | 0.089 | -0.012 | -0.005 |
| | (0.0984) | (0.0543) | (0.1407) | (0.0622) | (0.0610) | (0.1461) | (0.0624) | (0.0170) | (0.0542) |
| Dif Tertiary Educ | -0.014 | 0.071 | -0.142** | -0.016 | 0.068 | 0.213*** | 0.074 | -0.004 | -0.001 |
| | (0.2223) | (0.0583) | (0.0630) | (0.1588) | (0.0563) | (0.0711) | (0.0749) | (0.0202) | (0.0264) |
| Constant | -0.823 | 0.538 | 0.566 | -0.100 | 0.390 | -0.641* | 0.442** | 1.704*** | 1.537*** |
| | (0.7008) | (0.3307) | (0.4046) | (0.6319) | (0.3554) | (0.3290) | (0.1717) | (0.0856) | (0.1348) |
| a. | 2.2.5 | | | 26:5 | | | 26:5 | | |
| Observations | 2,016 | 2,464 | 4,496 | 2,016 | 2,464 | 4,496 | 2,016 | 2,464 | 4,496 |
| R-squared | 0.795 | 0.723 | 0.759 | 0.814 | 0.800 | 0.775 | 0.881 | 0.879 | 0.916 |

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1