

## Box 3

## WORLDWIDE TRENDS IN MONETARY AGGREGATES: SOME CONCEPTUAL ISSUES

In the period of heightened financial, economic and geopolitical uncertainty between 2001 and mid-2003, strong money growth was observed throughout the world as investors sought the safe haven of monetary assets at a time of volatility in financial markets. Thereafter, once the uncertainty had subsided, monetary growth moderated worldwide. In the box entitled “Worldwide trends in monetary aggregates over recent years” in the January 2004 issue of the Monthly Bulletin, the analysis of global money growth was based on a measure constructed from the broad money stock of five large industrialised economies (the euro area, the United States, Japan, the United Kingdom and Canada), converted into euro on the basis of purchasing power parity (PPP) exchange rates. The construction of a global monetary aggregate raises several questions regarding the underlying methodology: Should the focus be on broad or narrow monetary aggregates? Which economies should be included? Should PPP or market exchange rates be used for the conversion into a common currency? This box compares different concepts for constructing measures of global money.

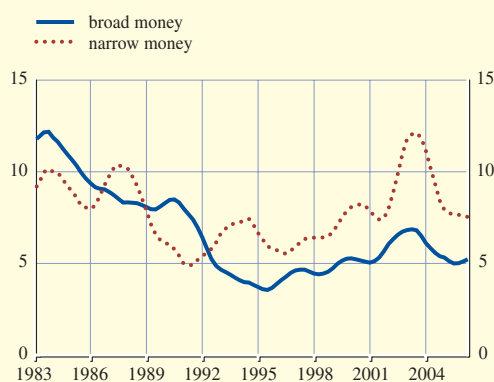
## What is the effect of using narrow rather than broad monetary aggregates?

A measure of global money can be constructed on the basis of narrow monetary aggregates, which generally comprise banknotes and coins plus highly liquid deposits such as overnight deposits, or on the basis of broad monetary aggregates that also include less liquid deposits and marketable instruments. Broad monetary aggregates typically provide a less volatile and perhaps more accurate picture of monetary growth in the individual economies, as they capture important substitution processes between different monetary assets. At the same time, a focus on narrow monetary aggregates may have the advantage that the components are typically more homogenous across the economies and thus make global measures more clearly interpretable.

Growth of global broad money, as shown in the box of the January 2004 issue of the Monthly Bulletin, rose rapidly in the late 1980s before falling to an annual rate of below 4% in the mid-1990s (see Chart A). A gradual strengthening was visible in the context of strong economic growth in the second half of the 1990s, followed by a further sharp increase in the period of heightened economic and financial uncertainty between 2001 and mid-2003. Since 2003, the growth of global broad money has returned to levels similar to those observed in the late 1990s.

**Chart A Global broad and narrow money growth**

(annual percentage changes; two-year moving average; quarterly data)



Sources: ECB, Eurostat, BIS and OECD.

Note: The series are the simple sum of the respective monetary aggregates in the United States, the euro area, Japan, the United Kingdom and Canada, converted into euro using purchasing power parity exchange rates.

A corresponding measure of global money constructed on the basis of narrow monetary aggregates displays a growth pattern that is broadly similar to that of the measure based on broad aggregates, in particular since the mid-1990s. The more pronounced hump in the growth pattern of the narrow measure between 2001 and 2004 reflects, inter alia, the impact of the Bank of Japan's zero interest rate and "quantitative easing" policy, which had a strong impact on Japan's contribution to global narrow money growth.

### What is the effect of extending the coverage to include emerging market economies?

In order to ensure a meaningful coverage of global monetary developments, the three largest currency areas (the euro area, the United States and Japan) must be included in any global measure, while the inclusion of other countries is, to a certain extent, arbitrary. In particular, monetary dynamics at the global level may currently be heavily influenced by developments in large emerging market economies, such as the so-called BRIC countries (Brazil, Russia, India and China). However, while the inclusion of such economies improves the global measure with respect to more recent developments, the lack of meaningful historical time series for some of these countries typically hampers the comparability of the global measure across time, and thus reduces its overall information content. This would be the case, for example, if the monetary assets of Russia or China were to be included for periods when these economies were still planned economies.

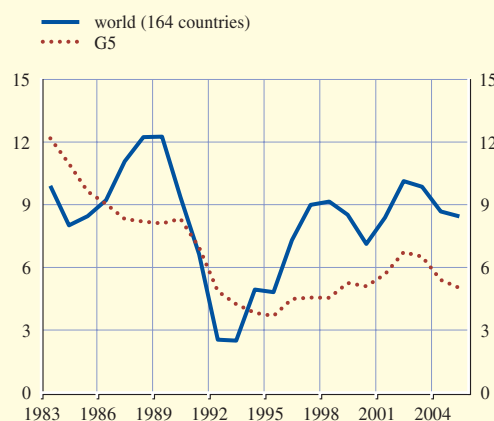
Comparing the measure of global broad money growth that is based on the five aforementioned large industrialised (G5) economies with a measure based on 164 economies displays clear differences in the level of the growth rates (see Chart B). At the same time, the longer-term pattern of developments is broadly similar, in particular for the period since the late 1990s.

### What is the effect of using market rather than PPP exchange rates for conversion into a common currency?

Money stocks denominated in different national currencies can be converted into a common currency by using either PPP or market exchange rates.<sup>1</sup> Using the latter presupposes that all monetary assets could be converted into a single currency at the spot exchange rate through the foreign exchange market. However, this neglects the differences in the purchasing power of

**Chart B Global broad money growth**

(annual percentage changes; two-year moving average; annual data)



Sources: ECB, Eurostat, IMF, BIS and OECD.  
 Note: G5 is the simple sum of the broad monetary aggregates in the United States, the euro area, Japan, the United Kingdom and Canada, converted into euro using purchasing power parity exchange rates. World is the simple sum of the broad monetary aggregates in 164 countries, converted into euro using purchasing power parity exchange rates.

<sup>1</sup> For the period prior to 1999, the euro area time series is based on irrevocably fixed exchange rates. Conceivably an aggregate at the global level could be constructed using fixed exchange rates between the included economies.

these monies across countries and suggests some advantage of using PPP exchange rates, which explicitly take into account differences in price levels across economies.<sup>2</sup> The use of PPP exchange rates is typically thought to yield less volatile contributions to a global aggregate than market exchange rates if the set of economies under consideration has experienced broadly similar monetary conditions.<sup>3</sup> In this respect, the reason for constructing global money measures on the basis of PPP exchange rates, especially when coverage is limited to the G5 countries, is to mitigate the strong impact of the exchange rate on the dynamics of the aggregate.

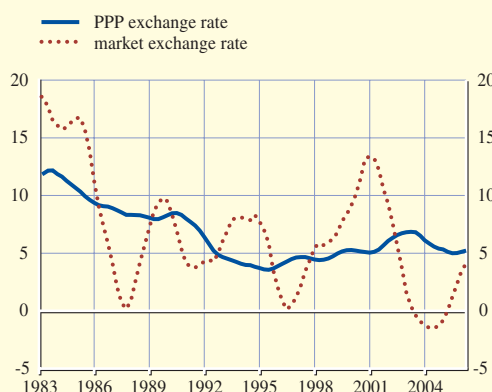
Chart C presents the annual growth rates of measures constructed on the basis of market exchange rates and PPP exchange rates. It shows that the growth rate of the monetary aggregate constructed on the basis of market exchange rates displays notably higher volatility than the growth rate of the measure based on PPP exchange rates, while the average level of growth is broadly similar.

### Concluding remarks

Measures of global money growth can be constructed on the basis of alternative concepts for the geographical coverage, the broadness of the monetary aggregate and/or the exchange rates used to convert the monetary figures into a single currency. This box shows that using narrow rather than broad measures of money, or including emerging market economies in addition to industrialised economies, implies differences in the level of global monetary growth, while the pattern of growth remains broadly similar. At the same time, using market exchange rates rather than purchasing power exchange rates implies a higher volatility in global money developments, while the average level of growth remains broadly unchanged. Overall, therefore, when analysing the general direction of global monetary expansion, the broad monetary aggregate constructed on the basis of the G5 economies and PPP exchange rates can be seen as a robust proxy measure.

**Chart C Global broad money growth based on different exchange rates**

(annual percentage changes; two-year moving average; quarterly data)



Sources: ECB, Eurostat, BIS and OECD.  
Note: Global monetary aggregates are the simple sum of the broad monetary aggregates in the United States, the euro area, Japan, the United Kingdom and Canada, converted into euro using either purchasing power parity exchanges rates or market exchange rates.

<sup>2</sup> See also the box entitled "Measuring world growth: do weights matter?" in the June 2006 issue of the Monthly Bulletin.

<sup>3</sup> A counterexample would be the case where economies have been subject to periods of strong inflation, or even hyperinflation, and have in this context experienced a sharp depreciation of their currency, while having large outstanding stocks of money. A conversion using market exchange rates of this large stock of money would automatically reduce the contribution to global monetary developments, while a conversion on the basis of PPP exchange rates would exaggerate the impact on global developments.