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Investment confidence and regional trade agreements with the United States[★]



Alberto Chong a,*, Carla Srebot b

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ABSTRACT

Using a fixed-effects approach as well synthetic control methods we provide evidence on a causal link between regional trade agreements and investment confidence. Interestingly, we find that this causal impact is not observed immediately after the agreement is enacted but takes time, as observed in corresponding event studies. Our results hold to a broad array of robustness tests.

1. Introduction

Whereas it is widely believed that regional trade agreements (RTAs) are conducive to increased foreign investment by lowering trade barriers, reducing regulations and increasing access to new markets, the empirical evidence that supports the link between these two variables appears not to be conclusive. This is somewhat puzzling given the fact that many RTAs include provisions that encourage foreign direct investment and typically include guarantees and strong protections to investors. A likely critical reason for this is appears to be that while regional trade agreements send a clear commitment signal to potential investors, it is unclear whether this signal will automatically modify the confidence of investors in the same tangible way that modifications in trade barriers, regulations or market access operate.

Consistent with the view above, in this paper we provide empirical evidence that regional trade agreements help build confidence in foreign investors, but that the causal impact is gradual and takes some time to materialize. In order to this we employ a fixed-effects

a Department of Economics, Georgia State University and Department of Economics, Universidad del Pacifico, Peru

^bDepartment of Economics, Universidad de San Andrés, Argentina

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^{*} Corresponding author.

E-mail addresses: achong6@gsu.edu (A. Chong), csrebotroeder@udesa.edu.ar (C. Srebot).

¹ Please see our review of the literature, below.

² While not empirically tested, Stevens et al. (2015) mention that regional trade agreements rise confidence by locking in more predictable trade policies.

approach similar to Abman and Lundberg (2020) that exploits the year of enforcement of every regional trade agreement signed by the United States with every other country in the world for the period 1985 and 2016 and find compelling evidence on a causal link between such regional trade agreements and investment confidence.³ Interestingly, we find that this causal impact on confidence is not observed immediately after the agreement is enacted but takes time, as confirmed in corresponding event studies. Our results hold when employing synthetic control methods as well as to a broad array of robustness tests.

Our paper is related to the literature on the implications of trade policies (trade liberalization, free trade agreements, preferential trade agreements, among others) and trade restrictions to investment outcomes. Trade openness policies are often linked with encouraging investment. In this regard, RTAs are attributed with direct and indirect effects on investment outcomes. The direct impact is associated with an increase in economic activity induced by the removal of barriers to trade. Whilst indirect effects are the result from rising confidence by locking in more predictable trade policies (Stevens et al., 2015).

The literature on trade and investment has focused predominantly on foreign direct investment (FDI). Several studies have manifested that trade liberalization is one of the main determinants of FDI growth in both developed and developing countries. Greenaway et al. (2007) and Asiedu (2002) analyze how trade liberalization and openness affect FDI in developing economies from Latin America, Africa and Asia. These research studies find that countries opened to trade have greater FDI inflows and reveal that the impact is heterogeneous vis-à-vis the level of income or development. The extent of which trade liberalization affects FDI could be explained by the decrease in trade costs and by the lower prices of consumption and investment goods, which leads to greater investment in technology capital (Anderson et al., 2019). In particular, technologies developed in one country may be used in other countries in ways such as multinational production, entailing broader investment in physical capital accumulation and, thus, higher gains from opening up to multinational firms and from liberalizing international flows (Anderson et al., 2019; Arkolakis et al., 2018; Ramondo and Rodríguez-Clare, 2013; Ramondo, 2014).

A strand of this literature has been carried out on the linkage of international trade agreements and foreign investment. Jaumotte (2004) studies the effect of market size on regional trade agreements (RTA) member countries on overseas investment and asserts that larger RTA country markets encourage more outwards FDI. The magnitude of the effect also depends on the degree of human capital and financial stability (Jaumotte, 2004). In this line of research, Levy Yeyati et al. (2003) point out that regional integration on OECD countries had a positive effect in attracting FDI during the period 1982–1999 (Levy Yeyati et al. (2003)). Overall, international trade agreements and policies, such as RTAs and preferential trade agreements (PTA) tend to exhibit a positive relationship with inward foreign direct investment (Medvedev, 2012; Büthe and Milner, 2008; Blanchard, 2007). Notably, countries that have enacted RTAs with larger trade partners are correlated with higher foreign direct investment inflows (Medvedev, 2012; Blanchard, 2007).

Nevertheless, opposing arguments and evidence may be found in the literature. For instance, Braconier et al. (2005) argue that the effect of free trade agreements on foreign direct investment depends on the nature of the investment. They argue that if the type of investment is horizontal that is, between industrialized and high-skilled labor countries, the end result will be different than if the nature of the investment is vertical namely, the case when firms in industrialized countries reduce production costs by relocating its process to low-wage countries. These authors find that if foreign direct investment is principally driven to take advantage of tariff-jumping and it is generally horizontal, then the participation in an RTA will likely decrease investment flows (Braconier et al., 2005). This evidence is consistent with other studies that show that the effect of trade openness on the inflow of foreign direct investment may differ according to the motivation for engaging in investment activities (Markusen and Maskus, 2003; Dunning, 1993). For instance, Seim (2009) shows how trade openness affects foreign direct investment depending on the characteristics of the country and suggests that there may be a negative relationship between investment inflows and the degree of openness for countries in transition. More recently, Reed et al. (2016) analyze the impact of RTA on outwards foreign direct investment and stress that investment activities between a foreign firm and the host government may be a dynamic process. In fact, using a panel on outbound investment from twenty OECD countries toward fifty OECD and non-OECD countries for the period 1990–2006, these authors find that the participation in an RTA is negatively related to outbound foreign direct investment, whereas in some specifications they find no relationship at all (Reed et al., 2016).

Our paper is organized as follows. Section 2 presents the data and empirical methods employed. Section 3 shows our main results. Section 4 provides robustness tests. Finally, Section 5 summarizes and concludes.

2. Data and methods

We focus on the period 1987–2013, as it maximizes our data availability. Our main variable of interest are the countries that signed regional trade agreements with the United States, taking into consideration the specific year. The data source is the Office of the United States Trade Representative (USTR) and the United Nations Conference on Trade and Development (UNCTAD). ⁴ Table 1 shows the year

³ Since RTA partners are not randomly chosen, we do not have a quasi-natural setting. In this context, it is particularly important to show that the assumption of equal trends, analogous to the case in differences-in-differences settings, hold. We show that this is the case when testing for event studies and introducing lags and leads (Lechner, 2010).

⁴ The countries that have signed regional trade agreements with the United States are Australia (2004), Bahrain (2004), Canada (1992), Chile (2003), Colombia (2009), Costa Rica (2004), Dominican Republic (2004), El Salvador (2004), Guatemala (2004), Honduras (2004), Israel (1985), Jordan (2000), South Korea (2007), Mexico (1992), Morocco (2004), Nicaragua (2004), Oman (2006), Panama (2007), Peru (2006) and Singapore (2003). Source: https://ustr.gov/trade-agreements/free-trade-agreements.

Table 1
Trade agreements with the United States.

Country	Year of signature	Year of enforcement
Australia	2004	2005
Bahrain	2004	2006
Canada	1992	1994
Chile	2003	2004
Colombia	2006	2012
Costa Rica	2004	2009
Dominican Republic	2004	2007
El Salvador	2004	2006
Guatemala	2004	2006
Honduras	2004	2006
Israel	1985	1985
Jordan	2000	2001
Korea, Rep.	2007	2012
Mexico	1992	1994
Morocco	2004	2006
Nicaragua	2004	2006
Oman	2006	2009
Panama	2007	2012
Peru	2006	2009
Singapore	2003	2004

Source. The Office of the United States Trade Representative and United Nations Conference on Trade and Development.

of signature and the year of enforcement of the RTAs with the United States. In particular, our analysis focus on the year of enforcement given that it indicates the date on which the agreement officially begins to apply or be valid from that time. Hence, for each country we assign a value equal to one to the years since the regional trade agreement with the United States entered into force and assign a value of zero otherwise.

Our main dependent variable in an investment confidence index that comes from the well-known International Country Risk Guide (ICRG). This 12-point-index comprises three subcomponents that capture aspects that are typically linked to the risk to invest in a particular country, each with a maximum score of four points and a minimum score of zero points. A score of four points equates to Very Low Risk and a score of zero points to Very High Risk. The three components are (i) the contract viability and risk of expropriation, (ii) the likelihood of profits repatriation, and (iii) likelihood of payment delays.

We include a set of standard country level controls including the rate of growth of gross domestic product (GDP), the logarithm of initial GDP per capita, trade openness as a percentage of GDP, the rate of inflation and rate of population growth. All these controls come from the World Development Indicators from the World Bank. In addition, we consider bilateral investment treaties reported in the International Investment Agreements Navigator of UNCTAD. Basic descriptive statistics are presented in Table 2.

We exploit spatial and time variation in regional trade agreements with the United States in order to estimate causal effects on country investment confidence. Our identification strategy compares countries that engage in regional trade agreements to countries that have not signed such agreements with the United States, before and after enactment, and is analogous to Abman and Lundberg (2020) as follows:

$$y_{ct} = \beta_0 + \beta_1 T_{ct} + X_{ct} \beta_2 + \gamma_c + \lambda_t + \varepsilon_{ct} \tag{1}$$

where y_{ct} denotes the investment confidence index in country c in year t, T is an indicator equal to one for countries that engage in RTAs with the United States, and X is a set of country–level covariates, including economic and trade characteristics. We estimate the model with the full set of country controls described above as well as country and year fixed effects (γ_c , λ_t). The coefficient of interest is β_1 , which denotes the causal effect of regional trade agreements on investment confidence. Our identifying assumption is that, conditional on time and country fixed effects and time-varying controls(X_{ct}), countries will differ in its investment outcomes only given the differences in the enactment of regional trade agreements. In addition, we cluster standard errors by country to allow for within-country serial correlation in the error terms because unobserved factors may be correlated over time¹⁰.

⁵ Whereas the year of signature stands for the date when the agreement is signed by the parties.

⁶ Source: https://www.prsgroup.com/explore-our-products/international-country-risk-guide/.

Source: http://datatopics.worldbank.org/world-development-indicators/.

⁸ Bilateral investment treaty (BIT) is an agreement between two countries regarding promotion and protection of investments made by investors from respective countries in each other's territory. In addition, we also considered specific investment provisions written in the treaties. However, we find no differences in our results and thus we do not report them. This is unsurprising since most treaties in our sample do include investment provisions (Chornyi et al., 2016).

⁹ See appendix 1 for a detailed description of the variables.

¹⁰ The inclusion of clusters at the country level do not change our findings, as shown in our empirical results.

Table 2 Descriptive statistics.

Variables	N	Mean	Std.	Min	Max
Covariates					
GDP growth (annual percent)	4866	3.72	7.11	-64.05	179.18
Log GDP per capita (US\$, 2010)	4809	2.10	0.19	1.56	2.47
Trade percentage of GDP	4604	85.81	51.96	0.02	531.74
Inflation Rate (annual percent)	4860	46.78	549.53	-57.88	26762.02
Population growth (annual percent)	5361	1.56	1.55	10.96	16.51
Bilateral Investment Treaties (BITs)	5372	19.75	33.96	0	254
Outcome variable					
Confidence Index (0–12)	3475	7.47	2.55	0	12

The inclusion of country-specific fixed effects controls for unobserved, time-invariant factors that may bias our results. Nevertheless, in order to be valid, the identification strategy with country fixed effects requires the assumption that trends in investment confidence and trade be uncorrelated with trends in unobserved, time-varying characteristics. To test that no unobservable factor that affects investment confidence is systematically changing while countries enact RTAs with de United States, we test for the critical parallel pretrend assumption by the following specification:

$$y_{ct} = \beta_0 + \sum_{k=-6}^{6} \vartheta_k(\tau_{ct} = k) + X_{ct}\beta_2 + \gamma_c + \lambda_t + \varepsilon_{ct}$$
(2)

where τ_{ct} takes value equal to one when an observation is k years away from the year the trade policy change. The case $\tau=0$ denotes the year when the RTA was executed, $\tau=1$ is the immediate year after opening to regional trade. Note that k equal to -6 or 6 denotes more than five years before and after the policy change. A test of common trend assumption is $\theta_k=0 \ \forall \ k<0$, i.e. the coefficients on all lags of RTAs should be zero. This implies that RTA enactment is not driven by confounding trends in unobserved factors that also affect investment confidence.

3. Results

Our main empirical findings are reported in Table 3. As shown in columns (1) to (3) the coefficient of our key variable of interest, regional trade agreements (β_1), is always positive and statistically significant at conventional levels, suggesting that RTAs are associated with an increase in the confidence index. Our results are robust regardless of the inclusion of country fixed effects and clusters. Considering the more conservative estimation (column 3) we find that enactment of regional trade agreements raises the investment confidence index by approximately 10.1 percent over the sample mean. In addition, we consider the year of signature of RTAs with the United Stated as treatment rather than the enforcement year. Similar results are found (see Table 4): the investment confidence index of countries which engaged in RTAs with the United States increases by approximately 9.0 percent over the sample mean after signing the treaty. In general, the size of the effect is larger when considering the enforcement year since it indicates the date when the agreements officially begin to apply.

Interestingly, our findings related to our pre-trends tests do provide an important nuance to the overall finding above. Fig. 1 shows the results when applying an event study according to Equation (2). As observed, they show no evidence of pre-existing trend differences in the investment confidence index. Estimated ϑ s are statistically not different from zero in the years before trade policy changed. However, while these findings support the overall causal interpretation of regional trade agreements on investment outcomes, we also observe an impact delay of several periods before impact occurs. The causal impact does not occur immediately after regional trade enforcement.

Similarly, Fig. 2 shows the results for the event study indicating that there is no evidence of pre-existing trend differences in investment confidence index when considering the year of signature. Still, it is worth to mention that the effect of signing RTAs with the

Table 3Free trade agreements and investment confidence (Year of enforcement).

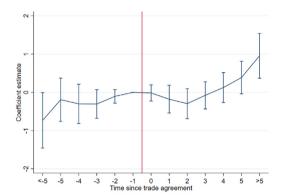
	(1)	(2)	(3)
Regional Trade Agreement	0.877***	0.755***	0.755***
	(0.229)	(0.141)	(0.245)
Observations	3241	3241	3241
R-squared	0.553	0.752	0.752
Country Fixed Effects	No	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Clusters at Country Level	Yes	No	Yes

Notes: (***) statistically significant at one percent; (**) statistically significant at five percent, (*) significant at ten percent. All regressions control for the following time-varying covariates at the country level: GDP growth, log of per capita GDP, Trade percentage of GDP, Inflation rate, Population growth and Bilateral Investment Treaties.

Table 4Free trade agreements and investment confidence (Year of signature).

	(1)	(2)	(3)
Regional Trade Agreement	0.737***	0.674***	0.674**
	(0.233)	(0.130)	(0.267)
Observations	3241	3241	3241
R-squared	0.553	0.752	0.752
Country Fixed Effects	No	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Clusters at Country Level	Yes	No	Yes

Notes: (***) statistically significant at one percent; (**) statistically significant at five percent, (*) significant at ten percent. All regressions control for the following time-varying covariates at the country level: GDP growth, log of per capita GDP, Trade percentage of GDP, Inflation rate, Population growth and Bilateral Investment Treaties.



Notes: Effects of RTAs on investment confidence. The graph shows parameter estimates in years before and after the change in free trade agreement from a regression that controls for country and year fixed effects, time-varying covariates at country level: GDP growth, log of per capita GDP, Trade percentage of GDP, Inflation rate, Population growth, and Bilateral Investment Treaties. Standard errors are clustered at the country level. Year -1 is the reference event and its coefficient is not estimated and thus equal to zero.

Fig. 1. Event study on investment confidence index (Year of enforcement). Notes: Effects of RTAs on investment confidence. The graph shows parameter estimates in years before and after the change in free trade agreement from a regression that controls for country and year fixed effects, time-varying covariates at country level: GDP growth, log of per capita GDP, Trade percentage of GDP, Inflation rate, Population growth, and Bilateral Investment Treaties.. Standard errors are clustered at the country level. Year -1 is the reference event and its coefficient is not estimated and thus equal to zero.

United States on investment confidence is unsurprisingly more attenuated than for the enforcement years.

4. Robustness

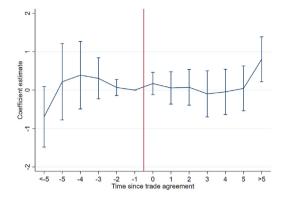
It might be claimed that RTAs may be endogenous in our setting (Baier and Bergstrand, 2007; Lechner, 2010). In order to test for this, we estimate the following specification:

$$y_{ct} = \beta_0 + \sum_{k=-5}^{5} \phi_k T_{c,t+k} + X_{ct} \beta_2 + \gamma_c + \lambda_t + \varepsilon_{ct}$$
(3)

where $T_{c,t+\kappa}$ are the lags ($\kappa \le 0$) and leads ($\kappa > 0$) of RTA in country c. Thus, the coefficients ϕ_k denote the post-impact effects and anticipatory effects, respectively. To test that, conditional on time and country fixed effects and time-varying controls, past T_{ct} predicts y_{ct} whilst future T_{ct} does not, the parameters associated with the leads of impact should be statistically equal to zero.

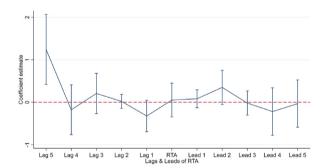
Fig. 3 shows the results for the effects of lags and leads. Estimated leads ϕ 's of the specification (3) are statistically not different from zero indicating that there are not anticipatory effects regarding RTAs with the United States. This further confirms that RTAs impact investment confidence but not vice versa and supports our identification strategy.

Additionally, we employ synthetic control methods (SCM) as a robustness check (Abadie et al., 2010). By using this method, we construct a counterfactual scenario for treated countries and test the causal effect of regional trade agreements on our investment confidence index. This empirical exercise works by assigning an analytical weight to each country that did not engage in RTAs with the United States. These weights are computed in order to minimize the difference in pre-impact outcome between the treated units and the



Notes: Effects of RTAs on investment confidence. The graph shows parameter estimates in years before and after the change in regional trade agreement from a regression that controls for country and year fixed effects, time-varying covariates at country level: GDP growth, log of per capita GDP, Trade percentage of GDP, Inflation rate, Population growth, and Bilateral Investment Treaties. Standard errors are clustered at the country level. Year -1 is the reference event and its coefficient is not estimated and thus equal to zero.

Fig. 2. Event study on investment confidence index (Year of signature). Notes: Effects of RTAs on investment confidence. The graph shows parameter estimates in years before and after the change in regional trade agreement from a regression that controls for country and year fixed effects, time-varying covariates at country level: GDP growth, log of per capita GDP, Trade percentage of GDP, Inflation rate, Population growth, and Bilateral Investment Treaties. Standard errors are clustered at the country level. Year -1 is the reference event and its coefficient is not estimated and thus equal to zero.



Notes: The graph shows estimated leads and lags, running from five years ahead to five years behind, of RTA from a regression that controls for country and year fixed effects, time-varying covariates at country level: GDP growth, log of per capita GDP, Trade percentage of GDP, Inflation rate, Population growth, and Bilateral Investment Treaties. Standard errors are clustered at the country level.

Fig. 3. Effect of leads and lags of RTAs on Investment Confidence Index (Year of enforcement). Notes: The graph shows estimated leads and lags, running from five years ahead to five years behind, of RTA from a regression that controls for country and year fixed effects, time-varying covariates at country level: GDP growth, log of per capita GDP, Trade percentage of GDP, Inflation rate, Population growth, and Bilateral Investment Treaties. Standard errors are clustered at the country level.

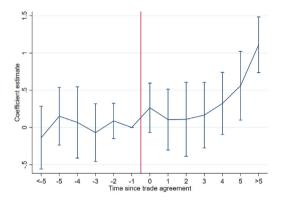
pool of potential comparison countries (e.g., countries that did not sign regional trade agreements). Thus, the synthetic group of countries open to trade is the weighted average of the untreated countries outcome that allows to meet the assumption of parallel trends conditional on observable characteristics prior to policy change. Under the assumption that in absence of regional trade agreements treated countries and its synthetic counterpart follow a similar trend, this approach enables us to test whether RTAs have an impact on the investment confidence index.

Results are shown in Table 5. We find that the investment confidence index increases by approximately 6.8 percent over the sample mean in treated countries compared to the synthetic control group and is statistically significant at conventional levels. The estimates of the impact of RTAs on confidence under the synthetic control method tend to be smaller relative to the sample mean compared with respect to the preferred fixed-effects approach. A possible explanation for these results might be the large reduction in sample size when using synthetic methods. Still, as a robustness method this finding gives further confidence on our main results. In Fig. 4 we observe an analogous pattern as in our main results namely, that there are no differential pre-trends and that it takes a few periods before the causal impact is actually observed.

Table 5
Regional trade agreements and investment confidence synthetic control methods (Year of enforcement).

	(1)	(2)	(3)
Regional Trade Agreement	0.662***	0.511***	0.511***
	(0.143)	(0.107)	(0.131)
Observations	918	918	918
R-squared	0.755	0.804	0.804
Country Fixed Effects	No	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Clusters at Country Level	Yes	No	Yes

Notes: (***) statistically significant at one percent; (**) statistically significant at five percent, (*) significant at ten percent. All regressions control for the following time-varying covariates at the country level: GDP growth, log of per capita GDP, Trade percentage of GDP, Inflation rate, Population growth, and Bilateral Investment Treaties.



Notes: Effects of RTAs on investment confidence. The graph shows parameter estimates in years before and after the change in regional trade agreement from a regression that controls for country and year fixed effects, time-varying covariates at country level: GDP growth, log of per capita GDP, Trade percentage of GDP, Inflation rate, Population growth, and Bilateral Investment Treaties. Standard errors are clustered at the country level. Year -1 is the reference event and its coefficient is not estimated and thus equal to zero.

Fig. 4. Event Study on Investment Confidence Index. Synthetic Control Methods (Year of enforcement). Notes: Effects of RTAs on investment confidence. The graph shows parameter estimates in years before and after the change in regional trade agreement from a regression that controls for country and year fixed effects, time-varying covariates at country level: GDP growth, log of per capita GDP, Trade percentage of GDP, Inflation rate, Population growth, and Bilateral Investment Treaties. Standard errors are clustered at the country level. Year -1 is the reference event and its coefficient is not estimated and thus equal to zero.

Table 6
Balance test.

	Effect of RTAs
GDP growth (annual percent)	-0.081
	(0.379)
Log GDP per capita (US\$, 2010)	0.015
	(0.020)
Trade percentage of GDP	-3.033
	(16.538)
Inflation GDP deflator (annual %)	6.504
	(8.081)
Population growth (annual %)	0.364
	(0.292)
Bilateral Investment Treaties (BITs)	-4.115
	(4.507)

Notes. (***) statistically significant at one percent; (**) statistically significant at five percent, (*) significant at ten percent. All regressions control for year fixed effects and standard errors are clustered by country. The set of time-varying covariates at the country level includes GDP growth, log of per capita GDP, Trade percentage of GDP, Inflation rate, Population growth and School enrollment on secondary levels.

In order to further test the robustness of our findings, we conduct a balance test. We estimate the effect of RTAs with the United States, equation (1), on covariates reported in Table 2. Table 6 shows the results for the balance test. As expected, we find no effect of RTAs on the latter variables. The coefficient estimates are not statistically different from zero at conventional levels, providing further support that our main findings are causal effects.

5. Conclusions

We provide evidence on a causal link between regional trade agreements and investment confidence using both fixed-effects and synthetic control methods. We find that whereas regional trade agreements do have a statistically significant causal impact on investment confidence, this causal impact is not observed immediately after the impact occurs but takes time, as observed when using an event study approach, regardless of the econometric method employed. We attribute this finding to the fact that while regional trade agreements send a clear commitment signal to investors, it takes time to the latter to adjust. While beyond the focus of our research, the adjustment lag may be due to several reasons, including risk aversion, herd behavior, or simply administrative delays. In future research we plan to pursue in-depth study on these and other likely delay-of-transmission mechanisms.

Appendix A

Description of variables

Variable	Definition	Source
GDP growth (annual percent)	Annual percentage growth rate of Gross Domestic Product (GDP) at market prices based on constant local currency.	World Bank
GDP per capita (US\$, 2010)	GDP divided by midyear population. Data are in constant 2010 U.S. dollars.	
Trade percentage of GDP	Sum of exports and imports of goods and services measured as a share of GDP.	
Inflation Rate (annual percent)	Inflation as measured by the annual growth rate of the GDP implicit deflator shows the rate of price change in the economy as a whole. The GDP implicit deflator is the ratio of GDP in current local currency to GDP in constant local currency.	
Population growth (annual percent)	Annual population growth rate for year t is the exponential rate of growth of midyear population from year t-1 to t, expressed as a percentage. Population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship.	
Bilateral Investment Treaties (BITs)	Bilateral investment treaty (BIT) is an agreement between two countries regarding promotion and protection of investments made by investors from respective countries in each other's territory.	United Nations Conference on Trade and Development (UNCTAD).
Confidence Index (0–12)	This is a 12-point-index which comprises an assessment of factors affecting the risk to investment that are not covered by other political, economic and financial risk components. The risk rating assigned is the sum of three subcomponents, each with a maximum score of four points and a minimum score of 0 points. A score of 4 points equates to Very Low Risk and a score of 0 points to Very High Risk. The subcomponents are: • Contract Viability/Expropriation • Profits Repatriation • Payment Delays	The International Country Risk Guide (ICRG)

Appendix B. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.inteco.2020.05.001.

References

Abadie, A., Diamond, A., Hainmueller, J., 2010. Synthetic control methods for comparative case studies: estimating the effect of California's tobacco control program. J. Am. Stat. Assoc. 105 (490), 493–505.

Abman, R., Lundberg, C., 2020. Does free trade increase deforestation? The effects of regional trade agreements. Journal of the Association of Environmental and Resource Economists 7 (1), 35–72.

Anderson, J.E., Larch, M., Yotov, Y.V., 2019. Trade and investment in the global economy: a multi-country dynamic analysis. European Economic Review, p. 120. Arkolakis, C., Ramondo, N., Rodríguez-Clare, A., 2018. Innovation and production in the global economy. Am. Econ. Rev. 108 (8), 2128–2173.

Baier, S., Bergstrand, J., 2007. Do free trade agreements actually increase members' international trade? J. Int. Econ. 71, 72–95. Blanchard, E.J., 2007. Adv. Econ. Anal. Pol. 7 (1) https://doi.org/10.2202/1935-1682.1800, 1935-1682.

Braconier, H., Norbäck, P.-J., Urban, D., 2005. Multinational enterprises and wage costs: vertical FDI revisited. J. Int. Econ. 67 (2), 446–470. https://doi.org/10.1016/j.jinteco.2004.08.011.

Büthe, T., Milner, H.V., 2008. The politics of foreign direct investment into developing countries: increasing FDI through international trade agreements? Am. J. Polit. Sci. 52 (4), 741–762.

Chornyi, V., Nerushay, M., Crawford, J., 2016. A Survey of Investment Provisions in Regional Trade Agreements. Working Paper. World Trade Organization. Dunning, J., 1993. Multinational Enterprises and the Global Economy. Addison Wesley.

Greenaway, D., Sapsford, D., Pfaffenzeller, S., 2007. Foreign direct investment, economic performance and trade liberalisation. World Econ. 30 (2), 197–210. https://doi.org/10.1111/j.1467-9701.2007.00887.

Jaumotte, F., 2004. Foreign direct investment and regional trade agreements; the market size effect revisited. IMF Working Papers 04/206. International Monetary Fund

Lechner, M., 2010. The estimation of causal effects by difference-in-difference methods. Foundations and Trends in Econometrics 4 (3), 165-224.

Levy-Yeyati, E., Stein, E., Daude, C., 2003. Regional Integration and the Location of FDI. IDB Working. Paper No. 414.

Markusen, J.R., Maskus, K.E., 2003. Discriminating among alternative theories of the multinational enterprise. Rev. Int. Econ. 10 (4), 694–707. https://doi.org/10.1111/1467-9396.00359.

Medvedey, D., 2012. Beyond trade: the impact of preferential trade agreements on FDI inflows. World Dev. 40 (1), 49-61.

Ramondo, N., 2014. A quantitative approach to multinational production. J. Int. Econ. 93 (1), 108–122.

Ramondo, N., Rodríguez-Clare, A., 2013. Trade, multinational production, and the gains from openness. J. Polit. Econ. 121 (2), 273-322.

Reed, R., Lira, C., Lee, B.-K., Lee, J., 2016. Free trade agreements and foreign direct investment: the role of endogeneity and dynamics. South. Econ. J. https://doi.org/10.1002/soej.12136.

Stevens, C., Irfan, M., Massa, I., Kennan, J., 2015. The Impact of Free Trade Agreements between Developed and Developing Countries on Economic Development in Developing Countries: A Rapid Evidence Assessment. Overseas Development Institute, London.