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Dependency revisited: Commodities, commodity-related capital flows and growth models in emerging economies

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Dependency revisited: Commodities, commodity-related capital flows and growth models in emerging economies

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Abstract

The growth model perspective has provided avenues for bridging Comparative and International Political Economy, mainly with regard to the global financial crisis and developments within the Eurozone. This article aims to contribute to this endeavor by highlighting the joint effects of capital flows and commodity price swings on growth models in emerging capitalist economies. While the literature on dependent financialization has primarily focused on debt-led growth in the Global South, we spell out the negative implications of commodity-based export-led growth. To this end, we first present a stylized depiction of commodity dependence and provide descriptive statistical evidence of its global prevalence. Subsequently, we trace the co-movement of capital flows to emerging economies and commodity prices. We argue that this 'commodity-finance nexus' reinforces the pro-cyclical nature of commodity-based growth, financial volatility, and the vulnerability to global boom-bust-cycles. Furthermore, we demonstrate that the conventional method for establishing growth models by calculating the relative contributions to growth is ill-suited to capture the commodity-based export-led growth model of highly commodity-dependent economies. Finally, we identify commodity price movements and fiscal policies as major drivers of growth, with an important role for domestic politics as an intervening variable.

Keywords: Commodity prices, capital flows, dependent financialization, growth models, emerging economies, boom-bust-cycles, export-led growth, fiscal policy, dependency

JEL codes: O13, O47, Q33

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1. Introduction

This article is part of a recent literature in Comparative Political Economy (CPE) and Post-Keynesian Economics (PKE) that aims to broaden the geographical scope of the growth model perspective towards emerging economies (Jungmann 2021; Schedelik et al. 2021; Akçay et al. 2022; Blyth et al. 2022; Mertens et al. 2022; Passos and Morlin 2022). It makes two key contributions to this research program. First, we highlight the importance of commodity exports for growth in the majority of developing and emerging economies, proposing a stylized commodity price-driven growth model and providing evidence of its global prevalence. Second, we analyze the joint effects of capital flows and commodity price swings on this growth model in commodity-dependent economies, a mechanism dubbed 'commodity-finance nexus' (following Akyüz 2022). We argue that this mechanism reinforces the pro-cyclical nature of commodity price-driven growth, financial volatility, and the vulnerability to global boom-bust-cycles. At the same time, the combination of the empirical literature on the commodity-finance nexus with the growth model perspective allows for a more fine-grained understanding of the repercussions of global boom-bust cycles on domestic economic processes. Moreover, it highlights how these economic processes link up with the domestic political economy of commodity-dependent countries, for example by explaining the persistence of this dependence in spite of several attempts to promote industrial upgrading and to diminish the role of primary goods in these economies (Sierra 2022).

The analysis of growth models has emerged as a vibrant field of study in CPE (Baccaro and Pontusson 2016; Blyth et al. 2022). By looking at the components and drivers of economic growth, its distributional implications and political underpinnings, this research program has shifted scholarly attention from the institutional structures of capitalist economies and their supply side effects on growth–the focus of the varieties of capitalism (VoC) perspective (Hall and Soskice 2001)–back to macroeconomics and aggregate demand (Schwartz and Tranøy 2019). The analytical shift from supply to demand side factors of the economy coincided with an evolving debate about the adequate macroeconomic theoretical foundations of growth model-inspired analyses (Hope and Soskice 2016; Pontusson and Baccaro 2020; Stockhammer 2022). This discussion has led to substantial engagement of CPE scholars with Post-Keynesian economics (PKE) and its focus on 'demand' or 'growth regimes' (see Hein 2017 and Stockhammer 2022: 164–170 for overviews), a cross-disciplinary exchange similar to that in the literature on 'financialization' (Mader et al. 2021). While PKE provides the macro-

economic fundamentals for this encounter, CPE highlights important institutional and political factors.

An important result of this theoretical encounter is the identification of important international interdependencies between different 'national' growth models. This line of research is also bridging the still relatively separate sub disciplines of CPE and International Political Economy (IPE) (Nölke 2016). So far, this perspective is mainly applied to the study of advanced economies (Hassel and Palier 2021; Hein et al. 2021; Kohler and Stockhammer 2022), in particular to countries of the Eurozone (Johnston and Regan 2016; Baccaro and Pontusson 2021). However, existing growth model analysis still does not consider IPE insights in a comprehensive way. It tends to neglect important system-level variables in the shaping of national growth models, such as the oil price hikes for the unravelling of the Fordist growth model in the 1970s. At the same time, it does not fully address how national growth models shape the international system, for example the global division of labor between financial centers, manufacturing hubs, and raw material exporters (Blyth and Schwartz 2022).[1]

Three national-international linkages are of particular importance for emerging economies (Mertens et al. 2022): the incorporation in foreign direct investment (FDI) and global value chains, subordinated financialization and the commodity-finance nexus. The first two of these linkages are increasingly the focus of studies at the nexus of CPE, IPE and PKE. For example, the emerging literature on FDI-led growth (Kacmarczyk 2020; Bohle and Regan 2021; Woodgate 2021, 2022) highlights the underestimated importance of multinational corporations in many 'national' growth models. System-level factors relating to more short-term international capital flows are the focus of a vibrant literature on 'dependent' or 'subordinate financialization' (Alami et al. 2022; Bonizzi et al. 2022; Lapavistas and Soydan 2022). This line of research investigates the asymmetries in today's global financial system and its impact on growth experiences in developing and emerging economies, in particular debt-led growth (for instance Akçay and Güngen 2022).

CPE scholars in general and growth model analyses in particular, however, do rarely take the third major international interdependence, commodities and their relevance for growth in the Global South, into account. However, initial studies (Mertens et al 2022; Passos and Morlin 2022; Sierra 2022) highlight the importance of commodity exports for an understanding of growth models in emerging economies, particularly in Latin America. IPE scholars, by contrast,

[1] The same holds true for IPE–or the dominant open economy politics (OEP) paradigm–which tends to neglect macroeconomic factors as well (see Blyth and Matthijs 2017).

analyze commodity markets mostly as global and increasingly financialized markets (Seddon 2020; Baines and Hager 2022) or on the micro level as 'global commodity chains' (Bair 2009; Staritz et al. 2018), without studying their interactions with growth models on the national level. Building on our previous analysis (Mertens et al. 2022), we aim to fill this gap in the literature and spell out the challenges and pitfalls of national growth models with an important share of commodity-based exports. To this end, we engage with an extensive literature in Development Economics dating back to the classics in the field (Lewis 1954; Prebisch 1959; Deaton 1999; Erten and Ocampo 2013; Akyüz 2022).

The article is structured as follows. Section 2 reviews the literature on commodity exports and growth in developing and emerging economies. Section 3 presents empirical evidence of the prevalence of commodity dependence in many countries of the Global South and highlights some stylized features of that growth model. Section 4 shows the correlation of commodity prices and capital flows to developing and emerging economies and points to the joint effects of these system-level variables on growth trajectories in these countries. Section 5 investigates how commodity dependence and the related financial flows impact on the national growth models in emerging economies. Section 6 develops a more complex model how commodity dependence, related financial flows and fiscal policies interact with the political economy of affected countries, thereby usually perpetuating commodity dependence. Section 7 concludes, with a special emphasis on policy conclusions.

2. Dependency theory, commodity dependency and growth in emerging economies

During the last years, we are witnessing a revival of dependency thinking in discussions about economic development (Kvangraven 2020, Madariaga and Palestini 2021, Koddenbrock et al. 2022). Fundamental arguments of both the traditional and the modern dependency discussions relate to the polarizing nature of global historical capitalist development, which leads to disadvantageous production structures and external development constraints for the periphery (Kvangraven 2020). While the current discussion on financial subordination strongly focuses on financial flows, dependency discussions rather focus on the productive structure, notably commodity dependency (Koddenbrock et al. 2022). Here, dependency theory partially walks hand-in-hand with classical Development Economics, in particular structuralism.

The relationship between commodity exports and (slow) growth has been a recurring topic in the Development Economics literature ever since its inception (see Nkurunziza et al. 2017 and

Thirlwall and Pacheco-Lopez 2017: 283-305 for recent overviews). More recently, this phenomenon has been framed from the perspective of the 'natural resource curse' (Frankel 2010). The most famous starting point of this debate, however, is the so-called Prebisch-Singer thesis, which states that commodity exporters are negatively affected by deteriorating terms of trade in the long-run (Singer 1950; Prebisch 1959). Due to lower income elasticities for primary commodities than those for manufactures, so the argument goes, demand for the latter grows more rapidly with rising incomes, tending to depress relative prices of the former (this may be called the 'demand mechanism' of the argument). Additionally, labor markets in developing countries are characterized by an abundance of low-skilled labor and low unionization, implying that technological progress in the sectors for primary goods does not translate into higher wages for workers but into lower prices for consumers (i.e. mostly those in the advanced economies) (the 'supply mechanism' of the argument). In the advanced economies, by contrast, labor markets are characterized by relative scarcity of labor in relation to capital and a relatively organized work force, so that technological progress does indeed result in higher real wages for workers. The latter mechanism was also identified by another eminent development economist, Arthur W. Lewis, who asked why real wages of sugar workers in the West Indies did not rise in contrast to those of wheat farmers in Canada (Lewis 1954). Therefore, prices of tropical commodities might fluctuate due to short-run events but are set in the long-run by the cost of growing it in the lowest real wage tropical country (Deaton 1999, 30). Despite these strong theoretical arguments, the empirics of long-run commodity price movements has been hotly contested. Starting with the seminal work of Grilli and Yang (1988), numerous studies have found either a slightly positive or a slightly negative trend, depending to a high degree on the end year of the sample (see Frankel 2010, 8 for an overview). More recent studies, therefore, take a broader historical perspective and identify long-run cycles of price movements, with extended periods of boom and bust well above or below their long-run trend (Erten and Ocampo 2013; Fernández et al. 2020).

This cyclical behavior of commodity prices lies at the heart of another strand of research, which focuses on short- and medium-term fluctuations in commodity markets and their impact on macroeconomic volatility and growth (Blattman et al. 2007; Arezki et al. 2013). Unpredictable commodity prices on international markets with sharp upward and downward swings incur risks on commodity dependent economies and tend to affect their macroeconomic performance negatively. It is hard or even impossible to predict if a commodity boom is temporary or permanent, adding uncertainty to economic agents. In many boom periods, large-scale investment projects are initiated that need to be scrapped or debt-financed when prices decline.

Additionally, the reliance of public sector finance on commodity revenues leads to procyclical government spending and associated domestic consumption (Ocampo 2017, 65). As a consequence, economic activity in commodity dependent economies closely moves in tandem with the prices of their major export items (IMF 2012, 125).

One of the most well known phenomena associated with fluctuations in commodity prices is the so-called 'Dutch Disease' – termed after the economic side-effects of natural gas discoveries in the Netherlands in the 1950s (Corden 1984). It refers to the real appreciation of the currency due to huge capital inflows into investment projects in the booming commodity sectors and/or large increases in commodity revenues during boom periods (Frankel 2010, 20). This results in increased domestic income and spending by the private and especially public sector, leading to higher prices and output in the nontradables sectors and consequently to higher wages across the economy (the so-called 'spending effect'). At the same time, capital and labor move from other parts of the economy to the booming commodity sectors, which results in rising prices of nontradables vis-à-vis other tradables (the so-called 'resource movement effect'). Both effects lead to a real exchange rate appreciation and therefore to a loss of international competitiveness and declining output in the non-commodity-export sectors, i.e. manufacturing, and, hence, deindustrialization (Brahmbhatt et al. 2010). Besides these strong theoretical arguments, there is ample empirical evidence that Dutch Disease is a recurring – although not inevitable – phenomenon for resource dependent developing and emerging economies (Mien and Goujon 2022).

3. Stylized features of commodity dependence in the Global South

The reliance on commodity exports is a recurring and prevalent feature of most developing and emerging economies, next to their financial subordination and their subordinated role in global value chains. A geographical extension of the growth model framework to the Global South therefore needs to take 'commodity dependence' and its challenges and pitfalls seriously. According to UNCTAD, which publishes frequently on the state of commodity dependence around the globe, 'a country is considered to be commodity export dependent when more than 60 per cent of its total merchandise exports are composed of commodities' (UNCTAD 2021, v). As with other thresholds, this is a rather arbitrary definition, excluding major commodity exports such as South Africa with 57.3 percent commodity exports, for instance. Nevertheless, we stick to this established definition. Drawing on UNCTAD data, we compiled a dataset on commodity dependent economies; which shows the global prevalence of this phenomenon (see

appendix). In the 2018-2019 period, 101 countries out of 195 UNCTAD member states, i.e. 53 percent, were commodity dependent (UNCTAD 2021, 5). Only five developed countries, Australia, Iceland, New Zealand, Norway, and Greece, were part of that group. Taking the World Bank classifications according to income levels as a baseline, commodity dependence is most prevalent in low income economies, followed by lower-middle and upper-middle income economies (see figure 1). Only 27.6 percent are high income economies, including Middle Eastern energy exporters such as Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

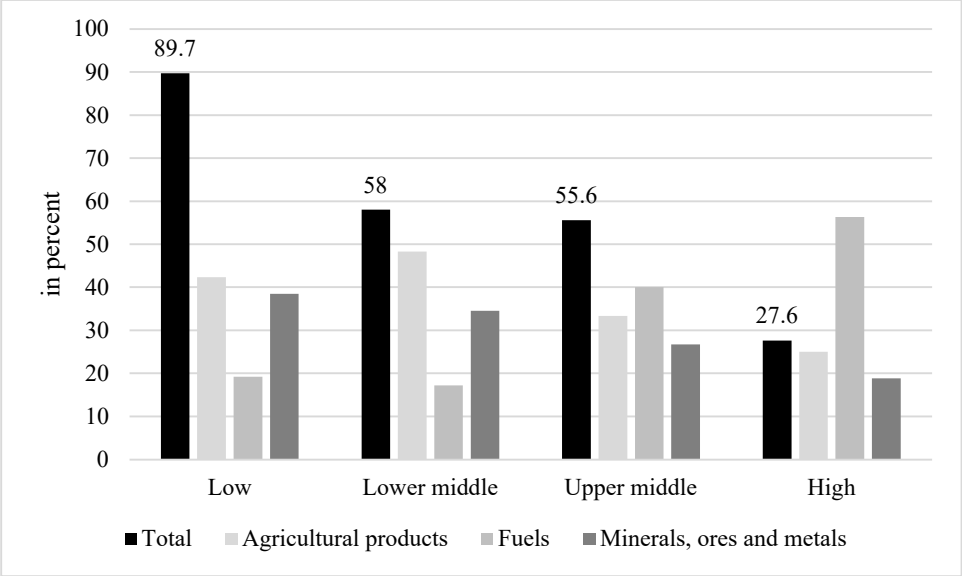

Figure 1. Commodity dependence by income level
Source: UNCTAD 2021

As figure 1 shows, fuel exports such as crude oil and natural gas are associated with higher income levels. Low and lower middle income countries predominately specialize in agricultural products or minerals and metals. These figures already indicate the global prevalence of commodity exports among developing and emerging economies. Beyond that, we can identify a correlation between the degree of commodity dependence, i.e. commodity exports as a share of merchandise exports, and the contribution of commodity exports to a country's gross domestic product (GDP) (see figure 2). Besides the outliers Djibouti and the United Arab Emirates in the upper left corner of the scatter plot, the higher the share of commodity export dependence, the higher the share of commodity exports in a country's GDP. Commodity dependence thereby can be as high as 99.8 percent in the case of Iraq and even 100 percent in the case of South Sudan. Furthermore, a range of countries exhibit an even higher commodity

dependence, relying on only one or a few commodities. Countries such as Iraq (93.5 percent), Angola (88 percent), Chad (79.6 percent), and Guinea-Bissau (88.4 percent) depend heavily on the export of a single product. In roughly half of all commodity dependent economies, a single product, mostly crude petroleum, constitutes more than half of all exports (UNCTAD 2019, 5). Figure 2 shows that a focus on commodity-based exports is wide-spread among developing and emerging economies.

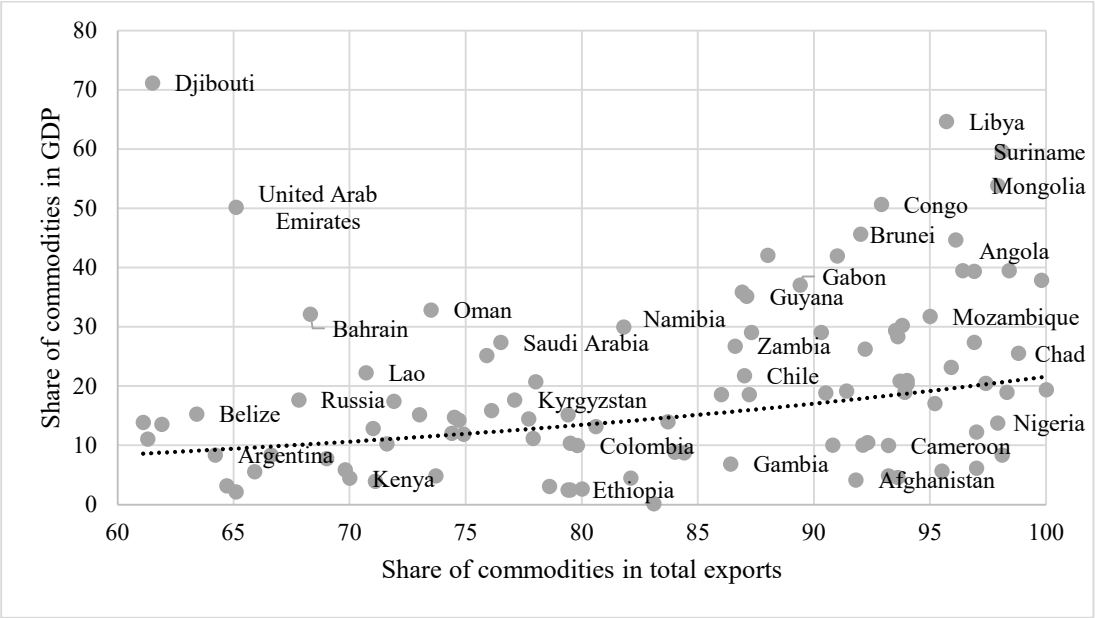

Figure 2. Commodity exports and gross domestic product

Source: UNCTAD 2021

Having established preliminary empirical evidence of the global prevalence of commodity dependence, we turn to some of its main features. To this end, we first look at the most important variable determining the prospects of commodity export-dependent economies: internationally-set commodity prices. As stated before, the majority of developing and emerging economies exports is concentrated in a handful or sometimes even a single product, putting these countries at the mercy of global commodity markets. Price movements therefore are crucial for their socioeconomic performance. Figures 3-5 depict the evolution of long-run real prices of the major commodity classes, agricultural goods, metals, and fuels. First of all, the prices of all selected commodities exhibit strong volatility in the short- and medium-term. In the long-term, several commodities show a downward trend, mostly agricultural goods (figure 3), but others, crude oil in particular, show an upward trend (figure 5). In line with the literature (e.g. Erten and Ocampo 2013), we can discern four major price cycles since the beginning of the 20th

century: a first one in the beginning of the 20th century, a second one after World War II in the1950s and 1960s, a third one in the 1970s, and a fourth one in the 2000s. Some of these general cycles are demand driven –i.e. by global economic activity related to the post-War recovery or, more recently, the industrialization of China and India, for instance–, some are supply driven within and across commodity markets (Kabundi et al. 2022, 203).

Energy plays a key role for other commodity markets as a crucial input in the production of metals and an important cost component for most agricultural goods via fuel and fertilizer prices. Therefore, supply factors, especially in the global oil market, are important determinants of price swings. Examples are the production agreements of major oil producers via cartels such as the 'Seven Sisters' between 1935 and the 1970s, the Organization of the Petroleum Exporting Countries (OPEC) since 1960, and OPEC+ since 2017 or the entry of new sources or producers such as US shale oil or Canadian oil sands (McNally 2017). In agricultural commodities, weather patterns are crucial supply side determinants as well.

However, global demand shocks such as recessions account for 50 percent of the volatility in commodity price movements, global supply shocks for 20 percent, and commodity-specific shocks for the rest (Kabundi et al. 2022, 206). This indicates that commodity exporters heavily depend on global macroeconomic conditions. Recessions in major consumer markets have large-scale negative repercussions on export revenues and growth prospects in producer countries, while sustained economic expansion in these markets can generate a lasting price and earnings boom. The latest of such demand-induced cycles started in the early 2000s and lasted until 2013 (briefly interrupted by the Global Financial Crisis), induced by strong commodity demand from China and India in particular. As shown in figures 3 to 5, price volatility since the 1990s has been much more pronounced in industrial commodities (i.e. minerals, metals, and fuels) than in agricultural products, although prices of the latter also tripled or even quadrupled during the latest cycle.

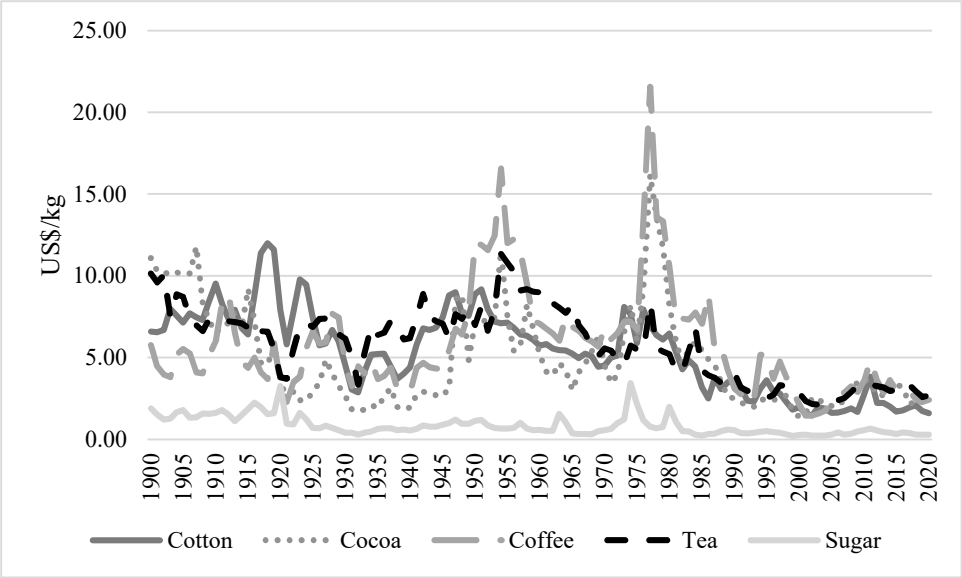

Figure 3. Long-run real prices of selected agricultural commodities

Source: Own elaboration based on Baffes et al. 2022.

Note: Prices deflated by Consumer Price Index (CPI).

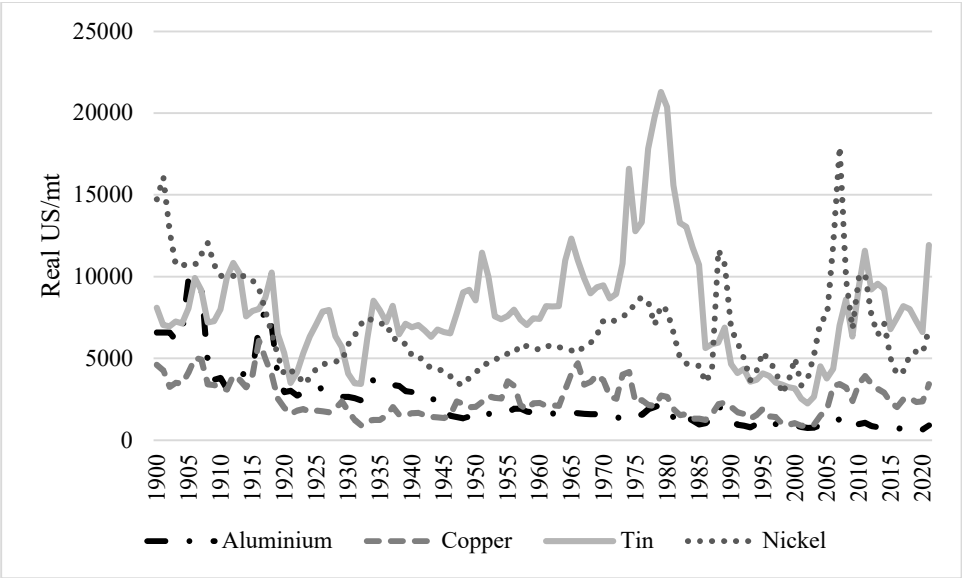

Figure 4. Long-run real prices of selected metals

Source: Own elaboration based on Baffes et al. 2022.

Note: Prices are deflated using US CPI (100 = 1982-84).

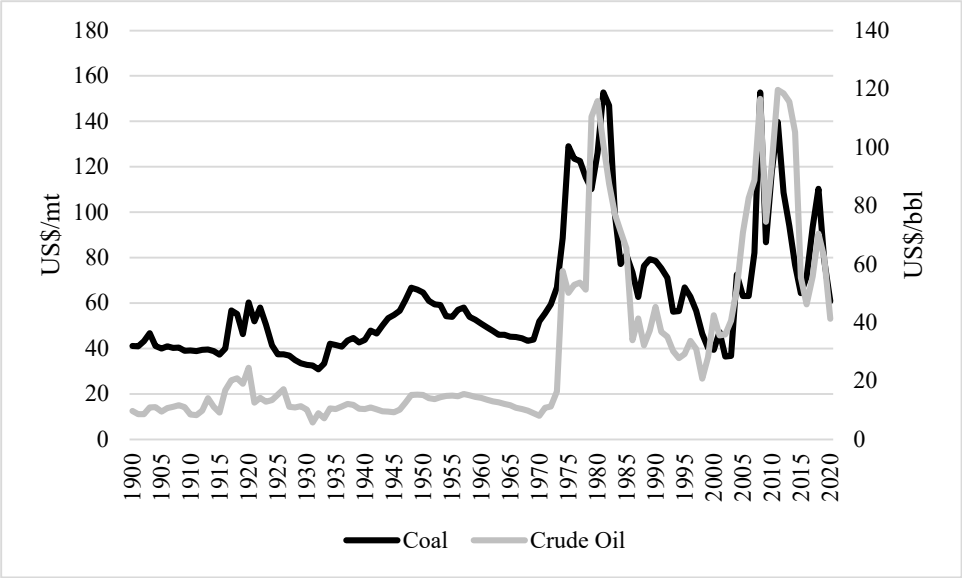

Figure 5. Long-run real prices of selected fuels

Source: Own elaboration based on Baffes et al. 2022.

Note: Prices have been deflated by the US CPI, base year is 1990.

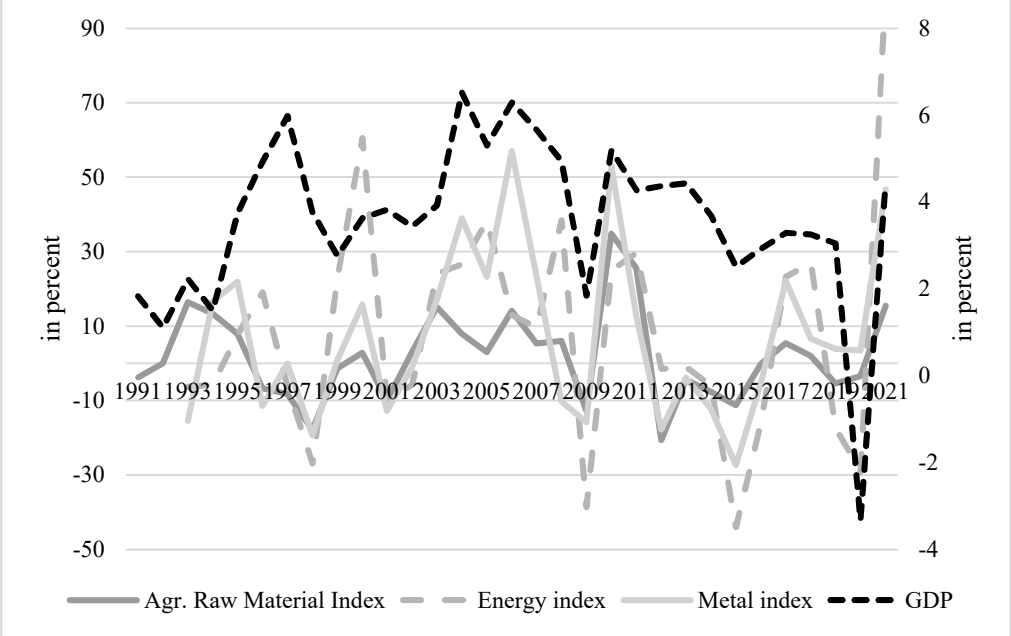

Figure 6. Commodity prices and growth in commodity dependent economies

Source: IMF, Commodity Price System; World Development Indicators

The combination of commodity dependence and of commodity price volatility obviously has an important impact on the growth performance of these economies. As figure 6 shows, growth

in commodity prices indicates some parallels with GDP growth in commodity dependent economies. However, these are average figures, which need to be taken with a grain of salt.

To summarize this section, we presented empirical evidence on the global prevalence of a high degree of dependency on commodity-based exports in many developing and emerging economies. We also carved out two important features of these economies: First, the dependence on a handful or even a single export product; second, the dependence on global commodity markets and external boom-bust-cycles. In the following section, we add another important aspect of commodity-led economies that has become salient more recently: their connection with international capital flows.

4. The 'commodity–finance nexus': The correlation of commodity prices and commodity-related capital flows

Capital flows to developing and emerging economies have risen markedly since the early 2000s, as international investors increasingly discovered 'emerging market' assets as a promising investment. Portfolio flows in particular have reached unprecedented levels recently and even outpaced foreign direct investment (FDI) (Molina and Viani 2019). A recent empirical literature therefore has investigated the drivers of these flows (see Koepke 2018 for an overview). Global risk aversion and a strong US dollar are negatively correlated with capital inflows to developing and emerging economies, whereas political risk and output growth in the recipient countries is positively correlated (Molina and Viani 2019, 4). In addition, commodity prices are another important determinant of capital inflows for commodity dependent countries (ibid.). Subsequently, we are focusing on the latter.

Several studies have found that commodity prices exhibit strong effects on global capital flow cycles, even in the 19th century (Byrne and Fiess 2016; Reinhart et al. 2016). As figure 7 shows, there is in fact a strong correlation between capital flows to commodity dependent economies and the movement of the major commodity indices. As our focus here is in short-term fluctuations, we leave FDI flows out, which are primarily driven by long-term investment decisions, and focus on portfolio investment. In accordance with the literature, portfolio flows to these countries feature a strong volatility, closely mirroring the ups and downs of commodity price movements.

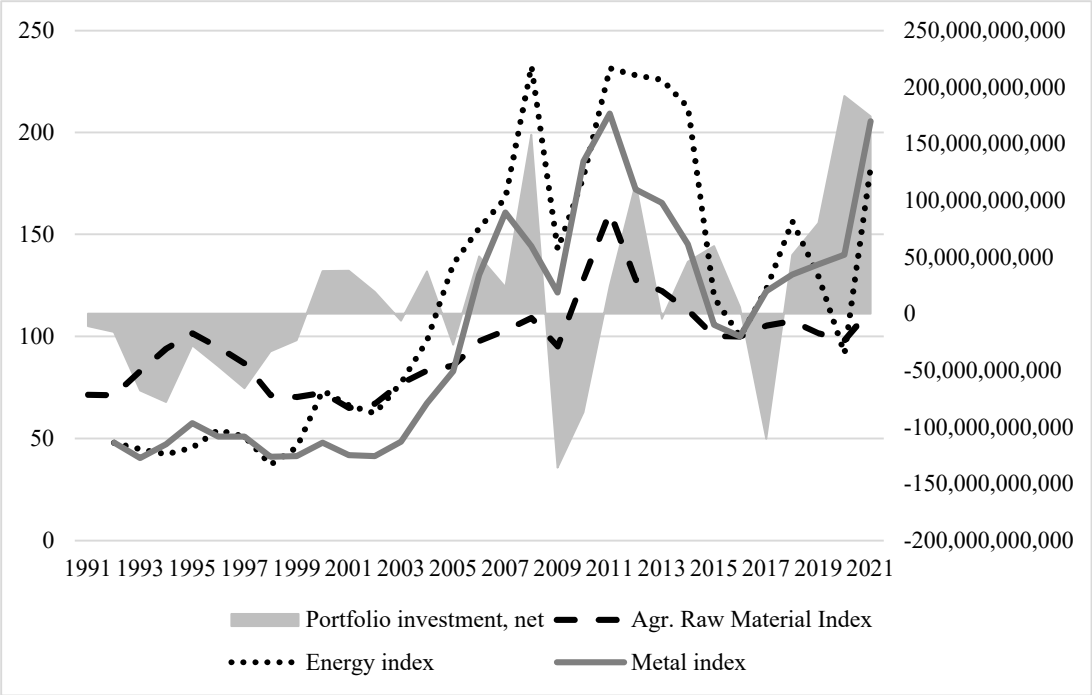

Figure 7. Commodity prices and capital flows to commodity dependent economies
Source: IMF, Balance of Payments Statistics; IMF, Commodity Price System

The pronounced correlation of commodity price swings and capital flows has profound impact on commodity-dependent economies. As capital inflows tend to follow commodity prices, they are heavily pro-cyclical, rising in boom periods and contracting in bust periods. Thereby, they aggravate the vulnerability of commodity dependent countries to externally induced boom-bust-cycles, detailed above.

In the following, we spell out the mechanism through which both system-level variables affect growth in these economies. Following Akyüz (2022), we term this mechanism 'commodity-finance nexus'. First and foremost, commodity prices have an impact on capital flows to commodity dependent economies by influencing their risk-return profile. A commodity price boom tends to improve the external financial position of these countries, while reducing the risk of lending (Akyüz 2022, 10). Simultaneously, growth prospects in the booming commodity sectors raise the return on lending, attracting ever more capital inflows. As a consequence, the currency tends to appreciate. This, in turn, leads to the infamous Dutch Disease phenomenon, reviewed on section 2, which is associated with booming commodities and nontradables sectors and a declining manufacturing sector. A shrinking manufacturing base increases the structural dependency on commodities even further and locks these countries in their commodity dependence trap. Figure 8 presents a graphical illustration of this mechanism.

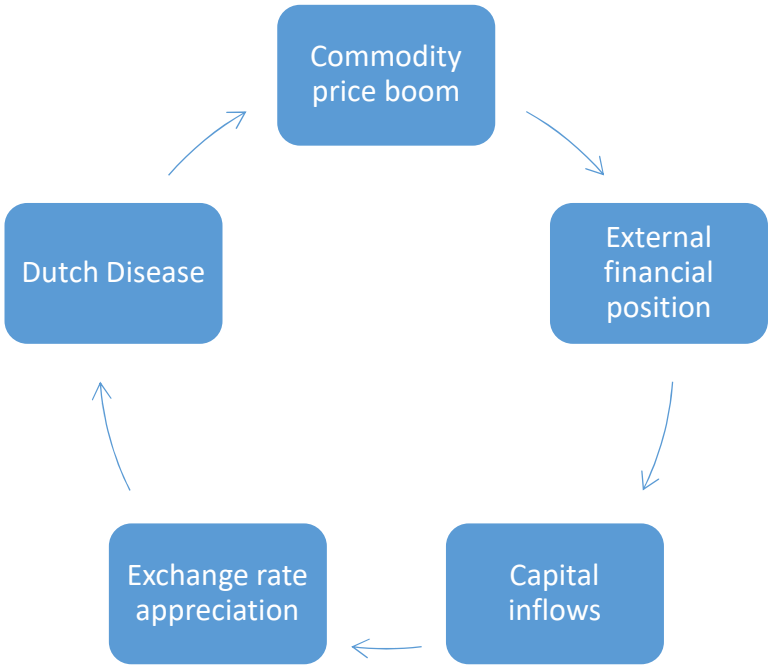

Figure 8. The commodity-finance nexus

Source. Own elaboration.

However, the commodity-finance nexus does not only operate in one direction, amplifying boom periods. It also works in the reverse direction, amplifying bust periods as well. Here, declining commodity prices tend to worsen the external financial position of commodity dependent economies, thereby raising the risk of lending. As a consequence, capital ceases to flow into the country or even flows out, with detrimental effects on the exchange rate and debt-fueled asset or spending bubbles. Given that foreign currency-denominated debt ('original sin') and foreign investors in local currency bond markets ('original sin redux') continue to play an important role in many developing and emerging economies, exchange rate deprecation tends to induce currency mismatches and thereby increases the risk of local financial crises (Eichengreen et al. 2005; Carstens and Shin 2019). These effects increase macroeconomic volatility and worsen the declining economic output induced by the fall in export earnings. In the medium- to long-run, these cyclical dynamics undermine avenues for structural change and diversification and lead to well known stop-go growth episodes (Jones and Olken 2008). Figure 9 depicts a graphical illustration of this mechanism in reverse.

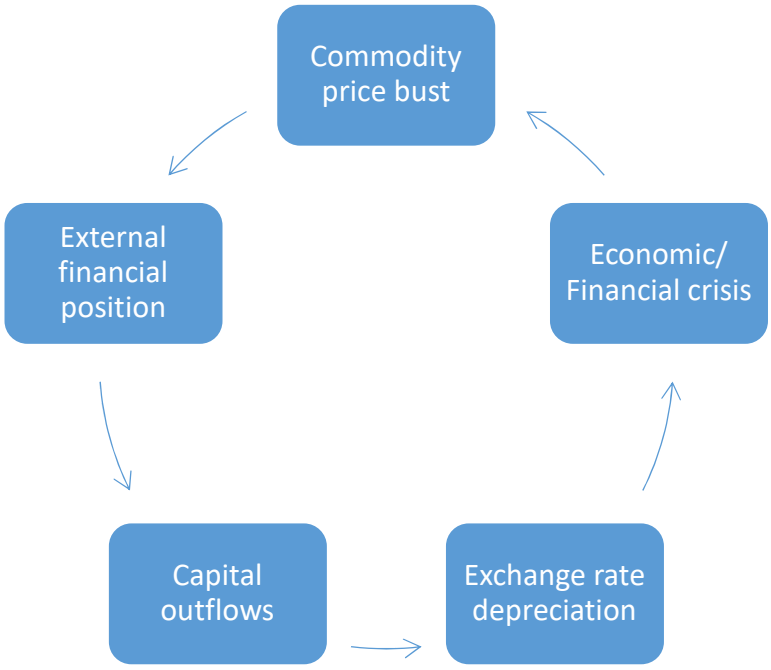

Figure 9. The commodity-finance nexus reversed

Source: Own elaboration.

In conclusion, the commodity-finance nexus in combination with global commodity price cycles leads not only to economies that become locked into a commodity trap, but also leads to far stronger economic fluctuations compared to economies that are not structurally dependent on commodity exports. Correspondingly, it becomes very difficult for these economies to undergo a process of industrialization, thereby keeping them in the subordinate position highlighted by dependency theory. However, this is only a partial picture of commodity export-dependent economies. For example, it does not explain why the high proceeds of commodity exports during a boom period are not used for investments into an economic model that is less commodity-dependent. In order to come to a more complete picture, we need to turn to the study of growth models in Comparative Political Economy and Post-Keynesian Economics.

5. National growth decomposition of commodity-dependent economies

How does commodity dependence and the commodity-finance nexus affect the national growth models in the affected emerging economies? Can we speak of commodity export-led growth models? In order to answer this question, we first conduct a decomposition of the growth contribution of demand aggregates, based on the methodology used by Hein et al (2021). In

order to select countries for demand decomposition, we have chosen the most commodity-dependent countries based on UNCTAD data (see the upper right corner in figure 2 above). Hence, these countries feature a very high share of commodity exports of total exports (above 90 percent), which in all of these countries account for 39 to 65 percent of their gross domestic product. They, therefore, are 'crucial' cases and should display very pronounced export-led growth models, as the bulk of economic activity in these economies is geared towards exporting a single commodity or small set of commodities. Given the marked volatility of growth in most emerging economies, we have to caution to calculate averages for longer time spans. Hence, we split the overall timeframe ranging from 2001 to 2020 into three sub periods: one characterized by the very pronounced commodity price boom of the early 2000s (2001-2007), one characterized by the short interruption of the price boom during the GFC und the subsequent recovery (2008-2013), and a final one characterized by the commodity price bust (2014-2020). Furthermore, we calculate the relative contributions of demand aggregates to economic growth using GDP based on current prices instead of constant prices, as we aim to identify the effects of changes in commodity prices on net exports.

Table 1. Relative contributions of demand aggregates to economic growth for selected commodity dependent economies, averages in percent, 2001–2020

	2001-2007				2008-2013				2014-2020			
	C	I	G	NX	C	I	G	NX	C	I	G	NX
Angola	**98**	42	4	-72	32	13	22	-1	**34**	-3	-10	13
Congo	40	**81**	24	-70	36	65	15	-49	13	-17	**30**	-71
Libya	-18	31	-1	**32**	8	2	**11**	-17	**25**	-31	-9	1
Mongolia	**50**	39	11	-6	**59**	19	10	-21	-10	-115	-7	**119**
Suriname	22	**39**	6	6	79	**91**	15	-83	**24**	**24**	4	-6

Source: United Nations National Accounts

Notes: 1) Investments figures are calculated based on gross capital formation. 2) Private consumption includes individual consumption expenditure of non-profit institutions serving households (NPISHs). 3) Data for exports are net exports (NX= X-M). 4) GDP data is based on current prices.

Somewhat surprisingly, only two of one of the structurally most commodity export-dependent economies feature export-led growth models – Lybia in the period from 2001 to 2007 and Mongolia in the period from 2014 to 2020 –, using this standard approach of demand

decomposition. Two basic reasons are responsible for this outcome. First, in this approach, one uses net exports instead of gross exports. By subtracting the value of imports from gross exports, the final contribution of this demand aggregate is, by definition, reduced. Hence, such a method underestimates the growth contribution of exports and overestimates that of domestic demand, especially consumption (Baccaro and Hadziabdic 2022, 1). In extreme cases, this approach can lead to grossly false interpretations of the effective contributions to growth (ibid., 8). This is all the more true for the countries we are studying here. As many developing economies have an unsophisticated productive structure, they have to import high volumes of consumption or capital goods. In addition, their major export items are commodities, i.e. raw materials, which is why they generally do not import intermediary goods. Hence, due to the high share of imports which are consumed by the private and/or the public sector of these economies, the massive gross exports tend not to show up in the growth contributions as net exports, i.e. exports minus imports, are generally low or even negative. Second, using multi-year averages is problematic, even with the shorter periods chosen here, due to the very pronounced volatility of growth in these economies.

Therefore, the standard growth decomposition method is ill-suited to capture commodity-based export-led growth in the highly commodity-dependent economies studied here. As a consequence, we zoom into two cases – Angola and Congo – and present yearly data of growth decomposition and the covariation of gross exports and the price of their major export item, crude oil (prices per barrel BRENT in US$).

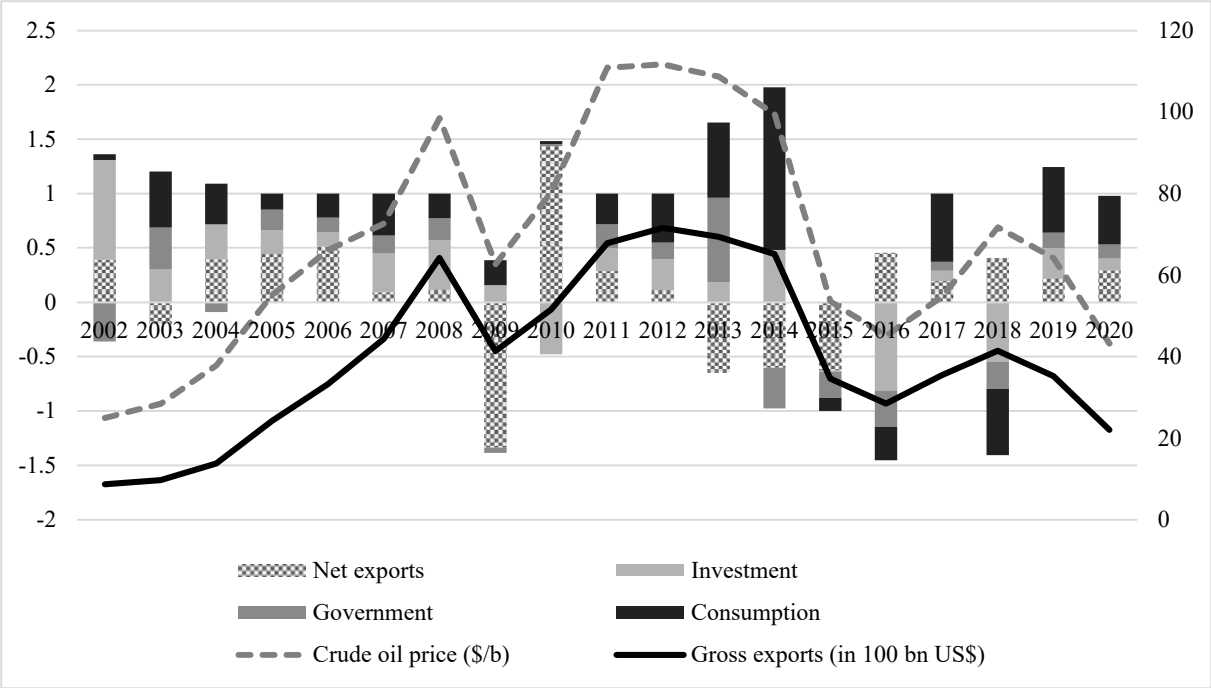

Figure 10. Growth decomposition, gross exports and oil prices for Angola

Source: United Nations National Accounts, OPEC 2022

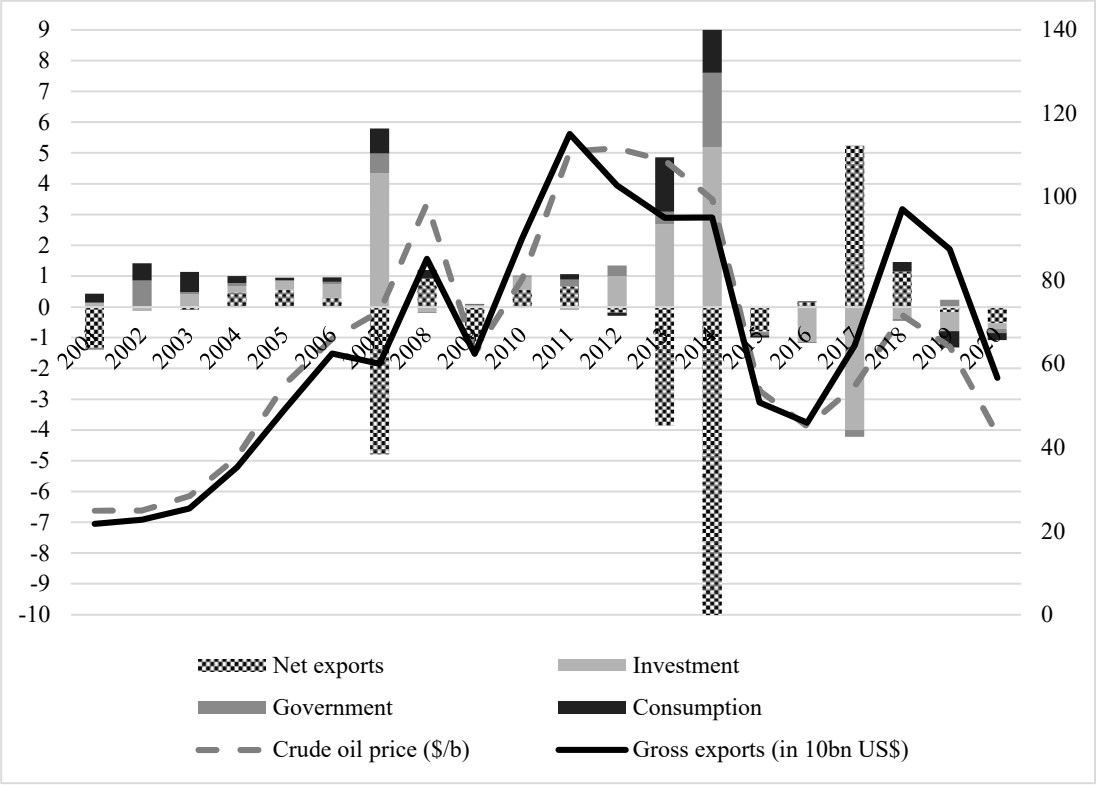

Fig. 11. Growth decomposition, gross exports and oil prices for Congo

Source: United Nations National Accounts, OPEC 2022

Fig. 10 and 11 show first an almost perfect covariation of gross export revenues and price movements for crude oil. Exports of Angola and Congo are, as expected, completely determined by commodities. Prior to the price hikes on the oil market, especially when the prices began to rise, both Angola and Congo feature significant contributions of net exports among the other demand components. When the commodity super cycle really took off, the contributions started to excess in both positive and negative directions. Most notably, we do not see strong net export positions for the boom period (although we know from the trade figures that oil exports increased strongly) but procyclical investment and consumption patterns. Instead of a growth model in which exports play the key role among the demand contributions, an export-led growth model in commodity-dependent economies seem to trigger a rollercoaster movement of export revenues, investment and consumption flows.

To conclude, by using the conventional decomposition methodology, the important role of commodity exports for economic growth in these economies is grossly underestimated. In order to capture this export-led growth model adequately, one might need to adjust the demand components by the imports they actually absorb – instead of subtracting imports directly from exports – (Baccaro and Hadziabdic 2022). In addition, commodity-dependent countries of the Global South have a strongly cyclical growth model and selected multi-year averages on demand aggregates provide somewhat misleading outcomes with regard to the underlying economic structures. Correspondingly, we need a more complex approach for depicting these models.

6. Commodity prices and fiscal policies as growth drivers in commodity export-dependent economies – and the role of domestic politics

Our point of departure for a more complex conceptualization of growth modes of commodity-dependent economies are two observations by Kohler and Stockhammer (2022) on the cyclical and nationally diverse development of debt-driven growth models in countries of the Global North after the Global Financial Crisis (GFC). Whereas they were able to observe a clear-cut juxtaposition of export-led versus debt-financed and consumption-led European economies before the crisis, this became much less clear after the crisis. The main reason was the collapse of the boom in debt-financed and consumption-led economies after the GFC, with Spain as a leading example for this growth model. Applying the traditional growth decomposition

approach to the Spanish economy in the post-crisis approach leads to its classification as 'weakly export-led' (Hein et al. 2021). However, this classification is not based on the expansion of Spanish exports but rather on a depression of the debt-driven model (Kohler and Stockhammer 2022: 1315-1316). Moreover, not all of the debt-finance and consumption-led economies suffered the same depression after the crisis. Some of these economies – particularly the English-speaking ones – have put strong fiscal expansion in place, thereby avoiding the fate of other economies – particularly Greece and Italy – that had to undergo massive austerity (Kohler and Stockhammer (2022: 1327-1330).

In order to make sense of these observations, Kohler and Stockhammer (2022: 1319) distinguish between growth *contributions*, growth *drivers* and growth *models*. While growth *contributions* are the familiar components of aggregate income (consumption, investment, government spending and exports) and growth *models* depict national economies where one of these components is dominating, growth *drivers* are exogenous factors that influence growth contributions and, therefore, growth models. Kohler and Stockhammer (2022: 1326) identify three types of growth drivers: property prices, fiscal policy and price/non-price competitiveness.

Our depiction of growth models for commodity export-dependent economies shows a similar pattern of boom and bust as observed by Kohler and Stockhammer. Arguably, commodity prices play a similar role for these economies as property prices for debt-financed and consumption-led growth models. Global commodity price developments act as an important growth driver for many emerging markets and developing countries with a high degree of commodity dependence.

Moreover, we can assume a similar importance of fiscal policies in these economies, given related observations in development economics. The price movements of global commodity markets affect growth in commodity-dependent economies directly via rising or contracting export earnings and indirectly via its impact on public finances (UNCTAD 2019, 34). As personal income tax collection is generally low, many developing economies heavily rely on corporate income taxes and royalties or the profits of state-owned enterprises in the natural resource-intensive sectors (Ocampo 2017, 69). Procyclical fiscal spending therefore is common among commodity dependent countries, magnifying both boom and bust periods (Herrera et al. 2019). We see this clearly for the cases of Angola and Congo. Consequently, the negative external shocks are amplified by the subsequent contraction in public spending and investment. Procyclical fiscal patterns are self-reinforcing and hard to change, as political pressures to spend

rising public sector revenues in boom periods are difficult to handle if there were austerity measures in place in the period (Ocampo 2017, 69).

Based on our observations, global commodity price developments have to be added as another growth driver to the list put forward by Kohler and Stockhammer (2022). Moreover, we note an important role for fiscal policies as another growth driver for commodity dependent economies. However, in contrast to commodity price cycles, fiscal policies are to a higher degree at the disposal of national governments and parliaments. The latter do not have to spend the proceeds of commodity exports at once. By using the proceeds of commodity exports wisely, countries can avoid the worst effects of commodity price swings. For example, governments can use these proceeds as a cushion to avoid overly strong currency fluctuations or for the import of key capital goods and the acquisition of foreign technology to support an upgrading of the domestic industry. Correspondingly, not all export-dependent economies need to follow the pro-cyclical fiscal patterns observed above. During the bust phase, countries can adopt Keynesian countercyclical fiscal policies to boost domestic demand and hence avoid sharp reductions in GDP growth.

A study on commodity-dependent Latin American countries (Passos and Morlin 2022) demonstrates that the governments of these countries have pursued quite different policies at the end of the commodity boom. While Bolivia and Chile have compensated lower proceeds from commodity exports by state-led growth and increased household propensity to consume, political coalitions in Argentina and Brazil prevented these policies, leading to economic stagnation.

However, fundamentally "switching" a growth model away from commodity exports is very difficult. Countries that are dependent on commodity exports are this for a reason, namely that their economies are hardly diversified. They gladly welcome windfall profits in boom phases but would need to continue exporting commodities in bust periods. If these would have a choice in macroeconomic adjustments to commodity prices, they were not dependent in the first place. But even more diversified developing economies have problems in changing growth models, as another study on "commodity-driven growth models" in Latin America (Sierra 2022) highlights. As underlying reason this study identifies an "endogenous distributional dilemma": "While governments have clear incentives to promote the interests of the agricultural sector due to its centrality in commodity-led growth, doing so affects their capacity to promote the industrial sector, and thereby switch growth models" (Sierra 2022: 168-169). A typical example

is the issue of exchange rate appreciation depicted above – while agricultural exporters fete the latter, it is poison for domestic industry.

To conclude, these observations make a strong case for incorporating domestic politics into the study of commodity-dependent growth models in emerging economies, even if in most cases these politics do not allow for switching towards a different growth model. Moreover, the depiction of these growth models via demand decomposition requires data on long time periods, given the pronounced cyclicality of commodity prices and the related swings of the importance of commodity exports for growth in these economies. Finally, these growth decompositions should always be analyzed in combination with commodity price developments and fiscal policies as important growth drivers for these economies.

6. Conclusion and policy implications

This article contributes to the growth models literature in Comparative Political Economy (CPE) that aims to broaden the geographical scope of this analytical perspective to developing and emerging economies. It made four key contributions to this research program. First, we highlighted the importance of commodity exports for growth in the majority of developing and emerging economies, proposing a stylized model of commodity-dependence and providing evidence of its global prevalence. Second, we analyzed the joint effects of capital flows and commodity price swings on this growth model in commodity dependent economies, a mechanism dubbed 'commodity-finance nexus' (following Akyüz 2022). We argued that this mechanism reinforces the pro-cyclical nature of commodity-led growth, financial volatility, and the vulnerability to global boom-bust-cycles. Third, we highlight that the conventional method for establishing the growth models of highly commodity-dependent economies does not always lead to convincing results, due to the highly cyclical character of these economies. In order to still make sense of the growth models of these economies, we fourth have identified commodity price developments and fiscal policies as major growth drivers, with an important role for domestic politics as a major intervening variable.

Given the important role for domestic politics, however, it does not come as a surprise that general cross-country regression analyses do not find a clear linkage between commodity price development and growth in emerging economies (Jungmann, 2021). Moreover, not all growth models of emerging economies with an important amount of commodity exports should be classified as highly commodity-dependent. Particularly in large emerging economies such as

Argentina or Brazil, commodity exports make for less than 10 percent of GDP, although they qualify for 64.2% (Argentina) and 66.6% of exports (Brazil), thereby being classified as commodity export dependent by UNCTAD. Future research needs to disentangle the (political) reasons why some countries with an attractive commodity base become highly commodity-dependent and others not.

Due to the negative aspects of commodity-dependent growth there is no doubt that governments should try to move away from this growth model. If politically feasible they should pursue industrial policies to support domestic manufacturing and sophisticated services. Several instruments are available to reduce the negative effects of commodity dependency, particularly with regard to the commodity-finance nexus, such as capital controls and interventions in foreign exchange markets.

Finally, dependency theory tells us to not only search for solutions in these economies, but also in global economic structures. From this perspective, the demand for commodity buffer stocks - a core issue in discussions about a New International Economic Order (NIEO) in the 1970s should be taken up again, in order to assist highly commodity-dependent countries to manage their economies.

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Appendix

Table A1. Commodity dependent economies and their export profiles, 2018–19, in percent

Country	Agriculture	Energy	Mining	Total	Share of GDP
Afghanistan	71.5	7.8	12.5	91.8	4.2
Algeria	0.9	92.6	0.2	93.7	20.9
Angola	0.6	92.7	3.1	96.4	39.5
Argentina	56.6	3.9	3.8	64.2	8.4
Armenia	25.9	2	46.8	74.7	14.3
Australia	13.8	20.9	36.2	71	12.9
Azerbaijan	4.5	90.5	1.9	96.9	39.4
Bahrain	5	33.6	29.6	68.3	32.2
Belize	53.9	4.9	4.6	63.4	15.3
Benin	67.3	4.2	18.9	90.3	29.1
Bolivia	16.1	33.1	44.8	94	20.4
Botswana	1.8	0.3	91.5	93.6	28.4
Brazil	39.2	12.9	14.5	66.6	8.4
Brunei	0.4	91.5	0.2	92	45.7
Burkina Faso	20.9	1	75.5	97.4	20.5
Burundi	36.2	2	55.1	93.2	4.9
Cabo Verde	76.1	0.4	3.4	80	2.7
Cameroon	42.4	42.6	8.2	93.2	10
Chad	7.9	81.3	9.6	98.8	25.6
Chile	32.5	0.9	53.6	87	21.8
Colombia	18	56.3	5.5	79.8	10
Congo	4.5	71.5	16.9	92.9	50.7
Côte d'Ivoire	68.7	14.9	8.6	92.2	26.3
DR Congo	3.1	6.7	85.4	95.2	17.1
Djibouti	43.6	11.2	6.6	61.5	71.2
Ecuador	49.7	41.7	2.5	93.9	19
Equatorial Guinea	3	87.6	0.4	91	42
Eritrea	28.6	0	55.4	84	8.9
Ethiopia	73.6	0	5.9	79.5	2.5
Fiji	56	14.3	7.4	77.7	14.5
Gabon	18.2	58.2	13	89.4	37.1
Gambia	77.4	2.9	6.1	86.4	6.9
Ghana	26.1	30.8	39.1	95.9	23.2
Greece	19.6	33	8.8	61.3	11.1
Guinea	6.2	3.1	84.3	93.5	29.4
Guinea-Bissau	93.6	4.4	0.3	98.3	19
Guyana	23.5	0	63.6	87.1	35.2
Iceland	46.1	1.8	38.1	86	18.6
Iran	7.1	62.3	5.4	74.9	11.9

Iraq	0.2	96.9	2.6	99.8	37.9
Jamaica	24.9	15.9	50	90.8	10.1
Kazakhstan	5.6	68.6	13.1	87.3	29.1
Kenya	58	4.6	7.4	70	4.5
Kiribati	95.1	0.4	0.1	95.5	5.7
Kuwait	1.5	85.9	0.6	88	42.1
Kyrgyzstan	13	6	58.1	77.1	17.7
Lao	23.5	23.4	23.7	70.7	22.3
Liberia	15.9	9.8	36.2	61.9	13.6
Libya	0.3	92.5	2.8	95.7	64.7
Madagascar	42.4	1.3	29.4	73	15.2
Malawi	89.6	0.4	2.4	92.3	10.5
Maldives	80.3	15.8	0.9	97	6.2
Mali	18.7	0.3	72.5	91.4	19.2
Mauritania	43.4	2.6	50.9	96.9	27.4
Micronesia	96.8	0	0.1	97	12.3
Mongolia	7	44.8	46.1	97.9	53.9
Montenegro	18.8	19	32	69.8	5.9
Mozambique	18	42.6	34.5	95	31.8
Myanmar	27.9	22.9	10.3	61.1	13.9
Namibia	22.4	0.6	58.8	81.8	30
Nauru	34.9	0	39.6	74.5	14.8
New Zealand	73.7	1.9	3.8	79.4	15.2
Niger	21.5	14	30.4	65.9	5.6
Nigeria	3.6	92.8	1.5	97.9	13.8
Norway	12.2	59.4	6.4	78	20.8
Oman	5.2	59.9	8.3	73.5	32.9
Papua New Guinea	23.8	31.9	40.4	96.1	44.7
Paraguay	65.6	20.3	1.3	87.2	18.6
Peru	22.3	7.9	60.3	90.5	18.9
Qatar	0.1	84.5	2.4	86.9	35.9
Russia	7.8	52.3	7.6	67.8	17.7
Rwanda	27.7	7.3	57.2	92.1	10.1
Saint Vincent and the Grenadines	18.3	46.1	0.3	64.7	3.2
Samoa	57.8	11.9	1.4	71.1	4
Sao Tome and Principe	59.6	2.6	2.9	65.1	2.2
Saudi Arabia	1.8	72.6	2	76.5	27.4
Senegal	33.9	16.5	24	74.4	12.1
Seychelles	53.8	21.8	0.3	75.9	25.2
Sierra Leone	22.9	1.1	47.6	71.6	10.3
Solomon Islands	89.8	0.2	8.4	98.4	39.5
Somalia	78.8	0	15.1	93.8	30.3
South Sudan	2.3	97.3	0.3	100	19.4

Sudan	46.9	20.5	30.7	98.1	8.4
Suriname	14.7	3.8	79.7	98.1	59.6
Syria	55.4	11.4	2.2	69	7.8
Tajikistan	27	2.6	48.3	77.9	11.2
Timor-Leste	39.5	36.7	2.4	78.6	3.1
Togo	17.9	40.9	17.4	76.1	15.9
Tonga	77.6	0	1.8	79.4	2.5
Turkmenistan	3.5	89.6	0.9	94	21
Tuvalu	82.9	0.1	0.1	83.1	0.2
Uganda	51.6	4.3	28.4	84.4	8.8
United Arab Emirates	4.7	40.6	19.8	65.1	50.2
Tanzania	42.4	1.9	29.3	73.7	4.9
Uruguay	77.5	1.2	0.8	79.5	10.4
Uzbekistan	15.9	22.9	33.2	71.9	17.5
Vanuatu	75.2	3.5	3.4	82.1	4.5
Venezuela	3	76.3	1.4	80.6	13.2
Yemen	26.2	50.4	17	93.6	4.6
Zambia	9.5	1.5	75.6	86.6	26.8
Zimbabwe	36	0.5	47.2	83.7	14

Source: UNCTAD, State of Commodity Dependence

Note: 'Total refers' to all commodity exports as a share of merchandise exports, 'Share of GDP' refers to Commodity exports as a share of GDP

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