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**THE COMMODITY-FINANCE NEXUS:
TWIN BOOM AND DOUBLE WHAMMY**

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THE COMMODITY-FINANCE NEXUS: TWIN BOOM AND DOUBLE WHAMMY

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ABSTRACT

International commodity prices and capital inflows to developing countries are increasingly synchronized, subjecting commodity-dependent economies to double boom-bust cycles. On the one hand, there are a number of common monetary factors, notably international interest rates and the exchange rate of the dollar that influence commodity prices and capital inflows in the same direction. On the other hand, commodity prices and capital inflows reinforce each other through their influence on economic activity in developing countries. Capital inflows move pro-cyclically with commodity prices, aggravating both positive and negative external trade shocks. This synchronization has greatly heightened the vulnerability of commodity-dependent developing economies to global boom-bust cycles.

Keywords: commodity prices, capital flows, boom-bust cycles.

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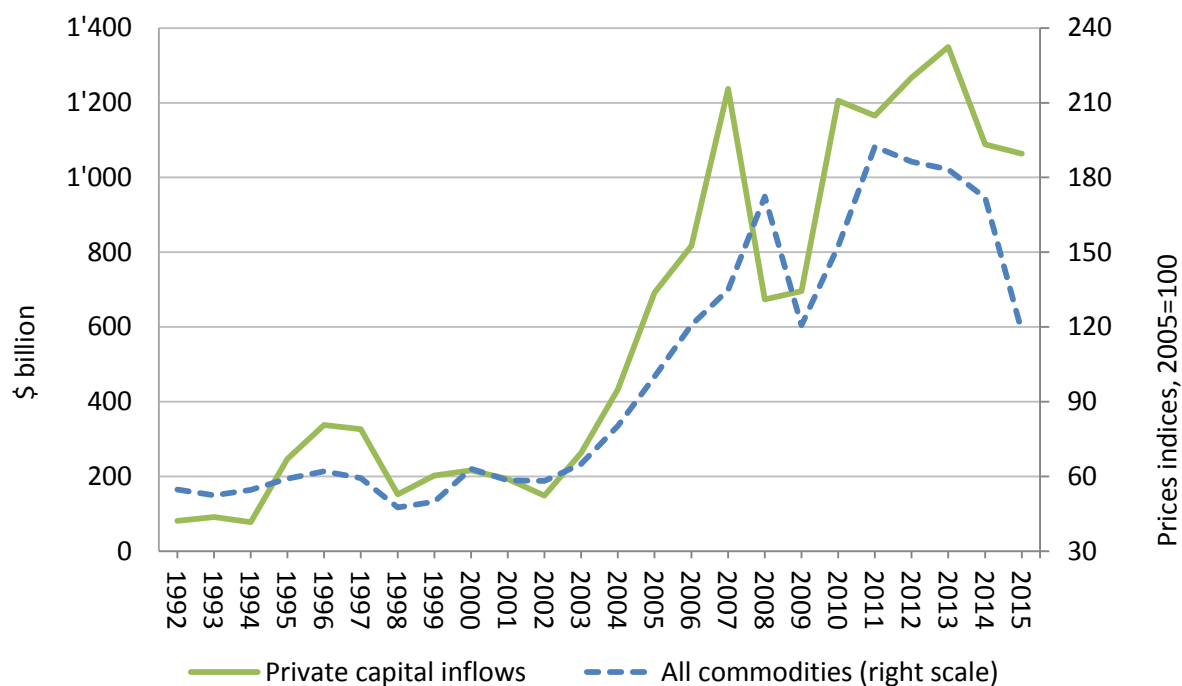
After several decades of effort to industrialize, the fortunes of a large majority of emerging and developing economies (EDEs) continue to depend on primary commodities. These include not only low-income countries but also many semi-industrialized, emerging economies, with notable exceptions of China, India, Mexico and Turkey. In fact commodity dependence among emerging economies is even more pervasive today than in the past because of “premature deindustrialization.” This had already started in the 1990s and continued in the new millennium thanks to the foreign exchange bonanza generated by the twin boom in commodity prices and capital flows (UNCTAD TDR, 2003; Akyüz, 2017). Exports of many emerging economies participating in international production networks for manufactures are also dominated by primary commodities when measured in value-added since their manufactured exports typically have low domestic value-added and high foreign contents in parts and components imported from more advanced economies. This is particularly the case in emerging economies in South-East Asia.

Notwithstanding the continued dependence on commodities, global financial conditions and international capital flows have increasingly become a stronger influence on EDEs. This is mainly due to deepened integration of these economies into the global financial system, particularly in the new millennium (Akyüz, 2017). But it is also due to growing influence of global financial conditions on commodity markets and financialization of commodities – that is, the integration of financial and commercial commodity markets as a result of entry of large financial players. Furthermore, there are strong mutually reinforcing impulses between capital flows and commodity prices which amplify their expansionary and contractionary effects on EDEs.

For all these reasons there has been a significant overlap between commodity and capital flow cycles in the new millennium (Chart 1). Both commodity prices and non-resident capital inflows to EDEs started to rise rapidly in the early 2000s; both booms were interrupted briefly by the collapse of Lehman Brothers in September 2008; recovery was quick in both cases. Commodity prices started to soften in 2011 and then collapsed while capital inflows stayed up until 2014 when they first moderated and then fell sharply, resulting in negative net flows of capital for the first time since the late 1980s.

The debt-driven expansion in the US and Europe that culminated in the global crisis and strong growth in China played a central role in the emergence of a twin boom in capital inflows and commodity prices in the early 2000s, lifting them up from their previously depressed levels. Simultaneously growth in EDEs bounced, exceeding growth in advanced economies by an unprecedented margin. The collapse of commodity prices and capital inflows around the Lehman turmoil in 2008 led to a sharp slowdown in EDEs. The ultra-easy monetary policies in the US and Europe adopted in response to the crisis and the increase in China’s demand for a number of commodities resulting from its massive investment stimulus package were crucial in the rapid recovery of commodity prices, capital inflows and growth in EDEs. As commodity prices and capital inflows weakened after 2011, growth in EDEs also started to level off. The collapse of commodity prices pushed some commodity-dependent emerging economies such as Brazil into recession even as net capital flows

Chart 1: Private capital inflows to emerging economies and commodity prices



Source: Institute of International Finance Capital Flows Data and IMF Primary Commodity Prices Data

remained at positive, albeit diminished, levels. After 2014 average growth in EDEs barely reached half of its level recorded during the pre-crisis booms in capital inflows and commodity prices.

The overlap between commodity and financial boom-bust cycles observed since the beginning of the 2000s is not unprecedented. There was a similar cycle in both markets in the 1970s and 1980s resulting in gyrations in economic activity in many EDEs. During that cycle commodity prices peaked in 1979 and capital inflows in 1981. They both ended in the early 1980s with the US recession and the hike in US interest rates, leading to a severe debt crisis in Latin America (UNCTAD TDR, 1985: Part 2).

There is also a broader historical evidence of a strong overlap between the boom and bust of capital flows, commodity prices and sovereign defaults since 1815 (Reinhart *et al.*, 2016). It is found that four of six global peaks in defaults followed double busts in capital flows and commodity markets. In this study in the most recent cycle the trough for both commodity prices and capital flows is dated to 1999 and the peak to 2011. The boom in commodity prices was the second longest one since the late 18th century and the boom in capital inflows one of the longest since 1815.

Although there are specific and independent determinants of commodity and financial cycles, for a number of reasons they tend to move together and reinforce each other. First there is a common set of global macroeconomic factors that influence both capital flows and commodity prices in the same direction. Second, commodity prices and capital inflows also have a strong influence on each other; that is, rising (falling) international commodity prices

stimulate (discourage) capital inflows to commodity-dependent EDEs whereas increases (declines) in capital inflows tend to raise (lower) the demand for commodities and commodity prices.

The common factors that affect both commodity prices and capital flows to EDEs originate mainly from monetary policies in advanced economies. Monetary policy in the US plays a key role because most commodities are priced in dollars and most commodity contracts are settled in dollars. Expansionary (contractionary) monetary policies, low (high) interest rates and weak (strong) dollar tend to encourage (discourage) capital inflows to emerging economies in search for arbitrage profits and quick capital gains. They also stimulate (dampen) commodity prices through several channels.²

First, interest rates affect commodity prices through their influence on the rate of exploitation of non-renewable resources such as oil and minerals. When interest rates fall, producers would be more willing to leave them underground for exploitation at a later date than raising production and investing the proceeds in interest-earning assets. Thus, lower interest rates tend to reduce commodity supplies and raise prices. Clearly this effect also depends on the rate of return on other assets such as property and stocks which can be used to invest proceeds from commodities. Furthermore, this link does not imply that high interest rates are always associated with high rates of exploitation of natural resources and low commodity prices. If prices are expected to rise significantly in the future, producers may still prefer to keep reserves underground even when the interest rate is high.

Secondly, since most commodities are storable, interest rates can also have a strong impact on demand for inventories. Given expectations about the future course of prices, lower interest rates stimulate inventory demand from users of commodities by reducing the carry cost, thereby pushing up prices. Increases in interest rates would have the opposite effect, reducing the demand for storable commodities. Again, this does not mean that low interest rates are always associated with high demand for inventories and high commodity prices; for, if prices are expected to decline sharply, inventory demand could be weak even when interest rates are low.

Thus, for storable commodities the effects of interest rates on supply and demand reinforce each other and move prices in the same direction. Other things being equal, increases (declines) in the interest rate would lower (raise) inventory demand and raise (lower) the rate of exploitation of oil and mineral reserves, putting downward (upward) pressure on their prices. In both decisions regarding extraction and inventory accumulation, price expectations play an important role. This is why such decisions are sometimes seen as speculative (Knittel and Pindyck, 2013).

Third, interest rates also have a strong impact on commodity prices through trading in commodity derivatives. This has gained particular importance in the new millennium as commodity markets have become more like financial markets, with several commodities being treated as a distinct asset class, comparable to securities and real estate, and attracting growing amounts of money from commodity index traders in search of profits from price movements. These traders are different from conventional speculators who provide liquidity to markets and allow commercial hedgers (producers and consumers) to transfer price

² For financial influences on commodity markets and empirical evidence see, Frankel (2006 and 2014a) and Bastourre *et al.* (2013).

exposures (Masters, 2008). While historically hedgers accounted for a very large segment of most commodity markets, now the percentage of speculators has risen dramatically, resulting in significant increases in the volume of trade in commodity derivatives.

Declines in interest rates encourage speculators to shift into commodity derivatives, particularly when prices are on an upward trend, adding further to the price momentum. This was an important factor in the strength of commodity prices before the 2008 crisis. But when sentiments turn sour regarding future commodity price movements and/or interest rates, financialization can also result in rapid and self-fulfilling declines. This was most visible at the outset of the subprime crisis in 2008 when the overall commodity price index rose by 35 per cent in the first 6 months of the year followed by a decline of 55 per cent in the second half (Akyüz, 2011). There is also evidence that price dynamics of highly-traded future commodity markets, including for corn, oil, soybean, sugar and wheat, are driven by self-reinforcing mechanisms (short-term endogeneity) rather than novel information about factors affecting supply and demand conditions. It is found that endogeneity increased in the 2000s and that about 60-70 per cent of price changes are now due to self-generated activities (Filimonov *et al.*, 2013).

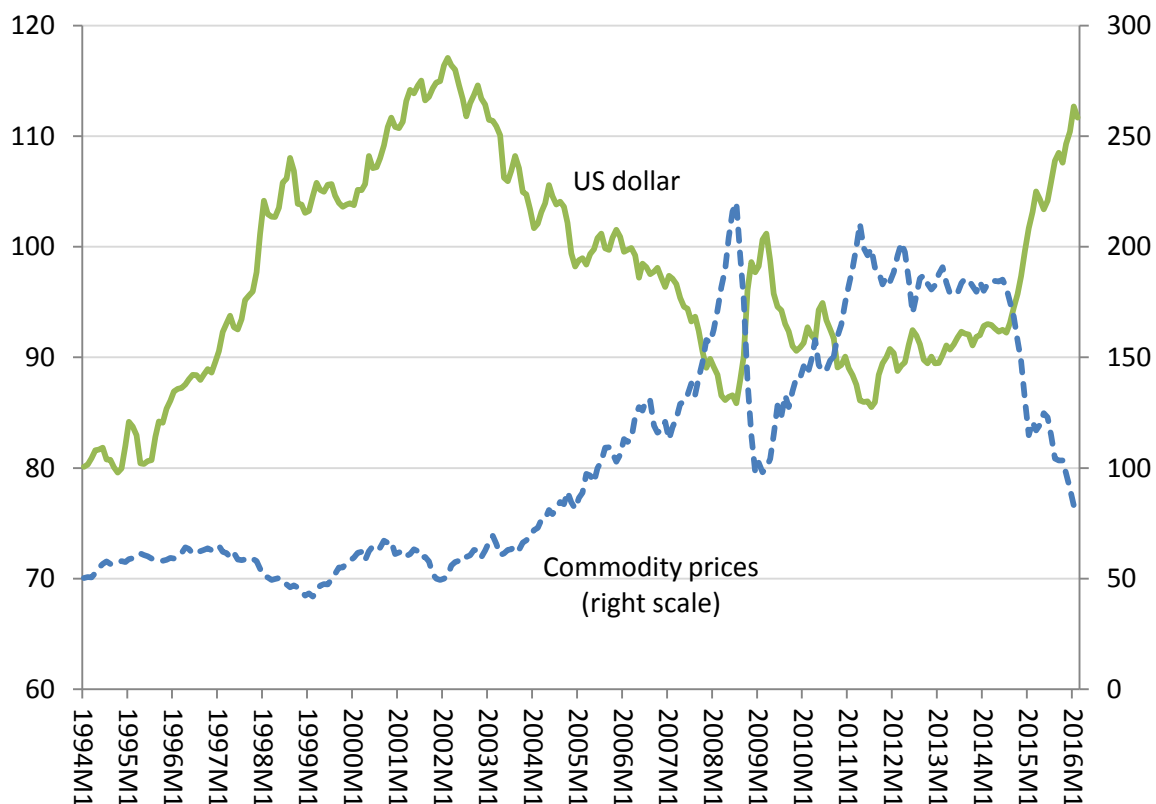
Finally, US monetary policy affects commodity prices also through its impact on the exchange rate of the dollar. Low US interest rates relative to other reserve currencies and weak dollar are often associated with strong commodity prices. Since a large proportion of commodities are priced in dollars, shifts in the exchange rate of the dollar alter the price of commodities in other currencies, thereby affecting overall demand. There has indeed been a remarkable inverse correlation between the nominal effective exchange rate of the dollar and commodity prices in the past two decades (Chart 2).

An appreciation (depreciation) of the dollar against the euro would raise (lower) the price of commodities in euros and hence reduce (increase) the demand in Europe, thereby lowering (raising) dollar prices. There are indeed several instances when dollar and euro prices of commodities moved in opposite directions. For instance between March 2014 and March 2015 when the dollar appreciated against the euro by almost 30 per cent, the International Monetary Fund (IMF) commodity price index in dollars fell by 16 per cent while the commodity price index in euros rose by 9 per cent. The contrast between euro and dollar prices in that period is even sharper for non-energy commodities (Chart 3).³ Generally when dollar prices of commodities were rising, euro prices increased less than dollar prices when the euro was appreciating against the dollar and more than dollar prices when the euro was depreciating against the dollar. For instance between mid-2001 and mid-2008 when the euro appreciated significantly against the dollar, commodity prices in dollars more than doubled while they rose by only 10 per cent in euros.

In addition to global monetary factors influencing commodity prices and capital flows to EDEs, developments in these two markets also influence and reinforce each other. In fact mutually reinforcing impulses appear to be at least as important as the influence of common global monetary factors in the overlap between commodity and capital flows cycles.

³ See also Frankel (2014b) who notes that during that period *The Economist's* euro-denominated commodity price index actually rose while the dollar index was down.

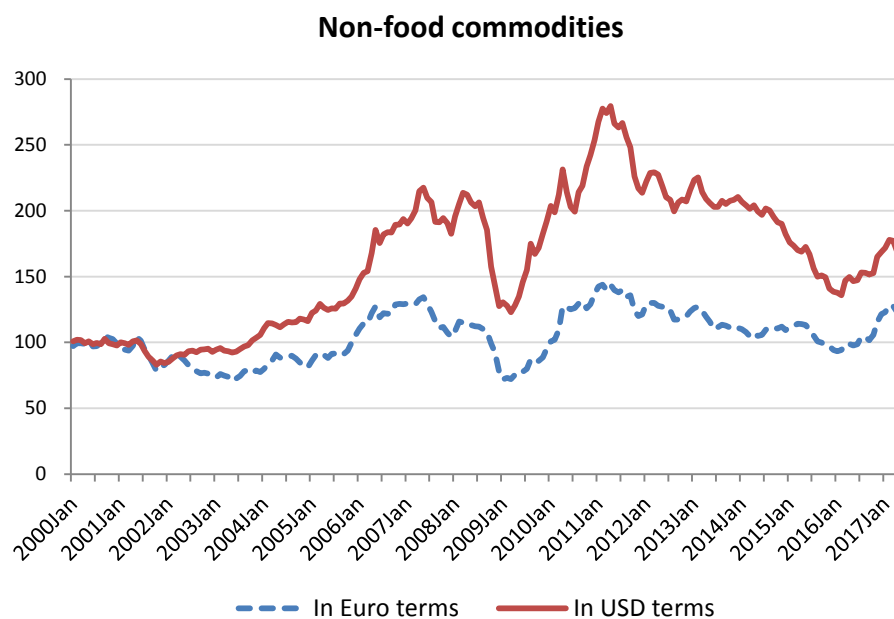
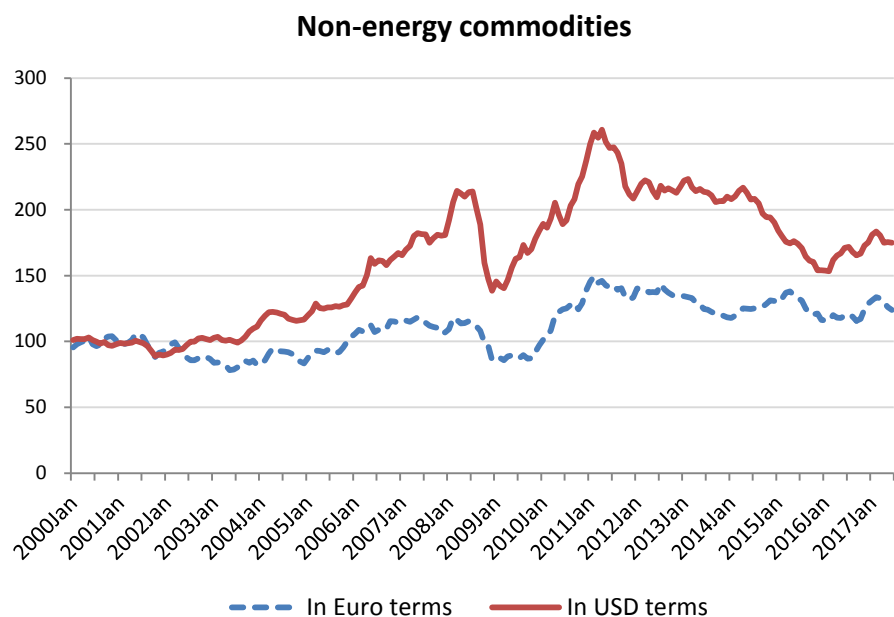
Chart 2: Commodity Prices and the US Dollar
(Index numbers, 2005=100)



Source: BIS Nominal effective exchange rates dataset and IMF Primary Commodity Prices dataset.

A number of studies have shown that commodity prices have systematic and strong effects on global capital flows cycles (Reinhart and Reinhart, 2008; Byrne and Fiess, 2015). Commodity prices influence capital inflows to commodity-dependent EDEs mainly through their impact on risk-return profiles of these economies. Higher commodity prices improve their external financial positions and reduce the risk on lending and investment. There is evidence of a strong negative correlation between commodity prices and sovereign spreads of commodity-dependent economies (Bastourre *et al.* 2013). Again, a boom in commodity prices raises the return on lending and investment in commodity economies by leading to faster growth and booms in asset and currency markets. They often cause currency appreciations and raise the prospects of capital gain on lending and investment. The surge in capital inflows stimulated by rising commodity prices aggravates the Dutch Disease effect and undermines industry particularly in countries adopting a hands-off approach to international capital flows.

These factors explain the strong association between rising commodity prices and the surge in international lending to commodity economies and sectors in the recent cyclical upturn. For instance, it is estimated that in 2015 the total debt of the oil and gas sector globally stood at roughly \$2.5 trillion, two and a half times what it was at the end of 2006. A substantial part of the increased borrowing was by state-owned, large integrated oil firms from EDEs. Between 2006 and 2014, the stock of total borrowing, including syndicated loans and debt securities, of Russian companies grew at an annual rate of 13 per cent. The

Chart 3: Commodity prices in Dollars and Euros (2000=100)

Source: Euro price index from ECB Statistical Data Warehouse; US dollar price index from IMF Primary Commodity Prices dataset. Monthly data rebased to 2000.

figure was 25 per cent for Brazilian companies and 31 per cent for Chinese companies (Domanski *et al.*, 2015). In the same vein many low-income commodity economies (the so-called frontier markets) traditionally dependent on official lending and excluded from international capital markets, including Bolivia, Ecuador, Ethiopia, Gabon, Ghana, Nigeria,

Rwanda, Senegal, Tanzania, Zambia were able to benefit from greater risk appetite and low interest rates, issuing dollar-denominated sovereign bonds for the first time.

The combination of rising oil prices, ample international liquidity and cheap credit resulted in overinvestment in highly capital-intensive energy sector, including in shale oil in the US. Global upstream (exploration and production) investment in oil doubled between 2003 and 2008 before falling with the onset of the crisis. It recovered rapidly after 2009 rising through 2014. The supply capacity generated by investment came into effect just as demand from EDEs was falling. Still, producers continued to pump out in order to avoid default, putting further downward pressure on prices. Investment fell sharply in 2015-16 to almost half of its level in 2014, and showed only a modest recovery in 2017 (IEA, 2017).

What is perhaps less appreciated is the impact of capital inflows to EDEs on commodity prices. A generalized surge in capital flows triggered by global macroeconomic factors typically leads to faster growth in these economies by generating credit, asset and spending bubbles. This has a strong impact on commodity prices since the commodity content of spending in EDEs is quite high, particularly in comparison with advanced economies. EDEs have become the major drivers in international commodity markets as their share has increased significantly in world commodity consumption in the new millennium. Oil demand from EDEs rose to levels as high as that from advanced economies, with China importing as much as the Eurozone and twice as much as Japan. China has also come to account for almost half of global metal consumption. However, the growing importance of EDEs as commodity users is not just due to China and other major importing EDEs. Commodity-exporting EDEs also constitute important markets for each other; many oil exporters import agricultural commodities and many EDEs dependent on the production of food and agricultural materials import energy and metals. Accordingly, the IMF (2013: 25) finds a strong “correlation between growth in commodity prices and growth in macroeconomic activity in emerging markets” and concludes that “slowdown in economic activity in emerging markets is an important driver of commodity price declines.”

Thus, not only do favourable conditions in commodity and financial markets bring faster growth in most EDEs, but faster growth also feeds into higher commodity prices by raising demand and into higher capital inflows by increasing profit opportunities for international lenders and investors. During downturns this commodity-finance nexus operates in the opposite direction. When commodity prices and capital flows are reversed, a vicious circle can emerge whereby declining growth in EDEs lead to weaker commodity prices and capital inflows which, in turn, weaken growth further. In this process the mutually reinforcing impulses between commodity and financial markets also serve deepen economic contraction – declines in commodity prices raise risk premium and discourage lending and investment in EDEs which in turn depress growth and demand for commodities and commodity prices.

Monetary factors, historically low interest rates and weak dollar, as well as strong growth in China no doubt played an important role in the emergence of a twin boom in capital inflows and commodity prices in the early years of the new millennium. The commodity boom ended before the boom in capital inflows, and commodity prices had an exceptionally steep decline from 2012 onwards. The role of monetary factors in this downturn is not always evident. Prices fell without any significant increase in interest rates even though there are suggestions that they may have been affected by the shift of speculators out of commodities in anticipation of future higher interest rates in the US (Frankel, 2014b).

But what is more certain is that the steep decline of dollar prices reflects in large part the appreciation of the nominal effective exchange rate of the dollar (Chart 2). In fact, as seen in Chart 3, price declines are much more moderate in euros.

There is a broad agreement that it may be several years and even decades before the world economy can witness another broad-based, demand-driven super boom in commodity prices. For the immediate future, prospects for commodity-dependent EDEs look bleak because of potential adverse influences from global macroeconomic conditions. In fact they seem to have been caught between a rock and a hard place. If the US and Europe maintain adequate growth, monetary policy could be normalized at a much faster pace than has been the case, resulting in hikes in interest rates and contraction in global liquidity. Financial implications for EDEs would be quite dire. The impact on commodity prices could also be deleterious. Growth in the US and Europe cannot be expected to provide much impetus to commodity prices even if it is at the potential rate, given that the latter has fallen significantly in the last ten years. But rising interest rates and sharply reduced capital flows could slow growth in EDEs significantly, exerting a strong downward pressure on commodity prices through the channels discussed above. If, on the other hand, the US and European economies stall, the policy-makers would have little ammunition in their existing arsenal to revive growth other than doing more of the same – the ultra-easy monetary policy – sustaining debt accumulation and speculative asset bubbles and laying the grounds yet for another crisis with global repercussions.

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