

# **Economic Diplomacy in Africa: The Impact of Regional Integration versus Bilateral Diplomacy on Bilateral Trade**

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Abstract:

The paper examines the impact of two main instruments of economic diplomacy — regional integration and commercial diplomacy on export flows among African states. We test whether there is any evidence of a trade-off or complementary interaction between these two instruments in trade facilitation. We compare the effects of these two instruments of economic diplomacy on bilateral trade by employing a gravity model for 45 African states over the period 1980-2005. The results show that bilateral diplomatic exchange is a relatively more significant determinant of bilateral exports among African states compared to regional integration. We also find a nuanced interaction between these two instruments of economic diplomacy: the trade-stimulating effect of diplomatic exchange is less pronounced among African countries that shared membership of the same regional bloc. Generally, this could mean that there exists a trade-off between regional integration and commercial diplomacy in facilitating exports or a lack of complementarity between these two instruments of economic diplomacy.

Keywords: Economic Diplomacy, Regional Integration, Bilateral Diplomacy, African Trade.

JEL Codes: F51, F14, O55

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## **1 Introduction**

More recently, the influence of politics on international trade has gained acceptance in economics. Many studies have emphasized the relevance of political or diplomatic relations in facilitating trade. They argue that diplomatic relationships between states taking the forms of state visits, opening trade missions, consulates and embassies are significant determinants of bilateral trade between countries (see, for example, Rose 2007; Nitch, 2007; Yakop and van Bergeijk, 2011; Moons and van Bergeijk, 2016). Conversely, strained political relationships between states can also deteriorate trade flow between them (see, for example, Fuchs and Klann, 2013).

Afman and Maurel (2010) identify facilitating exports as one of the explicit objectives of foreign diplomatic missions. This has been one of the main justifying economic rationales for establishing diplomatic missions abroad. Especially, the export-promoting functions of national companies to their host countries. There are many countries, both developed and developing countries that spend huge sum of their national budgets financing the activities of diplomatic missions abroad. However, for developing countries, the costs of financing these diplomatic activities constitute a substantial proportion of their national budgets. This may result in them only establishing diplomatic missions in few countries, or diplomatic missions will be allocated meagre financial resources that may not allow for any intense activities geared towards promoting bilateral trade.

Comparing the impact of the diplomatic representations of developed and developing countries, Yakop and van Bergeijk (2011) show that diplomatic representations are even more relevant for developing countries as they contribute more significantly in enhancing South-South trade than North-North trade. In a meta-analysis study, Moons and van Bergeijk (2016) find that the impact of diplomatic exchange is conditional on the level of development of the trading partners.

For example, they state that the effect of diplomatic exchange is more significant for South-South, North-South and South-North trade compared to North-North trade.

Moons and van Bergeijk's (2016) finding may be theoretically plausible since possible market and coordination failures resulting from information asymmetry may be more severe for developing countries compared to developed countries. However, their claim about the importance of diplomatic representations for South-South trade has not been put to an empirical test in a large cross-country analysis for developing countries, especially for Africa. This is important because previous studies that have analyzed the trade facilitation roles of diplomatic exchange focus exclusively on trade between North-South, South-North and North-North partners. For example, Afman and Maurel (2010) limit their sample to cover only OECD countries, Head and Ries (2010) only focus on Canada as an exporter; and similarly, Rose (2007) restricts its sample to only cover exports from advanced countries.

This study focuses specifically on South-South trade by comparing the impacts of diplomatic representations<sup>1</sup> and regional integration on African trade. More importantly, it examines whether there exists any interaction between these two instruments of economic diplomacy in the case of African countries. Africa offers an interesting perspective for comparison of these two instruments as the region is noted for its extreme level of overlapping and multi-membership of regional economic integration schemes (see for example, Yang and Gupta, 2005 and Afesorgbor and van Bergeijk, 2014). This comparison is particularly interesting as regional integration is argued to constrain the policy space of the member states of the regional blocs and thus, leave less space for bilateral negotiations (see for example, Woolcock, 2011 and van Bergeijk, 2011). Woolcock (2011) argues that greater regional integration would mean less scope for national commercial diplomacy by the member states. Put similarly, van Bergeijk (2011) confirms this by stating that increasing

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<sup>1</sup> We use the terms diplomatic representation, diplomatic exchange and bilateral diplomacy interchangeably.

regional integration activities would leave less space for countries to embark on rigorous bilateral diplomatic activities to promote trade and investment.

Diplomatic relationships are relevant in minimizing potential risks that businesses encounter in their foreign operations. Various forms of risks such as political, legal and credit risks may discourage potential exporters from entering foreign markets. However, these risks may be minimized if there are established diplomatic or political ties between countries. This is mainly because, they will signal or give assurance to international firms that their governments are on good terms and thus, their interests will be respected. Exposure to these risks is more commonly associated with South-South trade. For instance, Anderson and Marcouiller (2002) attribute the high level of trade among high-income or capital-abundant countries to a high level of trust. They argue that high levels of mistrust and insecurity act as a hidden tax which increases the transaction cost of international trade, thereby impeding trade among developing countries. Theoretically, it is plausible to link the low level of trade among developing countries to these potential risks because the trade among developing countries is more characterized by high levels of mistrust and insecurity.

Similarly, Moons and van Bergeijk (2016) justify economic diplomacy by developing countries mainly because of the existence of asymmetric information on doing business in low-income countries. They emphasize the scarcity of published statistics and information on business activities in developing countries. This therefore points to a relevance of foreign missions abroad, as they may be a better source of credible information for domestic firms seeking to enter the host countries of the foreign missions. There is also a strong argument that foreign missions are a necessary public sector investment as their involvement is a necessary condition for the reduction or elimination of cultural non-tariff barriers to trade and investment (Yakop and van Bergeijk, 2011).

Thus, this study focuses specifically on Africa for two reasons. First, diplomatic exchange among African states geared at promoting South-South trade has not yet been investigated at a sufficient level of detail. The focus on only African states is very important because apart from the insufficient number of studies that analyzed the effect of economic diplomacy on South-South trade; they also include a small number of African countries in their samples. For example, studies such as Yakop and van Bergeijk (2011) and van Veenstra et al. (2011) include less than 10 African countries in their samples. In addition, these studies used only cross-section data and this also poses a number of econometric challenges. Thus, this study provides the first detailed cross-country empirical studies for a large number of African states using panel data.

Second, spiraling activities of regional economic integration activities or extreme multi-membership of regional blocs on the continent may affect direct state- to-state diplomatic ties (such as state visits, embassies, consulates, etc.) among members that are involved in similar regional blocs positively or negatively. This can happen in a positive manner, if regional integration helps member countries to establish or reinforce bilateral diplomatic ties. In theory, countries that share membership in regional blocs are more likely to establish deeper diplomatic ties compared to those which do not. Thus, regional integration activities can complement commercial diplomatic activities. This is mainly because; regional economic activities can provide the platform for member states to dialogue and strengthen economic and political cooperation.

The negative effect can take place, if regional integration activities crowd out bilateral diplomatic activities among the members of the regional bloc. This may be largely due to the fact that both activities fall within the same spectrum of foreign policy and they come with huge financial burdens. Since the budgets for both regional integration and commercial diplomatic activities may all be financed from budget allocation mainly to a Ministry for Foreign Affairs, they

are more likely to compete for financial and human resources.<sup>2</sup> This may contribute to relatively fewer commercial diplomatic activities among African countries in the same regional bloc. In this way, any positive impact of commercial policies on bilateral trade is likely to be lower among African countries already involved in regional trade agreements (RTAs).

Thus, this paper deviates from the previous literature by focusing exclusively on only African states. The paper provides two main contributions. In one vein, it extends the literature by comparing how two specific instruments of economic diplomacy — regional integration and bilateral diplomacy — affect bilateral trade simultaneously. In another vein, it analyzes whether there exists any interaction effect between these diplomatic instruments in their impacts on trade facilitation.

To preempt the results, the paper finds that the effect of diplomatic representations on bilateral exports are quantitatively more pronounced compared to regional integration among African states. It also finds a nuanced interaction between these two instruments of economic diplomacy: the trade-promoting effect of diplomatic exchange is less pronounced among countries that already involved in a regional trade agreement. Generally, this could mean that there exists a trade-off between regional integration and commercial diplomacy in export facilitation or alternatively, there is a lack of complementarity between the two instruments of economic diplomacy.

The remainder of the paper consists of four main sections. Section 2 provides theoretical perspectives on how economic diplomacy relates to international trade, and on the possible interactions between regional integration and commercial diplomacy. Section 3 introduces the data

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<sup>2</sup> Soobramanien (2011) points out that because of the limited resources especially of developing countries, governments find it prudent to pool resources at the national level by combining the Ministry of Foreign Affairs with other departments playing key roles in economic diplomacy such as ministries for international trade and regional cooperation.

and empirical strategy (gravity model). The empirical results and discussions are presented in Section 4. Section 5 concludes the study with some policy implications.

## **2 Theoretical considerations and hypotheses**

Bayne and Woolcock (2011) show that economic diplomacy is a broad concept and it involves decision-making and negotiation at multiple levels. They identify four main levels at which international negotiation in economic diplomacy can occur: bilateral, regional, plurilateral and multilateral. They emphasize that there is complex interaction among the various levels. Examples of such complex interaction between the trade liberalization roles of regionalism and multilateralism are well-documented in the trade literature. The interaction revolves around whether increasing regionalism is a stumbling or building block for multilateral trade liberalization (see for example, Bhagwati and Panagariya, 1996; Baldwin, 2006).

The main theoretical interest of this paper is to determine whether a complex interaction exists between these two instruments of economic diplomacy — regional integration and bilateral diplomacy on intra-Africa trade. Do these instruments interact positively (i.e. complement each other) or negatively (i.e. substitute each other) in export facilitation?

From an economic point of view, van Bergeijk (2009) relates the existence of border effects to insufficient private investment in knowledge about foreign markets. Governments' involvements in providing public information through embassies, consulates or state visits constitute an incentive for private sector to enter foreign markets. These forms of diplomatic exchange are relevant for trade as they build political ties, reduce asymmetric information problem and also generate knowledge about opportunities for trade and investment (van Bergeijk 2009).

Theoretically, it is plausible there could be regional integration between two countries; however, this may not contribute to significant bilateral trade because of an absence of state-

sponsored policies that can directly stimulate trade between them. This is possible because, trade-related barriers are not the only disincentives to bilateral trade. Political uncertainties, mistrust, and a lack of information about trade opportunities in foreign markets also constitute substantial barriers to international trade. Moons and van Bergeijk (2016) emphasize that it is more problematic for foreign firms to enter developing countries' markets. They attribute this to lack of published statistics and other sources of credible information.

In addition, non-trade barriers can be more effectively eliminated through bilateral negotiations or direct state-to-state diplomacy. More importantly, some of these barriers may be peculiar to a particular state; hence a bilateral rather than a regional negotiation in eliminating them would be more effective. Thus, it is possible economic integration could create foreign market access opportunities that could only be utilized effectively if the market access is complemented with state-sponsored diplomatic activities.

Bayne and Woolcock (2011) point out that a complex interaction exists between the different levels of economic diplomacy. One such complex interactions indicated by van Bergeijk (2011) is that regional integration can restrict the policy space available for member states to use other instruments of economic diplomacy. He therefore points to a subtle trade-off that may exist between regional integration and bilateral negotiations, as membership of a regional bloc can require some national autonomy to be renounced. Citing the case of the EU, Woolcock (2011) argues that the inclusion of trade and investment treaties within the competence of the EU results in an indirect constraint on member countries to negotiate bilateral agreements and commercial policies. Furthermore, Woolcock argues that EU's role is essentially to facilitate rather to promote the commercial interest of national companies.

In contrast to this trade-off argument, the activities of regional blocs can also create synergic interaction, as they create a platform for bilateral contacts with member states to deepen diplomatic



relations. Thus, the normative assumption is that diplomatic ties will be stronger among countries that already share membership of a regional bloc. This is mainly informed by the common expectation that economic integration should breed trust among member states. As trust among countries increases; there is also increased mutual dependence and this leads to stronger political or diplomatic ties among them (Polachek and Seiglie, 2007). Schiff and Winters (1998) provide theoretical support for the link between integration and trust showing that regional integration can create a peace dividend among member states by promoting trust and security. Thus, as countries form or join regional integration blocs, this in turn reinforces political and diplomatic ties as security and trust increase among the member states.

Following on from the above theoretical considerations; the first hypothesis (H1) tests whether there is any qualitative or quantitative difference between bilateral diplomacy and regional integration in facilitating exports. The second hypothesis (H2) also tests whether there is any trade-off or complementarity between these two instruments of economic diplomacy.

H1: The impacts of diplomatic exchange and regional integration on bilateral trade are qualitatively/quantitatively similar.

H2: The effect of diplomatic exchange on bilateral exports is strictly greater when the partners share membership of a regional bloc.

### **3 Data and empirical strategy**

To empirically test the above theoretical considerations, we use the Correlates of Wars (CoW) Diplomatic Exchange data set by Bayer (2006).<sup>3</sup> The data capture diplomatic exchanges between countries at the level of chargé d'affairs, minister, plenipotentiary, ambassador, etc. Thus, the main

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<sup>3</sup> Details on diplomatic exchange data is available at <http://www.correlatesofwar.org/data-sets/diplomatic-exchange> (accessed 1st March 2016).

variable of interest is the diplomatic exchange. This is measured as an indicator variable that take the value 1, when the exporting country had diplomatic representation at the levels specified above in the importing country at time t, or zero otherwise. Because of large missing data at the different levels of diplomatic representation; we focus only on whether diplomatic representation existed between the two states rather than its level. In addition, since diplomatic representation is more likely to be stable over time rather than change within a short time, the diplomatic exchange variable is measured at five-year intervals.

To provide a firsthand insight on how the two instruments of economic diplomacy interact, we use a diagrammatic illustration as shown in Figure 1. The bar-chart compares the proportion of African countries involved in bilateral diplomacy compared to regional integration. It shows that the percentage of countries involved in bilateral diplomacy is relatively higher compared to regional integration. In addition, it shows that the percentage of countries involved in bilateral diplomacy declined sharply after 1980, and this coincides with the period in which there was an upsurge in regional integration activities in Africa.<sup>4</sup> To analyze how the interaction between the two instruments of economic diplomacy influences bilateral trade, so we employ a more rigorous econometric approach and also combine data from other sources to the CoW data.

**[Insert Figure 1 here]**

The other data sets include the bilateral export flows sourced from the IMF direction of trade statistics (DoTs).<sup>5</sup> In addition, we include a set of standard gravity model control variables from the

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<sup>4</sup> The period also saw a consolidation of the regional integration activities. The Abuja Treaty was signed in 1991 and this stipulates that strengthening of the regional blocs by coordinating and harmonizing the activities of regional economic communities towards attaining the goal of a single African Economic Community. In addition, many regional blocs were established in this period: Southern African Development Community (SADC) in 1992, Common Market for Eastern and Southern Africa (COMESA) in 1994 and Arab Maghreb Union (AMU) in 1989.

<sup>5</sup> Available at <http://data.imf.org/?sk=9d6028d4-f14a-464c-a2f2-59b2cd424b85&ss=1390030341854> ( accessed 1st February 2016)

Centre d'Etudes Prospectives et d'Informations Internationales (CEPII).<sup>6</sup> These standard variables consist of both monadic variables for exporting and importing countries and dyadic variables between them. The monadic variables are GDP, population, geographical area, and the dyadic variables are distance, border, common currencies, common colonizers, common language, World Trade Organization (WTO) and regional trade agreement memberships.

Apart from these standard gravity equation variables included as control variables, we also control for the political regime and the intensity of conflict within states. Africa is noted for high level of political instability and also records a high level of conflicts. Fosu (2003) shows that the lack of a stable political environment affects export performance adversely via competitiveness. He emphasizes further how this unstable political environment is more detrimental to export performance than overall GDP growth. Thus, we use a dichotomous measure of political regimes from the database by Cheibub *et al.* (2010). This database employs a minimalist approach and classifies political regimes as either democratic or autocratic (dictatorships). We control for conflict using the number of successful and attempted coups from Marshall and Marshall (2014).

Combining the data sets from these different sources produces a panel data set for 45 African countries covering the period 1980-2005. We restrict the data to this period because the main source for variable of interest — diplomatic exchange is restricted to this time period.<sup>7</sup> Table A1 in the Appendix provides details on the countries and the number of countries they had regional integration and bilateral diplomacy agreements with over the period.

In terms of empirical strategy; we employ a gravity model, which is a conventional framework for analyzing the determinants of trade flows between countries. This empirical model assumes that trade flow between two countries is determined by supply potential (exporter GDP),

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<sup>6</sup> Available at [http://www.cepii.fr/CEPII/en/bdd\\_modele/presentation.asp?id=8](http://www.cepii.fr/CEPII/en/bdd_modele/presentation.asp?id=8) (accessed on 1st January 2016)

<sup>7</sup> The CoW data is the only source of data that provides information on diplomatic exchanges over time that includes almost all African states.

market demand potential (importer GDP) and trade cost (transport). Using regression analysis, we augment the gravity model with our variable of interest —diplomatic exchange— as an additional determinant of trade flows. To capture the interaction between regional integration and diplomatic exchanges (DE), we introduce a multiplicative term for RTA and DE.

$$\ln(X_{ijt}) = \alpha_i + \alpha_j + \alpha_t + \beta \ln M_{it} + \gamma \ln M_{jt} + \rho D_{ij(t)} + \delta DE_{ijt} + \lambda (DE_{ijt} * RTA_{ijt}) + (1 - \sigma)[P_{it} + \Pi_{jt}] + \varepsilon_{ijt} \quad (1)$$

Included in the gravity equation is the exporting and importing countries fixed effects ( $\alpha_{i(j)}$ ). They control for time-invariant unobserved variables such as social, cultural and historical values that can also affect the trade flow between two countries. The dependent variable ( $X_{ijt}$ ) is exports from country  $i$  to country  $j$  at time  $t$ . We also add a full set of period dummies ( $\alpha_t$ ) in order to account for any global trends and joint influences.  $M_{i(j)t}$  is the vector of monadic exporter (importer) variables in the gravity equation, and  $D_{ij(t)}$  is the vector of dyadic observed time-invariant (variant) variables. All the variables with their definitions and measurements are described in Table 1 and the summary statistics are also provided in Table A2 in the Appendix.

**[Insert Table 1 here]**

$P_{it}$  and  $\Pi_{jt}$  are the multilateral resistance terms (MRTs), in line with Baier and Bergstrand's (2009) proxy. In their approach; the MRTs are derived from the first-order log-linear Taylor expansion of the multilateral price equations in the theoretical gravity equation which yields an empirical reduced-form equation (2). This measure is a simple average of multilateral relative to world trade costs ( $T_{ijt}$ ), where  $T_{ijt}$  is replaced with observable trade costs such as distance, common language, colonial ties etc. This approach has been used in recent studies: Egger and Nelson (2011), Hoekman and Nicita (2011) and Silva and Nelson (2012). Anderson and van Wincoop (2003) emphasize that without controlling for this term the estimates from a gravity model would be biased

and inconsistent. The control group is pairs of African countries which do not have any diplomatic exchange between them.

$$[P_{it} + \Pi_{jt}] = \frac{1}{N} \left[ \sum_i^N \theta_{it} \ln T_{ijt} + \sum_j^N \theta_{jt} \ln T_{ijt} - \frac{1}{N} \left( \sum_k^N \sum_m^N \theta_{kt} \theta_{mt} \ln T_{ijt} \right) \right] \quad (2)$$

Since we are de facto measuring the impact of diplomatic representations and its interacted effect with RTA, we lag these variables by a five-year period, which both makes it more likely that we observe real consequences. In addition, the impact of diplomatic exchange may not be contemporaneous, as it may take time for any commercial policy to have a real impact. For example, Baier *et al.* (2008) argue that it can take 5 to 10 years after signing any trade agreement for it to have any real impact on bilateral trade. Therefore, we lag the diplomatic exchange and regional integration variables to cater for any phasing-in that may characterize their implementation.

## 4. Results, discussion and econometric concerns

### 4.1 Empirical results and discussion

We examine the first hypothesis and present the results in Table 2. In column (1), we present the results for the baseline equation using ordinary least squares (OLS), while in the remaining columns the results are estimated using fixed effects (FE). We also estimate the baseline equation by imposing a restriction that the elasticity of export to GDP is unitary; hence, we normalize the export flows with the product of the GDPs of both the exporting and importing countries. We report the results using the restriction in Table 2A in the Appendix. The results do not deviate significantly from the Table 2.

The main discussion of the results is restricted to the estimates in columns (2) to (4) of Table 2. Focusing on the control variables, we find most of the variables have their expected signs and are

within the plausible range for standard gravity model estimates. Although, the results in column (1) are plausible, the estimates may be inconsistent as the exclusion of fixed effects may lead to a break-down of the exogeneity condition. In columns (2) to (4), we control for the unobserved heterogeneity using the fixed effects and also use Baier and Bergstrand's (2009) proxy to control for multilateral resistance. The results for multilateral resistance are reported in Table 2B of the Appendix.

**[Insert Table 2 here]**

In column (2), we estimate the trade-stimulating effect of African RTAs. The results indicate that although there is a general positive effect on bilateral exports, it is not statistically significant. The results confirm several studies that conclude that African RTAs are not particularly effective in promoting trade compared to RTAs in other developing regions. The United Nation Economic Commission for Africa (UNECA) points to that fact that few African RTAs have achieved tangible and modest outcomes whereas the majority has realized disappointing results (UNECA, 2012). Focusing on specific regional blocs, Kohl (2014) finds the Southern African Development Community (SADC) to be the only trade-stimulating African regional bloc. Similarly, Afesorgbor (2016), focusing on five major RTAs in the region, finds the Economic Community of West African States (ECOWAS) and SADC to be the only regional blocs that have positive and significant effects.

Turning to diplomatic exchange between African states, in column (3), we find a positive and strongly significant effect of diplomatic exchange on bilateral exports. We find an estimate of 0.456, which indicates that on average, exports are 58% ( $exp^{0.476} - 1$ ) more for African states that have any form of diplomatic representation compared to those without. In column (4), we include the two main variables as determinants in the gravity equation. The results do not change in terms of the size and significance of the estimates. Thus, comparing the estimates for the two instruments of economic diplomacy simultaneously indicates that diplomatic exchange is relatively more trade-

stimulating than regional integration among African states. The two instruments of economic diplomacy have qualitatively similar (in terms of the sign of the coefficients) effects on bilateral exports but quantitatively different (in terms of the statistical significance of the coefficients) effects.

A plausible explanation could be that regional integration is plurilateral in nature, as it involves negotiations among more than two countries, compared to diplomatic exchange which only involves bilateral negotiations. This may mean that bilateral agreements are more likely to have a stronger impact on bilateral trade than multilateral or plurilateral agreements. In addition, regional integration is a multifaceted phenomenon that not only focuses on market integration but also seeks to achieve political, social and security cooperation. Especially for Africa, Lee (2003) emphasizes that regional integration involves intertwined concerns bordering on market integration, regional cooperation and development integration. Thus, the resources of these regional blocs must be spread across these multidimensional purposes. However, diplomatic exchange activities are only bilateral and hence, negotiations are expected to be relatively easier. The focus of diplomatic missions is less likely to be diverse and this can result in more attention to trade facilitation. This distinction is particularly important for Africa as most of the African regional blocs are distracted from their market integration roles as they are embroiled in other regional activities such as ensuring political stability, maintaining peace and security and promoting good governance.

**[Insert Table 3 here]**

We examine our second hypothesis of interaction effects between regional integration and diplomatic exchanges in Table 3. In column (1), we find a negative and significant coefficient for the interaction term. This indicates that the positive effect of diplomatic exchange is less pronounced between African states already involved in regional integration. This result is also confirmed in columns (2) and (3) when we compare the effect of diplomatic exchange in two sub-

samples. In column (2), we examine the effect of diplomatic exchange among African countries that share membership of the same regional bloc and compare it to that when the two countries do not share membership of a regional bloc in column (3). We only find positive and significant effects in the latter case.

These results therefore provide empirical evidence supporting the theoretical argument of van Bergeijk (2011) and Woolcock (2011) that a subtle trade-off or lack of complementarity could exist between regional integration and bilateral commercial diplomacy. This is mainly because regional integration could usurp the policy space available for member countries of regional blocs to engage in intense bilateral activities that would facilitate trade between them. Alternatively, the spread of financial resources between these two dimensions of economic diplomacy could result in integration activities crowding out diplomatic activities between two countries already in the same regional bloc.

## **4.2. Econometric concerns**

### **4.2.1 Zero trade flows**

The first econometric concern we are confronted with has to do with zero trade flows. Trade flow measurement among developing countries (Africa) is characterized by a considerable number of zero flows, mostly arising from missing data, and (or) small value trade flows. This problem also occurs in the present data set, as more than half of the export flows (53%) are zero flows. In practice, these zero trade flows are left out of the empirical estimations mainly because of the logarithmic transformation in the gravity model. This therefore introduces selection bias into the estimation because only strictly positive trade values are considered. To deal with this bias, Santos Silva and Tenreyro (2006) suggest the use of a non-linear estimation method: the Poisson pseudo-maximum-likelihood (PPML). With the PPML, the expected (E) trade is modelled using an exponential function (exp) and exports are now measured at level as in equation (3).



$$E(X_{ijt}) = \exp\{\alpha_i + \alpha_j + \alpha_t + \beta \ln M_{it} + \gamma \ln M_{jt} + \rho D_{ij(t)} + \delta DE_{ijt} + \lambda (DE_{ijt} * RTA_{ijt}) + (1 - \sigma)[P_{it} + \Pi_{jt}] + \varepsilon_{ijt}\} \quad (3)$$

In Table 4, we present the results from the PPML estimations. In column (1), we find a positive effect for RTA but this is not significant, as in the previous estimations. However, in column (2), diplomatic exchange has a positive effect and this is strongly significant. In column (3), we include both regional integration and diplomatic exchange variables as determinants of bilateral exports. The results show that diplomatic exchange is a more significant determinant of bilateral exports compared to regional integration.

**[Insert Table 4 here]**

The effect of the interaction is reported in column (4). We find a negative effect which is statistically significant. This implies that the impact of diplomatic exchange on bilateral exports is significantly lower for member states that share membership of the same regional bloc. Thus, the trade-off between regional integration and bilateral diplomacy is robust when controlling for zero flows.

#### **4.2.2 Endogeneity concern**

The problem of endogeneity emanating especially from reverse causality or simultaneity can lead to inconsistent estimates in our baseline estimation. This can occur when countries that trade more, are also more likely to establish diplomatic ties or share membership of the same regional or economic blocs. To minimize this possible endogeneity, we resort to the use of first-differencing (FD). Clemens *et al.* (2012) argue that FD is more efficient than using weak instrumental variables for correcting endogeneity. In addition, Baier *et al.* (2008) state that first-differencing panel data can correct for any form of serial correlation as it is possible that unobserved heterogeneity in trade flows could be correlated over time. They also find that using the first-differencing approach can

prevent spurious regression if the data follow a unit-root trend. In the FD approach, both the left-hand side and right-hand side of equation (1) are first-differenced, as shown in equation (4). We use  $\Delta$  as the FD operator.

$$\Delta \ln(X_{ijt}) = \beta \Delta \ln M_{it} + \gamma \Delta \ln M_{jt} + \rho \Delta D_{ij(t)} + \delta \Delta DE_{ijt} + \lambda \Delta (DE_{ijt} * RTA_{ijt}) + (1 - \sigma) \Delta [P_{it} + \Pi_{jt}] + \Delta \varepsilon_{ijt} \quad (4)$$

Table 5 reports the results when we use the first-differencing to re-estimate the comparative effects of regional integration and diplomatic exchanges. Although, the significance of the coefficients is less pronounced, the coefficients for the variables of interest are still positive. Bilateral diplomacy remains significant at conventional levels. The results confirm that diplomatic exchange is a relatively more important determinant of bilateral exports compared to regional integration. The result for the interaction term is not significant, which also an indication that the impact of diplomatic exchange on bilateral exports is not stronger among countries already in the same RTA. Alternatively, this could be explained as lack of complementarity between the two instruments of economic diplomacy.

**[Insert Table 5 here]**

## 5. Conclusion

There are only limited numbers of quantitative studies that analyze the impact of economic diplomacy within Africa. This paper has addressed one aspect of the research gap by analyzing the impact of two main instruments of economic diplomacy on African trade. It has compared the trade-stimulating effect of regional integration and commercial diplomacy among Africa states. The paper has provided three empirical contributions to the economic diplomacy literature. First, it has

focused exclusively on Africa, hence analyzing the impact of economic diplomacy only on South-South trade. Second, it has compared the relevance of the two instruments of economic diplomacy to bilateral trade simultaneously, as previous studies tend to look at them separately. Third, it has added to the emerging literature that are examining whether there exist a trade-off or complementarity, between instruments of economic diplomacy.

The results from the study indicate that bilateral diplomatic exchange is a relatively more significant determinant of bilateral exports among African states compared to regional integration. The impact of diplomatic exchange on exports is positive and strongly significant compared to regional integration, which is positive but not statistically significant. The significant impact of diplomatic exchange on exports is robust to controlling for zero trade flows using the Poisson pseudo maximum likelihood estimator, and also for controlling simultaneity using first-differencing.

Turning to the interaction, a subtle trade-off or a lack of complementarity between diplomatic exchange and regional integration has been found. In one vein, we find that the interacted term is negative and significant, which indicates that the positive effect of diplomatic exchange on bilateral exports is less pronounced between African states that share membership of the same regional integration bloc. This finding is robust when we correct for zero trade flows using Poisson pseudo maximum likelihood estimator. However, after correcting for simultaneity using first-differencing, we find a positive but statistically insignificant effect. This alternatively indicates the lack of complementarity between regional integration and diplomatic exchange. These findings provide empirical evidence to support the theoretical arguments by Woolcock (2011) and van Bergeijk (2011) that the inclusion of trade and investment treaties within the competence of regional blocs limits the policy space available for member states to negotiate bilateral agreements with other countries.

The results from this paper may also have some policy implications for Africa as far as promoting intra-regional trade is concerned. The spiraling regional economic integration activities on the continent may result in dwindling direct state-to-state diplomatic activities (such as state visits, the opening of embassies and consulates). This may contribute to relatively fewer commercial diplomacy activities among African states in the same regional blocs. In this way, any positive impact of bilateral agreements is likely to be lower among African countries already involved in regional trade agreements.

This indicates that there is no coordination between the activities of the regional economic blocs and that of the diplomatic missions, or alternatively the activities of regional blocs override those of commercial diplomacy among states that share membership of regional bloc. Without any synergy, regional integration can create market access opportunities that may not be utilized effectively because of endemic coordination failure and asymmetric information. Thus, it would be advisable for regional blocs and member states to realize that the activities of regional integration cannot substitute for bilateral commercial diplomacy. Diplomatic missions are in a better position to correct the information asymmetry that international firms face in foreign markets.

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**Table 1: Variables and descriptions**

Variable	Description:
<b>Monadic</b> [ $M_{i(j)t}$ ]	
$GDP_{i(j)t}$	Exporting(importing) country's GDP measured in million US\$ at time t.
Geographical area $_{i(j)t}$	Exporting (importing) country's area measured in square km.
Population $_{i(j)t}$	Exporting (importing) country's population measured in million at time t.
Democracy $_{i(j)t}$	Dummy variable equal to 1 if i (j) is democratic at time t, 0 otherwise.
Conflict $_{i(j)t}$	The number of coup d'états in i(j) at time t.
<b>Dyadic</b> [ $D_{ijt}$ ]	
$RTA_{ijt}$	Dummy variable equal to 1 if i and j share membership of a regional bloc at time t, 0 otherwise.
Diplomatic exchange (DE) $_{ijt}$	Dummy variable equal to 1 if i and j have any form of diplomatic exchange at time t, 0 otherwise.
Border $_{ij}$	Dummy variable equal to 1 if i and j share a land border, 0 otherwise.
Common currency $_{ijt}$	Dummy variable equal to 1 if i and j use the same currency, 0 otherwise.
Common language $_{ijt}$	Dummy variable equal to 1 if i and j use the same language, 0 otherwise.
Distance $_{ij}$	Geographical distance between country i and j in km.
WTO/GATT $_{ijt}$	Dummy variable equal to 1 if i and j share membership of WTO or GATT at time t, 0 otherwise.

**Table 2: Comparing the impact of regional integration and diplomatic exchange on bilateral exports**

Dependent variable:	(1)	(2)	(3)	(4)
Log exports	OLS	FE	FE	FE
Log exporter GDP	0.999*** (0.0504)	0.545** (0.254)	0.536** (0.251)	0.537** (0.251)
Log importer GDP	0.747*** (0.0451)	0.200* (0.107)	0.189* (0.109)	0.188* (0.109)
Log exporter population	0.0409 (0.0682)	-2.765** (1.329)	-2.694** (1.325)	-2.676** (1.324)
Log importer population	-0.0615 (0.0602)	1.081 (0.820)	1.195 (0.789)	1.216 (0.800)
Exporter democracy (dummy)	-0.0923 (0.105)	0.122 (0.262)	0.115 (0.263)	0.117 (0.263)
Importer democracy (dummy)	0.0475 (0.107)	0.492*** (0.135)	0.497*** (0.134)	0.500*** (0.135)
Exporter conflict (number of coups)	0.264** (0.123)	-0.191* (0.103)	-0.199* (0.103)	-0.198* (0.103)
Importer conflict (number of coups)	-0.203 (0.128)	-0.0996 (0.104)	-0.112 (0.103)	-0.111 (0.103)
Log distance	-1.336*** (0.0826)			
Log exporter geographical area	-0.216*** (0.0420)			
Log importer geographical area	-0.234*** (0.0402)			
Common language (dummy)	0.308*** (0.118)			
Common border (dummy)	0.794*** (0.140)			
Common colonizer (dummy)	0.613*** (0.119)			
Common currency (dummy)	0.183 (0.142)			
WTO/GATT membership (dummy)	0.442*** (0.101)			
RTA (dummy)	0.550*** (0.117)	0.114 (0.243)		0.0540 (0.245)
Diplomatic exchange (dummy)	0.659*** (0.102)		0.456** (0.174)	0.454** (0.175)
Constant	12.58*** (0.906)	8.650** (3.780)	8.204** (3.757)	8.125** (3.735)
Observations	3,902	3,902	3,902	3,902
R-squared	0.381	0.526	0.527	0.527
MRT proxy	No	Yes	Yes	Yes

Note: The estimation includes the MRT proxies and the results for the MRTs are reported in Table 2B in the appendix. Cluster robust standard errors at the level of countries in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Time effects included.

**Table 3: Interaction between regional integration and diplomatic exchange**

Dependent variable:	1)	(2)	(3)
Log exports	Interaction	When RTA=1	When RTA=0
Log exporter GDP	0.535** (0.249)	0.205 (0.249)	0.500 (0.307)
Log importer GDP	0.184* (0.109)	0.225* (0.123)	0.252 (0.154)
Log exporter population	-2.619** (1.294)	3.422 (2.237)	-2.607** (1.237)
Log importer population	1.280 (0.810)	1.041 (1.161)	2.572** (1.060)
Exporter democracy (dummy)	0.105 (0.258)	0.228 (0.415)	0.169 (0.242)
Importer democracy (dummy)	0.479*** (0.135)	0.396** (0.195)	0.507** (0.198)
Exporter conflict (number of coups)	-0.205* (0.103)	-0.158 (0.146)	-0.165 (0.150)
Importer conflict (number of coups))	-0.116 (0.104)	-0.0899 (0.135)	-0.0636 (0.162)
RTA (dummy)	0.546* (0.288)		
Diplomatic exchange (dummy)	0.602*** (0.176)	-0.0506 (0.320)	0.583*** (0.184)
Diplomatic exchange*RTA	-0.653*** (0.236)		
Constant	7.831** (3.737)	0.829 (4.451)	4.561 (5.170)
Observations	3,902	1,121	2,781
R-squared	0.529	0.691	0.481

Note: The estimation includes the MRT proxies but they are not reported here for space constraints. Cluster robust standard errors at the level of countries in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Time effects included

**Table 4: Robustness—Using the PPML to compare the effect of regional integration and bilateral diplomatic exchange**

Dependent variable:	(1)	(2)	(3)	(4)
Exports	PPML	PPML	PPML	PPML
Log exporter GDP	0.555*** (0.140)	0.560*** (0.133)	0.561*** (0.132)	0.564*** (0.132)
Log importer GDP	0.132 (0.132)	0.134 (0.131)	0.134 (0.131)	0.119 (0.128)
Log exporter population	0.399 (1.012)	0.514 (1.036)	0.610 (1.045)	0.651 (1.048)
Log importer population	-0.398 (0.734)	-0.0978 (0.757)	-0.0445 (0.744)	0.0409 (0.753)
Exporter democracy (dummy)	0.0298 (0.199)	0.00776 (0.198)	0.0159 (0.199)	0.00991 (0.199)
Importer democracy (dummy)	0.421*** (0.106)	0.408*** (0.0973)	0.421*** (0.105)	0.425*** (0.104)
Exporter conflict (number of coups)	-0.133** (0.0601)	-0.153** (0.0619)	-0.155** (0.0623)	-0.152** (0.0617)
Importer conflict (number of coups)	-0.0279 (0.107)	-0.0631 (0.0993)	-0.0628 (0.0989)	-0.0628 (0.101)
RTA (dummy)	0.242 (0.153)		0.0843 (0.159)	0.605** (0.252)
Diplomatic exchange (dummy)		0.620*** (0.156)	0.604*** (0.159)	0.682*** (0.161)
Diplomatic exchange*RTA				-0.543*** (0.201)
Constant	7.080** (2.988)	5.813* (3.039)	5.472* (2.988)	5.209* (2.973)
Observations	7,670	7,670	7,670	7,670
Multilateral resistance proxy	Yes	Yes	Yes	Yes

Note: The estimation includes the MRT proxies but they are not reported here for space constraints. Cluster robust standard errors at the level of countries in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Time effects included

**Table 5: Robustness: First-differencing**

VARIABLES	(1) FD	(2) FD	(3) FD	(4) FD
Differenced RTA	0.126 (0.235)		0.104 (0.235)	-0.0992 (0.321)
Differenced diplomatic exchange		0.292** (0.145)	0.289** (0.145)	0.228 (0.173)
Differenced (RTA*diplomatic exchange)				0.232 (0.261)
Constant	-0.211 (0.225)	-0.192 (0.226)	-0.195 (0.226)	-0.187 (0.227)
Observations	2,814	2,814	1,731	1,731
R-squared	0.050	0.051	0.051	0.051

Note: The estimation includes the MRT proxies and all other covariates but they not are reported here for space constraints. Cluster robust standard errors at the level of countries in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Time effects included.

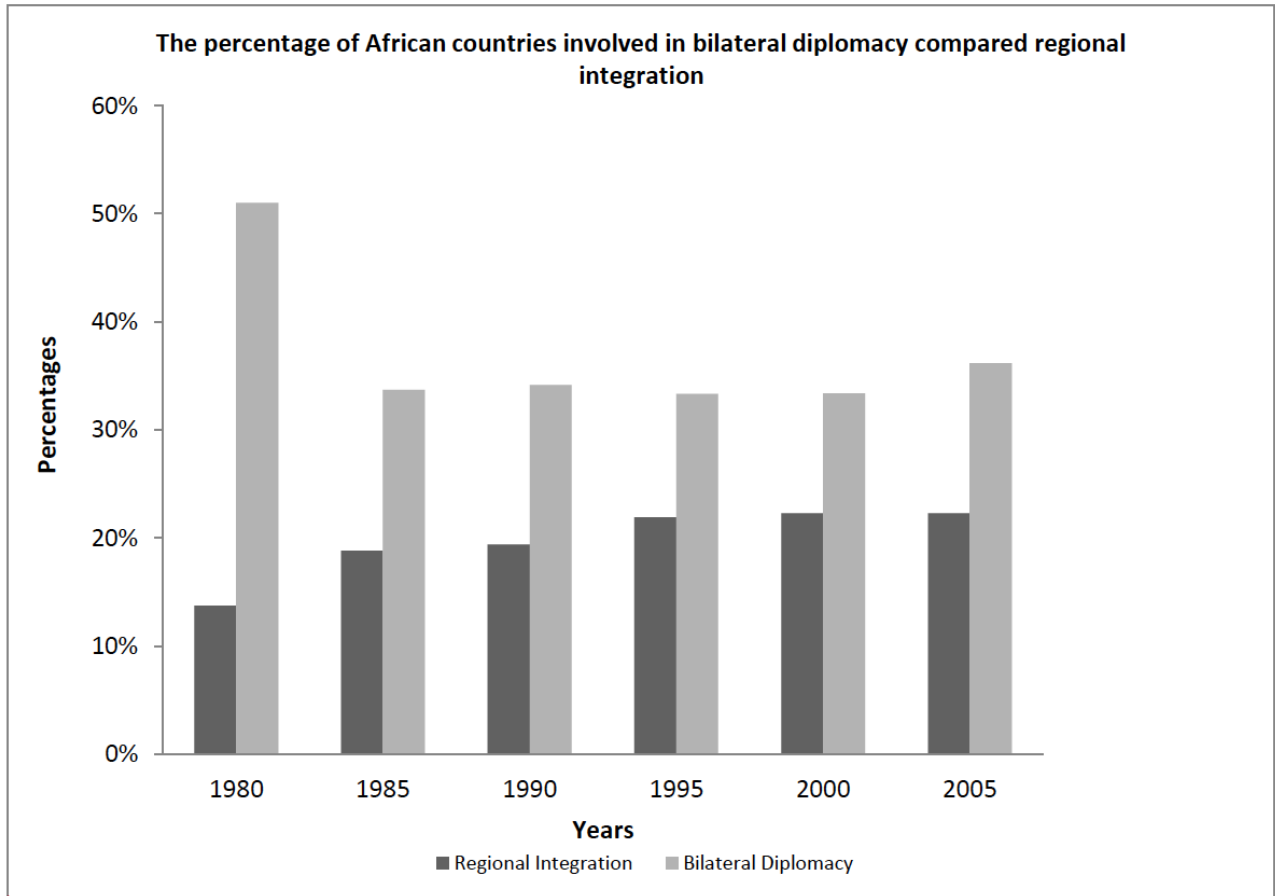


Figure 1: The proportion of African countries involved in bilateral diplomacy compared to regional integration.

**Appendix:****Table A1: Number of countries that an African country has regional integration and bilateral diplomacy agreements with in Africa:**

African countries:	Regional Integration		Bilateral diplomacy	
	1980	2005	1980	2005
Algeria	0	4	36	29
Angola	0	7	-	15
Benin	13	14	13	11
Burkina Faso	12	14	6	11
Burundi	0	4	14	7
Cameroon	0	6	25	16
Cape Verde	12	13	11	2
Central African Republic	0	6	14	10
Chad	0	6	-	10
Comoros	0	4	-	0
Congo, Republic of	0	6	15	13
Cote d'Ivoire	14	14	23	21
Djibouti	0	8	-	7
Egypt	0	9	35	39
Equatorial Guinea	0	3	-	5
Ethiopia	0	9	25	33
Gabon	0	5	20	18
Gambia, The	12	14	17	6
Ghana	14	14	30	17
Guinea	14	14	-	16
Guinea-Bissau	11	13	13	4
Kenya	0	9	21	17
Liberia	13	14	20	13
Libya	0	4	17	33
Madagascar	0	9	8	8
Malawi	0	7	7	8
Mali	14	14	18	14
Mauritania	14	4	-	11
Mauritius	0	7	8	4
Morocco	0	4	19	25
Mozambique	0	7	-	14
Niger	14	14	20	10
Nigeria	14	14	-	34
Rwanda	0	9	19	8
Senegal	14	14	24	22
Sierra Leone	10	13	13	8
Somalia	0	9	15	9
South Africa	0	7	-	31
Sudan	0	9	21	18
Tanzania	0	7	19	18
Togo	14	14	8	6
Tunisia	0	4	23	16
Uganda	0	9	17	10
Zambia	0	17	26	13
Zimbabwe	-	17	-	14

**Table A2: Summary statistics of the main variables**

Variable:	Obs	Mean	Std. Dev.	Min	Max
Diplomatic exchange	9,711	0.363	0.481	0	1
Regional Trade Agreements	9,711	0.201	0.401	0	1
Log exports	4,608	12.557	3.198	-0.729	20.986
Log exporter GDP	9,590	8.249	1.498	4.377	12.397
Log importer GDP	9,595	8.273	1.569	4.031	12.397
Log distance	9,711	7.955	0.694	5.089	9.187
Log exporter geographical area	9,711	12.456	1.719	7.529	14.734
Log importer geographical area	9,711	12.449	1.750	7.529	14.734
Log exporter population	9,711	2.014	1.275	-1.241	4.951
Log importer population	9,711	2.004	1.307	-1.517	4.951
Common colonizer	9,711	0.307	0.461	0	1
Common currency	9,711	0.097	0.296	0	1
Common language	9,711	0.470	0.499	0	1
Borders	9,711	0.094	0.291	0	1
WTO/GATT	9,711	0.517	0.500	0	1
Conflict (coups) in exporter	9,711	0.123	0.385	0	3
Conflict (coups) in importer	9,711	0.118	0.375	0	3
Democracy in exporter	9,711	0.189	0.391	0	1
Democracy in importer	9,711	0.190	0.392	0	1



**Table 2A: Impact of regional integration and diplomatic exchange on bilateral exports**

Dependent variable:	(1)	(2)	(3)	(4)	(5)
Log exports/product of GDPs	OLS	FE	FE	FE	FE
Log exporter income per capita	0.0189 (0.0500)	-0.443*** (0.161)	-0.453*** (0.160)	-0.453*** (0.160)	-0.455*** (0.161)
Log importer income per capita	-0.196*** (0.0437)	-0.807*** (0.122)	-0.818*** (0.121)	-0.819*** (0.122)	-0.823*** (0.121)
Exporter democracy (dummy)	-0.0757 (0.106)	0.0196 (0.153)	0.00931 (0.152)	0.0179 (0.153)	0.00729 (0.153)
Importer democracy (dummy)	-0.0194 (0.107)	0.496*** (0.154)	0.499*** (0.153)	0.508*** (0.154)	0.488*** (0.153)
Exporter conflict (number of coups)	0.259** (0.125)	-0.225* (0.126)	-0.234* (0.126)	-0.231* (0.126)	-0.238* (0.126)
Importer conflict (number of coups)	-0.221* (0.129)	-0.0961 (0.128)	-0.109 (0.127)	-0.107 (0.127)	-0.112 (0.128)
Log distance	-1.374*** (0.0830)				
Log exporter geographical area	-0.188*** (0.0312)				
Log importer geographical area	-0.412*** (0.0285)				
Common language (dummy)	0.214* (0.118)				
Common border (dummy)	0.822*** (0.141)				
Common colonizer (dummy)	0.711*** (0.118)				
Common currency (dummy)	0.343** (0.137)				
WTO/GATT membership (dummy)	0.349*** (0.0986)				
RTA (dummy)	0.515*** (0.119)	0.205 (0.223)		0.136 (0.223)	0.633** (0.259)
Diplomatic exchange (dummy)	0.579*** (0.100)		0.474*** (0.148)	0.467*** (0.149)	0.617*** (0.155)
RTA* Diplomatic exchange					-0.663*** (0.176)
Constant	-0.0215 (0.856)	-10.92*** (1.329)	-11.02*** (1.323)	-11.01*** (1.324)	-11.06*** (1.321)
Observations	3,902	3,902	3,902	3,902	3,902
R-squared	0.358	0.513	0.514	0.514	0.516

Note: MRTs are all included but not reported here because of space constraints. Cluster robust standard errors at the level of countries in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Time effects included.

**Table 2B: Continuation of Table 2**

Variable:	(1) OLS	(2) FE	(3) FE	(4) FE
MRT for RTA		0.396 (0.274)	0.481** (0.197)	0.433 (0.274)
MRT for diplomatic exchange		0.812*** (0.149)	0.444** (0.201)	0.446** (0.201)
MRT for WTO		0.517* (0.302)	0.511* (0.299)	0.511* (0.299)
MRT for distance		-1.528*** (0.161)	-1.519*** (0.160)	-1.518*** (0.161)
MRT for border		0.946*** (0.201)	0.934*** (0.202)	0.936*** (0.204)
MRT for common language		0.931*** (0.175)	0.925*** (0.174)	0.926*** (0.173)
MRT for common currency		0.484 (0.424)	0.500 (0.421)	0.500 (0.421)
Observations		3,902	3,902	3,902
R-squared		0.527	0.527	0.528

Note: These are estimates for only the columns (2) to (4), since we did not include the MRTs for column (1) in Table 2. Cluster robust standard errors at the level of countries in parentheses, \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Time effects included.