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The Rise of China in Sub-Saharan Africa: its Ambiguous Economic Impacts

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Abstract

The paper analyses the economic relationships between China and Sub-Saharan African countries, including original contractual relationships that link exports from Sub-Saharan Africa to China and investment by Chinese firms in Sub-Saharan Africa. Unlike the ‘traditional’ partners of Sub-Saharan African economies (European countries, USA), these relations inextricably combine trade, aid and investment, which may create ‘lock-in’ effects. China’s trade and investment focus on the commodities that are produced by African countries, which are crucial inputs in China’s growth, with the risk of a growing dependence of African economies on the exports of raw materials and the negative effects that are associated with such dependence, especially in oil-exporting countries. Chinese investment, however, increasingly involves other sectors, such as the manufacturing sector. In addition, Chinese investment and aid have positive effects, such as the improvement of infrastructure, the lack of which being one of the key factors of the stagnation of African economies. The rise of China in Sub-Saharan Africa also implies significant additional resources and a welcome increase in the number of ‘players’. The article thus shows the ambivalence of the impacts of China, which moreover substantially vary according to countries’ export structure and the nature of their political institutions.

La montée en puissance de la Chine en Afrique Sub-Saharienne : des impacts économiques incertains

Résumé : L’article analyse les relations économiques de la Chine avec les pays d’Afrique Sub-saharienne, notamment les nouvelles relations contractuelles liant les exportations africaines aux investissements par des firmes chinoises. Contrairement aux partenaires « traditionnels » des économies Sub-Sahariennes (pays européens, Etats-Unis), ces relations mêlent indissolublement commerce, aide et investissement, ce qui peut induire des effets de « verrouillage » (« *lock-in* »). Le commerce et l’investissement se centrent sur les matières premières produites par l’Afrique, qui constituent des inputs essentiels à la croissance chinoise, avec le risque de renforcer la

dépendance des pays africains vis-à-vis de l'exportation de matières premières et ses effets négatifs, notamment dans les pays exportateurs de pétrole. Cependant, les investissements chinois se dirigent de plus en plus vers d'autres secteurs, ainsi le secteur manufacturier. Également, l'aide et les investissements chinois ont des effets positifs, par exemple en contribuant à l'amélioration des infrastructures - le manque d'infrastructures étant l'un des facteurs-clés de la stagnation des économies africaines. La montée en puissance de la Chine représente également des ressources additionnelles significatives, ainsi qu'un élargissement bienvenu du nombre de « joueurs ». L'article montre ainsi l'ambivalence de l'impact de la Chine, qui en outre varie considérablement selon les pays, leurs structures d'exportation et la nature de leurs institutions politiques.

1. Introduction

Relationships between China and Sub-Saharan Africa have witnessed a remarkable intensification over the first decade of the 21st century. Moreover, they 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 relations that interlink trade, investment and aid. These types of contracts, as well as the increasing financial flows involved, are questioned by the 'traditional' partners of Sub-Saharan African countries, such as 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), debt creation and crowding-out (of other players).

In addition, China's spectacular growth and its specific strategies (reliance on the industrial sector, export of manufactures and machinery) are associated with trade and investment relationships that in Africa are centred on the sector of primary commodities (petroleum, ores, metals) and infrastructure development. While the improvement of infrastructure has beneficial effects on long-term growth under certain conditions (e.g., fostering industrialisation and enhancing the functioning of markets), the effects of the exporting of commodities 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 on Sub-Saharan African economies 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 importance of these commodities in the sequence of China's stages of development) and institutional consolidation. These effects can be 'neutral' (not specific to China and 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 thus contributes to the debates on the impact of China's economic policy towards Sub-Saharan Africa. It is structured as follows. It 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. Secondly, it analyses the dramatic increase in trade relationships between China and Sub-Saharan African countries since 2000 and underscores their positive and negative effects. Thirdly, it 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. It 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

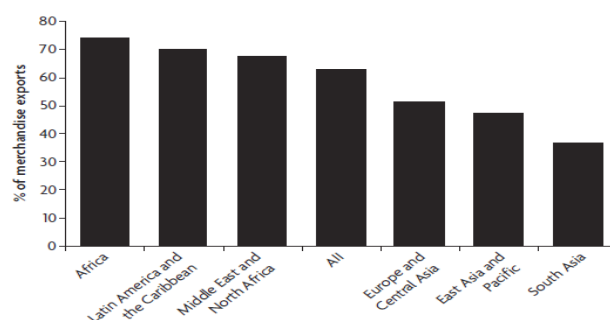
Sub-Saharan African (SSA) economies display a key characteristic, which explain the specificities of these countries' relationships with China: their market and export structures are heavily dependent on primary commodities, which is a central factor of SSA disappointing growth performances due to commodity prices' inherent volatility.

Growth performances of many SSA countries since the second half of the 2000s onwards are mostly driven by commodity prices movements and such performances therefore remain fragile. Moreover, earnings volatility strongly contributes for the formation of poverty traps.

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

A characteristic of Sub-Saharan African economies 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.

At a global level, SSA has specialised in the export of commodities. As shown by the figure below, the share of commodities in total exports is the highest in SSA in comparison with other regions.

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

Source: Canuto and Giugale (2010).

According to the World Bank's *World Development Indicators* (2004, 2011, table 4.4), in SSA, in 2009, fuels represented 37% of total merchandise exports; manufactures, 31%; ores and metals, 15%; food, 14%; and agricultural raw materials, 3%. This export composition is remarkably stable – but, significantly, with a decline in manufactures and an increasing share of fuels -: in 2001, manufactures represented 33% of exports, fuels, 31%, food, 16%; ores and metals, 8%; and agricultural raw materials, 6%.

An associated characteristic is the narrowness of the industrial base in SSA, with the exception of a few countries, notably South Africa and Kenya. Still according to the World Bank's *World Development Indicators* (2006, 2007, 2011, table 4.2), the structure of output in SSA was the following: in 1990, industry represented 34% of GDP; in 2005, 32% of GDP; in 2009, 30%. Manufacturing represented: in 1990, 17% of GDP; in 2005, 14% of GDP; and in 2009, 13% (with industry including mining, manufacturing, construction, electricity, water and gas).

As shown in the table below, over the period 2003-2006, in almost half of African countries, only one commodity represented more than 50% of exports. This percentage is higher than that during the 1995-1998 period.

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

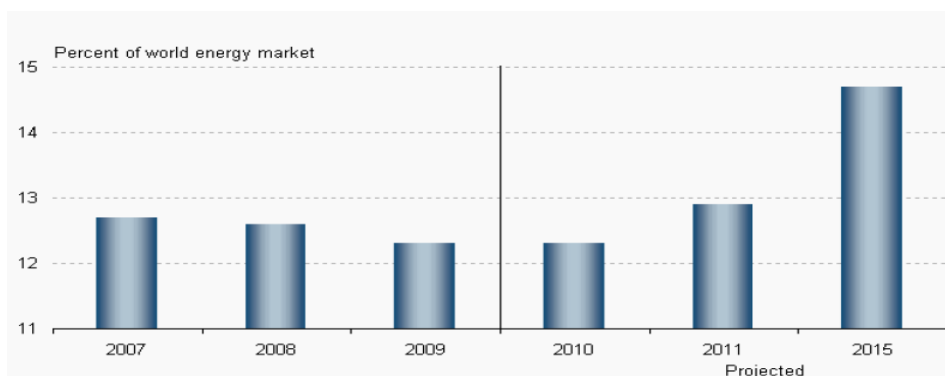
	Total primary commodities (a)		Three or less commodities		One commodity	
	1995–1998	2003–2006	1995–1998	2003–2006	1995–1998	2003–2006
Developing and transition economies	118	113	82	84	47	50
Developing economies	108	103	78	78	45	46
Africa (56)	46	45	37	34	21	23
Latin America (41)	30	27	15	17	6	7
East and South Asia (27)	7	8	4	6	1	2
West Asia (13)	9	9	9	9	8	6
Oceania (21)	16	14	13	12	9	8
Transition economies	10	10	4	6	2	4

Source: UNCTAD (2008, table 2.4). a: Primary commodities refer to the Standard International Trade Classification (SITC) Revision 2 classification's categories: 1 to 4; 68, 667 and 971. Africa here refers

not only to Sub-Saharan Africa, but also North Africa. The UNCTAD Handbook of Statistics 2010 lists 158 countries in the category of ‘developing economies’ and 18 countries in that of ‘transition economies’.

An important point is that SSA is progressively becoming an oil-producing region. As mentioned above, fuels represented 37% of SSA exports in 2009. SSA oil producers are Angola, Cameroon, Chad, the Republic of Congo, Côte d’Ivoire, Equatorial Guinea, Gabon, and Nigeria. As shown by the figure below, SSA is expected to represent about 15% of global oil exports by 2015. Gas exports have also increased, with three significant exporters in SSA, Nigeria, Mozambique and Equatorial Guinea – in 2008 (from zero in 2004), in Equatorial Guinea, gas exports represented 10.5% of total exports, and in Mozambique, 36% (AfDB, 2010).

Figure 2: Africa’s share of global oil market



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

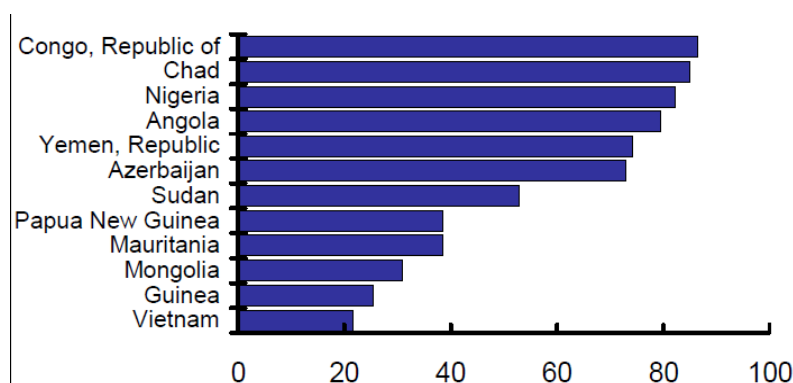
Given the specificities of oil markets in terms of price formation, financialisation – the trading of oil as a financial asset - and global political economy, this progressive transformation of SSA export structure towards the export of fuels has significant consequences. As shown by a vast literature, 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)¹.

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.

¹ ‘Dutch disease’ refers to the detrimental consequences of large increases in a country's income, typically associated with a natural resource discovery, but also any large inflows of foreign currency, e.g., surges in commodity prices, foreign assistance or foreign direct investment. The model elaborated by Corden and Neary shows that their effects can be the crowding out of the traditional (e.g., agriculture) export sector by the booming sector (e.g., oil) and the non-tradable sector (e.g., construction), due in particular to the appreciation of the exchange rate.

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 income 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 are their determinants?

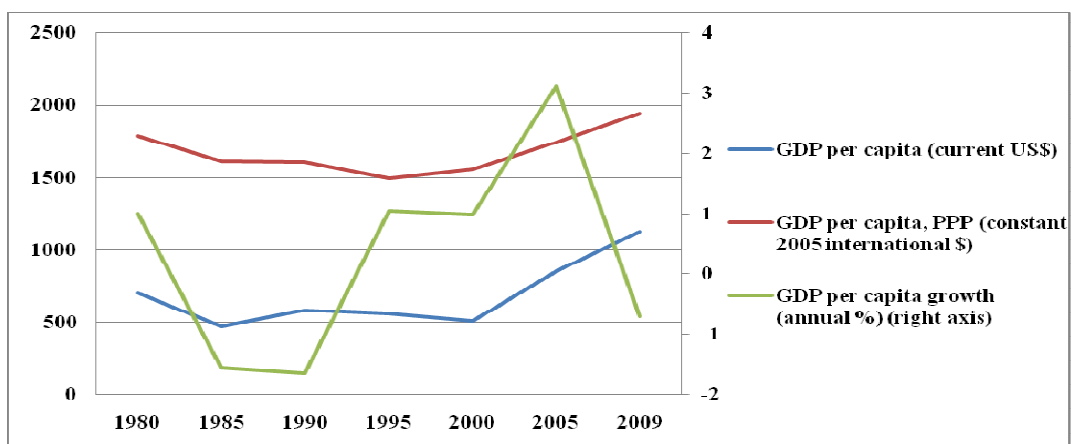
Assessments of the growth trajectories of SSA countries, however, depend on the time period analysed, as trends, cycles and salient facts may differ in the short- and the long-run (secular scale). According to Smits (2006), SSA economies did well during the colonial era, and over the 20th century SSA exhibits more a 'rise and fall' growth pattern rather than permanent stagnation.

In addition, 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.

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 economies².

² See the World Bank's country classification <http://data.worldbank.org/about/country-classifications/country-and-lending-groups>

Figure 4: GDP per capita and GDP per capita growth rate in Sub-Saharan Africa



Source: World Bank World Development Indicators database (via ESDS), April 2011. See also Arbache and Page (2007). PPP: purchasing power parity.

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

Of course, Latin America or the Middle East also export primary commodities. A specificity of SSA countries, however, is the association of this export structure with low levels of incomes.

Of course, there are a few exceptions: 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.

The key problems of the exporting of commodities, oil and non-oil, are the characteristics of their prices - notably volatility -, the determinants of price formation - in particular the linkages between commodity markets and their increasing financialisation -, and the negative consequences of this price volatility, i.e. government' earnings volatility and its detrimental impact on a key determinant of growth, i.e. investment.

Founding scholars of development economics such as Raul Prebisch and Hans Singer have demonstrated the long-term and structural decline of commodity prices³. This decline, however, remains debated, in particular because the 2000s have witnessed high prices for many commodities (e.g., oil, metals, some agricultural products), especially due to the demand from emerging countries. Indeed, the rebound was rapid after the 2008-10 financial crisis. This may suggest the existence of a 'supercycle' - i.e. a cycle that lasts much longer than an ordinary business cycle -, which started in the early-2000s, and perhaps a break in the decline.

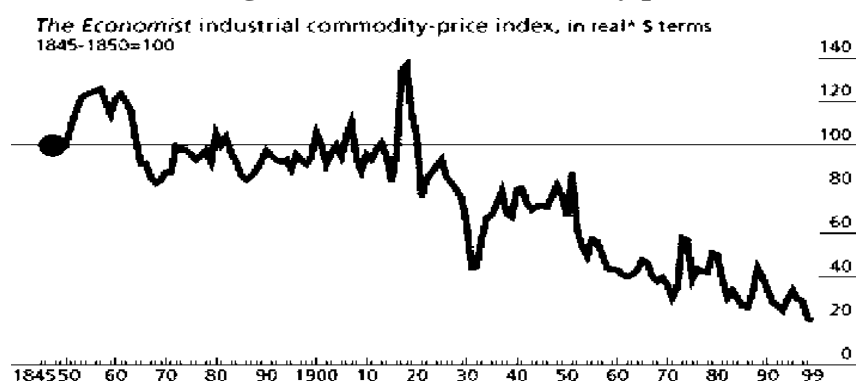
The IMF also emphasises this decline, and underscores that despite increases, the prices of most nonfuel commodities remain below their historical peaks in real terms. According to the IMF (2006), over the past five decades, commodity prices have fallen

³ Among many papers, Prebisch (1950), Singer (1950).

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 manufactured products' price inflation. This long-term decline is particularly apparent in the figure below, as it shows two different calculations, one made by *The Economist* from an index of industrial commodities it has started in 1845, and the other made by World Bank researchers.

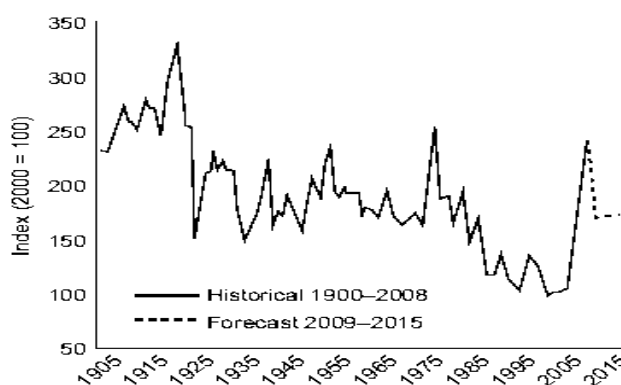
Figure 5: The long-term trend in commodity prices

(a) The long-term decline of commodity prices since 1845



Source: *The Economist*, 15 April 1999. *: adjusted by US GDP deflator.

(b) Real non-energy commodity prices, 1900-2015



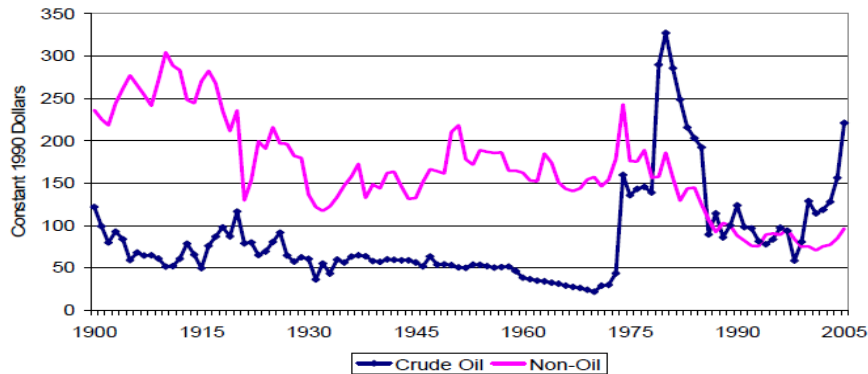
Source: Brahmabatt and Canuto (2010), based on Grilli and Yang (1988) and Pfaffenzeller et al. (2007). World Bank estimates 2004-08, forecasts 2009-15. Indexes, 2000=10. Deflated by unit value of manufactured exports.

For example, Frankel (2010b) has also demonstrated this decline since 1960 for copper prices (copper representing around 40% of Zambia's exports).

Commodity prices are above all characterised by their volatility. This volatility has been demonstrated since a long time in the literature and affects prices over the long-run, in

particular since the mid-19th century (Cashin and McDermott, 2002, for the period 1862-1999; Blattman *et al.*, 2007, for the period 1870-1939).

Figure 6: Real oil and non-oil commodity prices

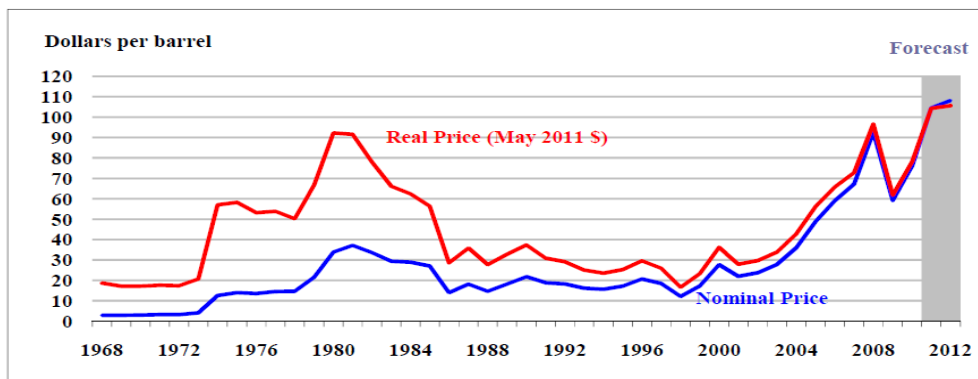


Source: Streifel (2006).

Oil is a special commodity: it is a strategic input for all developed and emerging countries, and price formation is determined by complex factors where global political economy and the financialisation of commodity markets play a particularly important role; despite the existence of OPEC, 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.

Oil prices are characterised by high volatility, as is shown by the figure below. 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

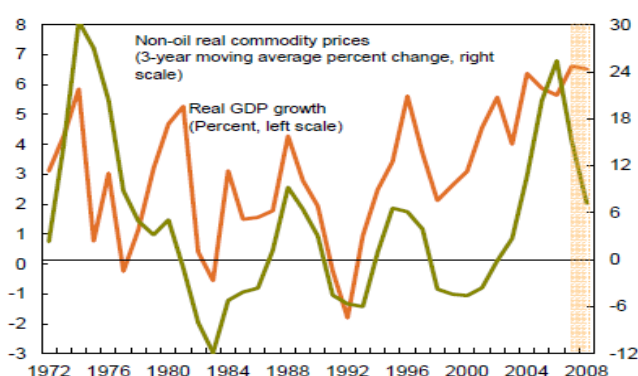


Source: Energy Information Administration (EIA) (US Department of Energy): <http://www.eia.doe.gov>. Base CPI: May 2011.

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

It may therefore be argued that the growth performances that have characterised many SSA countries in the 2000s have been driven by commodity prices and their 'supercycle', 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, 2010a; 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 rebound in 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 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’ (Nissanke, 2010b; Sindzingre, 2010).

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

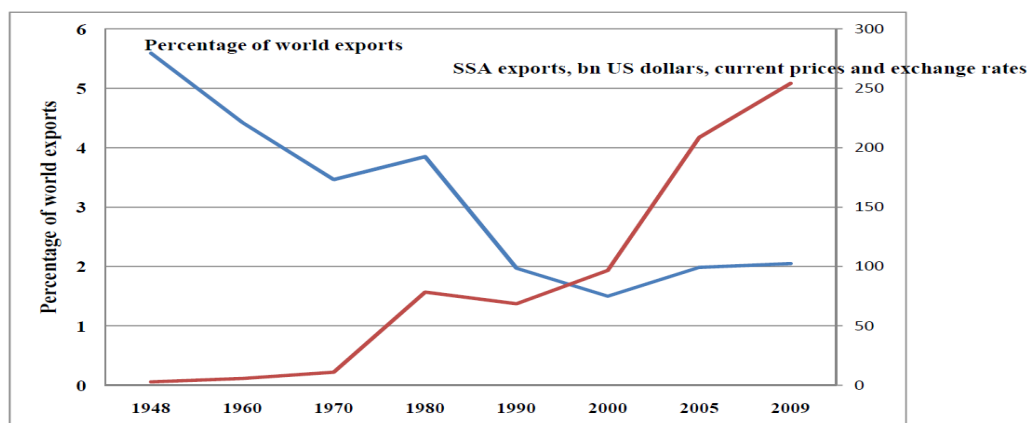
Export structures based on commodities reduce capacities for economic performance through a series of channels, the most important ones being, as argued by Frankel (2010a), long-term trends towards decline in world commodity prices, price volatility, crowding out of manufacturing activities, and Dutch 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 adherence 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 - 1.5% excluding South Africa.

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 below, 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.

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

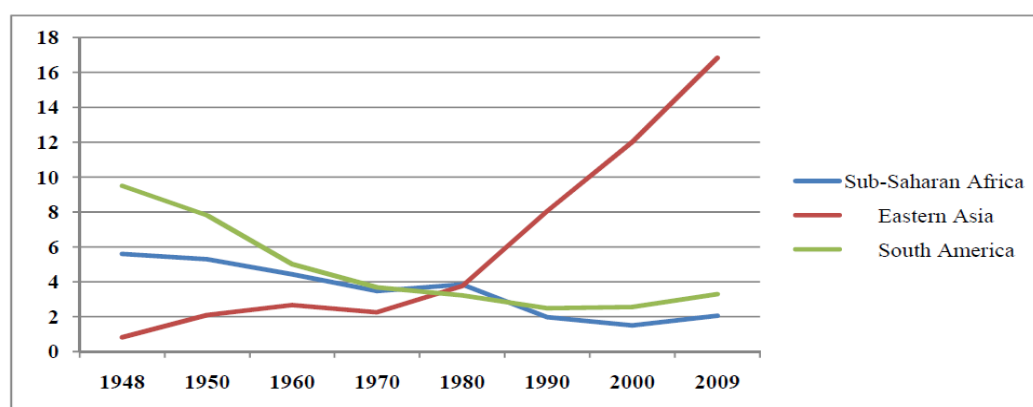


Source: UNCTAD Statistics: <http://unctadstat.unctad.org>

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 West African Economic and Monetary Union/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)



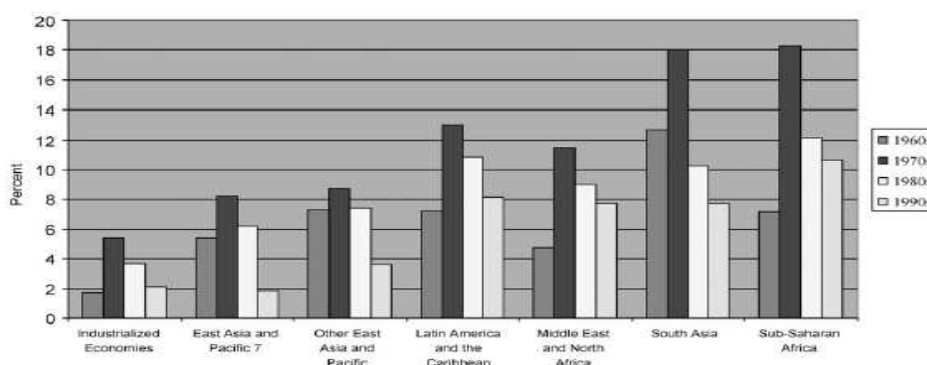
Source: UNCTAD Statistics: <http://unctadstat.unctad.org>; see also IMF (2007), fig. 4.1.

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. In particular, 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 in terms of trade growth (regional medians)



Source: Loayza *et al.* (2007). Vertical axis: standard deviation of the logarithmic change.

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.

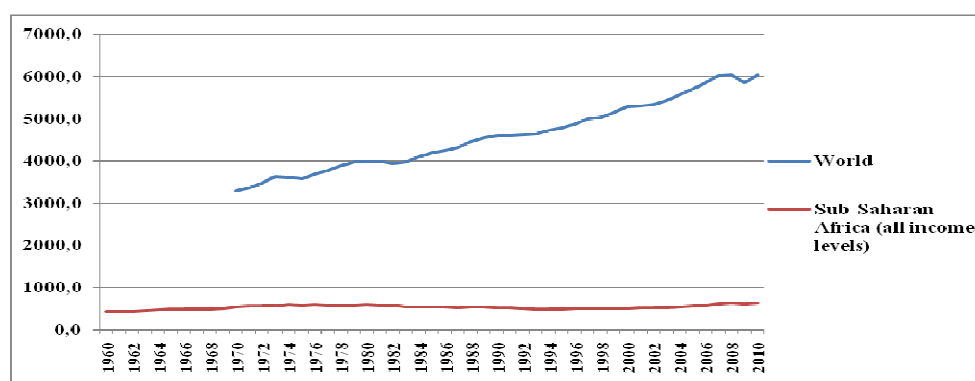
Indeed, SSA countries are characterised by institutions – economic, political, social – and by a specific political economy that may not be favourable to growth and aggravate the consequences of existing export structures. In most SSA countries, political institutions are shaped by authoritarian regimes 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 developing countries, especially 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, 1960–2010 (constant 2000 US\$)



Source: World Bank, World Development Indicators database, 2011.

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

What are the growth prospects of SSA countries given their current export structure, and 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 those 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)⁴. The 2000s, however, witnessed a spectacular increase in all commodity prices, and the length and magnitude of the price increases led some observers to describe this evolution as the beginning of price '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).

⁴ Source: <http://www.nber.org/cycles.html>.

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

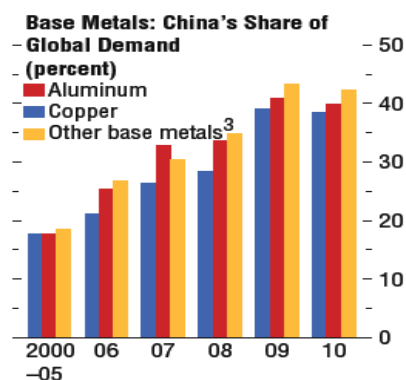
Many factors have underlain the 2003-2008 price commodity boom, with some being specific to particular commodities. Factors of commodity prices movements traditionally include the fluctuations of supply and demand, those of interest rates and exchange rates as well as the levels of inventories.

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).

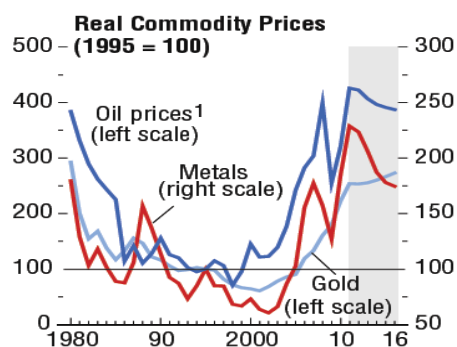
China as a factor of high prices for commodities in the medium term?

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's 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 (IMF, 2011, p. 93).

Figure 14: Real commodity prices, 1980-2016



Source: IMF (2011).

Demand from China, however, did not contribute to the price boom of all commodities, e.g., wheat, corn or cotton (Tang and Xiong, 2010a and b).

Equally, assessments of commodity prices 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.

More importantly, the sustainability of China's growth remains uncertain, which is acknowledged by the IMF (2011) and other studies. Eichengreen *et al.* (2011) thus show that China's growth may slow down after 2015 - when its per capita incomes will reach around 17,000 US\$ (in 2005 constant international prices).

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

There have been dramatic shifts in SSA trading patterns during the 2000s towards China and other parts of 'Developing Asia'. Their effects on SSA economies are multiple, as are the channels involved, and ambiguous.

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

By 2009, the share of China in SSA total exports and imports exceeded that of most other regions in the world (IMF, 2010). This is shown by the figure below via a sample of five SSA countries.

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

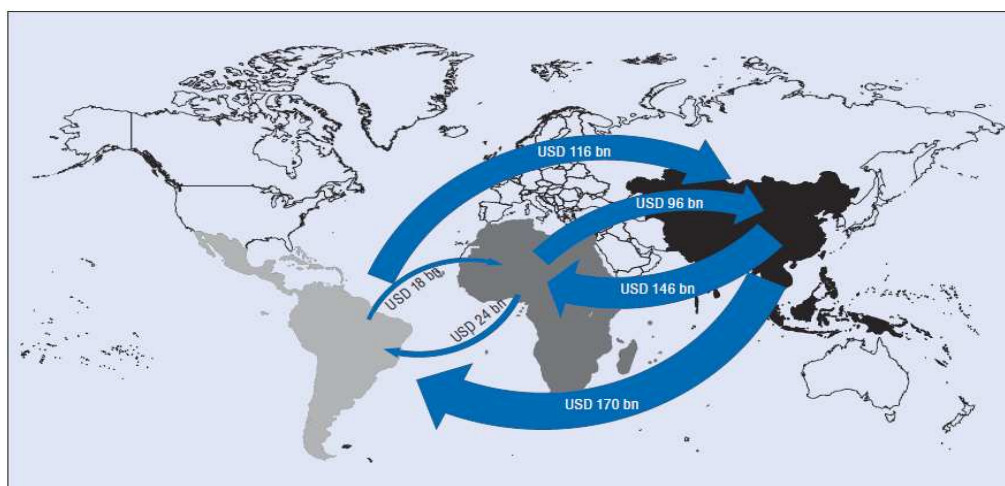
Source: OECD (2010) based on UNCTAD Handbook of Statistics 2010. Africa includes North Africa.

If China pursues its impressive growth rates – it is already the second world economy - its demand for SSA products may 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 intensification of SSA trade relationships with China is accompanied by increasing exchanges with other emerging countries, in particular Brazil.

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



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

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

China, however, may 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

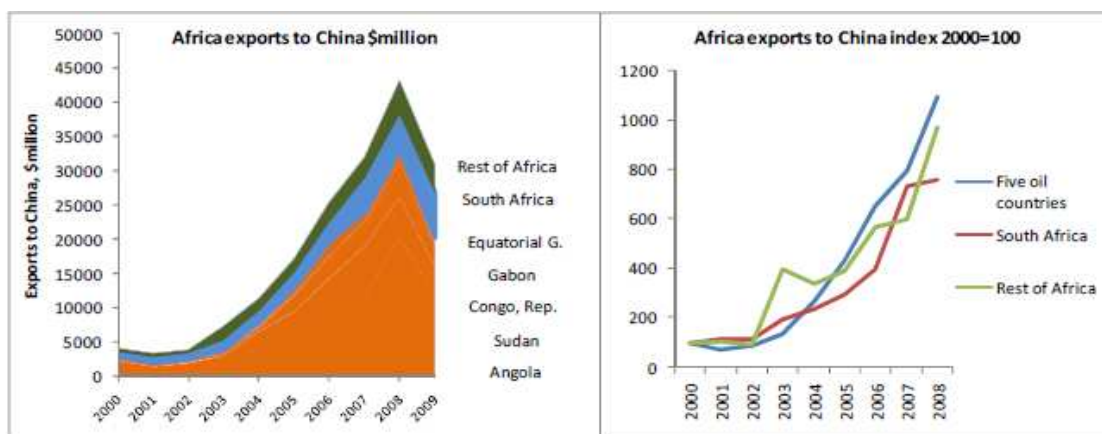
some commodities, which are driven by China's growth and demand, may be detrimental for the exporters of these commodities as they create strong incentives for remaining within this pattern of exports, although this pattern is a major factor of vulnerability to external shocks and fluctuations of international 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.

It is important to note that the current export pattern of SSA to China does not strongly differ from SSA export pattern to 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 six 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



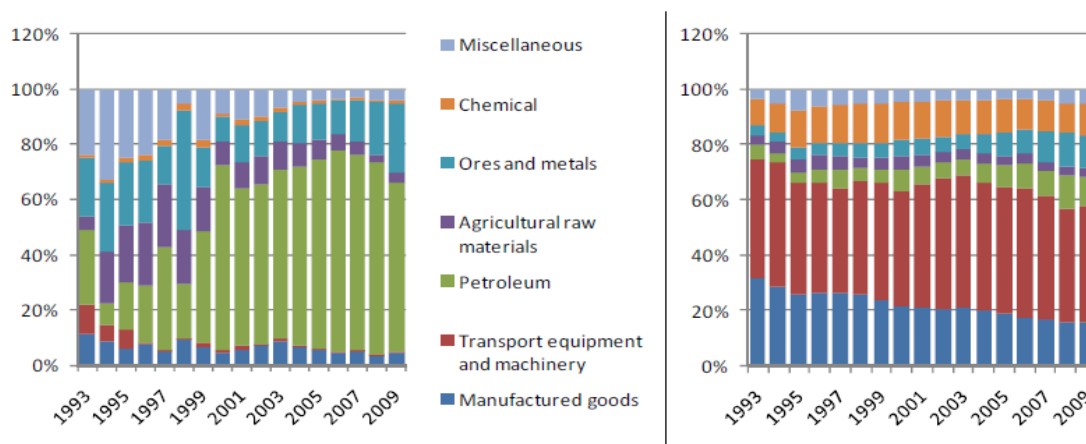
Source: Ye (2010).

On the side of China, however, the type of goods it imports from SSA is 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.

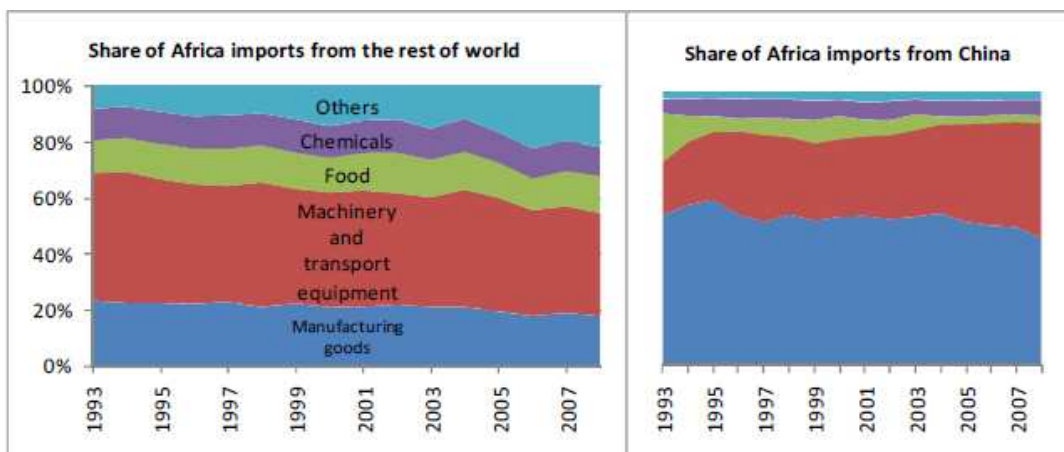
Figure 18: China's imports from Africa China's imports from rest of the world



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'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 underscored by a large literature, such a detrimental impact is not specific to SSA: it may be more destabilising in SSA, however, in view of the narrowness and fragility of local manufacturing sectors.

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 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

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, and aid. These three dimensions are characterised by close linkages, which contributes to the complexity and ambivalence of their effects.

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

As in economic theory investment is among the most robust predictors of growth, any increase in Chinese investment is likely to have a positive impact on SSA economies.

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

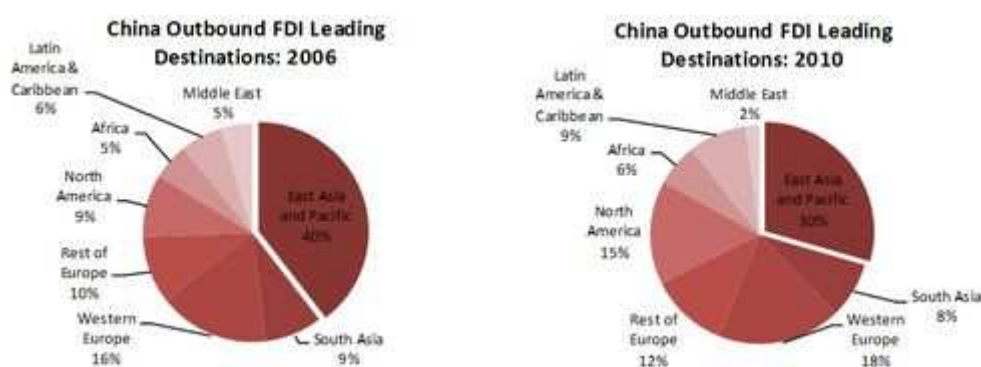
foreign policy and its quest for the securing strategic natural resources and global influence.

SSA is not the major destination of Chinese FDI, but these FDI are increasingly important for SSA. As underscored by Mlachila and Takebe (2011), however, finding reliable data on Chinese FDI to developing countries may be ‘mission impossible’: Chinese statistics exhibit important discrepancies and most countries do not keep FDI data on a balance of payment basis by country of origin.

The figure below is an example of large discrepancies when different sources are used (a private database or an IMF paper).

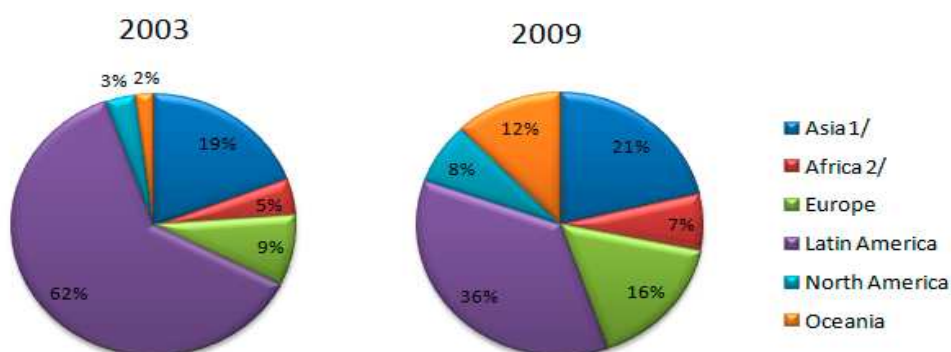
Figure 20: China outward foreign direct investment figures and their discrepancies

(a) 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.

(b) China: global FDI outflows: geographical distribution



Source: Mlachila and Takebe (2011) (IMF), figure 6, based on the *Statistical Bulletin of China's Outward Foreign Direct Investment*. 1) excluding Hong Kong SAR, Macau SAR; 2) including North Africa.

Chinese FDI flows still account for a small share of FDI flows to SSA. There also important variations from one year to the other. For example, according to Mlachila and Takebe (2011, table 4) estimates, Chinese FDI flows would have represented about one

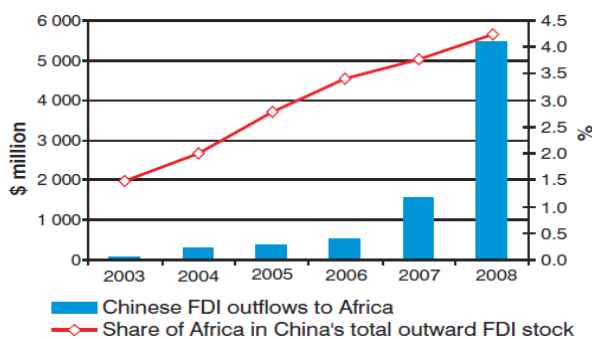
billion \$ in 2009, and 5.5 billion in 2008. South Africa, Nigeria, Zambia and Congo DRC were the main destinations on average over 2003-09.

This may be compared with FDI flows from the EU. According to Eurostat, the EU-27 countries invested in Africa 18.5 billion Euros in 2008 (with Egypt having attracted more than half, 53%, of this amount). France and the United Kingdom were the main investors in 2008 within the EU-27 group⁵.

For Christensen (2010), who also underscores the notorious difficulty in calculating FDI flows and the likely underestimation of this figure, Chinese FDI flows represented about 2% of the total of foreign direct investment in the continent as a whole. For Mlachila and Takebe (2001), compared to global FDI to SSA countries, the Chinese share is estimated to have increased from less than 0.5% in the early 2000s to about 4.5% in 2007.

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, and effects on employment. 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 the oil companies, e.g., CNPC or CNOOC⁶). Chinese outward investment is indeed characterised by the importance of state-backed FDI (Zhu *et al.*, 2011). An increasing number of medium and small

⁵ Source: http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Africa-EU_-_economic_indicators,_trade_and_investment. Data from November 2010, based on data available in the African Statistical Yearbook – 2010 Edition, prepared by the African Union Commission, the African Development Bank and the United Nations Economic Commission for Africa, and in Eurostat's databases. In 2008, the averaged annual exchange rate was: one euro=1.5 \$US (source: Eurostat http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ert_bil_eur_a&lang=en): EU-27 countries' FDI in 2008 thus amounted to about 27.7 billion \$.

⁶ China National Petroleum Corporation; China National Offshore Oil Corporation.

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). Investors' surveys conducted by Gu (2011) confirm that these numerous small, private manufacturing firms invest independently of the Chinese government (sometimes with the support of local overseas Chinese, Song, 2011), and moved from exporting to SSA to investing in production in SSA - and increasingly in industry parks where they collaborate in coordinated production.

As for the trade relationships between China and SSA, the structure and impact of Chinese FDI 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. Estimates of the number of Chinese FDI firms vary widely (and often do not disentangle SSA from 'Africa'). UNDP/UNCTAD (2007), quoted by Mlachila and Takebe (2011) estimated that there were approximately 700 Chinese enterprises operating in Africa. For Christensen (2010), 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. For Orr and Kennedy (2008), the number of Chinese state-owned and private enterprises in Africa has been estimated at about 1000 across all countries.

China is also investing in Special Economic Zones (SEZs) (Brautigam and Tang, 2011): 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 competitiveness problems that affect SSA (by end-2009, only 4000 jobs had been created in the Zambia's SEZ, Brautigam *et al.*, 2010).

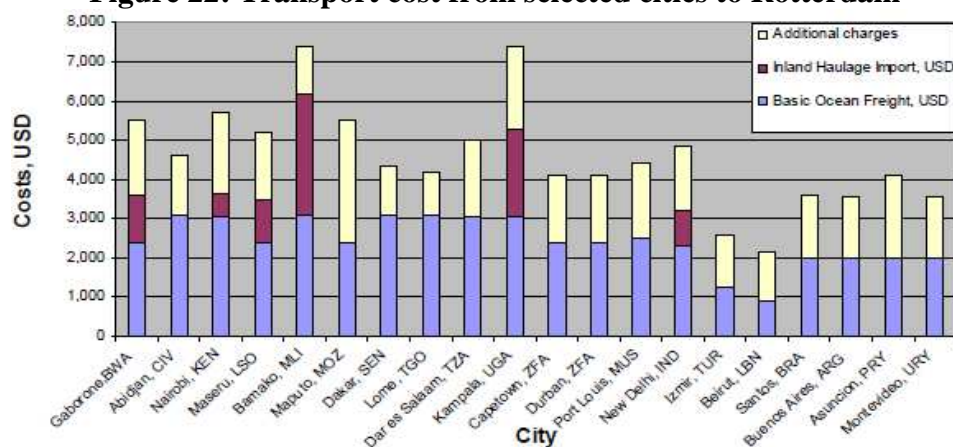
The positive impact of Chinese investment on growth via infrastructures

A significant amount of Chinese foreign direct investment in SSA is associated with the creation of infrastructure: Chinese investors and the government of China increasingly invest in infrastructure in Africa and infrastructure investment is concentrated in Angola, Nigeria and Sudan via water and sanitation, transportation, energy and mineral-related projects (Orr and Kennedy, 2008).

The improvement in infrastructure has *per se* a positive impact on SSA growth and trade capacity. 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.

These bundling arrangements 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.

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 is 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. In addition, only about 7% of Chinese infrastructure finance is directly linked with natural resource extraction, as it usually goes to broader development projects (Foster *et al.*, 2008, p. x).

Indeed, 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 assistance⁷.

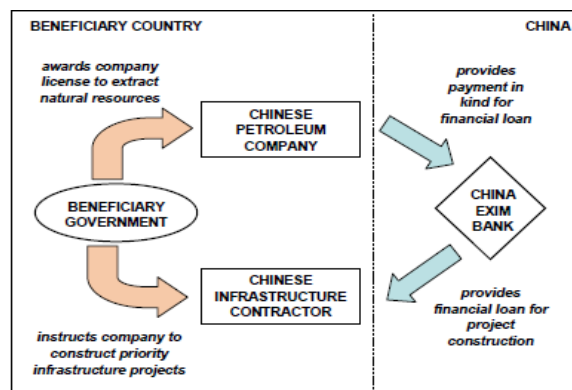
These contracts focus on extractive sectors and can be coined as ‘resource-for-infrastructure’ investment contracts – typically oil, but also copper and other metals (Alden and Alves, 2009): as underscored by Zongwe (2010), natural resources are exchanged for national infrastructures through two related 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 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).

⁷ 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).

Figure 23: Structure of the ‘Angola Model’ arrangements



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

The links of Chinese aid with trade and investment: their ambiguous impacts

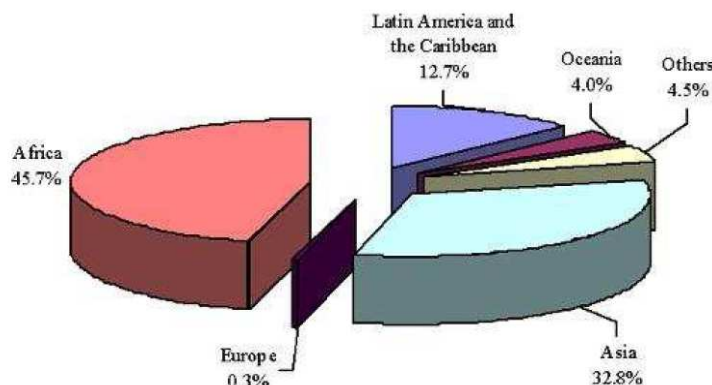
Chinese aid flows to Africa are increasingly important, and as such, it may be assumed that they can be beneficial for the continent's development. Their impact may be ambiguous, however. Potential lock-in effects are inherent to the bundle structure of the 'Angola model', as it links aid, trade and investment and gives Chinese aid a specific organisation – although China's aid may also be channelled outside the contractual modalities of the 'Angola Model'.

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 20percent 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.

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 38.8 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

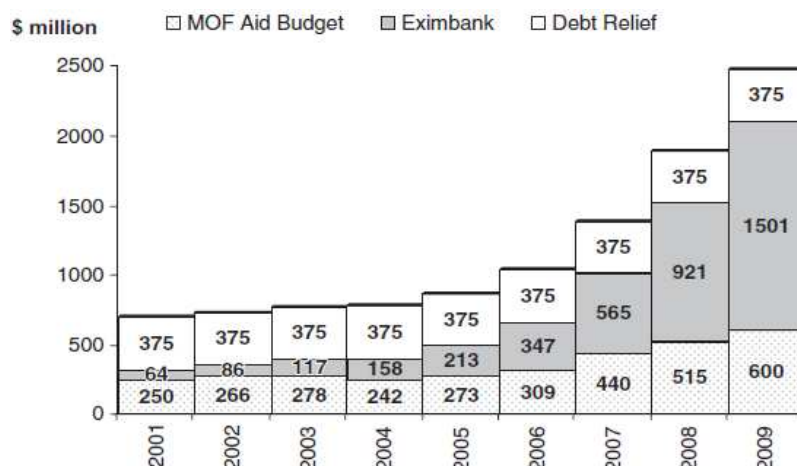


Source: China's Information Office, White Paper on foreign aid (2011).

It is difficult to disentangle Chinese aid in the sense of official development assistance (ODA) from other flows, notably commercial flows, and Chinese statistics do not follow the OECD Development Assistance Committee (DAC) definition of ODA. According to Brautigam (2009), 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.

Although figures cannot be strictly compared (they also refer to SSA and not Africa), France's ODA to SSA amounted to 3.2 billion US\$ in 2007-08 (average), United Kingdom's ODA 2.6 billion US\$ and United States' ODA 5.7 billion US\$ for (OECD-DAC, 2010, pp. 111, 129, 130).

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 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.

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