How promising is South-South trade as a contributor to economic development in Asia and South America? Insights from estimating income elasticities of import demand

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Insights from estimating income elasticities of import demand

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Abstract

The recent global economic crisis which originated in the global North but quickly spread to the global South has raised questions about the desirability and viability of export regimes primarily orientated towards the markets of high-income countries. The experience of crisis and contagion made developing countries intensify their efforts to diversify sources of economic growth and their search for alternative models of economic development. Expanding South-South trade relationships increasingly became viewed as one such alternative. Yet how promising a strategy is this? In an attempt to provide an answer to this question, this paper first documents the dynamic evolution of South-South trade in past decades and puts forward some theoretical considerations. It then undertakes an econometric analysis to estimate income elasticities of import demand for bilateral trade relationships among a sample of developing Asian and South American countries and two key Northern markets, the Eurozone and the US. Applying an ARDL approach to estimation, our econometric analysis yields mixed results with regard to the question whether South-South trade is generally characterized by higher income elasticities of import demand than South-North trade. While this is largely true for trade involving developing Asian economies, the same does not hold for South American countries. Moreover, income elasticities for imports from the global South are comparatively high in the US (and actually higher than for South-South trade flows in many cases) but this does not equally apply for the Eurozone. Still, our findings show that South-South trade can be a promising alternative source of economic growth, especially if South-North income growth and import growth differentials in favor of the former continue to persist. These findings, thus, provide a rationale for policies aimed at facilitating trade among developing countries.

Key words: South-South trade, Asia, South America, income elasticity of import demand, ARDL

JEL codes: F14, F15, O11, O19

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1. Introduction

The tremendous breakdown of world trade in the wake of the recent global financial and economic crisis has put into question the sustainability of the prevailing export-led growth regime pursued by a number of developing and emerging economies (Griffith-Jones/Ocampo 2009, Ocampo 2009). Traditionally, and also in the recent past, exports of many developing countries have been concentrated mainly in primary commodities and resource-based products which they used to exchange for imports of more technology-and skill-intensive manufactures primarily from rich countries in the global North (UNCTAD 2005: 129). The recent crisis made clear the necessity for export-dependent countries to diversify their sources of growth. One element of this diversification could include the diversification of export destinations. An increase in South-South trade, i.e. trade among developing countries, might promise to be not only, in the short run, one way out of the crisis but also, from a longer-term perspective, one element of a more reliable and sustainable development strategy for lower-income countries (Milberg/Winkler 2010: 60).

Indeed, already early development economists such as Myrdal (1956) or Lewis (1980) pointed to the potential of South-South trade as a potential driver of economic development. They emphasized that South-South integration could help to reduce developing countries' dependence on Northern markets and also contribute to overcome bottlenecks related to resource endowments and the size of domestic markets, thereby promoting industrialization. Later on, scholars such as Amsden (1987) and Lall (1987) noted the increasingly industrialized nature of South-South trade characterized by a higher share of capital and skill-intensive goods as compared to developing countries' exports to the North, and they "saw [South-South] trade in sophisticated manufactures as a potential catalyst for dynamic gains aiding industrialization and technology transfer within the South" (Dahi/Demir 2008: 267). More recently, a number of international development agencies, most notably within the United Nations, have shown renewed interest in South-South cooperation and South-South trade as pathway and vehicle to address various of the world's development challenges and as an ever more promising avenue towards economic development (see UNCTAD 2005, 2010, 2011; UNIDO 2006; ADB 2011; World Bank 2011; UNDP 2013: Ch. 2).

The present paper aims at exploring the driving forces, implications and prospects of South-South trade as a driver of economic development. In particular, focusing on a sample of Asia-South America trade relationships, it tries to find out whether South-South trade is typically characterized by higher income elasticities and therefore a more promising source of growth

as compared to developing countries' exports to rich countries. With the objective to document changes in international and regional trade patterns, the paper starts with a brief empirical account of the magnitude of South-South trade and its development over the past decades. After that, we will examine to what extent South-South trade differs from North-South trade. Specifically, we will investigate whether income elasticities of import demand are different in magnitude. How do South-South trade figures react to changes in economic activity and income in the developing countries involved? How does this compare to the implications of an increase in income in their rich-country trading partners? Can South-South trade – based on econometric estimations of income elasticities – be shown to be, overall, a (more) promising source of demand and economic growth? The present paper attempts to answer these questions by taking a look at the empirics of certain segments of South-South trade, namely both inter-regional and intra-regional trade between Asian and South American economies, and by comparing this to the trade of these countries with representatives of the rich global North, i.e. the Eurozone and the United States.

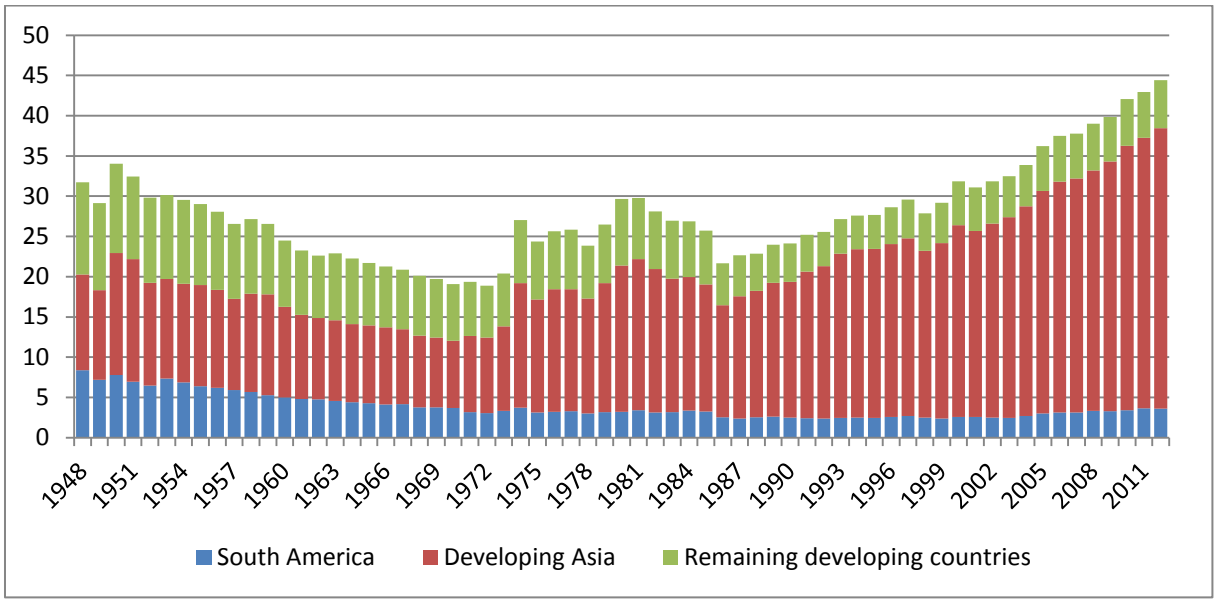
2. Empirical account of South-South trade: magnitude, developments and patterns

The purpose of this section is to give a brief empirical account of the magnitude of South-South trade and its development over the past decades. In doing so, we will also try to examine the driving forces and structure of South-South trade. What do South-South trade flows look like, what is the structure and composition of such flows? Which sectors are particularly involved in South-South trade in specific countries and regions?

As a starting point, we take a look at the general export performance of developing countries. Figure 1 plots the long-run trend of exports from the South since World War II. It reveals three different phases. First, in the two and a half decades immediately after the end of World War II, the share of exports from the South in world trade declined from over 30 percent to less than 20 percent. The second phase, dominated by high commodity prices from the mid-1970s on, saw a drastic increase in the South's share in world exports which shot up to reach almost 30 percent and which remained at over 25 percent until the mid-1980s when a decrease in oil and commodity prices brought it back down to 21 percent in 1987. Since then, the South's export share has experienced a continuous upward trend, reaching a record level of 44 percent in 2012 (representing an export value of US$ 6.14 trillion). As figure 1 reveals, this upward trend has been driven primarily by the economies in developing Asia. Importantly, the growth of exports from developing countries in this current phase since the mid-1980s has

been not only in trade values but also in trade volumes. Shirotori and Molina (2009: 2) report that export volumes show from the South to the world quintupled from levels in the 1980s, compared to world exports that increased only threefold. On average, the volume of exports from the South grew by 7 percent per year since 1980, exceeding the average annual rate of growth of world exports (at 6 percent) as a whole.

Figure 1: Exports from the South, 1948-2012 (in % of total world exports)



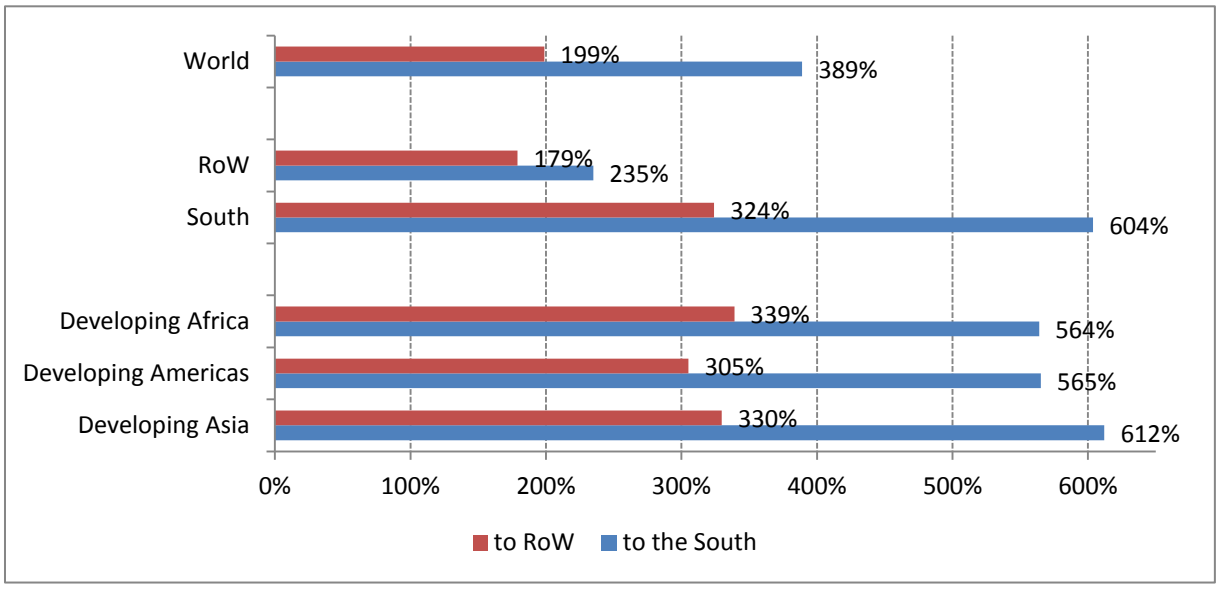
Source: Author's illustration based on data from UNCTADStat database

The major part of export growth from the South can be explained by the expansion of South-South trade (see also Hanson 2012). This is particularly true for the past decade. In 2011, total South-South exports amounted to US$ 4.3 trillion, accounting for 55 percent of total exports from the South. The significant growth of South-South exports becomes evident when compared to changes in exports from the South to the rest of the world (RoW). Figure 2 shows that, between 1995 and 2011, South-South exports rose by a staggering 604 percent, by far exceeding the growth of its exports to the rest of the world which was recorded at 324 percent. Comparing these figures with older data reported by Shirotori and Molina (2009: 3) reveals that this growth gap has actually widened in the course of the past few years: In the ten years between 1995 and 2005 developing countries' exports to other developing countries rose by 197 percent while their exports to the rest of the world grew by 143 percent, yielding a growth differential of 54 percentage points which pale against the 76 percentage points of export growth gap for the period 2005 to 2011.[2] As can be seen in Figure 2, this rapid growth

[2] All data reported in this section were drawn from *UNCTADStat database*: http://unctadstat.unctad.org.

of exports to Southern markets has been a phenomenon shared across continents, with Developing Asia recording the highest growth rates (+612% between 1995 and 2011) and Developing Africa and the Developing Americas more or less in lockstep (with about +565% each).

Figure 2: Growth of exports, 1995-2011 (in %)



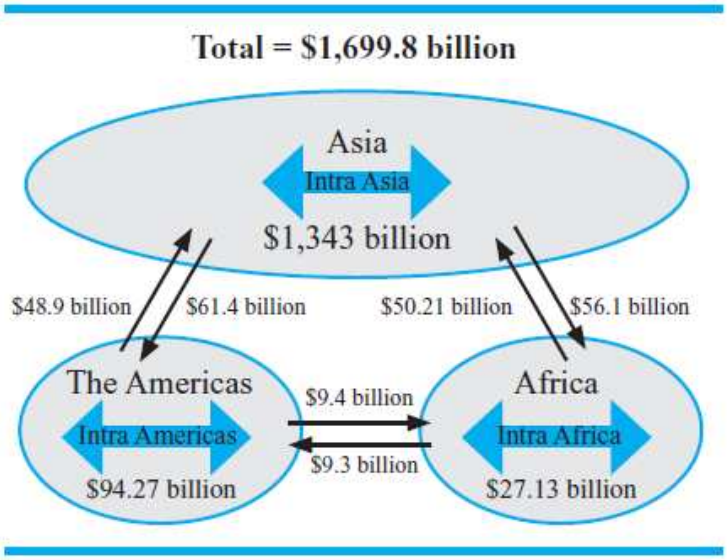
Source: Author's illustration based on data from UNCTADStat database

However, there are certain regional differences as regards the weight of the South as an export market. In 2011, developing Asia shipped considerably more than half of its total exports (namely 59 percent) to other countries in the global South. In other regions, this share is lower. As for Africa, exports to the South accounted for 43 percent of total exports. For the Americas as a whole, this figure was 39 percent while for the subcontinent of South America it was much higher at 54 percent.

Two more things are worth noting: First, South-South trade is clearly dominated by Asia which has acted as a "locomotive of South-South trade" (UNCTAD 2008: 3). In fact, Asia is both the largest exporter and the largest importer in South-South trade and its exports (including intra-regional exports) accounted for 85 percent of total South-South trade in 2005. This dominance can be explained by Asia's sheer economic size but also by its function as the world's most important hub for international trade and by its greater participation in international trade than the other two developing regions, i.e. Africa and the Americas (Shirotori/Molina 2009: 4). Second, inter-regional trade is currently only a rather minor component of South-South trade. The majority of South-South trade actually takes place

between countries within the same region (see Figure 3). Again, Asia plays a leading role with its high degree of regional integration, often in the form of regional supply chains, being a major reason.[3] Indeed, the rapid expansion of South-South trade cannot be understood without proper recognition of the increasingly important role of global and also regional production networks – which, in turn, also goes a long way in explaining the dominance of Asia in South-South trade (and indeed also global trade). For Shaffaeddin (2008), the fast growth of trade among Asian countries has, above all, been the result of industrialization and industrial collaboration in the region in the form of production sharing. Athukorala (2011: 12) points out that in Asia the elaborate "intercountry division of labor within production networks has contributed significantly to strengthening trade complementarity among countries in the region", thereby further accelerating intra-regional trade.[4] In the analysis below we will try to pay tribute to these different nuances of South-South trade by looking at both -regional trade and intra-regional trade flows (within Asia and South America).

Figure 3: Intra- and interregional South-South trade flows in 2005



Source: UNCTAD (2008: 2)

3. Why should South-South trade be beneficial for developing countries?

Is South-South trade really beneficial for participating developing countries? And why should a shift from the traditional South-North trade scheme to more South-South trade be advantageous for lower-income countries? Theoretically, at least three reasons can be found for such an argument.

[3] For a more detailed analysis of South-South trade in Asia, see UNCTAD (2008), particularly Chapter I.
[4] For the diffusion and role of cross-border production networks and their particular importance for Asia, see also ADB (2011) or Athukorala and Nasir (2012).

Firstly, South-South trade can potentially imply an increase in export *volumes*. Indeed, for most of the past 30 years (and particularly during the last decade) economic growth has been far more dynamic in the poorer countries of the global South, particularly in the large "Asian driver economies" (Kaplinsky/Farooki 2010: 11) of China and India, than in the rich countries of the global North. The sheer growth performance of developing countries itself and the growth gap (see below) between developing and advanced economies make the former promising and appealing export markets, not least for outward-oriented developing countries. Accordingly, Fugazza and Vanzetti (2008) find that the potential gains from a removal of South-South trade barriers are considerably higher than those of an opening up of Northern markets (see also ADB 2011, IMF 2011, and Wignaraja et al. 2012). And actually there has already been an impressive expansion of South-South trade, especially during the last two decades, with a higher rate of growth than world trade (UNCTAD 2005, Shirotori/Molina 2009). Such higher export volumes are potentially income-generating and thus poverty-reducing. However, a certain portion of this South-South trade has happened only on the books. The increasing integration of Southern producers into international production networks (often called global value chains) has led to a fragmentation of production processes and a new pattern of trade, in which goods travel across various locations before reaching the final consumer. Therefore, South-South trade statistics include a lot of double-counting and, thus, have to be interpreted with caution (UNCTAD 2005: 146, ADB 2011: 50).

A second way how South-South trade can potentially be beneficial for participating countries is via an increase in the *value* of the typical goods in their export baskets. In other words, South-South trade can potentially benefit developing countries if it allows or even promotes industrial upgrading in their productive structures. In particular, this could involve a shift from exporting goods with low skill intensity and low value added to goods with high(er) skill intensity and high(er) value added. Yet, evidence on this hypothesis is mixed. Shirotori and Molina (2009), for example, highlight that the dominant sector in South-South trade is the manufacturing sector and Dahi and Demir (2008) point out that the share of manufactures exports in total South-South exports has more than doubled during the last three decades. Klinger (2009) finds that for some developing countries, particularly in Africa, Latin America and Central Asia, exports to the South are more sophisticated and offer more learning effects than exports to the North which confirms Dahi and Demir's (2008) observation that Southern exports in technology- and skill-intensive manufactures destined for Southern markets have

grown faster than exports to Northern markets so that today South-South trade in manufactures is characterized by higher capital, technology and skill intensity than South-North trade. Indeed, the "electrical machinery & equipment, telecommunication equipment and electronics" industry was at the top of the ranking of sectors in South-South trade in 2005, accounting for 21.5 percent of total South-South trade (up from a share of 17.6 percent in 1995). It was followed in the ranking by "Fuels" (taking a share of 20.7 percent in 2005), "Computers, nuclear reactors, boilers, machinery and mechanical appliances" (11.4 percent), "Base metals and products" (7.2 percent), "Textile and textile articles" (6.4 percent), and "Chemicals and allied industries" (5.5 percent).[5] On the other hand, UNCTAD (2005: 147) reveals that, over the past three decades, the most dynamic sector in terms of export value in South-North trade was medium-skill intensive manufacturing whereas in South-South trade labor- and resource-intensive manufactures registered the most dynamic growth. Moreover, Kaplinsky et al. (2010) and Kaplinsky and Farooki (2010, 2011) predict that the shift from Northern to Southern final demand sources (expected as a consequence of recent global economic dynamics and particularly the recent crisis) will imply a change in the structure and nature of import demand, with product and production standards losing importance in global value chains and with suppliers in developing countries being forced to focus more on unprocessed products (with less value added and less potential for learning and upgrading). Meanwhile, Guarin and Knorringa (2011) focus on the role of the "new" middle class consumers in emerging markets but are somewhat wary about whether "responsible consumption" and ethical and labor standards as drivers for more sustainable production and trade will quickly assume a similar importance as in Northern markets, emphasizing that the consumption behavior of these "new" middle class consumers "is not likely to simply follow the same trajectory as that of middle class consumers in the west" (Guarin and Knorringa 2011: 26) when their incomes rise.

Thirdly, South-South trade can potentially benefit developing countries by enhancing the *reliability* of the demand for their exports which would be of great help in their struggle for macroeconomic stability. One underlying reason for this could be export diversification. It is a widespread phenomenon among developing countries that their basket of export goods and their export markets are highly concentrated. Export diversification would reduce this

[5] For complete lists for the years 1995, 2000, and 2005, see Shirotori and Molina (2009: Annex Table 3.1). It should be noted, however, that this ranking of sectors in South-South trade is, again, dominated by Asia. In fact, the top-10 sectors in Asian South-South trade (see Shirotori/Molina 2009: Annex Table 3.2) are exactly the same as in general South-South trade – although there is some variation in the exact ranking.

concentration and thereby make developing countries less dependent on one or a few export goods and/or one or a few export destinations. Another explanation could be that South-South trade flows are characterized by a higher income elasticity of import demand than South-North trade flows. This is what we want to focus on in the remainder of this paper.

4. Income elasticity of import demand as indicator of the prospects of South-South trade as a driver of economic development

Basically, the income elasticity of *demand for a good* measures the responsiveness of the demand for this good to the change in the income of the economic agents demanding this good. In the context of international trade, the income elasticity of *import demand* thus indicates the responsiveness of the demand for imports to changes in the income of the importing country. The higher the elasticity, the more responsive will be the demand for imports when the importing country's income rises.[6]

The main purpose of this paper is to make some basic estimates of income elasticities of import demand with regard to South-South trade in comparison to South-North trade. The key question is whether the income elasticity of import demand from developing countries' Southern trading partners is higher than the income elasticity of import demand from developing countries' Northern trading partners.

Why should this be the case? The reasoning behind such prediction can refer both to a supply-side and a demand-side dimension. The supply-side dimension relates to point 2 of the previous section, i.e. to the composition of developing countries' export baskets. As sketched above, there are indeed indications that South-South trade flows comprise a higher share of goods that are commonly expected to be characterized by a higher income elasticity of demand. For example, agricultural or food products are usually said to have a low (or even negative) income elasticity of demand; additional income, especially at higher levels, is expected to be decreasingly spent on food. On the other hand, most manufactures are generally expected to have a high(er) income elasticity of demand. If the typical basket of goods that a developing country imports from another developing countries contains relatively more manufactures than primary commodities (or relatively more high-skill intensive than

[6] Freund (2009) analyzes the elasticity of world trade with regard to global income. She also demonstrates how responsive regional exports are to slowdowns in the global economy. Escaith et al. (2010) carry out a similar exercise. In contrast, we will look at *bilateral* intra-regional and inter-regional trade and analyze to what extent a country's imports from Southern partners react to changes in its income.

low-skill intensive goods) than the typical basket of goods that it imports from an advanced economy, then South-South trade can be expected to be characterized by a higher income elasticity of import demand than South-North trade. As already mentioned, the most-traded sector in South-South trade is indeed the manufacturing sector (Shirotori/Molina 2009: 4).

The demand-side dimension, on the other hand, refers to the complementarity of productive structures and trade. Due to differences in the stage of development in general and industrialization in particular, the structure and nature of demand in developing countries typically differs from that in advanced economies (Kaplinsky/Farooki 2010: Ch. 4, UNCTAD 2005: Ch. II). Specifically, the ongoing rapid industrialization, in particular of the dynamic Asian economies, entails growing demand in raw materials, metals and energy. Moreover, urbanization and changing lifestyle and preference patterns also mean an increasing import demand for food and agricultural goods, which can be quite sizable given the huge scale of the Chinese or the Indian population (UNCTAD 2005: 57). All this suggests that these industrializing Southern countries offer promising export markets to other developing countries that specialize in exporting primary goods – at a time when productive structures in industrial countries in the North increasingly shift from industry to services, implying declining demand for raw materials and industrial inputs from the North (UNCTAD 2005). At the same time, the growing insertion of developing countries into regional and global production networks means that their demand for intermediate and manufacturing goods is also rising. Athukorala (2011) argues that the increasing integration of the South into regional and global value chains has contributed not only that to the diversification of their production structures but also to growing trade complementarity among Southern economies. However, up to now demand for the final goods produced in such global value chains has been primarily from Northern countries. This might change now as a result of the far-reaching repercussions of the recent global economic crisis.

Yet, as Kaplinsky and Farooki (2010, 2011) emphasize, a shift of export markets from the North to the South will have significant implications for the structure and nature of demand. While consumers' preferences in the North are increasingly based on product quality, innovation and differentiation, in developing countries the most important determinant of demand is very often simply the price of a good. "[L]ow levels of per capita incomes mean that the nature of demand will be for cheap, undifferentiated goods with low acquisition cost, running against the major trends in demand in northern economies after 1970 which increasingly favored differentiated, high quality positional products." (Kaplinsky/Farooki

2010: 21) However, the structure of demand is different not only for consumer goods but also for capital goods. In fact, "South–South trade offers developing countries access to affordable capital goods that are often more appropriate to their needs than are capital goods from richer countries and that are therefore more likely to be acquired, adopted and imitated" (UNDP 2013: 46). The widespread expectation that, at least in the short to medium run, economic growth will be much more dynamic in the South than in the North implies that there will be a rising demand for this type of goods. As such goods are dominantly produced in developing countries, (import) demand from the South complements (export) supply from the South, thus lending further momentum to South-South trade. This is confirmed by Shirotori and Molina (2009) who find that sectoral specialization in South-South trade and, thus, trade complementarity are indeed increasing. In a similar vein, while focusing more narrowly on trade between low-income countries (LICs) and the BRICs (Brazil, Russia, India, and China), an IMF paper finds strong economic complementarities between these two group of countries based on complementarities in resource endowments and productive structures. Indeed, using a trade complementarity index, this paper shows that "export complementarity is generally higher between LICs and China or India than between LICs and the US or the EU" (IMF 2011: 14).[7]

To sum up, the hypothesis that South-South trade is characterized by higher income elasticities of import demand than South-North trade can be derived from the assumptions that the former is based on different export portfolios (with a bigger share of manufacturing and more sophisticated goods) and that it features higher trade complementarity (import demand meets export supply). Of course, a higher income elasticity of Southern import demand will make the expansion of South-South trade particularly beneficial to developing countries if point 1 mentioned above, namely the existence of a growth gap between the South and the North, remains true.

5. Our empirical approach and model

With regard to the econometric model to be estimated, we employ a standard import demand function based on the imperfect substitute model, as outlined by Goldstein and Khan (1985),

[7] Hanson (2012) interprets this as the "return of comparative advantage" as a driver of global trade, arguing that fast growth in low- and middle-income countries and the concurrent increase in importance of North-South and South-South trade over North-North commerce makes specialization according to comparative advantage more important for the global composition of trade.

where foreign and domestic products are assumed to be imperfect substitutes and which can be written as follows:

$$(1) \qquad \ln M_t^j = \alpha + \beta \ln Y_t + \gamma \ln E_t^j + \varepsilon_t$$

where ln is the natural logarithmic form, M is the real import demand for imports from country j, Y real domestic income, E the real bilateral exchange rate between the home country and country j at time t (defined as the amount of units of home currency per foreign currency adjusted by domestic and foreign price levels), and ε_t the random error term. The hypothesis is that higher income is related to higher import demand, i.e. that parameter β is positive. Parameter γ is expected to be negative, implying that a real appreciation of the domestic currency is associated with a higher import demand.

We then follow the approach pursued by Milberg and Winkler (2009), Bahmani-Oskooee and Kara (2005) and Bahmani-Oskooee et al. (2005). These authors estimate long-run income elasticities of import demand for the US, Canada, and a number of different countries, respectively, employing an autoregressive distributed lag (ARDL) approach to cointegration, which, according to Pesaran et al. (2001), yields consistent estimates of the long-run coefficients irrespective of whether the regressors are stationary or not (i.e. whether they are integrated of order 0 or 1 or higher, i.e. I(0) or I(1)).[8] This approach, thus, is convenient as it does not require pre-testing for unit root and as it also possesses desirable small sample properties (see Pesaran/Shin 1999 or Panopoulou/Pittis 2004, for example) which is of relevance for our undertaking.[9] The ARDL approach includes lagged level variables and adds

[8] The underlying issue is that most of the variables included in our import demand function can be expected to have non-stationary time series (i.e.be integrated of order 1 or higher) which, when used in a standard OLS regression, can lead to misleading results and fallacious inferences in what is known as the "spurious regression" problem. To avoid this problem, several cointegration estimation techniques have been developed in the econometric literature, one of which, the ARDL framework, is applied here.

[9] Given its desirable properties sketched above, the ARDL framework has been employed in a number of recent papers that investigate and estimate trade elasticities, including, as already mentioned, Bahmani-Oskooee and Kara (2005), Bahmani-Oskooee et al. (2005), and Milberg and Winkler (2009), but also Chang et al. (2005) for South Korea, Bathalomew (2010) for Sierra Leone, Hye and Mashkoor (2010) for Bangladesh, Uz (2010) for Turkey, Yin and Hamori (2011) for China, Fukumoto (2012) for China, and Grullón (2012) for the Dominican Republic. Earlier empirical literature estimating income elasticities of import demand applied also other econometric methods while not all made use of cointegration techniques. Kwack et al. (2005), for example, conduct a simple OLS panel estimation for a number of countries. Thorbecke and Komoto (2010) present estimates of aggregate trade elasticities for the US and a number of Asian countries, using the dynamic ordinary least squares (DOLS) estimator developed by Stock and Watson (1993) which adds lags and leads of the regressors. Uz (2010) actually draws on five different methods to estimate long-run (cointegrating) trade relationships for Turkey, including the ordinary least squares (OLS) approach, the fully-modified OLS (FMOLS) estimator, the DOLS estimator, and Johansen's multivariate maximum-likelihood procedure (JOH-ML) in addition to the ARDL framework. Fukumoto (2012) complements his ARDL analysis with FMOLS estimations.

short-run dynamics (through including contemporaneous and lagged differenced variables) to a long-run estimation equation like the one given above, yielding:

$$(2)\quad \Delta M_t^j = \alpha + \sum_{i=1}^{n} \beta_i \Delta lnY_{t-i} + \sum_{i=1}^{n} \gamma_i \Delta lnE_{t-i}^j + \sum_{i=1}^{n} \delta_i \Delta lnE_{t-i}^j + v_1 lnY_{t-1} + v_2 lnE_{t-1}^j + v_3 ln\, M_{t-1}^j + \epsilon_t$$

In this equation, the lagged level variables for *Y, E* and *M* constitute the (lagged) error-correction term. Depending on the F-statistics, this lagged error-correction term should be retained or excluded from the equation, with Pesaran et al. (2001) providing critical value bounds. If the F-statistics is greater than the upper critical value bound reported by Pesaran et al. (2001), the null hypothesis of $v_1 = v_2 = v_3 = 0$ is rejected, i.e. the lagged level variables are cointegrated and kept in the equation.[10]

6. Focus of the analysis and regression results

Our analysis will focus on one particular inter-continental (or inter-regional) segment of South-South trade, namely the trade between Asian and South American countries[11], as well

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Similarly, Yin and Hamori (2011) estimate long-run income elasticities for China using not only the ARDL framework but also employing the DOLS technique. However, we refrain from the DOLS approach as adding lags and leads for the explanatory variables requires the availability of long time series for the variables in the model – which is a condition not easily met for developing countries, including those that will be the focus of analysis of this paper, where data availability is an issue and time series often do not date back far in the past.

[10] See Appendix I for information on data sources and Appendix II for more details on the estimation procedure.

[11] For another analysis of a sub-segment of Latino-Asian trade relations, namely trade between Mercosur and India, see UNCTAD (2004). Many recent studies have more narrowly focused on the impact that China's emergence as the factory of the world is having and will have on other countries and regions of the world, including Latin America. Hamanaka and Tafgar (2013) point to the different and, indeed, complementary factor endowments of Asia and South America, arguing that this provides a promising basis for trade among the two regions, but they also reveal several potential weaknesses in South America's trade with East Asia. Meanwhile, Lin (2011) and Chandra, Lin and Wang (2012) strike a more positive tone and highlight the emergence of large middle income countries like China as new global growth poles as a great opportunity to developing countries to accelerate industrialization and catch-up processes. They particularly emphasize China's dynamic transformation (now away from light manufacturing) and the subsequent relocation of production and jobs to other, lower-wage developing countries, South-South learning as well as outward FDI from China as accelerating factors. Hanson and Robertson (2009) and Gallagher and Porzecanski (2010), on the other hand, provide a more skeptical account of China's role for Latin American manufacturing exports and Latin American industrialization prospects more in general, arguing that China's industrial ascent and intensified trade between Latin America and China will push and ultimately lock in Latin American countries into specialization patterns that in the long run are not conducive to industrialization and economic development. In a similar vein, Jenkins (2012) points to several inherent weaknesses in inter-regional trade relations between East Asia and South America which he views as being asymmetric to the disadvantage of South American countries, in particular East Asia' significance for South America's trade (which does not hold true the other way round); the composition of export baskets (mainly primary commodities for South America as opposed to manufactured products for East Asia); and the degree of diversification of export baskets (which is high in East Asia but rather low in South America). On the latter two points, see also Fung et al. (2013). Creating and employing a "dependency index", Fercher et al. (2013) show that while South America is only minimally exposed to "export dependence" on

as on intra-continental trade within Asia and South America. The reason for this choice is that it promises to be a particularly interesting example given that the "scope for exploiting interregional trade (…) is particularly evident between Asia and the Americas" (Shirotori/ Molina 2009: 11). Indeed, trade complementarity between Asia and both Central America and South America seems to be particularly pronounced (UNCTAD 2008: 14, see also Hamanaka and Tafgar 2013). Taking a look at the list of most traded sector between the two regions provides some confirmation for this notion. While Asia's exports to the Americas largely consist of products from the manufacturing sector, the South America's exports to Asia are dominated by natural resource-based and agricultural products. More specifically, Asia's top-5 export sectors to the Americas are "electrical machinery & equipment, telecommunication equipment and electronics" industry (accounting for 22.6% of all Asian exports to the Americas), "Textile and textile articles" (12.9%), "Computers, nuclear reactors, boilers, machinery and mechanical appliances" (11.8%), "Aircraft & spacecraft, ships, boats & floating structures" (7.1%), and "Vehicles other than railway or tramway rolling stock" (6.9%). Meanwhile, the Americas mainly export "Base metals and products" (18.4% of all exports from the Americas to Asia), "Ores and minerals (excluding fuels)" (17.4%), "Vegetable products" (12.1%), "Prepared foodstuffs, beverages, etc." (11.3%), and "Fuels" (9.9%) to Asia (see Shirotori/Molina 2009: Annex Table 4.1). As regards market shares, South America's exports to developing Asia currently make up 25.36% of its total exports (up from 4.23% in 1980 and 8.61% in 1990). Developing Asia, in turn, sells 2.21% of its total exports to South America (compared to 1.85% in 1980 and just 1.02% in 1990).[12]

In addition to analyzing inter-regional trade between Asia and South America, we are also interested in a comparison of income elasticities of import demand in inter-regional versus intra-regional trade. In line with the gravity model literature which emphasizes the importance of factors like geographical proximity, shared borders, a common language, cultural familiarity, etc. as drivers for trade (see Kwack et al. 2005, for example), we hypothesize that elasticities are higher in intra-regional trade than inter-regional commerce. We check this by looking at elasticities in trade within Asia and within South America.

China in terms of overall GDP growth rates, its dependency on Chinese demand for certain commodities has increased over the last decade – a finding which, however, can also be interpreted as a strengthening of commercial ties between the two regions.

[12] The most current figure is for 2011. All data were drawn from UNCTAD's online *UNCTADStat database*.

As mentioned above, intra-regional trade is very important for developing Asia. In fact, 51.8% of all developing Asian exports go to fellow Asian countries within the region (up from 42.2% in 1995). In South America, on the other hand, intra-regional trade is not as significant. While intra-regional exports have grown fast and, indeed, quadrupled during the last 15 years, they have not kept pace with South America's overall exports to the world (which quintupled in the same period) so that the share of intra-regional exports in total exports dropped from 24.7% in 1995 to 19.3% in 2011. Interestingly, the list of most traded sectors in intra-Asian commerce is topped by "Petroleum, petroleum products and related materials" (accounting for 20.7% of all trade flows between developing Asian countries), followed by "Electrical machinery, apparatus and appliances" (14.9%), "Telecommunication and sound recording apparatus" (6.0%), "Office machines and automatic data processing machines" (5.2%), and "Textile fibres, yarn, fabrics and clothing" (4.7%). Meanwhile, the top-5 export sectors in intra-regional trade within South America are "road vehicles" (accounting for 15.8% of all trade flows between South American countries), "Petroleum, petroleum products and related materials" (11.1%), the "Non-ferrous metals", "Metalliferous ores and metal scrap", and "Iron and steel" industry (a combined 10.3%), "Cereals and cereal preparations" (5.0%), and "Natural and manufactured gas" (4.4%).[13]

In our analysis, we will concentrate on key players in the two regions, respectively, namely China, India, Indonesia, and South Korea as representatives for developing Asia; and Argentina, Brazil, Chile, and Peru as representatives for South America. In the final step, we will examine how income elasticities in South-South trade compare to those in South-North trade as proxied by the trade between these countries with the United States and the Eurozone, i.e. those countries within the European Union (EU) that adopted a common currency, the Euro.

[13] All data are for 2011 and were drawn from UNCTAD's online *UNCTADStat database*.

Table 1: Estimated coefficients for the income elasticities of bilateral import demand

	Partner							
Importer	***Argentina***	***Brazil***	***Chile***	***Peru***	***China***	***India***	***Indonesia***	***South Korea***
Argentina	-	0.173***	0.470***	0.394**	0.222**	0.185***	0.255***	0.549***
Brazil	0.629***	-	0.424***	0.407***	0.560***	0.890***	0.599***	0.427***
Chile	0.490	0.715***	-	0.247**	1.543***	0.811***	0.591***	0.628***
Peru	0.517***	0.386***	0.528***	-	0.526***	1.502***	0.494***	0.529***
China	0.375**	0.899***	0.613***	0.465***	-	1.577 [1)] (0.705***)	0.936***	0.500 [1)] (0.239***)
India	0.254***	1.564***	1.316***	1.797***	0. 676 [1)] (0.232)	-	0.402***	1.549 [1)] (0.737**)
Indonesia	0.761***	0.999***	1.165**	0.285***	0.841***	2.020***	-	0.344***
South Korea	0.751***	0.649***	0.656***	1.118***	0.674***	1.214***	0.500***	-
Eurozone	0.261**	1.126***	0.124	0.532*	0.685***	0.295***	0.462***	1.192***
USA	1.128***	0.913***	1.740***	1.609***	2.606***	0.244	0.288**	0.0218

** statistically significant at 10%, ** statistically significant at 5%, *** statistically significant at 1%*

[1]) The short-run income elasticity of import demand which we determine by the sum of all statistically significant short-run coefficients, i.e. $\sum_{i=1}^{n} \beta_i$ *(see Debelle/Vickery 1998 or Chatelain/Tiomo 2001). Following Milberg and Winkler (2010: 66), we additionally report (in brackets) the coefficient estimated for the first differenced income variable.*

6.1 South-South Trade

The objective of our first set of regressions is to estimate the income elasticities that characterize the different bilateral trade relations in both inter-regional South-South trade (i.e. between South American countries on the one hand and Asian countries on the other hand) and intra-regional South-South trade (i.e. within South America and Asia, respectively). The estimated coefficients for the income elasticities of import demand for all bilateral trade relations can be found in the upper panel of Table 1.

6.1.1 Income elasticities of South American import demand

Let us start by looking at bilateral trade flows into South American countries, be that from Asia or from fellow South American countries. As mentioned, we are particularly interested in the income elasticities of South American import demand for goods and services from Asian or South American trading partners. The estimation results for the corresponding coefficients delivered by the final regression models are shown in rows 1 to 4 of Table 1.[14]

The table reveals that income elasticities of import demand in *inter-regional* trade flows from Asia to South America range from a minimum of 0.19 (in the case of Argentine imports of Indian goods and services) to a maximum of 1.54 (for Chilean imports from China). More precisely, the income elasticities of Argentine imports from China, India, Indonesia, and South Korea are 0.22, 0.19, 0.26, and 0.55, respectively, indicating that a 1% increase in Argentine income will increase imports from China by 0.22%, from India by 0.19%, from Indonesia by 0.26% and imports from South Korea by 0.55%. A 1% increase in Brazilian income, in turn, will entail a 0.56% increase in Brazilian imports from China, a 0.89% rise in Brazilian imports from India, a 0.60% surge in Brazilian imports from Indonesia, and a 0.43% increase in Brazilian imports from South Korea. Meanwhile, a 1% increase in Chilean GDP will raise its imports from China by 1.54%, from India by 0.81%, from Indonesia by 0.59% and its imports from South Korea by 0.63%. Finally, a 1% increase in Peruvian GDP will increase Peru's imports from China by 0.53%, from India by 1.50%, from Indonesia by 0.49% and from South Korea by 0.53%. On average, a 1% increase in the income of the four South American countries leads to a 0.644% increase in bilateral imports from the four Asian economies, i.e. bilateral trade flows from Asia to South America are characterized by an (simple, i.e. unweighted) average income elasticity of import demand of circa 0.6%.

[14] For more details, see Tables A.1 to A.4 in Appendix III.

Looking now at *intra-regional* trade, Table 1 shows that income elasticities of import demand in trade flows within South America vary from a minimum of 0.17 (in the case of Argentine imports from Brazil) to a maximum of 0.72 (for Chilean imports from Brazil). Trade elasticities are particularly low for Argentine imports from its fellow South American partners; they are just somewhat higher for Brazilian, Chilean and Peruvian imports. The simple, unweighted average of income elasticities of import demand in intra-regional South-South trade between South American countries is a mere 0.555 (see Table 2). In general, intra-regional trade in South America is, thus, characterized by lower income elasticities than South America's extra-regional imports from Asia (which average 0.644) – which contradicts our hypothesis that it would be the other way round.

Table 2: Simple unweighted average of income elasticities of import demand in South-South trade and in South-North trade

	South-South trade	
	Partner	
Importer	***Asia***	***South America***
Asia	0.940	0.854
South America	0.644	0.555
	South-North trade	
	Partner	
Importer	***Asia***	***South America***
Eurozone	0.658	0.511
USA	0.790	1.347

6.1.1 Income elasticities of Asian import demand

The second part of our study of South-South trade consists of looking at bilateral trade flows into Asia. Rows 5 to 8 of Table 1 report the estimated coefficients representing the income elasticities of Asian import demand for goods and services from both South American and fellow Asian trading partners.[15]

As can be seen there, income elasticities of import demand in *inter-regional* trade flows from South America to Asia range from a minimum of 0.25 (for India's imports of Argentine merchandise) to a maximum of 1.80 (for Indian imports from Peru). In general, income

[15] For more details, see Tables A.5 to A.8 in Appendix III.

elasticities of import demand from South America on average seem to be highest in India among the Asian countries in our sample. To be precise, the estimated income elasticities of Indian imports from Argentina, Brazil, Chile, and Peru are 0.25, 1.56, 1.32, and 1.80, respectively, implying that a 1% increase in India's real GDP will increase imports from Argentina by 0.25%, from Brazil by 1.56%, from Chile by 1.32% and imports from Peru by 1.80%. Meanwhile, a 1% increase in Chinese income is estimated to trigger a 0.38% increase in Chinese imports from Argentina, a 0.90% rise in Chinese imports from Brazil, a 0.61% surge in Chinese imports from Chile, and a 0.47% increase in Chinese imports from Peru. In the case of Indonesia, a 1% increase in GDP will raise its imports from Argentina by 0.76%, from Brazil by 1.00%, from Chile by 1.17% and its imports from Peru by 0.29%. Finally, if income in South Korea grows by 1%, its imports from Argentina will increase by 0.75%, from Brazil by 0.65%, from Chile by 0.66% and from Peru by 1.12%. On average, a 1% rise in the income of the four Asian countries in our sample leads to a 0.854% increase in their bilateral imports from the four South American economies, i.e. *inter-regional* trade flows from South America to Asia are characterized by an average income elasticity of bilateral import demand of circa 0.9%.

Before turning now to *intra-regional* trade within Asia, a note of caution is warranted in that, in fact, not all the values in Table 1 are strictly comparable. In four cases (China's imports from India and South Korea, and India's imports from China and South Korea), econometric exercises indicated specification problems which led to the abandonment of the error correction term included in the original model[16]. For these four cases, Table 1 gives only the short-run effects of changes in income on import demand (i.e. the effects of $\Delta \ln Y_{t-i}$), while all other entries in Table 1 represent long-run income elasticities of import demand. In fact, for these four cases Table 1 reports two figures: First, it indicates the sum of all statistically significant short-run coefficients, i.e. $\sum_{i=1}^{n} \beta_i$, as an approximation to the long-run income effects (which is in line with Debelle and Vickery 1998, and Chatelain and Tiomo 2001, for example). Additionally, it reports (in brackets) the coefficient estimated for the first differenced income variables (i.e. β_1), which follows the approach taken by Milberg and Winkler (2010: 66).

[16] In these four cases, as is reported in Tables A.5 and A.6 in the appendix, the F-statistics exceed the upper critical value bound at the 10 percent significance level as specified by Pesaran et al. (2001), indicating that the lagged error-correction term should be excluded from the equation. However, as it is the coefficient for the lagged level variable for Y (which is part of the error-correction term) that gives us the long-run "equilibrium" income elasticity of import demand, we can only report the short-run income elasticities for these four bilateral trade relationships. For more details, see explanations provided in Appendix II.

As can be seen in Table 1, income elasticities of import demand in *intra-regional* trade flows within Asia range from a minimum of 0.35 (in the case of Indonesian imports from South Korea) to a maximum of 2.02 (for Indonesian imports from India). In general, Indonesia reports the highest trade elasticities for its intra-regional imports, followed by China with a 1% increase in Chinese income leading to an estimated 1.58% increase in its imports from India, a 0.94% rise in imports from Indonesia, and a 0.50% surge in imports from South Korea. Meanwhile, income elasticities are also comparatively high in trade between India and South Korea: A 1% rise in India's income is estimated to expand its imports from South Korea by 1.59%, while if South Korea's real GDP grows by 1% its imports from India will increase by 1.21%. Broadly speaking, intra-regional trade between Asian economies is, thus, fairly income elastic. The simple average of income elasticities of import demand in intra-regional South-South trade within Asia is calculated to be 0.94. This value exceeds not only, as expected, the average elasticities for Asia's extra-regional imports from South America (at 0.85) but is also higher than average income elasticities in intra-regional trade within South America (at 0.64, see Table 2), with the latter fact arguably reflecting the more advanced economic integration and the more refined production sharing among Asian countries.

6.2 South-North Trade

As we are ultimately interested in comparing the promises that South-South trade holds relative to South-North trade, we now try to obtain an idea of income elasticities of import demand in South-North trade. In our second set of regressions we therefore estimate the income elasticities that characterize the various bilateral trade relations between the Eurozone and the United States on the one hand, and Asian and South American countries on the other hand.

6.2.1 Eurozone imports from Asia and South America

In the first step of our analysis of South-North trade, we take a look at trade flows from Asia and South America to the Eurozone. The estimation results for the income elasticities of Eurozone import demand for Asian and South American goods and services are reported in row 9 in the second panel of Table 1.[17] There it can be seen that income elasticities are highest for the Eurozone's demand for imports from South Korea (at 1.19) and Brazil (at 1.13), and lowest for imports from Chile (at 0.12) and Argentina (at 0.26) while also rather low for

[17] A more detailed presentation of the estimation results can be found in the Appendix Table A.9.

imports from Peru (at 0.53), the fourth South American country in our sample. Meanwhile, as Table 1 reveals, a 1% increase in Eurozone income will lead to a 0.69% rise in Eurozone imports from China, a 0.30% expansion in imports from India, and a 0.46% increase in imports from Indonesia. Overall, income elasticities are, thus, higher for the Eurozone's demand for imports from Asia (averaging 0.66) than from South America (averaging 0.51, see Table 2).

6.2.2 US imports from Asia and South America

In order to get a more complete picture of South-North trade, the final step of our analysis consists of estimating income elasticities of US import demand for Asian and South American goods and services. The results of the corresponding regressions are exhibited in row 10 of Table 1.[18] The table reveals that income elasticities of import demand in trade flows from the South to the US are highest for China (at 2.61) but rather low for the other Asian countries considered here, namely 0.29 for Indonesia, 0.25 for India, and a mere 0.02 for South Korea. US imports from the South American countries in our sample, on the other hand, are characterized by rather high income elasticities. More precisely, the income elasticities for US imports from Argentina, Brazil, Chile, and Peru are 1.28, 0.91, 1.74, and 1.61, respectively. This means that a 1% increase in US real GDP will lead to a 1.28% increase in US imports from Argentina, a 0.91% rise in imports from Brazil, a 1.74% surge in imports from Chile, and a 1.61% increase in US imports from Peru. On average, a 1% expansion in US income will increase US imports from the four South American economies by 1.35% but imports from the four Asian countries in our sample only by 0.79%. In other words, and contrary to our findings for Eurozone imports, average income elasticities are higher for the US's demand for imports from South America than from Asia (see also Table 2).

Comparing across the two Northern markets analyzed here, it can be observed that, overall, US import demand is characterized by higher income elasticities than Eurozone import demand. While this does not hold true for every single bilateral trade relationship, the simple, unweighted averages reported in the lower panel of Table 2 show that average US income elasticities exceed Eurozone income elasticities for import demand from both Asia (0.79 vs. 0.66) and South America (1.35 vs. 0.51). Comparing South-North trade flows across regions of origin, one finds that, strikingly, average income elasticities of Northern demand for

[18] More details on the estimation results are given in Appendix Table A.10.

imports from South America exceed elasticities in trade flows to the global North originating from developing Asian countries (0.93 vs. 0.72).

Before undertaking a comparison and discussion of income elasticities in South-South trade versus South-North trade, which we will do below in Section 7, let us now quickly cross-check our results with those of other empirical studies. However, when making such comparisons across studies, it is important to keep in mind that there are certain differences in the approach, methodologies and data used which can explain a large part in the differences of the findings. Overall, however, the magnitude of our estimated income elasticities of import demand are in line with the results by Bahmani-Oskooee and Kara (2005) who report long-run income elasticity estimates that range from 0.14 for Japan and 0.29 for Germany to 2.10 for the US and 2.45 for Canada. Our estimates are also more or less in line with most of the results reported in Milberg and Winkler (2010) who find (statistically significant) long-run income elasticities of import demand of 0.77 for Taiwan, 1.24 for Brazil, and 1.86 for Germany, while their estimates for China and India exceed ours significantly. Yet, it is important to emphasize that the findings from these two studies are not entirely comparable with ours as for each county in their sample they estimate "global" income elasticities of demand for imports from all trading partners of the country in question, as opposed to the *bilateral* income elasticities that we estimate here.

Meanwhile, Thorbecke and Komoto (2010) report estimates of import elasticities that, on average, are slightly higher than ours, ranging from 1.32 for South Korea and 1.45 for Taiwan to 2.14 for the US and 2.31 for Japan. Similarly, the regressions undertaken by Kwack et al. (2005) yield coefficients that are somewhat higher than ours, ranging from a minimum of 1.05 for Singapore and 1.15 for Norway to maximum values of 3.08 for Finland and 3.28 for the Philippines. Yet, both studies differ from the present one in that they use annual data (in contrast to the quarterly data employed here), they estimate "global" elasticities (across all trading partners of a certain country – as opposed to the *bilateral* elasticities estimated here), and their dependent variable is real imports in levels, not in first differences as here.

A number of papers focus on one particular country. While these studies typically estimate "global" (as opposed to bilateral) income elasticities of import demand, their results are largely consistent with ours. For example, Grullón (2012) estimates the long-run income elasticity of the Dominican Republic's demand for imports from the world to be 1.37 while

Yin and Hamori's (2011) estimate for China is 1.52 with DOLS and 2.66 with ARDL, Hye and Mashkoor's (2010) estimate for Bangladesh is 0.94, and Chang et al.'s (2005) estimate for South Korea is 1.86.

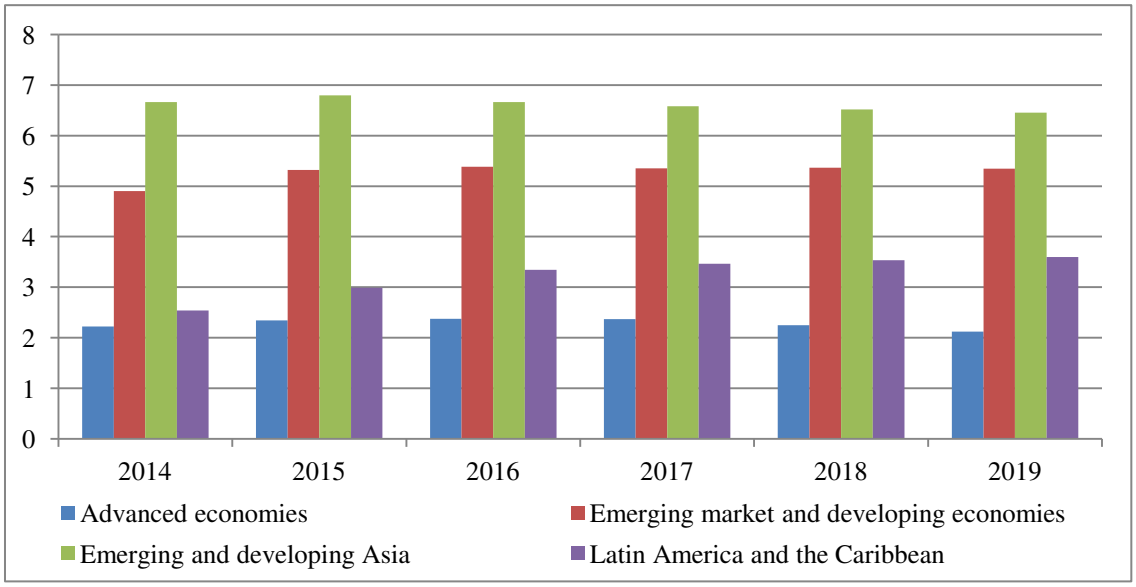
Bahmani-Oskooee et al. (2005) and Uz (2010) are two studies that investigate income elasticities in *bilateral* trade relations, and using quarterly data and the ARDL approach both yield estimates that, in general, are higher than ours. However, both papers are on countries that are not included in our sample, namely Canada in the case of Bahmani-Oskooee et al. (2005) and Turkey in the case of Uz (2010). While it is difficult to uncover what explains the differences in the findings from these studies and ours, it has to be pointed out that Bahmani-Oskooee et al. (2005) employ the ARDL framework but retain the error correction term (including the lagged level variables) regardless of the F-statistics so that not all of the coefficients that they report are statistically significant.

7. Past and future: Comparison of South-South trade versus South-North trade

In the previous section, we presented the results of our econometric analysis of income elasticities in South-South trade and in South-North trade. They provide mixed evidence with regard to our hypothesis that South-South trade is typically characterized by higher income elasticities of import demand than South-North trade. On the one hand, economic activity in the US, which is one of the key Northern markets, is characterized by comparatively high income elasticities for imports from the global South and, thus, represents an attractive export destination. In fact, income elasticities for demand of imports from South America (as represented by Argentina, Brazil, Chile, and Peru) are highest in the US, i.e. higher than in intra-regional South-South trade (within South America), in inter-regional South-South trade (from South America to Asia), and in other South-North trade from South America to the Eurozone (see Table 2). When it comes to imports from Asia (as represented by China, India, Indonesia, and South Korea), US income elasticities are topped just by those found in intra-regional South-South trade within Asia. On the other hand, certain segments of South-South trade are characterized by relatively high income elasticities. This is particularly true for trade flows going into Asia. In fact, Asian importers have higher income elasticities for imports from fellow Asian countries than have importers from the global North (i.e. the Eurozone and the US) and extra-regional trading partners in the global South (i.e. South America). Also, the (unweighted) average income elasticity of demand for imports from South America is higher

for Asian importers than for the Eurozone (while it is lower than for the US, the other key Northern importer). In other words, Asia is quite an attractive destination (in terms of import elasticities) in both intra-regional and inter-regional South-South trade. This does not apply to the same extent to South America. Intra-regional trade in South America is characterized by higher income elasticities than Eurozone imports from South America – but they are lower than in Asian and particularly US imports of South American products. Also, for trading partners in Asia, South America is a less attractive destination (in terms of income elasticities of import demand) than Northern markets.

Figure 4: Real GDP growth forecasts for selected country groups (in %, 2014-2019)



Source: Author's own elaboration based on data from the International Monetary Fund's (IMF) World Economic Outlook (WEO) Database, April 2014

These findings bear some important implications. For one, they indicate that strengthening trade ties with other countries of the global South might be indeed a promising path for developing countries to achieve diversification in growth sources and export markets as well as more stable and sustainable development. Taking into account the recent export performance by developing countries (see Figures 1 and 2) and forecasts about their future growth performance and import demand (see Figures 4 and 5 as well as Table 3) strongly reinforces this notion. Figure 4 shows what is a consensus among economists, namely that emerging and developing economies will grow considerably faster in the near future than advanced economies. Table 3, in turn, underpins this prediction by specifying the IMF's real GDP growth forecasts for a number of countries in the global North and in the global South. Both the figure and the table indicate that in the years to come developing countries, and

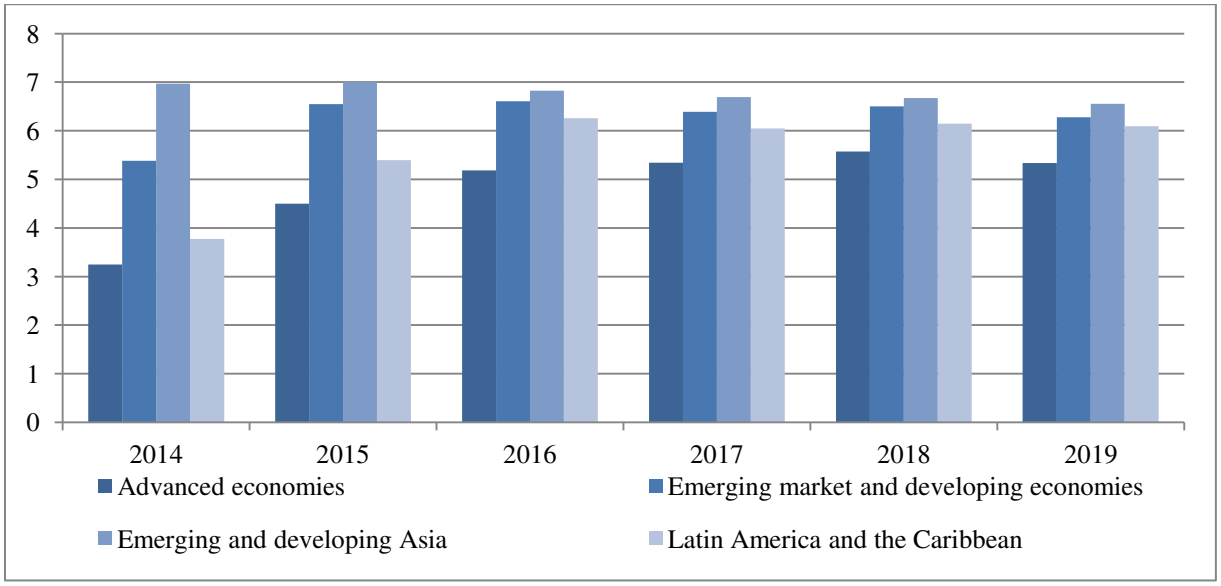
particularly those in Asia, will (in some cases by far) outpace industrial countries in terms of economic growth. According to IMF forecasts, during 2014 and 2019 economic growth rates will, on average, be about twice as high in emerging and developing economies compared to the advanced economies. While real GDP is predicted to grow by annual rates between a mere 1.16% and 1.54% in the Eurozone and between 2.22% and 3.03% in the US, forecasts for strong performers in the South such as China or India reach as much as 7.54% and 6.77%, respectively. In fact, as table 3 reveals, growth forecasts for industrial countries fall short of those for almost all developing countries considered here (with the exception of Argentina where the growth outlook has been significantly revised downwards recently) for every single year for which forecasts are available. This has important implications for import demand; faster growing countries or regions are expected to also exhibit a faster growing appetite for imported goods and services. Indeed, as is displayed in figure 5, for most of the years to come import growth is projected to consistently be one to two percentage points higher in developing countries than in rich countries. Wherever they coincide with higher income elasticities, these higher import growth rates indicate that the (potential) spillover effects from economic activity in one Southern country (the importing one) to another Southern country (the exporting one) are larger than those for South-North relationships.

Table 3: Real GDP growth forecasts for selected countries (in %, 2014-2019)

Country	2014	2015	2016	2017	2018	2019	Average
Argentina	0.50	1.00	1.50	2.00	2.00	2.00	**1.58**
Brazil	1.82	2.65	3.00	3.15	3.34	3.51	**3.05**
Chile	3.63	4.05	4.23	4.50	4.50	4.50	**4.31**
China	7.54	7.28	6.97	6.76	6.63	6.52	**6.91**
India	5.42	6.35	6.48	6.65	6.73	6.77	**6.56**
Indonesia	5.36	5.80	6.00	6.00	6.00	6.00	**5.93**
Korea	3.71	3.80	3.78	3.82	3.75	3.76	**3.78**
Peru	5.52	5.81	5.80	5.80	5.81	5.80	**5.80**
Eurozone	1.16	1.46	1.54	1.54	1.53	1.53	**1.51**
Japan	1.35	0.97	0.67	0.99	1.01	1.13	**0.95**
United States	2.77	2.95	3.03	2.91	2.59	2.22	**2.78**

Source: Author's own illustration based on data from the IMF's WEO Database, October 2012

Figure 5: Import growth forecasts for selected country groups (in %, 2014-2019)



Source: Author's own illustration based on data from the IMF's WEO Database, April 2014

However, while the above figures strongly suggest that South-North growth differentials (both in terms of economic activity and imports) will persist, an important caveat, namely the difference between levels and rates of change, has to be borne in mind in this context. That is, even if both income elasticities and import growth rates for a given South-South trade relationship are higher than for a South-North relationship involving the same Southern exporting country, the increase in imports triggered by an increase in income in the Northern importing country can *in absolute terms* exceed the increase in imports triggered by a rise in income in the Southern importing country if the differences in the base levels (in terms of incomes and imports) between the two importing countries are sufficiently large. While this applies to several of the bilateral trade relationships analyzed above, the reasoning to follow in the concluding section emphasizes the South-North differential in *dynamics* when assessing – with a policy focus – the promises that expanding South-South trade holds for the economic development of participating countries.

8. Policy implications and concluding remarks

This paper put forward some theoretical considerations for strengthening South-South trade links, not least in the context of widespread economic stagnation in the global North and the lessons provided by the recent global economic crisis. It also documented the dynamic evolution of South-South trade in past decades and presented some indications that this dynamism is likely to continue in the future, further outpacing trade flows involving advanced economies. Meanwhile, our econometric analysis – which focused on trade flows involving a

sample of Asian and South American countries and two key Northern markets (the Eurozone and the US) – yielded mixed results with regard to the question whether South-South trade is generally characterized by higher income elasticities of import demand than South-North trade. While relatively high income elasticities of import demand make Developing Asia an attractive destination for both intra-regional and inter-regional South-South trade, this does not equally apply to South America. Moreover, economic activity in the US, one of the key Northern markets, is characterized by comparatively high income elasticities for imports from the global South, especially from South America, exceeding in many cases the income elasticity estimates for South-South trade relationships. However, the same is not true for the Eurozone where growth in real income triggers only relatively modest increases in imports from the Asian and South American countries studied here.

In terms of policy, the above findings suggest that developing countries should seek to strengthen and expand trade relations with other developing countries and to remove barriers to South-South trade. Accordingly, Fugazza and Vanzetti (2008) find that the emphasis on gaining access to Northern markets represents a missed opportunity for developing countries as the potential gains from a removal of trade barriers on South-South trade are much higher (see also Anderson/Strutt 2011). The main reason for these potential gains is that with stages of development and levels of competitiveness being similar, participating countries do not have to fear being swamped by imports after trade liberalization. UNCTAD (2004, 2008) puts forward a similar argument, stressing that "South-South RTAs [Regional Trade Agreements] can form part of a strategic scenario for enhancing (…) economic gains for developing countries" (UNCTAD 2008: xviii). Moreover, tariffs and other trade barriers are often higher for South-South than for South-North trade flows so there is still quite some scope to facilitate trade flows between developing countries. Liberalization and facilitation of South-South trade can, thus, further strengthen economic ties between Southern countries and, indeed, the number of Free Trade Agreements (FTAs) between developing countries has grown considerably in recent years (see Wignaraja et al. 2012 and Anderson/Strutt 2011). Moreover, Athukorala (2011: 44) finds that "South-South trade is largely complementary to, rather than competing with, South–North trade" which further reinforces the argument that seeking to expand South-South trade is a sensible strategy for policy makers in developing countries.

The evidence and arguments presented above indeed provide some theoretical and empirical foundations for such policy recommendations. As we have seen, both economic growth and

international trade promise to be more dynamic in the developing hemisphere than in the industrial world. Moreover, to repeat the central finding of the econometric analysis undertaken here, for certain segments and certain bilateral trade relationships, particularly those involving Asian countries, South-South trade is characterized by higher income elasticities than import demand from the North. In these cases, further increases in the importing Southern countries' incomes will also strongly benefit their Southern trading partners who will see demand for their exports grow (with this growth being faster than if incomes in their Northern export markets increased at the same rate as in the Southern importing countries) – and this relationship is likely to strengthen further with any future dismantling of South-South trade barriers.

Taken together, these results suggest that the payoffs of fostering South-South integration often might be higher than those to be reaped from a further deepening of South-North commercial relationships. Our findings, thus, indicate that promoting South-South trade can be a sensible and viable way for developing countries to make foreign trade a more promising and sustainable source of their economic growth and development. However, further research is needed to substantiate and refine these results, e.g. across countries and regions. In particular, similar analyses have to be undertaken for a larger sample of countries that, notably, also cover South-South trade flows that involve African economies. Moreover, the robustness of the empirical findings needs to be further tested through the application of different estimation methods. South-South trade and South-South cooperation have received renewed attention in the past few years and it can be expected that they will remain high on the agenda of policy makers in developing countries so any additional piece of sound empirical evidence and analysis will help them in their struggle for evidence-based decision-making.

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Appendix I: Data sources

Import data which was sourced from the *Bureau of Economic Analysis* (BEA) for the US, and from the IMF's *Direction of Trade Statistics* (DOTS) for the Eurozone and the eight developing countries in our sample. Data on exchange rates and GDP deflators or, alternatively, Consumer Price Indices (CPI) were drawn from the IMF' *International Financial Statistics* (IFS) database while GDP data were sourced from the IMF's *World Economic Outlook* (WEO) and IFS databases as well as from the OECD's Statistical Database (OECDStat). All data are quarterly.

Appendix II: Estimation process

The first step in the estimation of the coefficients for every single bilateral trade relation consisted of running a regression on the full-fledged equation, i.e.:

$$\Delta M_t^j = \alpha + \sum_{i=1}^{n} \beta_i \Delta ln Y_{t-i} + \sum_{i=1}^{n} \gamma_i \Delta ln E_{t-i}^j + \sum_{i=1}^{n} \delta_i \Delta ln E_{t-i}^j + v_1 ln Y_{t-1} + v_2 ln E_{t-1}^j + v_3 ln\, M_{t-1}^j + \epsilon_t$$

where ln is the natural logarithmic form, M is the real import demand for imports from country j, Y real domestic income, E the real bilateral exchange rate between the home country and country j at time t (defined as the amount of units of home currency per foreign currency adjusted by domestic and foreign price levels), and ε_t the random error term. The second step consisted of a reiterative process of eliminating statistically insignificant differenced variables, while retaining the lagged level variables. In a third step, we run an F-test on linear restrictions on the final model, checking whether the coefficients for the lagged level variables for Y, E and M, which constitute the so-called lagged error-correction, were equal to zero, i.e. whether the term $v_1 = v_2 = v_3 = 0$. The results of these F-tests are reported in the tables in Appendix III below. They informed our decision as to whether to retain or exclude the lagged error-correction term from the equation. Pesaran et al. (2001: 300) provide critical value bounds for the F-statistics. If the F-statistics is greater than the critical value bound, the null hypothesis of $v_1 = v_2 = v_3 = 0$ is rejected, i.e. the lagged level variables are cointegrated. In Table CI(iii), they specify that the critical value bounds for the case with three variables in the lagged error-correction term are 3.77 at the 10% level, 4.35 at the 5%

level, 4.89 at the 2.5% level, and 5.61 at the 1% level, respectively (Pesaran et al. 2001: 300). Comparing the results of our F-tests with these critical values, we decided case by case whether to retain or exclude lagged error-correction term from the equation. In case the lagged error-correction term is retained, the coefficient for the lagged level variable for *Y*, i.e. v_1, gives us the long-run "equilibrium" income elasticity of import demand for the bilateral trade relation in consideration. If, however, the lagged error-correction term has to be excluded (according to the F-statistics), then we only obtain the short-run effect of a change in income on import demand.

Appendix III: Estimation results and final models

Table A.1: Estimation results of final models for Argentine imports

	Dependent variable $\Delta \ln M_t$						
Importer	**Argentina**						
Partner	***Brazil***	***Chile***	***Peru***	***China***	***India***	***Indonesia***	***South Korea***
$\ln Y_{t-1}$	0,17273***	0.47047***	0.222351**	0.22179**	0.18496***	0.25471***	0.54856***
$\ln E_{t-1}$	-0,0171392	-0.0147889	0.0506902*	0.13857**	0.0270226	0.0066361	-0.28952***
$\ln M_{t-1}$	-0,35142***	-0.48554***	-0.34144***	-0.24159***	-0.36709***	-0.40952***	-0.59349***
$\Delta \ln Y_t$	0,96912***	1.14069***	1.16149***	2.20067***	0.605827	1.01566***	1.62234***
$\Delta \ln Y_{t-1}$	0,70853***	0.74449***	0.76914***	2.1568***	0.72456***		0.80352***
$\Delta \ln Y_{t-2}$	0,368871**	0.63304***		0.95913**	0.92722***		0.471138**
$\Delta \ln Y_{t-3}$	0,166776*	0.42233***	0.133435			0.183171*	0.71800***
$\Delta \ln Y_{t-4}$			-0.249316				
$\Delta \ln E_t$			0.47672***	0.485431			-0.68897***
$\Delta \ln E_{t-1}$	0,40214***	0.66058***		1.80598***	0.545618**	-0.160817**	0.399711**
$\Delta \ln E_{t-2}$	0,190074**	0.289657**		0.613952*			
$\Delta \ln E_{t-3}$		0.228497					
$\Delta \ln E_{t-4}$				-0.58415***		-0.099311	
$\Delta \ln M_{t-1}$				-0.174902*		0.29617***	
$\Delta \ln M_{t-2}$				-0.200354**	-0.28932***		-0.0112736
$\Delta \ln M_{t-3}$		-0.169922*					
$\Delta \ln M_{t-4}$	0,134299*		-0.58884***				
R-squared	0,768193	0.707989	0.376636	0.803507	0.691805	0.562869	0.705648
DW or Durbin's h	1.805683	2.173458	2.285039	2.276935	2.106235	2.206782	1.63726
F-statistics[*)]	9.92664	17.191	7.66332	15.5429	8.88388	10.2569	19.1872
Observations	66	75	74	44	62	63	75

[*)] *F-statistic value for F-test on v1 = v2 = v3 = 0. We consider the error correction model with an unrestricted intercept and no trend. At the 10 percent significance level, the critical value bound for the F-statistics is 3.77. F-statistics are based on the optimal lag structure. The same applies for all other estimations presented in Tables A.2 to A.10. For explanation of variables, see Appendix II above.*

Table A.2: Estimation results of final models for Brazilian imports

	Dependent variable $\Delta \ln M_t$						
Importer	**Brazil**						
Partner	***Argentina***	***Chile***	***Peru***	***China***	***India***	***Indonesia***	***South Korea***
$\ln Y_{t-1}$	0.62869***	0.42395***	0.26462***	0.55993***	0.88986***	0.59950***	0.42679***
$\ln E_{t-1}$	0.17919***	0.39978***	-0.0332244	0.182959*	0.37227%**	-0.109575*	-0.096024**
$\ln M_{t-1}$	-0.59912***	-0.33523***	-0.35117***	-0.41388***	-0.64397***	-0.53112***	-0.460451**
$\Delta \ln Y_t$	0.73766***	0.89872***	0.89827***	0.42756***	1.28243***		0.79978***
$\Delta \ln Y_{t-1}$							0.388523**
$\Delta \ln Y_{t-2}$		0.263257**					0.31479*
$\Delta \ln Y_{t-3}$		0.34735***	0.43119***			0.722016**	0.62729***
$\Delta \ln Y_{t-4}$				0.0953272			0.306036**
$\Delta \ln E_t$	0.23991***	0.445288**			1.49243***		
$\Delta \ln E_{t-1}$		-0.390327**					0.48751**
$\Delta \ln E_{t-2}$		0.57668***		-0.70562***		0.38412***	
$\Delta \ln E_{t-3}$	-0.153758**		0.629195**		1.68937**		0.50209***
$\Delta \ln E_{t-4}$	0.109691**		-0.49210***				
$\Delta \ln M_{t-1}$							
$\Delta \ln M_{t-2}$	-0.156954**		0.240741**		0.23066***		
$\Delta \ln M_{t-3}$						-0.0557529	
$\Delta \ln M_{t-4}$		-0.0917402	0.128141*	0.47877***			0.148003**
R-squared	0.546789	0.465231	0.447216	0.666844	0.595249	0.446783	0.515928
DW or Durbin's h	1.993264	2.360781	1.962541	1.565182	2.040637	2.050523	0.741772
F-statistics	7.67561	17.1065	7.79984	6.52207	9.1225	6.7183	10.9622
Observations	71	71	63	45	57	73	63

Table A.3: Estimation results of final models for Chilean imports

Dependent variable Δln M_t

Importer	**Chile**						
Partner	***Argentina***	***Brazil***	***Peru***	***China***	***India***	***Indonesia***	***South Korea***
ln Y_{t-1}	0.48984	0.71512***	0.247264**	1.54312***	0.81127***	0.59148***	0.62802***
ln E_{t-1}	0.0042183	-0.86554***	0.0683267	0.62721***	0.246798**	0.156941**	0.0313223
ln M_{t-1}	-0.19012***	-0.66639***	-0.177352**	-1.1749***	-0.71201***	-0.92566***	-0.56847***
Δln Y_t	0.351988*		0.480353*		0.75689*		
Δln Y_{t-1}				1.08554***	0.619946*	-0.50598	
Δln Y_{t-2}			1.4779***	0.92299***	-0.639221*		
Δln Y_{t-3}	0.258646*	0.436572**	0.389112				-0.457152*
Δln Y_{t-4}							
Δln E_t							-0.383848**
Δln E_{t-1}	-0.25195***	0.527128**		-0.50787***	-0.405794*	-0.3925***	
Δln E_{t-2}		0.60863***	-0.348579	-0.62394***			-0.35396***
Δln E_{t-3}			-0.393981*				
Δln E_{t-4}	-0.148856**			-0.199114	0.421159**	-0.47795***	
Δln M_{t-1}	-0.18373**	0.293562**	-0.337983**	0.36117***			
Δln M_{t-2}						0.19079***	0.225366*
Δln M_{t-3}		0.169358*	0.22643***				0.164849*
Δln M_{t-4}	0.212891**	0.31799***		0.28980***			
R-squared	0.309881	0.594238	0.362834	0.839179	0.449104	0.593188	0.380667
DW or Durbin's h	-0.436235	1.281551	2.005321	0.720392	1.960226	2.141591	1.918265
F-statistics	4.40597	15.4047	4.1054	15.6104	7.96884	40.8245	17.5905
Observations	62	63	63	44	57	60	60

Table A.4: Estimation results of final models for Peruvian imports

Dependent variable Δln M_t

Importer	**Peru**						
Partner	***Argentina***	***Brazil***	***Chile***	***China***	***India***	***Indonesia***	***South Korea***
ln Y_{t-1}	0.32435***	0,466823***	0.52788***	0.52647***	1.5015***	0.49441***	0.52915***
ln E_{t-1}	0.0348607	-0,0327848	-0.307856*	0.0322028	1.2453***	-0.34078***	-0.229273*
ln M_{t-1}	-0.25620***	-0,34044***	-0.70943***	-0.21604***	-0.57249***	-0.58810***	-0.48716***
Δln Y_t		0,963437*		-0.06111***			
Δln Y_{t-1}	-0.266933**		-0.5105***	-0.52018***	-1.5131***	-0.46471***	-0.48299***
Δln Y_{t-2}	-0.32650***		-0.54628***	-0.56412***		-0.47757***	-0.52138***
Δln Y_{t-3}			-0.579436*	-1.7609***		-1.04789*	
Δln Y_{t-4}	1.81624***						
Δln E_t	0.351641*	-0,302548*			0.0619631		
Δln E_{t-1}	-0.29421**			-1.31816***	-1.16662**	-0.407067**	
Δln E_{t-2}			0.460413*	-0.76843***	-1.46616*		
Δln E_{t-3}		0,203277		-1.4893***		0.78553***	0.321634*
Δln E_{t-4}						0.513253**	
Δln M_{t-1}	0.10623		0.33444***	0.147518	-0.242468**		
Δln M_{t-2}			0.0987679			0.30428***	0.23059***
Δln M_{t-3}						0.29538***	
Δln M_{t-4}			0.36401***				
R-squared	0.339629	0.364895	0.479221	0.232499	0.445009	0.454522	0.273918
DW or Durbin's h	1.966769	1.926022	-1.03808	2.170762	-0.22377	2.004458	2.018975
F-statistics	4.37176	6.71018	6.90213	4.34271	9.52546	11.6755	6.47164
Observations	74	64	62	75	60	74	75

Table A.5: Estimation results of final models for Chinese imports

	Dependent variable $\Delta \ln M_t$						
Importer	**China**						
Partner	***Argentina***	***Brazil***	***Chile***	***Peru***	***India***	***Indonesia***	***South Korea***
$\ln Y_{t-1}$	0.37472**	0.89852***	0.61318***	0.46539***		0.93639***	
$\ln E_{t-1}$	0.23063	-0.55269***	0.11027***	3.10916***		1.72301***	
$\ln M_{t-1}$	-0.3976***	-0.73649***	-0.548099	-0.68489***		-0.69909***	
$\Delta \ln Y_t$	2.02846***	1.36451***	0.449267**	0.398873			0.23852***
$\Delta \ln Y_{t-1}$					0.70537***	-1.53411***	
$\Delta \ln Y_{t-2}$		0.62712***	0.286507		0.87168***	-1.2277***	0.0439596
$\Delta \ln Y_{t-3}$	1.8140***	1.11111***	0.508901*	0.70628***	0.129231	-0.87246***	0.26125***
$\Delta \ln Y_{t-4}$					0.183682	-0.70504***	
$\Delta \ln E_t$	1.27908***			3.06023***	0.938674	0.91574***	
$\Delta \ln E_{t-1}$		0.63103***	1.0588***		1.80317***		0.40368***
$\Delta \ln E_{t-2}$	-0.656145*	0.191735			0.188062		
$\Delta \ln E_{t-3}$		0.155061			0.242872		0.35075***
$\Delta \ln E_{t-4}$	-0.312115		-0.418005		-0.613889**		
$\Delta \ln M_{t-1}$		0.29726***					-0.25357***
$\Delta \ln M_{t-2}$		-0.246249**		-0.29499***	-0.25067***	-0.0536237	-0.30553***
$\Delta \ln M_{t-3}$				-0.34239***			0.28642***
$\Delta \ln M_{t-4}$	0.302331***		-0.178503		-0.0185373		
R-squared	0.8656	0.834065	0.492394	0.75032	0.619882	0.590597	0.754016
DW or Durbin's h	1.9235	0.351763	1.824557	1.791684	1.990164	1.984497	1.409711
F-statistics	8.21825	20.9313	24.4595	16.4821	0.750769	11.0403	0.262329
Observations	44	45	44	45	74	44	74

Table A.6: Estimation results of final models for Indian imports

	Dependent variable $\Delta \ln M_t$						
Importer	**India**						
Partner	***Argentina***	***Brazil***	***Chile***	***Peru***	***China***	***Indonesia***	***South Korea***
$\ln Y_{t-1}$	0.25362***	1.5644***	1.31644***	1.79701***		0.40233***	
$\ln E_{t-1}$	0.0293512	-0.152945	-1.9607***	-0.647891		-0.13271***	
$\ln M_{t-1}$	-0.404184**	-1.01041***	-0.70524***	-1.1087***		-0.32966***	
$\Delta \ln Y_t$					0.231897	0.71469***	0.73743**
$\Delta \ln Y_{t-1}$	0.954388	1.18489	1.76664	-3.95608*	0.444414*		0.562317
$\Delta \ln Y_{t-2}$		-1.75129*			0.228807	-0.403931*	
$\Delta \ln Y_{t-3}$			0.803069				0.294231
$\Delta \ln Y_{t-4}$		-4.8086***				-0.211091	
$\Delta \ln E_t$				-3.8686*			-0.78832***
$\Delta \ln E_{t-1}$	-0.147838	-0.556907	1.48932	-3.79887*	-0.69559***		
$\Delta \ln E_{t-2}$		0.46605			-0.652324**		-0.212181
$\Delta \ln E_{t-3}$		-1.38719**	2.65281**		-0.495818*	0.11469***	-0.177392
$\Delta \ln E_{t-4}$		1.47853**			-0.50359**		-0.312263
$\Delta \ln M_{t-1}$	-0.140485*	0.155838			-0.339966**		-0.173993*
$\Delta \ln M_{t-2}$		0.227384*			-0.306054**	0.180521*	-0.107428
$\Delta \ln M_{t-3}$	-0.254087**				-0.32683***	0.190297*	-0.251137**
$\Delta \ln M_{t-4}$	-0.236003*	0.173764*	0.24270***	0.0879177*	0.35076***		-0.115333
R-squared	0.336631	0.610246	0.486732	0.604968	0.604679	0.327546	0.349885
DW or Durbin's h	0.462515	2.085513	1.610771	2.065129	1.7501	2.012258	2.263349
F-statistics	4.46064	14.2317	8.11878	7.65013	0.743542	4.8231	2.76102
Observations	62	57	59	58	45	58	58

Table A.7: Estimation results of final models for Indonesian imports

	Dependent variable $\Delta \ln M_t$						
Importer	**Indonesia**						
Partner	***Argentina***	***Brazil***	***Chile***	***Peru***	***China***	***India***	***South Korea***
$\ln Y_{t-1}$	0.76118***	0.99892***	1.16456**	0.28548***	0.84069***	2.02035***	0.34462***
$\ln E_{t-1}$	-0.208368*	-0.0153088	-1.2488***	-0.35735***	-0.35418**	-1.07567*	-0.23329***
$\ln M_{t-1}$	-0.46695***	-0.76380***	-1.0498***	-0.29539***	-0.67567***	-1.1266***	-0.38379***
$\Delta \ln Y_t$		1.27282***	2.33696***	2.3037**	0.840267**		
$\Delta \ln Y_{t-1}$						7.12332**	0.477276**
$\Delta \ln Y_{t-2}$					-0.491138		-0.45437***
$\Delta \ln Y_{t-3}$	-1.08545**						
$\Delta \ln Y_{t-4}$	0.814825**	-0.926896*	-0.259929		-0.66675***	4.80123*	
$\Delta \ln E_t$		-0.473998**		1.14342			-0.41452***
$\Delta \ln E_{t-1}$	-0.696022*	0.304688**	2.1481*	-0.767152**		8.62208**	0.514668**
$\Delta \ln E_{t-2}$							
$\Delta \ln E_{t-3}$					0.38212***		
$\Delta \ln E_{t-4}$	0.606266**			0.149281*		3.93849*	
$\Delta \ln M_{t-1}$					0.212549*		
$\Delta \ln M_{t-2}$	-0.35193***	-0.22841***	0.0281864			0.482303**	0.0962016
$\Delta \ln M_{t-3}$				-0.133857		0.440791**	
$\Delta \ln M_{t-4}$		0.124377			0.163358*	0.090637**	
R-squared	0.454528	0.583607	0.539984	0.296265	0.580453	0.721099	0.267513
DW or Durbin's h	2.030702	2.07125	2.097085	1.868112	1.711811	1.156471	2.034526
F-statistics	4.29641	5.09501	7.09689	7.51658	7.87382	8.34377	7.68624
Observations	86	86	86	86	46	86	88

Table A.8: Estimation results of final models for South Korean imports

	Dependent variable $\Delta \ln M_t$						
Importer	**South Korea**						
Partner	***Argentina***	***Brazil***	***Chile***	***Peru***	***China***	***India***	***Indonesia***
$\ln Y_{t-1}$	0.75128***	0.64945***	0.65635***	1.11783***	0.67379***	1.21423***	0.50019***
$\ln E_{t-1}$	0.131557	-0.0129236	0.0257767	0.44106***	-0.0467199	-0.0165657	-0.0409097*
$\ln M_{t-1}$	-0.328711**	-0.39387***	-0.40093***	-0.48664***	-0.41489***	-0.66932***	-0.56688***
$\Delta \ln Y_t$	0.449839		0.526245**	0.85556***	0.80669***	0.586615**	0.309634**
$\Delta \ln Y_{t-1}$	-1.31825**				-0.589681*	-0.499273**	
$\Delta \ln Y_{t-2}$		-0.78857***	0.385421**		-0.217757		
$\Delta \ln Y_{t-3}$			0.278481		-0.0504043		0.118776*
$\Delta \ln Y_{t-4}$	-0.626331**	0.57123**				-0.49292***	
$\Delta \ln E_t$		-0.60064***			0.0523119		
$\Delta \ln E_{t-1}$	-0.0519154		0.351104		-0.339457**		
$\Delta \ln E_{t-2}$	-0.570057**	-0.48902***	0.151473		-0.0771909		
$\Delta \ln E_{t-3}$			0.110838		-0.0413102	0.452627**	
$\Delta \ln E_{t-4}$			0.200068	-0.370254*	-0.298846**		0.15283*
$\Delta \ln M_{t-1}$		-0.300092**	0.103269		0.169849		0.228828**
$\Delta \ln M_{t-2}$		-0.241013**		0.180101*		0.173066*	0.169707*
$\Delta \ln M_{t-3}$	-0.153562		-0.29279***		-0.29578***		
$\Delta \ln M_{t-4}$					-0.044347		
R-squared	0.259364	0.503604	0.40831	0.355075	0.828215	0.535988	0.331785
DW or Durbin's h	1.850982	1.608396	0.501074	1.801198	1.895739	1.839843	0.306543
F-statistics	8.94283	6.35745	11.3365	5.34538	21.1802	4.0164	4.60788
Observations	74	65	61	70	44	60	106

Table A.9: Estimation results of final models for Eurozone imports

	Dependent variable $\Delta \ln M_t$							
Importer	**Eurozone**							
Partner	***Argentina***	***Brazil***	***Chile***	***Peru***	***China***	***India***	***Indonesia***	***South Korea***
$\ln Y_{t-1}$	0.261366**	1.45531***	0.124342	0.602495*	0.68454***	0.2950"***	0.46219***	1.1919***
$\ln E_{t-1}$	0.00185003	0.33972***	-0.163362	-0.0690563	0.0646447	-0.38805***	0.28583**	0.68657***
$\ln M_{t-1}$	-0.22399***	-0.92189***	-0.172835*	-0.29600***	-0.28394***	-0.32536***	-0.127642*	-0.86361***
$\Delta \ln Y_t$	1.1427***	0.730649*	1.50443***		1.45997***	0.83643***	0.69435***	0.59192***
$\Delta \ln Y_{t-1}$	-0.339916		0.739327	1.64703**				
$\Delta \ln Y_{t-2}$	0.620672**	-0.358519	0.833514**			0.56022*		-0.515001**
$\Delta \ln Y_{t-3}$		0.524937**		-0.679513*	0.56102***			
$\Delta \ln Y_{t-4}$	-0.418669	-0.515537		-1.0792***	-1.2555***		-0.402209**	
$\Delta \ln E_t$	-0.17011***	-0.43617*	0.8112**	-0.835738*	0.67967***		0.46962***	0.49251***
$\Delta \ln E_{t-1}$			0.739949**	1.55055**		0.73573***		
$\Delta \ln E_{t-2}$	0.19477***	0.144951	1.48391***				0.574417**	
$\Delta \ln E_{t-3}$			0.520297*			0.81213***		
$\Delta \ln E_{t-4}$			0.708372*		-0.54414**	0.90682***		
$\Delta \ln M_{t-1}$		0.337033**					-0.29445**	
$\Delta \ln M_{t-2}$			-0.42685***		-0.168899*	-0.133922*		
$\Delta \ln M_{t-3}$	-0.24919***	0.248284*				-0.164067*		
$\Delta \ln M_{t-4}$	0.36768***	0.346971**	0.218859**	0.45147***	0.52588***	0.52287***		0.330392
R-squared	0.607599	0.647436	0.702787	0.507022	0.682878	0.74714	0.395598	0.586763
DW or Durbin's h	1.901893	-4.180715	2.575624	2.193426	1.366484	2.092219	-0.840853	1.891893
F-statistics	5.14771	28.2174	9.8743	3.77137	6.77142	7.34581	6.27194	21.966
Observations	47	47	49	47	43	47	47	47

Table A.10: Estimation results of final models for US imports

	Dependent variable $\Delta \ln M_t$							
Importer	**USA**							
Partner	***Argentina***	***Brazil***	***Chile***	***Peru***	***China***	***India***	***Indonesia***	***South Korea***
$\ln Y_{t-1}$	1.12794***	0.91295***	1.73989***	1.60889***	2.60626***	0.244538	0.28811**	0.0217674
$\ln E_{t-1}$	-0.0108118	-0.0141829	0.046815	0.26892***	0.284811*	-0.221185**	0.0338944	-0.12601***
$\ln M_{t-1}$	-0.48985***	-0.24619***	-0.33615***	-0.26237***	-0.31158***	-0.0826928	-0.046939**	-0.09617***
$\Delta \ln Y_t$				4.28864**	2.23633***			2.07088**
$\Delta \ln Y_{t-1}$		2.45399	4.86018**	6.97134***	2.1038**	5.36572***	3.87755***	1.36091*
$\Delta \ln Y_{t-2}$						2.23305		
$\Delta \ln Y_{t-3}$		5.48124***	2.58474				-2.92094**	
$\Delta \ln Y_{t-4}$	4.81918**				-3.01413**			-0.443174
$\Delta \ln E_t$						-0.214272	0.113519*	
$\Delta \ln E_{t-1}$		0.276374*			-0.40535***			-0.21845*
$\Delta \ln E_{t-2}$	-0.203194**				-0.471698**	0.790663**	-0.20567***	0.164447
$\Delta \ln E_{t-3}$			0.72325***	0.394075	-0.40763***	0.501374*		0.29253***
$\Delta \ln E_{t-4}$	0.121534							
$\Delta \ln M_{t-1}$			-0.122333			-0.46639***	-0.194455*	
$\Delta \ln M_{t-2}$		-0.35652***	-0.226512**	-0.223434**	-0.118169*	-0.302409**		
$\Delta \ln M_{t-3}$		-0.0984205	-0.28856***		-0.108296**	-0.30253***	0.170783*	
$\Delta \ln M_{t-4}$	0.245806**		0.47001***	0.32311***	0.64729***	0.258119**	0.24576***	0.35914***
R-squared	0.442162	0.438747	0.838259	0.524004	0.905915	0.57687	0.206964	0.474336
DW or Durbin's h	1.820248	1.994743	1.594452	2.144918	1.597117	2.181982	1.943784	2.161212
F-statistics	10.4753	5.41601	5.08191	6.64902	4.48138	4.65064	4.87112	7.83886
Observations	74	67	63	74	46	59	174	206