

International Monetary Fund

From the Selected Works of Warren Coats

November 11, 2011

Real SDR Currency Board

Warren Coats



Available at: https://works.bepress.com/warren_coats/25/

A Global Currency for a Global Economy: A Real SDR Currency Board

By Warren Coats¹
November 6, 2011

Introduction

Since the collapse of the gold standard and the Bretton Woods system in the early 1970s, the resulting international monetary system (IMS) has supported a dramatic growth in world trade and finance remarkably well. Yet the system of market determined or managed exchange rates, which suited well a world of limited international monetary cooperation, and the dominance of the U.S. dollar in international reserves and for international transactions has well known shortcoming and vulnerabilities that have revived the search for a better one.²

The weaknesses of the existing system include the asymmetry between the market pressure for deficit countries (other than reserve currency countries) to adjust and the lack of such pressure for surplus countries, and the Triffin dilemma like risk of foreign exchange reserve growth producing an increasingly large foreign holding of reserve currency countries' debt relative to the size of their economies. Less often discussed is the fundamental impediment to the free flow of goods and capital globally on the basis of national currencies, whose exchange rates vary dramatically. Moreover, the primary supplier of international reserves, the United States, has historically given little attention to the international value of its currency when formulating its monetary and fiscal policies.

¹ Warren Coats retired from the International Monetary Fund in 2003, where he was chief of the Operations Division for SDRs, in the Finance Department from 1982 - 88. While the ideas presented in this note have benefited from discussions with many people over the years, especially Leland Yeager, he is particularly grateful for the recent comments by Robert Pringle, Chairman of Central Banking Publications, and Leanne Ussher, Queens College, City University of New York. Earlier versions of this paper were presented in Paris on December 11, 2010; Nanjing, March 31, 2011; Astana, May 4, 2011; Buenos Aires, July 1, 2011; and Siena, July 10, 2011. His most recent book, "[One Currency for Bosnia: Creating the Central Bank of Bosnia and Herzegovina](#)," was published in November 2007. He has a Ph.D. in economics from the University of Chicago and lives in Bethesda, Md.

² International Monetary Fund, 2010, "[Reserve Accumulation and International Monetary Stability](#)", April 13.

In this paper I argue that a radically reformed system can be achieved by building on the existing foundation for the alternative reserve asset to the U.S. dollar created by the IMF in 1969. The Second Amendment to its Articles of Agreement obligated Fund members to make the Special Drawing Right (SDR) “the principal reserve asset in the international monetary system” (IMF Article XXII). The United States and many other industrial country members quickly lost interest in the SDR until a large allocation was approved in response to the financial crisis of 2008.

While many simple and practical steps can and should be taken to promote the use of the existing SDR, I argue that interest in the SDR could be transformed by replacing its valuation basket of currencies with a basket of goods and replacing the allocation of SDRs with issuing them under currency board rules. Rather than buying and selling SDRs for the items in its valuation basket (ala the gold or other traditional commodity standards), the IMF would sell and redeem these “real SDR” for the basket indirectly (against government or other AAA financial assets of equivalent value). Such an SDR, with a relatively constant real value, is likely to be adopted as the anchor currency for fixing the exchange rates of many if not most national currencies and to augment or replace the U.S dollar and Euro in countries’ foreign exchange reserves.

The Existing System and Options

According to the IMF: “Sustained government deficits may eventually bring public debt sustainability into question, undermining the *store of value* characteristic of reserve assets (by which is meant a stable value of a representative international basket of goods and services).”³ However, “More diversified reserve holdings would require the availability of other asset classes that reproduce the desirable characteristics of the dollar in terms of liquidity, safety and yield.”⁴

In an exploratory paper on a possible expanded role for the IMF’s Special Drawing Rights (SDR), the IMF stated that: “Clearly, problems in the international monetary system (IMS)—persistent global imbalances, large and volatile capital flows, exchange rate gyrations disconnected from fundamentals, insufficient supply of safe global assets—are complex and call for an array of remedies—global policy collaboration and stronger surveillance, enhanced systemic financial safety net, financial deepening in emerging markets and more generally development of new reserve assets. The issue is whether there is a helpful role to play for the SDR amid these solutions.”⁵

The IMF⁶ and others have explored measures that could reduce the demand for international reserves while increasing a more diversified supply. These deserve serious consideration. However, it is also clear that some surplus countries continue to accumulate reserves as a byproduct of a policy of export promotion rather than to satisfy

³ *Ibid.* Page 10

⁴ *Ibid.* Page 8

⁵ International Monetary Fund, 2011, ["Enhancing International Monetary Stability--Is there a Role for the SDR?"](#), January 7.

⁶ *Ibid.*

their demand for reserves. Thus more effective surveillance may also be needed. On the supply side, the most promising approach to moderating the demand for and growth of U.S. dollar reserves is to greatly increase the role and use of SDRs, the IMF's international reserve asset.

The attractiveness and importance of the existing SDR can be greatly enhanced without changes in the Fund's Articles of Agreement by continuing the relatively large allocations started (and also seem to have stopped) in 2009, encouraging the adoption of the SDR unit for pricing and invoicing and by the development and use of SDR denominated financial instruments ("private SDRs"). Clearing and settlement facilities for such SDR instruments and for the SDR currency counterpart would also provide a major boost to the expanded use of SDRs as an international reserve asset in all respects.

Revival of the old substitution account idea lacks "only" political will and would allow large-scale substitution of U.S. dollar reserves with SDRs without exerting exchange rate pressure on the dollar. A Substitution Account would introduce an exchange rate risk between its SDR liabilities and its USD assets. "The proposal foundered, however, when the United States refused to take sole responsibility for maintaining the dollar value of the SDR-denominated claims on the proposed account. No other arrangement was acceptable to the other governments involved in the negotiations."⁷ In a recent study, Peter Kenen finds that had it been adopted, the Account would not have resulted in any maintenance of value cost to the U.S.⁸ The IMF and the United States would be wise to have a Substitution Account ready in the wings in case there is a sudden drop in the demand for dollars in reserve holdings.

A more significant reform would allow international commercial banks to hold official SDRs (i.e. open accounts in the SDR Department) thus allowing foreign exchange market intervention in SDRs directly. The ability to settle market transactions with "SDRs" directly without first exchanging them for USD or EURO would further enhance the attractiveness of official (allocated) SDRs as reserve assets. Such an SDR would take the form of current account balances with the issuer (the IMF or a third party clearing bank such as the BIS). Account holders might be limited to IMF members as now or could be opened to all international banks. A two or three-tiered structure could be used to tie all banks into the system for the clearing and settlement of SDR payments.⁹

An all SDR IMF as advocated by J. J. Polak would further expand the use of SDRs.¹⁰ Pegging domestic currencies to the SDR rather than the dollar or euro would often provide increased real effective exchange rate stability and would further increase the demand for and use of SDRs of all types (official and private).

⁷ Kenen, 2010.

⁸ *Ibid.*

⁹ *Op cit*, IMF, 2010.

¹⁰ Polak, Jacques J. 1979

Over time regular allocations, supported by expanded uses of the SDR unit and of private SDRs of all types, could supplement or replace the USD and EURO in the expansion of reserve assets that are expected in coming years. Sufficiently broad acceptance could even reduce the absolute amounts of USD and EURO in reserve holdings thus substituting claims on the IMF's entire membership for claims on the U.S. or the E.U. Wide spread pegging of national currencies to the SDR would promote global trade by removing exchange rate uncertainty thus emulating the openness of the gold standard era.

None of these ideas is new but they have received little traction in the past three decades for lack of political will on the part of the major players. Times and circumstances are different today and perhaps the missing political will can be found.

Two further enhancements could significantly improve the SDR's attractiveness and potentially precipitate a virtuous cycle of its wider adoption as an exchange rate peg, invoicing unit, means of payment, and reserve asset to such an extent that dollar holdings in reserves might actually fall. First, the SDR's valuation basket, though marginally attractive relative to the behavior of a single currency, could be significantly improved giving it a constant real value (to be defined below). Second, allocations could be augmented or replaced by issuing (rather than allocating) SDRs with open market sales (and repurchases) of SDRs. Both would require amendments to the IMF's Articles of Agreement.

The recent IMF papers on the SDR have raised the more radical possibility of issuing an international currency unlinked to the SDR basket—"bancor." Its value would be determined by its supply and demand, possibly supported by some official uses (as is the demand for existing SDRs). An international central bank issuing a fiat currency would enjoy the political protection of needing the agreement of a majority of its international members to expand its supply, but is still very unlikely to enjoy the broad support necessary for its adoption. However, the value of such an SDR/bancor could be linked to that of the Real SDR valuation basket. An international "currency board," in which the IMF (or a new International Central Bank) would passively buy or sell SDRs (ala the classical gold standard) at the value of a real SDR valuation basket, would raise far fewer risks and potentially attract more political support. The rest of this paper explores the features of such a currency.

The Real SDR Unit of Account

The existing SDR unit of account has the current market value of the fixed quantities of the four currencies (USD, EURO, Pound Sterling, and Yen) in its valuation basket. The valuation basket (the amounts and choices of currencies included) has been adjusted every five years in a well tested process that preserves its continuity of value.

While pricing in or pegging an exchange rate to SDRs or holding assets denominated in SDRs provide the stabilizing advantages of a portfolio of major currencies and the transactional efficiencies of a universally fixed and recognized portfolio, these advantages are modest relative to dealing in any one of the four basket currencies. If the

SDR's value were determined by a basket of goods and commodities, it would more closely achieve the goal of being a unit with constant real value. Its value would be anchored to the real economy. This would set it apart from any existing currency and could attract considerable interest for invoicing and denominating assets, and as a currency peg.

The gold standard was an example of such a system. One gold dollar was a dollar exchangeable for the fixed amount of gold and thus had a value equal to the market price for that amount of gold. But being anchored to only one commodity, whose relative price varied, the real value of currencies fixed to gold was far from constant.

In the 1970s and 80s a handful of countries and international organizations fixed their exchange rates to the SDR or adopted it as their unit of account. It finessed the dilemma posed by fixed exchange rate regimes that traded with both the dollar and the Euro blocks, for example, when those exchange rates moved significantly against each other. Over the past ten years, for example, the USD/EURO rate has varied from 0.86 to 1.57, almost 100%, which departed widely from fundamentals and poses serious challenges for international trade. Pegging exchange rates to a Real SDR would stabilize terms of trade more than pegging to the current SDR and thus is likely to be attractive to a larger number of countries. Should a large number of countries peg to the Real SDR, something like the global trading system enjoyed under the classical gold standard could be restored.

The manner in which the current SDR is valued facilitates understanding how the SDR could be given a fixed real value. The SDR/USD rate is set every day on the basis of the market value of the amounts of the four currencies in its valuation basket. Holders of SDRs transact at that rate when a rate is needed. When SDR amounts are being settled with SDRs, exchange rates are not needed. But if SDRs or SDR amounts need to be converted into their USD equivalent or the equivalent in any other currency for which there is a market value in terms of USD, its value is given as explained above. The IMF publishes these rates every day. The value of one SDR is defined by the contents of the valuation basket, which is fixed, but the market value of the basket in terms of dollars or other currencies can vary.

The value of a Real SDR would be determined in the same way except that the valuation basket would consist of a globally representative basket of goods. If one SDR's value is defined as the market value of one tenth ounce of gold (of a specific fineness), one ounce of butter, an one tenth bail of cotton (of a specific type and quality), the representative market prices of each of these goods would be applied to the indicated amounts and added up to establish that day's value of an SDR. If the market prices of these goods were stated in USD, the result would be the USD value of one SDR (from which its value in terms of any other currency traded in currency markets could be established). In an all SDR world, the market prices of these goods would be in SDRs. If the SDR value of the basket were something more or less than one, there would be an arbitrage incentive to adjust the market supply of SDRs, which is discussed below. An SDR's value would thus be constant in terms of the goods in the basket.

There is a long history of proposals for commodity baskets or tabular standards, which is well summarized by Richard Cooper.¹¹ Benjamin Graham¹² proposes a basket of 23 commodities, while Keynes¹³ proposed 62 internationally traded commodities, which were reduced to 31 by Hart, Kaldor, and Tinbergen.¹⁴ Irving Fischer¹⁵ and later Robert Hall¹⁶ proposed indexing the valuation basket to a consumer price index. Each proposed different schemes for using their valuation baskets in order to anchor the value of money to the real economy.

Identifying the goods whose collective market value should be constant in SDR terms, i.e. establishing the Real SDR valuation basket, would be a challenging but manageable task. The items in the basket should have well defined market values, be widely and preferably globally traded, and relatively representative of a “typical” family’s expenditures.

A Real SDR Allocated by the IMF

A key point about the existing SDR’s valuation basket and the Real SDR valuation basket proposed here is that the IMF does not hold, and it is not necessary to hold, actual quantities of the items in the basket. If the valuation basket defines contract and accounting values, it is sufficient that the value of an SDR can be expressed in US dollars or any other currency at relevant times. Administratively defining the value of a Real SDR unit of account in this way does not insure, however, that SDR assets issued by the IMF or privately carry the same value in the market. That requires additional mechanisms.

The “official” SDRs allocated by the IMF (the asset, not the unit of account) are unusual assets in several respects. They have an indefinite and potentially infinite maturity, but can be used on demand, pay the equivalent of a three-month interest rate, and can only be held by central banks (with a few exceptions). The IMF relies on rules and compulsory requirements to keep the value of these SDRs fixed to that of their valuation basket. The official SDR may only be used at its official value. The “designation mechanism”, which obligates IMF members with strong balance of payments to accept SDRs at its official value in exchange for currency, insures that it is always possible for a holder of official SDRs to exchange them for a freely usable currency at the official SDR exchange rate.

Given that the SDR is valued daily in foreign exchange markets, its official value is rarely if ever far from the collective values of the currencies in its valuation basket for which it can always be exchanged. It is also important to note that SDR allocations have always been far below the growth in the demand for international reserve assets. As a

¹¹ Cooper, 1988.

¹² Graham, 1937.

¹³ Keynes, 1930.

¹⁴ Hart, Kaldor, and Tinbergen, 1964.

¹⁵ Fischer, 1920.

¹⁶ Hall, 1982.

result the compulsory designation mechanism has never been stressed by over use and in fact has not be invoked for over a quarter of a century.¹⁷

While the monetary liabilities of central banks (currency and current account balances of commercial banks) do not pay interest, term deposits with central banks do. In addition, the Federal Reserve in the U.S. now pays interest on bank balances in their current accounts with Federal Reserve Banks in excess of required levels as an instrument of monetary policy. The IMF's official SDR pays interest at the weighted average of three-month government debt with the same weights as the currencies in its valuation basket. Thus the yield on SDRs is attractive relative other reserve assets that may be used on demand as can the SDR but unattractive relative to assets of longer maturities than three months when the expected holding period is longer. The interest rate on Real SDRs allocated by the IMF could not be set in this way, which raises the important questions of how its rate would be set and how it's interest payments would be financed. A basket of inflation adjusted government securities, such as TIPS in the U.S., from the countries whose currencies are currently in the SDR valuation basket (or a broader collection of countries) might be considered.

The official "allocated" SDR is self-financing. Holdings of SDRs (Real or otherwise) earn interest at the official SDR interest rate. Holdings of SDRs are exactly matched globally by cumulative allocations, which carry a charge at the same rate payable by those to whom they were allocated. Those who hold SDRs equal to what they were allocated earn interest at the same rate and in the same amount as they pay charges on their allocations. Net use (holdings below allocations) or net acquisitions incur net charges or earn net interest respectively. If Real SDRs are allocated in the same way, whatever interest rate is given to them could be self-financed in the same way. Privately issued Real SDRs would pay interest determined in the same way as for other debt instruments in the market.

SDRs allocated by the IMF are fundamentally different than, say, SDR bonds issued by the United States or any other country or company. The IMF's SDRs augment the supply of international reserves with a claim on the IMF (on its entire membership) while those that might be issued by the U.S. would add to the considerable claims on the U.S. government already held abroad. While development and wide spread use of private SDRs would facilitate the use of and thus the demand for SDRs issued by the IMF as part of international reserve asset holdings, only IMF (or internationally) issued SDRs would substitute for claims on countries or their firms or real estate in the reserve assets of central banks.

¹⁷ While Chief of the Operations Division for SDR's in the Finance Department of the IMF in the mid 1980s I introduced the market making arrangements for voluntary purchases and sales of SDRs (so called Transactions by Agreement) that have made Designated Transactions unnecessary ever since.

Bancor – An SDR Currency

If the IMF (or some other international body) were to *issue* rather than *allocate* Real SDRs, they could be used freely like the monetary liability of any “other” central bank. The rules required to ensure the usability of allocated SDRs would not be needed.

Earlier proposals for issuing a currency whose value was fixed to a commodity basket (whether just gold, or a broader collection of commodities) required that they be sold (and redeemable) for the items in their valuation basket. This has obvious costs of physically transporting and storing (warehousing) the commodities in the basket that earlier schemes attempted to deal with. The larger and thus more representative the basket, the larger the challenges.

Greenfield and Yeager explained why transactions in and storage of the items in the valuation basket are not necessary to tie the market value of a currency to that of its valuation basket.¹⁸ If a currency is indirectly redeemable for its valuation basket, it will be redeemed for something of comparable market value to the basket rather than for all of the items in the basket. Any discrepancy between the market value of the currency and its value defined by its valuation basket would create an arbitrage incentive to either buy or redeem the currency at the basket price paying or receiving the equivalent value of the designated redemption asset (rather than everything in the basket). This market mechanism for keeping the quantity of currency equal to the market’s demand for it at its official value is well known and has functioned well with currency boards.

Some central banks, known loosely as “currency boards,” now operate under rules that guarantee that the market value of the currency they create and issue is equal to its fixed posted value (an exchange rate for some other currency—usually the USD or the EURO). The required supply of such currencies is regulated by the market via the central bank’s commitment to buy and sell its currency for the foreign anchor currency at the fixed posted price. The SDR currency’s market value could be kept equal to the value of its valuation basket in the same way. The IMF would stand ready to passively buy or sell its SDR currency (balances in member central banks’ SDR currency accounts with the IMF) for a select list of eligible assets (e.g., U.S. Japanese, UK and EU government debt securities) at the market value of one real SDR.¹⁹ Like the reserve or base money issued by central banks, SDR currency would not pay interest.

¹⁸ Greenfield and Yeager, 1983 and those cited there.

¹⁹ To illustrate with the simplified case of a basket consisting of one ounce of gold defining one SDR and the market price of one t-bill initially equal to one SDR: if all market prices double so that one ounce of gold and one t-bill cost 2 SDRs in the market, it will be profitable to redeem SDRs for the one ounce of gold equivalent in t-bills per SDR. The one ounce of gold value of an SDR when redeemed will buy one t-bill in the market, thus one SDR may be redeemed for one t-bill, but that t-bill will buy 2 SDRs in the market giving rise to arbitrage profits from redemptions. The resulting contraction of the market supply of SDRs will reduce market prices in SDRs.

Real SDR currency issued by the IMF according to currency board rules would thus have the same value as the Real SDR valuation basket within a very small margin. Whenever the SDR market prices of the goods in the basket resulted in a market value of the basket below one SDR, it would be profitable for banks to arbitrage the difference by selling an eligible asset to the IMF for SDRs at the official price and buying it back in the market at the cheaper market price. The supply of SDRs (and market prices) would increase. If the market value of the basket rose above one SDR banks would do the reverse, thus reducing the supply of SDRs.²⁰

The assets held by the IMF against the SDR currency it has issued would be the eligible government debt it had purchased when selling its SDRs. These assets would earn interest from which the IMF's operations could be financed and any valuation gains or losses relative to the valuation basket defined value of its SDR liabilities could be covered. In an all SDR world, one in which all countries have pegged their currencies to the SDR or used it directly, the only valuation risks to the eligible SDR denominated debt held by the IMF would arise from changes in interest rates (and default). Thus the IMF's holdings of such debt should have short maturities.²¹

The possibility of net gains or losses on the assets held by the IMF against its Real SDR liabilities relative to the value of those liabilities raises the same issue faced by any central bank and that was discussed in relation to earlier proposals for an SDR Substitution Account. Who would cover any losses should they arise? In the case of the Substitution Account, many IMF members argued that the U.S. should cover any losses because the Account directly benefited the U.S. Whatever the merits of that argument, it is clear that the IMF's collective membership (in proportion to its quotas) should stand behind the integrity of its Real SDR liabilities issued under this proposal. To the extent that the issuers of eligible debt denominated them in SDRs, there were be no exchange rate risk.

It is useful to compare the international Real SDR currency board with a classical gold standard. In its hypothetical purest form, currency was issued in exchange for gold at a fixed price with the obligation to redeem it on demand for gold at the same price (with a modest bid ask spread). The currency issuer had to maintain an inventory of gold equal in value to its currency liabilities. Currency was supplied in response to market demand, but its value varied with changes in the relative price of gold. The supply of Real SDR currency would also be determined by market demand, but the issuer would hold and deal in eligible government debt against its SDR currency liabilities rather than the items in the valuation basket (i.e. rather than gold). The redemption obligation and arbitrage would keep the market value of Real SDRs equal to the market value of its valuation

²⁰ Coats, 1994.

²¹ A change in world demand for Real SDR's would produce redemptions (for a fall in demand) or additional purchases of SDR currency. These would reduce or increase the amount of SDRs outstanding (and hence the size of the IMF's balance sheet), but would not (if these operations were timely) significantly change the market value of SDR currency nor of the IMF's assets (abstracting from the IMF's other financial activities).

basket. Relative price changes of items in the valuation basket would not affect the market value of the SDR, which would be fixed to the value of the entire basket.

Conclusion

The classical gold standard was good for long run monetary stability and trade. The disciplining effect of national money redeemable for gold at a fixed price and a world money (i.e., fixed exchange rates between national currencies) in which to price and settle external trade contributed to trade's rapid growth in the late 19th century. "What made the upward leap in international trade, the creation of an integrated world economy--a world economy where for the first time trade was not confined to luxuries and intoxicants but extended to staples and necessities--possible in the years before World War I? Falling costs of ocean transportation was one major factor. The development and extension of the international political and economic order called the *gold standard* was another."²²

While the year-to-year value of money varied considerably under the gold standard in the United States, its value was essentially the same at the beginning of World War II as it had been at the beginning of the Civil War or the beginning of the Union, a two-hundred-year period. Since the beginning of World War II, however, the value of the U.S. dollar has fallen to about 12 percent of its previous value (that is, prices have risen by a factor of more than 8). However, because of the variability of gold supplies and thus its price, both prices and real output were more variable in the short term during the gold standard years than after.²³

These shortcomings of the gold standard and the high resource cost of storing gold, would be overcome by an international currency issued and redeemed for eligible government debt at the market value of a large basket of internationally traded goods (a Real SDR currency board). Such an international currency would have a number of important benefits.

a) It would relieve the pressure on the United States to supply dollar assets to satisfy the demands by other countries for international reserves. In the extreme and over time it could replace the U.S. dollar as the unit of account, means of payment and store of value (reserve asset) for international transactions.

b) For countries pegging their own currencies to the Real SDR or using it directly, domestic prices would become more predictable both in the short and long term, thus promoting investment and growth.

²² DeLong, 1997.

²³ Bordo, "For the United States between 1879 and 1913, the coefficient was 17.0, which is quite high. Between 1946 and 1990 it was only 0.8.... The coefficient of variation for real output was 3.5 between 1879 and 1913, and only 1.5 between 1946 and 1990." See also Cooper.

c) Moreover, international prices would become much more predictable, facilitating the further extension of the gains from trade. A Real SDR could attract a large number of countries to peg the exchange rates of their currencies to the Real SDR, thus reestablishing a truly global currency for global trade.

d) Global liquidity would automatically become countercyclical and thus stabilizing. “This idea [of a commodity standard], which goes back to Keynes’ *Treatise on Money*, had interesting countercyclical features: world liquidity would automatically increase during global business downswings, which tended to depress commodity prices, and automatically decreased during business upswings, when commodity prices boomed.”²⁴

A number of technical issues would need to be addressed, none of which are insurmountable:

- Which goods should be put in the valuation basket and in what amounts?
- How should their market prices be determined and how frequently?
- How frequently should the items in the basket and their weights be adjusted?
- Should Real SDRs be issued actively or only passively?

Most of the measures proposed above to enhance the usefulness of the existing SDR would apply to the Real SDR as well.

Real SDRs issued under these rules would have enormous advantages and minimal risks. It would build upon an already established international asset with a well-established valuation methodology. It would introduce an improvement in the system of such significant benefit, that it could well overcome the propensity to hold on to the status quo except in time of crisis. This should make it possible to establish sufficient political support to amend the IMF’s articles to approve such a system. While the United States and the European Union would lose some of the privileges they now enjoy as a result of being able to borrow and transact internationally in their own currencies, they would also be relieved of the growing concern over the sustainability of their growing debt burdens as suppliers of international reserves.

²⁴ Ocampo, page 5. The countercyclical behavior of liquidity referred to here differs from the stabilizing effect on commodity prices of a traditional commodity standard, which resulted from supplying and absorbing the actual commodities in response to fluctuations in their prices.

Bibliography

Bordo, Michael D., *Gold Standard*, The Concise Encyclopedia of Economics, Library of Economics and Liberty. <http://www.econlib.org/library/Enc/GoldStandard.html>

Clark, P., and J. Polak, 2004, "International Liquidity and the Role of the SDR in the International Monetary System," *International Monetary Fund Staff Papers* Vol. 51 (1).

Coats, W., 1982, "The SDR as a Means of Payment," IMF *Staff Papers*, Vol. 29, No. 3 September, (reprinted in Spanish in Centro de Estudios Monetarios Latinoamericanos *Boletín*, Vol. XXIX, Numero 4, Julio–Agosto de 1983).

_____ with William J. Byrne, 1984, "The Special Drawing Right: Composite Currencies: SDR, ECU, and Other Instruments," *Euromoney*, 1984.

_____, 1990, "Enhancing the Attractiveness of the SDR," *World Development*, Vol. 18, No. 7, July.

_____, 1992, "Developing a Market for the Official SDR," *Current Legal Issues Affecting Central Banks*, Volume 1, Washington: International Monetary Fund, May.

_____, 1994, "In Search of a Monetary Anchor: A New Monetary Standard," *Occasional Papers* Number 48, International Center For Economic Growth (San Francisco) January. http://works.bepress.com/warren_coats/3/

_____, 1994a, "In Search of a Monetary Anchor: Commodity Standards Reexamined," in *Framework for Monetary Stability*, ed. by T. J. Baliño and C. Cottarelli, Washington: International Monetary Fund.

_____, 2010, "Time for a New Global Currency?" *New Global Studies* 3.1 (2010). Available at: http://works.bepress.com/warren_coats/1

Cooper, Richard N., 1988, "Toward An International Commodity Standard?" *Cato Journal*, Vol.8, No.2 (Fall 1988).

_____, 2006, "Proposal for a Common Currency among Rich Democracies," *International Economics and Economic Policy*, Vol. 3, December.

DeLong, J. Bradford, 1997 "International Finance" http://econ161.berkeley.edu/TCEH/Slouch_Gold8.html

Fisher, Irving. 1920. *Stabilizing the Dollar*. New York: Macmillan.

Graham, Benjamin. 1937. *Storage and Stability*. New York: McGraw-Hill.

- Greenfield, R. L., and L. B. Yeager. 1983. "A Laissez Faire Approach to Monetary Stability." *Journal of Money, Credit, and Banking* 15: 302-15.
- Hall, R. E. 1982. "Explorations in the Gold Standard and Related Policies for Stabilizing the Dollar." in R. E. Hall, ed., *Inflation: Causes and Effects*, pp. 111—22. Chicago: University of Chicago Press.
- Hart, A.G., Kaldor, N. and Tinbergen, J. 1964. *The Case for an International Commodity Reserve Currency*. Geneva: United Nations Conference on Trade and Development.
- Hoguet, G., and S. Tadesse, 2009, "The Role of SDR-Denominated Securities in Official and Private Portfolios," State Street Global Advisors, November 3.
- International Monetary Fund, 2010, "Reserve Accumulation and International Monetary Stability", <http://www.imf.org/external/np/pp/eng/2010/041310.pdf>
- _____ 2010a, "Reserve Accumulation and International Monetary Stability: Supplementary Information", <http://www.imf.org/external/np/pp/eng/2010/041310a.pdf>
- _____ 2011, "[Enhancing International Monetary Stability--Is there a Role for the SDR?](http://www.imf.org/external/np/pp/eng/2011/010711.pdf)", January 7. <http://www.imf.org/external/np/pp/eng/2011/010711.pdf>
- Kenen, Peter B, March 2010. "The Substitution Account as a First Step Toward Reform of the International Monetary System," *Policy Brief* Number PB10 – 6, Peterson Institute of International Economics.
- Keynes, J. M. 1930. *A Treatise on Money*, vol. 2. New York: Macmillan.
- Mundell, R., 2009, *Financial Crises and the International Monetary System*, Columbia University (<http://www.normangirvan.info/wp-content/uploads/2009/03/mundell.pdf>).
- Ocampo, J., 2009 "Special Drawing Rights and the Reform of the Global Reserve System" G24. www.g24.org/jao0909.pdf
- Polak, Jacques J. (1979). *Thoughts on an International Monetary Fund based fully on SDR*. Pamphlet Series No. 28, International Monetary Fund, Washington, DC.
- Truman, Edwin M., 2010, "Strengthening IMF Surveillance: A Comprehensive Proposal" Peterson Institute for International Economics, Policy Brief, Number PB 10-29, December
- Williamson, J., 2009, "Why SDRs Could Rival the Dollar," Peterson Institute for International Economics, Number PB 09 - 20, September, <http://www.iie.com/publications/pb/pb09-20.pdf>