South-South and North-South Economic Exchanges:

Does it Matter Who is Exchanging What and with Whom?

Omar S. Dahi[1]
Hampshire College
School of Critical Social Inquiry
Amherst, Massachusetts, USA 01002
Tel: +1 413 559-5392
E-mail: odahi@hampshire.edu

Firat Demir
University of Oklahoma
Department of Economics
436 CCDI, 308 Cate Center Drive
Norman, Oklahoma, USA 73019
Tel: +1 405 325-5844
E-mail: fdemir@ou.edu

Abstract

This article surveys the literature on costs and benefits of South-South vs. North-South economic exchanges. Unlike the case for North-South exchanges, academic work on South-South economic relations has been historically limited given their marginal importance in the global economy. After the 1990s, the literature has changed in two main ways. First South-South trade and finance since then has increased dramatically, leading to a bourgeoning literature on the topic. Second, the rise of the Emerging South has opened up new lines of inquiry to include not just the traditional topics of trade and preferential trading agreements, but also cover technology transfer, capital flows, labor migration, institutions, and environment. We discuss how this literature has evolved to take into account of the greater complexity of South-South relations with a focus on China in Africa as well as the blurring of the lines between heterodox and mainstream analysis of South-South relations. We end the review by showing how the empirical and theoretical literature is exploring the increasing divergence within the global South between what we refer to as the Emerging South and the Rest of South.

Keywords: South-South and South-North trade and finance, Neoclassical theory, Heterodox theory, Analytical Political Economy, China

JEL codes: B50, F10, F30, O10, O53, O55

[1] Corresponding author.

1. Introduction

The term 'South-South economic relations' captures a host of economic exchanges within the global South including trade in goods and services, capital flows, technology transfer, labor migration and remittances as well as preferential trade and investment agreements and voting blocs within multinational institutions. For the most part 'South-South trade' is used as shorthand to capture all those modes of interactions and South-South trade and South-South economic relations tend to be used interchangeably. In much of the post-war period through the 1980s, South-South economic relations were a flashpoint for debate between supporters and critics of universal free trade, state-led development and import substitution industrialization (ISI). The relatively scarce literature tended to focus overwhelmingly on the benefits or drawbacks of trade integration among developing countries.

The supporters' rationale was the ostensible benefits for industrialization in the South. Prebisch (1959) had famously advocated the "enlargement of national markets through the gradual establishment of a common market" in Latin America to take advantage of specialization and economies of scale (p. 268). Myrdal (1956: 261) supported South-South integration to help the global South overcome the colonial legacy that biases them in favor of North-South trade.[1] Linder (1967) had argued that similarities in consumer preferences, resource base, technological development, as well as institutions are likely to make South-South integration and trade more beneficial to Southern industrialization than North-South trade.

The critics on the other hand saw in South-South integration all that was wrong about ISI. According to Havrylyshyn and Wolf (1987: 3) if a Southern country "does a great deal of trade with other developing countries [in capital intensive products] this is probably a sign that it has distorted domestic prices." South-South trade according to Deardorff (1987) and Havrylyshyn (1987) was an attempt to recoup the losses from ISI. Given its inability to penetrate Northern markets due to the high cost and low quality of its consumer and capital goods, a large industrializer like Brazil would offload them to neighboring Paraguay thanks to preferential treatment. Amsden (1980, 1983, 1984, 1987, 1989), using her analysis of East Asian industrialization, countered these critics by arguing that much of South-South trade in capital goods was intra-industry and in intermediate products, most of which was not subject to

preferential treatment. Moreover, she argued, South-South trade facilitated technology transfer and a 'learning by exporting' in countries trying to climb the industrial ladder.

Research on South-South trade as an alternative remained relatively marginal throughout this period even when the structuralist literature on uneven development extensively critiqued North-South trade due to asymmetrical economic structures and patterns of specialization (Findlay, 1980; Darity, 1990; Dutt, 1992). As noted by Darity and Davis (2005: 154):

> "The role of government policy is not at the forefront of most of these [uneven development] papers. If we believe these processes operate and perpetuate international inequality, precisely how do we reverse them? Via industrial policy, South-South trade, South-South finance, autarky? Rarely does the formal literature on North-South trade and growth answer the question of how the world should be changed."

There is good reason for this lack. Research on South-South relations remained minimal because South-South trade and capital flows themselves remained relatively negligible throughout most of the post-war period. It was not until the 1990s that South-South economic relations took off and eventually brought the academic literature along with them. However, the post-1990s boom was fundamentally different from earlier ones. While most earlier studies focused on South-South relations under the ISI and the 'old regionalism', the rise in the past three decades has been under the neoliberal era and the 'new regionalism' in which most countries of the globe have experienced significant trade and financial liberalization relative to the earlier period together with a simultaneous retrenchment of industrial policy.

Several themes emerge from this newly bourgeoning literature. First, South-South trade and finance is now a significant economic and political force for South countries as well as for the global economy. There is a near consensus therefore that South-South economic relations *do matter* and that they have the potential to have a significant developmental impact. Moreover, this impact may be positive or negative, i.e. that it may help or hinder the long-term developmental goals of exchanging parties. Second, much of South-South manufactures trade is concentrated in high-technology-and-skill content, opening the door for potential long-run dynamic gains from trade. However, these gains are being increasingly concentrated within a small number of South countries. The global South is in fact splitting into two groups, which we refer to as the Emerging South and the Rest of South with very different outcomes. While there

is evidence for gains through South-South trade, there is also evidence that the Emerging South is rising at the expense of the Rest of South. Finally, the South-South exchanges have expanded significantly to cover issues including financial flows, technology transfer, among other topics. The overall conclusion of this diverse literature is that while it does matter who is exchanging what and with whom, South-South trade is not a panacea for the development challenges in Southern countries. On the contrary, South-South exchange themselves may become a potential threat for development for some of the Southern countries.

The rest of the paper proceeds as follows. Section 2 provides a framework for situating the literature by reviewing the traditional targets of development as well as the benefits and drawbacks of integration into the global economy in both South-South and North-South directions. By establishing the general goals for development in the global South and the means to achieving those goals, we can better appreciate the debates in the academic literature on the relative merits of South-South and North-South trade. Section 3 provides a discussion on the definition of North and South and offers a statistical overview of South-South economic relations that also helps contextualize the debates within the literature. Section 4 introduces the theoretical and empirical literature on the relative costs and benefits as well as relative constraints and bottlenecks in South-South and North-South economic exchanges. Section 5 provides a discussion of the China in Africa debate that helps explain the complexities in South-South exchanges. Section 6 debates whether South-South is still a useful analytical category with the potential of uplifting developing countries as a whole. Section 7 concludes.

2. Economic Development and Global Integration within the Global South

In order to understand the evolution of the literature on South-South trade it is necessary to anchor the discussion on the main question that the literature is responding to. The debate about South-South trade and its comparative merit relative to North-South trade is in essence a debate about economic development strategies within the global South. Linking South-South relations to trade was explicitly made by developing countries themselves starting with the Bandung Declaration of 1955 to the New International Economic Order of 1974 within UNCTAD to South-South coalitions such as the Like Minded Group within the WTO (Dahi and Demir, 2016). Through those various initiatives the majority of developing countries have declared the goals of development to be solving the problem of poverty, raising the living standards of their citizens, and achieving a level of economic independence to accompany political independence. This

leads to two central questions: What kind of processes lead to achieving those goals, and how does integration into the world economy help or hinder those processes?

The answers to those questions have been at the core of debates within economic development and international economics fields over the past half-century. Though the debate itself is outside the scope of this paper, much of the literature reviewed here assumes that the engines of economic development and structural change within the global South emanates from increasing industrialization, technology-and-skills upgrading as well as the development of effective institutions.[2] Economists have long argued that there exists a positive relationship between industrialization and income growth (Leontief, 1963; Kaldor, 1966; Chenery et al., 1986; Murphy et al., 1989) though this relationship has not gone without critiques (Easterly and Levine, 2001). Technological upgrading, and entering into knowledge based economies are also shown to be engines of growth (Romer, 1990; Landes, 1998; Rodrik, 2007). Overall there appears to be a consensus in this literature suggesting that what you produce and export matters for long run development and growth.

Accepting the goals of development, and the general means to achieving those goals leads to the key questions facing developing countries. What kind of barriers or binding constraints, internal or external, does the average developing country face in achieving those goals, and what may be the benefits or drawbacks from integration into the global economy? Internally most developing countries found themselves in vicious cycles of low savings and capital investments, dependence on primary product exports, underdeveloped institutions, low levels of financial depth and high levels of capital market imperfections, as well as a variety of information and coordination failures. These internal constraints also shape the developmental potential of South-South vs. North-South exchanges through adaptive capabilities, suitability of new technologies, transferability of skills and technology, and differences in demand structures. This is not to mention that many countries with extended experience with colonialism often had domestic vested interests in agricultural or natural resource extraction rather than in industrial development. Externally, the significant gaps that existed at the industrial and technological level were coupled by power and knowledge asymmetries, particularly as the U.S. and the U.K. wrote the rules of the game in the post-WWII era through the Bretton Woods institutions.

What then are the purported benefits of integration into the world economy? The mainstream orthodoxy since the 1970s has argued that integration into the world economy is the

best path for development and growth and that inward orientation hurts development (Little et al., 1970; Krueger, 1977, 1997; Bhagwati, 1978; Michaely et al., 1989; Dollar, 1992; Harrison, 1996; Dollar and Kraay, 2004). Integration has many potential benefits. Openness, particularly in trade, allows countries to access advanced technology that facilitates the process of growth and structural transformation and helps overcome domestic market constraints, enabling the industrial sector to achieve economies of scale, among other benefits (Grossman and Helpman, 2001). Likewise, financial liberalization is expected to drive down the cost of capital (Henry, 2000), increase investment and growth (Bekaert et al., 2001, 2005), and lower financial constraints on growth (Rajan and Zingales, 1998).

In short, developing countries want to industrialize and upgrade their technological capacity, and integration into the world economy may provide them with the means to do so. Nevertheless, the question then becomes whether North-South or South-South economic relations particularly help or hinder achieving developing country goals. The rest of the paper traces the evolution of this debate.

3. Evolving Nature of South-South and North-South Exchanges

3.1 Where is the South?

Defining the South and the North is not an easy task and the exact categorization of countries into one of these two groups partly depend on the research question at hand as well as the underlying assumptions for particular theoretical approaches. The countries of the South are usually defined as those developing (or underdeveloped/less developed/Third World/peripheral) countries in Latin America and the Caribbean, Africa and most of Asia excluding Japan and Oceania, as well as transition economies. This makes the North defined as developed (first world/center/core/metropolis) countries including those in North America (except Mexico), Western Europe, Japan, Oceania, and Israel.

The critique that both the North and the South are comprised of a wide range of countries with high levels of heterogeneity in their economic, social and political structures as well as in their factor endowments, development policies, historical experiences, etc. is a valid one. Furthermore, these countries have a diverse set of interests and treating them as homogenous units may create a fallacy of composition.[3] The literature we review is mostly aware of these objections and the North and South classification does not assume countries are homogenous within each group. Rather, it is based on the stylized facts showing that similarities are more than

differences within each group and that there are some fundamental differences between countries across these groups. Another issue is that the list of Northern club membership is a dynamic one even though there is strong hysteresis. Last, how much of this country heterogeneity needs to be emphasized depends on the research question. For example, differences in economic development trajectories of Southern countries for the last 30 years necessitate an additional distinction to separate Emerging South economies (i.e. Newly Industrialized Countries (NICs)/semi-periphery) from the Rest of South.

Notwithstanding these objections, we argue that the North vs. South distinction is a useful one with some caveats, particularly regarding emerging market economies with fast-track industrialization and technology-and-skills upgrading. Using Occam's razor, we chose the definition with the least number of assumptions and have classified countries in three groups: the North (23 countries), the Emerging South (55 countries) and the Rest of South (157 countries).[4] "The North" refers to the industrialized high-income countries. "Emerging South" refers to the more advanced and, at a minimum, partially industrialized countries of the South, most of them from what the World Bank refers to as the middle-income group, and a few from the NICs group. The term "developing," in the true sense of the word, refers to these countries. "Rest of South" includes those Southern countries that are not included in the Emerging South category. Global South (or when we simply state, South-South), on the other hand, refers to all countries of Emerging South and Rest of South combined. We should note that while most countries of the global South are in this group, the majority of Southern population lives in Emerging South countries.

In our classification, we have taken into account countries' incomes, production and trade structures, factor endowments, and human and institutional development, and have kept the group of countries constant over time. Allowing country-switching between groups would create inconsistency as we would have to exclude countries that move up the economic ladder, and to do so would introduce a selection bias. Furthermore, moving the new graduates from the global South class would prevent us from understanding how these now-rich countries have become rich. The rule of thumb in these decisions, especially in applied research, is the timing of a particular country's move up (or down) the development ladder. The obvious examples are Argentina's downgrading from North to South in early 20th century and the upgrading of South Korea in late 20th century.

3.2 Stylized facts on South-South and South-North exchanges

For most of post WWII period, South-South trade remained marginal, fluctuating at around 10% of world trade in merchandise goods. Historically, an interesting feature of South-South trade is that it is concentrated in relatively sophisticated manufactures compared to South-North trade (Amsden 1989). Since early 1990s, South-South trade has grown substantially, reaching as high as 28% of world merchandises trade by 2013 (Figure 1).[5] North-South and South-North trade, however, remained relatively stable, with a slight increase for the latter. The importance of South-South exports in total Southern exports has also increased substantially, reaching from around 20% in the 1950s to 60% in 2013. And yet, a majority of this, around 70%, is from trade between Emerging South countries. Likewise, more than 85% of South-North trade originates from Emerging South countries as seen in Figure 2.

<INSERT FIGURES 1&2 HERE>

During this period, the production structures of some Southern countries have gone through a major metamorphosis, becoming more industrial rather than agricultural or natural resource-dependent. In fact, as shown on Figure 3, the share of Emerging South countries in world manufactures exports steadily increased from 10% in 1962 to 45% in 2012, while the share of the Rest of South countries remained negligible, fluctuating at around 2%-3% of world trade since the 1980s. The situation with high-technology-and-skill-intensive manufactures is even worse such that the share of Rest of South stayed at or below 1% and has never been more than 2% of world trade. Meanwhile, the share of Emerging South in world exports of high-skill goods increased from 2% in 1962 to 55% in 2012, surpassing the share of the North (45%) (Figure 4).

<INSERT FIGURES 3&4 HERE>

We see a similar trend in South-South financial flows even though they have remained negligible up until very recently, and this is reflected in the relatively minimal literature we have on the subject. In fact, before the 1990s most of the South was in a state of financial autarky with regard to equity and private debt flows. Besides, Southern countries emerging as a source of debt, equity of aid coincides with the rise of few Emerging markets after the 2000s (UNDP, 2015). In 2013, FDI inflows to the South amounted to 61% of global inflows (including both the North and the South) while FDI outflows from the South reached its highest level of 39% within global outflows. We discuss the financial aspect of South-South exchanges further in section 4.4.

4. Theory and Empirics of South-South Trade and Finance

4.1. Static theories of trade

The traditional Ricardian and HOS (Heckscher-Ohlin-Samuelson) model approaches the issue of South-South trade with suspicion as it sees growing South–South trade coming at the expense of North-South trade. The static HOS model predicts that in countries with higher capital/labor ratios (i.e., the North) the relative cost of capital-intensive goods will be lower, while in countries with lower capital/labor ratios (i.e., the South), the relative costs will be lower for labor-intensive goods, reflecting the effect of factor endowments on each group of countries' comparative advantage in international trade. Through specialization, the capital-abundant countries will export more capital-intensive products to labor-abundant countries and receive more labor-intensive products in return. If we considered factor endowments as skilled and unskilled labor, we would get the same outcome. Countries with higher skilled/unskilled labor ratios will export more skill-intensive products and import relatively lower-skill-intensive products. We should note that the static nature of the HOS assumes that international division of labor and specialization should be based on current factor endowments.

The HOS model was extended to account for the rise of the NICs (i.e. the Emerging South), so that they appear as middle countries (Deardorff 1987). Unlike the older theories, which assume two countries with two goods and two factors of production, this formulation assumes a three-country and two-good model where factor endowments lie on a continuum, with relative labor abundance on one end, and relative capital abundance on the other. A middle country is somewhere in between and imports labor-intensive goods from a less-developed Southern country (i.e., Rest of South) and capital-intensive goods from a Northern country. At the same time, the Emerging South country exports capital-intensive goods to the low-income Southern country and labor-intensive goods to the Northern country (Krueger, 1977; Baldwin, 1979; Khanna, 1987; Deardorff, 1984). Therefore, the Rest of South competes with the Emerging South in labor-intensive but not in capital-intensive products while the North competes with the Emerging South in capital intensive but not in labor-intensive products.

Static neoclassical trade theory treats the South-South trade in capital or skill-intensive goods as a result of misguided ISI policies, which distorted relative prices and caused allocative inefficiencies and welfare losses. Accordingly, those Southern countries that had failed to develop high-quality and competitive capital-and-skill intensive products dump their lower

quality and overpriced industrial products on other Southern countries. Thus, Southern consumers end up being penalized by being forced to buy low quality refrigerators, televisions, machinery or cars from their Southern partners, driven by trade diversion from the North (Diaz-Alejandro, 1973; Havrylyshyn and Wolf, 1987; Bhagwati et al., 1998; Panagariya, 2000). This critique of South–South trade is therefore also a critique of the ISI model in developing countries. The basic idea behind the ISI was antithetical to the static HOS model as it argued that industrial upgrading is not only possible but is also desirable for less developed countries with low capital/labor and skill-intensity ratios.

4.2 Dynamic theories of trade

The development of neoclassical new trade theory starting with Krugman (1979) led to another wave of criticisms of South-South economic integration efforts. By then it had become obvious that most world trade was between similarly endowed economies, that is, North-North rather than North-South, and it was intra-industry rather than inter-industry, running against the predictions of the HOS theory. New trade theory introduced imperfect competition, including monopoly rights over new technology, increasing returns, differentiated products and mobile capital, with special attention to intra-industry trade. Unlike the static neoclassical trade theory, the evolution of factor endowments, technology, skill intensities and factor productivity has come to the center stage of trade analysis.

Compared to the neoclassical theory, heterodox trade and development theory had always focused on dynamic gains, or lack thereof, from international trade. Issues seemingly introduced by new trade theory, such as imperfect competition, increasing returns and endogenous technological change (together with surplus labor), were already a key feature of early classical development theory (Ros, 2000, 2008, 2013, ch. 2). While the heterodox macroeconomic literature on North-South and South-South trade is rich and diverse, the main debates on the subject mostly originated from the Structuralist school.[6] Therefore we will mostly compare neoclassical trade theory with the Structuralist and related literature in this section. In what follows, we will summarize the main points from the neoclassical and structuralist schools on South-South vs. North-South trade, emphasizing the binding constraints and developmental effects of economic interactions that favor one over the other. We should also note that the division between the neoclassical and structuralist literature has increasingly become blurred as it is possible to find arguments for and against South-South trade from both schools.

4.2.1 Productivity spillovers, technology frontier and adaptive capabilities

One strain of neoclassical new trade theory argues that North-South trade integration is mutually more beneficial as it allows for exploitation of economies of scale, and faster adoption of newer and better technologies and skills, leading to skills-and-technology upgrading and productivity-gains, which would not be possible under South-South trade. Otsubo (1998), for example, argue that only after the South has liberalized trade with the North and begun producing according to their comparative advantage (i.e. labor-intensive goods), will there be a chance for the expansion of intra-industry South-South trade. Schiff (2003), Schiff and Ollareaga (2002), and Schiff and Wang (2006, 2008) also suggest that the highest impact on Southern total factor productivity (TFP) comes from the North through trade-induced technology diffusion. That is, the potential for technology transfer is higher when the technology gap between the trading partners is larger. As the South is positioned further away from the international technology frontier, North-South trade offers a higher chance of technology diffusion than South-South trade. North-South trade integration is also suggested to accelerate vertical specialization or value-chain fragmentation, allowing for faster catching up with the North (Krugman, 1995). Thus, with regard to technological acquisition, Southern countries are to have a wider range of choices in the Northern technology market and therefore can adopt the best technologies with the least cost and effort. In this literature, as will be discussed further later, capacity and capability of technology adoption are seen as one and the same thing.

On the other hand, for other strands of this literature, the existence of a vast technological gap between the North and the South limits gains from North-South trade and prohibits expansion of intra-industry trade. As the gap is smaller in South-South direction, there is arguably a bigger potential for learning by exporting in more sophisticated manufactures. This view challenges the orthodox view about technology transfer. What is suggested here is the opposite of the earlier view: the closer two countries are in technological development, the more likely they are to benefit mutually from trade since the technology is more appropriate for local conditions, including consumer preferences (more on this in 4.2.2), production structures, resource bases and institutions (World Bank, 2006; Caglayan et al., 2013; Regolo, 2013; Dahi and Demir, 2013; Bahar et al., 2014; Cheong et al., 2015; Demir, 2016; Demir and Hu, 2016).

On this issue, the new trade theory has converged to the older structuralist tradition, which made the exact same arguments in favor of South-South trade (Amsden, 1980, 1987;

UNIDO, 2005). Particularly, because of its higher skill-and-technology intensity, South-South trade is argued to have dynamic long-run benefits (Amsden, 1980, 1983, 1984, 1987, 1989; Chang, 2002, 2006, 2008; Wade, 1990). Assuming that learning and other spillover effects are the highest in the production of higher-skill manufactures, South-South trade, therefore, offers higher potential for long-term development as it stimulates greater industrial production and skill-and-technology upgrading. Besides, South-South trade offers more opportunities in intra-industry trade in industrial products than the North-South trade, which is inter-industry, with the South exporting relatively lower skill-and-technology intensive products.[7] The importance of manufactured goods for industrial upgrading and growth was first raised by Kaldor (1967). While the classical development theory and the structuralist approaches have long argued that what you export matters for long run development, which is seen as a dynamic process reinforced by sectors that enjoy increasing return, neoclassical new trade theory, despite starting from different assumptions and often arriving at different policy conclusions, has increasingly recognized the importance of export structure and export diversification for skills-upgrading and growth (Antweiler and Trefler, 2002; Imbs and Wacziarg, 2003; An and Iyigun, 2004; Hausmann et al., 2007).

Table 1 shows that while the share of medium-skill manufactures in intra Rest of South trade has been around 14%-24% on average in each decade since 1960s, it was around 2%-4% in Rest of South-North trade. The same is true for high-skill goods. For intra-Emerging South trade in medium and high-skill goods we again find a similar pattern. During the 1960s, 70s and 80s, for example, the share of medium-skill goods in intra-Emerging South trade was more than twice higher than in Emerging South-North trade. Table 2 supports these findings by showing the destination market distribution of medium and high-skill exports of Southern countries. During the Great Recession period of 2009-2012, for example, 35% of Rest of South high-skill exports were to other similar countries and 42% were exported to Emerging South countries. In fact, for most of the years between 1962 and 2012, more than half of Rest of South exports of medium and high-skill goods were to global South countries, be that Rest of South or Emerging South.

<INSERT TABLE 1 & 2 HERE>

Furthermore, being the technological laggard, the South is argued to be in a dependent relationship regarding the direction of technological change. Particularly, being at the technological frontier, the North controls the direction of technological innovation, which is

conditioned by Northern endowments and preferences, making it more capital-intensive (Stewart, 1982; 1990: 81; Kaplinsky, 1990, 2011, Acemoglu, 2015). Thus, products produced by the North are biased against Southern preferences and are inappropriate in terms of production techniques and product characteristics, which the South accepts because of lack of alternatives. Conversely, South-South exports, which embody older technologies, might be more appropriate for skill and technology adoption, matching Southern production and demand structures as well as factor endowments and market size than Northern exports with cutting-edge technologies (Stewart, 1982; Chudnovsky, 1983; Amsden, 1984, 1987; Kaplinsky, 1990; Bhalla, 1985; Nelson and Pack, 1999). Environmental appropriateness, including climate conditions or land use patterns and soil fertility of a chosen technology adds another dimension to this debate as large-scale vs. small-scale production processes have different implications for resource-poor or environmentally-risky Southern countries that lack the resources to guarantee environmental safety and protections (Schumacher, 1973; Atta-Ankomah, 2014). Akamatsu's (1962) 'flying geese' made similar arguments about the rise of Japanese industrialization. The size of the market and scale economies also affects the choice of technology available to Southern and Northern producers (Stewart, 1982; Kaplinsky, 1990; He et al., 2012; Atta-Ankomah 2014). Therefore, technologies that are more suitable for Southern firms in smaller markets will not be necessarily available from Northern suppliers, whose capital goods are more suitable for large markets.

The assimilation argument of Stewart (1990) and Nelson and Pack (1999), among others, matches with what Lall (2000, 2001) refers to as the capabilities approach to technological change. Accordingly, developing country firms are constrained by imperfect knowledge of technological alternatives, and finding technologies is a difficult and costly process. Imported new technologies require creating new skills and know-how to master their tacit knowledge, which varies by the kind of technology in question. Learning costs and adaptive capabilities, therefore, create barriers for technology adoption and limit the ability of Southern firms to choose the best technology available from the North. Thus, national abilities, not comparative advantage in factor endowments, determine a country's ability to master and use effectively a given technology. The greater the gap in tacit technological knowledge required in the production processes, the smaller the possibility for technological acquisition and knowledge growth. Therefore, the adoption costs are an increasing function of the knowledge and

technology gap between the importers and suppliers (Amsden, 1987: 133). It must be stressed that the relevant literature argues for targeted industrial policy in promoting technological development, whether through North-South or South-South exchanges as has been shown for the case of Costa Rica, Brazil, India, South Korea, and elsewhere (Salazar-Xirinachs et al., 2014).

More recent advances in neoclassical research also support these observations. Acemoglu (2001, 2002: 783, 2007, 2015) and Acemoglu and Zilibotti (2001), for example, argue that market size, the relative scarcity of factor endowments, including their elasticity of substitution, and skills scarcity bias the direction of technological change. The technologies developed in the North, therefore, will be inappropriate to the needs of the South as they will not correspond to lower capital and skill intensities in developing countries. Caselli and Coleman (2001) also show that the level of human capital development, and industrial development level of importing countries influence technology adoption. In the industrial organization field, there is indeed a long literature exploring how the choice of technology is endogenous to firm, market, and consumer characteristics.[8]

Given the similarities in technological development, South-South trade, therefore, allows for easier technological innovation (Amsden, 1984, 1987; Lall, 2000, 2001; Lall et al., 1989). These production systems are also more likely to be labor intensive, and thus, allow for a more efficient use of surplus labor in the South while lowering license costs (Pack and Saggi, 1997). Recent empirical work using case studies show that developing country technologies might indeed fit better for local needs, demand structures, market size, factor endowments and adaptive capabilities (He et al., 2012; Atta-Ankomah, 2014; Agyei-Holmes, 2016; Xu et al., 2016).

4.2.2 Preference, demand and income similarity

Another seeming convergence between the neoclassical and structuralist literature is the recent work on Linder's preference similarity theory on consumer demand, which provides support for South-South over North-South trade (Hallak, 2006, 2010; Fajgelbaum et al., 2015). Linder (1967) suggested that inventors, innovators and entrepreneurs are stimulated by home demand as they develop products to fit home market tastes and preferences. Later, they export products to those countries with tastes and preferences similar to those at home. Thus, the reason why most Northern trade is with other Northern countries and why it is intra-industry is because of the demand structure: the incomes, tastes and preferences of developed countries are similar, and therefore they buy differentiated but similar products from each other (Krugman, 1980).

South-South trade may therefore fit the demand structure of Southern consumers better than North-South trade. Furthermore, because entry barriers are higher in South-South direction, be that because of higher trade barriers, transaction and transportation costs, colonial-era distortions that favor Northern countries, language differences or lack of trade financing and credit, Southern consumers buy inappropriate Northern goods that do not match their demand structures, reducing overall welfare.[9] The South also loses in North-South trade as it cannot export products that it is most efficient at (Linder, 1967: 37).

Accordingly, there are differences in consumer demand structures in the North and the South as certain products have "high" while others have "low" income characteristics and preference structures (Copeland-Kotwal, 1996; Murphy and Schleifer, 1997; Hallak, 2006, 2010; Fajgelbaum et al., 2015). Lancaster's (1971) approach to consumer demand also argues that consumers desire certain characteristics of goods rather than the goods themselves. The perceived quality differences between Southern and Northern goods of the same type also create some friction between Northern and Southern consumer preferences. For example, while there is little evidence showing that Chinese leather bags or watches are of lower quality than Italian bags or Swiss watches, the price differences are significant, reflecting differences in consumer demand for Southern and Northern goods (Brucks et al., 2000; Fontagne et al., 2008). Loren and Eric (2016), for example, showed that despite a lack of quality differences, Chinese excavators are sold at a significant price discount to foreign competitors. Therefore, specialized products in South-South trade may be subject to smaller perceived quality biases than in North-South trade, allowing Southern producers a better chance of exporting.

Recent empirical work supports Linder's theses showing that the level of institutional and cultural similarity as well as closeness in incomes, endowments, technological and preference structures between countries boost bilateral trade as well as the potential for economic convergence and spillovers through economic exchanges (Bergstrand and Egger, 2013; Dahi and Demir, 2013, 2016; Demir and Dahi, 2011; Regolo, 2013; Bahar et al., 2014; Hallak, 2006, 2010; Cheong et al., 2015; Demir, 2016; Fajgelbaum et al., 2015; Demir and Hu, 2016). Regolo (2013), for example, finds that endowment similarity between country pairs stimulates greater export diversification. Bergstrand and Egger (2013) also find that country pairs of similar economic sizes or capital and labor endowments are more likely to engage in bilateral preferential trade (PTAs) and investment agreements (BIAs) than others. Bahar et al. (2014)

show that having neighbors with similar comparative advantage increases a country's export growth in similar products. Besides, they show that countries with more similar incomes, endowments and population have more similar exports. Likewise, Hallak (2006, 2010) show that income similarity increases bilateral trade flows between countries.

4.2.3 Economies of scale and market size asymmetries

Unlike the discussion in sections 4.2.1 and 4.2.2, similarities in production and trade structures, consisting (arguably) of primary commodities, are claimed to make it harder to benefit from economies of scale in South-South trade. Faulty government interventions under the ISI through price distortions and errors in the choice of subsidized sectors as well as the geographical location of industrial plants are argued to lower the chances of economies of scale in South-South trade (Schiff, 2003). South-South trade integration is also suggested to have asymmetric effects on trading partners, conditional on their positioning in the industrialization ladder. More advanced Southern countries are more likely to reap larger benefits as they export their lower-quality manufactured goods to other less-developed Southern countries. Therefore weaker Southern countries are claimed to be better off in North-South than South-South trade. Because of economic power asymmetry, industries with the most dynamic development potential are also more likely to relocate to bigger and richer Southern countries, leading to their divergence from the Rest of South (Puga and Venables, 1997; Venables, 2003; Schiff, 2003).

4.2.4 Quality upgrading

The quality of exported goods is shown to be endogenous to importer characteristics such as income levels or similarities in tastes and preferences. Through panel data on Mexican manufacturing plants Verhoogen (2008) show that more productive plants produce higher quality goods to penetrate Northern (particularly US) markets. This is a stylized fact that was previously highlighted by the structuralist literature as well. Amsden (1989), for example, suggests that South Korean exports to the North enabled product quality upgrades. Hallak (2006), Bastos and Silva (2010), Manova and Zhang (2012), and Dahi and Demir (2016) find that export unit values, signaling product quality, increase with the income levels of importing nations, reflecting increasing consumer demand for quality with income. In fact, Manova and Zhang (2012) show that even the very same firms charge higher prices, reflecting higher quality, in richer country markets. One major implication of these findings is that North–South trade may provide additional benefits through productivity and quality improvements for Southern producers.

4.2.5 Uneven development, path dependency and trade

While previously outside the scope of mainstream trade theory there is now a bourgeoning neoclassical literature emphasizing the importance of initial conditions in explaining long-run differences in incomes and growth (Krugman, 1987, 1991; Lucas, 1988; Becker et al., 1990; Matsuyama, 1991). As Feenstra (1996) pointed out, the assumption of perfect international diffusion of knowledge is a necessary condition for the neoclassical convergence story to materialize. Without this assumption, the same models can lead to convergence clubs within but not between different groups of countries.

Furthermore, Northern colonial rule and slave trade are shown to have had significantly negative effects on bilateral trade, institutional development, democracy, income growth, human capital, trust, and income inequality within the South (Findlay, 1992; Acemoglu et al., 2001; Angeles, 2007; Iyer, 2010; Wietzke, 2015; Bagchi, 2008). Interestingly, the empirical neoclassical trade literature has long been aware of the effect of colonial past on trade as shown by the positive and significant colonial past dummies in Gravity regressions. However, most of these studies do not assume any interdependency between the rise of the West with the fall of the Rest, treating skill-biased technological and structural change in Northern economies as exogenous of their involvement in the South. Furthermore, learning-by-doing and induced-technological change, which have been the corner stones of endogenous growth and new-trade theories have not been applied to North-South exchanges. As Acemoglu (2015: 456) noted "the orthodoxy ..., which ignores the biased and localised nature of technological change, is still widespread in much of macro- economics."

On the other hand, the Structuralist school from its beginnings has questioned the premise that North-South trade is beneficial to all trading parties. Initially developed by Raul Prebisch, the structuralist literature argues that the South exports primary products and/or simple manufactures in return for advanced industrial products from the North and therefore remains in a constant state of underdevelopment. Unlike the arguments put forward in section 4.2.3, a rich literature from this tradition shows myriad ways in which North-South interactions create outcomes more favorable to the North, leaving the South in a dependent position to the North (Bacha, 1978; Taylor, 1981, 1983; Dutt, 1986, 1987, 1989, 1990, 1992, 1996; Findlay, 1980; Darity, 2005).

One strain of this literature argues that differences in income elasticities of demand for Southern and Northern goods generate uneven development given the international division of labor whereby the South produces primary products or low-end manufactures with low income elasticities while the North produces high-skill-and-technology intensive goods with higher income elasticities (Singer, 1950, 1975; Prebisch, 1950, 1975). Endogenous technological change is also suggested to cause uneven development in North-South trade. The invention of synthetic substitutes for Southern primary goods, for example, is shown to turn the terms of trade against the South, thereby slowing its growth (Dutt, 1996).

The asymmetric nature of North–South trade is also analyzed through the engine of a global growth metaphor where increasing Northern growth moves the terms of trade in favor of the South, stimulating growth and capital accumulation in the South (Lewis, 1980; Taylor, 1981). However, given the structure of Southern and Northern exports, the North–South interaction is doomed to be uneven (Dutt, 1989, 1990; Findlay, 1980, 1984; Taylor, 1981; Ros, 2013, ch. 4; Darity and Davis, 2005). Furthermore, in this framework, Southern growth is always dependent on Northern growth and is not self-sustaining. For example, a positive technological shock in the South increases Southern productivity and growth, leading to an expansion of Southern supply of goods as well as Southern demand for Northern goods, both of which turns the terms of trade against the South. Falling terms of trade, in turn, lowers Southern foreign exchange earnings and profits, eventually slowing down its growth (Singer, 1950, 1975; Prebisch, 1950, 1959; Lewis, 1969; Dutt, 2012). Interestingly, WTO (2003) celebrated the increase in South–South trade in manufactures and financial flows, citing favorably Prebisch's hypothesis on declining terms of trade in the context of discussing the importance of manufactures for industrial growth. Furthermore, the World Bank (2008) pointed out that South–South trade can help reduce the South's growth dependence on Northern growth.

The earlier Structuralist literature, however, did not suggest that South-South trade would reverse the asymmetric nature of North-South exchanges. In fact, there is nothing to stop the same dynamics from progressing within the South-South as long as there are the same type of asymmetries between Southern trading partners as is the case today between Emerging South and the Rest of South.

4.2.6 Entry barriers

Finally, any assessment of the payoff matrix in trade by direction should hold that due to long-standing structural (colonial legacy and neo-colonial ties) and policy factors (trade and non-trade barriers), South countries still do not have the same tendency or ease of trade by direction. South-South trade is subject to higher trade barriers, making it more difficult for firms to start exporting, survive and grow in Southern markets. Weak destination institutions, for example, increase entry costs and lower the entry, growth and survival rates while discouraging firms from exporting to new markets (Anderson and Marcouiller, 2002; Belloc, 2006; Levchenko, 2007; Aeberhardt et al., 2014; Fernandes et al., 2016; Söderlund and Tingvall, 2014). Traditional trade barriers in the form of tariffs are also higher in South-South trade than North-South (Dahi and Demir, 2016). Therefore, North-South trade can offer more opportunities to Southern exporters than those in South-South trade.

4.3 Preferential trade and investment agreements and South-North exchanges

Asymmetries in bargaining power, knowledge, negotiating capacity and retaliatory capabilities are argued to bias bilateral trade and investment agreements, favoring the Northern over Southern partners (Thrasher and Gallagher, 2008; Dahi and Demir, 2013, 2016). While these asymmetries are arguably also present in the South-South direction, the gap is smaller, allowing more policy space to developing countries to experiment with economic policies that are most suitable to their needs. An obvious refection of such asymmetries is that four Northern actors, the U.S., the E.U., Canada and Japan, were responsible for 52% of all trade-related disputes filed at WTO between 1995-2015 (Dahi and Demir, 2016: 40). The share of low income countries in total number of complaints was less than 7% while the middle income South countries accounted for 45% of the total during the same period (Dahi and Demir, 2016: 38). The case with investor-state disputes is no different. Dahi and Demir (2016: 47) report that between 1998-2014, global South countries were on the defending end 90% of the time, out of a total of 589 disputes filed though international investment agreements (IIAs). Of this number, more than 70% were brought by Northern investors against global South countries (with the remainder launched by other countries in the global South). The threat of a lawsuit works as a deterrent for the South not to employ policies that might be challenged by foreign investors, particularly in the face of exorbitant amounts of awards involved. That is why UNCTAD (2015: 125) argued that IIAs are not “harmless political declarations” and they in fact enable Northern investors to

"challenge core domestic policy decisions … for instance in the area of environmental, energy and health policies."

On the issue of trade-diversion caused by PTAs, South-South trade is unlikely to be trade diverting from South-North as trade barriers are significantly higher in South-South than in any other direction (Kowalski and Shepherd, 2006; Kee et al., 2009; Medvedev, 2010; Dahi and Demir, 2016, ch.4; Cernat 2001). Linder (1967) also suggested that the positive effects of South–South trade agreements are less ambiguous than those for the North, and even if they are trade diverting, they were still welfare enhancing as long as the diversion is from the North. Empirically speaking, the biggest trade enhancing effect of PTAs is found in South-South direction (Kowalski and Shepherd, 2006; Dahi and Demir, 2013; Behar and Cirera-i-Criville, 2013). Decreasing cost of intermediate goods imports from other Southern markets can also increase Southern export penetration in industrial goods in Northern markets (Fugazza and Robert-Nicoud, 2006).

As is consistently shown in the empirical trade literature, colonial-link variables almost always appear to be a significant predictor of bilateral trade flows. Therefore, Dahi and Demir (2013, 2016) suggest that PTAs may also be an indirect way of correcting for colonial linkages that distort international trade in favor of North-South direction.[10] Obviously, South-South trade suffers from smaller number of such colonial distortions. Dahi and Demir (2013) also see South-South PTAs as a developmentalist tool because of their larger positive effect on manufactured goods exports than North-South PTAs. The international political economy literature on South-South integration also suggested that PTAs and BITs help diversify the alliances of Southern countries and facilitate a more flexible policy space against the Northern dominance in global economy (Hveem, 1999; Hettne, 2005; Doctor, 2007; Thrasher and Gallagher, 2008).

The significant increase in the number of South-South PTAs and BITs suggest that policy makers in the South are aware of their positive effects. The average annual number of new PTA pairs was 30 between 1958 and 1988, it increased to 267 between 1989 and 2013, and 75% of these agreements were in the South-South direction (Dahi and Demir, 2016). In 2013 alone, for example, 222 new country pairs signed PTAs, 66% of which were between Southern countries. Likewise, 88% of BITs were signed after 1990, reaching 3,140 by 2015. Of those BITs signed since 1990, 56% were between Southern countries (Dahi and Demir, 2016: 47).

4.4 South-South vs. North-South Finance

Unlike the extensive literature on trade linkages, theoretical and empirical work on South-South and North-South financial linkages is only very recent and is in much shorter supply. The main reason is the relatively more recent history of such exchanges, which started to grow mostly after the financial liberalization wave of the early 1990s. The data quality and availability issues are also more severe for financial flows than trade flows. Most existing work on the topic has focused on long term capital flows as FDI differs significantly from other types of financial flows in its effects on productivity, capital formation, growth and employment. Global FDI flows reached $1.8 trillion in 2015 up from $54 billion in 1980 and $205 billion in 1990 (UNCTAD, 2017a). Even more strikingly, an increasing percentage of these flows are now to and from the South, and increasingly within the South-South direction. While more than 80% (90%) of all inflows (outflows) were to (from) the North even back in 2000, almost 60% (40) of all were to (from) the South in 2014. Mainland China alone ranked number three in both FDI inflows and outflows in 2015. Furthermore, eight of the top 20 host economies and six of the top 20 home economies were from the South in 2015. Within aggregate FDI flows to the South, South–South flows increased significantly, reaching around 63%-65% of all outflows from developing countries in 2010 (UNCTAD, 2011; WB, 2011). In the case of Africa, for example, 78% (44%) of all announced greenfield FDI inflows and 94% (88%) of outflows were in South-South direction in 2016 (2015). In Asia, 50% (52%) of all announced Greenfield FDI inflows and 82% (79%) of all outflows were in South-South direction in 2016 (2015) (UNCTAD, 2017b: 45, 50).

Within the neoclassical framework, North–South capital movements, particularly FDI flows, facilitate technology transfer and productivity spillovers, allowing the South to catch up with the North. The predicted spillover effects include better technology, modern management techniques and managerial skills, R&D investment, and more experience in international markets as well as the possibility of learning by watching (Fabbri et al., 2003; Fosfuri et al., 2001; Almeida, 2007; Desai and Foley, 2007; Arnold and Javorcik, 2009; Navaretti et al. 2003; Almeida, 2007; Huttunen, 2007). As the productivity and knowledge gaps are larger in the North-South dimension, so are the expected spillovers effects.

And yet, as discussed in 4.2.1 and 4.2.2, institutional and cultural similarities as well as closeness in technological and preference structures between countries can affect the potential for spillovers and convergence through economic exchanges (Bergstrand and Egger, 2013;

Regolo, 2013; Bahar et al., 2014; Cheong et al., 2015). Recent work on Linder hypothesis suggests that South-South FDI may offer some additional benefits over North-South FDI. Fajgelbaum et al. (2015), for example, show that countries with similar incomes and development levels are more likely to receive FDI from each other, given their similarities in consumer tastes and preferences. And yet, Demir and Duan (2017) find no evidence of positive productivity growth or convergence effects from bilateral FDI flows in South-South, North-South, South-North or North-North directions.

Financial development asymmetries between trading partners can also contribute to the uneven pattern of development in South-North trade. Kletzer and Bardhan (1987), Rajan and Zingales (1998), Demirguc-Kunt and Maksimovic (1998), Beck (2002), Svaleryd and Vlachos (2005) and Hur et al. (2006) argue that credit-market imperfections cause differential comparative costs even with identical technologies and endowments and therefore industries that are more dependent on external finance such as those in capital intensive sectors grow faster in countries with better-developed financial systems. In an extension of this work, Demir and Dahi (2011) argue and provide empirical support to the hypothesis that the comparative disadvantage of the South against the North in financial development can be alleviated in South-South trade where such asymmetries are smaller. As a result, a financially underdeveloped Southern country can have a better chance of exporting higher skill-and-technology-intensive products that are more reliant on external finance to other Southern countries.

South-South trade is also argued to be less sensitive to exchange rate shocks than South-North trade. Caglayan et al. (2013) suggest that because of lack of financial development as well as the original sin problem in the South, exchange rate shocks affect Northern and Southern exporters differently. In an extension of this work, Caglayan and Demir (2016) explore the effects of exchange rate changes on trade flows after controlling for the skill-content and origin/destination of products. They report that higher-skill exports are the least affected product category from exchange rate movements, thus affecting Southern and Northern economies differently. Furthermore, they find that while South-South and South-North exports are significantly affected by exchange rate shocks, North-South exports are not.

Regarding South-South capital flows, recent empirical work suggests that Southern investors have a comparative advantage in operating in institutionally less developed and higher risk countries (Cuervo-Cazurra and Genc, 2008; Darby et al., 2010; Aleksynska and Havrylchyk,

2013; Demir and Hu, 2016). Therefore, this advantage can help Southern investors overcome their disadvantaged position in technology, operational and management capabilities, experience, internal and external financing sources, marketing, size and colonial linkages (i.e., their lack of it), and enable them penetrate Southern markets (Dahi and Demir, 2016; Demir and Hu, 2016). Likewise, less developed Southern host countries can have less restricted access to foreign capital through Southern multinationals.

On the more critical side of the literature, increasing South-South financial flows is blamed for undermining Northern country efforts to improve Southern institutions as they have weaker institutions and conditionality requirements (Lyman, 2005; Economist, 2006; Graham-Harrison, 2009; Mbaye, 2011; Warmerdam, 2012; Strange et al., 2013). In contrast, North-South FDI is expected to improve Southern institutions as the Northern investors are endowed with better institutions than Southern ones (Mauro, 1995; Hall and Jones, 1999; Kaufmann et al., 1999; Acemoglu et al., 2001, 2005; Alfaro et al., 2008). Directly through conditionality requirements, such as anti-corruption or better rule of law demands in PTAs and BITs, or indirectly through the demonstration channel, (i.e. the introduction of new methods of business practices), Northern investors can help improve institutional quality in the South (Kwok and Tadesse, 2006). Northern investors can also improve host country institutions through lobbying and exerting pressure on local policy makers (Dang, 2015; Long, 2015). Yet, Demir (2016) finds no evidence of positive institutional effects of FDI flows at the bilateral level in North-South or any other direction but reports some negative effects at the aggregate level for South-South flows.

Table 3 provides a summary of the literature on South-South and South-North exchanges in trade and finance that we discussed in section 4.

<INSERT TABLE 3>

5. China and the Emerging South in Africa

The increasing importance of South-South exchanges in trade and finance is most visible in the China in Africa literature, which brings together the complex intersection of trade, aid, FDI, migration, and geo-politics. We dedicate a separate section here for three reasons. First compared to other debates on South-South exchanges, interactions between China and various African countries have received particular attention in North America and Europe. In addition, China and Africa tend to represent opposite ends of the development spectrum, i.e. a rising industrial power

vs. a relatively agrarian and primary good exporting region. Furthermore, on many development accounts Africa appears as a net loser from the neoliberal period while China appears as a winner. This makes investigating the outcome of their increased interaction particularly compelling. Finally, China in Africa best illustrates how the academic literature has evolved to allow for greater complexity in analyzing South-South interactions.

The earlier literature on the topic tended to be simplistic. As Ado and Su's (2016) survey argue, "research publications on the Chinese in Africa are mostly oriented toward findings that highlight a win-lose paradigm" (p. 42), underscoring the ideological bias in some of this literature, as is also pointed out by Power et al. (2012). Following Kaplinsky (2013), we classify the China in Africa debate by the levels of complexity of 'China' and 'Africa' as analytical categories that highlight the dynamism and the heterogeneity of country experiences involved therein. Particularly, we suggest three analytical categories: a) China and Africa as two homogeneous actors whose interactions would either benefit or harm the other or both; b) Recognizing Africa as too heterogeneous and diverse to expect a unitary impact of Chinese presence, to c) A most complex approach, which recognizes that both China and Africa are heterogeneous with multiple actors, processes and impacts. The articles surveyed here are classified accordingly in Table 4. The main benefit of this classification is that it reveals not just the fact that China-Africa engagement is complex but *how* it is complex.

<INSERT TABLE 4 HERE>

As alluded to by Power et al. (2012), China's Africa presence is often interpreted by its Cold War era engagements, signified by the iconic Tanzania-Zambia Railway, built during 1970-1975, which contained several elements that were later erroneously considered as *new* in terms of China's current engagement in Africa. First it was a massive investment, costing about $600 million dollars, more than the Aswan dam in Egypt had cost the Soviets. Second, it was efficiently and rapidly done. Despite containing 300 tunnels, 10 kilometers of bridges, and covering a distance of 1,860 km it was completed in only five years and two years ahead of schedule. Third, it contained a large number of workers, many of whom were Chinese (of the 75,000 workers who worked on the project, 25,000 were Chinese and the remaining were Tanzanian). These three elements: massive infrastructure project, efficiency in implementation, and the presence of Chinese laborers are common tropes covered by the later literature.

The first wave of the China in Africa literature was born in reaction to the overwhelmingly alarmist discussions in the West. Some, if not all, of this literature was excessively optimistic, highlighting the benefits more than potential risks (Brautigan, 2009; Alden, 2007; Mawdsley, 2008; Chan, 2013; and Kachiga, 2013). Brautigan (2009) questions the 'myths' on China in Africa by arguing that contrary to Western aid, Chinese aid and concessionary loans reduce the possibility of corruption and embezzlement in host countries as they are often contracted directly through Chinese companies. Likewise, Alden (2007) assesses China-Africa policy through three possibilities that are partner, competitor and colonizer, and finds elements of each in this relationship. While he finds that Chinese presence provides significant infrastructural benefits, it may also undermine African local industrial development and hurt indigenous democratization efforts. Jenkins and Edwards (2006) examine the direct and indirect impact of both China and India on African development in both natural resource and textile sector and find only limited crowding out effect on African exports in third country markets.

Kachiga (2013) through case studies on Nigeria, Sudan, Angola, Zimbabwe and South Africa illustrates both the unique aid and investment strategies of China and how they compare and differ from those of the West. Like Western aid, Chinese aid comes with conditionalities and expectations of strategic payoffs, including tying them to purchases of Chinese goods and services. Nevertheless given China's principle of sovereignty and non-interference, Kachiga argues that China's aid more closely fulfills the meaning of the word than that from the West as African countries are freer to set their own priorities on spending aid money. Carmody (2013), focusing on the BRIC countries, also highlights the positive developmental effects of these countries' involvement in Africa.

Kaplinsky et al. (2007), Kaplinsky (2008) and Kaplinsky et al. (2010) provide a more critical and balanced analysis of China effect in Africa. Kaplinsky (2008) is a cornerstone of the second level of complexity of China in Africa studies and finds that China may be undermining industrial development in Sub Saharan Africa (SSA) through two channels. First, increasing Chinese imports of natural resources turn the terms of trade against manufacturing.[11] Second China's manufacturing growth is out-competing African manufacturing, which has direct as well as indirect effects through third countries. For example, China's trade with the US may help or hinder SSA exports to the US. In addition, high saving rates of China help lower global interest

rates and stimulate investment in SSA. Lastly, increasing Chinese participation in international financial institutions may help relax their conditionality requirements imposed on SSA in aid flows given that China has now become a major donor for aid to the South (Gallagher et al., 2012; Strange et al., 2013).

In a follow up work, Kaplinsky et al. (2010) focus on three areas: trade, production/FDI, and aid. Regarding trade, unlike Jenkins and Edwards (2006), Kaplinsky et al. (2010) suggest that the opening up of the U.S. to imports from China (particularly in textiles after January 2005) resulted in significant declines in SSA manufactures exports to the U.S. market, hurting unemployment and poverty reduction efforts. The decline in exports and industrial employment is not sufficiently countered by growth in resource extractive industries as the latter is more capital intensive and involves more concentrated forms of ownership. Similarly, Giovanetti and Sanfilippo (2009) show significant crowding out of African exporters by Chinese manufactures exports to the US, EU, and other African countries. Furthermore, Adisu et al. (2010) finds that while Chinese investments create only minimal employment effects, they significantly hurt local trade in host economies. Similarly, Brenton and Walkenhorst (2010) highlight the competition risk China poses on domestic industries in North Africa while Edwards and Jenkins (2014) find a strong crowding out effect of China on South Africa's exports to SSA in medium and low technology manufactures. Busse et al. (2016), in their assessment of Chinese trade, aid and FDI effects on per capita growth rates among SSA countries find that while imports from China have a negative displacement effect on African growth, exports to China do not have any significantly positive effect.

Furthermore, Cheru (2016) examines the case of Ethiopia and points to the use of certain countries such as Ethiopia and Kenya by China and India as regional hubs and launching pads. Aguilar and Goldstein (2009), focusing on Angola, show that China's increasing interest in oil and metals resulted in significant investment and credit extension and helped build critical infrastructure. However, they also find minimal employment creation and, with credit being tied to imports from Chinese suppliers, little boost to domestic production. Contrary to perceptions about lack of accountability, they find persistent Chinese attention to the use of their credit and loans.

As discussed earlier, one of the biggest themes in the literature has been the potential payoffs from South-South technology transfer. Focusing on rice farms in Tanzania, Agyei-

Holmes (2016) find that imported power tillers from China and India are more suitable for local needs than those from Northern countries as they are more labor intensive, cost-effective and profitable. Likewise, focusing on furniture manufacturing industry in Kenya, Atta-Ankomah (2014) compares the effects of imported technologies from the North with those from China and with locally developed indigenous methods. He reports that local and Chinese technologies are more labor intensive, allowing for higher employment creation and poverty reduction. They are also more cost effective, allowing poor entrepreneurs to start up their businesses with a higher degree of automation than would be possible otherwise. The products produced with these technologies are also reported to be more pro-poor as they meet the needs of poor consumers better at lower prices. Xu et al. (2016) report similar positive effects of knowledge transfer potential of Chinese aid programs in Tanzania, Ethiopia, Zimbabwe, and Mozambique through the agricultural technology demonstration centers.

In contrast, Cabral et al. (2016) argue that Brazilian agricultural modernization initiatives in Ghana, Mozambique and Zimbabwe are subject to similar constraints and distortions that are present in North-South exchanges. Amanor and Chichava (2016) also find similar constraints in trilateral exchanges in agricultural development policies among Brazil, Ghana and Mozambique. Shankland and Goncalves (2016) also question the better suitability of Southern technologies in other Southern countries by analyzing the debates around the proSavana project of Brazil and Japan in Mozambique that was expected to boost agricultural productivity and lower poverty rates while increasing employment. They conclude that just being South-South does not ensure that such exchanges will not be subject to the same types of limitations present in North-South dimension. Conflicting priorities, differing development narratives, and problems in the suitability of local technologies to other Southern countries' needs remain as problematic in South-South exchanges as in North-South. Regarding the effect of Brazilian and Chinese development cooperation in Africa, Scoones et al. (2016) also argue that the benevolent effects of South-South cooperation may be more in theory than in reality and that the existing evidence hints at a reproduction of North-South style uneven development within South-South relations.

Finally, a series of articles have begun examining issues of labor and migration. Baah and Jauch (2009) and Jauch (2011) argue that Chinese businesses in Africa are neocolonial, focusing on resource extraction, and are highly anti-labor, and exploitative with minimal labor rights. These businesses also fail to develop local capabilities. Mohan and Kale (2007), Mohan and Tan-

Mullins (2009), Mohan and Lampert (2013) and Mohan (2013), while not disputing the exploitative tendencies of Chinese businesses, argue for a more nuanced understanding of the spatially complex state-capital dynamics, the fractious capital, Chinese and African workers and other structural factors that are contributing to shaping the outcome of Chinese engagements in Africa. Mohan (2013) sees heterogeneous union activity and labor practices depending on country and even the Chinese company in question. Strauss and Saavedra (2009) also bring together a vast array of works, highlighting heterogeneous country experiences in their exchanges with China.

In summary, the literature on China in Africa has moved away from sweeping judgements and extreme pessimism and optimism and toward both a more detailed assessment of heterogeneous impact, not just across but also within countries and by sectors as well as a recognition of the multiplicity of actors on both sides.

6. Is South-South Still a Meaningful Category?

Moving forward, a big question for the South-South literature is existential: to what extent is 'South-South' still a meaningful analytical category given the huge disparities within the South? Figures 1-4 show what might be another great divergence between and within Southern countries themselves (Dahi and Demir, 2016). What has been called the rise of the South is actually the rise of a *few* in the South albeit the largest and most populous countries. What is more alarming is that their rise is coming at the expense of the Rest of South. As Figures 1-3 shows, more than 30% of world trade is now in South-South direction and 58% of total Southern exports were to other Southern countries in 2013. And yet, 70% of this global South-South trade was between Emerging South countries. In fact, 10 Emerging South countries accounted for more than 60% of South–South trade in 2013 and China alone was responsible for 21% of it (IMF, 2015).[12] Likewise, 86% of global South-North trade was from Emerging South to North and top 10 countries accounted for 60% of total South–North trade in 2013 (with China accounting for more than 25% of the total).[13]

The skill content of Southern exports is also highly skewed in favor of a few Emerging economies. Figure 2 shows that the share of Rest of South in world manufactures exports was almost non-existent in 2012, less than 2%, while Emerging South countries accounted for 45% of the total. Figure 4 shows that the share of Rest of South in global high-skill manufactures exports

was 0% in 2012 while that of Emerging South was 55%. In fact, fossil fuels alone accounted for 58% of all Rest of South exports in 2012 (MIT Media Lab, 2015).[14] We should note, however, that the Emerging South as a whole accounts for 75% of Southern population and 86% of Southern output. The top ten South-South exporters host 47% of Southern population and are responsible for 52% Southern output. China and India are the heavyweights in these calculations, jointly accounting for 42% of Southern population and 33% of total Southern output in 2012.

This country heterogeneity is mostly neglected in the South-South literature. Particularly, the issue that Emerging South-Rest of South exchanges may well recreate the same type of dependency within the South as in North-South is not explored much. Over 74% percent of all Rest of South's exports were in primary commodities in 2012, compared to 64% in 1970, which hints at the return of the traditional center-periphery relationship but this time between Emerging South and Rest of South (MIT Media Lab, 2015). As argued by Ros (2013), the rise of China changed the terms of trade in favor of primary goods during the 2000s, benefiting primary good exporting Southern countries in an opposite pattern to that predicted by the Prebisch-Singer hypothesis. However this is a double-edged growth spurt, encouraging deindustrialization in the long run.[15] China (mainland) accounted for more than a third of world consumption of all metals, 50% of global coal consumption, 15% percent of global crude oil demand, 73% of iron ore, 38% of copper ore, 60% of global soy beans demand, and 27% of world demand in natural rubber in 2014 (MIT Media lab, 2016). Thus, as discussed in the previous section on China in Africa, growing Chinese demand for primary commodities had two distinct effects on Southern countries. For primary good producers, it triggered a structural transformation, called primarization, so that increasing demand for primary products and favorable terms of trade pushed them to specialize in primary goods and to move away from manufactures. For primary good importing semi-industrialized economies, increasing competition from China in export markets and the rising cost of imported primary inputs have crowded them out of other Southern and Northern markets, decimating their manufacturing industries. Both groups of countries here face deindustrialization/primarization, as the shares of industry employment, output and investment decrease and they experience a downgrading to less technology-and-skill-intensive, low-productivity activities, mostly in primary goods or low-skill service sectors (UNCTAD, 2003, 2006; McMillan and Rodrik, 2011, Peters, 2005; Jenkins and Peters, 2009; Gallagher and Porzecanski, 2009; Rodrik 2016; Dahi and Demir, 2016).

Tables 5 and 6 highlight the effect of China on world trade, and particularly that of Latin America. Since the 1990s China emerged as a major exporter of high, medium and low skill manufactures.[16] Between 1990 and 2012, China's shares in world exports of these goods increased from 13% to 32% for low-skill goods, from 2.6% to 11% for medium-skill goods, and from 3% to just below 29% for high-skill goods. Meanwhile, its import share of primary goods and natural resource intensive manufactures increased from less than 4% to 12%, and from 2% to 10%, respectively. Similarly, in 2012, more than 45% of Chinese imports from Latin America were primary commodities and 41.6% were natural resource intensive manufactures, jointly accounting for 87% of its imports from the entire region. In contrast, in that year, 35% of its exports to Latin America were high-skill and 28% were medium-skill manufactures, jointly accounting for more than 63% of Chinese exports to the region. This is exactly what the structuralist economists were afraid of: a vicious cycle of increasing deindustrialization and primarization process in the South. Looking at particular economies, in 2012 74% of Argentine and 61% of Chilean exports to China were of primary commodities. Together with natural-resource-intensive manufactures, primary goods accounted for 92.6% of Argentine and 99.5% of Chilean exports to China in 2012. Even in the case of more successful industrializing countries such as Brazil, the future looks grim as 92% of Brazilian exports to China were of either primary commodities or natural resource intensive manufactures in 2012.

<INSERT TABLE 5 & 6 HERE>

Table 7 shows the structure of South–China trade in 1990 compared to 2012. The trend here also suggests increasing primarization of exports from the Rest of South to China. In fact, 75% of Rest of South exports to China were of primary goods in 2012, compared to only 13% in 1990. The manufactures exports from the Rest of South fell radically across all skill levels, while the share of primary goods increased. While we observe similar changes in Emerging South-China trade, it is not as radical. Overall, the experience of Latin America and SSA show that export growth is not synonyms with export-led growth.

<INSERT TABLE 7 HERE>

Despite this heterogeneity however, South-South is still a meaningful unit of analysis in two ways. First even if some countries have now reached high income levels, these countries are few (such as South Korea). On the other hand most countries, including most of the Emerging South, are still at low or middle income levels. Therefore it would be inappropriate to remove

these countries from the global South. Our emphasis on heterogeneity is meant to illustrate that these interactions, particularly between Emerging South and Rest of South may be unequalizing rather than mutually beneficial unless addressed through policy interventions or regional harmonization. Secondly, as illustrated by some of the literature reviewed, the term 'South-South' carries with it a geo-political and power dimension rather than simply a technical one. The gap in bargaining power and global influence is still significantly smaller within much of the South than between South and North. Moreover countries such as China self-identifying as 'developing' or 'South' may be an attempt to utilize the prestige of South-South relations to advance their interests. However the evidence from negotiating blocs within the WTO showed that South-South cooperation was able to reap meaningful results for the global South as a whole (Dahi and Demir, 2016, chapter 2).

Muhr (2016) argued that social relations and social realities are influenced by discourse and the labels of solidarity, cooperation and alternative economic models that emanate from within the global South are themselves important and capable of being transformative. Therefore they should not be dismissed as mere exaggerations or smokescreens to mere exploitation. He points to the case of Latin America, showing how South-South mobilization has proven to be capable of building a progressive alternative, and that ultimately interests and solidarity are not mutually exclusive. And yet, as our review highlight, South-South exchanges involve a variety of perspectives, visions, and motivations, including diverse social, cultural and political dynamics at home and host countries, and are inherently heterogeneous in nature. Consequently, increasing South-South trade and finance are likely to create diverse outcomes, some positive and, inevitably, some negative. What is needed, therefore, is recognition of this diversity in the theoretical and empirical analysis of South-South economic exchanges.

7. Conclusion

This article has traced the evolution of the South-South vs. North-South economic exchanges literature. The paucity of South-South trade and financial flows in the post-war period implied that the debate on South-South relations was less of an actual assessment of its implications and more a proxy debate over the (obviously erroneous) state-led versus market-led economic development paradigms in the global South. There was certainly much less at stake than today. Particularly with the industrial rise of large developing countries, South-South trade and finance

now makes up significant shares of global as well as Southern country exchanges and much of these exchanges are in increasingly sophisticated products.

However this dramatic increase in the intensity and scope of these exchanges has implied a greater willingness to embrace complexity in measuring the development positives and benefits. Simplistic assessments have given way to more sophisticated and pointed examinations of certain forms of interactions within the South. At the same time, the lion's share of the benefits of South-South exchanges are accruing to the larger, more populous and more industrialized South countries. For South-South exchanges to be mutually beneficial what is needed is to identify the necessary conditions that maximize spillovers and gains in the form of technology transfer, skills-upgrading, institutional development, policy space and global governance, labor and environment policy, etc. The fact that all developing countries, large or small, still face significant pressures from the North implies an opportunity for South-South arrangements that are mutually beneficial (Dahi and Demir, 2016). However, once left to mere market forces, the evidence points to an increasing uneven development within the global South. Therefore, whether or not South-South exchanges can still offer a developmental promise that might be missing in North-South exchanges depends on how it is appropriated and shaped by movements within the global South.

Acknowledgments

We thank Mustafa Caglayan, Amitava K. Dutt, Kevin Gallagher, Ilene Grabel, Arslan Razmi, Jaime Ros, Roberto Veneziani and two anonymous reviewers for excellent comments on previous drafts. We also thank session participants at the URPE/ASSA meetings in 2014, 2015, 2017, the EEA meetings in 2015 and 2017, the Analytical Political Economy Workshop at the University of Notre Dame in 2015, and the seminar participants at the faculty of economics at the University of Montenegro in 2016. Firat Demir thanks the Fulbright Commission and the Faculty of Economics at the University of Montenegro for his Fulbright visit during 2015-2016 when this project was started. We are grateful to two anonymous referees who gave significant feedback on an earlier draft of this paper. Omar S. Dahi thanks the Dean of Faculty Office at Hampshire College and the School of Critical Social Inquiry at Hampshire College for financial support.

Endnotes

[1] In this paper, we use the term "North-South" as a default term for relations between developed and developing countries unless we are specifically referring to Southern exports to the North, in which case we use "South-North". Our personal preference is to use "South-North" as a default term since it de-centers the North and is in line with adopting a South based perspective. However since this is a survey paper, and the standard usage in the development and trade literature is North-South, we stick with that term.

[2] We leave various critiques of modernization theory outside the scope of this review, including the critique that industrialization efforts in the South have confused ends (human development) with means (capital accumulation).

[3] For example, what is good for one Southern country may not be necessarily good for other Southern countries (Razmi and Blecker, 2008).

[4] The full list of countries in each category is included in the Appendix.

[5] The trade data we use here and in the rest of the paper does not correct for triangular trade, re-exports and processing trade, or intra-firm trade through global value chains, which risk an upward bias in the implied net value added of South-South as well as North-South exchanges. Therefore, we should not equate trade values with net value added, which would require an input-output analysis.

[6] Structuralism in economics emphasizes the interdependence of relations among various economic actors and how institutions and "distributional relationships across its [an economy's] productive sectors and social groups play essential roles in determining its macro behavior" (Taylor, 2004: 1). In the case of North-South exchanges, the Marxian literature on the causes of uneven development between the North and the South is also very rich and explore the role of uneven exchange, primitive accumulation and imperialism in the rise of the West at the expense of the Rest (Lenin, 1913; Luxemburg, 1917; Frank, 1966; Furtado, 1964; Baran, 1957; Amin, 1976, 1990; Emmanuel et al., 1972; Chase-Dunn, 1990; Brewer, 1990; Wallerstein, 1976; Trotsky, 2001).

[7] Note that Dahi and Demir (2016) show that intra-industry trade is higher in Rest of South-North and Emerging South-North directions than in any other.

[8] For an extensive review see Atta-Ankomah (2014).

[9] For a theoretical analysis of welfare effects, see Foellmi et al. (2007) and Fajgelbaum et al. (2011).

[10] Myrdal (1956, p. 261) also argued that, because of the colonial legacy, "governments and businesses in underdeveloped countries are conditioned and trained to negotiate and cooperate with their opposite partners in advanced countries but not with the governments and businesses in other underdeveloped countries."

[11] See Ros (2013) for a similar discussion. Busse et al. (2016) interprets this as a positive development since it benefits African natural resource and primary good exporters.

[12] These ten countries are China (20.8%), South Korea (7.4%), Hong Kong (6%), Taiwan (5.2%), Russia (4.6%), Singapore (4.2%), Saudi Arabia (4%), India (3.6%), UAE (3.3%), Malaysia (2.9%).

[13] These ten countries are China (25.5%), Mexico (8.3%), Russia (6.4%), Korea (3.7%), Saudi Arabia (3.4%), Poland (3%), Czech Republic (2.6%), India (2.5%), Ireland (2.4%), Taiwan (2.3%).

[14] SITC codes: 3330, 3340, 3341, 3342, 3343, 3350, 3354.

[15] Interestingly, these warnings are also raised by IMF (2013, Ch.4).

[16] We should note that there is a disagreement in the literature regarding the net value added of Chinese exports. Lemoine and Ünal-Kesenci (2004) and Feenstra and Wei (2010) suggest that including processing trade in export values causes an overestimation of Chinese export sophistication. For works that critically re-estimate the real content of Chinese exports see, for example, Koopman et al. (2008), Yao (2009) and Assche and Gangnes (2010).

References

Acemoglu, D. 2001 "Factor Prices and Technical Change: From Induced Innovations to Recent Debates", MIT Department of Economics Working Paper No. 01-39, Massachusetts Institute of Technology.

Acemoglu, D. 2002). Directed Technical Change. *Review of Economic Studies* 69(4): 781-809.

Acemoglu, D. 2007. Equilibrium Bias of Technology. *Econometrica* 75(5): 1371- 1409.

Acemoglu, D., Johnson, S. and Robinson, J.A. 2001. The Colonial Origins of Comparative Development: An Empirical Investigation. *American Economic Review* 91(5): 1369-1401.

Acemoglu, D., Johnson, S., Robinson, J. 2005. Institutions as the Fundamental Cause of Long-run Growth. In P. Aghion and S. Durlauf (Eds.), *Handbook of Economic Growth*, vol. 1A, pp. 385–472, Elsevier.

Adisu, K., Sharkey, T. and Okoroafo, S.C. 2010. The Impact of Chinese investment in Africa, *International Journal of Business and Management* 5(9): 3-9.

Ado, A. and Z. Su. 2016. "China in Africa: a critical literature review," *Critical Perspectives on International Business*, 12(1): 40-60.

Aeberhardt, R., Buono, I. and Fadinger, H. 2014. Learning, incomplete contracts and export dynamics: theory and evidence from French firms. *European Economic Review* 68:219–249.

Aguilar, R. and A. Goldstein. 2009. The Chinisation of Africa: the case of Angola, *World Economy* 32(11): 1543-1562.

Alden, C. 2007. *China in Africa,* London: Zed Books.

Aleksynska, M. and Havrylchyk, O. 2013. FDI from the South: The role of institutional distance and natural resources. *European Journal of Political Economy* 29: 38– 53.

Alfaro, L., Kalemli-Ozcan, S., Volosovych, V. 2008. Why doesn't Capital Flow from Rich to Poor Countries? An Empirical Investigation. *The Review of Economics and Statistics* 90: 347–368.

Allesi, C. and B. Xu, 2015. "China in Africa," Council on Foreign Relations backgrounders. Accessible at: http://www.cfr.org/china/china-africa/p9557.

Almeida, R., 2007. The labor market effects of foreign owned firms, *Journal of International Economics* 72: 75-96.

Amanor, K.S. and Chichava, S. 2016. South–South Cooperation, Agribusiness, and African Agricultural Development: Brazil and China in Ghana and Mozambique, *World Development* 81: 13-23.

Amighini, A. and Sanfilippo, M. 2014. Impact of South– South FDI and trade on the export upgrading of African economies. *World Development* 64: 1– 17.

Amin, S. 1976. *Unequal Development: An Essay on the Social Formations of Peripheral Capitalism*. New York: Monthly Review Press.

Amin, S. 1990. *Delinking: Towards a Polycentric World*. London: Zed Books.

Amsden, A. 1983. De- skilling, skilled commodities, and the NIC's emerging competitive advantage. *American Economic Review; Papers and Proceedings* 73(2): 333– 37.

Amsden, A. 1984. The division of labor is limited by the rate of growth of the market: The Taiwanese machine tool industry revisited. Harvard Business School, mimeo.

Amsden, A. 1987. The directionality of trade: Historical perspective and overview. In O. Havrylyshin (ed.), World Bank Symposium: Exports of Developing Countries: How Direction Affects Performance, 123– 38. Washington, DC: World Bank.

Amsden, A. 1989. Asia's Next Giant: South Korea and Late Industrialization. New York: Oxford University Press.

Amsden, A. 2001. The Rise of the "Rest." New York: Oxford University Press.

Amsden, A. 2007. Escape from Empire: The Developing World's Journey through Heaven and Hell. Cambridge, MA: MIT Press.

An, G. and Iyigun, M. F. 2004. The export skill content, learning by exporting and economic growth. *Economics Letters* 84: 29– 34.

Anderson, J. and Marcouiller, D. 2002. Insecurity and the pattern of trade: An empirical investigation. *Review of Economics and Statistics* 84(2): 342-352.

Agyei-Holmes, A. 2016. Tilling the Soil in Tanzania: What do Emerging Economies have to Offer? *European Journal of Development Research* 28(3): 379–396.

Angeles, L. 2007. Income inequality and colonialism. *European Economic Review* 51(5): 1155– 76.

Antweiler, W. and Trefler, D. 2002. Increasing returns and all that: A view from trade. *American Economic Review* 92(1): 93– 119.

Arnold, J.M., Javorcik, B.S., 2009. Gifted kids or pushy parents? Foreign direct investment and plant productivity in Indonesia. *Journal of International Economics* 79: 42-53.

Assche, A.V., Gangnes, B., 2010. Electronics production upgrading: is China exceptional? Applied Economics Letters 17(5), 477–482.

Atta-Ankomah, R. 2014. China's Presence in Developing Countries' Technology Basket: The Case of Furniture Manufacturing in Kenya. PhD thesis The Open University, UK.

Baah, A.Y. and Jauch, H., 2009. Chinese investments in Africa. *Chinese Investments in Africa: A Labour Perspective*, p.35.

Bacha, E. L. 1978. An interpretation of unequal exchange from Prebisch- Singer to Emmanuel. Journal of Development Economics 5(4): 319–330.

Bagchi, A. K. 2008. Historical perspectives on development. In A. K. Dutt and J. Ros (eds.) *International Handbook of Development Economics*, vol. 1. (16-31). Northampton, MA: Edward Elgar.

Bahar, D., Hausmann, R. and Hidalgo, C. A. 2014. Neighbors and the evolution of the comparative advantage of nations: Evidence of international knowledge diffusion? *Journal of International Economics* 92(1): 111– 23.

Baldwin, R. E. 1979. Determinants of trade and foreign investment: Further evidence. *Review of Economics and Statistics* 61(1): 40–48.

Baran, B. 1957. *The Political Economy of Growth*. New York: Monthly Review Press.

Bastos, P. and Silva, J. 2010. The quality of a firm's exports: Where you export to matters. *Journal of International Economics* 82(2): 99– 111.

Beck, T. 2002. Financial development and international trade: Is there a link? *Journal of International Economics* 57: 107– 31.

Becker, G. S., Murphy, K. M. and Tamura, R. F. 1990. Human capital fertility and economic development. *Journal of Political Economy* 98: 12– 37.

Behar, A. and Cirera-i-Criville, L. 2013. Does it matter who you sign with? Comparing the impacts of North- South and South- South trade agreements on bilateral trade. *Review of International Economics* 21(4): 765– 82.

Bekaert, G., Harvey, C. R. and Lundblad, C. 2001, Emerging Equity Markets and Economic Development, *Journal of Development Economics* 66, 465-504.

Bekaert, G. Harvey, C.R., and Lundblad, C. 2005. Does financial liberalization spur growth?, *Journal of Financial Economics* 77(1), 3-55.

Belloc, M. 2006. Institutions and international trade: A reconsideration of comparative advantage. *Journal of Economic Surveys*, 20(1): 3-26.

Bergstrand, J. H. and Egger, P. 2013. What Determines BITs? *Journal of International Economics* 90(1): 107– 22.

Bhagwati, J.N. 1978. *Foreign trade regimes and economic development: Anatomy and consequences of exchange control regimes*. Cambridge: MA, Ballinger Press.

Bhagwati, J. N., Panagariya, A. and Srinivasan, T. N. 1998. *Lectures on International Trade*. Cambridge, MA: MIT Press.

Bhalla, A. S. 1985. Concept and Measurement of labour intensity. In: Bhalla, A. S. (ed.), *Technology and Employment in Industry: A case study approach*, 3rd Edition, Geneva: International Labour Organization.

Brautigan, D. 2009. *The Dragon's Gift: The Real Story of China in Africa*, Oxford: Oxford University Press.

Brenton, P. and Walkenhorst, P. 2010. Impacts of the rise of China on developing country trade: evidence from North Africa. *African Development Review* 22(1): 577-586.

Brewer, A. 1990. *Marxist Theories of Imperialism. A Critical Survey*. London: Routledge and Kegan Paul, 2nd edition.

Broadman, H. 2008. "China and India Go to Africa: New Deals in the Developing World," *Foreign Affairs Magazine,* March/April.

Brookes, P. and Shin, J.H. 2006. "China's Influence in Africa: Implications for the

United States," *Heritage Foundation Reports*, February 22. Backgrounder #1916.

Brucks, M., Zeithaml, V.A. and Naylor, G. (2000). Price and brand name as indicators of quality dimensions for consumer durables. *Journal of the Academy of Marketing Science* 28: 359-374.

Burke, C. and Corkin, L. (2006) China's Interest and Activity in Africa's Construction and Infrastructure Sectors. The Centre for Chinese Studies, Stellenbosch, South Africa: Stellenbosch University.

Busse, M., Erdogan, C. and Mühlen, H., 2016. China's Impact on Africa–The Role of Trade, FDI and Aid. *Kyklos* 69(2): 228-262.

Cabral, L. Favareto, A., Mukwereza, L., Amanor, K. 2016. Brazil's Agricultural Politics in Africa: More Food International and the Disputed Meanings of "Family Farming", *World Developme*nt 81: 47-60.

Caglayan, M., Dahi, O. S. and Demir, F. 2013. Trade flows, exchange rate uncertainty, and financial depth: Evidence from 28 emerging countries. *Southern Economic Journal* 79(4): 905-27.

Caglayan, M. and Demir, F. 2016. Exchange Rate Movements, Skill-Content and Direction of Trade. Mimeo. University of Oklahoma.

Carmody, P.R. 2013. The rise of the BRICS in Africa: the geopolitics of south-south relations, London, Zed Books Ltd.

Caselli, F., and Coleman II, W. 2001. Cross-country Technology Diffusion: The Case of Computers, *American Economic Review* 91(2): 328-335.

Chan, S. 2013. *The Morality of China in Africa: The Middle Kingdom and the Dark Continent,* London: Zed Books.

Chang, H.-J. 2002. *Kicking Away the Ladder: Development Strategy in Historical Perspective*. London: Anthem Press.

Chang, H.- J. 2006. *The East Asian Development Experience: The Miracle, the Crisis and the Future*. London: Zed Books.

Chang, H.- J. 2008. *Bad Samaritans*. London: Random House.

Chase-Dunn, C. 1990. Resistance to imperialism: Semiperipheral actors. *Review* (Fernand Braudel Center): 1– 31.

Chenery, H. B., Robinson, S., & Syrquin, M. (1986). *Industrialization and growth* (p. 45). Washington: World Bank.

Cheong, J., Kwak, D.W., and Tang, K.K. 2015. Heterogeneous Effects of Preferential Trade Agreements: How does Partner Similarity Matter? *World Development*, 66: 222-236

Cheru, F. 2016. "Emerging Southern powers and new forms of South-South cooperation: Ethiopia's strategic engagement with China and India," *Third World Quarterly* 37(4): 592-611.

Chudnovsky, D. 1983. The entry into the design and production of complex capital goods: The experiences of Brazil, India, and South Korea. In M. Fransman (ed.), Machinery and Economic Development (54– 92). New York: St. Martin's Press.

Cuervo-Cazurra, A. and Genc, M. 2008. Transforming disadvantages into advantages: Developing- country MNEs in the least developed countries. *Journal of International Business Studies* 39(6): 957– 79.

Dahi, O.S. and Demir, F. 2013. Preferential trade agreements and manufactured goods exports: does it matter whom you PTA with? *Applied Economics* 45(34): 4754– 72.

Dahi, O.S., and Demir, F. 2016. South–South Trade and Finance in the Twenty-First Century. Anthem Press.

Dang, D.A. 2013. How foreign direct investment promote institutional quality: Evidence from Vietnam. *Journal of Comparative Economics* 41: 1054–1072.

Darity, W. Jr. 1992. A model of "Original Sin": Rise of the West and lag of the rest. *American Economic Review Papers and Proceedings* 82(2): 162– 67.

Darity, W. Jr., and Davis, L. S. 2005. Growth, trade and uneven development. *Cambridge Journal of Economics* 29: 141– 70.

Deardorff, A. V. 1987. The directions of developing country trade: Examples of pure theory. World Bank symposium: Exports of developing countries: How direction affects performance: 9– 22. Washington, DC: World Bank.

Demir, F. 2016. Effects of FDI flows on institutional development in the South: Does it matter where the investors are from? *World Development* 78: 341– 59.

Demir, F. and Dahi, O. S. 2011. Asymmetric effects of financial development on South–South and South– North trade: Panel data evidence from emerging markets. *Journal of Development Economics* 94: 139– 49.

Demir, F., and Duan, Y. 2017. Bilateral FDI Flows, Productivity Growth and Convergence: the North vs. the South. Forthcoming in *World Development*.

Demir, F., and Hu, C. 2016. "Institutional Differences and Direction of Bilateral FDI Flows: Are South-South Flows any Different than the Rest?" *The World Economy* 39(12): 2000 – 2024.

Demirguc- Kunt, A. and Maksimovic, V. 1998. Law, finance and firm growth. *Journal of Finance* 53: 2107– 37.

Desai, M.A., Foley, C.F., Forbes, K.J., 2008. Financial constraints and growth: Multinational and local firm responses to currency depreciations. *Review of Financial Studies* 21(6): 2857-88.

Diaz-Alejandro, C. F. 1973. Some characteristics of recent export expansion in Latin America. Economic Growth Center Discussion Paper no. 183. Yale University.

Doctor, M. 2007. Why bother with inter- regionalism? Negotiations for a European Union- Mercosur agreement. *Journal of Common Market Studies* 45(2): 281– 314.

Dollar, D. 1992. Outward oriented developing economies really do grow more rapidly: evidence from 95 LDCs, 1976-85. *Economic Development and Cultural Change*, 40(3): 523-544.

Dollar, D. and Kraay, A. 2004. Trade, Growth, And Poverty. *The Economic Journal*, 114 (493): F22-F49.

Dutt, A. K. 1986. Vertical trading and uneven development. *Journal of Development Economics* 20(2): 339– 59.

Dutt, A. K. 1987. Keynes with a perfectly competitive goods market. *Australian Economic Papers* 26(49): 275– 93.

Dutt, A. K. 1989. Uneven development in alternative models of North– South trade. *Eastern Economic Journal* 15(2): 91– 106.

Dutt, A. K. 1990. *Growth, Distribution, and Uneven Development*. Cambridge, UK: Cambridge University Press.

Dutt, A. K. 1992. The NICs, global accumulation and uneven development: Implications of a simple three- region model. *World Development* 20(8): 1159– 71.

Dutt, A. K. 1996. Southern primary exports, technological change and uneven development. *Cambridge Journal of Economics* 20(1): 73– 89.

Dutt, A. K. 2012. Distributional dynamics in Post Keynesian growth models. *Journal of Post Keynesian Economics* 34(3): 431– 52.

Easterly, W. and Levine, R. (2001). It´s Not Factor Accumulation: Stylized Facts and Growth Models. *World Bank Economic Review* 15(2): 177-220.

Economist, 2006. Africa and China: African Heads of State Gather for a Summit in China. Nov 3rd. http://www.economist.com/node/8126261/print?story_id=8126261

Edwards, L. and Jenkins, R. 2014. The margins of export competition: A new approach to evaluating the impact of China on South African exports to Sub-Saharan Africa, *Journal of Policy Modeling* 36(1): S132-S150.

Ellis, R.E., 2009. *China in Latin America: the whats and wherefores* (Vol. 46). Boulder, Colo: Lynne Rienner Publishers.

Emmanuel, A., Bettelheim, C. and Pearce, B. 1972. *Unequal Exchange: A Study of the Imperialism of Trade*. New York: Monthly Review Press.

Fabbri, F., Slaughter, M. J., and Haskel, J.E., 2003. Does nationality of ownership matter for labor demands? *Journal of the European Economic Association* 1(2–3): 698 –707.

Fajgelbaum, P., Grossman, G. M., and Helpman, E. 2011. Income Distribution, Product Quality, and International Trade. *Journal of Political Economy* 119(4): 721-765.

Fajgelbaum, P., Grossman, G. M., and Helpman, E. 2015. A linder hypothesis for foreign direct investment. *The Review of Economic Studies* 82(1), 83-121.

Feenstra, R. C. 1996. Trade and uneven growth. *Journal of Development Economics* (49): 229– 56.

Feenstra, R.C., Wei, S.-J. (Eds.), 2010. China's growing role in world trade, National Bureau of Economic Research Conference Report. University of Chicago Press, Chicago.

Fernandes, A., Freund, C. and Pierola, C. 2016. Exporter behavior, country size and stage of development: Evidence from the exporter dynamics database. *Journal of Development Economics* 119: 121-137.

Findlay, R. 1978. Relative backwardness, direct foreign investment, and the transfer of

technology: a simple dynamic model. *Quarterly Journal of Economics* 92(1): 1–16.

Findlay, R. 1980. The terms of trade and equilibrium growth in the world economy. *American Economic Review* 70(3): 291– 99.

Findlay, R. 1984. Growth and development in trade models. In R. Jones and P. Kenen (eds.), *Handbook of International Economics*, vol. 1. Amsterdam: Elsevier Science.

Findlay, R. 1992. The roots of divergence: Western economic history in comparative perspective. *American Economic Review Papers and Proceedings* 82(2): 158– 61.

Fontagne, L., Gaulier, G., and Zignago, S. 2008. Specialization across varieties and North-South competition. *Economic policy* 53: 53-91.

Foellmi, R., Hepenstrick, C. and Zweimuller, J. 2007. Income effects in the theory of monopolistic competition and international trade, Mimeo, University of Zurich.

Fosfuri, A., Motta, M., Ronde, T., 2001. Foreign direct investment and spillovers through workers' mobility. *Journal of International Economics* 53(1): 205–222.

Frank, A. G. 1966. The Development of Underdevelopment. Boston: New England Free Press.

Fugazza, M. and Robert- Nicoud, F. 2006. Can South-South trade liberalization stimulate North-South trade? *Journal of Economic Integration* 21: 234– 53.

Furtado, C. 1964. *Development and Underdevelopment*. Berkeley: University of California Press.

Gallagher, K. and Porzecanski, R., 2008. China matters: China's economic impact in Latin America. *Latin American Research Review 43*(1): 185-200.

Gallagher, K. P. and Porzecanski, R. 2010. *The Dragon in the Room: China and the Future of Latin American Industrialization*. Palo Alto: Stanford University Press.

Gallagher, K. P., Irwin, A. and Koleski, K. 2012. *The New Banks in Town: Chinese Finance in Latin America*. Inter-American Development Bank Report.

Graham-Harrison, E. 2009. China Trade Outweighs Corruption Fears for Africa. Reuters. http://www.reuters.com/article/2009/11/05/businesspro-us-china-africa-corruption-a-idUSTRE5A44I220091105

Grossman, G. M., & Helpman, E. (1991). Trade, knowledge spillovers, and growth. *European Economic Review 35*(2-3): 517-526.

Giovanetti, G. and Sanfilippo, M. 2009. "Do Chinese exports crowd-out African goods? An econometric analysis by country and sector," *European Journal of Development Research*, 21(4): 506-530.

Hall, R. and Jones, C. 1999. Why Do Some Countries Produce So Much More Output per Worker than Others? *Quarterly Journal of Economics* 114: 83–116.

Hallak, J., 2006. Product Quality and the Direction of Trade, *Journal of International Economics* 68(1): 238–265.

Hallak, J. C. 2010. A product-quality view of the Linder hypothesis. *The Review of Economics and Statistics* 92(3), 453-466.

Hanauer, L. and Morris, L. 2014. *Chinese Engagement in Africa: Drivers, Reactions, and Implications for U.S. Policy.* RAND Corporation Research Reports. Accessible at: http://www.rand.org/pubs/research_reports/RR521.html

Harrison, A. (1996). Openness and growth: a time series, cross-country analysis for developing countries. *Journal of Development Economics* 48: 419-447.

Hausman, R., Hwang, J. and Rodrik, D. 2007. What you export matters. *Journal of Economic Growth* 12: 1– 25.

Havrylyshyn, O. and Wolf, M. 1983. *Recent Trends Among Developing Countries*. Washington, DC: World Bank.

Henry, P. B., 2000, Stock Market Liberalization, Economic Reform, and Emerging Market Equity Prices, *Journal of Finance* 55: 529-564.

Hettne, B. 2005. Beyond the "new regionalism." *New Political Economy* 10(4): 543– 71.

Hur, J., Raj, M. and Riyanto, Y. E. 2006. Finance and trade: A cross- country empirical analysis on the impact of financial development and asset tangibility on international trade. *World Development* 34(10): 1728– 41.

Huttunen, K., 2007. The effect of foreign acquisition on employment and wages: evidence from Finnish establishments. *Review of Economics and Statistics* 89(3): 497–509.

Hveem, H. 1999. Political regionalism: Master or servant of economic internationalization? In B. Hettne, A. Inotai, and O. Sunkei (eds.), *Globalism and the New Regionalism*. New York: Palgrave Macmillan.

Imbs, J. and Wacziarg, R. 2003. Stages of diversification. *American Economic Review* 93(1): 63– 86.

IMF. 2013. *World Economic Outlook*. April. IMF, April.

IMF 2014. Direction of Trade Statistics Online Database. Accessed on December 1, 2014.

Iyer, L. 2010. Direct versus indirect colonial rule in India: Long- term consequences. *Review of Economics and Statistics* 92(4): 693– 713.

Jauch, H., 2011. Chinese investments in Africa: Twenty-first century colonialism? *New Labor Forum,* 20(2), 48-55. The Murphy Institute/City University of New York.

Jenkins, R. 2009. The Latin American case. In R. Jenkins, and E. D. Peters (eds.), *China and Latin America: Economic Relations in the Twenty- First Century*, 21– 64. Bonn and Mexico City: German Development Institute.

Jenkins, R. and Edwards, C. 2006. The Economic Impact of China and India on sub Saharan Africa: Trends and Prospects, *Journal of Asian Economics* 17(2): 207-225.

Jenkins, R. and Peters, E.D. (eds.) 2009. *China and Latin America: Economic Relations in the Twenty-First Century*. Bonn and Mexico City: German Development Institute.

Kaldor, N. (1966). *Causes of the Slow Rate of Economic Growth of the United Kingdom, An Inaugural Lecture*. Cambridge: Cambridge Univ. Press.

Kaplinsky R. 1990. The Economies of Small: Appropriate Technology in a Changing World, London: Intermediate Technology Publications.

Kaplinksy, R., D. McCormick, and M. Morris. 2007. The Impact of China on Sub-Saharan Africa*, Institute of Development Studies working paper 291*.

Kaplinksy, R., D. McCormick, and M. Morris. 2010. "China and Sub Saharan Africa: impacts and challenges of a growing relationship," in Padayachee, V. ed. *The Political Economy of Africa*, London: Routledge.

Kaplinksy, R. 2008. "China and the Terms of Trade: the Challenge to Development Strategy in SSA," Mt. Holyoke Conference on New Developmentalism March 2008, Mt. Holyoke College, USA.

Kaplinsky, R. 2013. What Contribution Can China Make To Inclusive Growth In SSA? *Development and Change*, 44(6): 1295-1316.

Kaplinsky, R. & Morris, M. 2009. Chinese FDI in Sub-Saharan Africa: Engaging with Large Dragons. *European Journal of Development Research*, 21(4): 551–569.

Kaplinsky, R. and Morris, M. 2008. Do the Asian drivers undermine export- oriented industrialization in SSA? *World Development* 36(2): 254– 73.

Kaufmann, D., Kraay, A. and Zoido-Lobato´n, P. 1999. Governance Matters, World Bank Research Paper No. 2196. The World Bank: Washington, DC.

Kee, H. L. Nicita, A. and Olarreaga, M. 2009. Estimating trade restrictiveness indices. *The Economic Journal* 119: 172– 99.

Khanna, A. 1987. Market distortions, export performances, and export direction: India's exports of manufactures in the 1970s. World Bank Symposium: Exports of developing countries: How direction affects performance (47– 56). Washington, DC: World Bank.

Kletzer, K. and Bardhan, P. 1987. Credit markets and patterns of international trade. *Journal of Development Economics* 27(1– 2): 57– 70.

Koopman, R., Wang, Z., Wei, S.-J., 2008. How Much of Chinese Exports is Really Made In China? Assessing Domestic Value-Added When Processing Trade is Pervasive (Working Paper No. 14109). National Bureau of Economic Research.

Kowalski, P. and Shepherd, B. 2006. South– South trade in goods. OECD Trade Policy (Working Paper No. 40).

Krueger, A.O. 1977. *Growth, Distortions, and Patterns of Trade among Many Countries*. Princeton Studies in International Finance, no. 40. Princeton: Princeton University Press.

Krueger, A.O. 1997. Trade policy and economic development: how we learn. *American Economic Review*, 87(1): 1-6.

Krugman, P. R. 1979. Increasing returns, monopolistic competition, and international trade. *Journal of International Economics* 9(4): 469– 79.

Krugman, P. 1980. Scale economies, product differentiation, and the pattern of trade. *American Economic Review* 70(5): 950-959.

Krugman, P. 1987. The narrow moving band, the Dutch disease and the consequences of Mrs. Thatcher. *Journal of Development Economics* 27: 41– 55.

Krugman, P. 1991. History versus expectations. *Quarterly Journal of Economics* 196(2): 651– 67.

Krugman, P. 1995. Growing world trade: Causes and consequences. *Brookings Papers on Economic Activity* 1: 327– 77.

Kumar, N. 2008. South- South and triangular cooperation in Asia- Pacific. Research and Information System for Developing Countries Discussion Paper RIS-DP #145.

Lall, S. 2000. The technological structure and performance of developing country manufactured exports, 1985– 1998. *Oxford Development Studies* 28(3): 337– 70.

Lall, S. 2001. *Competiveness, Technology and Skills*. Cheltenham: Edward Elgar.

Lall, S., Ray, A. and Ghosh, S. 1989. The determinants and promotion of south- south trade in manufactured products. In V. Ventura- Dias (ed.), *South- South Trade: Trends, Issues, and Obstacles to its Growth*. New York: Praeger Publishers.

Lancaster, K. 1971. *Consumer Demand: A New Approach*. New York: Columbia University Press.

Landes, D. S. (1998). Homo Faber, Homo Sapiens: Knowledge, Technology, Growth, and Development. *The Knowledge Economy*, 53-67.

Lemoine, F., Ünal-Kesenci, D., 2008. Rise of China and India in International Trade: From Textiles to New Technology. *China & World Economy* 16(5), 16–34.

Leontief, W. 1986. Input-Output Economics. Oxford University Press: Oxford.

Lenin, V.I. 1917. Imperialism, the Highest Stage of Capitalism. In *Selected Works*, vol. 1. Moscow: Foreign Languages Publishing House.

Levchenko, A. 2007. Institutional quality and international trade. *Review of Economic Studie*s 74(3): 791-819.

Lewis, W. A. 1969. *Some aspects of economic development*. The Ghana Publishing Corporation, Ghana.

Linder, S. B. 1967. *Trade and Trade Policy for Development*. New York: Praeger Publishers.

Little, I., & Scitovsky, T. M. Scott, 1970. *Industry and Trade in Some Developing Countries: a comparative study*. London: Oxford University Press.

Long, C., Yang, J., Zhang, J. 2015. Institutional Impact of Foreign Direct Investment in China, *World Development* 66: 31-48.

Loren, B. and Eric, T. (2016). Constructing a ladder for growth: Policy, markets, and industrial upgrading in China. *World Development* 80: 78–95.

Lucas, R. E. 1988. On The Mechanics of Economic Development. *Journal of Monetary Economics* 22(1): 3- 42.

Luxemburg, R. 1913. *The Accumulation of Capital* (transl. from German, 1951). London: Routledge and Kegan Paul.

Lyman, P. 2005. China's Rising Role in Africa. Testimony on Council on Foreign Relations. July 21. http://www.cfr.org/china/chinas-rising-role-africa/p8436

Manova, K. B. and Zhang, Z. 2012. Export prices across firms and destinations. *Quarterly Journal of Economics* 127: 379– 436

Matsuyama, K. 1991. Increasing returns, industrialization and indeterminacy of equilibrium. *Quarterly Journal of Economics* 106(2): 617– 50.

Mawdsley, E. 2008. "Fu Manchu versus Dr. Livingstone in the Dark Continent? Representing China, Africa, and the West in British Broadsheet Newspapers," *Political Geography*, 27(5): 509-529.

Mbaye, S. 2011. Africa will not Put Up with a Colonialist China. The Guardian.

McMillan, M. and Rodrik, D. 2011. Globalization, Structural Change, and Productivity Growth. NBER Working Paper 17143. Cambridge, MA: NBER.

Medvedev, D. 2010. Preferential trade agreements and their role in world trade. *Review of World Economies* 146: 199– 222.

Michaely, M., Papageorgious, D. and Choksi, A. 1991. *Liberalizing foreign trade: Lessons of experience in the developing world*. Cambridge, MA: Blackwell.

MIT Media Lab. 2015. *The Atlas of Economic Complexity*. Center for International Development at Harvard University. http:// atlas.media.mit.edu/ en/ resources/ data/ Accessed on March 1, 2015.

Mohan, G. and Kale, D., 2007. The invisible hand of South-South globalization: Chinese migrants in Africa. A Report for the Rockefeller Foundation prepared by The Development Policy and Practice Department, The Open University, UK.

Mohan, G. and Lampert, B., 2013. Negotiating china: reinserting African agency into china–Africa relations. *African Affairs 112*(446): 92-110.

Mohan, G., Lampert, B., Tan-Mullins, M. and Chang, D. 2014. "Chinese Migrants and Africa's Development: New Imperialists or Agents of Change?" London: Zed Books

Muhr, T. 2016. "Beyond 'BRICS': ten theses on South-South cooperation in the twenty-first century, *Third World Quarterly* 37(4): 630-649.

Murphy, K. M., and Shleifer, A, 1997. Quality and Trade. *Journal of Development Economics* 53: 1-15.

Murphy, K. M., Shleifer, A., & Vishny, R. W. (1989). Industrialization and the big push. *Journal of political economy*, *97*(5), 1003-1026.

Navaretti, G.B., Turrini, A., Checchi, D., 2003. Adjusting Labor demand: multinational versus national firms: a cross-European analysis, *Journal of European Economic Association* 1:708-719.

Nelson, R. and Pack, H. 1999. The Asian miracle and modern growth theory. *Economic Journal*, 109(457): 416– 36.

Otsubo, S. 1998. New regionalism and South- South trade: Could it be an entry point for the South toward global integration? APEC Discussion Paper, No. 18.

Pack, H. and Saggi, K. 1997. Inflows of foreign technology and indigenous technological development. *Review of Development Economics* 1(1): 81– 98.

Panagariya, A. 2000. Preferential trade liberalization: the traditional theory and new developments. *Journal of Economic Literature* 38(2): 287– 331.

Paz, L. S. 2014. Intermediate inputs and premature deindustrialization: An analysis of the Brazilian case. Working Paper. Syracuse University.

Peters, E. D. 2005. Economic opportunities and challenges posed by China for Mexico and Central America. Bonn: Dt. Inst. Fur Entwicklungspolitik.

Power, M., G. Mohan, and M. Tan-Mullins. 2012. *China's Resource Diplomacy in Africa: Powering Development?* New York: Palgrave Macmillan.

Prebisch, P. 1950. *The Economic Development of Latin America and Its Principal Problems*. New York: United Nations Department of Economic Affairs.

Prebisch, P. 1959. Commercial Policy in the Underdeveloped Countries. *American Economic Review Papers and Proceedings* 49(2): 251-273.

Puga, D. and Venables, A. J. 1997. Preferential trading arrangements and industrial location. *Journal of International Economics* 43: 347– 68.

Rajan, R. G. and Zingales, L. 1998. Financial dependence and growth. *American Economic Review* 88: 559– 86.

Razmi, A., and Blecker, R.A., 2008. Developing country exports of manufactures: moving up the ladder to escape the fallacy of composition? *The Journal of Development Studies*, *44*(1): 21-48.

Regolo, J. 2013. Export diversification: How much does the choice of the trading partner matter? *Journal of International Economics* 91: 329– 42.

Rodrik, D. 2007. Industrial development: Some stylized facts and policy directions. *Industrial development for the 21st century: Sustainable development perspectives*, 7-28.

Rodrik, D., 2016. Premature deindustrialization. *Journal of Economic Growth*, *21*(1): 1-33.

Romer, P. M. 1990. Endogenous technological change. *Journal of Political Economy*, *98*(5), S71-S102.

Ros, J. 2001. *Development Theory and Economic of Growth*. Ann Arbor: University of Michigan Press.

Ros, J. 2008. Classical development theory. In A. K. Dutt and J. Ros (eds.), *International Handbook of Development Economics* vol. 1. 111– 24. Northampton, MA: Edward Elgar.

Ros, J. 2013. Latin America's trade and growth patterns, the China Factor, and Prebisch's Nightmare. *Journal of Globalization and Development* 3(2): 1– 16.

Salazar-Xirinachs, J.M., Nübler, I. and Kozul-Wright, R., 2014. Transforming economies. *Making industrial policy work for growth, jobs and development*. *ILO/UNCTAD*.

Schiff, M. 2003. The Unilateral/ Bilateral/ Regional/ Multilateral approaches to trade liberalization. Background paper for *Trade for Development UN Millennium Project.* New York.

Schiff, M. and Wang, Y. 2006. North- South and South- South trade- related technology diffusion: An industry- level analysis of direct and indirect effects. *Canadian Journal of Economics* 39(3): 831– 44.

Schiff, M. and Wang, Y. 2008. North- South and South- South trade- related technology diffusion: How important are they in improving TFP growth? *Journal of Development Studies* 44(1): 49– 59.

Schiff, M. and Wang, Y. and Ollareaga, M. 2002. Trade- related technology diffusion and the dynamics of North- South and South- South integration. The World Bank Policy Research Working Paper, No. 2861.

Schumacher, F. 1973. *Small is Beautiful: A Study of Economics as if People Mattered*, London: Blond and Briggs.

Scoones, I., Amanor, K., Favareto, A., Qi, G. 2016. A New Politics of Development Cooperation? Chinese and Brazilian Engagements in African Agriculture, *World Development* 81: 1-12,

Shankland, A., Gonçalves, E. 2016 Imagining Agricultural Development in South–South Cooperation: The Contestation and Transformation of ProSAVANA, *World Development* 81: 35-46

Singer, H. W. 1950. The distribution of gains between investing and borrowing countries. *American Economic Review Papers and Proceedings* 40(2): 473– 85.

Singer, H. W. 1975. *The Strategy of International Development: Essays in the Economics of Backwardness*. A. Cairncross and M. Puri (eds.) London: Macmillan.

Söderlund, B. and Tingvall, P. 2014. Dynamic effects of institutions on firm-level exports. *Review of World Economy* 150(2): 277-308.

Stewart, F. 1982. *Technology and Underdevelopment*, 2nd edition, London: Macmillan.

Stewart, F. 1992. *North-South and South-South: Essays on International Economics*. Hong Kong: St. Martin's Press.

Strange, A., Parks, B., Tierney, M.J., Fuchs, A., Dreher, A., and Ramachandran, V. 2013. China's Development Finance to Africa: A Media-Based Approach to Data Collection. Center for Global Development, Working paper 323.

Sun, Yun. 2014. "Africa in China's Foreign Policy," Brookings Institute Report, accessible at: https://www.brookings.edu/research/africa-in-chinas-foreign-policy/

Svaleryd, H. and Vlachos, J. 2005. Financial markets, the pattern of industrial specialization and comparative advantage: Evidence from OECD countries. *European Economic Review* 49: 113– 44.

Taylor, L. 1981. South- North trade and Southern growth: Bleak prospects from a structuralist point of view. *Journal of International Economics* 11(4): 589– 602.

Taylor, M. A. 1993. Quality ladders' and Ricardian trade. *Journal of International Economics* 34(3/4): 225–43.

Taylor, L. 2004. *Reconstructing Macroeconomics*. Cambridge, MA: Harvard University Press.

Trotsky, L. 2001. History of the Russian Revolution. New York: Pathfinder Press.

UNDP (United Nations Development Programme). 2013. *Human Development Report 2013. The Rise of the South: Human Progress in a Diverse World*. New York: United Nations.

UNIDO. 2005. *Industrial Development, Trade and Poverty Alleviation through South-South Cooperation*. New York: United Nations.

United Nations Conference on Trade and Development (UNCTAD). 2003. *Trade and Development Report*. Geneva: United Nations.

United Nations Conference on Trade and Development (UNCTAD). 2006. *Trade and Development Report*. Geneva: United Nations.

United Nations Conference on Trade and Development (UNCTAD). 2011. *World Investment Report 2011*. New York and Geneva: United Nations.

United Nations Conference on Trade and Development (UNCTAD). 2014. *World Investment Report 2014*. Geneva: United Nations.

United Nations Conference on Trade and Development (UNCTAD). 2015. *World Investment Report 2015*. Geneva: United Nations.

United Nations Conference on Trade and Development (UNCTAD). 2016. *World Investment Report 2016*. Geneva: United Nations.

United Nations Conference on Trade and Development (UNCTAD). 2017a. UNCTADSTAT. Geneva: United Nations. Accessed on 5/10/2017.

United Nations Conference on Trade and Development (UNCTAD). 2017b. *World Investment Report 2016*. Geneva: United Nations.

Venables, A. 1999. Regional integration agreements, a force for divergence or convergence? World Bank Policy Research Working Paper, No. 2260, Washington, DC: World Bank.

Wade, R. 1990. *Governing the Market: Economic Theory and the Role of Government in East Asian Industrialization*. Princeton: Princeton University Press.

Wallerstein, I. 1976. Semi- peripheral countries and the contemporary world crisis. *Theory and Society* 3(4): 461– 83.

Warmerdam, W. 2012. Is China a Liberal Internationalist? *The Chinese Journal of International Politics* 5: 201–243.

Wietzke, F-B. 2015. Long- term consequences of colonial institutions and human capital investments: Sub- national evidence from Madagascar. *World Development* 66: 293– 307.

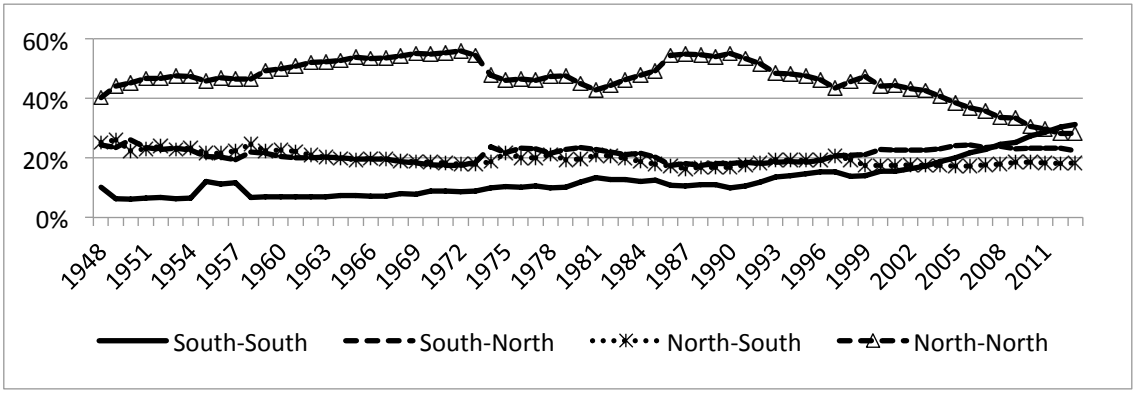
World Bank. 2008. *Global Development Finance*. Washington, DC: World Bank.

World Trade Organization (WTO). 2003. *World Trade Report 2003* Geneva: WTO Publications

Xu, X., Li, X., Qi, G., Tang, L., Mukwereza, L. 2016. Science, Technology, and the Politics of Knowledge: The Case of China's Agricultural Technology Demonstration Centers in Africa, *World Development* 81: 82-91.

Yao, S., 2009. Why Are Chinese Exports Not So Special? *China & World Economy* 17(1), 47–65.

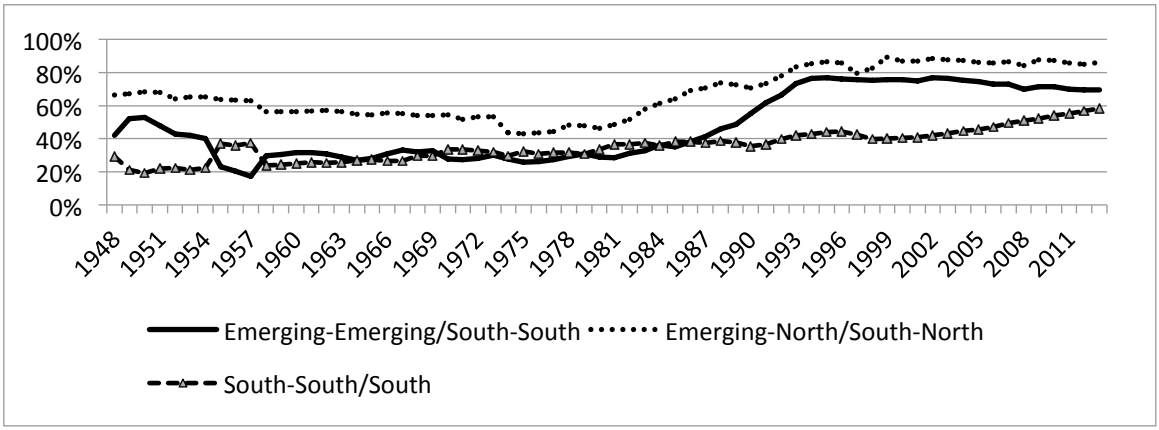
Figure 1: The share of South and North in world merchandise goods trade, 1948-2013



Source: IMF Direction of Trade Statistics (2014) and authors' calculations.

Notes: South-South, South-North, North-South and North-North refer to the share of each group of exporters in world merchandise exports.

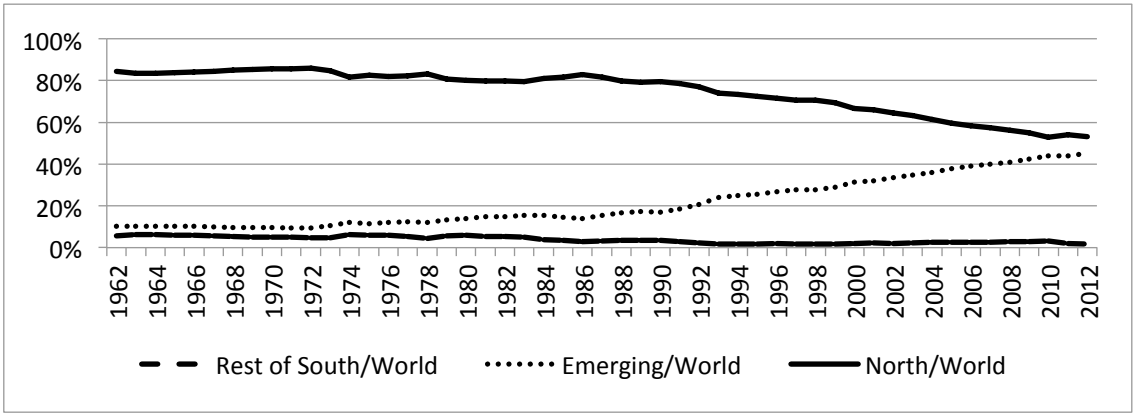
Figure 2: Share of Emerging South within South–South and South–North merchandise exports, 1948-2013



Source: IMF Direction of Trade Statistics (2014) and authors' calculations.

Notes: Emerging-Emerging/South-South and Emerging-North/South-North refers to the share of Emerging-Emerging country trade and Emerging–North trade in total South–South and South–North trade, respectively. South-South/South refers to the share of South-South trade in global South exports to the rest of the world.

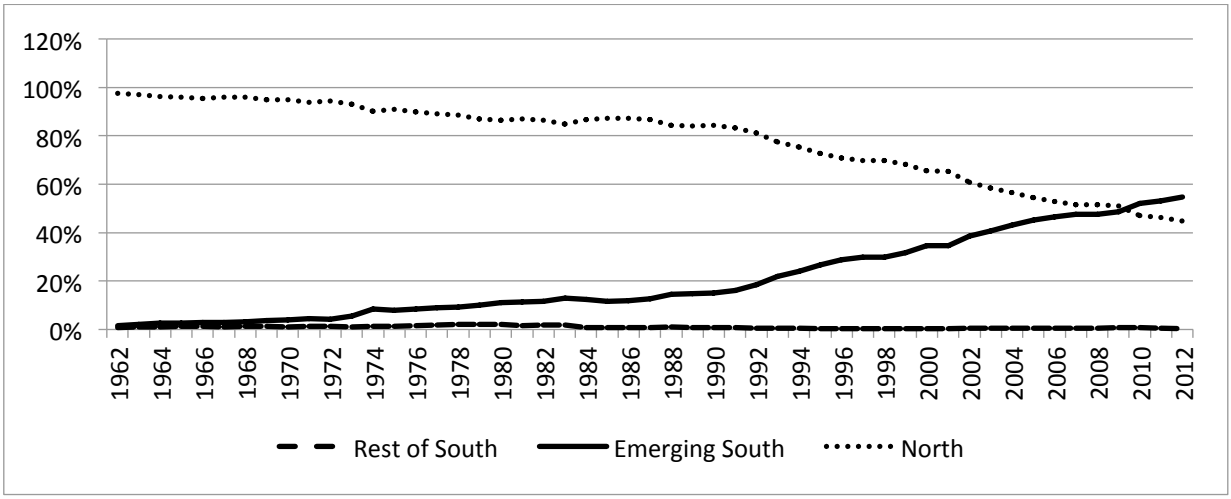
Figure 3: Share of South, Emerging South and North in world manufactures exports, 1962-2012



Source: MIT Media Lab (2015) and authors' calculations.

Notes: Rest of South/World, Emerging/World and North/World refer to the share of Rest of South, Emerging South and the North in world manufactures exports.

Figure 4: Share of South and North in World High-Skill Manufactures Exports, 1962-2012



Source: IMF Direction of Trade Statistics (2014) and authors' calculations.

Table 1: Share of high-skill exports in total exports in each direction of trade

High-skill	South-South	South-Emerging	South-North	Emerging-South	Emerging-Emerging	Emerging-North
1962-1969	2%	2%	0%	1%	2%	1%
1970-1979	2%	1%	1%	2%	4%	4%
1980-1989	3%	1%	1%	4%	9%	8%
1990-1999	3%	2%	1%	7%	18%	17%
2000-2008	5%	2%	1%	8%	28%	22%
2009-2012	7%	1%	1%	10%	27%	21%
Medium-skill	South-South	South-Emerging	South-North	Emerging-South	Emerging-Emerging	Emerging-North
1962-1969	14%	13%	3%	6%	8%	2%
1970-1979	15%	6%	2%	13%	14%	5%
1980-1989	18%	10%	4%	20%	20%	10%
1990-1999	15%	10%	4%	29%	23%	16%
2000-2008	21%	8%	4%	29%	21%	20%
2009-2012	24%	9%	4%	30%	23%	22%

Source: MIT Media Lab (2015) and authors' calculations.

Notes: Skill-classification is based on Based on Lall (2000). High-skill refers high technology-and-skill intensive manufactured goods.

Table 2: Share of high and medium-skill goods in South-South trade

High-skill	South-South	South-Emerging	Emerging-South	Emerging-Emerging
1962-1969	25%	30%	11%	27%
1970-1979	25%	16%	6%	19%
1980-1989	17%	14%	4%	21%
1990-1999	7%	30%	3%	34%
2000-2008	23%	42%	2%	42%
2009-2012	35%	42%	3%	51%
Medium-skill	South-South	South-Emerging	Emerging-South	Emerging-Emerging
1962-1969	24%	28%	17%	38%
1970-1979	35%	22%	17%	31%
1980-1989	23%	26%	12%	32%
1990-1999	9%	44%	9%	38%
2000-2008	22%	44%	9%	35%
2009-2012	24%	53%	9%	43%

Source: MIT Media Lab (2015) and authors' calculations.

Notes: Medium-skill and High-skill refer to medium- and high-skill manufactured goods.

Table 3: Classification of South-South theories (mainstream and heterodox)

1. In favor of North-South trade and finance	
1.1 Static Theories	
Diaz-Alejandro (1973), Krueger (1977), Baldwin (1979), Khanna (1987), Deardorff (1984), Havrylyshyn and Wolf (1987), Bhagwati et al. (1998), Panagariya (2000)	Allows for specialization, technology transfer and comparative advantage.
1.2 Dynamic Theories	
Otsubo (1998), Schiff (2003), Schiff and Ollareaga (2002), Schiff and Wang (2006, 2008)	Expansion of intra-industry trade. Increases TFP through faster and better technology diffusion. It also enables economies of scale.
Puga and Venables (1997), Venables (2003) Schiff (2003).	South-North is better for smaller/weaker Southern countries as they are disadvantaged in economic power and market size against larger Southern countries.
Krugman (1995)	Allows for vertical specialization/value-chain fragmentation
Hallak (2006), Bastos and Silva (2010), Manova and Zhang (2012), Dahi and Demir (2016)	Export unit values (product quality) increase in importer incomes, allowing for productivity and quality improvements.
Anderson and Marcouiller (2002), Belloc (2006), Levchenko (2007), Aeberhardt et al. (2014), Fernandes et al. (2016), Söderlund and Tingvall (2014).	Lower Northern entry barriers make it easier for firms to export, enter, diversify, survive and grow.
Fabbri et al. (2003), Fosfuri et al. (2001), Almeida (2007), Desai and Foley (2007), Arnold and Javorcik (2009), Navaretti et al. (2003), Almeida (2007), Huttunen (2007)	FDI spillovers through better technology, modern management techniques and managerial skills, R&D investment, more experience in the international markets and higher possibility of learning by watching.
Lyman (2005), Kwok and Tadesse (2006), Graham-Harrison (2009), Warmerdam (2012), Dang (2015), Long (2015) Mbaye (2011),	North-South FDI and financial flows improve Southern institutional quality through conditionality requirements, lobbying, and demonstration channel. South-South financial flows encourage rogue states and hurt institutional development efforts in the South.
2.In favor of South-South trade and finance	
2.1 Dynamic Theories	
Linder (1967), Hallak (2006, 2010), World Bank	Similarities in institutions, culture,

(2006), UNCTAD (2011: 42), Bergstrand and Egger (2013), Regolo (2013), Amighini and Sanfilippo (2014), Cheong et al. (2015), Bahar et al. (2014), Cheong et al. (2015), Fajgelbaum et al. (2015), Demir and Duan (2016)	endowments, production structures, preferences, incomes, technological development increase bilateral trade and finance and boost facilitate economic convergence and spillovers. They also allow for easier technology adoption and enable Southern investors to address local consumer needs better.
Dutt (1989, 1990), Findlay (1980, 1984), Taylor (1981), Darity and Davis (2005), Lewis (1980), Taylor (1981), World Bank (2008), Ros (2013, ch. 4),	North-South trade causes dependent growth in the South. South-South exchanges allow for decoupling from Northern business cycles and increase global economic stability.
Cuervo-Cazurra and Genc (2008), Darby et al. (2010), Aleksynska and Havrylchyk (2012) Amighini and Sanfilippo (2014), Demir and Hu (2016)	South-South investment flows can benefit from the comparative advantage of Southern investors in operating in institutionally less developed and more risky countries.
Prebisch (1959), Akamatsu (1962), Amsden (1980, 1983, 1984, 1987, 1989), Fugazza and Robert-Nicoud (2006); Amighini and Sanfilippo (2014), Dahi and Demir (2013), Demir and Dahi (2011)	Higher skill and technology intensive content of South-South trade allows for better skills upgrading and endogenous technological change. Allows for more export diversification and higher skill content in exports.
Amsden (1980, 1987), UNIDO (2005), Caglayan et al. (2013), Regolo (2013), Dahi and Demir,(2013), Stewart (1982, 1990, p. 81), Kaplinsky (1990, 2011), Bhalla (1985), Nelson and Pack (1999), Schumacher (1973), Atta-Ankomah (2014), Lall (2000, 2001), Pack and Saggi (1997), Lall et al. (1989), Copeland-Kotwal (1996), Murphy and Schleifer (1997), Agyei-Holmes (2016), Atta-Ankomah (2014), Xu et al. (2016), He et al. (2012), Demir and Duan (2017)	The North controls the direction of technological innovation, which is conditioned by Northern endowments and preferences, making it more capital-intensive. Southern technologies are better fit for production and demand structures, resource bases, institutions, factor endowments and market size in the South. They are more cost effective and easier to learn, adapt and upgrade. They are also more fit to consumer preferences.
Hveem (1999), Hettne (2005), Doctor (2007), Thrasher and Gallagher (2008), Kaplinsky (2008), Gallagher et al. (2012), Dahi and Demir (2013, 2016), UNCTAD (2015)	Smaller gaps in bargaining power, negotiating capacity and retaliatory capabilities allow for more balanced BITs and PTAs and create more flexible policy space
Myrdal (1956), Kowalski and Shepherd, 2006; Demir and Dahi (2011), Dahi and Demir (2013, 2016); Behar and Cirera-i-Criville, 2013	Higher trade and skill-growth effects of South-South PTAs
Caglayan et al. (2013), Caglayan and Demir (2016)	South-South trade may be less sensitive to exchange rate shocks
Brautigan (2009)	Chinese lending lowers corruption risk in

	Southern countries.
3. Critical of North-South exchanges	
Singer (1950, 1975), Prebisch (1950, 1959), Bacha (1978), Taylor (1981, 1983), Dutt (1986, 1987, 1989, 1990, 1992, 1996, 2002), Findlay (1980), Darity (2005), Acemoglu and Zilibotti (2001), Acemoglu (2015)	Causes uneven development favoring the North through terms of trade changes, dependent growth, skill-biased technological change. Hurts industrialization efforts by forcing South to specialize in primary and labor intensive goods.
Acemoglu et al. (2001, 2005), Iyer (2010), Wietzke (2015), Bagchi (2008)	Northern colonialism and slave trade had negative effects on institutional development, democracy, income growth, human capital, trust, and income inequality in the South.
5. Critical of South-South exchanges	
Kaplinsky et al. (2007), Jenkins (2009), Brautigan (2009), Gallagher and Porzecanski (2009), Giovanetti and Sanfilippo (2009), Adisu et al. (2010), Kaplinsky et al. (2010), Edwards and Jenkins (2006, 2014), Peters (2005), Jenkins and Peters (2009); Ros (2013), Cabral et al. (2016), Dahi and Demir (2016), Demir and Duan (2017), Shankland and Goncalves (2016), Scoones et al. (2016)	South-South exchanges benefit Emerging South at the expense of Rest of South. Rise of China crowds out Southern exporters and cause primarization and deindustrialization.
Amanor and Chichava (2016), Cabral et al. (2016), Scoones et al. (2016), Demir and Duan (2017)	South-South technology transfer and adaptive capabilities are subject to same limitations as North-South exchanges.
Baah and Jauch (2009) and Jauch (2011)	Chinese investments in Africa are neocolonial, focusing on resource extraction, and are anti-labor, and exploitative.
Mohan and Kale (2007), Mohan and Tan-Mullins (2009), Mohan and Lampert (2013) and Mohan (2013), Demir (2016), Demir and Duan (2017)	The net effect of Southern investments in local economies depends on country characteristics.

Table 4: Selective survey of China-Africa literature by complexity

1. Both China & Africa as homogeneous	
Brautigan (2009)	Chinese aid and investment is largely beneficial.
Alden (2007)	China as competitor, partner, colonizer: elements of all three, but large positive potential.
Busse et al. (2016)	Positive terms of trade impact, crowding out of African firms and no impact of aid and FDI on African growth
2. Africa heterogeneous, China homogenous	
Kaplinsky et al. (2007), Kaplinsky (2008), Adisu et al. (2010), Brenton and Walkenhorst (2010), Kaplinsky et al. (2010), Edwards and Jenkins (2014)	Channels of impact: trade, aid, FDI reflecting strategic and political economy factors. China endangers manufacturing, governance & institutional development, triggers resource-curse, crowds out domestic investment & has limited local employment effects.
Jenkins and Edwards (2006)	Direct channels more important than indirect due to lack of export similarity between China and SSA
Aguilar and Goldstein (2009)	China in Angola increases Angolan engagement with international community and brings significant infrastructural investments.
Baah and Jauch (2009); Jauch (2011)	Chinese investments engage in neocolonial practices, and labor exploitation.
Xu et al. (2016)	Positive effects of Chinese aid on technology transfer.
Atta-Ankomah (2014), Agyei-Holmes (2016)	More appropriate technology transfer through more labor intensive, cost-effective and profitable imported capital goods.
Cheru (2016)	Joint ventures of China in Ethiopia and the use of the country as launching pad for regional investments.
3. Both China and Africa as heterogeneous	
Kaplinsky (2013)	Multiple actors in both China and Africa, indirect effects just as important as direct ones, and interaction contains both equalizing and unequalizing tendencies.
Mohan (2013)	Labor exploitation and migrant worker integration varies by Chinese firm, country, institutional, cultural and other factors.
Strauss and Saavedra (2009)	Ethnographic studies showing how cultural norms, structures, practices, critical engagements and other

	interactions over time shape the China-Africa relationship.
Cabral et al. (2016), Amanor and Chichava (2016), Shankland and Goncalves (2016)	Chinese and other Southern investment in Africa are subject to the same types of constraints and bottlenecks present in North-South exchanges.

Source: Kaplinsky (2013) and authors'.

Table 5: Share of Chinese exports and imports in world trade, 1990, 2003 and 2012

	Exports			Imports		
	1990	2003	2012	1990	2003	2012
Total	4.2%	9.4%	15.1%	3.9%	8.0%	12.3%
Primary	2.7%	2.6%	2.2%	2.4%	5.5%	10.6%
Nat-Resource Intensive	1.8%	4.0%	7.5%	3.1%	6.4%	14.6%
Low-Skill	13.3%	24.2%	32.4%	6.4%	8.5%	7.3%
Medium-Skill	2.6%	5.8%	11.3%	4.1%	7.1%	9.3%
High-Skill	3.0%	13.4%	28.8%	4.1%	12.9%	20.1%

Source: Dahi and Demir (2016, Table 5.3)

Notes: Based on Lall (2000), Total, Primary, and Nat-Resource Intensive refer to the export (import) shares of total merchandise goods, primary commodities and natural-resource intensive manufactured goods in world trade of these goods. Low-skill, Medium-skill and High-skill refer to low-, medium- and high-skill manufactured goods. China includes Hong Kong. Exports and imports are valued fob and cif, respectively.

Table 6: Structure of China-Latin America trade, 1990, 2003 and 2012

	Exports to Latin America			Imports from Latin America		
	1990	2003	2012	1990	2003	2012
Primary	10.4%	1.9%	2.3%	31.8%	36.9%	45.5%
Nat-Resource Intensive	7.2%	8.5%	7.9%	31.4%	31.7%	41.6%
Low-Skill	46.2%	29.8%	25.4%	19.0%	8.5%	1.6%
Medium-Skill	28.0%	21.9%	28.4%	16.1%	11.2%	4.2%
High-Skill	7.6%	37.0%	35.0%	1.4%	11.6%	6.5%

Source: Dahi and Demir (2016, Table 5.6).

Notes: Latin America includes the Caribbean.

Table 7: Structure of South-China Trade

Rest of South				
	Exports		Imports	
	1990	2012	1990	2012
Primary	13.0%	75.2%	14.1%	3.0%
Nat-Resource Intensive	18.4%	11.2%	9.1%	9.8%
Low-Skill	16.3%	1.7%	48.2%	37.8%
Medium-Skill	46.6%	8.7%	22.6%	34.1%
High-Skill	5.4%	2.0%	5.5%	14.0%
Emerging South				
	Exports		Imports	
	1990	2012	1990	2012
Primary	8.5%	15.6%	8.1%	3.3%
Nat-Resource Intensive	12.2%	12.9%	7.7%	6.7%
Low-Skill	39.4%	9.0%	43.4%	21.8%
Medium-Skill	27.5%	15.8%	27.1%	24.2%
High-Skill	11.4%	42.8%	12.2%	40.4%

Source: Dahi and Demir (2016, Table 5.9).

Appendix

A1. Country Classification: North, Emerging South, and Rest of South

The North refers to the following countries: Austria, Australia, Belgium, Canada, Denmark, Germany, Finland, France, Greece, Iceland, Israel, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, and the United States.

The Emerging South includes: Algeria, Argentina, Angola, Armenia, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Bolivia, Brazil, Chile, China, Colombia, Costa Rica, Croatia, Cyprus, Czech Republic, Dominican Republic, Ecuador, Egypt, Estonia, Guatemala, Hong Kong, Hungary, India, Indonesia, Ireland, Jordan, Kazakhstan, Korea, Lithuania, Latvia, Malaysia, Mexico, Morocco, Oman, Pakistan, Paraguay, Peru, Philippines, Poland, Romania, Russian Federation, South Africa, Singapore, Slovenia, Slovakia, Syria, Thailand, Tunisia, Turkey, Taiwan, Ukraine, Uruguay, Venezuela, Vietnam.

All other countries are classified as the Rest of South.

A2. Product Classification

The product classifications are from Lall (2000) and are based on the following three-digit product codes using SITC Rev2.

High-skill-manufactures: 716, 718, 751, 752, 759, 761, 764, 771, 774, 776, 778, 524, 541, 712, 792, 871, 874, 881.

Medium-skill-manufactures: 781, 782, 783, 784, 785, 266, 267, 512, 513, 533, 553, 554, 562, 572, 582, 583, 584, 585, 591, 598, 653, 671, 672, 678, 786, 791, 882, 711, 713, 714, 721, 722, 723, 724, 725, 726, 727, 728, 736, 737, 741, 742, 743, 744, 745, 749, 762, 763, 772, 773, 775, 793, 812, 872, 873, 884, 885, 951.

Low-skill manufactures: 611, 612, 613, 651, 652, 654, 655, 656, 657, 658, 659, 831, 842, 843, 844, 845, 846, 847, 848, 851, 642, 665, 666, 673, 674, 675, 676, 677, 679, 691, 692, 693, 694, 695, 696, 697, 699, 821, 893, 894, 895, 897, 898, 899.

Resource-intensive-manufactures: 012, 014, 023, 024, 035, 037, 046, 047, 048, 056, 058, 061, 062, 073, 098, 111, 112, 122, 233, 247, 248, 251, 264, 265, 269, 423, 424, 431, 621, 625, 628, 633, 634, 635, 641, 281, 282, 286, 287, 288, 289, 323, 334, 335, 411, 511, 514, 515, 516, 522, 523, 531, 532, 551, 592, 661, 662, 663, 664, 667, 688, 689.

Primary products: 001, 011, 022, 025, 034, 036, 041, 042, 043, 044, 045, 054, 057, 071, 072, 074, 075, 081, 091, 121, 211, 212, 222, 223, 232, 244, 245, 246, 261, 263, 268, 271, 273, 274, 277, 278, 291, 292, 322, 333, 341, 681, 682, 683, 684, 685, 686, 687.

Unclassified goods: All remaining products not included in any of above groups