

## A CONSTANT UNIT OF ACCOUNT

*Richard W. Rahn*

F. A. Hayek, in his classic *Denationalisation of Money*, argued the case for competitive nongovernmental currencies. As Hayek ([1976] 1990: 130) wrote,

The abolition of the government monopoly of money was conceived to prevent the bouts of acute inflation and deflation which have plagued the world for the past 60 years. It proves on examination to be also the much needed cure for a more deep-seated disease; the recurrent waves of depression and unemployment that have been represented as an inherent and deadly defect of capitalism.

Over the past several decades, I have been a professional economist, government advisor, financial regulator, and have also engaged in international business. After this variety of experience, I am now more than ever convinced that Hayek was absolutely correct in how the government monopoly of the issuance of money leads to a never-ending cycle of economic crises. A decade ago, I was hopeful that the ability of private parties to create their own digital currency might be our salvation, and that led me to write a book, *The End of Money and the Struggle for Financial Privacy* (Rahn 1999). At the time, Milton Friedman told me that I was much too optimistic about how long it would take. Friedman was right, as usual, and we still seem decades away from this ideal.

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Richard W. Rahn is a Senior Fellow at the Cato Institute.

Many have struggled with this problem. Warren Coats, who studied under Friedman and served on the IMF staff for many years (and served with me on the board of the Cayman Islands Monetary Authority), wrote an important study on the subject, *In Search of a Monetary Anchor* (Coats 1994), where he both reviewed the history of the effort and made significant recommendations for creating a global monetary standard.

In this article, my goal is far less ambitious, and that is to lay out a very practical and politically doable, and even simple, way to define a global monetary unit of account that is closer to a monetary constant than other alternatives now available, such as gold or commodity baskets. As Hayek and many other authors have noted over the decades, inflation, deflation, and wide swings in relative exchange rates cause huge problems for business people, investors, policymakers, and, of course, economists in trying to understand what is happening. The result of the risks and uncertainties of holding or contracting any government-issued money has reduced productive investment, productivity growth, and job creation—making us all unnecessarily poorer.

## Overview

In an ideal world, there would be one global currency subject to neither inflation nor deflation, nor political manipulation by any one or group of countries. In such a world, transaction and exchange costs, and investment costs and risks would be greatly reduced, but it is not going to happen in the foreseeable future. That does not mean, however, no improvements can be made in the functioning of the existing monetary order. This article presents a practical proposal for creating a “constant unit of account” that could result in substantial economic benefits to the global financial system.

Money is traditionally defined as a medium of exchange, a unit of account, and a store of value. The goal of this article is to deal only with the unit of account, which facilitates the valuation and calculation function of money. The idea is that, by providing a better global unit of account whose definition is widely accepted, it will enable others to devise ways to make it a medium of exchange and a store of value.

There has been rising dissatisfaction with the U.S. dollar as the primary global reserve currency and the unit of account for much of world trade and commodity prices, most importantly oil. The problem is there are, at the moment, no obviously superior alternatives. There has been some discussion about trying to turn the SDR (Special Drawing Right issued by the IMF) into a global currency. The SDR does serve both as a unit of account and a medium of exchange, but for many reasons, including practical and political, it is unlikely to become a world currency in the near future, if ever.<sup>1</sup> The United States and the European Union enjoy the profits they obtain from selling their currencies to the citizens of the world. And the United States, in particular, is most unlikely to give up its monetary sovereignty to a group of international bureaucrats representing countries, many of whom are not necessarily friendly to U.S. interests. In fact, the Founders of the American Republic explicitly provided in the Constitution that the Congress shall have the power “to coin money and regulate the value thereof.” Thus, it may not even be constitutional for the U.S. government to delegate this power to some international organization.

Nobel laureate economist Robert Mundell, a principal architect of the euro, noted in an article written almost a half century ago that there are optimal currency areas (Mundell 1961). Some economists dispute whether the eurozone is truly an optimal currency area. Nevertheless, one could argue that as trade and investment are increasingly globalized, the entire world may become an optimum currency area. The huge swings in currency exchange rates (the U.S. dollar has ranged from 80 cents to \$1.60 for one euro in just the past seven years) have caused costly problems for everyone—from international tourists to major international traders and investors. Current mechanisms for currency hedging and forward trading can partially mitigate some of, but far from all, exchange rate risks, and they are often costly.

Banks and other financial institutions do provide some private specialized currency baskets, but these are of limited use. As noted

<sup>1</sup>A recent paper by Warren Coats (2009) explains how the SDR could evolve into a world currency, while another recent paper by Swaminathan S. Anklesaria Aiyar (2009) presents the arguments why the SDR will never evolve into a world currency.

above, proponents of the expanded use of SDRs correctly note that the SDR can serve as a unit of account, a means of payment, and even a store of value, but the definition and value is determined by a group of international bureaucrats and is—usually for good reason—periodically revised. When the SDR was last revised in 2006, its currency basket consisted of 44 percent U.S. dollars, 34 percent euros, and 11 percent for both the Japanese yen and the British pound sterling. Over time, these weights vary as the exchange rates of the currencies in the basket shift. Revisions are scheduled for every five years, and such adjustments are subject to political influence, even though the value of the new basket must equal the value of the old one on the day of the exchange.

Holding SDRs, or defining international contracts in SDRs, will reduce exchange rate risk, but only modestly reduce the risk of protecting an individual or a business from global inflation (or deflation).

The private sector has managed to create many indices that are viewed as so reliable and well-managed, and whose value and weights are sufficiently insulated from either private or public pressure, that they serve as the basis for financial instruments and widely accepted measures of performance, the Dow Jones Index being exhibit A. The Dow Jones Index of 30 industrial companies is a “changing constant.” The companies which make up the Index are changed as the relative importance of industries and individual companies change, or when companies like GM go into bankruptcy, and a change becomes a necessity. When new companies replace old companies, the Index number, as reported, is not adjusted; what is adjusted is the relative weight of the companies within the Index. This is done so seamlessly, accurately, professionally, and transparently that it does not become an issue, even though the Index is used for hundreds of billions of dollars in trades.

A highly regarded private institution like Dow Jones (now owned by NewsCorp) could provide an index for a global monetary constant, which will be referred to in the rest of this article as the Constant Unit of Account or CUA. One improvement of the CUA over the SDR would be to add more currencies to the basket, including the currency of every country with more than 1 percent of world GDP. In the Appendix to this article, I list 15 currencies accounting for more than 80 percent of world GDP that would be included in the CUA. I also recommend weights for

each currency in the basket: the U.S. dollar is assigned the top spot with a weight of 32 percent, while the euro is number two with a weight of 22 percent. The relative weight of the CUA would be transparently adjusted to reflect (1) changes in exchange rates and (2) the relative importance of each country and currency in world trade and output—much like what is done with the present SDR.

The CUA would be an improvement over the SDR because adjustments in currency block weights would be continuous and not made by a political body. An additional major improvement would be made by also indexing each of the currencies in the basket for inflation. The goal is to have as close to a global monetary constant as possible. Most major currencies have been subject to inflation (and in rare cases deflation) in most years since the end of the gold standard four decades ago. Thus, the number of dollars, euros, and other currencies needed to purchase the index would rise by the amount of inflation each currency suffered each year, even if their relative amounts in the index remained constant.

The existence of such an index could easily serve as a unit of account for trade and investment contracts and for those who develop measures of relative international performance. Large international commodity producers, such as oil-rich states, might find it politically more acceptable to price their commodity in CUAs rather than U.S. dollars. Small countries could use the index as their monetary unit if they had a currency board with enough financial and/or commodity reserves to back it. For instance, a small country with very large oil reserves could pledge sufficient reserves of oil so that even when the price of oil was low, the country would have more than 100 percent backing for the currency it issued. The possible uses are endless.

The technology to calculate the value of the CUA is readily available. The value of each currency within the basket could be calculated on a real-time basis. The private organization that calculates the value of the CUA would have an overwhelming interest to maintain the integrity of the index, because the index would be worthless without the reputation and integrity of the private oversight board and managing institution. It would be very important for the board members and institution not to have, or even be perceived to have, conflicts of interest so as not to be in a position to be pressured by any government or international government organization.

## Why a New Unit of Account Is Necessary

If the U.S. dollar were to suffer from a high rate of single and, particularly, double-digit inflation for a number of years, it could no longer be used as even an approximate measuring stick for international accounts and statistics. International commodity producers, such as oil producers, would almost certainly be trying to find a new unit of account. Given the massive increase in U.S. debt, projected debt, and projected large continuing deficits, this inflation possibility is increasingly likely.

Businesses, governments, and individuals engaged in long-term contractual international relationships need a reasonably stable unit of account or a way and formula to make frequent adjustments between whatever are the relevant currencies. The higher the rate of inflation and exchange rate instability between the relevant countries, the more difficult this becomes.

Economists, historians, and other scholars also need a better measuring stick when trying to do comparative economic performance studies. Having an independent measure of performance (rather than basing it against one national currency) has both political and explanatory advantages.

For the reasons mentioned earlier, it is unlikely that the euro, RMB, yen, or SDR will be able to satisfactorily fulfill the role. International organizations, such as the IMF, World Bank, and OECD, are unlikely to be able to create an acceptable unit of account as they always become politicized because neither their funding nor management is ever really totally independent of the interests of their major members.

## Why the Dollar Is Likely to Fall in Value

The U.S. dollar has been the primary global reserve currency, but its share of total foreign exchange is eroding. Foreign exchange (FX) holdings of the dollar decreased from 55 percent in 1999 to 40 percent in 2008. During this period of time, the euro share grew from 14 percent to 17 percent, and the Japanese yen, British pound sterling, and Swiss franc modestly increased their small shares. At present, there is no other single currency that is a credible alternative to the U.S. dollar.

Given that the deterioration of the external value of the dollar is largely due to the U.S. fiscal situation, major dollar holders,

including the Chinese and the Japanese, are becoming increasingly nervous and have indicated they are seeking to reduce the percentage of their reserves held in U.S. dollars. U.S. government spending is currently growing much faster than real GDP; and given the entitlement problem, it appears that government spending will continue to grow much faster than realistic forecasts of U.S. GDP—a situation which is clearly unsustainable over the long run.

In part, because of the U.S. fiscal situation, the governor of the People's Bank of China, Zhou Xiaochuan, has proposed replacing the U.S. dollar as the international reserve currency. In March 2009, he argued that a super-sovereign international currency, based on SDRs, should be created. At present, SDRs are only a very small part of global reserves, and both mechanically and politically it would be nearly impossible for them to substitute for the U.S. dollar. Gary Hufbauer (2009) of the Peterson Institute for International Economics has observed:

Official FX reserves, at \$7 trillion, now amount to around 40 percent of world imports. If globalization recovers and imports resume their customary nominal growth rate of 10 percent annually, and if the FX reserve ratio holds at 40 percent, in 2020 countries will want to hold \$20 trillion of FX reserves—an additional \$13 trillion. If the U.S. moderates its current account deficit to 2 percent of GDP annually, the dollar component of additional reserves would be around \$4.5 trillion. Where will the extra \$8.5 trillion come from?

The proposal for a new unit of account does not solve the reserve problem, but it can give guidance to countries as to how to diversify their reserves to minimize the effects of both exchange rate swings and the depreciation of reserves due to high rates of inflation in one or more of the countries providing the reserves. Only countries running sustained current account deficits, as the United States has done for many years, can provide large amounts of monetary reserves (capital account surpluses) to the global community.

Economists of various stripes are presently debating whether the United States will enter a period of long deflation as the Japanese have experienced or whether the U.S. dollar will suffer higher and

higher rates of inflation, including a return to the double-digit inflation that was last experienced in the late 1970s. It is true that the Fed can prevent a return to a period of high inflation by refusing to monetize U.S. government spending. If one believes that super-sized deficits—even double-digit ones as a percentage of GDP—are likely to continue, then the only way inflation can be avoided is through a very large increase in the U.S. savings rate, with the government taking almost all of the savings to service the ever-growing debt. Under this scenario, little, if any, economic growth will take place because of the absence of private capital formation. With almost no growth and a continuing increase in working age population, either real wages will have to fall or unemployment will continue to increase. Either of these alternatives is likely to be less acceptable to the political class than a rise in inflation, which has the advantage of masking the fall in real wages to the uniformed (because nominal wages can still rise), or stemming the rise in unemployment in the short run, but not in the long run. One more option exists, and that is to reduce the size of government.

The more likely scenario is that as the global recovery takes hold and high growth rates return to much of Asia and elsewhere, commodity prices will rise more rapidly, and the dollar will continue to fall, given the slower growth rates in the United States. Under this scenario, the United States will have higher, but still single-digit, inflation; but if Treasury yields average 10.5 percent as they did in the 1980s, the interest bill would rise from \$1.5 trillion to \$2.6 trillion for the 2010–2014 period. A rise of this magnitude in interest payments would force Congress to cut another trillion dollars out of the budget and try to raise taxes to cover part or all of the increase. Given that Congress is unlikely to make the necessary spending cuts, tax rates on persons with higher incomes would likely rise, causing slower economic growth and larger deficits. Consequently, the public debt would continue to rise as a percentage of GDP.

As the public debt continued to rise as a share of GDP, foreign investors would be less and less likely to invest in U.S. government securities, which would cause a further fall in the dollar, more inflation (assuming the Fed monetizes much of the new debt), higher interest rates, and an increase in interest payments on the debt. The resulting economic chaos would cause panic in the political classes, and either a new Reagan/Volcker team would emerge



and throw the United States into a painful austerity for a few years, or massive inflation would occur, which, at some point, would cause a totally new group of politicians to be elected.

Most business people and investors would see what is coming and seek to protect themselves by buying foreign assets or diversifying their assets by using an impartial global unit of account. Almost all inflations over the past century have been measured against the U.S. dollar (How many units of a home currency does it take to buy a dollar?). Despite the U.S. dollar becoming an ever-shorter measuring stick, it has been close enough for people to estimate their real change in circumstances.

## How the CUA Would Be Calculated

The SDR adjusts the weights of the currencies in the basket as exchange rates change. Many authors have proposed nongovernmental currencies, usually fixing the value of the currency to a commodity (i.e., gold), or a basket of commodities, or a basket of currencies. None of these approaches deals specifically with the inflation problem or loss in value of government legal tender currencies over time. Artificial currencies, such as the SDR, by incorporating exchange rate changes, do muffle some of the adverse purchasing power effects of individual currencies that may be suffering higher inflation than the other currencies in the basket. Individual commodities do reflect much of what is called inflation over time, but individual commodities, including gold, and even commodity baskets tend to have much larger price swings than are seen in broad-based inflation indices for the major currencies. Commodities, as Julian Simon famously noted, tend to fall in relative price over time compared to a broader basket of goods and services.

The proposal for the CUA outlined in this article would explicitly deal with the inflation problem by constantly (i.e., monthly) adjusting the value of each currency in the basket for inflation. For example, assume there are only two currencies (A and B) in the basket and that the weight of each currency in the basket is 100 units (100 units of currency A plus 100 units of currency B equals 1 CUA). If, at the end of one year, country A has inflation of 10 percent and country B has inflation of 3 percent, the CUA would be then defined as 110 units of currency A and 103 units of currency B. Like the SDR, the exchange rates of the currencies would

be adjusted on a continuous basis, which would capture part but not necessarily all of the relative rates of inflation. In addition, over time, if one country grows much more rapidly than another country whose currencies are also in the basket, an adjustment would be made to reflect the growing share of world GDP by the stronger country. Only proportionate shares in the basket would be adjusted, so the overall value of the CUA would not change because of the realigning of relative shares.

The analogy is the Dow Jones Industrial Index, which has been around since 1896, even though General Electric is the only company to have been in the Index from the beginning. Dow Jones has an overriding interest in making sure that the Index is properly calculated for each second of each day, and that the substitutions are made in a transparent and nonpolitical way. Consequently, the Index is viewed as having so much integrity that it can be used as the measure for billions of dollars of investments and transactions every day.

There are measures of inflation for all the countries that issue the major currencies. The supervisory board for the CUA would need to select similar measures of inflation for each of the currencies within the basket to maintain internal consistency. Of course, none of the inflation measures are going to be identical, and every inflation index has its flaws. It is also recognized that as people become wealthier, the proportion of their income spent on “commodities”—including food, where the price statistics are very good—declines, and the proportion of income spent on “new goods and services” increases. For instance, the Blackberry and iPhone are devices that substitute for many products and have totally new features—so how does one measure inflation or deflation if a substantial portion of income is spent on goods or services that have no reference point? Despite these problems, price-level index creators continue to find ways to cope with these issues and thus provide reasonable approximations of what is happening to prices. Most countries now report price changes on a monthly basis, which would be immediately reflected in the CUA as a change in a component weight. Each of these adjustments would be very small in relation to the total value of the CUA, and hence would be unlikely to cause practical use problems.

One problem with using price indices as measures of inflation is that they are all backwards looking, in that they measure past inflation, not current inflation. The lags in the index measures can

be lengthy, even up to a year or more. One way of partially mitigating this problem is to add a measure of current and even anticipated inflation. Both the United States and the United Kingdom issue inflation-indexed government bonds. An increase in the spread between the nonindexed bond and the indexed bond indicates an increased expectation of more inflation and vice versa. If the number of units of the currency in the basket were multiplied by the increase or decrease in the spread of the indexed and non-indexed bonds on a minute-by-minute basis, and then the number of units of the currency was adjusted to bring it back to par, it would serve as a proxy for current inflation expectations, partially offsetting the inflation index lag problem. (A rise in the spread of a few basis points would be multiplied as a negative number and vice versa.)

Over time, the negative and positive basis point spreads would tend to wash out and would have little effect on the long-term measured value of any specific currency in the basket. However, again, in the short run, the bond spread multiplier would both offset the lag problem and dampen down the tiny jumps that would occur when the monthly inflation numbers are reported. The bond spread multiplier would also make it more difficult for very sophisticated users of the CUA to anticipate the adjustment of any one currency within the basket, thus negating any advantage they might have over less sophisticated users.

Many of the currencies within the basket would not have inflation-indexed bonds; so, measuring the change in inflation expectations would not be as easy as it would be with American and British indexed bonds. For those currencies, a slightly cruder approach would have to be used. The positive and negative multipliers would need to be the changes in the minute-by-minute bond prices for the one- or two-year bonds, recognizing the fact that the total movement in such bond prices reflects much more than just inflation expectations. There are internationally traded bonds for all of the currencies proposed for the basket. The Chinese began issuing RMB-denominated internationally traded bonds in September 2009.

## Conclusion

For decades, economists and others have been trying to devise the perfect global money—one not subject to inflation or deflation

or political manipulation. Gold, commodity, and currency baskets all have their shortcomings. This article explains how a superior monetary unit of account can be created and implemented by private parties. In sum, a basket of currencies largely reflecting their global importance would be created (and occasionally reweighted) and continuously adjusted for changes in exchange rates and purchasing power. The purchasing power adjustments would be done by using a combination of price indices and interest-rate spread changes between inflation-indexed and nonindexed bonds.

## Appendix: Creating a Constant Unit of Account

In this Appendix, I offer a more detailed account of how a CUA might be constructed by assigning weights to a basket of 15 currencies. The countries and weights are shown in Appendix Table 1.

APPENDIX TABLE 1  
HYPOTHETICAL WEIGHTING OF CUA

COUNTRY	CURRENCY	SYMBOL	WEIGHT (%)
United States	dollar	USD	32
Eurozone	euro	EUR	22
China	renminbi	RMB	8
Japan	yen	JPY	8
India	rupee	INR	6
United Kingdom	pound sterling	GBP	5
Russia	ruble	RUB	5
Brazil	real	BRL	3
Canada	dollar	CAD	3
South Korea	won	KRW	3
Australia	dollar	AUD	1
Turkey	new lira	TRY	1
Indonesia	rupiah	IDR	1
Switzerland	franc	CHF	1
Norway	krone	NOK	1

The weights in Appendix Table 1 approximately reflect the currencies share of world GDP, with a few exceptions. The 15 currencies chosen account for more than 80 percent of world GDP. The dollar is given a disproportionate weight because of its role as the

primary reserve currency and unit of account for most international commodity prices, including oil, and it is used by other nations (directly, or as a “fix,” or “peg”) in addition to the United States. On a purchasing power basis, the RMB is underweighted because it is not yet a fully convertible currency. The Swiss franc is included because of its extensive global use as a “safe haven” currency. The Norwegian krone was included because, like the Swiss franc, it is used by many non-Norwegians as a “safe haven” currency and because it serves as a rough proxy for the price of oil and energy.

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