

Article history: Received 17 June 2019; accepted 5 September 2019
DOI: <https://doi.org/10.33182/rr.v4i2.812>

Remittances Inflows and Trade Policy

Sèna Kimm
Gnangnon[±]

Abstract

This article explores the trade policy effect of remittances inflows, notably through three main channels, including trade imbalances, financial development and economic growth. The analysis uses a sample of 135 countries over the period 1996-2016. The findings suggest that remittances inflows induce trade policy liberalization, and the magnitude of this positive effect on trade policy liberalization is higher for less advanced countries, including poor countries than for relatively advanced countries. Furthermore, results suggest that the effect of remittances inflows on trade policy depends on countries' levels of trade imbalances, their financial development depth and their economic growth rate.

Keywords: remittances inflows; trade policy; economic growth; trade imbalance; financial development.

JEL Classification: F13, F24, O24

Introduction

A huge volume of studies has been devoted to the economic effects (including macroeconomic effects) of remittances inflows, in light of the importance of these inflows for recipient- economies (e.g., Rapoport and Docquier, 2006; European Union, 2014). For example, studies have been carried out on the effect of remittances inflows on poverty (e.g., Gupta et al. 2009); economic growth (e.g., Barajas et al. 2009; Catrinescu, et al. 2009; Chami et al. 2005; Freund and Spatafora (2008; Giuliano and Ruiz-Arranz, 2009; Mundaca, 2009; Pradhana et al. 2008; Rao and Hassan, 2011; Rao and Hassan, 2012; Senbeta, 2013; World Bank, 2006; Ziesemer, 2012); inflation and consumption (e.g., Narayan et al. 2011; Vacaflores, 2012); exchange rate and external competitiveness (e.g., Acosta et al. 2009; Amuedo-Dorantes and Pozo, 2004; Cáceres and Saca, 2006; Muktadir-Al-Mukit and Sajib, 2013; Raheem et al. 2014; Tuanò-Amador, 2007; Vargas-

[±] Sèna Kimm Gnangnon, World Trade Organization, Rue de Lausanne 154, CH-1211, Geneva, Switzerland. E-mail: SenaKimm.Gnangnon@wto.org; kgnangnon@yahoo.fr.

Acknowledgments: This article represents the personal opinions of individual staff members of the WTO and is not meant to represent the position or opinions of the WTO or its Members, nor the official position of any staff members. The author would like to thank the anonymous Reviewers for their comments on an earlier version of this paper that significantly help improve the quality of the paper. Any errors or omissions are the fault of the author.



Silva, 2009; Wahba, 1998); financial development (e.g., Aggarwal et al. 2011; Demirgüç-Kunt et al. 2011; Giuliano and Ruiz-Arranz 2009; Gupta et al. 2009); and labor supply (e.g., Acosta et al. 2009; Chami et al. 2005; El Hamma, 2017; Funkhouser, 1992; Hanson, 2007). However, to the best of our knowledge, little attention has been paid to the effect of remittances inflows on trade policy in recipient economies. The current article aims to fill this gap in the literature by examining the effect of remittances inflows on the trade policy implemented by the recipient-countries of these capital inflows. In particular, it assesses the effect of remittances inflows on trade policy through three channels, namely the trade balance channel, the financial development channel and the economic growth channel.

The empirical analysis has been performed using a sample of 135 countries over the period 1996-2016, and the two-step system Generalized Methods of Moments (GMM) estimator. Results show that on average, over the full sample, remittances inflows are associated with greater trade policy liberalization, with the magnitude of this positive effect diminishing as countries experience higher development levels. Furthermore, the findings indicate that the three aforementioned channels matter for the effect of remittances inflows on trade policy in recipient economies.

Section 2 discusses how remittances inflows could influence trade policy through the three channels, including the trade balance, the financial development and the economic growth. Section 3 presents the model specification that helps perform the empirical analysis, and discusses the econometry approach that helps carry out the empirical analysis. Section 4 interprets the empirical outcomes, and Section 5 concludes.

Discussion on the channels through which remittances inflows could affect trade policy

As noted above, remittances inflows could affect several economic and social outcomes. In this study, we examine the effect of remittances inflows (henceforth referred to as 'remittances') on trade policy through three major channels, including trade balance, financial development and economic growth rates. We examine below how these capital inflows could affect trade policy through each of these avenues.

Effect of remittances on trade policy through the trade balance channel

We first discuss here the effect of trade imbalances on trade policies, and then examine how remittances could influence trade policies through their effect on trade balances.



The literature has shown that trade imbalances are driven in the medium to the long run by a mixture of cyclical and structural factors that a set of policies (expenditure changing policies or expenditure-switching policies) including trade policies could influence directly or indirectly through their effect on the public and private saving and investment (Guillemette and Turner, 2013; Kerdrain et al. 2010; Kowalski and Leshner, 2011, Barratieri, 2014; Joy et al., 2018; Yongding, 2012). However, the use of restrictive trade policy measures (as part of expenditure-switching policies) in response to trade imbalances is likely to be welfare-reducing (for a discussion on this matter, see Flaig et al. 2018). For example, Deardorff (2010) has suggested not using subsidy policies to address trade imbalances because implicit or explicit subsidization could lead to the accumulation of trade surpluses and deficits that goes against a country's natural comparative advantage, and would, therefore, be welfare-reducing. Drabek and Laird (2001, p. 5) have argued that the use of restrictive policies to address trade imbalances will not generate a sustainable current account balance if the economy is not competitive.

Flaig et al. (2018) have examined the role of trade policies in addressing global trade imbalances and concluded that while trade liberalization would generate significant economic benefits for all countries, the use of restrictive trade measures would induce disproportionately high economic costs for all countries. Very rare studies (e.g., Gnangnon, 2018a) have explored the effect of trade imbalances (measured as the difference between import and export volumes or values) on trade policy, as the existing works have usually looked at the effect of the current account on trade policy. Gnangnon (2018a) has reported a positive effect of trade surplus on trade policies. Ancharaz (2003) has obtained a positive effect of the current account on the probability of undertaking trade reforms, and Borgatti (2007) has obtained that current account deficits are conducive to a fast trade policy liberalization, whereas improvements in the current account balance induce gradual trade policy liberalization.

In light of these, we expect in the current analysis that countries that experience an improvement of trade balance could be incentivized to further liberalize their trade regimes so as to increase the benefits associated with international trade, i.e., to enhance the positive effect of trade policy liberalization on trade balance. In this case trade balance improvements would be associated with greater trade policy liberalization. Likewise, countries with higher trade deficits could also be willing to open up their economies to international trade through the adoption of trade policy liberalization measures: in this

scenario, higher trade deficits would be positively associated with trade policy liberalization. In the meantime, as countries with improved trade accounts accumulate international reserves, they may be tempted to adopt restricted trade policies so as to collect higher international trade tax revenue.¹ In this context, an improvement in trade balance would lead to a lower degree of trade policy liberalization, i.e., restricted trade policies.

Remittances inflows could influence trade balance through a direct effect on demand for imported goods and services as well as through the real exchange rate channel. As for the first channel, Cáceres and Saca (2006) and Raheem et al. (2014) have reported a positive effect of remittances inflows on imports respectively by Pakistan and El Salvador. However, Muktadir-Al-Mukit and Sajib (2013) have obtained that remittances do not exert a significant effect on the demand for imported goods in Bangladesh. Using a sample of 11 Central and Eastern European countries, Iliescu (2019) has reported the lack of long-run common trends (no cointegration) between imports and remittances. This study, therefore, concludes that remittances could not be used by policymakers as a lever for eventually addressing current account deficits caused by higher imports. Concerning the real exchange rate channel, remittances could induce an appreciation of the real exchange rate, move resources from the tradable to the non-tradable sector (e.g., Acosta et al., 2009), and hurt the recipient country's export competitiveness (i.e., by reducing its export flows). At the same time, the appreciation of the real effective exchange rate would translate into higher imports, which would deteriorate the recipient country's trade balance. As for the effect of remittances inflows on the exchange rate of recipient-countries, a large number of studies (Acosta et al. 2009; Amuedo-Dorantes and Pozo, 2004; Bayangos and Jansen, 2011; Bourdet and Falck, 2006; Chowdhury and Rabbi, 2014; Hassan and Holmes, 2013; Lartey et al. 2008; 2012; Loser et al. 2006; Tuanò-Amador, 2007; Vargas-Silva, 2009; Wahba, 1998) have found that remittances inflows induce an appreciation of the real exchange rate (and could hence hurt the competitiveness of recipient economies).

Nonetheless, Bayangos and Jansen (2011) have underlined that the effect of remittances on recipient-economies' competitiveness does not translate solely through the real exchange rate channel, but may also go through the labour market channel. They have argued that the emigration (that precedes the transfer of money to the home country) reduces the labour force available in the migrants' home

¹ In many developing countries, international trade tax revenue still represents a non-negligible share of total tax revenue.



countries. This is compounded by the eventual effect of remittances inflows on recipients' incentives to reduce labour supply in favour of leisure (Gubert, 2002; Amuedo-Dorantes and Pozo, 2006; Bourdet and Falck, 2006). These two effects on labour supply would induce higher wages in the recipient economies, and undermine the export competitiveness of these economies (eventually resulting in higher trade deficits), although a rise in labour productivity might mitigate this adverse effect. In their simulations, Bayangos and Jansen (2011) have obtained for the case of Philippines that remittances inflows have contributed to the rise of the unit labour costs. They have, therefore, concluded that when assessing the effect of remittances on export performance, one should account not only for the Dutch disease channel, but also for the labour market channel.

In light of the foregoing, we will be tempted to conclude that remittances inflows are likely to hurt the export competitiveness of the recipient economies, including through the real exchange rate appreciation and eventually generate higher unit labour costs. As such appreciation of the exchange rate would also generate higher import flows, the recipient-countries' trade balance would deteriorate. However, as it is not clear whether remittances inflows (eventually through higher consumption) would lead to higher imports, it would be difficult to anticipate the theoretical effect of remittances inflows on imports by the recipient-countries. Overall, it would be hard at this stage of the analysis to anticipate the net effect of remittances inflows on trade balance. Given that the effect of trade balance on trade policy is also uncertain, the effect of remittances inflows on trade policy through the trade channel is a priori unknown, and remains an empirical matter.

Effect of remittances on trade policy through the financial development channel

Studies on the effect of remittances on financial development have not come up with a clear-cut conclusion. On the one hand, remittances could promote financial development if they led recipients of the money (including those that are unbanked or with limited financial intermediation) to increase their interaction with commercial banks as they would be looking for a safe storage of these funds, other bank products or services (Aggarwal et al., 2011). The effect could be particularly strong for recipients that collect their funds through the banking system. In addition, such interactions between recipients and the financial sector could lead banks to relax credits constraints on recipients following the 'induced financial literacy' hypothesis, which would help enhance the financial sector development.

On the other hand, by contributing to relaxing recipients' financing constraints, remittances may reduce the demand for credit (Giuliano and Ruiz-Arranz 2009), which would have an adverse effect on the credit market development (Aggarwal et al., 2011), and foster nonbank transactions (e.g., Bhattacharya et al. 2018). From an empirical perspective, Gupta et al. (2009)², Aggarwal et al. (2011) and Demirgüç-Kunt et al. (2011) have provided evidence that remittances inflows enhance financial development. Bhattacharya et al. (2018) have analysed the effect of remittances inflows on financial development in the 57 highest remittance recipient economies. They have found that while remittances foster financial development, the positive effect is higher for developed countries than for developing ones. In contrast with these studies, Brown et al. (2013) have found a negative effect of remittances on financial development, whereas Kumar (2013) has uncovered no significant effect of remittances on financial development. Fromentin and Leon (2019) have looked at the effect of remittances inflows on credit in both developed and developing countries. They have found that while remittances inflows drive credit in the long-run, they exert in the short-run no significant influence on credit. Furthermore, in developing countries, remittances inflows encourage the supply of more household credit than firm credit, whereas, in developed countries, remittances encourage the supply of credit through firm credit.

On the other side, the literature on the effect of financial development on trade openness tends to conclude that financial development promotes trade openness, that is, both *de jure* trade policy liberalization - which reflects trade policy measures implemented by governments - and the *de facto* trade openness considered as an outcome of both trade policy and other economic policies and factors. In fact, from a theoretical perspective, Kletzer and Bardhan (1987) have shown that industries in countries with well-functioning financial institutions (i.e., where few restrictions exist in the credit market) tend to specialize in the production of goods and services that use intensively external finance. Along the same lines, Beck (2002) has argued that as financial development shifts producers' incentives towards the good with increasing returns to scale, countries that experience a rise in the depth of financial development would be net exporters of the good with increasing returns to scale. Rajan and Zingales (1998) have argued that as firms' borrowing costs are low in financially developed countries, industries in these countries would specialize in financially intensive goods and

² Specifically, Gupta et al. (2009) have obtained a bi-directional causality between remittances and financial development.



services, which increase their export share and trade balances. According to Chaney (2005) and Manova (2005), financial development facilitates firms' access to cheaper external finance, which helps them to overcome international trade barriers and to promote international trade. Svaleryd and Vlachos (2002) have argued that a developed financial system helps diversify the private sector's risks, and hence promote trade openness. They have provided empirical support for the positive effect of financial development on trade openness, while Kim et al. (2010) have obtained that financial development exerts a positive effect in countries that are not members of the OECD (Organization for Economic Cooperation and Development).

From this brief literature review, we could not derive a conclusion as to whether remittances inflows are always complementary or substitutable with financial development in recipient economies. Even though financial development could induce greater trade policy liberalization, the direction of the effect of remittances on trade policy through the financial development channel is still uncertain and therefore is an empirical issue.

Effect of remittances on trade policy through the economic growth channel

There is no consensus on the direction concerning the direct effect of remittances on economic growth. Studies such as Barajas et al. (2009); Chami et al. (2005) and Rao and Hassan (2011) have reported a negative or no significant effect of remittances on economic growth. Rao and Hassan (2012) and Senbeta (2013) have shown that even though there is no significant direct effect of remittances on economic growth, there might exist an indirect effect through various channels, including investment, human capital formation, financial development, output volatility, total factor productivity (TFP) and the real exchange rate. The adverse effect of remittances inflows on economic growth could translate through their effects on the appreciation of the real exchange rate (e.g., Acosta et al., 2009). Likewise, as migrants' transfers could reduce labour supply (e.g., Chami³ et al. 2005; El Hamma, 2017), these capital inflows can cancel out any positive effect of consumption on economic growth, and ultimately result in lower economic growth. However, if migrants' transfers were invested in education, health care, or in business activities, they could promote growth (see Sobiech, 2019). A number

³Chami et al. (2005) have postulated that if the consumption motive of remittances dominates over the investment motive, then labor supply would decline due to moral hazard problems (Gubert, 2002; Amuedo-Dorantes and Pozo, 2006; Bourdet and Falck, 2006) between the money sender and receiver.

of studies (Catrinescu, et al. 2009; Freund and Spatafora (2008; Giuliano and Ruiz-Arranz, 2009; Mundaca, 2009; Pradhana et al. 2008; World Bank, 2006; Ziesemer, 2012) have reported a positive effect of remittances on economic growth. Taking, for example, the case of the financial development channel, Giuliano and Ruiz-Arranz (2009) have demonstrated empirically that in financially developed countries, remittances are not necessary used in a productive way, which could adversely affect economic growth. However, in countries that have a poorly developed financial sector, remittances help alleviate credit constraints, and contribute to the allocation of capital towards productive activities, which in turn enhance economic growth. Barajas et al. (2009)'s empirical results have gone along the lines of those obtained by Giuliano and Ruiz-Arranz (2009). However, Bettin and Zazzaro (2012) have shown that remittances that promote financial development might hurt economic growth if they are used to increase bank deposits and available credits, and if in the meantime, loans are not provided in an efficient way. Recently, Sobiech (2019) has provided empirical evidence that while remittances can foster economic growth, this positive impact tends to be lower for financially developed countries compared to less financially developed countries. This corroborates the findings of previous studies that remittances and financial development are substitutes. Nyamongo et al. (2012) have rather shown that remittances are complementary to financial development in promoting economic growth in African countries. The complementarity between remittances and financial development arises from the fact that rises in remittances facilitate contacts between a large share of the population and the financial sector, which in turn increases the availability of savings products and credit (e.g., Aggarwal et al. 2011).

It is not clear from this brief literature review that remittances would promote economic growth. As a result, we could not anticipate the direction of the effect of remittances on trade policy through the economic growth channel. As a matter of fact, countries that receive higher remittances inflows and enjoy a higher economic growth could experience an increase in their imports (final goods and services as well as capital goods) thanks to the rise in the demand for consumption and investments so as to eventually promote exports. This could lead governments that aim to promote the country's integration into the global trade market to further liberalize their trade regimes. Likewise, in this context, governments whose primary objective is to collect higher trade tax revenue could adopt restrict



trade policies⁴, although the latter would negatively affect domestic tax revenue. Thus, higher economic growth rates could lead to greater trade policy liberalization or induce the adoption of restrictive trade policies. Borgatti (2007) has found that trade liberalization takes place when countries experience lower economic growth rates, while Gnangnon (2018a) has uncovered a positive effect of economic growth on trade policy liberalization. Based on all this discussion, the extent to which remittances inflows would affect trade policy through the economic growth channel (including in terms of direction and statistical significance of the effect) remains unclear, and thus an empirical matter.

Model specification and empirical methodology

We investigate empirically the effect of remittances (including through the three channels mentioned above) by relying on previous studies on the determinants of trade policy (e.g., Easterly and Rebelo, 1993; Jansen and Nordås, 2004; Milner and Kutoba, 2005; Wu et al. 2012; and Fukumoto and Kinugasa, 2016; Gnangnon, 2018a, 2018b). As many variables have been found in the empirical literature as determinants of trade policies, we focus on variables that could affect the influence of remittances inflows on trade policy. Thus, in addition to variables capturing the trade balance (% GDP) (or its components, namely exports of goods and services (% GDP) and imports of goods and services (% GDP)), the depth of financial development and the economic growth rate, these controls include the real per capita income (which is a proxy for the development level), and the institutional and governance quality. We expect a rise in countries' economic development level to be positively associated with trade policy liberalization (e.g., Rodrik, 1995). Better institutional and governance quality is also expected to positively influence trade policy liberalization (e.g., Jansen and Nordås, 2004; Wu et al. 2012; Gnangnon, 2018a; 2018b).

Against this background, we postulate the following baseline dynamic model:

$$TP_{it} = \alpha_0 + \alpha_1 TP_{it-1} + \alpha_2 REMIT_{it} + \alpha_3 TBGDP_{it} + \alpha_4 Log(GDPC)_{it} + \alpha_5 FINDEV_{it} + \alpha_6 GROWTH_{it} + \alpha_7 INST_{it} + \mu_i + \gamma_t + \omega_{it} \quad (1)$$

where the subscript *i* refers to a given country; *t* represents the time-period. The panel dataset is unbalanced and comprises 135 countries over the annual period 1996-2016. This panel dataset has been chosen on the basis of data availability. In particular, the analysis

⁴ However, restrictive trade measures could undermine exporting firms' competitiveness in the international trade market, and increase import prices for consumers.

focuses on all countries for which data is available, except countries qualified as "old industrialized countries"⁵. Following the practice in the literature, data on variables have been averaged over non-overlapping sub-periods of 3-year averages to reduce the effect of business cycles. These sub-periods include 1996-1998; 1999-2001; 2002-2004; 2005-2007; 2008-2010; 2011-2013; and 2014-2016.

The dependent variable "TP" is the measure of trade policy. Following Gngangnon (2018a, 2018b), we have used as the measure of trade policy, the index of "freedom to trade internationally" developed by Heritage Foundation⁶ (see Miller et al., 2019). This indicator is an important component of the Economic Freedom Index (EFW) computed by the Heritage Foundation. It has also been used in other empirical analyses (e.g., Batuo and Asongu, 2015; Bergh and Nilsson, 2010; Gngangnon, 2018c; Rose, 2013). The "freedom to trade internationally" index is a trade-weighted average tariff rate and non-tariff barriers, the latter being determined on the basis of quantitative and qualitative available information. Non-tariff barriers include quantity restrictions, price restrictions, regulatory restrictions, investment restrictions, customs restrictions, and direct government interventions (see Miller et al. 2019). Values of this index range between 0 and 100, with a rise in these values indicating greater trade policy liberalization, and lower values representing restrictive trade policies.

"REMIT" is our key variable of interest, and represents the remittances inflows (% GDP). All other variables have been described in Appendix 1. The descriptive statistics related to these variables are presented in Appendix 2, and the list of the 135 countries used in the analysis is provided in Appendix 3.

α_0 to α_7 are parameters to be estimated. μ_i stand for countries' fixed effects; γ_t represent global shocks that affect all countries' trade policies together. ω_{it} is an error-term.

Model (1) is dynamic, i.e., it contains the one-period lag variable, which could be correlated with the error term and hence generates the Nickell bias – see Nickell (1981). It also contains several potentially endogenous variables due *inter alia* to the bi-directional causality between these variables and the dependent variable. These possible endogenous variables include the remittances (% GDP), the depth of financial development, the institutional quality, and the trade

⁵ These countries include Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States.

⁶ Data on this Index could be found on <https://www.heritage.org/index/explore>



balance (% GDP) or its components, namely exports (% GDP), and imports (% GDP). For example, while remittances inflows are expected to influence trade policy among others through the channels discussed above, one could also expect trade policies to influence the amount of money transferred by migrants. This is the case if migrants send money to their home countries with a view to investing in activities oriented towards international trade. The same reasoning applies to other potentially endogenous variables: for example, trade policies could influence the development of institutions and improvement of governance (e.g., Ades and Di Tella, 1999; Bhattacharyya, 2012; Treisman, 2000).

Similarly, trade policies could affect trade imbalances (e.g., Ju et al. 2010; Santos-Paulino, 2004); economic growth (e.g., Falvey et al. 2012; Huchet-Bourdon et al. 2018; Kneller et al. 2008; Olugbenga and Owoye, 1998) and financial development (e.g., Kim et al. 2010; Svaleryd and Vlachos, 2002). To tackle these endogeneity concerns, we use as our main estimator the two-step system Generalized Methods of Moments (GMM) approach (see Arellano and Bover 1995; Blundell and Bond, 1998). Compared to other GMM approaches (difference-GMM and one-step system GMM), the two-step system GMM estimator is suitable for dynamic panels (in particular unbalanced panels) where series exhibit a strong persistent over time. The use of the two-step system GMM approach entails the estimation of a system of equations containing an equation in differences and an equation in levels, where lagged first differences are used as instruments for the level's equation, and lagged levels are used as instruments for the first-difference equation. The appropriateness of this estimator is evaluated using the standard Sargan test of over-identifying restrictions, which determines the validity of the instruments used in the estimations, as well as the Arellano–Bond (AB) test of first-order serial correlation in the error term (denoted AR(1)) and the AB test of no second-order autocorrelation in the residuals (denoted AR(2)).

Even though the two-step system GMM is our primary estimator in the analysis, we nevertheless present the outcome of the estimation of the static specification of model (1) (i.e., model (1) without the one-period lag of the dependent variable as a regressor) using one standard econometric technique, namely the within fixed effects estimator (denoted "FEDK"). Standard errors of estimates arising from the use of the FEDK estimator have been corrected for serial correlation, heteroscedasticity, and cross-sectional dependence by means of the Driscoll and Kraay (1998) technique. The outcome of the

estimation of this static specification of model (1) is presented in column [1] of Table 1.

Table 1: Impact of remittances on trade policy for varying countries' development levels

Estimator: FE-DK and Two-step System GMM

VARIABLES	FE-DK		Two-step System GMM		
	TP (1)	TP (2)	TP (3)	TP (4)	TP (5)
TP _{t-1}		0.582*** (0.0357)	0.586*** (0.0304)	0.586*** (0.0337)	0.593*** (0.0319)
REMIT	-0.0558 (0.0750)	0.336*** (0.0666)	0.218*** (0.0699)	0.348*** (0.0834)	0.946*** (0.243)
DUM15*REMIT			0.341** (0.145)		
DUM15			-8.689*** (2.769)		
DUM20*REMIT				0.389** (0.174)	
DUM20				-12.40*** (3.733)	
[Log(GDPC)]*REMIT					- 0.0956*** (0.0327)
Log(GDPC)	26.04*** (1.098)	0.815 (0.643)	1.164** (0.522)	1.537*** (0.591)	1.010* (0.583)
TBGDP	-0.118* (0.0645)	0.0681** (0.0323)	0.0135 (0.0266)	0.0145 (0.0283)	0.0519** (0.0264)
FINDEV	0.0733*** (0.0117)	-0.0155 (0.0116)	-0.00615 (0.00865)	-0.00817 (0.00856)	-0.0263** (0.0116)
GROWTH	-0.0180 (0.0667)	0.112 (0.112)	0.142 (0.101)	0.199* (0.109)	0.00550 (0.0934)
INST	-2.425*** (0.489)	2.061*** (0.505)	1.595*** (0.427)	1.680*** (0.447)	1.895*** (0.414)
Constant	-145.3*** (9.222)	22.15*** (5.528)	18.47*** (4.713)	15.67*** (4.873)	24.68*** (5.981)
Observations/Countries	792/135	683/135	683/135	683/135	683/135
Within R ²	0.3912				
Number of Instruments		71	82	82	81
AR1 (P-Value)		0.0000	0.0000	0.0000	0.0000
AR2 (P-Value)		0.2457	0.2041	0.2451	0.2515
AR3 (P-Value)		0.0369	0.0214	0.0228	0.0439
Sargan (P-Value)		0.5079	0.5107	0.6938	0.6024

Note: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust Standard Errors are in parenthesis. In the two-step system GMM estimations, the variables "REMIT, TBGDP, GROWTH, FINDEV and INST" and the interaction variables have been considered as endogenous. The other variables have been considered as exogenous. The variable "DUM15" is a dummy variable taking the value 1 for remittances (% GDP) higher than 15%, and 0 otherwise. The variable "DUM20" is a dummy variable taking the value 1 for remittances (% GDP) higher than 20%, and 0 otherwise. Time dummies have been included in the regressions. The latter have used 2 lags of the dependent variables as instruments and 2 lags of the endogenous variables as instruments.



Table 2: Channels through which remittances influence trade policy**Estimator:** Two-step System GMM

VARIABLES	TP (1)	TP (2)	TP (3)	TP (4)
TP _{t-1}	0.552*** (0.0359)	0.574*** (0.0249)	0.587*** (0.0296)	0.600*** (0.0355)
REMIT	0.404*** (0.0764)	0.623*** (0.0624)	0.456*** (0.0704)	0.442*** (0.0534)
TBGDP*REMIT	0.00297** (0.00134)			
EXPGDP*REMIT		-0.00495*** (0.00122)		
IMPGDP*REMIT		-0.00419*** (0.000853)		
FINDEV*REMIT			-0.00584*** (0.00153)	
GROWTH*REMIT				-0.0405*** (0.0105)
Log(GDPC)	1.679*** (0.503)	1.715*** (0.361)	2.062*** (0.516)	1.478*** (0.455)
TBGDP	0.0141 (0.0252)		-0.0141 (0.0236)	0.0424* (0.0226)
EXPGDP		0.00705 (0.0184)		
IMPGDP		0.0488*** (0.0179)		
FINDEV	-0.00561 (0.00834)	-0.0273*** (0.0100)	0.00497 (0.00943)	-0.00753 (0.00812)
GROWTH	0.209** (0.0827)	0.132** (0.0569)	0.236*** (0.0905)	0.416*** (0.126)
INST	1.415*** (0.372)	1.160*** (0.286)	1.270*** (0.376)	1.771*** (0.316)
Constant	16.17*** (3.811)	12.47*** (2.432)	10.66*** (3.661)	15.04*** (3.430)
Observations/Countries	683-135	683-135	683-135	683-135
Number of Instruments	81	101	81	81
AR1 (P-Value)	0.0000	0.0000	0.0000	0.0000
AR2 (P-Value)	0.2120	0.2307	0.2334	0.1822
Sargan (P-Value)	0.6065	0.4558	0.5216	0.5051

Note: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust Standard Errors are in parenthesis. In the two-step system GMM estimations, the variables "REMIT, TBGDP, GROWTH, FINDEV, INST," and the interaction variables have been considered as endogenous. The other variables have been considered as exogenous. Time dummies have been included in the regressions. The latter have used 2 lags of the dependent variables as instruments and 2 lags of the endogenous variables as instruments.

The estimation of the dynamic model (1) by means of the two-step system GMM approach allows obtaining (*inter alia*) the direct effect of remittances inflows on trade policy over the full sample, that does not translate through the three channels mentioned above. The results of this estimation are reported in column [2] of Table 1. We

further assess whether the degree of countries' dependence on remittances matters for trade policy. To do so, we examine how remittances inflows affect trade policy in countries with remittances (% GDP) higher respectively than 15% and 20%. Therefore, we create two dummy variables, denoted "DUM15" and "DUM20", which take the value 1 if the share of remittances inflows (% GDP) is respectively higher than 15% and 20%; and the value 0, otherwise. Each of these two dummies is interacted with the variable "REMIT" and both the dummy and the related interaction variable are introduced once in model (1). The results of these model specifications are reported in columns [3] and [4] of Table 1. We additionally consider the extent to which the effect of remittances inflows on trade policy varies across countries in the full sample. This analysis is performed by estimating a specification of model (1) that includes the interaction between the variable capturing the remittance inflows and the real per capita income variable. The results of the estimation of this model specification are presented in column [5] of Table 1.

Table 2 displays the outcome of the estimation of specifications of model (1) that allow examining how remittances inflows influence trade policy in recipient economies through the three channels discussed in Section 2, namely trade balance (or its components, i.e. exports and imports), financial development and economic growth. To perform this analysis, we interact the variable "REMIT", with each of the variables capturing these channels, including "TBGDP", "FINDEV" and "GROWTH". Note that each interaction variable is included once in the model. The outcomes of the estimations of these different specifications of model (1) are displayed in Table 2.

Interpretation of results

The estimations' results based on the FEDK approach (see column [1] of Table 1) show that remittances inflows do not affect significantly (at least at the 10% level) trade policy over the full sample. However, the higher the development level, the greater the degree of trade policy liberalization (the coefficient of the real per capita income variable is positive and significant at the 1% level). Similarly, financial development exerts a positive and significant effect on trade policy liberalization. Trade surpluses induce the adoption of restrictive trade policies, but the coefficient of the variable "TBGDP" is statistically significant only at the 10% level. Economic growth does not exert a significant effect at the 10% level on trade policy, while surprisingly, the institutional and governance quality induces the adoption of restrictive trade policies. As noted above, these results are likely biased because of the endogeneity concerns mentioned above. The results of the tests related to the validity of the two-step system GMM



approach are displayed at the bottom of columns [2] to [5] of Table 1 as well as of all columns of Table 2. All results meet our expectations, as the p-value of the statistics associated with the AR(1) and AR(2) tests are respectively 0 (i.e. lower than 10%) and higher than 10%. Furthermore, the p-values of the statistics associated with the Sargan test are higher than 0.10. Overall, we conclude that the two-step system GMM estimator is suitable for the estimation of model (1) specification and all its variants described above. This leads us to now interpret safely the estimates reported in columns [2] to [5] of Table 1 and in Table 2.

Starting with results in column [2] of Table 1, we find that remittances exert a positive and significant effect (at the 1% level) on trade policy, i.e., they contribute to trade policy liberalization. A 1 percentage point increase in remittances share of GDP is associated with a 0.34-point increase in the index of trade policy. Estimates related to control variables in this column indicate that trade policy liberalization is significantly driven by improved trade balance and better institutional and governance quality. The other control variables, including the real per capita income, financial development, and economic growth are not statistically significant at the conventional levels. With few exceptions, the same findings of control variables are obtained in columns [3] to [5]. Taking up results in columns [3] and [4] of Table 1, we observe a positive and significant effect (at the 1% level) of remittances inflows on trade policy liberalization, while at the same the interaction terms respectively of the variable ["DUM15*REMIT"] and ["DUM20*REMIT"] are also positive and statistically significant at the 5% level. These signify that the effect of remittances inflows on trade policy is higher in cases where the share of remittances (% GDP) exceed 15% and 20% than in cases where these shares are respectively lower than 15% and 20%. In terms of magnitude, the net effects of remittances inflows on trade policy in cases where the share of remittances (% GDP) exceed 15% and 20% are given respectively by 0.56 [= 0.218+0.341] and 0.74 [= 0.348+0.389].

These figures, therefore, indicate that in countries where remittances share exceed 15% and 20%, not only do remittances inflows induce greater trade policy liberalization, but the magnitude of the positive trade liberalization effect of remittances is higher for the situation where the remittances share is higher than 20% compared to the case where the remittances share is higher than 15%. A 1 percentage point increase in remittances share of GDP (when the remittances share exceeds the 15% threshold) is associated with a 0.56-point increase in the index of trade policy, and a 1 percentage point increase in remittances share of GDP (when the remittances share exceeds the

20% threshold) is associated with a 0.74-point increase in the index of trade policy. Results in column [5] show a positive and statistically significant effect (at the 1% level) of the remittances variable, but a negative and statistically significant effect (at the 1% level) of the interaction variable ["[Log(GDPC)]*REMIT"]. Note that values of the real per capita income range from \$US 217 to \$US 70655.8. Combined together, these two results suggest that remittances inflows exert a positive effect on trade policy (i.e., they induce greater trade policy liberalization) up to a certain development level, above which these inflows influence negatively trade policy, i.e., they induce restrictive trade policy measures.

This level of development (real per capita income) amounts to US\$ 19838.85 [= exponential (0.946/0.0956)]. As a result, in countries whose real per capita income is lower than US\$ 19838.9, remittances inflows are associated with greater trade policy liberalization, and for these countries, the lower the development level, the higher is the magnitude of the positive effect of remittances inflows on trade policy liberalization. In other words, less developed countries, including poorest countries tend to experience a higher positive effect of remittances inflows on trade policy liberalization than relatively advanced countries. In contrast, for countries that experience a real per capita income higher than US\$ 19838.85, remittances inflows are associated with the adoption of restrictive trade policies.

Let us now consider the estimates presented in Table 2. Column [1] of this Table suggest positive coefficients of both the variable capturing the size of remittances inflows and the interaction variable ["TBGDP*REMIT"] at least at the 5% level. These two results suggest that remittances inflows induce greater trade policy liberalization as countries improve their trade balance, and the better the trade balance improvement, the greater is the magnitude of the positive effect of remittances inflows on trade policy liberalization. Results in column [2] of the same Table show a positive coefficient (at the 1% level) of the variable capturing the size of remittances inflows, but a negative and significant coefficient (at the 1% level) of the exports and imports variables. These suggest that remittances inflows induce a greater trade policy liberalization as long as the export share is lower than 125.9% (=0.623/0.00495) and the import share is lower than 148.7% (= 0.623/0.00419).

Otherwise, remittances inflows are associated with restrictive trade policies. Note that values of export shares range between 0.11% and 216.8%, while values of import shares range between 0.07% and 214.9% (see Appendix 2). Thus, countries whose export shares and



import shares are lower respectively than 125.9% and 148.7% experience a positive effect of remittances inflows on trade policy liberalization, while in countries where export and import shares exceed these two thresholds, governments tend to adopt restrictive trade policies. Results in column [3] suggest that remittances inflows are associated with greater trade policy liberalization when countries' financial development level is below the threshold 78.1% ($= 0.456/0.00584$), as above this threshold, remittances inflows induce the adoption of restrictive trade policies. Likewise, results in column [4] indicate that remittances inflows contribute to greater trade policy liberalization when countries experience an economic growth rate lower than 10.9% ($= 0.442/0.0405$), as beyond this economic growth rate, these capital inflows are associated with the adoption of restrictive trade policies.

Conclusion

This article has investigated the effect of remittances inflows on trade policy, including through three main channels, namely trade imbalances, financial development and economic growth. Results have shown that, on average, over the full sample, remittances inflows tend to be positively associated with trade policy liberalization, and the magnitude of this positive effect is higher in less advanced countries, including poor countries than in more developed economies. Specifically, remittances inflows appear to induce restrictive trade policies in countries with very high development levels. Interestingly, the analysis also shows that countries with remittances share (% GDP) exceeding 15% and 20% experience a positive trade policy liberalization effect of remittances flows than other countries.

Additionally, countries with remittances share higher than 20% enjoy a higher positive effect of remittances inflows on trade policy liberalization than those with a share higher than 15%. Interestingly, we find that the effect of remittances on trade policy also depends on the level of trade imbalances, financial development and the economic growth rate. Remittances exert a trade policy liberalization effect in countries with a less developed financial sector (in particular when the financial development level is lower than 78.1% (within a sample where financial development degrees range from 0.19% and 249%) as above this threshold, remittances inflows induce the adoption of restrictive trade policies.

Remittances also contribute to trade policy liberalization as long as countries' economic growth rate is lower than 10%; otherwise, these capital inflows are associated with lower trade policy liberalization. Finally, we find that remittances inflows induce greater trade policy

liberalization as countries improve their trade imbalances, and the higher the magnitude of the improvement in trade imbalances, the greater is the trade policy liberalization effect of remittances inflows.

All these findings show that the size of remittances inflows definitely matters for trade policy, and that the effect of these capital inflows could translate through the trade balance, financial development, and economic growth channels.

References

- Acosta, P., Lartey, E., and Mandelman, F. (2009). Remittances and the Dutch disease. *Journal of International Economics*, 79, 102-116. <https://doi.org/10.1016/j.jinteco.2009.06.007>
- Ades, A. and Di Tella, R. (1999). Rents, Competition and Corruption. *American Economic Review*, 89(4), 982-993. <https://doi.org/10.1257/aer.89.4.982>
- Aggarwal et al. (2011) have provided empirical evidence that remittances enhance financial development.
- Aggarwal, R., Demirgüç-Kunt, A., and Pería, M. S. M. (2011). Do remittances promote financial development? *Journal of Development Economics*, 96, 255-264. <https://doi.org/10.1016/j.jdeveco.2010.10.005>
- Amuedo-Dorantes, C., and Pozo, S. (2004). Workers' remittances and the real exchange rate: A paradox of gifts. *World Development*, 32(8), 1407-1417. <https://doi.org/10.1016/j.worlddev.2004.02.004>
- Amuedo-Dorantes, C., Pozo, S. (2006). Migration, remittances and male and female employment patterns. *American Economic Review*, 96, 222-226. <https://doi.org/10.1257/000282806777211946>
- Ancharaz, V. D. (2003). Determinants of Trade Policy Reform in Sub-Saharan Africa. *Journal of African Economies*, 12(3), 417-443. <https://doi.org/10.1093/jae/12.3.417>
- Arellano, M., and Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics*, 68(1), 29-51. [https://doi.org/10.1016/0304-4076\(94\)01642-D](https://doi.org/10.1016/0304-4076(94)01642-D)
- Barajas, A., Chami, R., Fullenkamp, C., Gapen, M. T., and Montiel, P. (2009). Do workers' remittances promote economic growth? IMF Working Paper 153, International Monetary Fund, Washington, D.C.
- Barattieri, A. (2014). Comparative advantage, service trade, and global imbalances. *Journal of International Economics*, 92(1), 1-13. <https://doi.org/10.1016/j.jinteco.2013.11.004>
- Batuo, E. M., and Asongu, S.A. (2015). The impact of liberalisation policies on income inequality in African countries. *Journal of Economic Studies*, 42(1), 68-100. <https://doi.org/10.1108/JES-05-2013-0065>
- Bayangos, V., and Jansen, K. (2011). Remittances and Competitiveness: The Case of the Philippines. *World Development*, 39(10), 1834-1846. <https://doi.org/10.1016/j.worlddev.2011.04.019>
- Beck, T. (2002). Financial development and international trade: Is there a link? *Journal of International Economics*, 57(1), 107-131. [https://doi.org/10.1016/S0022-1996\(01\)00131-3](https://doi.org/10.1016/S0022-1996(01)00131-3)



- Bergh, A., and Nilsson, T. (2010). Do liberalization and globalization increase income inequality? *European Journal of Political Economy* 26, 488-505. <https://doi.org/10.1016/j.ejpoleco.2010.03.002>
- Bettin, G., and Zazzaro, A. (2012). Remittances and financial development: Substitutes or complements in economic growth? *Bulletin of Economic Research*, 64, 509-536. <https://doi.org/10.1111/j.1467-8586.2011.00398.x>
- Bhattacharya, M., Inekwe, J., and Paramati, S.R. (2018). Remittances and financial development: empirical evidence from heterogeneous panel of countries. *Applied Economics*, 50(38), 4099-4112. <https://doi.org/10.1080/00036846.2018.1441513>
- Bhattacharyya, S. (2012). Trade liberalization and institutional development. *Journal of Policy Modeling*, 34(2), 253-269. <https://doi.org/10.1016/j.jpolmod.2011.08.005>
- Blundell, R., and Bond, S. (1998). Initial Conditions and Moment Restrictions in Dynamic Panel Data Models. *Journal of Econometrics*, 87, 115-143. [https://doi.org/10.1016/S0304-4076\(98\)00009-8](https://doi.org/10.1016/S0304-4076(98)00009-8)
- Borgatti, L. (2007). Timing and sequencing of trade liberalization in the least-developed countries: Does foreign aid play a role? *Economia Internazionale LX* (1): 33-56.
- Bourdet, Y., and Falck, H. (2006). Emigrants' remittances and Dutch disease in cape verde. *International Economic Journal*, 20(3), 267-284. <https://doi.org/10.1080/10168730600879323>
- Brown, R.P.C., Carmignani, F. and Fayad, G. (2013). Migrants' Remittances and Financial Development: Macro-and Micro-Level Evidence of a Perverse Relationship." *The World Economy* 36, 636-660. <https://doi.org/10.1111/twec.12016>
- Cáceres, L.R., and Saca, N.N. (2006). What Do Remittances Do? Analyzing the Private Remittance Transmission Mechanism in El Salvador. IMF Working Paper WP/06/250, International Monetary Fund, Washington, D.C. <https://doi.org/10.5089/9781451865103.001>
- Catrinescu, N., Leon-Ledesma, M., Piracha, M., and Quillin, B. (2009). Remittances, institutions, and economic growth. *World Development*, 37(1), 81-92. <https://doi.org/10.1016/j.worlddev.2008.02.004>
- Chami, R., Fullenkamp, C., and Jahjah, S. (2005). Are immigrant remittance flows a source of capital for development? IMF Staff Papers, 52, 55-81.
- Chami, R., Cosimano, T., and Gapen, M. (2006). Beware of Emigrants Bearing Gifts: Optimal Fiscal and Monetary Policy in the Presence of Remittances, IMF Working Paper WP/06/61, International Monetary Fund, Washington D.C. <https://doi.org/10.5089/9781451863215.001>
- Chaney, T. (2005). Liquidity constrained exporters, University of Chicago Mimeo.
- Chowdhury, M.B. and Rabbi, F. (2014). Workers' remittances and Dutch Disease in Bangladesh. *The Journal of International Trade & Economic Development*, 23(4), 455-475. <https://doi.org/10.1080/09638199.2012.738240>
- Demirgüç-Kunt, A., Córdoba, E.L., Peria, M.S.M., and Woodruff, C. (2011). Remittances and banking sector breadth and depth: Evidence from Mexico. *Journal of Development Economics*, 95(2), 229-41. <https://doi.org/10.1016/j.jdeveco.2010.04.002>

- Drabek, Z., and Laird, S. (2001). Can trade policy help mobilize financial resources for economic development? (WTO Staff Working Paper No. ERAD-2001-02). Geneva, Switzerland: World Trade Organization.
- Driscoll, J. C., and Kraay, A.C. (1998). Consistent Covariance Matrix Estimation with Spatially Dependent Panel Data. *Review of Economics and Statistics*, 80 (4), 549-560. <https://doi.org/10.1162/003465398557825>
- Easterly, W. and Rebelo, S. (1993). Fiscal Policy and Economic Growth. *Journal of Monetary Economics*, 32(3):417-458. [https://doi.org/10.1016/0304-3932\(93\)90025-B](https://doi.org/10.1016/0304-3932(93)90025-B)
- El Hamma, I. (2017). Do political institutions improve the effect of remittances on economic growth? Evidence South-Mediterranean countries. *Economics Bulletin*, 37(3), 2133-2148.
- European Union (2014). The impacts of remittances on developing countries. Directorate-General for External Policies of the European Union, EXPO/B/DEVE/2013/34, European Union, Belgium.
- Falvey, R., Foster, N., and Greenaway, D. (2012). Trade Liberalization, Economic Crises, and Growth. *World Development*, 40(11), 2177-2193. <https://doi.org/10.1016/j.worlddev.2012.03.020>
- Flaig, D., Haugh, D., Kowalski, P., Rouzet, D., and van Tongeren, F. (2018). Miracle or Mirage: What role can trade policies play in tackling global trade imbalances? OECD Economics Department Working Papers No. 1473, OECD Publishing, Paris.
- Freund, C., and Spatafora, N. (2008). Remittances, transaction costs, and informality. *Journal of Development Economics*, 86(2), 356-66. <https://doi.org/10.1016/j.jdeveco.2007.09.002>
- Fromentin, V., and Leon, F. (2019). Remittances and credit in developed and developing countries: A dynamic panel analysis. *Research in International Business and Finance*, 48, 310-320. <https://doi.org/10.1016/j.ribaf.2018.12.010>
- Fukumoto, Y and Kinugasa, T. (2016). Age Structure and Trade Openness: An Empirical Investigation. *The World Economy*, 40(6), 1247-1263. <https://doi.org/10.1111/twec.12464>
- Funkhouser, E. (1992). Migration from Nicaragua: some recent evidence. *World Development*, 20(8), 1209-1218. [https://doi.org/10.1016/0305-750X\(92\)90011-J](https://doi.org/10.1016/0305-750X(92)90011-J)
- Giuliano, P., and Ruiz-Arranz, M. (2009). Remittances, financial development, and growth. *Journal of Development Economics*, 90, 144-152. <https://doi.org/10.1016/j.jdeveco.2008.10.005>
- Gnangnon, S.K. (2018a). Impact of trade imbalances on domestic trade policy: Does multilateral trade policy matter?. *Review of Development Economics*, 22(4), e266-e289. <https://doi.org/10.1111/rode.12527>
- Gnangnon, S.K. (2018b). Trade space and trade policy: an empirical assessment. *Journal of Economic Studies*, 45(3), 498-520. <https://doi.org/10.1108/JES-02-2017-0033>
- Gnangnon, S.K. (2018c). Is the Impact of Trade Policy on Developing and Developed Countries' Export Performance Sustainable? *Economic Issues*, 23(2), 57-83.



- Gubert, F. (2002). Do Migrants Insure Those who Stay Behind? Evidence from the Kayes Area (Western Mali). *Oxford Development Studies*, 30(3), 267-287. <https://doi.org/10.1080/1360081022000012699>
- Guillemette, Y., and Turner, D. (2013). Policy Options to Durably Resolve Euro Area Imbalances. OECD Economics Department Working Papers, No. 1035, OECD Publishing, Paris.
- Gupta, S., Pattillo, C. A., and Wagh, S. (2009). Effect of Remittances on Poverty and Financial Development in Sub-Saharan Africa. *World Development*, 37 (1), 104-115. <https://doi.org/10.1016/j.worlddev.2008.05.007>
- Hanson, G. (2007). Emigration, remittances, and labor force participation in Mexico. *Integration and Trade Journal*, 27, 73-103.
- Hassan, G.M. and Holmes, M.J. (2013). Remittances and the real effective exchange rate. *Applied Economics*, 45(35), 4959-4970. <https://doi.org/10.1080/00036846.2013.808311>
- Huchet-Bourdon, M., Le Mouël, C., and Vijil, M. (2018). The relationship between trade openness and economic growth: Some new insights on the openness measurement issue. *The World Economy*, 41(1), 1-356. <https://doi.org/10.1111/twec.12586>
- Iliescu, N. (2019). Are imports and remittances cointegrated for the Central and Eastern European countries? *Applied Economics Letters*, 26(5), 387-395. <https://doi.org/10.1080/13504851.2018.1486006>
- Jansen, M. and Nordås, H. K. (2004). Institutions, trade policy and trade flows, WTO Staff Working Paper ERSD-2004-02, World Trade Organization, Geneva. <https://doi.org/10.2139/ssrn.923544>
- Joy, M., Lisack, N., Lloyd S., Reinhardt, D., Sajedi, R. and Whitaker, S. (2018) Mind the (current account) gap. Bank of England Financial Stability Paper No. 43, United Kingdom.
- Ju, J., Wu, Yi, and Zeng, Li. (2010). The Impact of Trade Liberalization on the Trade Balance in Developing Countries. *IMF Staff Papers*, 57(2), 427-449. <https://doi.org/10.1057/imfsp.2009.19>
- Kaufmann, D, Kraay, A. and M. Mastruzzi. (2010). The Worldwide Governance Indicators Methodology and Analytical Issues. World Bank Policy Research N° 5430 (WPS5430), Washington, D.C.
- Kerdraïn, C., Koske, I., and Wanner, I. (2010). The Impact of Structural Policies on Saving, Investment and Current Accounts. OECD Economics Department Working Papers, No. 815, OECD Publishing, Paris.
- Kim, D-H., Lin, S-C., and Suen, Y-B. (2010). Are Financial Development and Trade Openness Complements or Substitutes? *Southern Economic Journal*, 6(3), 827-845. <https://doi.org/10.4284/sej.2010.76.3.827>
- Kim, D-H., Lin, S-C., and Suen, Y-B. (2010). Are Financial Development and Trade Openness Complements or Substitutes? *Southern Economic Journal*, 6(3), 827-845. <https://doi.org/10.4284/sej.2010.76.3.827>
- Kletzer, K. and Bardhan, P. (1987). Credit markets and patterns of international Trade. *Journal of Development Economics* 27, 57-70. [https://doi.org/10.1016/0304-3878\(87\)90006-X](https://doi.org/10.1016/0304-3878(87)90006-X)
- Kneller, R., Morgan, C. W., and Kanchanahatakij, S. (2008). Trade Liberalisation and Economic Growth. 31(6), 701-719. <https://doi.org/10.1111/j.1467-9701.2008.01101.x>

- Kowalski, P. and Leshner, M. (2011). *Global Imbalances: Trade Effects and Policy Challenges*. OECD Trade Policy Papers, No. 120, OECD Publishing, Paris.
- Kumar, R.R. (2013). Remittances and Economic Growth: A Study of Guyana." *Economic Systems* 37, 462-472. <https://doi.org/10.1016/j.ecosys.2013.01.001>
- Lartey E. K., Federico, Mandelman, S., and Acosta, P.A. (2008). *Remittances, Exchange Rate Regimes, and the Dutch disease: A Panel Data Analysis*. Atlanta: Federal Reserve Bank of Atlanta, Working Paper 2008-12. <https://doi.org/10.2139/ssrn.1109206>
- Lartey, E.K. Mandelman, F.S. and Acosta, P.A., 2012. Remittances, exchange rate regimes and the Dutch disease: a panel data analysis. *Review of International Economics*, 20(2), 377-395. <https://doi.org/10.1111/j.1467-9396.2012.01028.x>
- Loser, C., Lockwood, C. Minson, A., and Balcazar, L. (2006). The macroeconomic impact of remittances in Latin-America-Dutch disease or Latin cure?. *Inter-American Dialogue*.
- Manova, K. (2005). *Credit Constraints in Trade: Financial Development and Export Composition*", Harvard University mimeo.
- Miller, T., Kim, A. B., Roberts, J.M., and Tyrrell, P. (2019). *2019 Index of Economic Freedom*, Institute for Economic Freedom, The Heritage Foundation, Washington, DC. See online: https://www.heritage.org/index/pdf/2019/book/index_2019.pdf
- Milner, H. V., and Kubota K. (2005). Why the Move to Free Trade? Democracy and Trade Policy in the Developing Countries. *International Organization*, 59(1): 107-143. <https://doi.org/10.1017/S002081830505006X>
- Muktadir-Al-Mukit, D., Shafiullah, A. Z. M., and Sajib, A. H. (2013). Determination of Causality between Remittances and Import: Evidence from Bangladesh. *International Journal of Business and Social Research* 3, 55-62.
- Mundaca, B. G. (2009). Remittances, financial market development, and economic growth: The case of Latin America and the Caribbean. *Review of Development Economics*, 13, 288-303. <https://doi.org/10.1111/j.1467-9361.2008.00487.x>
- Narayan, P. K., Narayan, S., and Mishra, S. (2011). Do remittances induce inflation? Fresh evidence from developing countries. *Southern Economic Journal*, 77(4), 914-933. <https://doi.org/10.4284/0038-4038-77.4.914>
- Nickell, S. (1981). Biases in Dynamic Models with Fixed Effects. *Econometrica*, 49(6), 1417-1426. <https://doi.org/10.2307/1911408>
- Nyamongo, E. M., Misati, R. N., Kipyegon, L., and Ndirangu, L. (2012). Remittances, financial development and economic growth in Africa. *Journal of Economics and Business*, 64, 240-260. <https://doi.org/10.1016/j.jeconbus.2012.01.001>
- Olugbenga, A. O. and Owoye, O. (1998). Can Trade Liberalization Stimulate Economic Growth in Africa? *World Development*, 26(3), 497-506. [https://doi.org/10.1016/S0305-750X\(97\)10058-4](https://doi.org/10.1016/S0305-750X(97)10058-4)
- Pradhana, G., Upadhyay, M., and Upadhyaya, K. (2008). Remittances and economic growth in developing countries. *The European Journal of*



- Development Research, 20(3), 497-506.
<https://doi.org/10.1080/09578810802246285>
- Raheem, A. R., Vishnu, P., and Nawaz, A. (2014). Causal Relationship between Worker's Remittances and Imports in Pakistan. *European Journal of Scientific Research* 119 (3), 327-336.
- Rajan, R., and Zingales, L. (1998). Financial dependence and growth. *American Economic Review*, 88(3), 559-586.
- Rao, B. B., and Hassan, G. M. (2011). A panel data analysis of the growth effects of remittances. *Economic Modelling*, 28, 701-709. <https://doi.org/10.1016/j.econmod.2010.05.011>
- Rao, B. B., and Hassan, G. M. (2012). Are the direct and indirect growth effects of remittances significant? *The World Economy*, 35, 351-372. <https://doi.org/10.1111/j.1467-9701.2011.01399.x>
- Rapoport, H., and Docquier, F. (2006). The Economics of Migrants' Remittances. Vol. 1 of *Handbook on the Economics of Giving, Reciprocity and Altruism*. Elsevier. Ch. 17. [https://doi.org/10.1016/S1574-0714\(06\)02017-3](https://doi.org/10.1016/S1574-0714(06)02017-3)
- Rodrik, D. (1995). Political Economy of Trade Policy. In *Handbook of International Economics*, edited by Gene Grossman and Kenneth Rogoff, 1457-94, Amsterdam, Netherlands: Elsevier Science Press. [https://doi.org/10.1016/S1573-4404\(05\)80008-5](https://doi.org/10.1016/S1573-4404(05)80008-5)
- Rose, A.K. (2013). The march of an economic idea? Protectionism isn't counter-cyclic (anymore). *Economic Policy*, 28(76), 569-612. <https://doi.org/10.1111/1468-0327.12017>
- Santos-Paulino, A.U. (2004). Trade Liberalization and the Balance of Payments in Selected Developing Countries. *The Manchester School*, 72(1), 100-118. <https://doi.org/10.1111/j.1467-9957.2004.00382.x>
- Senbeta, A. (2013). Remittances and the sources of growth. *Applied Economics Letters*, 20, 572-580. <https://doi.org/10.1080/13504851.2012.718057>
- Sobiech, I. (2019). Remittances, finance and growth: Does financial development foster the impact of remittances on economic growth? *World Development*, 113, 44-59. <https://doi.org/10.1016/j.worlddev.2018.08.016>
- Svaleryd, H. and Vlachos J. (2002). Markets for Risk and Openness to Trade: How are they Related? *Journal of International Economics*, 57(2), 369-395. [https://doi.org/10.1016/S0022-1996\(01\)00153-2](https://doi.org/10.1016/S0022-1996(01)00153-2)
- Treisman, D. (2000). The Causes of Corruption: A Cross National Study. *Journal of Public Economics*, 76: 399-457. [https://doi.org/10.1016/S0047-2727\(99\)00092-4](https://doi.org/10.1016/S0047-2727(99)00092-4)
- Tuanò-Amador, Ma. N. Cyd, Claveria, Racquel A., Co, Ferdinand S., and Delloro, Vic K. (2007). Philippine overseas workers and migrants remittances: The Dutch disease question and the cyclicity issue. *Bangko Sentral Review*, XI(1), 1-23.
- Vacaflor, D. E. (2012). Remittances, monetary policy and partial sterilization. *Southern Economic Journal*, 79(2), 367-387. <https://doi.org/10.4284/0038-4038-2011.147>

- Vargas-Silva, C. (2009). The tale of three amigos: Remittances, exchange rates, and money demand in Mexico. *Review of Development Economics*, 13(1), 1-14. <https://doi.org/10.1111/j.1467-9361.2008.00468.x>
- Wahba, J. (1998). The transmission of Dutch disease and labour migration. *The Journal of International Trade & Economic Development*, 7(3), 355-365. <https://doi.org/10.1080/09638199800000019>
- World Bank. (2006). *The development impact of workers remittances in Latin America*. Vol. 2: Detailed findings. Washington, D.C., Ch. 3. Remittances and Poverty Reduction, pp. 62-89, report No. 37026.
- Wu, J., Li, S., and Samsell, D. (2012). Why some countries trade more, some trade less, some trade almost nothing: The Effect of governance environment on trade flows. *International Business Review*, 21, 225-238. <https://doi.org/10.1016/j.ibusrev.2011.02.007>
- Yongding, Y. (2012). Rebalancing the Chinese economy. *Oxford Review of Economic Policy*, 28(3), 551-568. <https://doi.org/10.1093/oxrep/grs025>
- Ziesemer, T. H. W. (2012). Worker remittances, migration, accumulation and growth in poor developing countries: Survey and analysis of direct and indirect effects. *Economic Modelling*, 29(2), 103-118. <https://doi.org/10.1016/j.econmod.2011.08.013>



Appendix 1: Definition and Source of variables

Variables	Definition	Sources
TP	This is the domestic trade policy, measured by the "freedom to trade internationally" index. The latter is an important component of the Economic Freedom Index. It is composite measure of the absence of tariff and nontariff barriers that affect imports and exports of goods and services. Higher values of TP reflect lower trade barriers, that is, higher trade liberalisation. Lower values of TP indicate rising trade restrictive measures.	Heritage Foundation (see Miller et al., 2019)
REMIT	Personal remittances received (% of GDP)	World Development Indicators (WDI) of the World Bank
TBGDP	This variable measures the trade balance (% GDP). It is the difference between total export of goods and services (% GDP) and total imports of goods and services (% GDP).	WDI
FINDEV	This is the measure of the depth of financial development. It is measured by the domestic credit to private sector (% of GDP)	WDI
GROWTH	This is the measure of the real GDP per capita growth (annual %)	WDI
GDPC	GDP per capita (constant 2010 US\$)	WDI
INST	This is the variable representing the institutional and governance quality in a given country. It has been computed by extracting the first principal component (based on factor analysis) of the following six indicators of governance. These indicators include a measure of political stability and absence of violence/terrorism; the regulatory quality; an index of rule of law index; the government effectiveness index; the index of Voice and Accountability; and the index of corruption. Higher values of the index "INST" are associated with better governance and institutional quality, while lower values reflect worse governance and institutional quality.	Data on the components of "INST" variables has been collected from World Bank Governance Indicators developed by Kaufmann et al. (2010) and recently updated.

Appendix 2: Standard Descriptive statistics on the variables used in the analysis

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
TP	869	67.459	13.759	0	93.333
REMIT	881	4.944	7.618	0.00003	84.644
GDPC	942	6237.301	8909.764	213.913	70655.8
FINDEV	909	37.135	33.784	0.186	248.885
INST	936	-0.608	1.637	-4.7943	3.692
TBGDP	929	-7.618	17.224	-141.95	58.761
EXPGDP	929	39.151	24.124	0.109	216.771
IMPGDP	929	46.769	24.181	0.066	214.910
GROWTH	942	2.702	4.024	-25.792	47.725

Appendix 3: List of countries of the full sample

Full Sample				
Albania	Congo, Rep.	Indonesia	Micronesia, Fed. Sts.	Serbia
Algeria	Costa Rica	Iran, Islamic Rep.	Moldova	Seychelles
Angola	Cote d'Ivoire	Israel	Mongolia	Sierra Leone
Argentina	Croatia	Jamaica	Montenegro	Slovak Republic
Armenia	Cyprus	Jordan	Morocco	Slovenia
Azerbaijan	Czech Republic	Kazakhstan	Mozambique	Solomon Islands
Bangladesh	Dominica	Kenya	Myanmar	South Africa
Barbados	Dominican Republic	Korea, Rep.	Namibia	Sri Lanka
Belarus	Ecuador	Kuwait	Nepal	St. Vincent and the Grenadines
Belize	Egypt, Arab Rep.	Kyrgyz Republic	Nicaragua	Sudan
Benin	El Salvador	Lao PDR	Niger	Suriname
Bhutan	Estonia	Latvia	Nigeria	Tajikistan
Bolivia	Eswatini	Lebanon	Oman	Tanzania
Bosnia and Herzegovina	Fiji	Lesotho	Pakistan	Thailand
Botswana	Gabon	Liberia	Panama	Timor-Leste
Brazil	Gambia, The	Libya	Papua New Guinea	Togo
Bulgaria	Georgia	Lithuania	Paraguay	Tonga
Burkina Faso	Ghana	Macao SAR, China	Peru	Tunisia
Burundi	Guatemala	Macedonia, FYR	Philippines	Turkey
Cabo Verde	Guinea	Madagascar	Poland	Uganda
Cambodia	Guinea-Bissau	Malawi	Qatar	Ukraine
Cameroon	Guyana	Malaysia	Romania	Uruguay
Chile	Haiti	Maldives	Russian Federation	Vanuatu
China	Honduras	Mali	Rwanda	Venezuela, RB
Colombia	Hong Kong SAR, China	Malta	Samoa	Vietnam
Comoros	Hungary	Mauritius	Saudi Arabia	Yemen, Rep.
Congo, Dem. Rep.	India	Mexico	Senegal	Zambia

