Paper

or

Gold

Table of contents

Introduction

Economic power is often political power achieved through economic means. Trade has always been an indispensable part of the economy of any civilization. Even now, trade remains indispensable and is the major livelihood of many nations.

Refusing to trade with a country until it changes some aspect of its culture or government can serve as an example of the correlation of economic and political power. Throughout the 1970s and 1980s, many countries around the world refused to trade with South Africa until apartheid was repealed, which occurred in the early 1990s. In other cases, economic power is the ability to affect the lives of others by withholding trade or by raising the prices of goods. The oil crisis of the 1970s is an example of this point. Economic power is often needed to adequately express political or social power adequately. The golden rule often applies, "He with the most gold, rules."

We live in an interdependent society. Interdependence can be defined as the reliance of people on goods, resources, and knowledge from other parts of the world. This interaction is mutually beneficial and most often takes the form of trade and cultural diffusion. The exchanges throughout the ancient Middle East, along the Silk Road from China, and between great civilizations such as the Byzantine and the Islamic Empires are good examples of interdependence. The economic power of these countries was significant, as many countries could not survive without this trade. Countries like China could adversely affect the lives of people as far away as USA and Europe through trade. However, because of the interdependent nature of this power, if the people of the USA and Europe failed to purchase Chinese goods, the same affects could be achieved in reverse.

Increasing interdependence continues to grow today not only due to the rapid exchange of ideas, goods and services; but also due to the increasing volumes of complex consumer demands. An example of interdependence today is the USA importing Japanese automobiles, Indian tea, and oil from the Middle East. In 1960, the Organization of Petroleum Exporting Countries was formed by Iraq, Iran, Kuwait, Saudi Arabia, and Venezuela. Their goal was to control the oil industry by setting prices and production levels. Control of most of the world's oil supply has given OPEC significant power. In 1973, OPEC stopped the sale of oil to certain countries, in West Europe and the USA. This caused a major slowdown, not only of the US economy but also of many economies in Western Europe and made them realize how dependent they were on foreign oil. OPEC continues to limit the production of oil, which in turn causes petrol prices to soar.

By signing the agreements like Bretton Woods, nations were submitting their exchange rates to international disciplines. This amounted to a significant surrender of national sovereignty to an international organization.

Nobody quite knows when trade began. It might have begun when two parties decided to exchange their own produce. This form of exchange, where a farmer could exchange a certain amount of his wheat for another farmer's pail of milk, was called barter trade.

Generally, trade flourishes under peaceful conditions. Trade generates income, especially for exporters of goods, so rulers of most nations welcomed trade. Most of the great civilizations conducted some form of trade and what they traded their products for depended on their needs. For example, Carthage, a Phoenician colony in North Africa, was a formidable trading force in Greek times. The most important Greek imports was agricultural goods, like barley and wheat, which they imported from Sicily and Egypt, and they exported wine to the other parts of the Mediterranean area.

The Greeks also bought copper from Cyprus, with which they had close links[1]. Slaves were another notable source of trade for the Greeks: since slavery was so widely practiced, this was a great source of profit for the merchants. The export of cosmetics and pottery markets were also important ones for the Greek economy. Greek trade was usually carried over sea routes, as land barriers made traveling over land routes impossible, compasses and navigation charts did not exist, so it was a dangerous occupation. Most Greek merchants refused to travel in bad weather or at night, because navigation depended solely upon sight of the land.

Trade and Money

The next logical concept after trade is money, because money changes hands in trade. This brings us to the pertinent question of what is money?[2] Today, this initially simple question would probably elicit answers like cash, credit cards, cheques, and travelers' cheques, amongst others. Money was needed to replace (for and in) barter trade as a payment for another's goods. The commodities chosen to be used as money were those that were either easy to store or had some financial value attached to them. This has led to the misconception that money was invented for trade, but this is actually not the case. The word 'pay' actually comes from the Latin word *'pacare'*, which means to pay. Its uses in trade is but one of its functions; the primary usage of money is for payment.

Payment of goods is thus only a small part of the payments made with money. Payment also comes in many other forms. Money is used for compensation — dowries were often paid to the bride's family, for the loss of their daughter's services upon marriage. One of its other uses was tax: the ruler would demand a certain amount of a farmer's produce in exchange for allowing him to settle on his land. Coins replaced barter currency like conches, goats etc. Paper currency replaced coins. The spread of paper currency was even faster than the spread of coinage. One of the major advantages of paper currency was its lightness, but the main reason was that there was no shortage of paper in the world. Whereas gold, silver or other metals had to be mined, and were limited in quantities, paper could be obtained easily.

Today, we are still using paper currency as well as coins. The invention of money is probably one of the most important inventions in the world. We cannot imagine a world without money; how would we conduct our business? How would we have any concept

[1] These links include trade, politics, ethnic and social

[2] A detailed explanation can be found in papers Raj Mukund, Impact of agriculture on exchange rate (Dec 2002) and Raj Mukund, Currency competition-Survival of the fittest (Jan 2003)

of how much an item costs? Philosophy indicates that although money was initially only a tool of man, increasing numbers of people nowadays are becoming the slaves of money.

The Merriam-Webster's dictionary defines value as a fair return or equivalent in goods, services, or money for something exchanged. Value is also defined as the monetary worth of something, that is, its market price. Value is also defined as the relative worth, utility, or importance of an item.

The world is in permanent monetary crisis, but once in a while the crisis flares up acutely, and we noisily shift gears from one flawed monetary system to another. We go back and forth from fixed rates to fluctuating rates, to some inchoate and aborted blend of the two. Each new system, each basic change, is hailed extravagantly by economists, bankers, the financial press, politicians, and central banks, as the final and permanent solution to our persistent monetary woes. Then, after some years, the inevitable breakdown occurs and the world establishment trots out another bauble, another wondrous monetary nostrum for us to admire. Right now, we are on the edge of another shift.

We must realize that there are three coherent systems of international money, of which only one is sound and non-inflationary. I feel that the sound form of money is the genuine gold standard; it is "genuine" in the sense that each currency is defined as a certain unit of weight of gold, and is redeemable at that weight.

Exchange rates between currencies were "fixed" in the sense that each was defined as a given weight of gold; for example, since the dollar was defined as one-twentieth of a gold ounce and the pound sterling as .24 of a gold ounce, the exchange rate between the two was naturally fixed at their proportionate gold weight, i.e., £ 1 = $ 1.87.

It is my conviction that, on the gold standard, the whole world would be able to inflate together and therefore not suffer the inconvenience of inflationary countries losing either gold or income to sound-money countries. All the countries would inflate in a centrally coordinated fashion, and we would suffer manipulation and inflation by a world-government banking system without check or hindrance. Ultimately there would be worldwide hyperinflation, without an emergency fire exit for escaping into sounder or less inflated currencies.

Keynes and Friedman Economics

The national rivalries prevented the Keynesians from achieving their goal, so they had to settle for next best, namely the Bretton Woods system that lasted until its collapse in 1971. Instead of gold, the USD served as the international reserve upon which other currencies could co-relate their money and credit. The USD, in turn, was tied to gold in a mockery of a genuine gold standard, at the pre-war par of $35 per ounce. Firstly, dollars were not redeemable in gold coins, as they had been before, but only in large and heavy gold bars, which were worth many thousands of dollars. Secondly, only foreign governments and central banks could redeem their USD in gold even on this limited basis.

With the collapse of the Bretton Woods agreement, the developed countries tried a system that was not only unstable but also incoherent: fixing exchange rates without gold or even any international paper money with which to make payments. These countries signed the Smithsonian Agreement on December 18, 1971. It was hailed by President Nixon as "the greatest monetary agreement in the history of the world" but if currencies are purely fiat, with no international money, they become goods in themselves, and fixed exchange rates are then bound to violate the market rates set by supply and demand.

At that time the inflated dollar was heavily overvalued in regard to Western European and Japanese currencies. At the overvalued dollar rate, there were repeated scrambles to buy European and Japanese moneys at bargain rates, and to get rid of dollars. Maximum price control policy of exchange rates resulted in repeated "shortages" of the harder moneys.

Finally, panic selling of the dollar broke the Smithsonian system apart in March 1973. With the collapse of Bretton Woods and Smithsonian Agreements, both the gold standard and the fixed paper exchange rate systems were widely and correctly seen to be inherent system failures. The world subsequently witnessed the Friedmanite monetary system.

The Friedmanite monetarists replaced the Keynesians as the favorites of the financial press and of the international monetary establishment. Governments and central banks began to hail the soundness and permanence of fluctuating exchange rates. Many monetarists proclaimed the ideal international monetary system to be freely fluctuating exchange rates between different moneys, with no government intervention to try to stabilize or even moderate the fluctuations. In that way, exchange rates would reflect the daily fluctuations of supply and demand, just as prices do on the free market.

In effect, the monetarists make each currency fiat paper issued by the national government. They give total power over money to that government and its central bank, and then they issue stern admonitions to the wielders of absolute power: "Remember, use your power wisely, don't under any circumstances interfere with exchange rates." But inevitably, governments will find many reasons to interfere: to force exchange rates up or down, or stabilize them, and there is nothing to stop them from exercising their natural instincts to control and intervene.

Since 1973 the world has witnessed a blend of "fixed" and fluctuating, unhampered and hampered, foreign currency markets. The problem with freely fluctuating rates is not only political. One virtue of fixed rates, especially under gold, but even to some extent under paper, is that they keep a check on national inflation by central banks. The virtue of fluctuating rates – that they prevent sudden monetary crises due to arbitrarily valued currencies – is a mixed blessing, because at least those crises provided a much-needed restraint on domestic inflation. Freely fluctuating rates mean that the only damper on domestic inflation is that the currency might depreciate. Yet countries often want their money to depreciate, as we have seen in the recent agitation to soften the dollar and thereby subsidize exports and restrict imports – back-door protectionism. The current

refixers have one sound point: that worldwide inflation only became rampant in the mid and late 1970s, after the last fixed-rate discipline was failed.

I feel that only a genuine gold standard can bring us the virtues of both systems and a great deal more: free markets, absence of inflation, and exchange rates that are fixed, but not arbitrarily by government. They would be fixed as units of weights of a precious market commodity – gold.

The Gold Money

There is a difference between 'money' and 'currency', although the two terms are often used interchangeably. Money is a tool of economic calculation that enables the communication of value whereas currency is the medium that facilitates an exchange between participants in a market[3]. Money is conceptual whereas currency is physical – money allows the mental calculation of relative value whereas currency is the thing that actually changes hands. By this definition, the USD is both money and currency while gold is a form of money that does not circulate as currency. Governments have not demonetized gold; they have prevented it from (officially) circulating as currency. Governments do not have the power to demonetize gold since money is in the eye (or, more aptly, the mind) of the beholder.

In addition to being money, gold is a commodity and its relative value would be expected to bear some positive correlation to commodity prices in general. However, this correlation is not particularly strong and is getting weaker all the time, probably because the amount of gold being used for non-monetary purposes at any given time is miniscule in comparison to the 80,000 tonnes of above-ground gold that is being held for monetary purposes. The price of gold can more appropriately be referred to as an exchange rate, with the gold-USD exchange rate tending to move with the SF-USD and euro-USD exchange rates.

Though gold is no longer an official currency, it has begun to circulate unofficially as currency over the past decade due to the proliferation of gold loans. Gold currency is not available to the average man, but is widely used as a medium of exchange within the banking community. In fact, low gold interest rates and a long-term downward trend in the gold-USD exchange rate have made gold currency very popular as a means of financing mining operations and various speculative ventures. This growing use of gold as an unofficial global currency has tended to further de-emphasize any positive correlation between the gold price and other commodity prices.

[3] Turk James, The Illusions of Prosperity (1985)

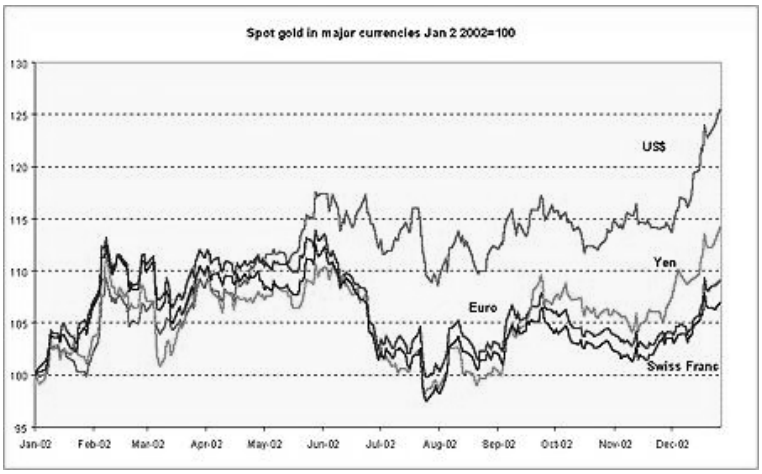

Figure 1-Spot Gold in major currencies

We often misinterpret certain data while reading analyses of the gold market. Firstly, large-scale lending and short-selling of gold has caused the major down-trend in the gold price or has, at least, extended gold's bear market, and the large gap between newly-mined supply and fabrication demand will eventually lead to a huge rally in the gold price. The proliferation of gold lending and short selling is an effect of gold's bear market that has acted to reinforce an existing trend.

Secondly, the deficit between newly mined supply and fabrication demand is irrelevant to the gold price. A falling gold price always leads to an increase in fabrication demand and the further the price falls the greater the fabrication demand will become. Similarly, as the gold price rises, fabrication demand will fall. Fabrication demand is an effect of the gold price; it is not a driver of the gold price. If gold moves up, fabrication demand will fall substantially and may even drop below the demand for the newly mined supply. Such a 'surplus' would be just as irrelevant to the gold price as today's so-called 'deficit'. In fact, during a gold bull market we would expect newly mined supply to be consistently in excess of fabrication demand. The bottom line is that investment demand, not fabrication demand, determines the gold price.

It is worth noting that the total supply of USD has increased by 30% over the past 3 years whereas the total supply of gold has grown by less than 6% over the same period. Therefore, a much smaller percentage shift in investment demand, from USD to gold, is required today to generate a particular increase in the gold price than would have been required three years ago.

Exchange Rate

In principle, the state of a country's current account should determine the exchange rate. The basic argument here is that, if a country has a current account deficit, the exchange rate of that country needs to weaken. This would, in effect, make exports cheaper and imports more expensive, thereby helping to reverse the deficit. The opposite applies in the case of a country running a current account surplus – the exchange rate strengthens to

make exports more expensive and imports cheaper. There is always an impending question hanging in the air – why an exchange rate may be under or overvalued.

As discussed in my previous papers[4], the core theory was Purchasing Power Parity or PPP. The PPP exchange rate was that rate which completely neutralized the impact of inflation differentials on competitiveness and the relative purchasing power of nations. Many references to a currency's longer-term equilibrium value still involve some appeal to a PPP rate.

The basic monetary theory involved the idea that if money growth was developing faster in one country compared to another; higher inflation was likely to ensue in that country. As this made the relative price of goods in that country higher than the prices abroad, exports would fall and imports would rise, causing a current account deficit. PPP suggests that the exchange rate should fall in these circumstances. Many other monetary approaches incorporated the impact of money growth on real and nominal interest rates and the effect this could have on the exchange rate. The basic notion of medium-long term exchange rate valuation lay with the current account and PPP.

The current account approach was also very useful in analyzing the whole post-war situation in the international monetary system. The Bretton Woods arrangement saw currencies fixed in an adjustable peg system around the US$ from 1945 to 1971, with the idea being that `exchange rates' would be adjusted if a `disequilibrium' occurred in the current account. When that system eventually became unsustainable for the US it did so because of the emergence of a trade deficit and what had been a steady depletion of US reserves over the previous decade. The system collapsed in 1971 and a system of floating rates was implemented by 1973. Thus today’s floating regime began as a consequence of current account-related pressures destroying the old system.

The current account theories were valid in the 1970s as countries had dramatically different inflation rates, making it easy to point fingers in the direction of those countries that were `uncompetitive' and in need of some devaluation. The European Monetary System had at its core an Exchange Rate Mechanism that was, for much of the 1980s, an adjustable system where the central rates of participating currencies were frequently adjusted to offset losses of competitiveness compared to the core of the system, the Deutsche Mark.

For much of the past two decades, the range and volume of products and asset classes covered by cross-border transactions has increased dramatically. First goods, then money, and then a broader range of financial assets and more recently physical assets or companies have been traded internationally. The point of consideration here is that because of the development of capital account transactions, current account deficits are not as significant as they a few decades ago.

[4] A detailed explanation can be found in papers Raj Mukund, Impact of agriculture on exchange rate (Dec 2002) and Raj Mukund, Currency competition-Survival of the fittest (Jan 2003)

The USD was the *numeraire* of the system, i.e., it was the standard to which every other currency was pegged. Accordingly, the U.S. did not have the power to set the exchange rate between the dollar and any other currency. Changing the value of the dollar in terms of gold had no real effect, because the values of other currencies were pegged to the dollar. This is one of the many economic problems (especially w.r.t currencies) faced by the world. This problem would not have existed if most of other currencies were pegged to gold or other currencies. However, none of these currencies was pegged to gold because none of them were convertible into gold.

In the aftermath of the gold standard and the inception of the Bretton Woods agreement, the currencies were defined in terms of their gold reserves. It may not be out of place to say that, in the course of currency fixation, the Bretton Woods agreement favored the then developed countries. Consequently, some currencies were overvalued while many were undervalued.

Gold is treated and internationally traded as a precious commodity but, in times of crisis and recession, it has been more often than not treated and traded as currency. It has been vehemently argued that gold is money as it performs the primary functions of money — unit of account, store of value, universal acceptance and mobility.

With the dollar down and gold up, both trends obviously being related to growing fear of economic troubles ahead, the question again arises: why shouldn't the dollar itself be defined as a fixed quantity of gold? It would be if the views of the classical liberal tradition held sway. This tradition stands solidly behind commodity money standards, like silver or gold, as the very embodiment of sound money.

Classical Economic Theory

The general case for commodity money rests on the uncontestable assertion, repeated constantly by classical economists, that in order to fulfill the various functions of money, a thing must possess value. Because metals do have value, and a note of paper does not, it is natural for a metal which is also endowed with a number of other qualities, like being divisible, portable, cognizable, etc, to be the general medium of exchange.
"Because a law cannot give to bills that intrinsic value, which the universal consent of mankind has annexed to silver and gold."[5]

It is true that a promissory note, or any form of bank credit, provides the same functions as money does, but the explanation for this lies in the representative-of-money nature of the note, which would otherwise never be accepted in exchange.

David Ricardo goes as far as raising this principle into a norm when he undertakes to "show what is the standard measure of value in this country, and of which, therefore, our

[5] Locke John, *Some Considerations of the Consequences of Lowering of Interest, and Raising the Value of Money* (1691)

paper currency ought to be the representative."[6] And for the norm to be respected, a strict redemption of paper in money, which can be nothing but a commodity, is necessary. "The value argument against paper money achieves its most accomplished shape. If the paper currency is convertible at will into specie, then its value springs from the cost of production of the commodity money. This is not the case of "a paper currency not convertible into the metals at the option of the holder" whose quantity "can be arbitrarily fixed; especially if the issuer is the sovereign power of the state. The value, therefore, of such a currency is entirely arbitrary.[7]"

The choice between commodity and inconvertible paper is that between determined or undetermined exchange values of the money. Therefore, clinging to commodity money is indeed the only possible choice, since any money must possess a determined value. Classical economists rejected inconvertible paper money from the very beginning, because they thought it lacked the most important attribute a thing must possess in order to be used as money, namely it lacked value. This argument is not invalidated by the falsity of the objective value theory; the marginal revolution certainly changes its content, but leaves its essence unchanged.

In addition to their essentialist approach, and building their point of view upon a careful examination of the repercussions brought about by an increase of the stock of media of exchange in the economy, the classical liberals developed an equally convincing set of arguments against any augmentation of paper currency, convertible as well as inconvertible.

Prior to the analysis of the consequences driven by an increase of the stock of media of exchange is the very important classical consideration that the given quantity of money is immaterial for the functioning of the economy. David Hume states, "The absolute quantity of the precious metals is a matter of great indifference."

"The smaller quantity of money would perform the functions of a circulating medium, as well as the larger."[8] Having explained that money renders its services equally well whatever its quantity, the classical economists emphasized that the primary of an additional quantity of media of exchange is the subsequent rising of prices, be it strictly proportional or not. And because rising prices produce a series of detrimental effects on the economy, these should not be engineered artificially by more paper.

"It must be allow'd, that no bank cou'd be more advantageous than such a one as lockt up all the money it receiv'd, and never augmented the circulating coin, as is usual, by returning part of its treasure into commerce."[9]
Richard Cantillon and Ricardo also stressed that paper currency unlike commodity money like gold, is of a serviceability limited to a narrow range of nations, but Hume

[6] Ricardo David, 'Morning Chronicle' (1809)
[7] John Stuart Mill, Principles of Political Economy with Some of Their Applications to Social Philosophy (1848)
[8] Ricardo David, The High Price of Bullion, a Proof of the Depreciation of Bank Notes (1810)
[9] Hume, David Essays, Moral, Political and Literary (1777)

went as far as to state that great undertakings (like trade, economic and political advantage) can be done conveniently only in specie, not in paper.

Ricardo pointed out that, because the paper currency arbitrarily depreciates the medium of exchange, the "equitable state" of the currency must be restored, by "the total overthrow of our paper credit" if necessary. All other repercussions, like the instability and unpredictability of the future purchasing power of a paper currency[10], can be deduced from this economic law. Generally, credit and more paper in particular, necessarily heightens prices.

Conclusion

These economists were aware of all the imperfections of paper currency; Ricardo did not omit even the uncertainty as to the future interest on public and private debts, potentially paid in money of lower exchange value.

Secondly, because the quantity of money in the economy is irrelevant, and since each increase of the stock of media of exchange produces harmful effects, the quantity of paper currency should not be increased beyond the amount of specie for which it is a substitute. Besides, the opposition to fiat paper money stems from the insight that in such a system the harmful effects are more likely to occur, since interested groups will push the money producer to abuse his power and to issue more money at others' expense.

Although they lacked a complete analytical system based on the concept of property rights, the classical liberals emphasized that the monetary system, which does not allow for arbitrary political interference with the market economy, is that of commodity money. Eighteenth and nineteenth century economists warned against the possibility offered by paper currency to privilege the particular interests of one special group and hurt those of others.

Examining the debtor's position, Cantillon writes that " a Banker with the complicity of a Minister is able to… pay off the State debt" by means of new banknotes "In fact, what security have we, except in this integrity, that the Bank Directors may not agree to create and divide 24 millions in notes among them for their private fortunes?"[11]

Although the early classical economists realized that paper money vests its issuer with the power to destroy contract engagements and individual fortunes, they did not really recognize the institution that is most interested in capturing the opportunity to provide an economy with a medium of exchange. Ricardo observed that "experience, however, shows that neither a State nor a Bank ever have had the unrestricted power of issuing paper money, without abusing that power,[12]" which seems to put the emphasis on the probable "indiscretion of the Bank", not on the expectedly systematic recourse to this evident source of revenue on the part of the state.

[10] Emphasized later by Goschen George and Robertson Dennis
[11] Thomas Robert Malthus, Depreciation of Paper Currency (1811)
[12] Ricardo David, Principles of Political Economy and Taxation (1817)

The case for commodity money in general, and for silver and gold in particular, was authoritatively established long ago. It is true that the subtleness and some errors of the classical economists' thought are partially responsible for the present day ideological reversal in quasi-total support of paper money.

Appendix 1 – The Euro[13]

When the euro was launched on 1 January 1999, the European Central Bank (ECB) assumed responsibility for monetary policy in the euro area – the second largest economic area in the world after the United States. I wish to argue in this speech that this clear objective in conjunction with the economic size of the euro area constitute the key fundamentals for the euro to become a stable international currency.

The Oxford dictionary of economics defines international money as "money which can be used in settling international transactions". Indeed, a currency acquires the status of international money if it assumes the role of a vehicle in international transactions, if it is used internationally to denominate assets and if it is stored as official reserve.

I will argue that the economic size of a country is an important factor for having its corresponding currency getting the status of international money. This factor alone, however, is not sufficient. Institutions of the issuing country matter as well. I wish to emphasise that we at the ECB contribute to the international role of the euro through our efforts to achieve the price stability objective.

Determinants of the International role of currency
Economic size of the issuing country
With regard to economic size, it is common to look at the Gross Domestic Product (GDP) of the issuing country and its global trade. Ceteris paribus, the larger the GDP of a country and the more open its economy, the larger its international trade. A large cross-border goods trade volume of a country generally implies lower transaction costs in using this country's currency to channel global trade. If traders find it convenient to use this country's currency as a means of exchange also for transactions with other countries' traders, then it becomes a vehicle currency and its status is enhanced to international money.

Although GDP and trade are seminal factors for a currency to acquire international status, recent literature has given increasing importance to the size of the financial markets. The deeper and wider the financial markets of a country, the greater the likelihood that its money is chosen as an international currency, as large and liquid markets imply low transaction costs.

[13] Excerpts from an speech by Prof. Otmar Issing, Member of the Executive Board of the European Central Bank,

As it is well known, the United States has the highest real GDP and the largest capital markets. Both real GDP in 2001 and the sum of stock market capitalisation, debt securities outstanding and bank loans outstanding in 2002 in the United States are 70% larger than that in the euro area. Similarly, these variables in the euro area are 50% larger than that in Japan. In terms of foreign trade in goods and services, total trade of the United States and the euro area is roughly the same amounting in 2001 to EUR 2.6 trillions, about 2.7 times the total trade of Japan.

When comparing with other countries, the data relative to economic size suggest that the United States, the euro area and Japan are the largest economies in the world, thus fulfilling one of the key criteria for their respective currencies to be chosen as international money.

Sound and effective institutions of the issuing country
With regard to the role of institutions, political stability and good governance in the issuing country are important determinants for the international role of currencies. Economic agents must be confident that the country whose currency is chosen to be international money is committed to provide a market friendly regulatory framework and to deliver good governance.

In this regard, price stability is an important precondition for the development and maintenance of the international role of a currency. It is a necessary condition for foreign investors' confidence that their purchasing power will be preserved. Internal monetary stability is also a precondition for external stability in the sense of contributing to lower exchange rate volatility and helping in preserving the confidence in the currency.

Incumbency advantage and inertia of an existing international currency
The third factor determining international money is linked to the previous use of the currency. Traders' preferences for a specific currency appear to change very slowly, because imperfections in goods and asset markets generate economies of scale in using the existing currency. As often pointed out, the pound sterling kept its international status for decades despite the strength of the US economy relative to the British economy. Typical examples are the international commodity markets, which generally trade in the same currency over the years. This inertia in financial and commodity markets can outweigh the forward-looking behaviour of economic agents.

A snapshot of the main three international currencies
Putting all three categories of factors into perspective, it is accurate to say that the US dollar satisfies all of these three criteria (i.e. economic size, soundness of institutional setting and previous use of the currency), while the euro satisfies the first two.

It is not surprising that the US dollar is the global leading currency in accordance with the main criteria used to rank international currencies and represented by the share in foreign exchange reserves, the share in foreign exchange market, the share in the denomination of international debt securities and international trade transactions. However, there is no doubt that the US dollar is the global vehicle currency for transactions between almost all

currency pairs. International commodity markets, such as the crude oil market and the gold market, trade in US dollars.

Given the weight of the euro area in the world economy and the legacy of the former national currency, which have been replaced by the euro, the euro is the second most widely used currency behind the US dollar, despite its recent birth, while the Japanese yen has a smaller role.

With regard to the euro's role in the foreign exchange markets, data on daily foreign exchange market turnover indicate that the euro in April 2001 entered 19% of all foreign exchange transactions. This share is higher than the Deutsche mark's share in 1998 (15%) but lower than that of all euro constituent currencies taken together in the same year (26%).With regard to the other two main currencies, the dollar's and the yen's share in foreign exchange markets edged up respectively from 44% and 10% in 1998 to 45% and 11% in 2001. The BIS Survey also indicates that the dollar/euro was by far the most traded currency pair in 2001 and accounted for 30% of global turnover. It was followed by the dollar/yen pair with a 20% share.The data in goods trade for Bulgaria, Poland and Japan indicate that the euro's share has increased at the expense of the US dollar.

Regarding the global debt securities market, the amount outstanding of the euro-denominated issues by non euro area residents showed a steady upward trend, rising from 19% at the end of 1998 to nearly 30% in the third quarter of 2002. This share compares with 44% for the US dollar, whose share decreased gradually since the launch of the euro, and with 12% for the Japanese yen, whose share showed a marked decline since 1997.

The evidence on international trade and financial transactions indicates that the international role of the euro has a strong regional dimension, whereas the US dollar is used more globally. This feature can also be seen in the exchange rate policies of third countries. The euro is the anchor currency in several countries and regions in the broad geographical neighbourhood of the European Union, especially in Central and Eastern Europe but also in North Africa as well as parts of sub-Saharan Africa.

However, is there actually a struggle for dominance between the US dollar and the euro? I think that the dominance of a currency in international money, which can occur when the use of national currencies depends heavily on international trade in goods and services, is not longer a persuasive argument in a world where global financial transactions become preponderant. Indeed a single national currency, which is identified as the numeraire and medium of exchange in the foreign exchange trading, is economically more efficient.

An additional argument against the dominance of one single international currency is that global financial markets are less vulnerable to shocks if more than one currency is used as international money. The "rivalry" between these two currencies in international finance should be best understood, in his words, "as a positive sum game, rather than a fight to the death". By reducing market inefficiencies, the euro contributes to promoting

economic growth in Europe with positive spillover effects on the rest of the world. The creation of the euro has already generated welfare gains.

In summary, there is compelling evidence that international finance has already been benefiting from both the "coexistence" of the US dollar and the euro. International investors can reduce risk by diversifying their asset portfolio, commodity traders can make international contracts using easily one of these two currencies as a numeraire and, most importantly as far as the ECB is concerned, they can trust the single monetary policy which, through its pursuit of price stability, safeguards the purchasing power of the euro.

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