A practical solution to the problems of currencies

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This paper is part of the WDX Institute white paper series. The WDX Institute is a not-for-profit research body established to further academic research on World Currency Baskets.

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Introduction

Currency crises, lack of trust in the Euro and global macroeconomic imbalances are all signs that the current international monetary regime is insufficient to effectively face the challenges of a globalized world with ever-increasing trade flows and financial integration.

As growing voices for reform of the international financial system serve to underline the necessity for a paradigm change, it is necessary to review potential options under the aspects of suitability as well as political and economic feasibility.

This paper analyzes several approaches for financial system reform and comes to the conclusion that a standardized basket of national fiat currencies has several characteristics that suggest a substantial role for such a basket moving forward. Attractive characteristics for the private sector include decreased volatility and costs for basket users. For central banks, increased use of a standardized basket of currencies allows for retention of national monetary policy sovereignty and macroeconomic readjustment via currency revaluation.

The case for a standardized currency basket is particularly compelling due to the fact that it can be deployed immediately. There is no requirement for a new set of lengthy Bretton Woods style conferences in an attempt to generate international consensus on the best way forward. Private as well as public actors can immediately partially shield themselves from some of the most acute risks of holding a singly fiat currency. Furthermore, should usage of the standardized currency pass a certain threshold, its standardized nature would allow it to become a viable unit for settling payments in itself, further increasing the benefits for its users.

Currencies

Historical Summary

Currencies and money have undergone steady development and technological innovations since receipts for grain stored in temple granaries in ancient Mesopotamia became used not only as a value store but also as a medium of exchange.

Many approaches worked well for a particular area and type of economy at a particular time but the only real constant in the development of monies is that of change. Whereas certain monetary systems were hurt by over or under supply of the physical commodity used as store of value, causing excessive inflation or deflation, others succumbed to widespread counterfeiting or were merely superseded by new, more appropriate technologies.

Following the suspension of the convertibility of the US Dollar into gold and the subsequent demise of the gold backed Bretton Woods regime in the early seventies, the international regime of fiat currencies and floating exchange rates was established.

Whereas this system was always somewhat flawed, it has been shown to be a largely viable system for almost four decades. However, current excessive volatility in foreign exchange markets and widespread fear over the viability of debt accumulated by governments suggest that the time is ripe for a new approach to complement the fiat currency system.

Fiat currencies

A fiat currency has no intrinsic value and is not officially convertible into a traditional store of value such as precious metals. Of course, any commodity, including precious metals may be purchased with fiat currencies; however, when this is done the lack of value stability often leads to substantial volatility.

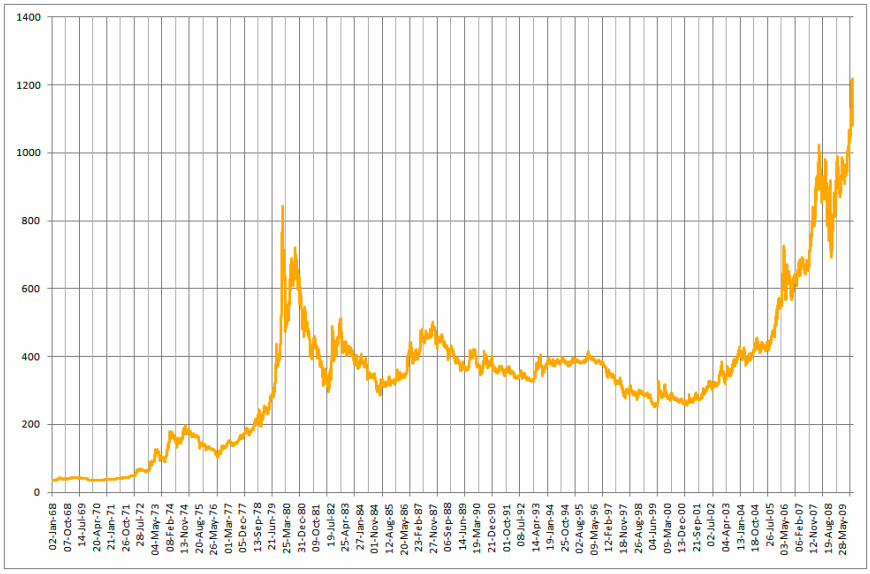

fig 1: long-term chart of the Gold/USD relation. During the Fiat currency regime. Substantial value uncertainty is apparent.

The "value", or the purchasing power of a fiat currency is determined purely by demand and supply for the currency and the demand and supply of products and services denominated in that currency.

Demand is determined by the requirement to pay taxes in legal tender, as well as for use in private economic transactions and as a store of value. Supply is explicitly determined by Central banks, although they are subject to market expectations and valuations when they seek to sell bonds.

The case for fiat currencies

Despite the apparent complexity of determining the exact value of a unit of fiat currency at any given time relative to any particular product or service or indeed a unit of an alternative currency, there are certain rather compelling arguments for the use of fiat currencies.

Monetary policy independence

The single most important reason for using fiat currencies is that it allows for monetary policy. Central bankers can choose to increase or decrease the supply of money in the economy, depending on whether they desire expanding or cooling down economic activity. The preferred tool for achieving this aim is to manipulate the demand via the interest rate mechanism. The idea behind this mechanism is that when interest rates are lowered demand will increase as future repayments of debt are decreased in nominal terms. Conversely, an increase in interest rates reduces demand for new debt and thus fresh currency leading to an overall decrease of the money supply as debt is repaid.

Retaining the ability to conduct independent national monetary policy is often considered an important element of sovereignty. It allows central bankers to react dynamically to shocks that affect the national economy in a particular way. This is no longer possible when exchange rates are fixed, or in the case of a supranational currency like the Euro. In such cases, in the presence of shocks which have different effects across currency areas, the decision on what type of policy to adopt will always entail difficult political decisions which effectively impose sub-optimal monetary policy on certain national economies whilst favouring others.

For this reason, the decision to adopt a supranational currency or to peg to a foreign currency is one which should not be taken lightly. Indeed, a seemingly wise decision for one period may turn out to harbour serious negative implications in the next, a phenomenon which can arguably be currently observed in the Euro-zone.

Issues with fiat currencies

The fiat currency regime displays certain attractive characteristics, especially regarding the option of retaining national monetary policy, an option not given within the constraints of a precious metal-based system or in a fixed exchange rate regime.

What reserve currency?

Within a fiat currency system nation states must hold foreign currency for several reasons. A certain level of foreign currency holdings is necessary in order to settle bilateral trade. However, this is not the only reason why a nation-state requires foreign currency reserves. The main reason has to do with the specificities of the fiat currency regime itself and the value uncertainty prevalent at all times within this system.

Given that fiat currencies have no intrinsic value, and that their value is merely determined by demand and supply of the currency nominal value, fluctuations can be immense. In order to cushion some of this value volatility, central banks have resorted to increasing amounts of foreign currency holdings. This way, any transitory variation in the confidence in the national currency can be somewhat mitigated by holdings of alternative national currencies. Substantial currency reserves can also be used as to pre-empt excessive currency speculation. As long as a national economy holds substantial value denominated in foreign currency, even a concerted attack on this currency by speculators is less likely to succeed. Just as the attacked currency loses value, the reserve currency holdings of that country increase in value. Indeed, with substantial foreign reserves, the attack could be seen as a net benefit for the economy of the attacked. Debt denominated in local currency becomes easier to repay, as the stock of reserve wealth in nominal national currency terms increases in line with the growth in trade competitiveness of the attacked economy that generally accompanies national currency devaluation. In fact, it is due to these dynamics that substantial foreign currency reserves can be seen as a shield against speculative attack. Central bankers in Asia learnt this the hard way: since the Asian crisis in the late 1990's foreign reserve holdings in the area, mostly in the form of US Dollars, have increased exponentially.

2010: Global Macroeconomic imbalances

It is easy to understand the rationale of Asian central bankers to accumulate reserves in order to pre-empt speculative attacks on their respective currencies, and thus their national economies. However, when large stocks of reserve currencies are accumulated in a fiat currency system the composition of these reserves becomes a critical issue.

In the current fiat regime, the US Dollar has retained the position of reserve currency of choice for the majority of central banks. Whilst this reflects the ongoing importance of the US economy in the global system, it brings certain undesirable effects both for the US as well as the holders of the currency. One of these has become known as "Triffin dilemma".

Triffin dilemma

The Triffin dilemma is named in reference to Belgian-American economist Robert Triffin. He first pointed out in the 1960's that a country issuing a global reserve currency must be willing to run trade deficits in order to supply the world with its currency in order to satisfy demand for foreign exchange reserves in a growing global economy.

In the Bretton Woods system, this relationship was particularly pronounced as the US Dollar was officially the global reserve currency. As trade developed during the economic boom of the postwar years, the United States increasingly became a debtor towards other nations as on-going deficits led to external liabilities substantially exceeding the US stock of gold, in which US Dollars were officially convertible. Certain trade partners, most notably the French president Charles de Gaulle complained that this system unfairly benefitted the United States, speaking of their "exorbitant privilege". Indeed, it was his instruction to convert French US Dollar holdings into gold which exposed the fundamentally unsustainable nature of the system and led to closing of the "gold window" and the suspension of dollar convertibility into gold in 1971.

Theoretically, in a fiat currency system the Triffin dilemma should no longer be an issue. However, due to the fact that the US Dollar is the single predominant reserve currency the issue remains acute today. Although a dramatic suspension of convertibility is no longer feasible, a reserve currency still faces the dilemma of reconciling internal and external demand for currency. When a national currency is used as a reserve currency as well as to price commodities and for settling international trade, the issuing monetary authority no longer has the option of addressing its internal economic imbalances through adjustment of the

external exchange rate because its currency serves as a benchmark for many others.

The steady increases of US T-bill holdings by foreigners are indeed accompanied by increasing US deficits, with no end in sight. This phenomenon is a focus of research of several notable economists. The academic discussion currently focuses not on whether the situation is unsustainable but whether the inevitable reversal will occur gradually, through careful economic management and cooperation - the so-called "soft-landing scenario" – or whether the US Dollar will suddenly experience a dramatic confidence crisis with unforeseeable knock-on effects throughout the global economy, the so-called "hard-landing scenario".

Regardless of which scenario will prevail, there is considerable agreement on the fact that the current situation is unsustainable and must change. This will involve both a reduction of US external debt and a diversification of reserve-holding away from the US Dollar. Given the recent loosening of the yuan/dollar soft peg there remains room for hope regarding the soft landing scenario. However, the issue of future reserve-holding composition must be addressed.

Given certain structural and confidence issues surrounding the Euro that make this currency an unlikely candidate to tackle US Dollar predominance at this time, it is necessary to review other options to escape the current stalemate.

Volatility

One of the main challenges facing the current regime is volatility. Given the multitude of variables which affect a currency's value in a fiat currency system and the inherent uncertainty surrounding these variables, bilateral currency volatility is an issue of great importance even among the largest currencies. Among smaller currencies, volatility is often even more pronounced.

fig 2: illustrative of bilateral currency volatility: EUR/USD chart past five years

This volatility entails a multitude of negative effects. Most fundamentally, it brings uncertainty regarding future values and, therefore, acts as a deterrent to investment and trade, which reduces wealth generation.

Although currency exposure can often be hedged in the forex futures market, this has quite substantial costs of its own. These costs are further exacerbated when exotic currencies are involved, in which the cost of hedging often becomes prohibitive.

Furthermore, there is substantial risk involved in using futures to hedge currency exposure, as the hedged exposure can move in the opposite way, forcing hedgers to post margin. Depending on the access to liquidity and the magnitude of the exposure, such an experiment can become critical.

Potential solutions – an overview

Given the serious negative effects that a full-blown currency crisis in any of the major economic zones would entail, there is increasing focus on potential alternatives. Whilst none of the suggestions appear to be a universal panacea, certain options appear more attractive and feasible than others.

Pegging to an external currency

Smaller economies have often seen benefit in maintaining a particular value against another currency, generally the US Dollar. This has certain very obvious advantages: where the peg is credible, inflation expectations can be dampened allowing the local government to borrow at more favourable long-term rates. The peg and the reduction in external value volatility of the local currency can also be generally favourable to economic conditions, increasing foreign direct investment, which in turn increases the potential for the central bank to accumulate foreign currency reserves.

However, these benefits do not come without costs and risks, the most fundamental being the loss of independent monetary policy tools and heightened risk of financial crises.

Loss of monetary policy independence: the impossible trinity

In order for a currency peg to be credible, it must also be sustainable. This means that the Central banker administering the currency peg will be required to adapt to monetary policy decisions taken by his colleague whose currency the banker has pegged to. For example, should the Federal Reserve chairman decide to pursue a restrictive monetary policy in order to stop the US economy from overheating, the pegger will be required to follow suit. This is due to the fact that any derogation from the monetary policy decisions affecting the reference currency would be very likely to cause speculators to attack the peg.

There are situations where shocks in the globalized economy may call for uniform monetary policy decisions to face the common challenges. In these situations the fallout from the loss of independent monetary policy may be negligible. In cases, however, where economic shocks are local or only affect a certain production mix the necessity to adapt to external foreign policy decisions could cause significant damage to an economy.

The option of imposing controls on the free flow of capital in order to allow for a derogation of monetary policy from that of the currency pegged to is generally considered to be ill-advised. Not only can capital controls generally be avoided at a cost (under and over invoicing is but one option) but there are also usually substantially negative effects on foreign direct investment, due to the uncertainty regarding the future repatriation of profits.

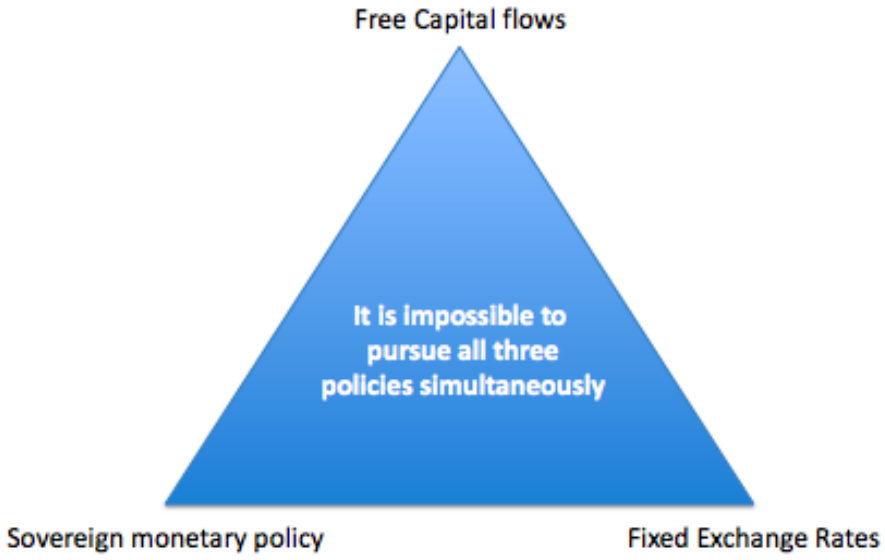

fig 3: the impossible trinity

Increased likelihood of financial crises

One common risk involved in pegging to an external currency is the heightened potential for a financial crisis to occur. Whether the example is the Argentine or the Asian crisis, generally the dynamic is as follows: an economy decides to peg their currency to that of another economy, usually in order to curtail inflation. Should the peg be credible, many local and international actors will begin to perceive the currencies as interchangeable equivalents. However, generally the risk premium, i.e. the cost of borrowing, will be lower in the reference currency relative to the pegged currency. This is due to several factors, but most of all due to the fact that in most cases only the currencies of the largest, most stable economies are pegged to in the first place. Furthermore, a currency peg will usually only be established where there is a history of monetary policy failures, such as out-of-control inflation.

Given the interest rate differential and the absence of capital controls, certain local actors may decide to borrow in the reference currency rather than in the local currency. As this practice becomes increasingly popular, the risk to the local economy also increases.

The catalyst for the crisis could be a negative shock, either in the local economy which would render local investment less attractive, or in the economy of the reference currency, which would require capital to be repatriated in order to cover losses there. It could also be a concerted attack by currency traders or a combination of all of the above. The effect will generally be the same: after having exhausted all currency reserves in defence of the peg it will have to be abandoned, causing further grief to the local economy as companies which borrowed in foreign currency suddenly see their debt service rising in proportion of the currency devaluation.

Supranational currencies

The supra-national currency unit, of which the Euro is so far the only example, is a rather unique creation. On one hand, it is one currency and governed by one entity, the European Central Bank. On the other hand, each Eurozone government has the right to issue bonds denominated in Euro. In order to impede excessive bond issues by any one government, an action which has the potential to undermine the stability of the entire Eurozone, strict criteria were put in place which must be satisfied before a state can join the European monetary union. These "Maastricht criteria" stipulate conditions regarding inflation, public deficits, debt and interest rates. Unfortunately for European monetary stability, it has surfaced that certain countries, such as Greece, "cooked the books" in order to superficially satisfy the criteria. Furthermore, the majority of states already in the Eurozone have since amassed public deficits substantially exceeding the Maastricht criteria.

Although a fund has been set up to support Eurozone states which face "short-term financing constraints" i.e. the inability to raise cash at sustainable rates in the market due to bankruptcy expectations by investors, there has been little progress on establishing a mechanism which would force member governments to fiscally sustainable budgets which do not undermine the Euro system. Indeed, Greek access to funds was only on condition that reforms demanded by the IMF were pushed through.

It appears that European Monetary Union has difficulty in overcoming its internal contradictions. Only given increased political integration and institutional reform can the Euro become a viable project with a sound

institutional setup. In its current form, the Euro appears to be more of a problem for international financial stability than part of the solution.

An international super-sovereign currency

As the 2007-8 financial crisis was playing out, Zhou Xiaouchuan, the governor of the People's Bank of China, proposed remedying the current flawed system by establishing a global super sovereign reserve currency, modelled on Keynes Bancor. Specifically, he advocated the expansion of the use of IMF Special Drawing Rights and the creation of settlement mechanisms to facilitate this aim.

These ideas generated considerable enthusiasm among academics, as well as policy makers, and leaders meeting at the April 2009 G-20 London summit did agree to allow for USD 250 bn of SDRs to be created by the IMF and distributed to members, according to each country's voting rights. This could be seen as a step to establish the SDR as a truly global currency.

Issues with the super sovereign currency plan

Due to the lack of coordinated and effective global political governance a political solution to the current situation in the short to medium term remains optimistic, if not fanciful.

The IMF is a political institution. The extensive discussions surrounding IMF voting right reform serve to illustrate the difficulties involved in coordinating action in the international arena. Given that diplomats and politicians are mandated to pursue the self-interests of their respective states, reform is especially difficult in situations where the powerful would be required to relinquish rights and privileges in order for a system to become more equitable. In the case of the IMF, for example, the United States benefits from a larger allocation of rights than their share of global GDP would call for. Therefore, the allocation of SDR's according to this system merely serves to perpetuate a flawed system and would certainly antagonize smaller members, should this approach be adopted more widely.

Other issues that would need to be resolved are those of valuation and how to account for different speeds of development of respective national currencies. Should substantial monetary creation occur according to IMF voting rights, the relative shares of voting rights would effectively determine the relative exchange rates of these currencies, thereby introducing a form of supra-national currency on the international level. Obviously, this currency would not be spared from the

difficulties of the impossible trinity and countries would be forced to abandon national sovereignty in the form of independent monetary policy. In its most extreme form, the IMF would be determining a single global monetary policy. Not only is it questionable whether this would be economically desirable, it is unlikely to become feasible without substantial reform of global governance structures.

The crisis of 2007/8 has, however, shown another major issue with this approach. While US American monetary policy has been widely credited with sowing the seeds of leverage excesses and an unsustainable credit boost, the effects thereof were mitigated by more sustainable monetary policy in other economies. In the case where the global central bank makes a mistake, the problems arising could be even more acute and difficult to mitigate.

Certainly, a single global currency would make currency crises a thing of the past. After all, with only one real currency, speculation itself would be rendered impossible. However, as can be witnessed in the Eurozone today, there remain real difficulties in maintaining a single currency zone without also a centralized government, and a single authority allowed to tax and sell bonds in that currency. Greek lack of austerity within the European framework could easily be replicated by any country within a loose global framework, should each participating country be allowed to issue bonds in global currency. Said simply, without prior increased political integration, any supranational currency system carries the seeds of its own destruction from the outset.

As it appears unlikely that the international community will be able to realise the kind of political integration required to remedy the issues facing the international monetary order, it is only natural that non-governmental actors should step into the void and offer potential solutions. Whereas the issuing of private sector currencies backed by Fiat appears risky, there is a promising concept in the standardized currency basket of national fiat currencies.

Complete currency privatisation

One solution could be to completely privatize currency issuing, i.e. to get nation-states out of the business of issuing currency altogether. Individuals and companies could choose which currency to hold and to accept. Value would be determined according to the perceived solvency of the currency issuing institution. In theory, this approach therefore has some merits. In practice, however, several issues render the success of this model highly unlikely. Transparency and auditing is a major issue. Corporate governance scandals such as Enron or WorldCom in recent years have illustrated that even very large private sector entities remain open to fraud and abuse. Given this, it could be a

challenge to establish structures which would deter confidence tricksters and ponzi schemers from operating in the liberalized currency-issuing business. The financing of government and denomination of taxation could also be potentially difficult issues to navigate, and are certainly among the reasons why private sector currencies are currently illegal in most jurisdictions.

A standardized currency basket of national fiat currencies: the benefits of fiat currencies without the drawbacks

Given the difficult constellations and linkages between national and global politics and the international monetary order, it has been shown that neither a reliance on a political solution nor a pure private sector solution is likely to be successful in the current environment. However, there remains an option which provides a balance between the constraints of a single global currency and an expansion of the role of the IMF, and the anarchy which a complete liberalization of the monetary system would entail: the standardized currency basket of national fiat currencies.

This arrangement has several benefits. As the standardized basket is fully backed by fiat currencies, it is as reliable a store of value as the constituent currencies within it. However, due to the fact that its holdings are diversified, a basket holder would retain value even in the case of the currency crisis within a constituent currency. Basket holders would only risk losing the weighting of that particular currency within the basket.

Another strong benefit is reduced volatility. As the basket is the weighted average of the value of the constituent currencies at any time, value is generally more stable and consistent than that of any particular constituent currency relative to holding a single currency. For international actors who generate income across borders this is key. An international alimentary producer may procure raw goods in one country, process it in another and sell it in a third, all the while having its seat and main stock listing in a fourth. Although it remains a challenge to entirely mitigate this operations' exposure to the whole chain of bilateral currency value uncertainties, the firm would certainly decrease uncertainty if it were to account, plan, analyze costs and most fundamentally think in terms of units of basket.

The advantages for commodity producers are also apparent. Whilst they may currently use the futures markets in order to lock in a certain amount of predictable profits, the cost of hedging currency exposure is often extremely high, especially where the national currency is not among the most widely traded. Listing commodity futures in terms of basket units allows for the benefit of reduced volatility to transpire into a more predictable future-effective value of commodities traded.

Eventually, smaller central banks may also see the benefit of holding standardized basket units rather than building a basket themselves, quite simply due to the reduced complexity and cost of using a standardized product compared to holding reserves in single currencies.

Another benefit of the standardized currency basket is that it can be deployed and used today. International political agreement is not required, and therefore it is unnecessary to wait for political processes to culminate.

Therefore, it can only be hoped that a standardized basket of fiat currencies rapidly gains momentum and becomes widely understood and used. The benefits of reduced volatility and increased reliability become increasingly easily accessible the wider the basket is deployed. Eventually, it could be feasible to see transactions where the constituent currencies are by-passed altogether as deals are priced and settled in terms of basket units. Basically, with such a basket arrangement, the more it is used, the more useful it becomes.

One issue with a standardized basket of currencies could be a loss of relevance of certain currencies within the basket thus "weighing down" the basket with increasingly irrelevant and thus more expensive to trade currencies. In order to avoid this pitfall, the basket could be dynamically reweighted according to economic relevance of currencies within the basket. In order to retain value certainty and allow for ongoing exchange of basket units, the basket would have to be composed according to a set of stringent rules.

Conclusion

Given the national and international financial, legal and political constraints it appears that the only solution which is feasible and currently readily deployable in the market is a standardized basket of national fiat currencies. Ideally this basket would be dynamic and would adapt to economic developments through periodic re-weightings according to stringent principles.

The success of such a basket would depend on the courage and willingness of international firms, asset managers, commodity exchanges, NGO's and ultimately national central banks to adopt this basket. The more the basket is used, the more it could also be used directly to settle payments between firms and institutions, thus truly becoming an international meta-currency and increasing welfare globally by giving access to reduced volatility and reduced hedging costs to an increasingly broad demographic.

About the WDXI, WDX and the Wocu™

The WDX Institute is a wholly independent not-for-profit research body established by WDX, a private company that owns and distributes the Wocu™ world currency unit quotation. The WDXI independently monitors the Wocu and its constituent revisions, as determined by IMF GDP figures, every six months to ensure the Wocu's integrity, non-manipulation and standardisation. The WDXI is also mandated to further research into the application of the Wocu and World currency baskets in general.

The Wocu (**Wo**rld **C**urrency **U**nit) is a standardised, apolitical, basket currency derivative quotation based on the real time exchange rates of the currency pairs of the world's top 20 nations as determined by IMF measures of GDP. The Wocu naturally takes into account changing economic power and commercial perception of currency values as an elegant, market driven solution to the need for a global reference currency.

Wocu quotations are delivered across financial networks and the Internet in real time from the unique Wocu algorithm which inputs trading prices of currency pairs from a broad spread of global sources to output the Wocu. The Wocu, its constituent currency pairs weighted in line with GDPs, is a generally less volatile currency unit than traditional currency pairs.

The Wocu balances and stabilizes currency risk, offering commercial advantage compared to the traditional use of the U.S. dollar to denominate international trade, acting as a natural currency shock absorber. It is applicable to most cross currency transactions and particularly international commodity trading. U.S. dollar agnostic (the U.S. dollar simply forms a weighted component of the Wocu) the Wocu offers sovereign nations an alternative to the U.S. dollar to price commodity exports and a standardised reference for holding currency reserves.

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