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► **To cite this version:**

Alice Nicole Sindzingre. The Conditions for Long-Term Growth in Sub-Saharan Africa: China as a Model, a Constraint and an Opportunity. 2011, pp.48. halshs-03604139

HAL Id: halshs-03604139

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*The Conditions for Long-Term Growth in Sub-Saharan Africa:
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ISSN 2116-5513

THE CONDITIONS FOR LONG-TERM GROWTH IN SUB-SAHARAN AFRICA: CHINA AS A MODEL, A CONSTRAINT AND AN OPPORTUNITY

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Abstract

The understanding of the factors that underlie the disappointing situation of Sub-Saharan African economies over the past decades is a debated issue. The paper highlights the problems that are associated with the export structures that characterise most Sub-Saharan African economies, in particular the dependence on primary products. It assesses the constraints that are created by this export structure regarding the possibility of structural transformation, notably the risk of 'traps'. It argues that the impact of China has become a crucial element of the conditions for growth in Sub-Saharan Africa. This impact functions according to three dimensions: i) as a conceptual framework (the 'developmental states'); ii) as a constraint (e.g., risk of locking economies in the exporting of commodities; risks associated with contracts that link trade and investment; risks for industrial sectors); and iii) as an opportunity for growth, via increased demand and direct investment. The paper shows the intrinsic tensions between these three dimensions.

Résumé

La compréhension des facteurs sous-jacents aux performances économiques décevantes de l'Afrique Sub-Saharienne durant les dernières décennies demeure l'objet de débats. L'article analyse les problèmes découlant des structures d'exportation caractérisant la plupart des économies Sub-Sahariennes, en particulier la dépendance vis-à-vis des produits primaires. Il évalue les contraintes induites par cette structure d'exportation sur les possibilités de transformation structurelle, notamment les risques de phénomènes de « trappe ». Il montre que l'impact de la Chine est devenu un élément essentiel des conditions de la croissance en Afrique Sub-Saharienne. Cet impact fonctionne selon trois dimensions : i) comme cadre conceptuel (les « Etats développementaux ») ; ii) comme contrainte (risque d'enfermement dans l'exportation de matières premières ; risques associés aux contrats liant commerce et investissement ; risques pour les secteurs industriels) ; et iii) comme opportunité de croissance, via une demande et un investissement accrus. L'article conclut sur les tensions intrinsèques entre ces trois dimensions.

Keywords | Mots clés

*Sub-Saharan Africa; China; commodities; long-term growth; trade; foreign investment
Afrique Sub-Saharienne ; Chine ; matières premières ; croissance à long-terme ;
investissement étranger*

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1. INTRODUCTION¹

The understanding of the factors that underlie the disappointing situation of Sub-Saharan African economies over the past decades is a much debated issue, as is the exact nature of the factors that would foster growth in the continent. Most studies underscore the composition of trade and its excessive reliance on the exporting of commodities as core constraints. The change in trade composition, industrialisation, the improvement of infrastructure and structural transformation are therefore viewed as the key processes that would trigger virtuous growth paths in Sub-Saharan Africa.

The paper thus highlights the problems that are associated with the current export structures that characterise most Sub-Saharan African economies, and in particular the dependence on primary products, oil and non oil. It then assesses the constraints that are created by this export structure regarding the possibility of structural transformation, notably the risk of formation of ‘traps.’ It examines the determinants of this transformation, which are not only economic, but also refer to the nature of local institutions and political economy.

The paper finally argues that the impact of East Asian countries, especially China, has become a crucial element in the reflection on the conditions for growth and structural transformation in Sub-Saharan African economies. It reveals that this impact functions according to three dimensions: i) as a conceptual framework (the ‘developmental states’); ii) as a constraint (e.g., risk of locking Sub-Saharan African economies in commodity-based export structures, risks associated with original contracts that link trade and investment – the so-called ‘Angola model’; risks for African labour-intensive industrial sectors); and iii) as a genuine opportunity for growth, via increased demand and direct investment. The paper shows the intrinsic tensions between these three dimensions.

The paper is thus structured as follows. It firstly underscores the

¹ A first version of this paper has been presented at Professor Daniel Bach’s Master 2 course: “Emerging global powers in international relations”, Bordeaux, Institut d’Etudes Politiques (Sciences Po), 6 April 2011. The author is grateful to Daniel Bach for his very relevant comments.

commodity boom of the 2000s, and shows that most Sub-Saharan African economies are characterised by specific market and export structures that appear to be stable and resilient over the long-term and are based on the export of raw commodities, in particular oil. Secondly, it reveals that such export structures generate important constraints regarding prospects for structural change and may create the conditions for multiple equilibria and traps. Thirdly, it shows that the constraints and possible negative outcomes of these export structures are compounded by specific local institutions, according feedback and cumulative processes where both structures and institutions may reinforce themselves, and that the transformation of these institutions is a prerequisite for any structural change in Sub-Saharan African countries. It finally develops the three levels of the impact of East Asia, in particular China, on Sub-Saharan Africa, i.e. as a conceptual framework, as a constraint and as an opportunity.

2. SUB-SAHARAN AFRICAN COUNTRIES AS COMMODITY-DEPENDENT COUNTRIES

2.1. New contexts and questions: 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)².

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’.

² Source: <http://www.nber.org/cycles.html>.

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).

The increasing importance of China's demand

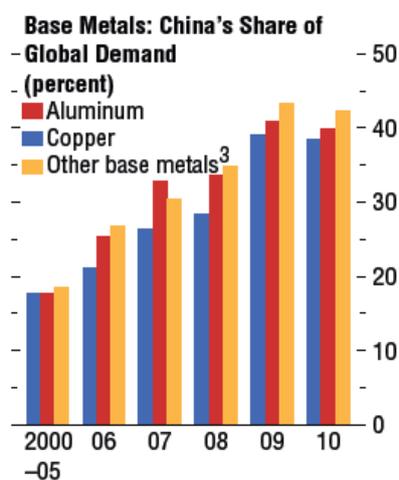
Many factors have underlain the 2003-2008 price commodity boom, with some being specific to particular commodities. Factors of commodity prices movements traditionally include the fluctuations of supply and demand, those of interest rates and exchange rates as well as the levels of inventories. Among 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 1: 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 being for example a central importer in global grain and oilseeds markets (IMF, 2011).

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

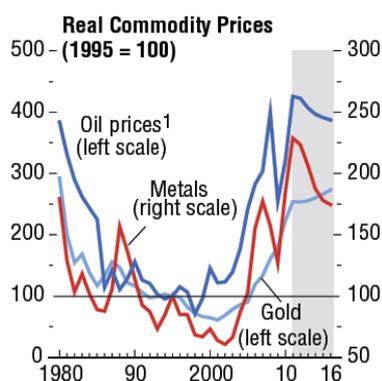
The 2008-2009 financial crisis has been associated with very sharp price drops and fluctuations. According to the IMF (2009a, chap. 1),

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. In particular, China's demand for oil remains high (IMF, 2010a). 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: according to IMF forecasts, 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 2: 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.

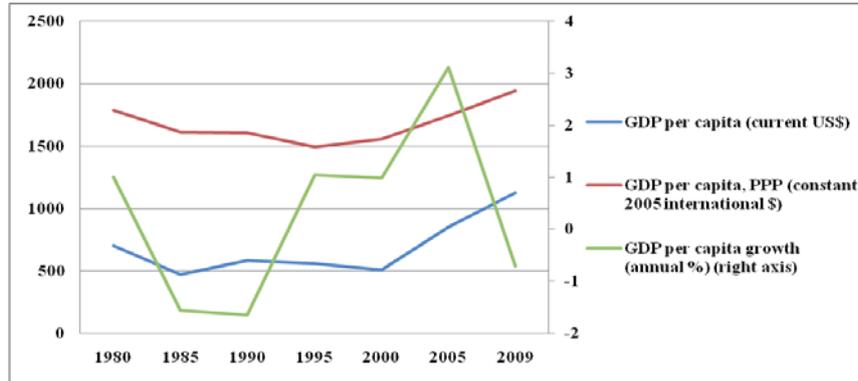
2.2. The problem: Sub-Saharan African countries' disappointing growth performances

Sub-Saharan African (SSA) countries have been characterised by low levels of incomes and growth rates over the past decades, until the mid-2000s, 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 (Arbache and Page, 2007). The figure below shows this association (and contrast) between low incomes – although increasing over the 2000s – and volatile growth rates.

Figure 3: GDP per capita and GDP per capita growth rate in Sub-Saharan Africa



Source: World Bank World Development Indicators database (via ESDS), April 2011.

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 economies³.

2.3. Commodity dependence and a narrow industrial base

A characteristic of Sub-Saharan African countries 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%.

³ <http://data.worldbank.org/about/country-classifications/country-and-lending-groups>

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.

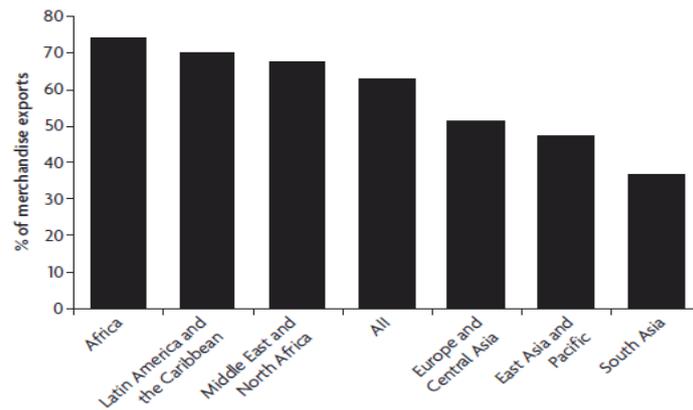
Table 1: Commodity dependence by geographical region, 1995-98 and 2003-06 (number of countries where exports of commodities = more than 50% of total exports)

	Total primary commodities (a)		Three or less commodities		One commodity	
	1995-1998	2003-2006	1995-1998	2003-2006	1995-1998	2003-2006
Developing 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

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 4: Developing countries: commodity exports share, 2003–2007

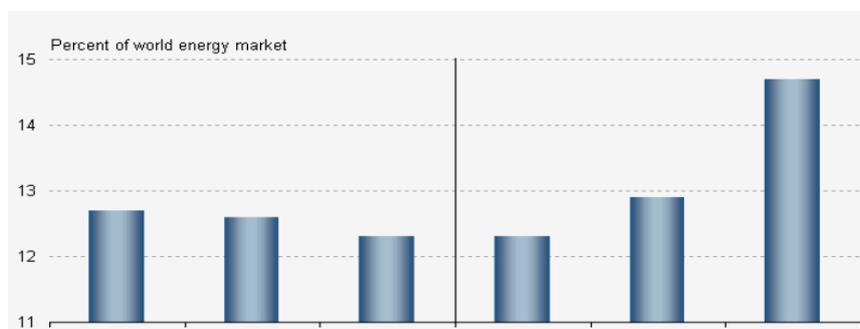


Source: Canuto and Giugale (2010).

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 5: Africa's share of global oil market

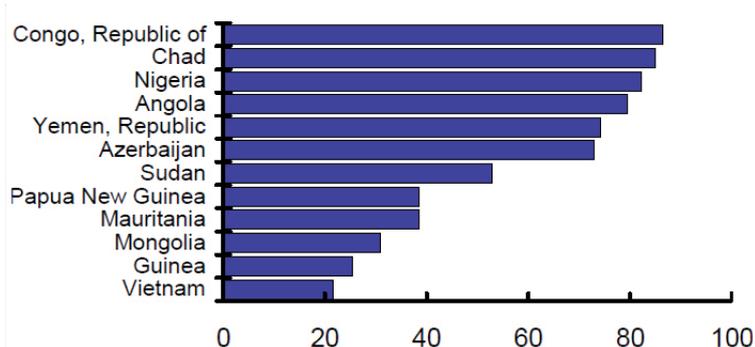


Source: Wetherill (2010). Africa includes North Africa.

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 6: Commodity revenue to total revenue, 2008
(in percent of total revenue)



Source: IMF (2009b).

3. THE RESULTING CONSTRAINTS ON STRUCTURAL CHANGE: THE POSSIBILITY OF TRAPS

Such a high dependence on commodities could have no significant consequences regarding the growth prospects of SSA countries – it could even have positive effects in times of high prices. Commodity-dependence, however, inherently creates severe constraints on growth due to commodity prices' intrinsic volatility, which may even foster the formation of poverty traps and lock-in processes.

3.1. Key constraints on growth: decline and volatility as characteristics 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 Singer⁴ 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)

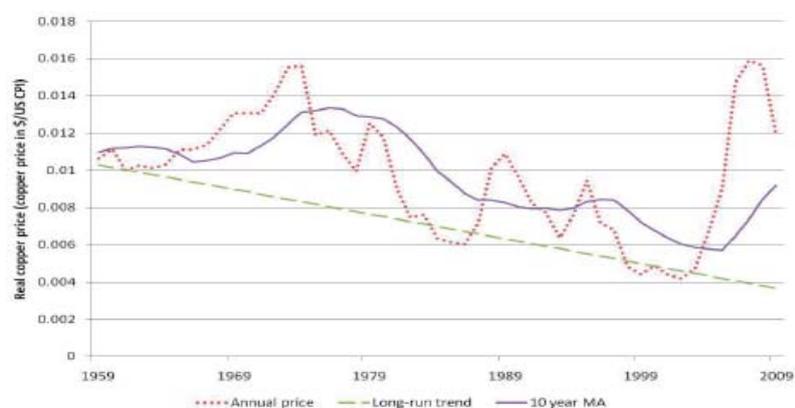
⁴ Among many papers, Prebisch (1950), Singer (1950).

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.

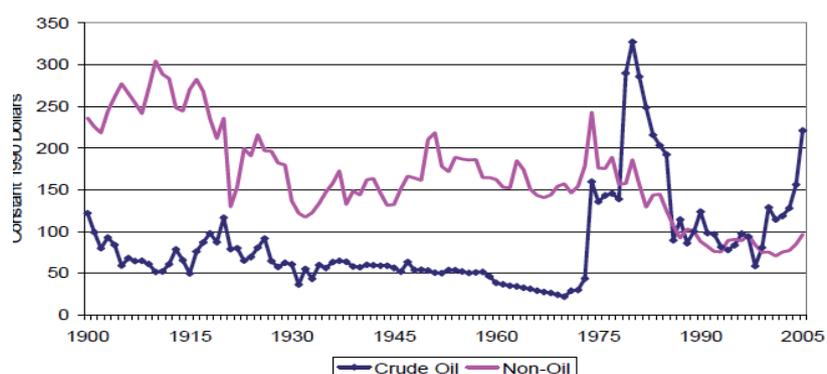
Figure 7: The real price of copper relative to its trend over 50 years



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 8: 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 9: Annual imported crude oil price



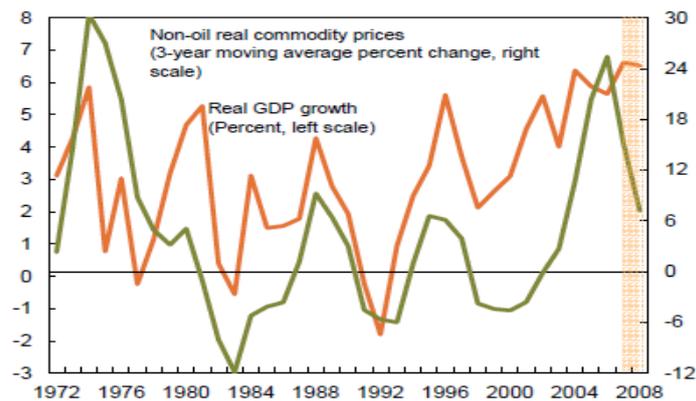
Source: Energy Information Administration (US Department of Energy): <http://www.eia.doe.gov>. Base CPI: May 2011.

3.2. Growth performances 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 10: 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, 2010b) 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).

3.3. The contribution of commodities to 'low growth equilibria'

A central issue is that these characteristics – domestic growth rates that are driven by a single and external factor (international commodity prices), which is inherently volatile and uncertain – create the conditions of 'low equilibria'. Indeed, 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.

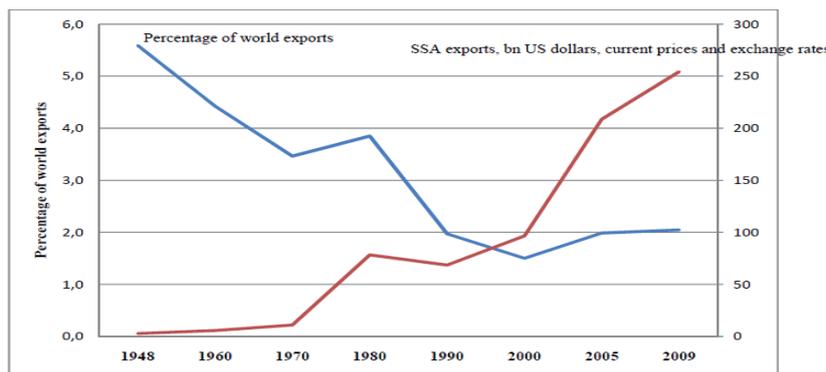
The decline of Sub-Saharan African economies in world export share

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 was 3.9% in 1980, 2.0% in 1990, 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 11: Sub-Saharan Africa's exports: percentage of world exports (left scale) and value (right scale), 1948-2009



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

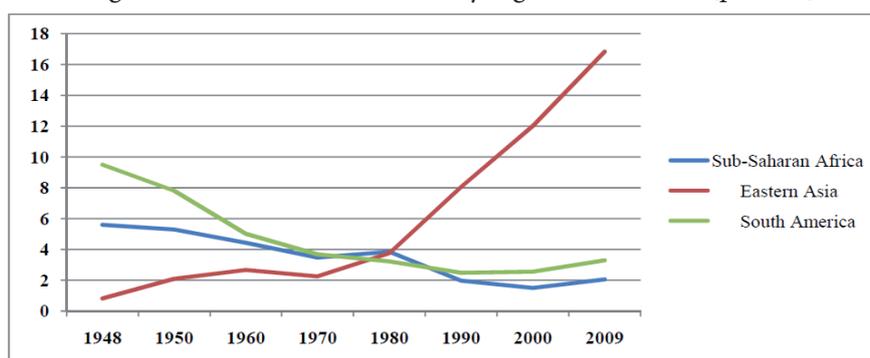
The share of SSA in world export has declined because SSA exports have grown much more slowly than world exports, SSA being therefore marginalised in world trade. For UNCTAD, this marginalisation of SSA in world trade is partially explained by the secular decline in SSA terms of trade.

A key point, which is consistently highlighted by UNCTAD, is that SSA marginalisation in world trade reflects its inability to sustain growth. As shown by the figure above, SSA failures have been developmental failures, and not export failures. SSA declining shares of 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 an increase in their share, i.e., spectacularly, Asia.

Figure 12: Share of world trade by region, 1948-2009 (percent)



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

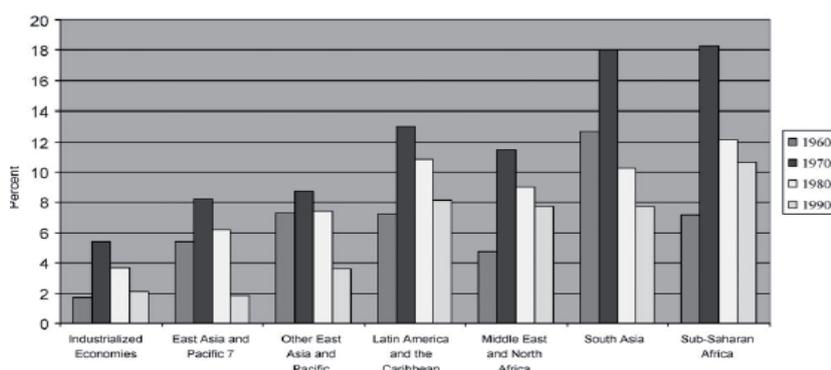
The negative impact of volatility on growth

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 13: Volatility of terms of trade growth (regional medians)



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

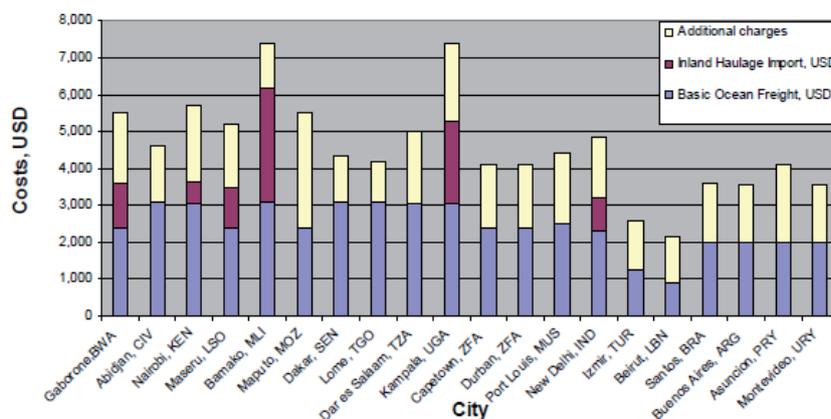
3.4. A key factor of low equilibria and ‘lock-in’ processes: poor infrastructure

A crucial aspect of SSA countries’ market structure is that their specific export profile, where unprocessed commodities dominate exports, combines with a very poor level of the infrastructure stock. This generates important constraints and transaction costs on the circulation of goods and people. Infrastructure is a central problem for the competitiveness of SSA, in particular power, rural electrification and transport.

The World Bank and many academic studies have demonstrated that delays due to poor infrastructure have a very detrimental effect on trade and that poor trade infrastructure is a key reason for SSA low levels of exports: there is indeed a correlation between infrastructure and export diversification. For the World Bank, the current levels and composition of exports in SSA are partly due to poor trade infrastructure. For Hummels (2001; 2007), trade delays reduce exports; similarly, for Bouët *et al.* (2007), infrastructure is a central factor of marginalisation of SSA in world trade.

The problem of poor infrastructure in SSA is demonstrated by the high transport costs that characterise SSA countries, which are much higher in SSA than any other region of the world. The delays in inland transport are sometimes viewed as the most crucial factor restricting SSA trade.

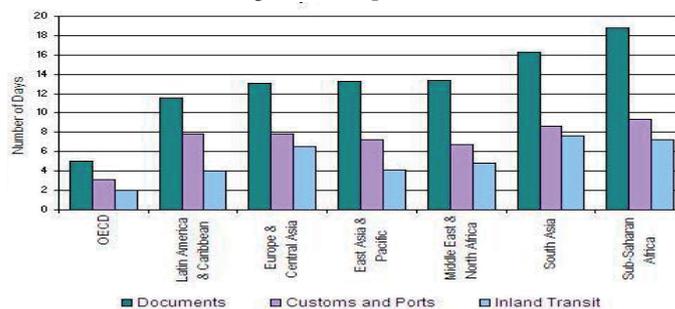
Figure 14: Transport cost from selected cities to Rotterdam



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

Moreover, poor infrastructure combines with bureaucratic inefficiency, causing important delays for exporters. This is shown by Freund and Rocha (2009), who use data on the average time it takes for an exporter to complete a series of procedures when moving their goods from the principal city to the port of exit, classified into three categories: documentation, inland transportation, and customs and ports.

Figure 15: Exports times



Source: Freund and Rocha (2009).

It should be added that the poor impact of infrastructure is to be associated to 'informal' causes of delays and the many 'checkpoints' induced by governments officials (customs, police, and the like) on the entirety of the transportation networks in SSA, roads, ports and so on.

4. THE CUMULATIVE PROCESSES INDUCED BY POLITICAL ECONOMY AND INSTITUTIONS

Exports 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 or Scandinavian countries, and most 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 cumulative and feedback 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.

4.1. Poor institutions and their combination with export structures

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. Such regimes are likely to be associated with slow growth due to their poor investment appraisal and poor quality of governance (Deaton, 1999). This political economy may precisely be reinforced by commodity-based export structures, which allow the distribution of rents and strengthen patronage systems, while the latter are in turn consolidated by the existence of natural resources that can be distributed (Sindzingre and Milelli, 2010).

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. Political instability, commitment 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. In a context where such combinations prevail, there is little incentive for development. Predatory regimes have no incentives to increase wealth and create efficient economic institutions that would aim, for example, at diversifying and industrialising.

SSA governments' policies may be detrimental because irrespective of the type of political regime, SSA governments are shaped by political economies that are characterised by the difficulty to use transfers in separating efficiency and distribution and the inability to credibly commit. This inability refers to the concept of credibility developed by the 2004 Nobel Prizes Finn Kydland and Edward Prescott, who precisely defined credibility as the incapacity for a government to credibly commit. Policies and economic outcomes are endogenous to each other. As shown by Acemoglu (2003), all governments are affected by the problem of commitment and credibility, and this is even more the case for SSA governments that are simultaneously confronted with weak institutions and low levels of incomes. For Acemoglu, the inherent problem of governments' credibility is that there is no meta-level above government that has the coercive capacity to enforce government policies and promises.

The possibility to harness the outcomes of policies is moreover constrained by political economy: the political dimensions of trade reforms make difficult to implement these reforms and to lay down the conditions of a transformation of the commodity-based composition of exports, as not only reforms create 'winners' and 'losers' but in commodity-based political economies these reforms have important distributional consequences. As shown by Rodrik (1998), SSA governments cannot compensate the losers from trade liberalisation because their fiscal room of manoeuvre is very narrow, which is compounded by the problems of incomplete information that typically prevail in poor countries and are a source of resistance to reform.

4.2. The risk of growth traps and divergence with other regions

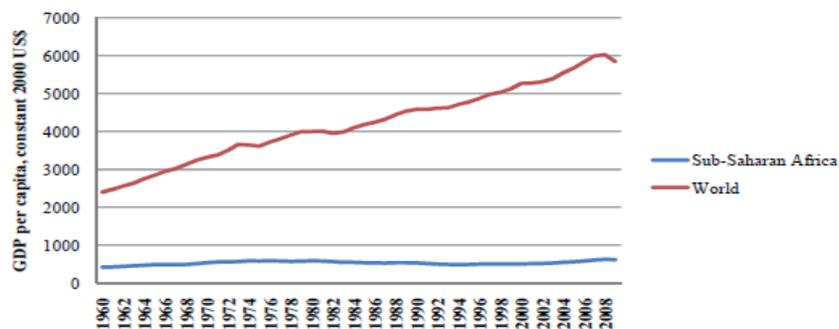
Another central issue refers not only to disappointing growth performances, but to the possibility of divergence of SSA countries vis-à-vis other regions. Growth rates in SSA may be positive, and for Easterly (2005), SSA countries are not caught in trapping processes. The combination of commodity dependence, poor infrastructure and weak institutions, however, may generate cumulative process and reinforce the ingredients of low equilibria and growth traps (Sindzingre, 2009).

As explained by Matsuyama (2009), a poverty trap is a self-perpetuating condition whereby an economy, caught in a vicious circle, suffers from persistent underdevelopment. Matsuyama (1995) defines the concept of 'underdevelopment traps' as a circular causation where countries suffer both a lack of demand and a lack of support industries, which are mutually interrelated, and where the extent of the market is limited by the division of labor. But Matsuyama also reveals the ways of getting out of these 'low equilibria': the circularity does not imply a vicious circle. If the economy acquires more than a critical mass of support industries, the very fact that the relation is circular generates a virtuous circle. Through this cumulative process, productivity grows. In the presence of complementarity, "nothing succeeds like success, and poverty becomes its own cause" (Matsuyama, 1995). For example, if the demand, trade relationships and investment from emerging countries create structural change in SSA, such cumulative virtuous circles could possibly be triggered.

These theoretical perspectives are related to those regarding the concepts of convergence and divergence. The existence of poverty or underdevelopment traps, and their determinants – economic, political, institutional –, point at a recurrent question in development economics and in the literature on growth and convergence, i.e., as to whether world countries would form ‘convergence clubs’. In contrast with the neoclassical assumptions of convergence of all economies, different patterns of growth and convergence clubs have been highlighted in the literature on global inequality (Pritchett, 1997). Some countries are ‘catching up’, while others continue to experience slower growth than the richest countries, or even ‘growth collapses’.

Here the important point is that during the second half of the 20th century SSA countries’ growth performances appear to diverge vis-à-vis other parts of the world.

Figure 16: GDP per capita, Sub-Saharan Africa and the world, 1960–2008



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

5. CHINA AS A CONCEPTUAL FRAMEWORK, A CONSTRAINT AND AN OPPORTUNITY

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. Debates are ongoing. As underscored by the IMF (2006), many countries are exposed to fluctuations in nonfuel 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 are likely to remain high, particularly of metals; but it may be argued 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 the Asian growth and demand for SSA products, in particular China, and the new orientations of SSA exports be an opportunity for structural transformation? Indeed, Klinger (2009), for a group of developing countries in Africa, Latin America and Central Asia, has shown that exports within the 'South' are more sophisticated and better connected between themselves (within the 'product space') than exports to the North. In contrast, for many developing countries, exports to the North are not growth-enhancing, nor do they offer learning opportunities to foster structural transformation: for these countries South-South trade flows may therefore create the conditions for structural transformation.

5.1. China as a conceptual framework: the lessons of the 'developmental state' for Sub-Saharan African economies

For low-income countries, and in particular SSA countries, China, its growth strategies and performance may function as a conceptual framework, where key features could constitute lessons for other contexts and countries. China may be viewed as an example of the category of the Asian 'developmental states' even if the concept has

been initially built in the 1980s for Japan, South Korea and Taiwan. From the 1960s onwards, these states witnessed spectacular growth via export-oriented strategies, and may constitute models for other developing countries' development policies.

As highlighted by Rodrik (2009), Japan, South Korea, and China based their growth on developing industrial capabilities, rather than on specialising according to their comparative advantages: after WWII, Japan rebuilt its industry via trade and industrial policies that protected domestic producers; South Korea moved from simple manufactures in the 1960s to more complex products in the 1970s; and China's export performances relied on strategic industrial policies that compelled foreign firms to transfer technology. For Rodrik, they demonstrate that countries grow when they are able to undertake rapid structural transformation from low-productivity ('traditional') to high-productivity ('modern') activities, in particular tradable industrial products and services: in developmental states, the ingredients of growth differed from those that prevailed in the 19th century in non-Western countries, i.e. specialisation in primary products.

These common features are at the foundation of the concept of 'developmental states', elaborated for explaining the takeoff of East Asia latecomers. They all implemented active state intervention and public policies, not only in order to enhance the functioning of markets, but also to create suitable political conditions – coalitions – and institutions. The concept of the developmental state has explained the exceptional growth performances of East Asian countries as resulting simultaneously from a specific combination of economic, political and institutional structures (among a vast literature, Johnson, 1982; White, 1988; Amsden, 1989; Wade, 1990; Sindingre, 2004).

One of the key lessons of developmental states is that growth may be a result of state intervention and 'heterodox policies'. The latter varied from country to country, but common features were targeted industrial policies, a focus on education, technically competent bureaucracy, the capacity to build coalitions and cooperation among the various agents of an economy, but always conditional to growth. They all grounded their industrialisation on learning processes and the borrowing of

technology rather than on creating new products. Developmental states behaved as 'entrepreneurial' states, more engaged in 'creating winners' than 'picking' them (Wade, 2000). Industrial policies have involved targeted taxation, protection, limitation of foreigner shareholding, incentives for the banking sector and firm financing, and training in technology.

Developmental states relied on active public policies, which were targeted on growth and oriented towards export performance: developmental states were grounded on a model of growth based on export-led growth. Developmental states have even used political rent-seeking - for the Korean *chaebols* or the Japanese *zaibatsu* and *keiretsu* - but public policies were tuned to sanctions provided by international markets, i.e. to export performance: these policies were market-preserving regarding external markets, but market-distorting at the domestic level (for example regarding tariffs and subsidies, e.g. subsidised interest rates).

Another key point is that public intervention was based on policies and incentives, not on the 'owning' of the economy or the recycling of the country's wealth, e.g. via high levels of taxation, spending and redistribution, or via nationalisation (Sindzingre, 2007). In developmental states, state intervention in the economy took the form of policies that are credible and oriented towards growth, not of the ownership and direct control by the state of large pieces of the economy. Developmental states therefore did not rely on high levels of tax collection and massive redistribution and transfers. As shown by Knowles and Garces-Ozanne (2003), government spending in Asian states is an irrelevant proxy for state intervention: public policies provided incentives, and governments issued instructions regarding what to produce and used various economic and political rewards; they influenced resource allocation in modifying relative prices, using subsidies, and so on. Developmental states were not welfare states, European style. Many functions that are achieved by the state in welfare states, e.g. social protection, were achieved by the private sector and households. The state was here a regulator and guarantor. Education and training, particularly within the civil service, were central strategies, in addition to the minimal use of foreign expatriates, and an emphasis on infrastructures.

China's successful heterodox trade and industrial policies share many features with those of Asian developmental states. As revealed by Aglietta (2009), Chinese reforms have been based on three key principles: the economy must produce wealth and in an efficient way ("catching up with the West"); the state must secure property rights, produce public goods and be the engine of an 'endogenous' growth; growth exhibits an intrinsic political dimension, and the Party must keep control of the political system. This model of growth has relied on a joint transformation of economic structures and state institutions, which has been based on gradualism and a long-term view of reforms.

Likewise, China witnessed heavy government intervention, but the government had a commitment in preserving market incentives (Weingast *et al.*, 1995). As shown by Qian (2002), China has grown rapidly despite the absence of many conventional institutions such as rule of law and secure private property rights. China elaborated an original pattern of firms, the Township-Village Enterprises (TVEs), which were associated to non-conventional ownership forms, where the local community (i.e., township or village) government controls firms, in contrast with private or national government control. China's model shows that institutional development needs to fit into the initial conditions and to be made interest compatible for the ruling groups.

Although SSA growth trajectories obviously differ across countries, SSA post-independence public policies strongly contrast with those that characterise developmental states, especially in the case of SSA commodity-dependent states. This contrast has been compounded by the fiscal crisis that affected commodity-dependent SSA countries in the early-1980s due to the fall in commodity prices, and the IMF and World Bank stabilisation and adjustment programmes in the 1980-90s, which were the conditionalities to the latter's financing.

5.2. China as a constraint

China, however, may also constitute a significant constraint for developing countries, in particular low-income commodity-dependent SSA countries.

The risk of locking countries in the exporting of commodities

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.

As highlighted by the IMF (2010b), there have been dramatic shifts in trading patterns during the 2000s toward 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.

Figure 17: The increasing role of developing Asia, 2005–10



Source: International Monetary Fund (2010b).

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

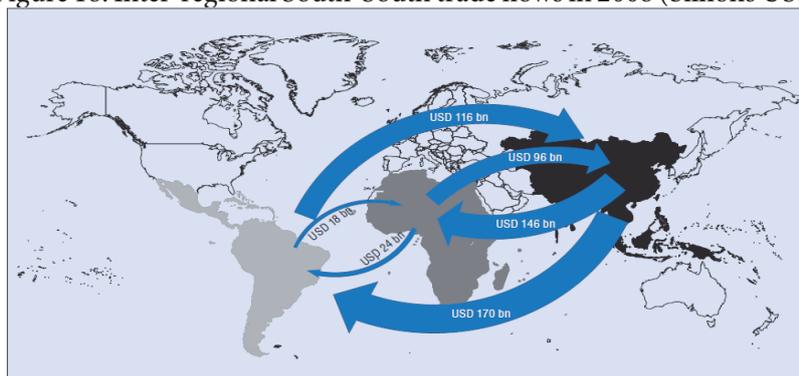
Table 2: Major African trade partners in 2008 (US\$ billions)

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 18. Inter-regional South-South trade flows in 2008 (billions US\$)

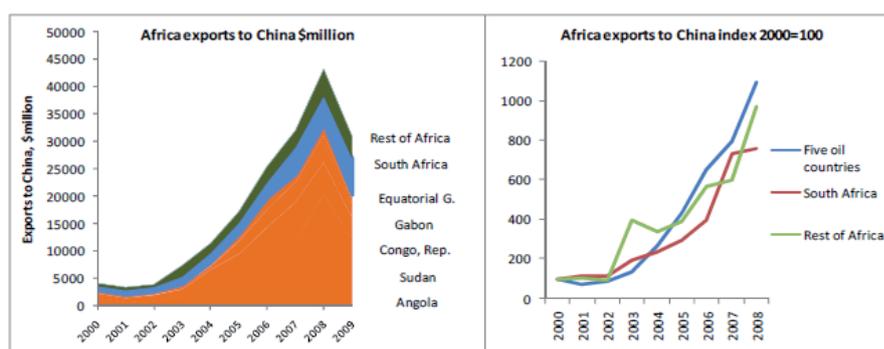


Source: OECD (2010) based on UNCTAD Handbook of Statistics 2010.

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

The 6 largest African 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 19: SSA exports to China

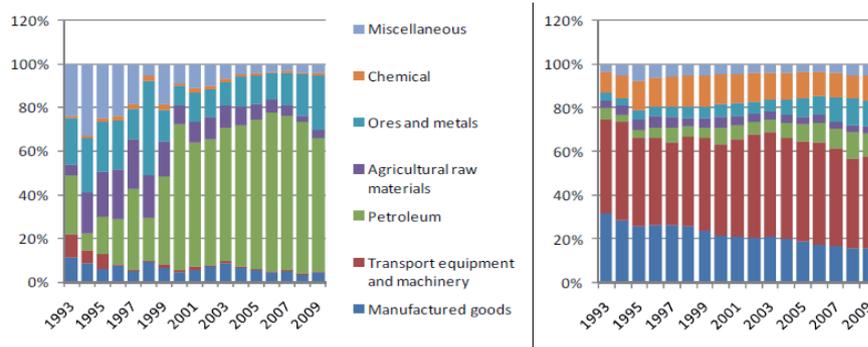


Source: Ye (2010).

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 strengthens 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 part of the world, i.e. manufactured goods, transport equipment and machinery, and chemicals.

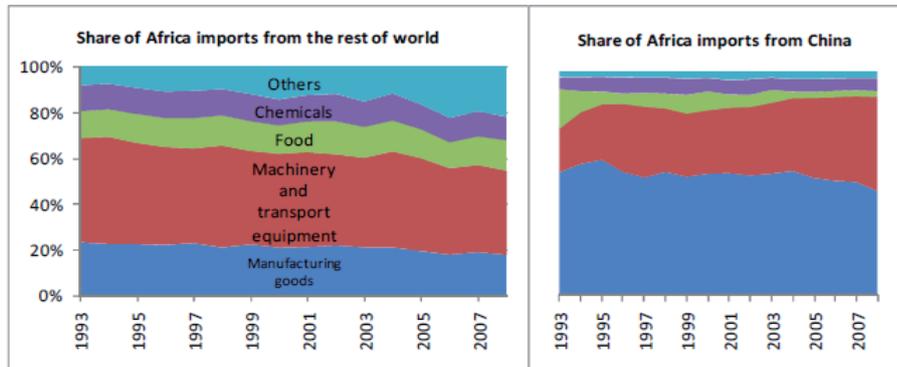
Figure 20: China's imports from Africa and from the rest of the world



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 21: Africa imports from China and from the rest of the world



Source: Ye (2010).

Another risk of lock-in: China's nexus trade-investment-aid

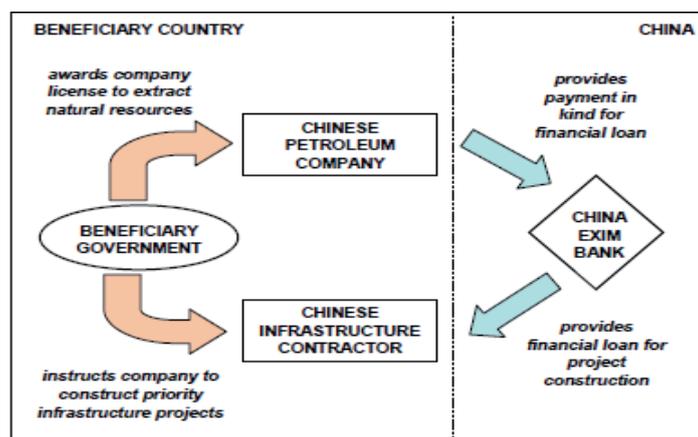
The relationships between China and SSA follow three main channels: trade, foreign direct investment (FDI) and aid. These relationships may

be interlinked via original contractual links that associate FDI, trade and aid, and constitute an 'exchange' of products for investment, often in infrastructure - under which SSA governments barter exports of commodities for investment in infrastructure by Chinese firms.

As explained by Orr and Kennedy (2008), in order to facilitate its investments, China created the Export-Import (Exim) Bank and Sinosure, which provides export credit insurance. China bundles its official development assistance with commercial trade finance in a single transaction: the money from the export-import bank does not pass through the host country government and goes directly to the Chinese contractor. For Orr and Kennedy, there is some similarity between the Chinese focus on development assistance to resource-rich countries and other types of barter arrangements (e.g., the United States aid to and oil imports from SSA countries). 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 a wide range of projects (water and sanitation, transportation, energy and mineral-related projects).

This is the so-called 'Angola model', as Angola has been considered as the first and paradigmatic example of such contractual arrangements - in 2004 Angola and China 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). China's Exim Bank's first such arrangement was concluded with Angola 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).

Figure 22: Structure of the ‘Angola Model’ arrangements



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

China’s investments focus on SSA extractive sectors, and these contracts 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.

As analysed by Kaplinsky and Morris (2009), these arrangements between China and SSA countries blur the usual distinction between aid, trade and FDI. They constitute ‘packages’ in which China’s Exim Bank provides a line of credit, often at subsidised interest rates. Large Chinese firms then tender for infrastructural and resource projects (e.g., mining, oil, roads, railways). These funds are tied to the use of Chinese inputs. The bulk of these ‘aid’ funds are transferred directly from the Exim Bank to the firms, which are often state-owned enterprises. Kaplinsky and Morris underscore that these funds are not grants, but are repaid by the recipient country via commodity exports to China. This original contractual arrangement therefore implies a potential

dimension of 'lock-in' effect as it closely links trade, investment and aid: it entails risks of maintaining SSA export structure in its commodity-based pattern, as well as reducing the room of maneuver on the side of the SSA contractor.

China as a threat for Sub-Saharan African industrial sectors

China trade and investment specific modalities 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 revealed 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).

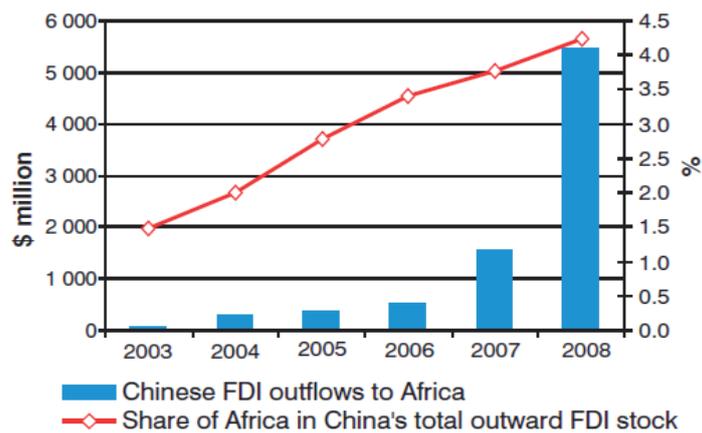
5.3. Conclusion: China is also a source of crucial opportunities

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. This constitutes a genuine opportunity for SSA countries.

In addition, China's relationships with SSA are not only constituted by trade links, but by foreign direct investment, which is increasing and is likely to have a positive impact on SSA economies. These investments focus on the primary sector, but also target SSA industrial and manufacturing sectors. Chinese private investors tend to invest in SSA manufacturing and services (Kaplinsky and Morris, 2009). As underscored by 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. Chinese FDIs go to the sectors of natural resource extraction, but also to the telecommunications, construction and banking sectors.

China is also investing in Special Economic Zones (SEZs), and seven are expected in Africa: two in Nigeria and one each in Egypt, Ethiopia, Mauritius, Zambia and, possibly, Algeria (Brautigam, 2010).

Figure 23: FDI from China to Africa, 2003–2008



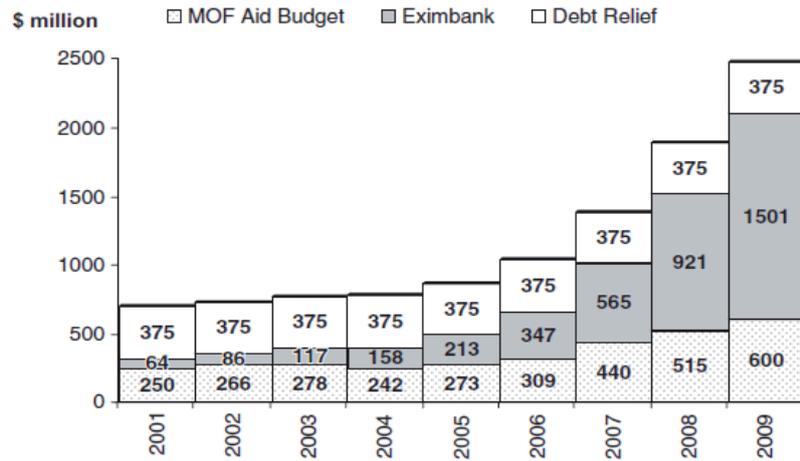
Source: UNCTAD (2010).

The so-called ‘Angola model’ of foreign direct investment is mostly associated with the creation of infrastructure. As highlighted by a vast literature mentioned above, poor infrastructure is a key impediment to growth in SSA, and the improvement in infrastructure is very likely to have a positive impact on SSA trade and growth.

The ‘Angola model’ also refers to Chinese aid, 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; however, it represents much less than China Exim Bank export credits (Brautigam, 2009). Aid consists of grants and zero-interest loans from the Ministry of Commerce and concessional loans from China Exim Bank, which implicitly acknowledges the close links between trade, investment, and development. China differs from traditional donors by its close links with the state banks and state enterprises, which are often involved in the implementation of China’s policy in SSA (Christensen, 2010).

Chinese aid flows to Africa are increasingly important, which may be beneficial for the continent’s development.

Figure 24: 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 the conditionalities of traditional donors - the international financial institutions (the IMF and the World Bank), the EU or bilateral donors. The associated risks have been underscored in several studies in political science, such as strengthening questionable political regimes. They provide, however, SSA governments with a 'fiscal space' and room of manoeuvre in the choice of policies they consider as appropriate for themselves.

These three dimensions - China as a model, a constraint and an opportunity -, function simultaneously. There are obvious and constant tensions between them, however. This explains the complexity and ambivalence of the impact of China on Sub-Saharan African economies.

BIBLIOGRAPHY

Aglietta M. (2009), *Chinese Reform Confronted with the Global Crisis*, Paris, mimeo.

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

Arbache J. S., Page J. (2007), *Patterns of Long Term Growth in Sub-Saharan Africa*, Washington D. C., The World Bank, policy research working paper 4398.

Acemoglu D. (2003), "Why Not A Political Coase Theorem? Social Conflict, Commitment and Politics", *Journal of Comparative Economics*, 31, December, p. 620-652.

Baffes J. (2007), *Oil Spills on other Commodities*, Washington, D. C., The World Bank, policy research working paper 4333.

Bouët A., Roy D., Mishra S. (2007), *Why is Africa Marginalized in World Trade?*, Telos website, 22 October. http://www.telos-eu.com/fr/article/why_is_africa_maginalized_in_world_trade

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

Bräutigam D. (2010), "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's-eastern-promise

Canuto O., Giugale M. (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 P., McDermott C. J. (2002), "The Long-Run Behaviour of Commodity Prices: Small Trends and Big Variability", *IMF Staff Papers*, 49(2), p. 175-199.

Christensen B. V. (2010), *China in Africa: A Macroeconomic Perspective*, Washington D. C., Center for Global Development, working paper 230.

Corden W. M., Neary J. P. (1982), "Booming Sector and De-Industrialisation in a Small Open Economy", *Economic Journal*, 92(368), p. 825–848.

Corkin L. (2011), "China and Angola: Strategic Partnership or Marriage of Convenience?", Bergen, Chr. Michelsen Institute, *Angola Brief*, 1(1), January.

Cuddington J. T., Jerrett D. (2008), "Super Cycles in Real Metals Prices?", *IMF Staff Papers*, 55(4), p. 541–565.

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

Deaton A. (1999), "Commodity Prices and Growth in Africa", *Journal of Economic Perspectives*, 13(3), Summer, p. 23-40.

Easterly W. (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.

Fan S., Nestorova B., Olofinbiyi T. (2010), *China's Agricultural and Rural Development: Implications for Africa*, Bamako, China-DAC Study Group on Agriculture, Food Security and Rural Development, April 27-28.

Foster V., Butterfield W., Chen C., Pushak N. (2008), *Building Bridges: China's Growing Role as Infrastructure Financier for SSA*, Washington D. C., The World Bank.

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

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

Frankel J. 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 C., Rocha N. (2009), *What is Holding Back African Exports*, VoxEU, 11 December: <http://www.voxeu.org/index.php?q=node/4358>

Gebre-Egziabher T. (2009), "The Developmental Impact of Asian Drivers on Ethiopia with Emphasis on Small-scale Footwear Producers", *World Economy*, 32(11), p. 1613-1637.

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

Hummels D. (2001), *Time as a Trade Barrier*, Purdue University, GTAP Working Papers 1152, Centre for Global Trade Analysis, Department of Agricultural Economics.

Hummels D. (2007), "Transportation Costs and International Trade over Time", *Journal of Economic Perspectives*, 21(3), p. 131-154.

Humphrey J. (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 (2010a), *World Economic Outlook*, Washington D. C., International Monetary Fund, October.

International Monetary Fund (2010b), *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.

Johnson C. (1982), *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975*, Stanford, Stanford University Press.

Kaplinsky R. (2006), "Revisiting the Revisited Terms of Trade: Will China Make a Difference?", *World Development*, 34(6), June, p. 981-995.

Kaplinsky R., McCormick D., Morris M. (2007), *The Impact of China on Sub Saharan Africa*, London, the Open University, DFID, Agenda-setting Paper, and Brighton, Institute of Development Studies.

Kaplinsky R., Morris M. (2008), "Do the Asian Drivers Undermine Export-Oriented Industrialisation in SSA?", *World Development*, 36(2), p. 254-273.

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

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

Knowles S., Garces-Ozanne A. (2003), "Government Intervention and Economic Performance in East Asia", *Economic Development and Cultural Change*, 51(2), January, p. 451-477.

Krishna P., Levchenko A. A. (2009), *Comparative Advantage, Complexity and Volatility*, Cambridge MA, NBER working paper 14965.

Loayza N. V., Rancière R., Servén L., Ventura J. (2007), "Macroeconomic Volatility and Welfare in Developing Countries: An Introduction", *World Bank Economic Review*, 2(3), p. 343-357.

Matsuyama K. (1995), "Complementarities and Cumulative Processes in Models of Monopolistic Competition", *Journal of Economic Literature*, 33(2), June, p. 701-729.

Matsuyama K. (2009), *Poverty Traps*, Basingstoke, New Palgrave Dictionary of Economics.

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

Mehlum H., Moene K. O., Torvik R. (2006), "Cursed by Resources or Institutions?", *World Economy*, 29(8), p. 1117-1131.

Nissanke M. (2010), "Issues and Challenges for Commodity Markets in the Global Economy: An Overview", Nissanke M, Mavrotas G. (eds), *Commodities, Governance and Economic Development under Globalization, in Memory of Alfred Maizels*, Basingstoke, Palgrave Macmillan.

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

Olson M. (1993), "Dictatorship, Democracy and Development", *American Political Science Review*, 87(3), September, p. 567-576.

Orr R. J., Kennedy J. R. (2008), Research Note: "Highlights of Recent Trends in Global Infrastructure. New Players and Revised Game Rules", *Transnational Corporations*, UNCTAD, 17(1), April.

Portugal-Perez A., J. S. Wilson (2008), *Trade Costs in Africa: Barriers and Opportunities for Reform*, Washington D. C., The World Bank,

policy research working paper 4619.

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

Pritchett L. H. (1997), "Divergence, Big Time", *Journal of Economic Perspectives*, 11(3), p. 3-17.

Qian Y. (2002), *How Reform Worked in China*, University of Michigan Business School, William Davidson Institute Working Paper 473.

Radetzki M. (2006), "The Anatomy of Three Commodity Booms", *Resources Policy*, 31(1), p. 56-64.

Radetzki M., Eggert R. G., Lagos G., Lima M., Tilton J. E. (2008), "The Boom in Mineral Markets: How Long Might It Last?", *Resources Policy*, 33, p. 125-128.

Rodrik D. (1998), "Why is Trade Reform so Difficult in Africa?", *Journal of African Economies*, 7(supplement 1), June, AERC Sessions, p. 43-69.

Rodrik D. (2009), *Growth after the Crisis*, London, CEPR, discussion paper 7480.

Sindzingre A. N. (2004), *Bringing the Developmental State Back In: Contrasting Development Trajectories in Sub-Saharan Africa and East Asia*, mimeo, Washington D. C., Society for the Advancement of Socio-Economics (SASE) 16th Annual Meeting, Georges Washington University.

Sindzingre A. N. (2007), "Financing the Developmental State: Tax and Revenue Issues", *Development Policy Review*, 25(5), September, p. 615-632 (theme issue 'Developmental States in the New Millennium').

Sindzingre A. 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 A. N. (2010), "Uncertain Prospects of Commodity-Dependent Developing Countries", Nissanke M., Mavrotas G. (eds), *Commodities, Governance and Economic Development under Globalization, in Memory of Alfred Maizels*, Basingstoke, Palgrave Macmillan.

Sindzingre A. N., Milelli C. (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 H. W. (1950), "The Distribution of Gains between Investing and Borrowing Countries", *American Economic Review*, 40(2), May, p. 473-485.

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

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

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

Torvik R. (2009), "Why Do Some Resource-Abundant Countries Succeed While Others Do Not?", *Oxford Review of Economic Policy*, 25, p. 241-256.

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

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

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

Wade R. (2000), *Governing the Market: a Decade Later*, London, London School of Economics, LSE Development Studies Institute working paper n°00-03.

Weingast B. R., Qian Y., Montinola G. (1995), "Federalism, Chinese Style: the Political Basis for Economic Success in China", *World Politics*, 48(1), October, p. 50-81.

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

White G. (ed.) (1988), *Developmental States in East Asia*, London, Macmillan.

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 G. (1990), "The Origins of American Industrial Success, 1879–1940", *American Economic Review*, 80(4), p. 651–668.

Wright G., Czelusta J. (2002), *Resource-Based Economic Growth, Past and Present*, mimeo, Stanford University, June.

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

Zongwe D. P. (2010), *On the Road to Post Conflict Reconstruction by Contract: The Angola Model*, mimeo.

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