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# The Fundamentals of a Falling Dollar

by Richard C. B. Johnsson

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One of the more confused propositions in the realm of currencies and exchange rates is the belief that the value of a currency is measured or determined by the exchange rate. For example, the dollar has fallen about 13 percent against the euro in this year and has lost about a third of its value against the euro since mid-2001. This makes some people believe that the value of the dollar has fallen and the value of the euro has risen. From observing the exchange rate, people do make inferences about the value of each currency [i].

I respectfully challenge that view. The exchange rate is a measure of the relative value of these two currencies, not the value of the dollar or the euro *per se*. We cannot *a priori* rule out either that both the value of dollar and the euro has risen lately but the euro a bit more, or that both has lost in value but the euro less, or that one of them has kept its value and only the other changed. I believe both have lost value since mid-2001, as we shall see below, only the euro has lost less.

It is not possible to determine the change in the value of a currency between two dates by looking at the change in the exchange rate. Similarly, it is not possible to infer the future value of a currency from an estimate of the future exchange rate, indeed, not even if one knew what the future exchange rate was. Instead, it runs the other way around. It is the value of one currency in relation to another currency that is the fundamental determinant of the exchange rate. One has to start by assessing the future value of the currencies that one wants to estimate the future exchange rate of.

## The Value or Purchasing Power of a Currency

This is in no way news to the world. It is the value, or purchasing power, of a currency that fundamentally determines the exchange rate to other currencies. As Mises (*Human Action*, 1949, p. 452) writes, "The purchasing-power parity theory of foreign exchange is merely the application of the general theorems concerning the determination of prices to the special case of the coexistence of various kinds of money." Mises was right about the fact that the idea originates with



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David Ricardo and this was also admitted by Swedish economist Gustav Cassel (1866–1945)[ii]. Cassel became world famous in the 1920's because of his ideas about the purchasing power parities, a term he coined[iii]. I believe this idea still holds.

In 1922, in explaining the inflationary chaos of World War I and the subsequent deflationary ditto, Cassel wrote the following:

"If we suppose that the community's supply of currency was increased to double the normal amount, while the supply of commodities went down from 100 to 80, then from the first cause a rise in prices from 100 to 200 must result, and from the second cause a rise in prices from 100 to 125. The total rise in prices must, then, have been from 100 to 250. This sketch illustrates how the increase in the normal purchasing power in conjunction with the growing scarcity of commodities tends towards a heightening of the general price level." [iv]

With these words, Cassel attempted to explain that the wartime scarcity of goods alone couldn't account for the enormous price inflation that occurred in most countries at this time. What is imbedded in these words is a particularly helpful idea for analyzing the causes of aggregate price changes. This is the idea Cassel employed when explaining exchange rates. The idea is conveyed in the following simple formula:  $P=D\uparrow/S\uparrow$ , where P is the general price level, D the nominal demand and S the physical supply of goods produced and sold during the period. The nominal demand is the amount of money spent during the period and the main determinant of this is simply the amount of money available, i.e., the money supply or the supply of currency, in Cassel's words. Using Cassel's numbers, if D doubled and S dropped 20 percent, this would cause prices to rise 250 percent. Thus, the value and purchasing power of a unit of a currency is determined inversely by the price level. The price level, in turn, is basically determined by nominal and real factors.

### The Relative Value of Two Currencies

If the value of the dollar is determined in this way, and the value of the euro likewise, the exchange rate between them is determined by all the factors that determine the purchasing power of each single currency. This means that if the dollar has fallen 13 percent to the euro, it could be because of nominal and real factors on the side of each currency. From the change in the exchange rate, it is not possible to make any inferences about the value of the dollar or the euro. Similarly, if the dollar has fallen 13 percent to the euro, it is not possible to make any inferences about the expected future value of the dollar or the euro.



The exchange rate could be thought of as a scale weighing the two currencies. From the scale, it is possible to determine only the relative weight. However, if we simultaneously put a certain amount of weight on each side of the scale, it will not move. It is the weight of each currency that determines the relative weight.

What we can tell when it comes to each of the two currencies (including the euro's earlier counterparts), is that the amount of currency and the nominal demand has increased dramatically during the last 100 years, particularly since the governments and their central banks took over as "guardians" of the value of currencies ( $D\uparrow$  in formula (1)). However, this has partly been offset by an increasing production and supply by the goods and service producing part of the population ( $S\uparrow$  in formula (1)). The net effect has been that the purchasing power of the currencies has fallen dramatically by all historical standards, despite the rising production that might have strengthened them.

Hence, the value of each currency has fallen constantly during the last 100 years or so. The fact that this has happened at a different pace in different countries explains the long-term movements in the exchange rates. I also would suspect that lately not only the value of the dollar has fallen but also the value of the euro. This follows from the fact that it is the European Central Bank's goal to increase the currency by 4½ percent [v] each year and that the Fed implicitly has similar targets. Moreover, the budget deficits of many of the major euro-zone countries are alarming and that of the US even more severe. At the same time, there is not much that points toward any offsetting effects on the real side, either in Europe or in the US—*au contraire*.

This makes me think that both currencies have continued to fall in value lately. The ultimate proof of this is that the average prices still are rising on both sides of the Atlantic. It is hard to tell which currency is falling faster because of these reasons. However, I don't suspect that the dollar has dropped so much more compared to the euro because of these reasons alone to justify the fall of a third since middle 2001. There must be other reasons as well.

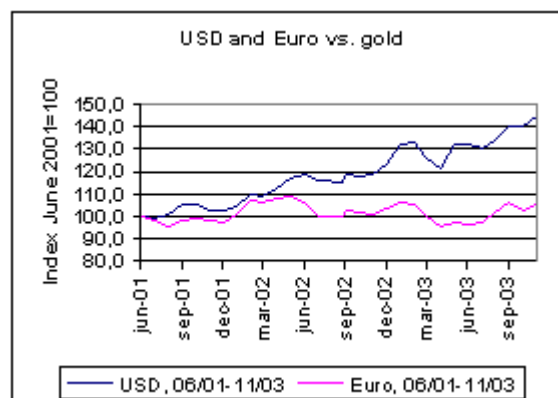
### Some further thoughts

There are some real world phenomena that complicate the rather straight-forward idea of purchasing power parities somewhat, but at the same time add a compelling explanation to the movements in the exchange rates.

First, we have exchange rate speculation. It seems hard to exclude the possibility that the fall in the dollar against the euro could be a case of mistaken speculation, i.e. that many people sell only because others do. That is known to have happened before, to say the least. It would simply mean that someone has bought a currency that was worse than the one they sold. Some would gain and some lose and there would sooner or later be some kind of correction of such a mistake. This is because it is hard to see how such mistakes can have any major effects on the value of either two currencies, at least not without it being a major speculative mistake.

Secondly, we have another explanation for the movements in the exchange rates and that is that the dollar in the last 30 years or so has become a reserve currency held by central banks and others around the globe [vi]. This means that the dollar has served as not only a medium of exchange in the US, but has had a second role. This latter role seems now have become questioned. If this is so, one would suspect investors to look for a substitute currency. It is conceivable that there have been large movements towards the euro because of this. It means that some people now choose to hold, for example, euros instead of dollars and that central banks the world over re-weight their portfolios.

I find some support for this in the fact that since mid-2001, the euro has dropped only a couple of percent against gold, while the dollar has dropped 30 percent. Gold is of course the ultimate and premiere form of money and has always been the object of those who want to hedge against poorly administered fiat paper money [vii]. The figures suggest a move away from the dollar towards gold and the Euro. After all, the dollar has lost a third against the euro and 30 percent against gold since mid-2001.



The foreign exchange analysts at Merrill Lynch were right that the exchange rates are not directly related to real growth [viii]. Neither are they a purely monetary matter. According to the past exchange rate champion, Cassel, it's both. Add some short-term

speculation and some hedging against fiat paper money, and you have whole springs of profit and loss opportunities. These opportunities are excellent when we have a system of floating exchange rates and sinking currencies. Is it time to hold on to something real?

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[i] This is implicit in the [Economist](#) piece 'A Faded Green', December 4, 2003, where it is assumed that the exchange rate is a measure of the value of the dollar. Moreover, Ambrose Evans-Pritchard at the [Daily Telegraph](#), in a piece on December 4, 2003, called 'Brussels considers imposing currency controls,' claims that the European Commission is concerned about the strong euro. Such worries are of course nothing but mercantilist folly, but are evidence of the general idea I am referring to.

[ii] See Mises's *Theory of Money and Credit*, 1912, p. 207 and Cassel's *Money and Foreign Exchange After 1914*, 1922, p. 170 for the references to Ricardo. Cassel had some great ideas on economics, but also some that were not so great. For example, he rejected the theory of marginal utility and was a defender of the idea of a centrally administered price stability norm.

[iii] He writes that the "actual term 'purchasing power parity' I introduced [in] my article 'Abnormal deviation in international exchanges', in the *Economic Journal*, December, 1918." He had then already introduced the Swedish term 'Köpkraftsparitet' in April 1918, and the German term 'Kaufkraftparität' was introduced in 1919.

[iv] See *Money and Foreign Exchange After 1914*, p. 56. Cassel believed this to be so obvious that he felt prompted in following this up with the following words: "The connection of ideas, indeed, is, one would suppose, not so technical but that any and everybody should be able to grasp it, and the fact that so much obscurity ruled on this point testifies in no favourable manner to the results of mathematical education in our schools."

[v] "At its meeting on 2 December 1999 the Governing Council decided to confirm the reference value for monetary growth, namely an annual growth rate of 4½% for the broad aggregate M3."

[vi] See for example [Consequences of a Dollar Standard](#) for more on this.

[vii] On the origins of money and why a commodity is the ultimate money, see Carl Menger's 1892 essay [On the Origins of Money](#).

[viii] See their Foreign Exchange Strategy report, *Cause and FX - It's Not a Growth Thing*, March 12, 2003.

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