

COMMODITIES, INFLATION AND MONETARY POLICY: A GLOBAL PERSPECTIVE

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### **Introduction**

Over the past year, the issue of rising commodity prices has attracted growing interest and raised concern at international level owing to its macroeconomic (the rise in inflation and impact on the economy), social (redistribution effect) and, indeed, geopolitical repercussions.

This article briefly describes developments in commodity prices with an emphasis on food, reviews the reasons behind these developments and assesses the short and medium-term outlook, before focusing on the macroeconomic implications. It looks, in particular, at the potential impact of rising commodity prices on inflation and monetary policy in a global context marked by considerable uncertainty and the slowdown in some of the biggest economies. The analysis is geared towards emerging economies for the following reasons: first, they are, in theory, more exposed to the inflationary impact of an increase in commodity prices; second, the anti-inflation credibility of their monetary authorities is, in general, less anchored than in the advanced economies; and lastly, the monetary policy conduct is complicated in some countries by rigid exchange rate regimes and/or as a result of their status as exporters of commodities. The same reasons dictate that emerging countries are likely to run a greater risk of a deterioration in inflation expectations. Furthermore, the rise in commodity prices has greater social implications in emerging countries and requires a more active policy response by the economic authorities.

The prominence of emerging countries in the global economy is ever greater and they have so far displayed relative resilience to the effects of the financial turmoil and the slowdown in the advanced economies.<sup>2</sup> Consequently, they are proving instrumental in maintaining the dynamism of the global economy. This means that their response to the increase in global inflationary pressures transcends their borders and also has global implications.

### **Developments in commodity prices**

The upward trend in commodity prices started in 2002. Between 2002 and April 2008, prices increased by 277% in nominal terms and by 214% in real terms, according to the IMF index used in this article (see the upper panels in Chart 1). However, considerable differences in the figures can be observed for different commodities. In the period 2002-2006, food prices grew at a very moderate pace, while metal and energy prices recorded very significant growth. However, since 2006 food prices have gained ground, posting an annual average growth of 23% in real terms, exceeding metals (19%) and drawing close to energy (24%). This upward trend has strengthened over the past year, such that the year-on-year rate of growth of the aggregate index now stands at around 40%, with food at a similar level and energy at 60%. The price of oil has reached all-time highs in real terms, while the prices of metals and food are at levels not seen since the 1980s, at least in nominal terms; in real terms, however, they are far off their historical peaks. In short, the sharp, prolonged and generalised rise in commodity prices following a twenty-year downward trend, has brought about a fundamental change in the structure of relative prices at global level.

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**1.** We would like to thank Sarai Criado for her work on the increase in food prices, on which we based the second part of this article, along with José María Martínez Pérez for providing us with the charts. **2.** See Alberola, Broto and Gallego (2008).

## COMMODITIES

CHART 1



SOURCES: IMF, ECB, USDA and Banco de España.

a. "Food" includes cereals, plant oils, meat, seafood, sugar, bananas and oranges. "Metals" includes copper, aluminium, iron oxide, tin, nickel, zinc, lead and uranium. "Energy" includes oil, natural gas and coal. To deflate, the US CPI was used.

b. The annual average was calculated using the last twelve months available.

c. Hundred thousand tonnes for metals and thousand tonnes for the remainder.

d. Maize, rice, soya and wheat.

e. Includes cost of fuel for transport and the cost of fertiliser.

The reasons for this increase are mainly structural and derive from the disparity between accelerating demand and the relatively rigid response of supply.<sup>3</sup>

On the demand side, the economic development of the emerging countries has had significant implications for the consumption of all types of commodity, partly owing to the fact that they are used more intensively than in other regions. Developing countries use energy less efficiently, which is why the growth in energy demand associated with an increment of one unit of productivity or consumption is greater than that for developed countries. Similarly, development itself leads to changes in the habits of consumers and affects diet. So, emerging Asia

3. Banco de España (2007): See Box 3.1 of the Annual Report 2007, chapter 1.1.

now consumes higher levels of protein and, indirectly, of cereals. In short, the contribution of emerging countries to the ever-growing demand for commodities – and food in particular – is far greater than that of the advanced economies (see the lower left-hand panel of Chart 1). These structural changes have been observed for some time and are expected to continue exerting sustained upward pressure on the demand for commodities.

With regard to supply, a distinction should be drawn between renewable and non-renewable resources. In the case of non-renewable resources, such as oil or metals, there is usually little possibility of adjusting supply in the short term, especially when there is no surplus capacity. In the medium and long term, this is limited to resources with proven reserves. On the contrary, for food and agricultural commodities, the elasticity of supply is greater in the short term, and in the medium and long term. But in recent years, bad weather and, in some cases, factors limiting the increase of yields and acreage have prevented supply from meeting demand.

In short, the combination of supply, which is adjusting in a slow and limited way, and a particularly marked rise in demand has led to a sharp drop in inventories and a notably prolonged and steep rise in prices.

It is worth highlighting the increasingly close link between the respective developments in energy and food commodity prices, which occurs mainly via two channels. The first is the increase in the production of biofuels as substitutes for traditional fuels, which has occurred in response to a proliferation of farming subsidies in the context of concerns over climate change. This has generated additional demand for food commodities, such as maize, sugar cane and plant oils, putting extra pressure on prices and, in turn, upward pressure on the prices of related substitutes. It is not clear what impact biofuels will have on energy and food commodity prices in the long term, but they are an additional factor contributing to the structural growth in demand for agricultural products. The second channel relates to the importance of energy as an input in farming (fertilisers, harvesting and storage) and in the transport of agricultural commodities. Already in 2004, the proportion of energy costs in farming costs fluctuated at around 50% for some cereals, such as wheat, and at around 20% for other crops, like soya (see the lower right-hand panel of Chart 1). Both of these channels are contributing to the upward pressures on agricultural commodity prices and to the duration of the process, although it is difficult to determine to what extent.

Lastly, financial factors, such as the increase in non-tradable positions in commodities, low real interest rates or the weakness of the US dollar, may be strengthening the above-mentioned price rises and increasing their volatility.

Furthermore, most of the factors considered point towards the prices of some staple goods remaining at elevated levels in the medium term. Energy and food prices will probably remain high owing to the greater constraints on expanding supply. However, the duration of the current cycle of food price rises, which has far exceeded that of previous cycles, coupled with the sharp and accelerating rate of increase in demand, also explain the particularities of the current boom cycle in this sector.

#### ***The increase in headline inflation and the stability of core inflation***

Following several years of relative stability at 2-3%, the global inflation rate started to rise in late 2006, and this trend has gone largely unabated since. The global inflation rate rose in year-on-year terms from 2.4% in December 2006 to 4% in December 2007 and 4.5% in March 2008, an increase of more than 2 pp (see the upper left-hand panel of Chart 2).

In the developed countries, inflation rose from 2% to 3.2%, up 1.2 pp, while in the emerging countries it reached 7.2%, an increase of almost 4 pp (see the upper right-hand panel in Chart 2).

In relative terms, the rise in inflation was also steeper in emerging countries as a whole (116% since the end of 2006 compared with 60% in the advanced economies). As a whole, the emerging countries account for approximately three-fifths of the overall rise in inflation since the end of 2006 (1.2 pp), even though they account for only 30% of GDP in the sample used.<sup>4</sup> The rise has been greater and more prolonged in China (5.5 pp and almost 200% in relative terms)<sup>5</sup>, with its contribution reaching 0.8 pp.

This rising trend in consumer prices has caused the inflation forecasts for 2008 to be revised upward several times for all geographical areas from the second half of 2007 (see the lower left-hand panel of Chart 2). Particularly notable were the revisions upward for Eastern Europe and South East Asia of over 3 pp compared with the mid-2007 forecasts. However, both market consensus and the expectations implicit in financial instruments continue to point in the medium and long term to a gradual return to previous rates of inflation. The inflation forecasts for December 2009, therefore, are in general substantially below current rates of inflation, at close to 2% for the United States and the euro area, 4% for emerging Asia and 6-7% for Latin America and Eastern Europe.

The fact that the rise in headline inflation has taken place in a context of relatively stable core inflation has probably anchored medium-term expectations. Indeed, the upper left-hand panel of Chart 2 shows that global core inflation continues to average around 2%, although it has started to rise in several emerging countries since the end of 2007. This development has opened a growing gap between overall and core inflation at the global level, which already stands at over 2 pp, the widest it has been in recent years. The widening of the gap has been fairly generalised across geographical areas, with the cases of China in Asia, Chile and Peru in Latin America and the United States and the euro area among the developed countries all standing out.

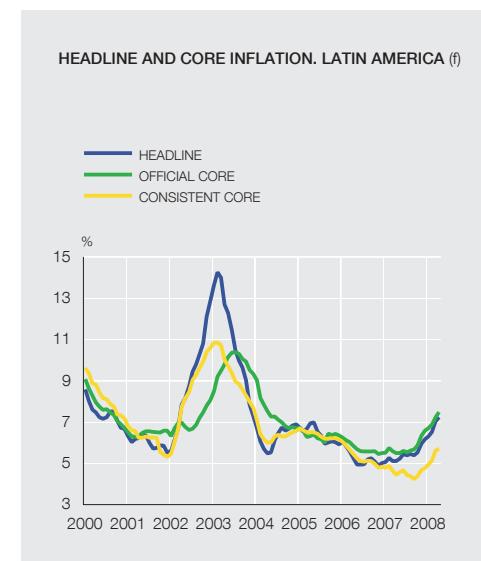
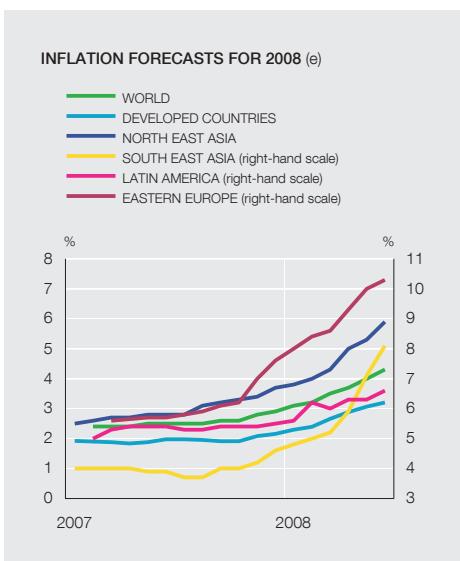
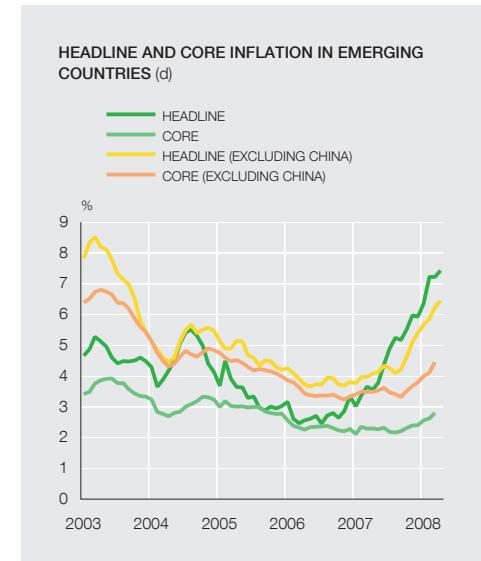
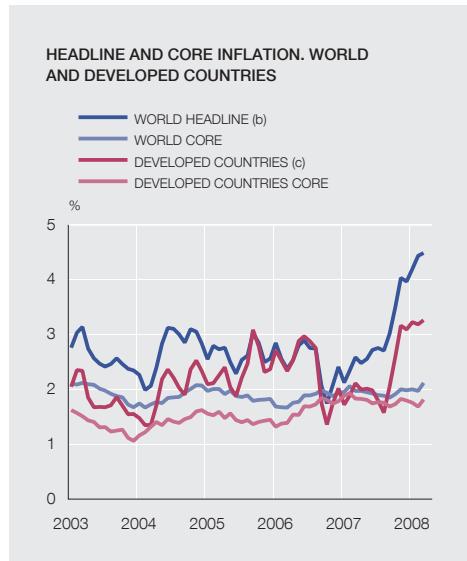
The above-mentioned analysis is based on a measure of core inflation that is intended to be as consistent as possible across countries. To this end, the food (processed and unprocessed) and energy components were excluded from the overall index for each country. In a number of cases, the measures used differ from the official measures of core inflation employed by central banks, which often design them to reflect persistent changes in overall price levels. The excluded components are more volatile or more prone to transitory shocks: unprocessed food, energy, administered prices, impact of the exchange rate on indirect taxes, etc. The decision to use one measure over another is intentional, which is why attention is drawn to this in the literature.<sup>6</sup> The fact that numerous central banks use this variable in their communication with the public or, to a lesser extent, to set the inflation target underlines its importance. The lower right-hand panel of Chart 2 shows the divergence between the measure of core inflation used in this article and the national measures used by Latin American countries. The aggregate of the official measures of core inflation used in the region indicates stronger inflationary pressures than the consistent measure and enables different conclusions to be drawn as to developments in the transitory component of inflation.

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4. The sample includes 35 countries: 22 developed countries and 13 emerging countries. The former account for 51% of world GDP and the latter for 22%, i.e. the sample represents around 73% of world GDP. According to the most recent figures released by the World Bank, there are a total of 141 developing and emerging countries, representing 43.6% of world GDP and 31 developed countries, which account for the remaining 56.4%. 5. If China had been excluded from the aggregate of emerging countries, the developed countries and the emerging countries would have recorded similar rises in inflation in relative terms. 6. For an international comparison of the various official measures of core inflation, see, for example, McCauley (2007) and the Bank of Mexico (2007). For an analysis of the problems encountered in devising a measure of core inflation and the implications of various options, see, for example Clark (2001) or Silver (2006).

## HEADLINE AND CORE INFLATION (a)

CHART 2



SOURCES: National statistics, World Bank, Consensus Forecast and Banco de España.

- Year-on-year rates. The core inflation index is consistent since it excludes the total for food and energy for all of the countries in the sample, except Thailand, South Africa and, from January 2005 to December 2005, China.
- Aggregate calculated based on the data for 35 countries, which represent over 70% of world GDP.
- United States, Canada, Japan, euro area, Denmark, Norway, Sweden and the United Kingdom.
- Brazil, Chile, Mexico, Colombia, Venezuela, Peru, Hungary, Poland, Czech Republic, Slovakia, China, Korea and Thailand.
- Developed countries: United States, United Kingdom, euro area and Japan; North East Asia: China, Hong Kong, South Korea and Taiwan; South East Asia: Indonesia, Malaysia, Singapore, Thailand, Philippines and Vietnam; for Latin America forecasts are for December; for the remainder, mid-year forecasts.
- Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.

## **Food commodities and inflation**

Looking at the gap between overall and core inflation, it is clear that food and energy have been behind the rise in headline inflation at the global level since late 2006. The upper panel of Chart 3 also illustrates this point and further confirms that, in recent months, energy price increases, boosted by a significant base effect, have made a very strong contribution to the rise in the global inflation rate. However, since the aim of this article is to focus on emerging economies and the impact of the food price increases are particularly important for these economies, this section will focus on food prices.

When explaining the impact of international food prices on inflation in individual countries, it is necessary to distinguish between two types of effect: (1) the pass-through effect derived from the transmission of international prices to the corresponding domestic component of the CPI; and (2) the composition effect, derived from the weight of the food component in the overall index.

With regard to the pass-through effect, the centre left-hand panel of Chart 3 shows food inflation by region between 2006 and the opening months of 2008. It is measured by comparing the food component of the CPI relative to developments in food commodities internationally.<sup>7</sup> The sharp increase in international food commodity prices is only partially reflected in the food component of the CPI, although to differing degrees of intensity across the regions, and there tends to be more pass-through in emerging countries. This is a reasonable outcome, since it is usually the case that, the lower the level of development, the larger the share of commodity prices in the total cost of the final consumer good. This is presumably because the value added between the commodity and the consumer good is lower on account of lower wage costs and the fact that there are fewer stages of production and intermediation.

As far as the composition effect is concerned, with an identical increase in food inflation in each country, the larger the weight of the food component, the higher the impact on headline inflation. In this regard, a simple statistical analysis indicates that, indeed, there is a positive relationship for a large sample of countries – which is statistically very significant – between the weight of food components in the CPI and the increase in headline inflation from the end of 2006 to the latest data available at the time of this report going to press. The centre right-hand panel of Chart 3 illustrates the strong positive relationship compared with the assessment of the starting level of inflation in each country and confirms the relevance of the composition effect: a 10 pp difference in the weight of food components in the CPI implies an additional 1 pp rise in inflation.

Additionally, the lower panels of Chart 3 illustrate how the lower per capita income, the heavier the weight of food in the overall consumer price index and also the stronger the transmission of the increase from international to national prices for these goods. This explains why in emerging countries the rise in inflation – which has contributed significantly to food price increases – has been around 3 pp higher than in the developed countries.

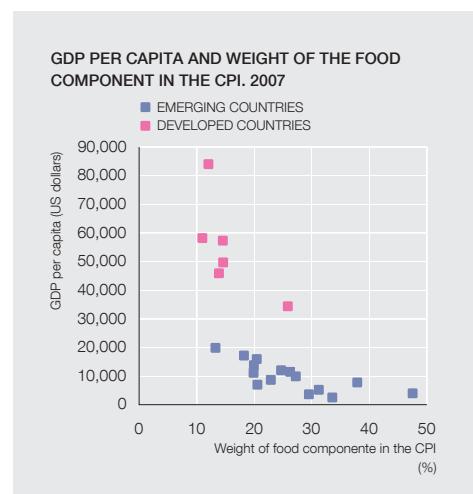
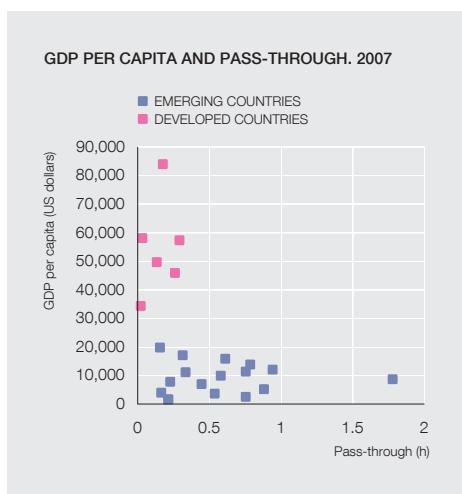
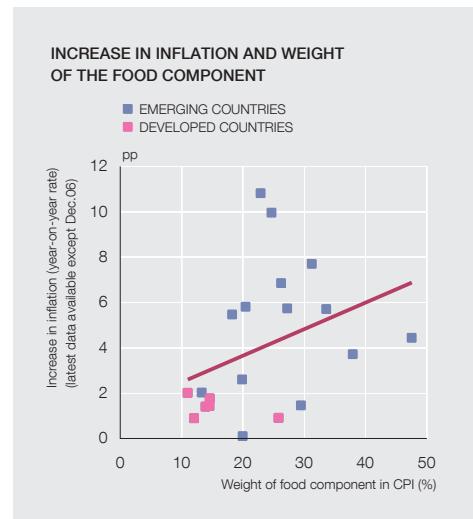
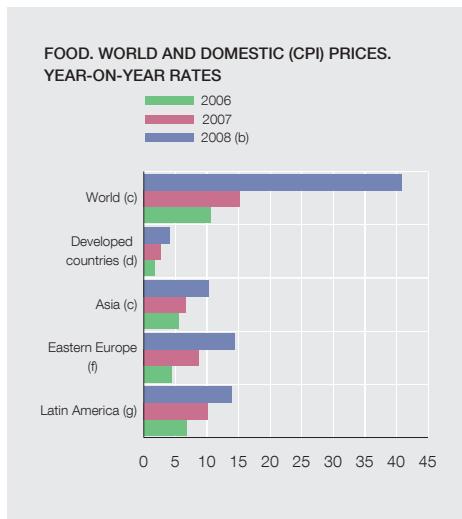
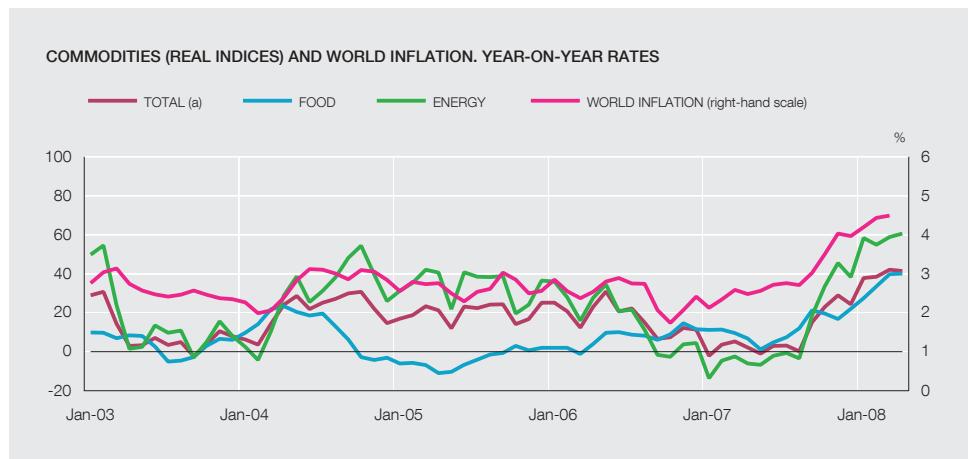
Further factors, some of which are idiosyncratic, may have influenced the impact of the increase in international commodity prices on inflation in individual countries, for example the position in the cycle or the various shocks in each economy. In recent years, strong demand pressures and symptoms of overheating have thus been identified in many emerging economies. The cyclical position and demand pressures are associated with two factors which merit particular attention in the current circumstances and which, as will be seen in the following section, are also closely interrelated:

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7. The figures for 2008 were calculated using the data available for the opening months of the year only. If year-on-year rates recorded for the remainder of the year are similar to those recorded during the first few months, food inflation in 2008 will exceed that in 2007 and will be significantly higher than the 2006 rate in most countries.

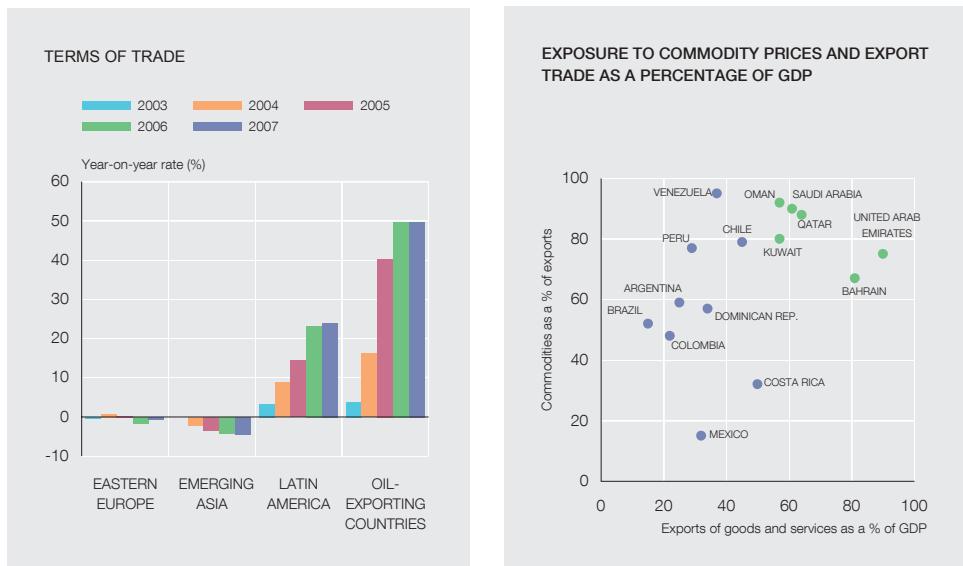
## FACTORS CONTRIBUTING TO INFLATION

CHART 3



SOURCES: National statistics, IMF, World Bank and Banco de España.

- a. IMF's commodity prices index, deflated by the US CPI.
- b. To April.
- c. Food component of the IMF's commodity prices index.
- d. United States, Canada, Japan, euro area, Norway, Sweden, Denmark, United Kingdom and Switzerland.
- e. China, Korea, Indonesia, Philippines and Thailand.
- f. Hungary, Poland, Czech Republic, Latvia, Lithuania, Estonia, Slovakia, Bulgaria and Romania.
- g. Argentina, Brazil, Chile, Colombia, Mexico, Venezuela and Peru.
- h. Ratio of domestic food inflation to international food inflation.



SOURCES: IMF and Banco de España.

- (a) the real terms of trade, i.e. relative export prices compared with relative import prices, especially in commodities exporting countries; and
- (b) the economic policy options in each country and, most particularly, monetary policy and its relationship to the current exchange rate regime.

### **The adjustment of the economy and the monetary policy response**

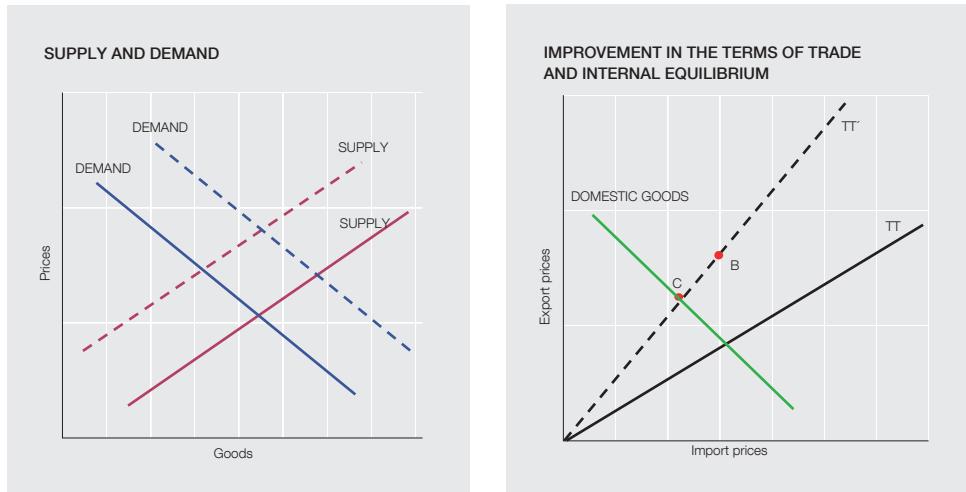
The rise in inflation following a prolonged period of very moderate inflation rates raises important issues and challenges, globally and for the national authorities, in developed and emerging countries alike. Nevertheless, the emerging countries face a greater challenge for two reasons. First, because low inflation is a recent achievement: the substantial and persistent easing in inflation in most emerging countries, which was particularly marked in Latin America, led in the 1990s to the use of nominal anchors, which initially were external (forms of fixed or rigid exchange rate regimes) and are increasingly internal, based on inflation targeting regimes and greater monetary discipline by the central banks. The disinflation process also benefited from the entry into global trade of new and highly dynamic competitors, such as China, and from structural reforms. Against this background, the recent rise in inflation is a critical test for these countries, since it will reveal whether the transition towards a sustained low inflation regime, consisting of the anchoring of agents' inflation expectations and the credibility of the monetary authorities, has taken root or whether the progress made in recent years in terms of price stability will be reversed.

Second, many emerging countries are exporters of commodities, posing an additional challenge in terms of inflationary pressures. As shown in the left-hand panel of Chart 4, oil exporting countries and Latin American economies that export metals and agricultural commodities have witnessed a significant improvement in their terms of trade in recent years, also owing to the fact that they are open economies (see right-hand panel of Chart 4).

### **IMPACT AND ECONOMIC ADJUSTMENT OF THE RISE IN COMMODITY PRICES**

In order to assess more accurately whether economic policies are responding adequately to the persistent increase in commodity prices, it is useful to start by analysing the impact of the latter on the economy and on adjustment mechanisms.

An increase in the price of commodities used in the supply chain entails an increase in production costs, which in the traditional aggregate supply and demand model produces an upward

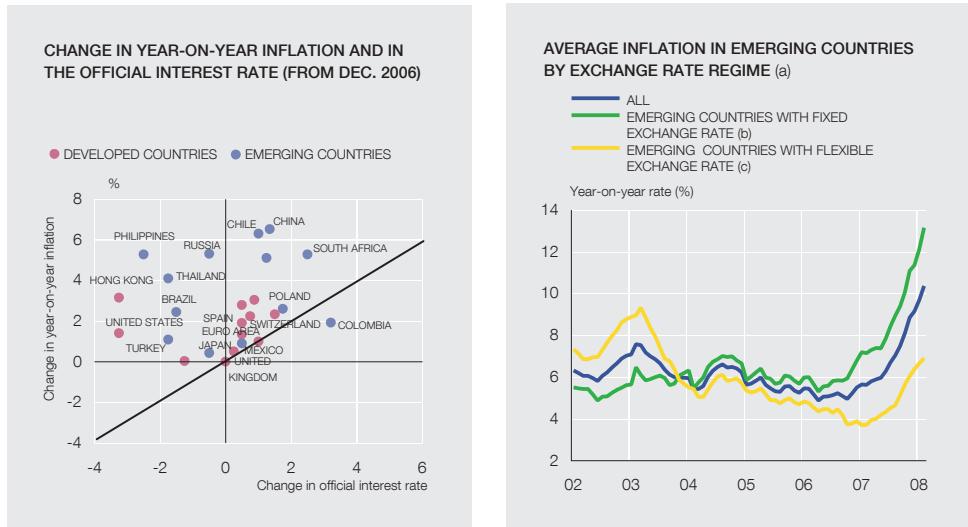


SOURCE: Banco de España.

shift in the supply curve (see the left-hand panel of Chart 5), whereby the same quantity of goods is supplied at a higher price. The impact of an increase in commodity prices on aggregate demand depends on whether the terms of trade are deemed to be improving or worsening. This is depicted in the right-hand panel of Chart 5, where the steeper slope of the TT curve indicates an improvement in the terms of trade and the perpendicular curve represents equilibrium in the domestic market in (non-tradable) goods produced by a country (see Dornbusch (1980) and Obstfeld and Rogoff (1996)). If the terms of trade deteriorate, the value of the country's real income declines, leading to lower spending capacity, which restricts aggregate demand. To some extent, this effect offsets the inflationary impact of the rise in commodity prices, but reinforces the adjustment of the economy (the demand curve moves leftward). On the contrary, if the terms of trade improve, the purchasing power of a country increases, leading, in normal circumstances, to an improvement in the external balance. With respect to the supply and demand model, the demand curve shifts towards the right, indicating the expansionary nature of the improvement in the terms of trade. In addition, this also leads to an increase in output and investment in export sectors, which has a positive effect on supply and potential output, but does not necessarily counter the negative impact on the increase in costs in the rest of the economy (for the sake of simplicity, this impact is not depicted in the supply and demand model).

The first conclusion that can be drawn from this simplified analysis is that the rise in commodity prices does have an inflationary impact, and one that will increase the more commodities are used as an input in the various supply chains (shift in aggregate supply) and the greater the improvement in the terms of trade (shift in aggregate demand). The ultimate impact on the economy will depend on the relative shift in the supply and demand curves and on the attendant elasticity.

For the economy to accommodate the terms of trade shock, it is necessary to adjust the real exchange rate. An improvement in the terms of trade would lead to an appreciation of the real exchange rate (the scale of which would depend on how permanent the improvement was perceived to be). This would imply stronger demand for imports at the expense of non-tradable domestic goods, such that the external surplus would tend to ease off and excess demand to correct itself. In accordance with the right-hand panel of Chart 5, this appreciation would result in equilibrium at point C.



SOURCE: National statistics.

a. Exchange rate classified according to the "De Facto Classification of Exchange Rates Regime and Monetary Policy Framework", IMF, July 2006.

b. Bolivia, Bulgaria, China, Ecuador, Honduras, Hungary, Iran, Latvia, Lithuania, Nicaragua, Panama, Saudi Arabia, Ukraine and Venezuela.

c. Brazil, Colombia, Croatia, Guatemala, Korea, Peru, Poland, Romania, Russia, Singapore, South Africa and Uruguay.

Confirmation that real appreciation is occurring is provided by the revaluation of the nominal exchange rate or higher inflation. Under a flexible exchange rate regime, this is the factor that would be most likely to adjust itself. However, in the case of a more rigid exchange rate, the adjustment tends to take place by means of higher inflationary pressures. Under flexible exchange rates, monetary policy can help to contain inflation by the raising of interest rates, which helps to moderate demand and facilitates the adjustment of the nominal exchange rate. In contrast, exchange rate rigidity hinders the achievement of price stability, in that the exchange rate makes no contribution when it comes to abating inflationary pressures, and nor is it possible, given free circulation of capital, to increase interest rates autonomously. In these circumstances, there are significant constraints on the use of monetary policy to counter inflationary pressures, and the risks to price stability in the medium term increase considerably.

In the case of a worsening of the terms of trade, i.e. in countries which are not net exporters of commodities (mostly developed countries), there is less need for a monetary policy response. On one hand, demand pressures work in favour of the required adjustment. On the other, the depreciation of the nominal effective exchange rate, which may add to inflationary pressures, will foreseeably be of a lower magnitude than in the opposite case, given that the relative share of commodities in a country's imports is usually much smaller than the weight of commodities in the exports of those countries benefiting from the enhanced terms of trade.

#### THE MONETARY POLICY RESPONSE

In practice, individual central banks have applied different monetary policy responses to the rise in inflation. It is difficult to see these outside of the context of the financial turmoil, the sharp slowdown in the United States and the deterioration in global growth expectations.

The left-hand panel of Chart 6 depicts the variation in percentage points in official interest rates and in inflation since the start of the rise in late 2006, distinguishing between developed and emerging countries. The points above the diagonal line between the axes represent a reduction in real interest rates, giving an indication of which countries have, ex-post, relaxed their

monetary conditions in the period under review. This interpretation should be viewed with caution, since decisions on monetary policy are taken in relation to anticipated developments in inflation rather than to actual ex-post inflation. In any case, it is telling that, although most countries have raised their official interest rates, the rise in inflation has meant that, in all but one (Colombia), real interest rates have decreased. This suggests that monetary conditions have eased across the board during the period of rising inflation.<sup>8</sup> This conclusion can be drawn for the developed and the emerging economies alike, although the marked fall in real interest rates of over 4 pp in the United States and several emerging economies (such as China and Russia) is notable.

With regard to the exchange rate regime, the right-hand panel of Chart 6 plots average inflation for a sample of emerging countries, broken down in terms of countries with fixed or rigid exchange rates and those with flexible exchange rates according to the IMF classification. Inflation is much higher for rigid exchange rate regimes (13% compared with 7%) and the recent rise in inflation is also sharper, in both absolute and real terms. This situation is the opposite to that of a few years ago, when the exchange rate anchor was key in reducing inflation expectations. The upward pressures on the real exchange rate seen in emerging economies in recent years as a result of both the improvement in the terms of trade and large financing inflows have led to higher inflation in economies with rigid exchange rate regimes. This is exemplified by the Persian Gulf economies, whose terms of trade have improved most substantially and whose economies are pegged to the US dollar. This particularly complicates their monetary policy conduct as, in addition to having to implement a more generous than necessary monetary policy, in parallel with the monetary loosening in the United States, their currencies have depreciated (in real effective terms). This combination reinforces what are already significant inflationary pressures. For this reason, the current monetary policy framework puts central banks in the region in a very difficult situation as far as maintaining price stability is concerned.

The above-mentioned charts suggest that, in general, monetary policy is responding only in a limited way to the rise in inflation and that, under rigid exchange rate regimes, the response tends to be even more constrained. It is worth reiterating that the increase in commodity prices represents a change in relative prices. In principle, monetary policy should be geared towards preventing this adjustment of relative prices from giving rise to second-round effects on prices and wages and towards keeping inflation expectations anchored. In this context, the moderate monetary policy response in developed countries can be attributed to the fact that inflation expectations continue to be anchored, although concerns are growing in this respect. It is also worth noting that there has been a marked downward revision of growth expectations in the United States and other advanced economies and that uncertainty continues to prevail as far as developments in the international financial markets and their effects on the global economy are concerned.

The timidity of the response in the emerging countries is more striking given that demand continues to be dynamic, particularly in commodity exporting countries. It has been observed that countries tend to avoid sharp currency appreciations, including those with flexible exchange rate regimes. This has led a number of governments to intervene in the exchange markets. There are various arguments in favour of limiting currency appreciations or, in the case of fixed exchange rate regimes, revaluing the exchange rate. First, certain sectors of tradable goods other than commodities have seen their competitiveness deteriorate ('the Dutch disease') and are concerned that it will not remain viable, leading to a permanent impact on the productive

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8. In any event, some countries have tightened monetary conditions by other means, such as larger reserve requirements.



SOURCES: Consensus Forecast, national statistics, FAO and Banco de España.

- a. For cases in which the inflation target is set in accordance with a range of values, the average point in the range was used.
- b. For Latin America, forecasts are for December; for the remaining countries, mid-year forecasts.
- c. The inflation target for 2009 was recently revised upward from 4% to 7.5%.
- d. Based on a sample of 77 countries.

and export structure. This would constitute a natural adjustment if the change in relative prices were permanent. However, the uncertainty in this regard explains the resistance to appreciation. Second, given the scale of the food and oil price increases, some authorities argue that their reluctance vis-à-vis appreciation is warranted, because an extremely significant appreciation of the exchange rate would be necessary for it to have the required impact in terms of controlling inflation. However, this argument applies to food inflation, but not to headline inflation, which is what the central banks are mandated to control. Lastly, it can be argued that allowing currencies to appreciate attracts more short-term capital flows, generating expectations of further appreciations in the future, which would reinforce appreciation pressures even more.

The cuts in official interest rates by the US Federal Reserve System have widened the official interest rate differential between the Fed and many emerging economies' central banks, making it more difficult for the latter to resist appreciation and inflation pressures. Consequently, in order to effect the necessary monetary tightening in a way compatible with the need to contain appreciation, some central banks have resorted to raising reserve requirements or imposing temporary capital controls. These measures may be useful in the short term, but may impact on monetary policy transmission in other ways and are usually less effective in the medium term.

The increase in inflation may erode the credibility of the monetary authorities, given the opening of a wide gap between the inflation target (or officially forecast inflation) and actual inflation. In the left-hand panel of Chart 7, the upper column illustrates this divergence for a sample of emerging countries that use direct inflation targeting, while the lower columns show the expected deviation at the end of 2008 and of 2009. While the gap noticeably narrows in the medium term, it remains positive in almost all of the countries, including over the longest horizon (the third column).

This development poses a challenge to the central banks in these countries, as their credibility is associated in the medium term with the achievement of the announced inflation targets. Partly as a result, various proposals have surfaced in recent months to modify inflation targeting in some countries, e.g. by adopting a core rather than a headline inflation target since it is less exposed to short-term fluctuations, by lengthening the periods of time over which the inflation target must be reached, or, like Turkey, by revising the inflation target upwards. In all cases, there remains a lot of room for manoeuvre to shape the monetary policy response to inflation developments, which may be temporary or due to specific goods. An additional argument in favour of adopting a core inflation target is that it is core inflation that is most directly affected by monetary policy. However, there may be external pressures on the central bank behind this debate, which raises the questions on the independence of the monetary authority.

As stressed at the beginning of this section, the current rise in inflation is a critical challenge for emerging countries in terms of building on the advances made in recent years. To this end, the monetary authorities are advised to observe the frameworks established to achieve their inflation targets and to resist the temptation (or pressures) to move the goalposts, since this could bring about a loss of credibility for monetary policy and the central bank as an institution. In this context, the central bank communication policies are particularly important in effectively conveying the reasons for potentially missing an inflation target and in justifying the monetary policy decisions taken. This recommendation applies equally to advanced and emerging economies, irrespective of the type of monetary policy regime.

#### ***The response of other economic policies***

Other types of policy can help the economy to adjust to the rise in commodity prices, also contributing to limiting the inflationary impact of this shock.

Fiscal policy plays a prominent role in that it can support monetary policy in easing inflationary pressures. In countries where the terms of trade are improving and are having a positive impact on tax revenues, it may be inferred from the foregoing that fiscal policy should adopt a counter-cyclical stance. The greater the degree of improvement in the terms of trade and the more transitory this is perceived to be, the more marked this stance should be. In this regard, the most complex issue when implementing fiscal policy is how to manage the increase in tax takings stemming from the improvement in the terms of trade and, in particular, to decide on how much to adjust the level of spending upward. On one hand, there is usually some uncertainty over the duration of the improvement; on the other, there may be limits to the economy's capacity to absorb the external boom and to the increase in disposable income. Lastly, it is useful to establish mechanisms for absorbing and accumulating these funds for future cyclical contingencies. In fact, some commodity exporting countries have set up stabilisation funds or sovereign wealth funds precisely for the purpose of dampening the direct impact of the economic boom, spreading out the revenue over the cycle and/or accumulating and investing funds for future generations. Although these funds have grown exponentially in recent years, in many countries there is plenty of room for improving the efficient use of such funds.

It is also important when devising economic policies in emerging countries to take into account the social impact of price increases in staple goods, which are particularly affected by the rise in commodity prices (as in the case for food shown in the central right-hand panel of Chart 3). Concerns in this regard have led many governments to adopt an array of administrative measures to restrict the rises in food and energy prices for the poorest segments of the population. The right-hand panel of Chart 7 shows the results of a survey carried out by the FAO, which assesses some of these measures and their sizeable influence in a wide sample of countries, affecting in some cases more than half of the countries.

Some of these measures, such as lowering import tariffs (or duties), are aimed at reducing the final cost of the goods and have been used extensively in the past few months. Ultimately, these policies help iron out market distortions and can thus be considered positive. Measures designed specifically to boost the supply of commodities and the productivity of the agricultural sector (e.g. subsidies for fertilisers and investment in machinery) may also be considered in a favourable light. Likewise, conditional cash transfers, aimed at mitigating the shrinking purchasing power of the most vulnerable (with high relative food consumption) are, in principle, also well received. Indeed, one of the main objections to subsidies to production or these kinds of transfer relates to the way in which they are implemented, since they can lead to distortions and perverse incentives. In this respect, it is worth highlighting the experience of Latin America in recent years, which through its social programmes based on these kinds of transfer<sup>9</sup> has shown itself to have an appropriate infrastructure for transferring assistance of this type swiftly and efficiently.

In contrast, several countries have been implementing measures that are having a distortionary effect on the market. Among these are the restrictions or bans on exports of specific goods, price controls or freezes, and generalised food and energy consumption subsidies. Moreover, the latter are usually counter-productive in that the better-off tend to consume more of these goods. Export restrictions or bans have been adopted by almost 30% of the countries, while price controls have been adopted by over half of them, making them the most widely adopted measure. All of these measures hinder the adjustment of production and consumption to the change in relative prices, and they mostly lead to the price rises persisting. This is either because they prevent a correction of demand (as would occur, for example, if the commodity price increases were passed on to the final consumer) or because they tend to exacerbate supply constraints at the global level (by restricting exports). The use of reserves (by 20% of the countries) also distorts price signals, but may be justified in the event of the food shortages recently experienced in many countries.

These administrative measures also have repercussions on fiscal and monetary policies. The budgetary impact of some of these measures means that fiscal policy may ultimately take on an expansionary bias in an inflationary environment, which should be countered with fiscal measures in the opposite direction. The fiscal cost of the measures can be high – in some cases of the order of several percentage points of GDP – and may grow over time. Furthermore, some of the measures contribute to the deterioration in the current account balance. In some countries, mainly in Asia, governments are cutting these subsidies, many of which have been implemented for decades, because the fiscal costs have reached unsustainable levels. For this reason, the measures must be well designed and temporary. The problem is that, for reasons of political economy, some of these measures are easier to introduce than to dismantle.

With regard to monetary policy, these measures have a direct impact on inflation. This can work in one direction or another, depending on the type of measure: price controls tend to reduce inflation in the component in question, while passing on the price increases to the consumer tends to induce a rise in inflation. However, over and above these effects, possibly the most significant implications relate to the role of the monetary authority itself. Since some of these administrative measures are aimed at mitigating price increases, they are, in a way, anti-inflationary – even if restricted to very specific components. This could lead to them gaining in prominence or becoming perceived as alternatives to conventional monetary policy. Most of

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9. These development initiatives, known as cash transfer programs, transfer money to low-income households on condition that the parents send their children to primary school, attend regular medical check-ups and turn up for talks given at local health centres.

them are designed in response to exceptional circumstances and should be abandoned once these have been overcome. However, as pointed out above, sometimes as a result of the incentives, the very opposite occurs and the measures are retained. For this reason, there is always a risk that this kind of measure might take root, which could lead to conflict between the different economic policy authorities and undermine the credibility of the central banks.

### **Conclusions**

The rise in commodity prices, in particular energy and food prices, has triggered a worldwide increase in headline inflation since late 2006. In emerging countries, this rise has been steeper, in absolute and relative terms, than in developed countries. One possible reason for the stronger impact on the overall price index lies in the fact that lower levels of development generally entail a heavier weight of food in the CPI and a greater pass-through of international to national food prices. Although it would be difficult for commodity prices to continue growing at the rates seen in recent months, there is cause to expect that prices will remain high in the medium term.

Among the emerging countries, inflationary pressures have tended to be stronger in commodity exporting countries and those with rigid exchange rates, in particular when they are pegged to the US dollar. In some countries both of these factors have coincided, painting a particularly worrisome picture since, as has been discussed in this article, in order for the economy to adjust to improved terms of trade, an appreciation of the real exchange rate is required. If this is not effected through a revaluation of the nominal exchange rate, it will ultimately manifest itself as higher inflation.

The increase in headline inflation has so far scarcely fed through to core inflation rates or medium-term inflation expectations. Nevertheless, these kinds of effect are starting to be observed in a number of emerging economies. This stability, combined with the uncertainty surrounding the economic outlook and the expectation that price increases will ultimately ease off, explains the generally cautious response by the monetary authorities. In short, the rise in commodity prices is an adjustment of relative prices, which central banks should continue to monitor carefully to ensure that it does not generate second-round effects or have an impact on medium-term inflation expectations. It should, however, be noted that real interest rates have fallen in almost all of the countries in question during this phase of mounting inflation, which would denote an easing of monetary policy stances.

Nevertheless, the growing and persistent gap between headline and core inflation gives cause for concern, and monetary policy is faced with several challenges on a global scale. And the challenges facing developing countries are even greater. This is not only due to the fact that the increase in inflation has been higher in these countries and that, in some of them, core inflation is already on the rise, but is also because price stability is a recent achievement and anti-inflation credibility is less anchored than in the advanced economies. This situation thus presents a clear risk to the consolidation of the low inflation regimes that were so hard to achieve. In countries with a less favourable institutional context, administrative measures to contain food and energy inflation – some of which are justified in the light of the exceptional market situation – have proliferated, constituting an additional obstacle for central bankers. More specifically, such measures risk mutating into factors that undermine the conduct of monetary policy and the very autonomy of the central bank, as a result of their distortionary effect on prices and because they come to be seen as an alternative way of combating inflation, which is neither conventional nor desirable.

Faced with these challenges and the complexity of conducting monetary policy, it is essential for all monetary authorities to respond in a prudent and firm manner. This applies especially to

emerging economies, which must avoid making changes to the operational framework of monetary policy and reaffirm their autonomy and commitment to price stability.

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## REFERENCES

- ALBEROLA, E., C. BROTO and S. GALLEGOS (2008). 'Turbulencia financiera y perspectivas para las economías emergentes', Boletín Económico, May, Banco de España.
- ÁLVAREZ, L.J. and I. SÁNCHEZ (2007). 'El efecto de las variaciones del precio del petróleo sobre la inflación española', Boletín Económico, December, Banco de España.
- BANCO DE ESPAÑA (2008). 'The increase in food commodity prices', Box 3.1, Annual Report, 2007.
- BANCO DE MÉXICO (2007). 'Consideraciones sobre la definición de la inflación subyacente', Annex 1, Informe sobre Inflación, July-September.
- CHENG, K., T. HELBLING, V. MERCER-BLACKMAN et al. (2008). 'Commodity Market Developments and Prospects', Appendix 1.2, World Economic Outlook, April, IMF.
- CLARK, T. (2001). 'Comparing Measures of Core Inflation', Economic Review, II semester, Federal Reserve Bank of Kansas City.
- CORBACHO, A. (2008). 'Effects of Commodity Prices on Consumer Prices', Box 3.2, Regional Economic Outlook: Western Hemisphere, April, IMF.
- DORNBUSCH, R. (1980). 'La macroeconomía de una economía abierta', Antoni Bosch (ed.).
- ELEKDAG, S., K. KRANJNYÁK and J. LEE (2008). 'The depreciation of the U.S. Dollar: Causes and Consequences', Box 1.2, World Economic Outlook, April, IMF.
- FAO (2008a). 'Crop Prospects and Food Situation', April.
- FAO (2008b). 'Crop Prospects and Food Situation', February.
- FAO (2008c). 'Soaring Food Prices: Facts, Perspectives, Impacts and Actions Required', High Level Conference on World Food Security: The Challenge of Climate Change and Bioenergy, June.
- IMF (2007). 'World Commodity Prices and LAC inflation', Chapter 3, Regional Economic Outlook, November.
- IMF (2008). 'Commodity Boom: How Long Will it Last?', Finance and Development, March.
- MCCAULEY, R.N. (2007). 'Core versus headline inflation targeting in Thailand', March, BPI.
- OBSTFELD, M. and K. ROGOFF (1996). 'Foundations of International Macroeconomics', Massachusetts Institute of Technology.
- SILVER, M. (2006). 'Core Inflation Measures and Statistical Issues in Choosing Among Them', April, IMF.
- WORLD BANK (2008). 'Rising food prices: policy options and World Bank response', April.