The constraints to structural transformation in commodity exporting countries: China's trade-investment-aid relationships with Sub-Saharan Africa

Alice N. Sindzingre

Research Fellow, National Centre for Scientific Research (CNRS, Paris)-EconomiX, University Paris West-Nanterre; Visiting Lecturer, School of Oriental and African Studies (SOAS), University of London, Department of Economics; Associate Researcher, Les Afriques dans le Monde (LAM, CNRS-Sciences Po-Bordeaux)

AEGIS 4th European Conference on African Studies (ECAS 4), Nordic Africa Institute, Uppsala, Sweden, 15-18 June 2011

Panel 1: Europe and China in Africa: Security and Development Implications. Panel organisers: Professor Daniel C. Bach (University of Bordeaux, SPIRIT, Sciences Po Bordeaux) and Dr Catherine Gégout (University of Nottingham)

Abstract

The relationships between China and Sub-Saharan Africa have witnessed a remarkable intensification over the first decade of the 21st century. These relationships respond to political agendas but are also strongly driven by economic objectives. They take complex forms, in particular original contractual modes that interlink trade, investment and aid. These modes, as well as the increasing financial flows involved, are questioned by the 'traditional' partners of African countries regarding their effects (lock-in governments' room of manoeuvre, crowding-out of other players, debt creation). In addition, China's spectacular growth has been associated with trade and investment relationships, which in Africa are heavily focused on the sector of primary commodities (petroleum, ores, metals) as well as infrastructure development. While the latter has beneficial effects on long-term growth under certain conditions (fostering industrialisation, enhancing the functioning of markets), the effects of the former remain the subject of heated debates. Many studies indeed identify commodity-dependence as one of the key factors of African economic stagnation due to the intrinsic volatility of commodity prices, and a demand that is out of the control of exporting countries and dependent on importing countries' business cycle. Other studies, however, view the exporting of commodities as an opportunity for long-term growth, since these commodities constitute necessary inputs for the growth of emerging countries, including China, and are therefore subject to a steady demand that is likely to maintain high price levels. The assessment of the effects of this new mix of trade, investment and aid is thus a recurring question in the literature. The paper argues that these effects cannot be assessed as a whole: they differ across African countries, as they depend on these countries' market structure (types of export sectors and commodities, the latter's importance in China's stages of development) and institutional consolidation. These effects can be 'neutral' (exhibiting patterns that are similar to other trade partners, investors or donors), negative (reinforcing the detrimental effects of commodity-dependence, threatening African industrial production) or positive (augmenting the number of players, available resources and investment flows; creating infrastructure).

1. Introduction

The relationships between China and Sub-Saharan Africa have witnessed a remarkable intensification over the first decade of the 21st century and have become a central issue both in political science and development economics. These relationships respond to political agendas but are also strongly driven by economic objectives (those of the Chinese government and the firms it controls as well as private agents).

These relationships take complex forms, in particular original contractual modes that interlink trade, investment and aid. These modes, as well as the increasing financial flows involved, are questioned by the 'traditional' partners of Sub-Saharan African countries, such as the international financial institutions (the IMF and the World Bank), European states and the United States, for example regarding their effects of lock-in (African governments' room of manoeuvre), crowding-out (of other players) and debt creation.

In addition, China's spectacular growth and its specific strategies (reliance on the industrial sector, export of manufactures and machinery) have been associated with trade and investment relationships, which in Africa are heavily focused on the sector of primary commodities (petroleum, ores, metals) as well as infrastructure development. While the latter has beneficial effects on long-term growth under certain conditions (e.g., fostering industrialisation and enhancing the functioning of markets), the effects of the former remain the subject of heated debates.

Many studies indeed identify commodity-dependence as one of the key factors of African economic stagnation due to the intrinsic volatility of commodity prices, a demand that is out of the control of exporting countries and dependent on importing countries' business cycle. Other studies, however, view the exporting of commodities as an opportunity for long-term growth, since these commodities constitute inputs that are necessary for the growth of emerging countries, including China, and are therefore subject to a steady demand that is likely to maintain high price levels.

The assessment of the effects of this new mix of trade, investment and aid is thus a recurring question in the literature. The paper argues that these effects cannot be assessed as a whole: they differ across African countries, as they depend on these countries' market structure (types of export sectors and commodities, the latter's importance in China's stages of development) and institutional consolidation. These effects can be 'neutral' (exhibiting patterns that are similar to other trade partners, investors or donors), negative (reinforcing the detrimental effects of commodity-dependence, threatening African industrial production) or positive (augmenting the number of players, available resources and investment flows; creating infrastructure).

The paper is structured as follows. Section 2 firstly presents the key characteristics of the market and export structure of Sub-Saharan African countries, i.e. their dependence on a limited number of primary commodities for their exports and fiscal resources. Section 3 analyses the dramatic increase in trade relationships between China and Sub-Saharan African countries over the 2000s and underscores their positive and negative effects. Section 4 examines China's foreign investment in Sub-Saharan African countries and the associated original contractual relationships, where transactions bundle together trade, investment and aid, and similarly underscores their ambiguous effects. Section 5 concludes in highlighting the plurality of impacts of China on Sub-Saharan African economies, as well as their ambivalence: indeed, these impacts depend on many factors, which vary across Sub-Saharan African countries and are specific to the economic sectors and the types of flows that are considered.

2. A key characteristic of Sub-Saharan African countries' export structure: commodity dependence

The composition of exports of Sub-Saharan African countries: prevalence of commodities, narrow industrial sectors

A characteristic of Sub-Saharan African countries (SSA) is a specific market and export structure, where exports include an important proportion of raw materials, be they fuels, minerals and agricultural, South Africa obviously being a special case. According to the World Bank *World Development Indicators* (2004, 2010), in SSA, in 2008, food represented 12% of merchandise exports; agricultural raw materials, 3%; fuels, 36%; ores and metals, 16%; manufactures, 32%. This export composition is remarkably stable, as in 2001, food represented 16% of exports, agricultural raw materials, 6%, fuels, 31%, ores and metals, 8%, and manufactures, 33%.

An associated characteristic is the narrowness of the industrial base in SSA, with the exception of a few countries, notably South Africa and Kenya. According to the World Bank *World Development Indicators* (2006, 2007, 2010), the structure of output in SSA was the following in 1990: industry represented 34% of GDP, in 2002, 29% of GDP; in 2005, 32% of GDP; in 2008, 33%. Manufacturing represented in 1990, 17% of GDP, in 2002, 15% of GDP; in 2005, 14% of GDP; in 2008, 15% (with industry including mining, manufacturing, construction, electricity, water and gas).

As shown by the table below, over the period 2003-2006, in almost half of African countries, only one commodity represented more than 50% of exports. Moreover, this proportion has aggravated compared with the 1995-1998 period.

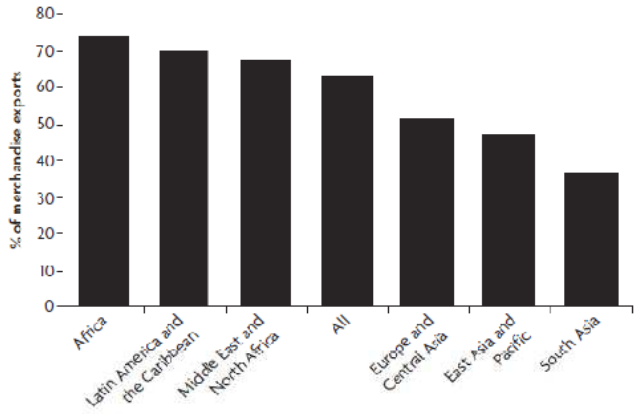
Table 1. Commodity dependence by region, 1995-98 / 2003-06 (number of countries for which exports of commodities=more than 50% of total exports)

	Total primary commodities (a)		Three or less commodities		One commodity	
	1995–1998	2003–2006	1995–1998	2003–2006	1995–1998	2003–2006
Developing and transition economies	118	113	82	84	47	50
Developing economies	108	103	78	78	45	46
Africa	46	45	37	34	21	23
Latin America	30	27	15	17	6	7
East and South Asia	7	8	4	6	1	2
West Asia	9	9	9	9	8	6
Oceania	16	14	13	12	9	8
Transition economies	10	10	4	6	2	4
Memo items						
Least developed countries	38	38	31	31	19	20
Heavily indebted poor countries	38	36	30	28	15	15

Source: UNCTAD (2008, table 2.4). a: Primary commodities: SITC Rev. 2: 1 to 4 plus 68, 667 and 971. Africa here refers not only to Sub-Saharan Africa, but also North Africa.

At a global level, SSA has specialised in the export of commodities, which is the product category that it exports the most in comparison with other regions.

Figure 1: Developing countries: commodity exports share, 2003–2007

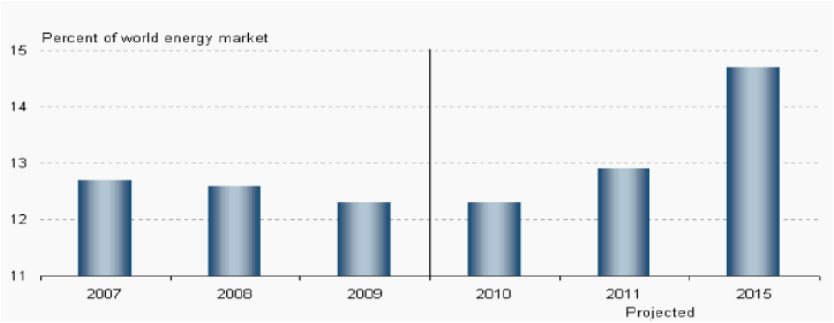


Source: Canuto and Giugale (2010).

An important point is that SSA is progressively becoming an oil–producing region. Fuels represented 36% of SSA exports in 2008 (World Bank *World Development Indicators* 2010, table 4.4). SSA oil producers are Angola, Cameroon, Chad, the Republic of Congo, Côte d'Ivoire, Equatorial Guinea, Gabon, and Nigeria. SSA is expected to represent about 15% of global oil exports by 2015. Gas exports have also significantly increased.

Given the specificities of oil markets in terms of price formation, financialisation – the trading of oil as a financial asset - and global political economy, this progressive transformation of SSA export structure towards the export of fuels has significant consequences. As shown by a vast literature, oil-based export structures are typically prone to generate Dutch disease effects, with their well-known negative consequences on the non-booming sectors, in particular domestic agricultural and industrial sectors, i.e. deindustrialisation (Corden and Neary, 1982; Gelb *et al.*, 1988).

Figure 2: Africa's share of global oil market

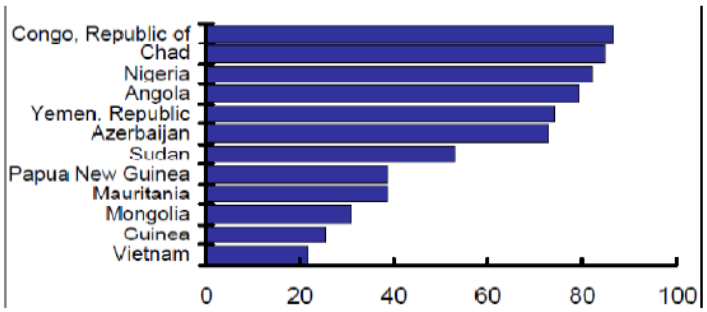


Source: Wetherill (2010). Africa includes North Africa.

Moreover, an important issue is not only SSA countries' distorted export structure, which is based on a very limited number of unprocessed products, but also their fiscal structure. In SSA, fiscal revenues typically rely on the taxation of external trade, and most commodity–based economies, especially oil producers, rely on these few commodities for the largest part of the earnings, which make them very vulnerable to terms of trade shocks and commodity price volatility.

The following figure demonstrates this excessive dependence of government revenues on the export of commodities, with oil-exporting countries (Republic of Congo, Chad, Nigeria, Angola) being associated with high levels of fiscal dependence.

Figure 3: Commodity revenue to total revenue, 2008 (ratio, percent of total revenue)



Source: IMF (2009b).

The problem: Sub-Saharan African countries' disappointing growth performances

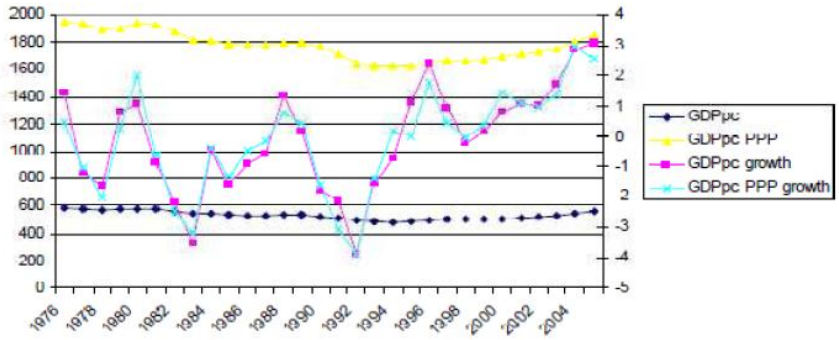
Sub-Saharan African countries are characterised by low levels of incomes and growth rates, and it is precisely the research question that is the subject of a large literature and heated debates: what are the common features of the growth trajectories of Sub-Saharan countries, and what could be the latter' determinants?

An important issue, however, is that the assessments of the growth trajectories of SSA countries depend on the time period that is analysed, as trends, cycles and salient facts may differ according to the short- and the long-run, e.g. whether they are considered on a secular scale or over the recent decades or years – indeed, according to Smits (2006), SSA economies did well during the colonial era, and over the 20th century SSA exhibits more a 'rise and fall' growth pattern than permanent stagnation .

It is important to note that growth performances significantly vary across countries – growth profiles differ, for example, between oil exporters and oil importers, countries heavily relying on food imports and the others, landlocked and coastal countries, among others. As shown by the World Bank, however, SSA is characterised by commonalities, in particular low incomes per capita and volatile growth rates: in 2011, most countries were classified by the World Bank as low-income (GNI per capita of 995$ or less) or lower-middle income economies (GNI per capita between 996 and 3945$) – only Botswana, Gabon, Mauritius, Namibia and South Africa being classified as upper-middle income economies[1].

[1] http://data.worldbank.org/about/country-classifications/country-and-lending-groups.

Figure 4: GDP per capita and growth rate in Sub-Saharan Africa (constant international $, PPP and non-PPP)



Source: Arbache and Page (2007).

Commodity dependence as an explanation of Sub-Saharan Africa's economic stagnation: the problems of the decline and volatility of commodity prices

Of course, the exporting of primary commodities may also predominate in other parts of the world, for example in Latin America or the Middle East. A specificity of SSA countries, however, is the association of this export structure with low levels of incomes. It may be argued that SSA includes oil countries, which for some of them have reached the categories of middle-income countries, such as, for example, Gabon, Angola, and now Ghana (with Equatorial Guinea even being a high-income country). Likewise, Botswana is classified as an upper-middle income country, although its economy strongly depends on the export of one primary commodity, i.e. diamonds.

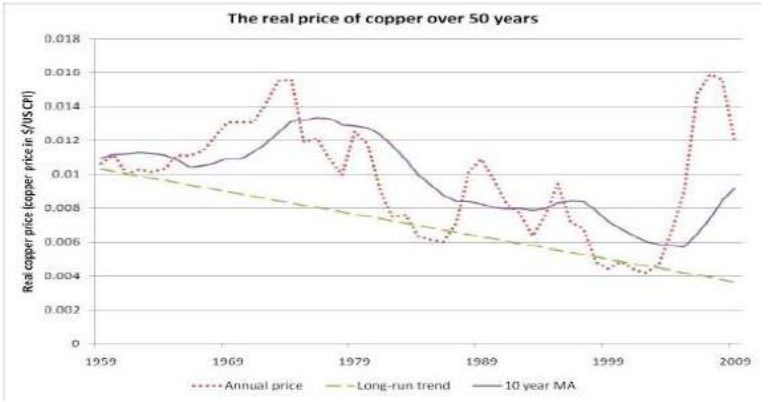
Yet, a key problem of the exporting of commodities, oil and non-oil, is the characteristics of their prices, notably volatility, the determinants of the latter' formation, in particular the linkages between commodity markets and their increasing financialisation, and the negative consequences of this volatility, especially on a key determinant of economic growth, i.e. investment.

Founding fathers of development economics such as Raul Prebisch and Hans Singer[2] have demonstrated the secular and structural decline of commodity prices – the latter, however, remains debated due to the demand from emerging countries, both for oil and non-oil exporters, and the subsequent high prices of several commodities (e.g., oil, cotton) in 2011 and rapid rebound after the 2008-09 financial crisis, which seem to suggest the continuation of a 'supercycle' since the early-2000s and perhaps a break in the decline.

The IMF also emphasises this decline, and underscores that despite increases, the prices of most nonfuel commodities remain below their historical peaks in real terms. According to the IMF (2006), over the past 5 decades, commodity prices have fallen relative to consumer prices at the rate of about 1.6 % a year. This long-term downward trend is found for most of the 20th century, and may be attributed to large productivity gains in the agricultural and metals sectors relative to other parts of the economy. For the IMF, however, compared with the prices of manufactures, commodity prices stopped falling in the 1990s due to globalisation of the manufacturing sector, which slowed producer price inflation. This decline is apparent in the example of copper prices.

[2] Among many papers, Prebisch (1950), Singer (1950).

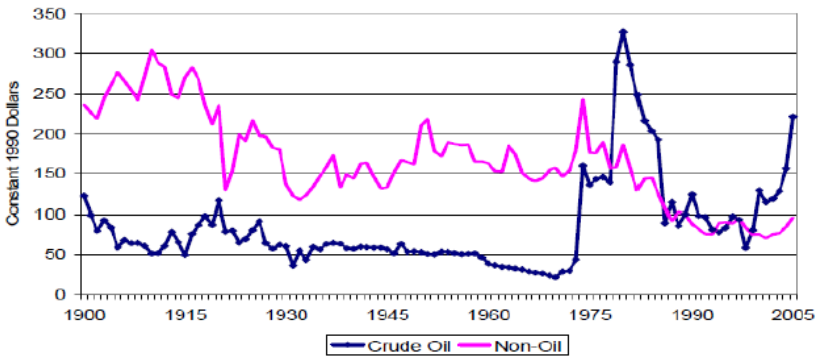
Figure 5: The real price of copper relative to its trend



Source: Frankel (2010b).

Commodity prices are above all characterised by their volatility. The latter has been demonstrated since a long time in the literature, in particular by Cashin and McDermott (2002) over a century and half period (1862-1999).

Figure 6: Real oil and non-oil commodity prices

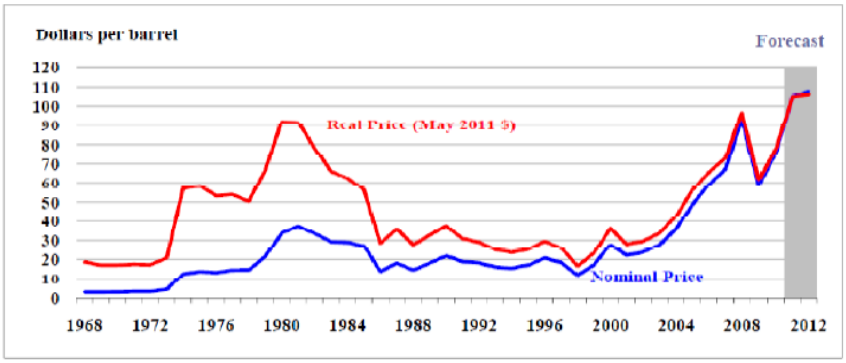


Source: Streifel (2006).

Oil is a special commodity: price formation is determined by complex factors where global political economy and the financialisation of commodity markets play a particularly important role; producing countries governments have limited power on the formation of these prices and hence their volatility. This is especially crucial because of the increasing importance of oil in SSA.

As is well-known, oil prices are characterised by high volatility. Oil prices fluctuations were the causes of the major shocks that affected world economies in the 20th century (1973, 1979) as well as global business cycles, and oil prices backed the commodity price supercycle of the 2000s. Their volatility moreover disseminates across commodity markets and contributes to the volatility of other commodity prices, and generates co-movements of prices, as many commodity prices depend on oil at some stage of their production and transportation (Baffes, 2007).

Figure 7: Annual imported crude oil price

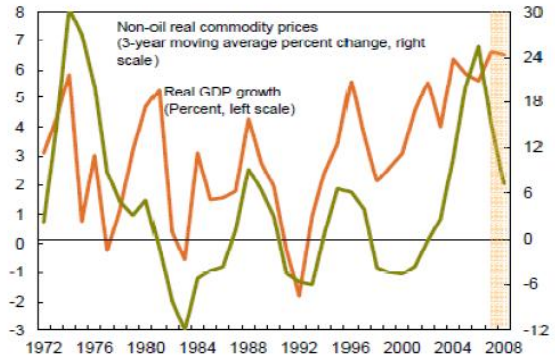


Source: Energy Information Administration (EIA) (US Department of Energy): http://www.eia.doe.gov. Base CPI: May 2011.

Sub-Saharan African economies' growth performances mainly driven by commodity prices

Hence it may be argued that the recent growth performances that have characterised many SSA countries have been driven by commodity prices and their supercycle of the 2000s, as is the case for the rapid resumption of pre-crisis growth rates exhibited by many of them after the 2008-10 global crisis. As is shown by the following graph, growth rates in SSA countries closely follow the fluctuations of commodity prices.

Figure 8: Sub-Saharan Africa: growth and commodity prices



Source: IMF (2008).

Commodity-dependent SSA countries' growth rates are thus driven by factors that are external to these countries and beyond the scope of their domestic policies, i.e. the movements of international commodity prices and their multiple determinants, on which SSA domestic government policies have limited influence – typically since the 2000s, interest rates, level of inventories, speculation, increasing linkages and integration of global commodity markets compounded by their financialisation (Nissanke, 2010; Frankel, 2008; Mayer, 2009). This growth appears therefore to be intrinsically fragile and based on distorted factors rather than sound economic fundamentals.

Recurrent arguments, however, underscore the increasing demand from emerging countries (China, India and others) for SSA exports and deduce from it reasons for optimism; they also insist on the resilience of the region after the 2008-10 crisis. These arguments have been put forward for example by the IMF (IMF, 2010) and the World Bank (Canuto and Giugale, 2010).

Yet the same World Bank and IMF emphasise the sensitivity of world trade to global economic conditions, for example the fragility of the bounce back of world exports after the 2008-10 crisis (World Bank, 2011). The IMF also expresses warnings regarding the sensitivity of SSA countries to global business cycles, and hence the inherent risks of its export structure, and underscores that in many low-income countries, a large share of export receipts are generated by just a few commodities (IMF, 2006).

The contribution of commodity-based export structures to the formation of 'poverty traps'

The decline of Sub-Saharan African economies' share in world exports

The key problem of the current composition of exports prevailing in SSA countries is that commodity price volatility implies the volatility of fiscal earnings and output, which has a negative impact on growth. A central channel of this causality is the negative impact of volatility on investment, in particular its 'ratchet effects' (Sindzingre, 2010).

Export structures based on commodities reduce capacities for economic performance through a series of channels, the most important being, as argued by Frankel (2010a), the long-term trends towards decline in world commodity prices, price volatility, crowding out of manufacturing and Dutch Disease.

Indeed, Sub-Saharan African countries opened their trade in the 1990s due to the conjunction of the IMF and World Bank stabilisation and adjustment programmes, together with adhesion to the WTO. Trade liberalisation has increased the importance of international trade in SSA. However, despite the increased trade orientation of SSA, the share of SSA in world trade has declined. For the continent as a whole, Subramanian and Matthijs (2007) have calculated that Africa's share of world exports has declined from above 7% in 1948 to less than 2% in 2004. According to the UNCTAD Handbooks of Statistics (2007; 2010, table 1.1.2), the share of SSA exports in world exports declined from 3.9% in 1980 to 1.5% in 2000.

In line with better growth rates in the 2000s as well as the growing demand from emerging countries and higher commodity prices, however, this share increased in 2005, where SSA exports represented 2.0% of world exports. It has stabilised in the second half of the 2000s and still represented 2.0% of world exports in 2009 - 1.51% excluding South Africa.

Figure 9: Sub-Saharan Africa's exports: percentage of world exports (left scale) and value (right scale), 1948-2009

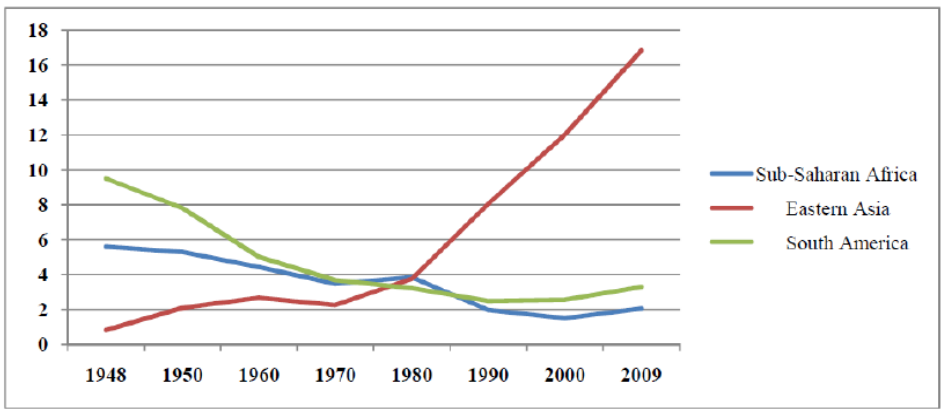
Source: UNCTAD Statistics: http://unctadstat.unctad.org

The share of SSA in world export has declined because SSA exports have grown much more slowly than world exports, SSA being therefore marginalised in world trade, which for UNCTAD is partially explained by the secular decline in SSA terms of trade and its inability to sustain growth. As shown by the figure above, SSA declining shares in world trade reflect SSA slow GDP growth, and other countries' increasingly outward orientation, not a decline in trade or export shares of GDP.

Above all, SSA countries suffer structural constraints, in particular lower competitiveness and a lower labour productivity than its competitors in the developing world, e.g., in emerging economies, especially in manufacturing. SSA countries may have gained in competitiveness through the exchange rate (e.g., devaluation of the CFA franc in 1994 in the WAEMU countries), but the adjustment and post-adjustment programmes in the 1980s-2000s witnessed little improvements in productivity growth.

The decline of SSA in world exports is associated with the divergence with other parts of the world, as SSA share declines relatively to other regions that witness a spectacular increase in their share, notably Asia.

Figure 10: Share of world trade by region, 1948-2009 (percent)



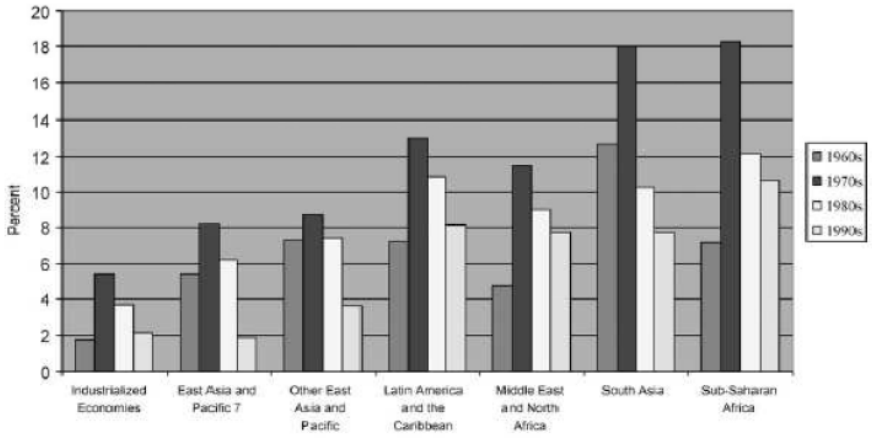
Source: UNCTAD Statistics: http://unctadstat.unctad.org; see also IMF (2007), fig. 4.1.

The negative impact of volatility on growth

Price volatility exposes commodity-based countries to shocks, in particular fiscal shocks, as these countries depend on very few commodities for most of their fiscal earnings. As shown by a large literature, there is a relationship between exposure to shocks and low growth. Similarly, volatility has a negative impact on investment, and therefore impedes growth.

Indeed, there is a negative relationship between macroeconomic volatility and growth: over the long-run, the volatility of the terms of trade is detrimental to growth (Krishna and Levchenko, 2009). As revealed by Loayza *et al.* (2007), macroeconomic volatility is both a cause and an effect of low levels of development, and results from a combination of external shocks, volatile macroeconomic policies and microeconomic rigidities. Volatility entails a direct welfare cost for risk-averse individuals, as well as an indirect one through its adverse effect on income growth. Interestingly, Loayza *et al.* also show that volatility is the strongest for SSA.

Figure 11: Volatility of terms of trade growth (regional medians)



Source: Loayza *et al.* (2007).

The reinforcement of trapping processes: the combination of commodity exports and local political economy

Export structures obviously cannot be viewed as the sole and systematic causal factors of weak growth performance, as is shown by the numerous countries that have based their long-term growth on the production and export of commodities, for example Canada, Australia, Scandinavian countries, and interestingly, the United States at the period of the beginning of their growth in the 19th century (Wright, 1990; Wright and Czelusta, 2002).

It is the combination of export structures and other factors such as institutions that generate processes that impede growth and lock-in SSA economies in 'low equilibria' and traps. Political and economic institutions *in fine* command the composition of exports and the use of commodities (Mehlum *et al.*, 2006; Torvik, 2009). Trapping processes are typically self-reinforcing and endogenous. Poor institutions – or poor infrastructure – may foster economic stagnation, while the latter foster poor institutions, and for example political regimes that do

not invest in infrastructure and are unable to implement efficient taxation systems and provide public goods.

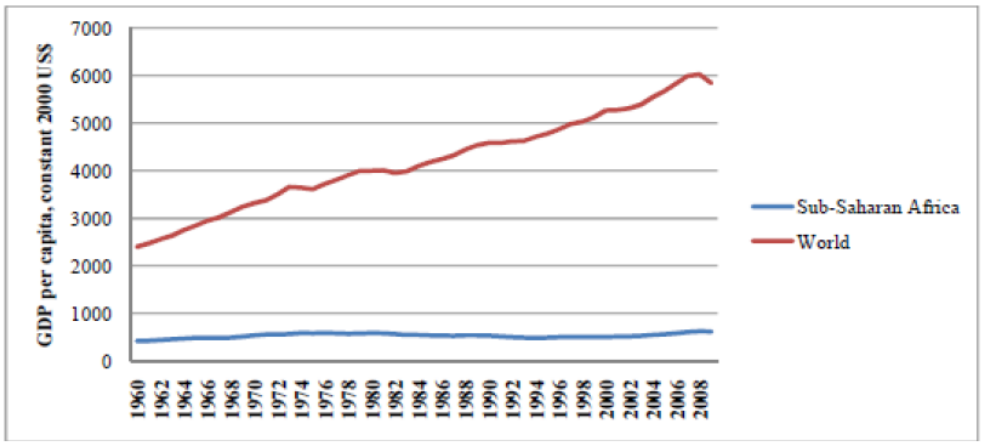
Indeed, SSA countries are characterised by institutions – economic, political, social - and by a specific political economy that may not be favourable to growth and aggravate the consequences of existing export structures. In most SSA countries, political institutions are shaped by authoritarian regimes or illiberal democracies, where institutions are democratic only *de jure*, but not *de facto*: arbitrariness, patronage relationships and corruption typically prevail in such regimes. Authoritarian regimes may have a detrimental impact on growth as they suffer problems of credibility, which lower the efficiency of all their policies, promises and commitments. As shown by Acemoglu (2003), all governments are affected by the problem of commitment and credibility, because there is no meta-level above government that has the coercive capacity to enforce government policies and promises: this is even more the case for SSA governments that are simultaneously confronted with weak institutions and low levels of incomes.

Political instability and credibility problems are key endogenous processes leading to poverty traps. As revealed by Olson (1993), the combination of political instability and dictatorships may foster the emergence of pure predators, because the latter feel insecure. They have more incentives to loot the country than to make it grow, increase productivity and levy taxes on its production. Predatory regimes have no incentives to increase wealth and create efficient economic institutions that would aim, for example, at diversifying and industrialising. This political economy is reinforced by commodity-based export structures, which generate rents whose redistribution strengthens patronage systems (Sindzingre and Milelli, 2010).

Indeed, some SSA countries not only exhibit disappointing growth performances, but may possibly diverge vis-à-vis other regions and be locked in trapping processes: although Easterly (2005) argues that SSA growth rates have been positive in the second half of the 20th century, the combination of commodity dependence, poor infrastructure and weak institutions, however, may generate cumulative process and reinforce the ingredients of 'growth traps', i.e. self-perpetuating vicious circles of underdevelopment (Matsuyama, 2009; Sindzingre, 2009).

During the second half of the 20th century SSA countries' growth performances appear to diverge vis-à-vis other parts of the world.

Figure 12: GDP per capita, Sub-Saharan Africa vs. the world, 1960–2008



Source: World Bank, World Development Indicators database, 2010.

3. The intensification of trade relationships between China and Sub-Saharan African countries: its complex and ambivalent effects

These contexts suggest important questions. One refers to the growth prospects of SSA countries given their current export structure, knowing that this growth is a prerequisite for structural transformation. As underscored by the IMF (2006), many countries are exposed to fluctuations in commodity prices, and the future dynamics of commodity markets is uncertain: the rise of China and other large emerging markets may lead to a fundamental change in long-term price trends, and prices may remain high, particularly of metals; it may be argued, however, that speculation has decoupled metals prices from market fundamentals and that prices will fall back and continue to decline gradually in real terms, as during most of the past century.

Another question refers to the possibility of this structural transformation: for example, can China's growth and demand for SSA products and the new orientations of SSA exports be an opportunity for structural transformation? This is argued, for example, by Klinger (2009), who shows that, for a group of developing countries in Africa, Latin America and Central Asia, exports within the 'South' are more sophisticated and better connected between themselves (within the 'product space') than exports to the North. In contrast, exports to the North are not growth-enhancing, nor do they offer learning opportunities to foster structural transformation: South-South trade flows may therefore create the conditions for structural transformation.

China as a driver of the increase in commodity prices in the 2000s

Commodity prices have always been subjected to price cycles, and are partially determined by global and country-level business cycles, i.e. short-term fluctuations of growth, industrial activity, real incomes and demand. According to the United States National Bureau of Economic Research, there were 55 cycles between 1854 and 2009 in the United States (lasting 55 months on average)[3].

The 2000s, however, witnessed a spectacular increase in all commodity prices, which led some observers to describe this evolution as the beginning of a price 'supercycle'. Supercycles are much longer in duration than ordinary business cycles, and the length and magnitude of the price increases that occurred in the 2000s have been perceived as so important that they could deserve the name of 'supercycle'.

Indeed, the price increase of the 2000s has followed three major commodity booms and slumps in the 20th century - 1915–17; 1950–57; 1973–74 (World Bank, 2009, table 2.1), but the 2003-2008 commodity price boom has been associated with unprecedented price increases (World Bank, 2009). The increase in prices of 2003-2008 is the largest and longest one since 1900 and it has involved a wide range of commodities. The real U.S. dollar price of commodities has increased by some 109% between 2003 and 2008, or 130% since the earlier cyclical low in 1999. By contrast, the increase in earlier major booms never exceeded 60% (World Bank, 2009).

[3] Source: http://www.nber.org/cycles.html.

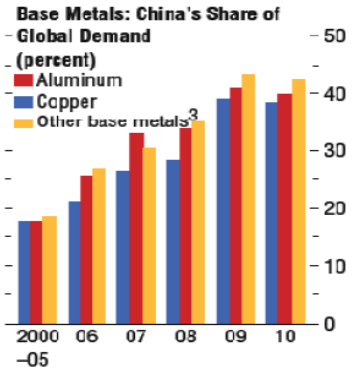
The increasing importance of China's demand in commodity price formation

Many factors have underlain the 2003-2008 price commodity boom, with some being specific to particular commodities. Factors of commodity prices movements traditionally include the fluctuations of supply and demand, those of interest rates and exchange rates as well as the levels of inventories. Among the most important factors of the boom of the 2000s, there are the rise in demand from emerging countries, especially China – a 'commodity-intensive' emerging economy, as coined by the IMF (2011, p. 31) -, and a mismatch between supply and demand that occurred in the 2000s. China's and India's growth and demand for primary commodities are viewed as a key cause of the 2003-2008 price boom and distinguish it from the other booms of the 20th century (Radetzki, 2006).

Oil and metals prices have been boosted by strong demand growth, low prices in the period prior to the early-2000s, and the rising demand from China, especially its very high demand for metals. Cuddington and Jerrett (2008) thus identify three supercycles in metal prices in the past 150 years, and consider that the 2000s are the early phase of a fourth super cycle, which is mostly determined by the industrialisation of China.

China has been for example the main contributor to the growth in global demand for aluminum, coal and copper (World Bank, 2009): during 2003–2007, China contributed two-thirds of the increase in world consumption of aluminum and copper and almost all the increase in world consumption of lead, tin, and zinc (IMF, 2011, table 1.3); its share in global base metal consumption has doubled to 40% between 2000 and 2010, which reflects the spectacular growth in its manufacturing sector over the past two decades (IMF, 2011, fig.1.23).

Figure 13: China's share of global demand, in percentage, 2000-2010



Source: IMF (2011). (3): IMF index-weighted average of lead, nickel, tin, zinc and lead.

The time necessary for the establishment of new capacity in response to demand also keep minerals prices at high level – for Radetzki *et al.* (2008), however, prices may fall as soon as the new capacity is in place.

For its part, the boom of agricultural commodity prices has reflected the rising demand for biofuels and high energy prices, oil in particular (World Bank, 2009). The demand from emerging markets, especially China, contributed to the increase in food prices between 2010 and 2011 – China has become a central and net importer in global grain and oilseeds markets (IMF, 2011), as well as cotton and rubber (Nissanke and Söderberg, 2011).

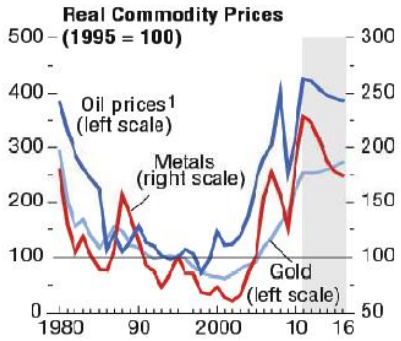
China as a factor of high prices for commodities in the medium term?

The 2008-2009 financial crisis has been associated with very sharp price drops and fluctuations. According to the IMF (2009a, chap. 1), the magnitude of price changes and volatility rose to unprecedented levels for many major commodities, especially oil. As was the case in past cycles, commodities linked to industrial activity (e.g., fuels and base metals) have been most affected.

Remarkably, after their spectacular fall in 2008, commodity prices rebounded within a short time span, and increased again in 2010, in particular oil prices and the prices of some agricultural commodities. If not the sole factors, the demand for commodities from emerging countries as inputs for their own growth and industrialisation, as well as the demand of new middle classes, explain the high prices of some commodities.

The IMF acknowledges that the prospects for activity in China are very important for many commodities, due to the rapid increase China's share of global commodity demand over the 2000s. At the global level, the increase in the demand for commodities strongly depends on China' growth rates and their evolution. Per capita oil consumption in the United States and other OECD economies has been flat since the early 1980s, while it has risen rapidly in China (IMF, 2011, figure 3.5). The growth rate of global primary energy consumption (non renewable - oil, coal, gas - and renewable) has accelerated in the past decade, mainly due to China, which is now the first energy consumer in the world: energy consumption in China is projected to double by 2017 and triple by 2025 from its 2008 level, although the sustainability of China's growth remains uncertain (IMF, 2011, p. 93).

Figure 14: Real commodity prices, 1980-2016



Source: IMF (2011).

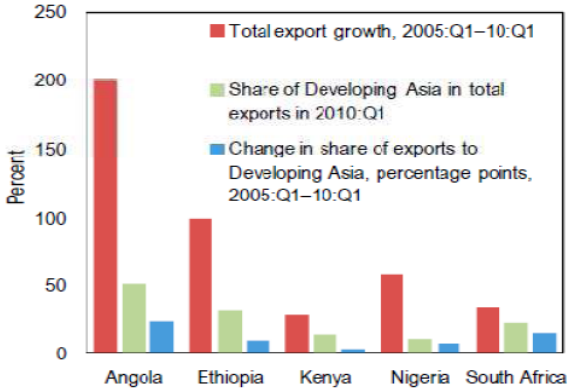
Assessments of commodity prices, however, obviously depend on the time span that is considered. In this regard, even after their post-crisis rebound, it may be noted that real commodity prices remain below their levels of the 1970s.

The intensification and patterns of Sub-Saharan Africa-China trade relationships: positive, neutral *and* negative effects

The dramatic increase in trade flows between Sub-Saharan Africa and China: a genuine engine of growth

There have been dramatic shifts in SSA trading patterns during the 2000s towards China and other parts of 'Developing Asia': by 2009, the share of China in SSA total exports and imports exceeded that of most other regions in the world (IMF, 2010).

Figure 15: The increasing role of developing Asia, 2005–10



Source: IMF (2010).

As shown by the table below, China has become the first destination of Africa's exports, and the second source of its imports.

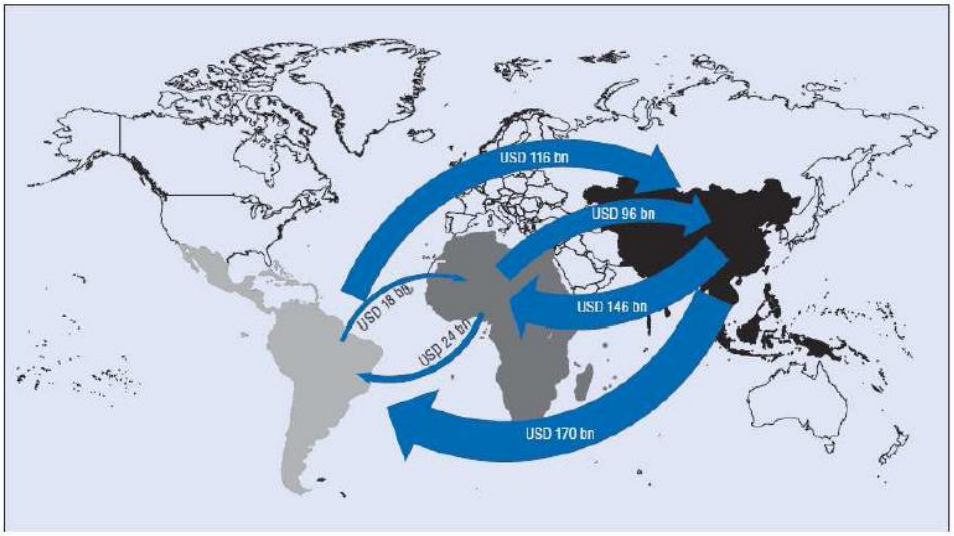
Table 2. Major African trade partners in 2008 (US$ billions)

Destination	Exports	Origin	Imports
China	49,8	United States	117,3
France	36,9	China	56,8
United States	28,6	Italy	56,5
Germany	28,6	Spain	38,4
Italy	26,4	France	38,6
United Kingdom	15,6	Germany	27,6
Saudi Arabia	15,3	United Kingdom	21,0
Netherlands	15,7	Japan	20,9
Spain	14,6	Brazil	20,7
Japan	13,4	Netherlands	19,7

Source: OECD (2010) based on UNCTAD Handbook of Statistics 2010. Africa includes North Africa.

The intensification of SSA trade relationships with China is accompanied by increasing exchanges with other emerging countries, in particular Brazil – while China's trade with Brazil is also growing.

Figure 16. Inter-regional South-South trade flows in 2008 (billions US$)



Source: OECD (2010) based on UNCTAD Handbook of Statistics 2010.

If China pursues its impressive growth rates – it is already the second world economy - its demand for SSA products is likely to remain sustained, not only for primary commodities, but possibly for low-end manufactured products that will increasingly no longer be made in China due to increasing local factor costs.

China expands the international demand for SSA exports, and may even be a substitute for industrialised countries when the latter are in crisis – China's growth and demand have thus attenuated the impact of the 2008-09 crisis on SSA and fostered a rapid rebound. China therefore constitutes a genuine factor of growth for SSA countries.

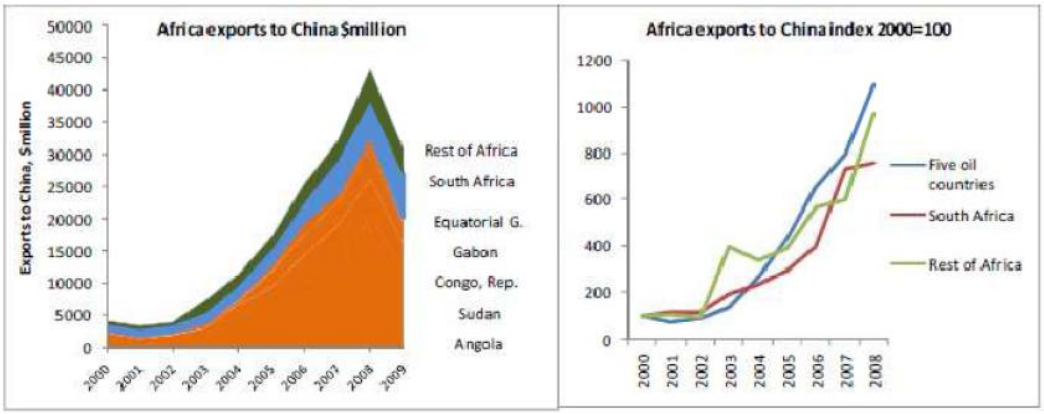
The risk of lock-in Sub-Saharan African economies in the exporting of commodities

It is important to note that the current export pattern of SSA to China does not strongly differ from SSA export pattern to the other parts of the world. Oil dominates Africa's export to China, but African exports to the rest of the world exhibit the same composition – firstly oil and gas, then non-petroleum minerals and metals (Wang and Bio-Tchané, 2008).

The 6 largest SSA exporting countries to the rest of the world are South Africa, Nigeria, Angola, Côte d'Ivoire, Equatorial Guinea, and Gabon, which are almost all oil countries, plus South Africa (Ye, 2010).

As highlighted by Ye (2010) in the figure below, oil countries dominates Africa's exports to China; non-oil countries' exports to China, however, also exhibit remarkable growth.

Figure 17: Sub-Saharan Africa's exports to China



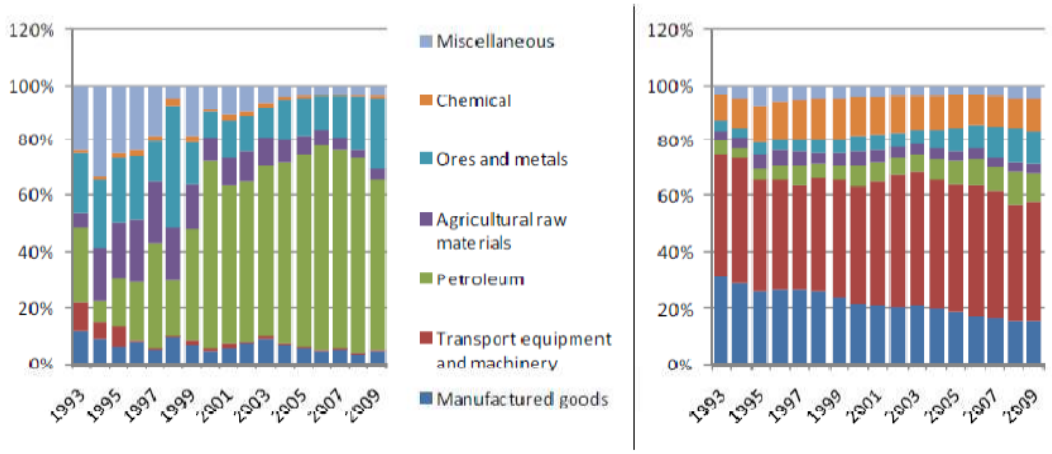
Source: Ye (2010).

However, it is crucial to underscore that on the side of China, the type of goods it imports from SSA are very specific to the continent: this confirms the view that China trade relationships with SSA are keeping the continent in its specialisation of commodity exporting region.

Indeed, China imports commodities from SSA, but imports different products from other parts of the world, i.e. manufactured goods, transport equipment and machinery, and chemicals.

This strengthening of the specialisation of SSA in commodity exports is not only driven by China but also by other emerging countries: as underscored by UNCTAD (2010a, p. 36), the composition of SSA exports to other developing countries over the 2000s has shifted towards primary products at the expense of manufactures.

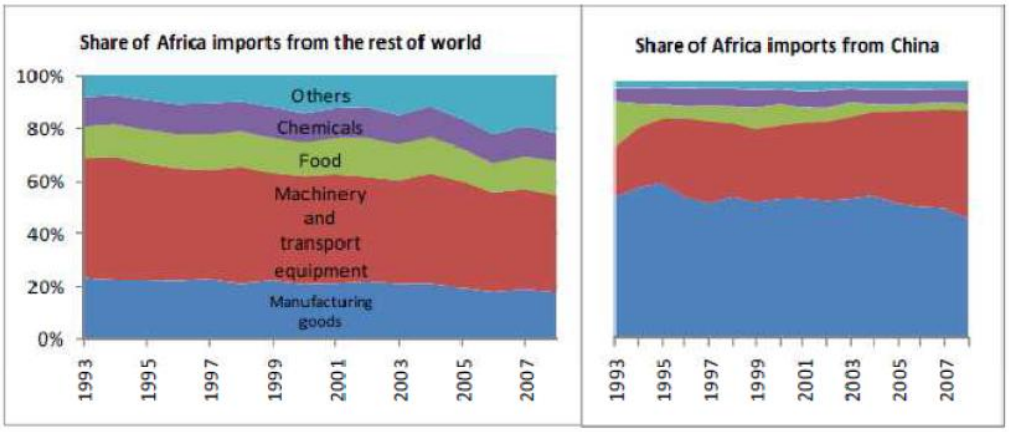
Figure 18: China's imports from Africa **China's imports from rest of the world**



Source: Ye (2010).

As shown by Ye (2010), the pattern of Africa's import from China and from the rest of the world does not exhibit significant differences. Africa imports manufactured goods and processed commodities from the world, e.g., manufacturing goods, machinery and equipment, food and chemicals.

Figure 19: Africa imports from China and from the rest of the world



Source: Ye (2010).

China, however, may also constitute a significant constraint for developing countries, in particular low-income commodity-dependent SSA countries. China's relationships with SSA are driven by the quest for the inputs - oil and other raw materials – that are necessary for its own industrialisation, its infrastructural investments and its exports. The growing demand from China - and other large emerging countries - for SSA commodities, e.g., oil, metals, cotton, etc. pushes prices upwards: therefore, the demand for commodities from China may lock-in SSA countries in their existing commodity exporting structure.

In this regard, there are two different and simultaneous types of effects, which may have damaging impacts on SSA economies. On the one hand, the high levels of prices of some commodities, which are driven by China's growth and demand, may be detrimental for the exporters of these commodities as they create strong incentives for remaining within this pattern of exports, although this pattern is a major factor of vulnerability to external shocks and fluctuations of international prices and demand. On the other hand, these commodities' high levels of prices harm the SSA countries that do not export them and on the contrary need to import them (e.g., oil- or food-importers), as they cause a deterioration of their trade balance.

China's trade as a threat for Sub-Saharan African industrial sectors

China trade may not only intensify the specialisation of commodity exporters in this pattern of export, but China may also have a detrimental impact on existing manufacturing sectors in SSA.

As demonstrated by Kaplinsky (2006), the entry of China into the global market has increased the demand for many 'hard commodities' (oil, metals), but China as an exporter of manufactures may undermine the prices of many manufactures, which is compounded by the concentration in global buying.

For Kaplinsky and Morris (2008), China may undermine export-oriented industrialisation, which may be detrimental to SSA development, as export-oriented manufacturing can constitute a developmental path for SSA, as was the case for the first Asian developmental states' and China itself. China has become a major global exporter of manufactures, which creates severe problems for export-oriented growth in SSA. While they can be possible first steps in export-oriented manufacturing growth, SSA clothing and textile sectors are facing

important difficulties because of the competition of China's products. SSA's clothing and textile industries incur the risk of being excluded from global markets and are threatened in their domestic markets.

Kaplinsky *et al.* (2007) thus reveal that the share of SSA exporters in the US clothing and textiles imports grew between 2001 and 2004, reflecting preferential AGOA trading arrangements. The end of the Multifiber Arrangement (MFA) in 2005 put an end to MFA quotas, which were limiting Chinese exports, and SSA exporters experienced a significant fall in their share of the US market after quota removal. On the contrary, the share of China in these product markets grew significantly.

This is also shown by case studies. In Ethiopia for example, China has displaced other countries as export destinations for that country. Imports of Chinese footwear have reduced the activities of local firms, and over the long term risk crowding out Ethiopia's efforts to use sectors such as footwear as a basis for industrialisation (Gebre-Egziabher, 2009).

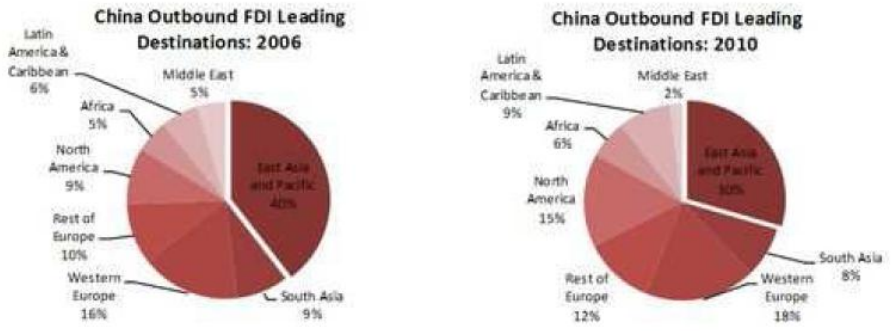
4. China's investment in Sub-Saharan African countries: the bundling of trade, investment and aid

The increase in Chinese investment: not only the primary sector, but also the manufacturing sector

China's relationships with SSA are not only constituted by trade links, but by foreign direct investment (FDI), which has significantly increased over the 2000s. As in economic theory investment is among the most robust predictors of economic growth, any increase in Chinese investment is likely to have a positive impact on SSA economies.

Chinese investments still account for a small share of FDI flows to SSA, for example compared with those from the US and EU countries. For Christensen (2010), who underscores the notorious difficulty in calculating FDI flows and the likely underestimation of this figure, the latter represented about 2% of the total of foreign direct investment in the continent as a whole. SSA is not the major destination of Chinese FDI, but these FDIs are increasingly important for SSA.

Figure 20: China outward foreign direct investment destinations, 2006 and 2010

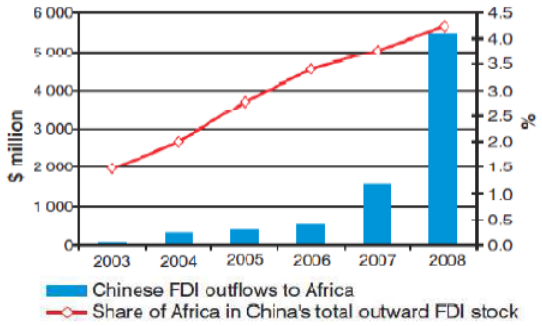


Source: World Bank private sector development blog, Kusi Hornberger, http://blogs.worldbank.org/psd/outbound-fdi-the-emergence-of-chinese-companies-on-the-global-scene. Based on Financial Times, fDi Markets database, 2010.

The government of China created in 1994 the Export-Import (Exim) bank in order to facilitate exports and investment, and Sinosure, which provides export credit insurance. The Exim Bank's main activities are export credit, international guarantees, loans for overseas construction and investment and official lines of credit, according to Moss and Rose (2006), who underscore that the Exim Bank is an important piece in China's foreign policy and its quest for the securing strategic natural resources and global influence.

Indeed, Chinese investments in SSA exhibit a sharp increase.

Figure 21: FDI from China to Africa, 2003–2008



Source: UNCTAD (2010b). Africa includes North Africa.

In addition, the effects of investment vary according to their motives – among others, market-seeking, efficiency-seeking and resource-seeking –, and economic sectors, e.g., spillover effects on technology, productivity and skills, effects on employment, and so on. Spillover effects on skills and employment appear to be mixed and vary across countries, sectors and projects – some investments may be highly capital-intensive and rely on Chinese workforce, others not (Broadman, 2007). In terms of value, Chinese investments are mostly resource-seeking and often involve large Chinese state-owned enterprises (such as CNOOC). An increasing number of medium and small enterprises operate in SSA, however, and in terms of number of projects, the largest numbers of investment projects undertaken by Chinese investors are in manufacturing and infrastructure (Gu, 2009; UNCTAD, 2010b).

As for the trade relationships between China and SSA, the structure and impact of Chinese FDIs on SSA share many similarities with those of the other countries that invest in the continent (Kragelund, 2009). In SSA, foreign direct investment, whatever the investor's country, has a strong focus on the primary sector, and especially oil. In 2009, the top recipients in terms of magnitude of FDI flows (above 3 billion $) were Angola, Nigeria, South Africa and Sudan (UNCTAD, 2010b).

Similarly, Chinese investments in SSA focus on the primary sector and natural resources extraction. They also target, however, the industrial, manufacturing and service sectors – notably the telecommunications, construction and banking sectors. While large Chinese state-owned enterprises tend to invest in the extractive, infrastructure and construction sectors, Chinese private investors tend to invest in SSA manufacturing and services (Kaplinsky and Morris, 2009) – in particular the textile and garments sector (Alden, 2007a, chap. 2; Henley *et al.*, 2008).

All SSA countries are involved, and by end-2008, Chinese investors had set up around 1600 companies in Africa, firstly in South Africa, followed by Nigeria, Zambia, Sudan, Algeria, Mauritius, Tanzania, Madagascar, Niger, Congo, Egypt, and Ethiopia (Christensen, 2010). For Orr and Kennedy (2008), Chinese investors and the government of China increasingly invest in infrastructure in Africa, and the number of Chinese state-owned and private enterprises in Africa has been estimated at close to one thousand across all countries. Chinese infrastructure investment is concentrated in Angola, Nigeria and Sudan via water and sanitation, transportation, energy and mineral-related projects.

China is also investing in Special Economic Zones (SEZs): five are expected in Africa - two in Nigeria and one each in Ethiopia, Mauritius and Zambia (Brautigam, 2010a). SEZs may foster spillovers effects, for example in terms of local employment. The first SEZ in SSA, announced in 2007 for Zambia (in the Chambishi copper belt region) claimed that it would create 60000 jobs (Corkin *et al.*, 2008). Outcomes, however, remain disappointing, and SEZs are confronted with the long-lasting competiveness problems that affect SSA (by end-2009, only 4000 jobs had been created in the Zambia's SEZ, Brautigam *et al.*, 2010).

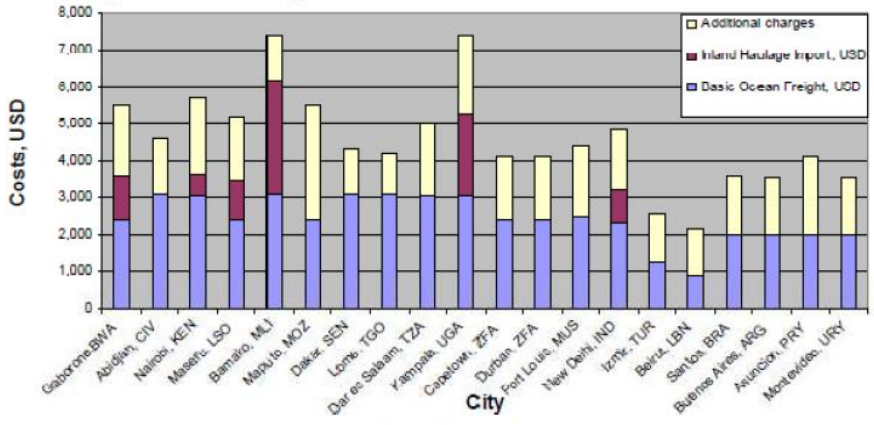
The positive impact of Chinese investment on growth via infrastructures

A significant amount of Chinese foreign direct investment in SSA is associated with the creation of infrastructure, and the improvement in infrastructure is very likely to have a positive impact on SSA growth and trade capacity.

Indeed, poor infrastructure is a key impediment to growth, trade and competitiveness of SSA, in particular power, rural electrification and transport: a crucial aspect of SSA countries is the combination of a commodity-based market and export structure with a poor level of the infrastructure stock. This generates important constraints and transaction costs on the circulation of goods and people.

There is indeed a correlation between infrastructure and export diversification, and the current low levels and distorted composition of exports in SSA are partly due to poor trade infrastructure, as trade delays reduce exports (Hummels, 2001; 2007). Moreover, delays for exporters due to poor infrastructure are compounded by bureaucratic inefficiency (Freund and Rocha, 2009).

Figure 22: Transport cost from selected cities to Rotterdam



Source: Portugal-Perez and Wilson (2008), from Maersk (standard container, textiles).

Transportation costs are much higher in SSA than any other region of the world. The delays in inland transport are also an important factor restricting trade.

The potential lock-in effects in commodity-based export structure of China's package linking investment, trade and aid

A characteristic of the relationships between China and SSA is that their three main channels - trade, foreign direct investment and aid - are interlinked and bundled via original contractual links. This contractual package constitutes an 'exchange' of products for investment - under which SSA governments exchange - in a way that may be compared with barter - exports of commodities for investment by Chinese firms, often in infrastructure.

China bundles its aid with commercial trade finance in a single transaction: the money from the Exim bank does not pass through the host country government and goes directly to the Chinese contractor (Orr and Kennedy, 2008). As underscored by Kaplinsky and Morris (2009), these contracts constitute 'packages' in which the Exim bank provides a line of credit, often at subsidised interest rates; large Chinese firms, often state-owned enterprises, then tender for infrastructural and resource projects (e.g., mining, oil, roads, railways); and finally these funds, which are tied to the use of Chinese inputs, are transferred from the Exim Bank to the firms and are repaid by the recipient country through commodity exports to China. As underscored by Foster et al. (2008), the China Exim Bank's terms and conditions are agreed on a bilateral basis, with the degree of concessionality depending on the nature of the project: they calculate that for both infrastructure and non-infrastructure loans Chinese loans compare favorably with private sector lending to SSA but not with official development assistance[4].

These contracts focus on extractive sectors and can be coined as 'resource-for-infrastructure' investment contracts: as underscored by Zongwe (2010), natural resources are exchanged for national infrastructures through two related investment contracts, a resource (mining, oil) contract and an infrastructure contract. China gets the resources from the host country in SSA and, in exchange for the resources, China implements infrastructure projects in that country. The two investment contracts secure the extraction of natural resources, their export to China and the use of the revenues thus generated to fund infrastructural and industrial projects in the host state.

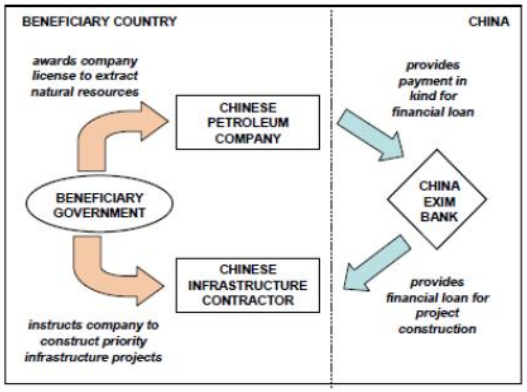
This is the so-called 'Angola model' (or 'mode'), as Angola has been considered as the first and paradigmatic example of such contractual arrangements - in 2004 Angola and China's Exim bank agreed on a series of financing packages for public investment projects in Angola, which were based on oil-backed concessional loans from Chinese banks (Corkin, 2011), for the financing of infrastructure in the sectors of energy, water, health, education, fisheries, road, rail and airport public works projects.

The 'Angola Model' is now the framework of most Chinese state-owned enterprises' activity in SSA. It is a new type of concessional finance, which attracts SSA governments in comparison with aid from traditional donors (Davies, 2010). This 'model', however, has to be understood as an ideal-type, as its actualisation differs across SSA countries, according to

[4] Chinese loans provide a grant element of 36% to Africa, vs. 66% for official development assistance (ODA) in the sense of the OECD-Development Assistance Committee/DAC (Foster *et al*., 2008).

their political specificities, the commodity, sector and project considered – Angola's empirics of the oil sector do not even entirely fit with the 'Angola model' (Vallée, 2008).

Figure 23: Structure of the 'Angola Model' arrangements



Source: Foster *et al.* (2008).

As analysed by Kaplinsky and Morris (2009), these original contractual arrangements represent a strategic integration of Chinese operations in SSA: Chinese aid complements trade and FDI flows and distinctions between these three dimensions are blurred.

This may be compounded by the fact that, as underscored by Foster *et al*. (2008), the financial terms of Angola mode are very difficult to assess because they depend on the implicit price agreed for the commodity traded: prices rise and fall over the period of the loan, for example typically for oil, and the term of the loan is adjusted accordingly.

According to Foster *et al.* (2008, p. x), only about 7% of Chinese infrastructure finance is directly linked with natural resource extraction, as it usually goes to broader development projects. These bundling arrangements, however, imply a potential 'lock-in' effect: in closely linking trade, investment and aid, they entails the risk of maintaining SSA export structure in its commodity-based pattern, as well as reducing the room of maneuver on the side of the SSA contracting government.

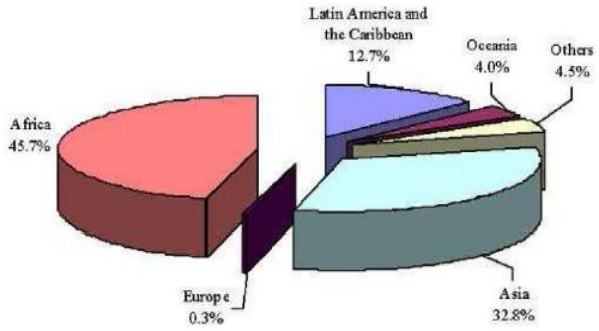
A Chinese aid that is linked with trade and investment: its ambiguous impacts

The bundle structure with potential lock-in effects of the 'Angola model', as it links aid, trade and investment, gives Chinese aid a specific organisation and ambiguous impacts. China's aid, however, may also be channelled outside the contractual modalities of the 'Angola Model'.

According to the government of China's White Paper on foreign aid (China's Information Office, 2011), financial resources provided for foreign aid fall into three types: grants (aid gratis), interest-free loans and concessional loans. The first two come from China's state finances, while concessional loans are provided by the Exim bank. This highlights the close links between trade, investment and official development assistance. As a donor, China differs from 'traditional' donors by its close ties with the state banks and state enterprises, which are often involved in the implementation of China's foreign policy vis-à-vis SSA. In addition, China mostly gives aid tied to the delivery of Chinese goods and services (Christensen, 2010).

By the end of 2009, China had provided 38.83 billion US$ in aid to foreign countries, firstly under the form of grants (GoC White Paper, China's Information Office, 2011). These aid flows go in the first place to Africa (45.7% of total flows).

Figure 24: Geographical distribution of China's foreign aid funds in 2009



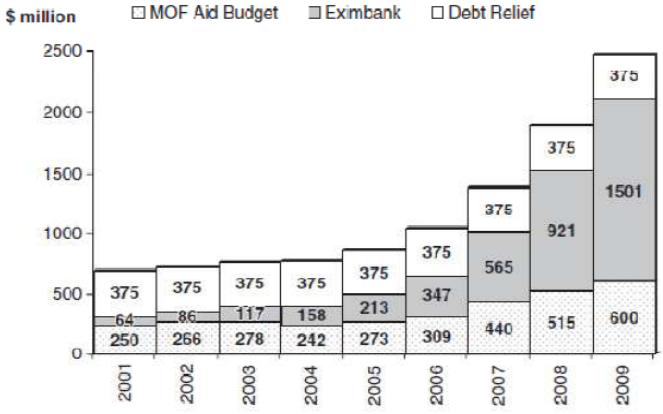
Source: China's Information Office, White Paper on foreign aid (2011).

Chinese aid includes finance to Chinese companies and subsidised resource-backed infrastructure loans; it represents, however, much less than China Exim Bank export credits (Brautigam, 2009). Indeed, while aid was historically a major instrument of China's economic engagement with Africa, with aid flows relative to trade being about 20% in the early 1990s, this ratio declined to 3-4% in 2004-05; although exact figures are difficult to find, China Exim Bank firstly supports infrastructure projects in Africa, and the latter's financing is likely to be much larger than aid flows (Wang and Bio-Tchané, 2008).

China, however, created the FOCAC (China-Africa Cooperation Forum) in 2000 and has augmented its aid since then. It is difficult to disentangle Chinese aid in the sense of official development assistance (ODA) from other flows, notably commercial flows. According to Deborah Brautigam, who has analysed multiple sources, aid to Africa would have represented 2.5 billion US$ in 2009. China is therefore a significant donor, broadly at the level of Japan or the United Kingdom.

Chinese aid flows to Africa are increasingly important, and as such, it may be assumed that they can be beneficial for the continent's development.

Figure 25: China's aid to Africa, US$ millions



Source: Brautigam (2009, p. 170), quoted in Humphrey (2011) and Fan *et al*. (2010). MOF: Ministry of Finance; Eximbank: Eximbank concessional loans.

Chinese aid flows are not linked to donors' conditionalities as is the case for 'traditional' donors - the international financial institutions (the IMF and the World Bank), the EU or bilateral donors. In particular, Chinese foreign assistance is not conditional to recipient countries' compliance with political (such as good governance), environmental or social conditions. China's government views its aid as an element of a policy of strengthening its ties with SSA governments in order to fulfil strategic objectives, such as the securing of its access to natural resources that are crucial for its own growth and consolidate diplomatic alliances (Alden, 2007b).

The associated risks have been underscored in several studies, such as the strengthening of questionable political regimes and weak support to the genuine ingredients of long-term sustainable growth (Brautigam, 2010b). The very limited contribution to growth and even harmful effects of 'traditional' donors' assistance, however, are now demonstrated by a vast literature (among many others, Easterly, 2003; 2007), as are its political motives (Alesina and Dollar, 2000). Moreover, Chinese aid may fill the critical gaps that characterise traditional donors (Nissanke and Söderberg, 2011). For SSA governments, in contrast with traditional donors, China's aid provides them with a 'fiscal space' and room of manoeuvre in the choice of policies they consider as appropriate for themselves.

5. Conclusion

This paper has shown the plurality of the relationships between Sub-Saharan African countries and China: plurality of modes, channels and impacts, as they involve trade, investment and aid relationships.

In contrast with many studies that assert either positive or negative effects, the paper reveals the ambivalence of these impacts because they depend on many factors: these impacts vary across Sub-Saharan African countries due to the diversity of these countries' export structure; they are also specific to the sectors and the types of flows that are considered.

Equally, it has been shown that these relationships both differ and are similar to the relationships between Sub-Saharan African countries and their 'traditional' partners, the European states and the United States. Despite the indisputably beneficial impacts of larger trade and capital flows and the associated additional room of manoeuvre, it is not likely that the trade, investment and aid relationships between China and Sub-Saharan Africa will induce the latter's structural transformation in the short term, as they maintain its current export structure – commodity-dependence – and rely on a bundling of trade-investment-aid that may create lock-in effects.

Bibliography

Acemoglu, Daron. 2003. Why Not A Political Coase Theorem? Social Conflict, Commitment and Politics, **Journal of Comparative Economics**, vol. 31, December, pp. 620-652.

Alden, Chris. 2007a. **China in Africa**, London, Zed Books.

Alden, Chris. 2007b. **Emerging Countries as New ODA Players in LDCs: the Case of China and Africa**, Paris, IDDRI, Idées pour le débat 01/2007.

Alesina, Alberto and David Dollar. 2000. Who Gives Foreign Aid to Whom and Why?, **Journal of Economic Growth**, vol. 5, n°1, March, pp. 33-63.

Arbache, Jorge Saba and John Page. 2007. **Patterns of Long Term Growth in Sub-Saharan Africa,** Washington D. C., the World Bank, policy research working paper 4398.

Baffes, John. 2007. **Oil Spills on other Commodities**, Washington, D. C., the World Bank, policy research working paper 4333.

Brautigam, Deborah 2009. **The Dragon's Gift: the Real Story of China in Africa**, Oxford, Oxford University Press.

Brautigam, Deborah. 2010a. Africa's Eastern Promise: What the West can Learn from Chinese Investment in Africa, **Foreign Affairs**, 5 January. www.foreignaffairs.com/articles/65916/deborah-brautigam/africa'seastern-promise

Brautigam, Deborah. 2010b. **China, Africa and the International Aid Architecture**, African Development Bank, working paper 107.

Brautigam, Deborah, Thomas Farole and Tang Xiaoyang. 2010. **China's Investment in African Special Economic Zones: Prospects, Challenges, and Opportunities**, Washington D. C., the World Bank, PREM network, Economic Premise 5.

Broadman, Harry G. 2007, **Africa's Silk Road**, Washington D. C., the World Bank.

Canuto, Otaviano and Marcelo Giugale eds. 2010. **The Day after Tomorrow: A Handbook on the Future of Economic Policy in the Developing World,** Washington D. C., the World Bank.

Cashin, Paul and C. John McDermott. 2002. The Long-Run Behaviour of Commodity Prices: Small Trends and Big Variability, **IMF Staff Papers**, vol. 49, n°2, pp. 175-199.

China's Information Office of the State Council. 2011. **China's Foreign Aid White Paper,** Beijing, April: http://europe.chinadaily.com.cn/china/2011-04/21/content_12375680.htm

Christensen, Benedicte Vibe. 2010. **China in Africa: a Macroeconomic Perspective**, Washington D. C., Center for Global Development, working paper 230.

Corden, W. Max and J. Peter Neary. 1982. Booming Sector and De-Industrialisation in a Small Open Economy, **Economic Journal**, vol. 92, n°368, pp. 825-848.

Corkin Lucy *et al.* 2008. **China's Role in the Development of Africa's Infrastructure**, Washington D. C., Johns Hopkins University, SAIS working paper in African Studies 04-08.

Corkin, Lucy. 2011. **China and Angola: Strategic Partnership or Marriage of Convenience?**, Bergen, Chr. Michelsen Institute, Angola Brief, vol. 1, n°1, January.

Cuddington, John T. and Daniel Jerrett. 2008. Super Cycles in Real Metals Prices?, **IMF Staff Papers**, vol. 55, n°4, pp. 541–565.

Davies, Martyn. 2010. **How China Is Influencing Africa's Development**, Paris, OECD Development Centre, background paper for the Perspectives on Global Development 'Shifting Wealth'.

Easterly, William. 2003. The Cartel of Good Intentions: the Problem of Bureaucracy in Foreign Aid, **Journal of Policy Reform**, pp. 1-28.

Easterly, William. 2005. **Reliving the 50s: the Big Push, Poverty Traps and Takeoffs in Economic Development,** mimeo, IFPRI-Cornell Conference on Threshold Effects and Non-Linearities in Growth and Development.

Easterly, William. 2007. Was Development Assistance a Mistake?, **American Economic Review**, vol. 97, n°2, May, pp. 328-332.

Fan, Shenggen, Bella Nestorova and Tolulope Olofinbiyi. 2010. **China's Agricultural and Rural Development: Implications for Africa**, Bamako, China-DAC Study Group on Agriculture, Food Security and Rural Development, 27-28 April.

Foster, Vivien, William Butterfield, Chuan Chen and Nataliya Pushak. 2008. **Building Bridges: China's Growing Role as Infrastructure Financier for SSA**, Washington D. C., the World Bank.

Frankel, Jeffrey A. 2008. **An Explanation for Soaring Commodity Prices**, VoxEU, 25 March: http://www.voxeu.org/index.php?q=node/1002

Frankel, Jeffrey A. 2010a. **The Natural Resource Curse: a Survey**, Cambridge MA, NBER working paper 15836.

Frankel, Jeffrey A. 2010b. **How Can Commodity Producers Make Fiscal and Monetary Policy Less Procyclical**?, Algiers, High Level Seminar on Natural Resources, Finance and Development, IMF Institute and Central Bank of Algeria, 4-5 November.

Freund, Caroline and Nadia Rocha. 2009. **What is Holding Back African Exports**, VoxEU, 11 December: http://www.voxeu.org/index.php?q=node/4358

Gebre-Egziabher, Tegegne. 2009. The Developmental Impact of Asian Drivers on Ethiopia with Emphasis on Small-scale Footwear Producers**, World Economy,** vol. 32, n° 11, pp. 1613-1637.

Gelb, Allan H. ed. 1998. **Windfall Gains: Blessing or Curse?**, New York, Oxford University Press.

Gu, Jing. 2009. China's Private Enterprises in Africa and the Implications for African Development, **European Journal of Development Research**, vol. 21, n°4, September, pp. 570-587.

Henley, John Stefan Kratzsch, Mithat Külür and Tamer Tandogan. 2008. **Foreign Direct Investment from China, India and South Africa in sub-Saharan Africa: A New or Old Phenomenon**?, Helsinki**,** WIDER Research Paper 2008/24.

Hummels, David. 2001. **Time as a Trade Barrier**, Purdue University, Department of Agricultural Economics, Centre for Global Trade Analysis, working paper 1152.

Hummels, David. 2007. Transportation Costs and International Trade over Time, **Journal of Economic Perspectives**, vol. 21, n°3, pp. 131-154.

Humphrey, John. 2011. **Chinese Development Cooperation and the EU,** Bonn, EADI, EDC 2000, policy brief 17, March.

International Monetary Fund. 2006. **World Economic Outlook,** Washington D. C., International Monetary Fund, September.

International Monetary Fund. 2007. **Regional Economic Outlook: Sub-Saharan Africa**, Washington D. C., International Monetary Fund, April.

International Monetary Fund. 2008. **Regional Economic Outlook: Sub-Saharan Africa,** Washington D. C., International Monetary Fund, April.

International Monetary Fund. 2009a. **World Economic Outlook**, Washington D. C., International Monetary Fund, April.

International Monetary Fund. 2009b. **The Implications of the Global Financial Crisis for Low-Income Countries**, Washington D. C., International Monetary Fund.

International Monetary Fund. 2010. **Regional Economic Outlook: Sub-Saharan Africa: Resilience and Risks,** Washington D. C., International Monetary Fund, October.

International Monetary Fund. 2011. **World Economic Outlook**, Washington D. C., International Monetary Fund, April.

Kaplinsky, Raphael. 2006. Revisiting the Revisited Terms of Trade: Will China Make a Difference?, **World Development**, vol. 34, n°6, June, pp. 981-995.

Kaplinsky, Raphael, Dorothy McCormick and Mike Morris. 2007. **The Impact of China on Sub Saharan Africa**, London, the Open University, DFID, Agenda-setting Paper, and Brighton, Institute of Development Studies.

Kaplinsky, Raphael and Mike Morris. 2008. Do the Asian Drivers Undermine Export-Oriented Industrialisation in SSA?, **World Development,** vol. 36, n°2, pp. 254–273.

Kaplinsky, Raphael and Mike Morris**.** 2009. Chinese FDI in Sub-Saharan Africa: Engaging with Large Dragons, **European Journal of Development Research**, vol. 21, n°4, September, pp. 551–569.

Klinger, Bailey. 2009. **Is South–South Trade a Testing Ground for Structural Transformation**?, Geneva, UNCTAD, Policy Issues in International Trade and Commodities Study 40.

Kragelund, Peter. 2009. Part of the Disease or Part of the Cure? Chinese Investments in the Zambian Mining and Construction Sectors, **European Journal of Development Research,** vol. 21**,** n°4, September, pp. 644–661.

Loayza, Norman V., Romain Rancière, Luis Servén and Jaume Ventura. 2007. Macroeconomic Volatility and Welfare in Developing Countries: An Introduction, **World Bank Economic Review**, vol. 2, n°3, pp. 343-357.

Matsuyama, Kinimori. 2009. **Poverty Traps**, Basingstoke, New Palgrave Dictionary of Economics.

Mayer, Jörg. 2009. **The Growing Interdependence between Financial and Commodity Markets**, Geneva, UNCTAD, discussion paper 195, October.

Mehlum, Halvor, Karl Ove Moene and Ragnar Torvik. 2006. Cursed by Resources or Institutions?, **World Economy**, vol. 29, n°8, pp. 1117-1131.

Moss, Todd and Sarah Rose. 2006. **China ExIm Bank and Africa: New Lending, New Challenges,** Washington, D.C., Center for Global Development, CGD Notes.

Nissanke, Machiko. 2010. Issues and Challenges for Commodity Markets in the Global Economy: an Overview, in Machiko Nissanke and George Mavrotas eds., **Commodities, Governance and Economic Development under Globalization, in Memory of Alfred Maizels**, Basingstoke, Palgrave Macmillan.

Nissanke, Machiko and Marie Söderberg. 2011. **The Changing Landscape In Aid Relationships in Africa: Can China's Engagement Make A Difference to African Development?,** Stockholm, Swedish Institute of International Affairs (UI), UI paper 2011-2.

OECD. 2010. **Perspectives on Global Development 2010: Shifting Wealth**, Paris, OECD, Development Centre.

Olson, Mancur. 1993. Dictatorship, Democracy and Development, **American Political Science Review,** vol. 87, n°3, September, pp. 567-576.

Orr, Ryan J. and Jeremy R. Kennedy. 2008. Research Note: Highlights of Recent Trends in Global Infrastructure: New Players and Revised Game Rules, **Transnational Corporations**, UNCTAD, vol. 17, n°1, April, pp. 95-130.

Portugal-Perez, Alberto and John S. Wilson. 2008. **Trade Costs in Africa: Barriers and Opportunities for Reform**, Washington D. C., the World Bank, policy research working paper 4619.

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

Radetzki, Marian. 2006. The Anatomy of Three Commodity Booms, **Resources Policy,** vol. 31, n°1, pp. 56–64.

Radetzki, Marian, Roderick G. Eggert, Gustavo Lagos, Marcos Lima and John E. Tilton. 2008. The Boom in Mineral Markets: How Long Might It Last?, **Resources Policy**, vol. 33, pp. 125-128.

Sindzingre, Alice N. 2009. **The Impact of the Global Crisis on Commodity-Dependent Low-Income Countries: Confirming the Relevance of the Concept of Poverty Trap?**, University of Ulster, Coleraine Campus, Development Studies Association (DSA) Annual Conference.

Sindzingre, Alice N. 2010. Uncertain Prospects of Commodity-Dependent Developing Countries, in Machiko Nissanke and George Mavrotas eds., **Commodities, Governance and Economic Development under Globalization, in Memory of Alfred Maizels,** Basingstoke, Palgrave Macmillan.

Sindzingre, Alice N. and Christian Milelli. 2010. **The Uncertain Relationship between Corruption and Growth in Developing Countries: Threshold Effects and State Effectiveness**, Paris, University of Paris West-Nanterre, EconomiX working paper 2010-10.

Singer, Hans W. 1950. The Distribution of Gains between Investing and Borrowing Countries, **American Economic Review**, vol. 40, n°2, May, pp. 473-485

Smits, Jan-Pieter. 2006. **Economic Growth and Structural Change in Sub Saharan Africa during the Twentieth Century: New Empirical Evidence**, Helsinki, International Economic History Association Conference.

Streifel, Shane. 2006. **Impact of China and India on Global Commodity Markets: Focus on Metals and Minerals and Petroleum**, Washington D.C., the World Bank.

Subramanian, Uma and Matthias Matthijs. 2007. **Can Sub-Saharan Africa Leap into Global Network Trade?**, Washington D. C., the World Bank, policy research working paper 4112.

Torvik, Ragnar. 2009. Why Do Some Resource-Abundant Countries Succeed While Others Do Not?, **Oxford Review of Economic Policy**, vol. 25, pp. 241-256.

UNCTAD. 2008. **Trade and Development Report 2008**: **Commodity Prices**, Geneva, UNCTAD.

UNCTAD. 2010a. **Economic Development in Africa: South-South Cooperation: Africa and the New Forms of Development Partnership,** Geneva, UNCTAD.

UNCTAD. 2010b. **World Investment Report 2010: Investing in a Low-Carbon Economy**, Geneva, UNCTAD.

Vallée, Olivier. 2008. Du Palais aux banques: la reproduction élargie du capital indigène en Angola, **Politique Africaine**, n° 110, June, pp. 21-46.

Wang, Jian-Ye and Abdoulaye Bio-Tchané. 2008. Africa's Burgeoning Ties with China, **Finance and Development**, vol. 45, n°1, March, pp. 44-47.

Wetherill, Charles. 2010. **Additionality of Development Finance Institutions in Upstream Oil and Gas in Africa**, Tunis, African Development Bank, Development Research Department.

World Bank. 2009. **Global Economic Prospects: Commodities at the Crossroads,** Washington D. C., the World Bank.

World Bank. 2011. **Global Economic Prospects 2011**, Washington D. C., the World Bank.

Wright, Gavin. 1990. The Origins of American Industrial Success, 1879–1940, **American Economic Review**, vol. 80, n°4, pp. 651–668.

Wright, Gavin and Jesse Czelusta. 2002. **Resource-Based Economic Growth, Past and Present,** mimeo, Stanford University, June.

Ye, Xiao. 2010. **A Path to Mutual Prosperity? The Trade and Investment between China and Africa,** Tunis, African Development Bank, AEC Conference.

Zongwe, Dunia P. 2010. **On the Road to Post Conflict Reconstruction by Contract: the Angola Model**, mimeo.