

Combining International Monetary Reform with Commodity Buffer Stocks : Keynes, Graham and Kaldor¹

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Abstract

Central to John Maynard Keynes's original Bretton Woods proposal was an International Clearing Union (ICU) that would issue a new international reserve currency by fiat called Bancor, to resolve global imbalances. Among other social functions, the ICU would finance commodity stockpiles to stabilize individual commodity prices and thereby create a counter cyclical international incomes policy to smooth the world business cycle. Benjamin Graham's proposal to the Bretton Woods committee was to also create a new international currency however this currency would be fully backed by buffer stocks of raw materials in fixed proportion to world production and trade. By targeting a commodity index Graham's plan offered counter cyclical monetary policy: supply of the international reserve issued by an international commodity corporation (ICC), or central bank, which would use open market operations to relieve balance of payment constraints and potentially stabilize world demand and the price of wholesale goods. Nicholas Kaldor revitalized the Graham proposal for international monetary reform and a commodity reserve currency (CRC) in 1964. Like Keynes he was trying to avoid a gold or dollar standard and find a solution to global imbalances, cost-push inflation and world inequality. He argued that a CRC would anchor real exchange rates, promote trade, allow nations to have independent employment and credit policies, and provide the natural resource security necessary for equitable robust growth and world peace. At the time of their authorship all three proposals went nowhere. In 1943 Keynes was supportive of a CRC but believed it was for future implementation once men's minds were trained for such advances. In 1972 Kaldor thought that the commodity reserve currency was still 20 years ahead of its time. This paper concludes that it remains a worthy futuristic policy.

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Introduction

Changes in the international monetary regime, and the volatility of the currency in which tradable goods are priced, have a dramatic impact on international commodity prices. The amplitude of large commodity price movements increased during the breakdown of the gold standard in the early 1900s, and the frequency of this volatility increased greatly following the collapse of Bretton Woods and fixed exchange rates in 1971 (Cashin and McDermott, 2002). Such price volatility is of great concern since commodities account for more than one fifth of global trade and 65 percent of all developing countries derive more than 50 percent of their export income from commodities (UNCTAD 2011). Rising incomes for emerging market commodity exporters have improved since 2002 and have been a strong source of demand in world trade. However volatility in commodity prices continues to wreak havoc for both North and South. Since the 1980s under ‘the Washington Consensus’ emphasis has been placed on microeconomic remedies to deal with commodity price volatility. Established in 1989, the Common Fund, set up by UNCTAD came out of a long history of discussions on commodity price volatility. Its mission was to secure a fair distribution of the economic benefits from commodity production and trade. Rather than attempting to influence market prices through buffer stocks, the Fund worked on case-specific solutions for commodity-dependent developing countries (CDDCs), which involved expanding and diversifying their productive capacity, increasing their competitiveness, securing new markets, managing their risks, and developing access to services such as finance. These piecemeal, country specific and microeconomic measures have failed or rather forsaken earlier attempts to combat international commodity price volatility and its global macroeconomic consequences: commodity cobb-web cycles, hindrance

of fiscal planning, global imbalances, widening inequality, growing monopolies in commodity production, global sustainability, and the unequal access to raw materials.

In a prior era, three men stand out in their macroeconomic and international approach to the commodity dilemma. In the lead up to the 1944 United Nations Monetary and Financial Conference at Bretton Woods, John Maynard Keynes and Benjamin Graham both independently proposed commodity price stabilization schemes as automatic counter cyclical stabilizers to the international business cycle through international monetary reform. These global macro policies were followed up by Nicholas Kaldor, beginning in 1964 at the first UNCTAD meeting.

Central to all three was a belief that global trade and sustainable economic development would be promoted through the use of international commodity buffer stocks. All thought the market system inefficient and wasteful in the pricing of primary commodities - it had too many positive feedbacks, production delays, risky carrying costs, multiple equilibria, and unequal access. “Assuredly nothing can be more inefficient than the present system by which the price is always too high or too low and there are frequent meaningless fluctuations in the plant and labour force employed” (Keynes 1938, pp. 451-452). All three agreed that a far superior mechanism was independently run international public commodity buffer stocks.

In a market system without buffer stocks a recession in the industrialized world typically led to a decline in commodity prices and a collapse in export income of CDDCs who would demand less capital imports and cause second round effects for demand in manufacture exporting countries, leading to further declines in commodity prices. This pro-cyclicality of the trade system works in reverse when demand for manufactured goods increase, commodity prices rise, incomes of commodity dependent economies rise, which in turn allows them to import more manufactured goods from other countries. For a low income CDDC higher US dollar commodity

prices can lead to a surplus that can be substitute for foreign or domestic savings and invested into capital formation. Taxes on commodity exports, rising real wages of rural poor and mining communities, with limited inflation through appreciation of their own currency and protection of infant industries can act as a multiplier for wage-led growth for a closed economy.

However, at some point these positive feedbacks can hit a limit, as food prices rise from limited local supplies or imports, investment and production are modified in the long run and Dutch disease type effects can slow the growth of manufactured exports in CDDCs as exchange rates rise (Bresser-Pereira 2008). Other exceptions to the vicious or virtuous commodity spirals occur when rising commodity prices lead to fears of inflation which central banks respond to by raising interest rates and causing a negative feedback on a boom. Similarly, in a recession, easy US dollar monetary policy can promote high commodity prices if there is retreat from the dollar to commodities, in particular gold, and herding speculation. For example, in the recent 2008-2009 recession in the developed world high commodity prices maintained growth in emerging markets and de-coupled what would otherwise have been a much stronger world deflationary feedback.

Overall, the cumulative process of commodity prices can long run trends that may move far away from fundamentals, around these trends shorter run cycles from lags in production creating cobb-web cycles (Kaldor 1934), plus the interventions of industrial country monetary policy can produce other shocks and swings around these trends. These short run cycles arise out of *price inelasticity* in the demand and supply of commodities, countered by the elasticity of demand and supply of manufactured goods. The Keynes, Graham and Kaldor proposals for commodity buffer stocks would make the supply and demand of commodities elastic, helping to equilibrate inter-sectoral growth, stabilize the terms of trade between primary commodities and

manufactures, and set up a mechanism where an increase in primary production and resource security can accelerate industrial growth rather than dampen it (see Kaldor 1996).

Keynes, Graham and Kaldor rather uniquely solved the financing problem of large commodity buffer stocks by combining them with the issuance of a new international reserve currency, resolving what was later known as *Triffin's dilemma* (Triffin 1960): the inherent contradictions that come with a nation using its own currency as the international reserve currency. Commodity buffer stocks run by independent technocrats of an international agency to stabilize commodity price swings, and paid for by a new international currency, will promote investment, and smooth production and consumption of these essential goods. It would relieve the private sector of burdensome uncertainties, inventories and storage costs, as well as anchor speculative expectations, thus making private sector commodity activities far more efficient. This would greatly increase trade, relieve balance of payment constraints, remove the need for foreign aid by CDDCs and promote automatic counter cyclical fiscal/monetary policy to our global economy. While there are some problems with this approach, such as the promotion of monoculture agriculture, depletion of non-renewable resources, increasing correlation of oil and non-fuel commodities; it is believed that these issues can be resolved with minor modifications of the original plans.

Section one of this paper considers John Maynard Keynes's plan, which had two distinct institutions – an international central bank or ICU that financed the commodity market operations of an ICC. Section two summarizes Benjamin Graham's plan where his international central bank is the ICC and it stabilizes an index of commodity prices through open market operations and ultimately wholesale prices. Stabilizing an index, rather than individual commodities, allows for offsetting price flexibility in individual commodities. The stockpile of

his basket of commodities fully backs the new international CRC, similar to how the gold standard was suppose to operate. The next section shows how Nicholas Kaldor took points from Keynes and elaborated on Graham's proposal focusing on North-South balanced growth by arguing that a CRC could stabilize the terms of trade between commodity and manufactured goods. Section 4 of the paper concludes with a short history of commodity prices and advocates the need for creating institutions like an ICU and CRC in our reform of the international monetary system, especially in a world of growing scarcity of natural resources.

John Maynard Keynes

In his 1941 proposal for international monetary reform at Bretton Woods, Keynes had envisaged at least five international postwar institutions: an International Clearing Union (ICU) and central bank that would issue by fiat an international reserve which he called Bancor; a reconstruction and relief organization; an international police and disaster relief force; an international trade organization; and an ICC to manage international commodity buffer stocks (see Moggeridge 1980). Keynes elaborated on the role of the ICC in a draft a year later in 1942 and only published after his death in 1974 entitled "The International Control of Raw Materials" (Keynes 1974). Keynes proposed an ICC called the *Commod Control*, where 'commod' was the generic term for an individual commodity, with representatives of the governments of the leading producing and consuming nations though the management of the buffer stocks would be by independent experts. His plan consisted of individual commodity buffer stock schemes to stabilize Bancor prices of internationally traded raw materials over the short run, but allow gradual changes over the longer run to balance supply and demand and allow a steady rate of expansion for the cheaper-cost producers. While his plan was never seriously considered outside

British government circles, Keynes and some of his fellow economists regarded it as an issue of utmost importance (such as Roy Harrod and Dennis Robertson see Kaldor 1983, p. 243) - introducing international counter cyclical macro policy that would secure stability and prosperity in the post war world. He also saw it was an answer to Britains growing war debts, trade deficits and sterling demise through trade expansion with its colonies (Keynes 1938).²

Keynes's ICU was the financial core that supported his plans for global governance and commodity buffer stocks. At its heart, this international central bank was designed to place an expansionist, rather than a contractionary, pressure on world trade. The ICU was to be a *lender* of last resort in Bancor and could put a symmetric burden on both deficit and surplus countries to resolve imbalances and avoid the deflationary bias that occurred under the gold standard where reserves were scarce due to lack of gold production and hoarding.³

Bancor was intended to promote equilibrium in international trade balances. All international trade would be measured in Bancor, which was held only by central banks. The balancing of deficit and surplus reserves was through member cooperation and agreement to automatic rules and penalties. The ICU would impose penalties on trade surplus and deficit countries and offer strong incentives for surplus countries to spend their reserves held in excess of their quota.⁴ Exchange rates would for the most part be fixed with capital controls, though adjustable to equate wage efficiencies across countries and balance trade.

² Keynes was originally encouraged to create an international commodity fund for Bretton Woods by Roy Harrod who in 1939 also promoted the work of an Australian L. St Clare Grondona who advocated commodity buffer stocks as a tool of macroeconomic policy, as early as 1924 and as late as 1975 (see Grondona 1975, p.9).

³ In contrast the resulting Bretton Woods institutions, the International Monetary Fund (IMF) and the World Bank (WB) were much narrower in their macroeconomic ambitions and never became central to the international payment and settlement system nor a means by which to counter global imbalances. Skidelsky suggests that this is due to the difference in opinions between America and Britain on the breakdown of the gold standard in 1931. The British saw it as a refusal by surplus countries to spend their surpluses – e.g. the United States and France had a 'liquidity preference' for gold. Whereas the Americans saw it as the lack of monetary discipline of deficit countries such as those in Latin America (Skidelsky 2005, p.21).

⁴ The value of a Bancor was fixed in terms of gold, dollars and pounds but adjustable. Countries would be required

Importantly, international counter cyclical policy would be carried out by Keynes's ICC, financed by an overdraft from the ICU. The ICC, with its individual buffer stocks, would stand ready to buy or sell commodities if prices fall or rise more than 10 percent below or above the long run fundamental price (i.e. the long run cost of the most efficient producers in Bancor). Stabilizing the short run commodity cycle would promote trade and adequate world effective demand during a world slump.

“At present a falling off in effective demand in the industrial consuming centers causes a price collapse which means a corresponding break in the level of incomes and of effective demand in the raw material producing centers, with a further adverse reaction, by repercussion, on effective demand in the industrial centers; and so, in the familiar way, the slump proceeds from bad to worse. And when the recovery comes, the rebound to excessive demand through the stimulus of inflated prices promotes, the same evil manner, the excesses of the boom” (Keynes 1942 cited in Moggridge 1980 vol 27 p. 121).

An ICU would reduce the problem of cost greatly – pooling the burden of carrying stocks and establishing the success of the program. Although Keynes did argue that the large sums of money involved in such a scheme should be viewed as a positive, since it offered an easy to implement ‘weapon capable of producing large effects ... in both directions on a scale and with an immediacy which is quite impossible for projects of public works’ (Ibid p. 122), he knew that without the ICU the financing of such buffer stocks would be a large political hurdle to the adoption of his commodity stabilization program. A national program that tries to stabilize producer commodity prices for its exports without ICU financing would carry more stocks

to adopt a fixed exchange rate but could apply to the ICU for modification. In Keynes's early 1941 versions, the current account quota limit for both deficit and surplus countries was $(\text{total imports} + \text{total exports})/2$ for a year. (There was no limit on surplus countries in the latter 1943 proposal (see Moggridge 1980)). Interest was charged at 1% on credit or debit Bancor balances in excess of 25% of quota on average. This increased to 2% when 50% of quota is reached. However, any member state in deficit could borrow from a surplus state, and then both would avoid these expenses. A deficit country that is allowed to increase its quota by more than 50% may also be required to devalue its currency. A deficit greater than 75% will be declared in default and no longer have access to its Bancor account at the ICU. Surplus countries in excess of 50% will have to either: expand domestic credit and demand, appreciate its currency in terms of Bancor, increase money wages, reduce excess tariffs on imports, offer international loans to developing countries and/or have their excess confiscated.

precisely at the moment when it is least able – during a decline in demand for its product and an unbalancing of its international position (Ibid p.129). Alternatively, guaranteed, unlimited and external financing from an ICU would render a producing country's primary commodities always liquid, that is:

“A producing country is always paid for its output at or above a reasonable minimum price, whether or not the whole of this output passes immediately into consumption, and paid for it in *liquid cash* [Bancor] which it can employ on maintaining its normal volume of imports and its normal standard of life, thus retaining its own stability and being no longer the occasion, by repercussion, of instability in others. There can be no question that the scheme proposed would be of the very greatest value to raw material countries, especially to those which are financially weak, with overseas debt and lacking in reserves or are highly specialized in their produce” (Ibid p. 129).

Keynes proposal was that individual international commodity buffer stocks would stabilize Bancor prices within a 20 percent price range. Within this range trade and competition would be promoted between commodity buyers, sellers and middle men. Keynes's scheme removed the negative spillover effects from subsidies by stopping them from depressing commodity prices. Now such spillover effects would be internal to the country that paid for them. However, while subsidies could be tolerated there were to be limits to be enforced:

“It is necessary...that buffer stock schemes should be framed on lines which leave each country free to give subsidies to their own producers, in order to maintain their standard of living at whatever level they consider suitable. Nonetheless it must be recognized that a real difficulty arises if such subsidies are given on a substantial scale by the wealthier countries. For the effect of the subsidies is likely to be to maintain a larger volume of production in the countries giving them, and thus to check any tendency which might otherwise exist towards a redistribution of world production in favor of countries with more restricted economic opportunities” (Ibid p.124).

Keynes emphasized that this was perhaps the only scheme which would offer “free and equal access for all countries alike to the sources of supply of raw materials” (Ibid p.129). The private storage of commodities was unprofitable and carrying charges such as backwardation, interest, insurance and warehouse costs makes it such that the market would never provide such resource abundance or democratic access:

“The competitive system abhors the existence of stocks, with as strong a reflex as nature abhors a vacuum, because stocks yield a negative return in terms of themselves. It is ready without remorse to tear the structure of output to pieces rather than admit them, and in the effort to rid itself of them” Keynes (1938, pp. 449).

Eleven years prior to his Bancor and ICC proposal, Keynes in the *Treatise* had proposed reforming the gold standard by managing its value - stabilizing the long period trend of gold via a supranational central bank issuing its own supranational currency - to conform to an index of 62 standardized commodities, weighted in terms of world output (Keynes 1930, vol II, pp.391-393). Since 90 percent of gold monetary stocks were held by central banks at the time it would be possible to peg the price of gold to such a Tabular Standard. Importantly, there was no attempt to stabilize commodity prices under this scheme nor any need to store commodities. Rather a supranational bank that issued money backed by gold could stabilize its value to a Tabular Standard by indirectly redeeming into the basket of commodities.⁵

Keynes believed that a broad basket of internationally traded commodities was the closest thing to an international wholesale price, and pegging gold to this price would allow gold prices to be more responsive to the business cycle, and offer greater monetary management and responsiveness to changes in investment. This index was not the same as purchasing power. Rather the wholesales index was expected to gradually decline relative to retail prices (purchasing power of money) and wages (labor power of money) due to technical improvements in the commodity producing sector. This relatively small component of inflation would be beneficial for wage negotiations and the easing of debt payments, lowering the cost of living over time.

⁵ Instead of gold being redeemed for the 62 commodities, it is redeemed in an alternative asset (e.g. supranational bonds) at the current 62 commodity basket valuation - this is very similar to Jevon’s monetary scheme (1876, ch.XXV). See Coats (1993) for a modern day example pegging the IMF’s SDR to a world consumer price index, where only SDR and bonds are exchanged to equalize the SDR to the world CPI.

Under this scheme both gold and the supranational currency would act as international reserves for national banks which would best peg their exchange rates to gold in a 2 percent range, though with some freedom for adjustment. Keynes obviously decided later that it was more important to stabilize the price of commodities in terms of the international currency, rather than require a stable international currency in terms of commodity prices.

In 1943, following his Bancor proposal, Keynes responded to an article where Hayek (1943) was praising the CRC proposal of Benjamin and Frank Graham. Keynes warned that backing a reserve with commodities might make it overly rigid and not elastic enough in its supply, thus having similar traits to gold and its tendency to create deflation. He was also nervous about the degree to which sovereign policy would be constrained under such a scheme e.g. if exchanged rates were pegged to the CRC and wage inflation was rampant. These concerns were addressed by Frank Graham (1944) and Benjamin Graham (1944, pp.173-175) making clear that: the supply of CRC was indeed endogenous and not scarce; that unlike gold rising commodity prices would lead to rising wholesale prices through cost-push factors though not necessarily in parallel with wages, and final prices; and that exchange rates could be adjustable and even flexible allowing for efficiency wages to be equated across countries. Keynes (1944) basically followed up with an apology stating that had been overly suspicious given Hayek's strong endorsement. However he remained skeptical of the political viability of the CRC:

“I have no quarrel with a *tabular standard* as being intrinsically more sensible than gold. My own sympathies have always fallen that way. I hope the world will come to some version of it some time. But the opinion I was expressing was on the level of contemporary practical policy; and on that level I do not feel that this is the next urgent thing or that other measures should be risked or postponed for the sake of it.... The right way to approach the tabular standard is to evolve a technique and to accustom men's minds to the idea through international buffer stocks. When we have thoroughly mastered the technique of these, which is sufficiently difficult without the further complications of the *tabular standard* and the oppositions and prejudices which this must overcome, it will be time enough to think again” (Keynes 1944, pp. 429-430, emphasis added).

Benjamin Graham

Keynes was well aware of Benjamin Graham's (1937) *Storage and Stability* which laid out a national plan to back the US currency with a basket of commodities and stabilize aggregated commodity prices within a 10 percent range.⁶ Graham extended his proposal to an international commodity reserve currency (CRC) in 1944 following its advocacy by Hayek in 1943 in the *Economic Journal*. A similar international proposal had been made by Frank Graham in 1942. While not on the agenda, Graham had lobbied at Bretton Woods for the newly created IMF to stabilize a price index of international commodities in terms of US currency, Bancor or Unitas. But this idea went no where.

Like Keynes, Graham had seen the waste and irony that came with the restriction and even destruction of excess commodity supplies and the strong liquidity preference of the market.

“[I]f surplus stocks do operate as a national liability rather than an asset, the fault must lie in the functioning of the business machine and not in any inherent viciousness of the surplus itself...Some means must be found to restore the Goddess of Plenty to the role of benefactress-in-chief that was hers without question under a simpler economy.” (Graham 1937, pp.16-17)

The originality of Graham's plan, compared to traditional commodity buffer stock schemes, was that it would stabilize an index or a collection of 15 commodities initially, building up to 30 or more storable commodities over time. The composition of the index would be according to the tonnage as a percentage of world production and world trade (an average between the two weights). The composition could be modified from time to time in accordance with suitable statistical techniques, e.g. based on 10 year moving averages of world production and exports.

⁶ Graham is well known for his microeconomic advice to investors with his book on fundamental investing, *Security Analysis* (1934) co-authored with David Dodd, still known as the bible of Wall Street. However his macroeconomic advice to policy makers is today largely unknown - *Storage and Stability* (1937) and *World Commodities and World Currency* (1944). Both his micro and macro positions emphasize the intrinsic value of assets behind short run market prices.

Under this schema relative prices of individual commodities could float according to supply and demand, however stabilization of the index - as one price went up others would go down – would still reduce commodity price volatility.

The ICC, which was also the international central bank, would contract out the storage to commodity exchanges and warehouses, in selling or buying nations who may value this storage for reasons of supply security. Storage costs could be paid for by nations that chose to store, profits from the ICC buying the basket low and selling high, the sale of spot for future contracts at a lower price during periods of temporary shortage in individual commodities, or finally by assessed contributions against member nations. Graham estimated that an ICC stockpile of commodities would need to be around 15 percent of world production to be large enough to stabilize international prices.⁷ Such stockpiling would begin during a commodity slump and might take a few years to accumulate. Once in operation, the ICC would buy and sell the commodity unit – stabilizing world commodity *dollar prices* (or whatever currency international trade was priced in) within a 10 percent band (Graham 1944, p.44). Such open market operations by the ICC would result in the counter-cyclical issuance or destruction of CRC (a new currency redeemable into the commodity basket of warehouse certificates): when the US dollar index price was more than 5 percent below the target the ICC would buy the basket in exchange for CRC, when US dollar index price was more than 5 percent above the target the ICC would sell the basket in exchange for the CRC.

Graham's 10 percent spread between the ICC's bid and ask would give less profit to middle men and speculators than Keynes's 20 percent. But like Keynes's plan it assumed that

⁷ The World Bank in 2009 estimated that an international stockpile to stabilize international grain prices would require 10 percent of global production. This would have been worth roughly \$66 billion with estimated running costs of \$4–6 billion to maintain (\$1.4 billion in storage costs and \$3–5 billion of spoilage costs based on losses in high-income countries). Total losses to all consumers from rising food prices in 2007 were estimated at \$270 billion (World Bank 2009, p. 127-130).

commodity prices were correlated positively to world economic expansion and swings outside the band would supply reserves and thus change demand for imports counter cyclically.

Situations of negative correlation due to supply constraints and excess speculation should not occur if the buffer stock is large enough. However, if such a case arose it would always be possible to adjust up the commodity index to increase the supply of reserves in the international system without restricting supply of commodities.

As already stated, unlike the gold standard, as the commodity unit price rises so too do prices of food, manufactured goods and wages to the extent that they are priced off raw material inputs. Such a correlation between consumer prices and commodity inputs would be greater in low income countries where a large proportion of consumer spending is spent on food. If wages rise for other reasons, then a country can choose to offset this through devaluation of their currency relative to the CRC. While Benjamin Graham had preferred fixed exchange rates, Frank Graham (1944), a sometimes co-author of Graham's and a highly respected Princeton economist, had argued for flexible exchange rates to equalize efficiency wages across countries. Thus in general countries were free to choose fix or floating exchange rates and to have independent fiscal and monetary policies, unlike a currency union. There would be no obligations, conditionality, or necessary agreements placed on countries by the ICC, in stark contrast to Keynes Bancor plan.

In 1944 Benjamin and Frank Graham formed the *Committee for Economic Stability*, which included a number of other academics, Wall Street practitioners, and government policy makers. This group formally made a proposal to the Bretton Woods conference that a CRC be added to the projected International Monetary Fund (IMF) charter.⁸ Under the originally

⁸ Irving Kahn provided the unpublished *Committee for Economic Stability* (Graham and Graham 1944) document to the author. Kahn was a signature to this commodity reserve currency proposal to Bretton Woods and remembers Benjamin Graham attending the 1944 conference in New Hampshire. Kahn has remained a tireless advocate of Graham's proposal for commodity buffer stocks since this time (see his <http://bufferstock.org> website).

proposed Keynes and White format the IMF would operate in two different kinds of international money: Bancor and gold. Under Graham's plan the IMF would operate the buffer stock and additionally issue CRC to stabilize the commodity price index in terms of Bancor, weight of gold or US dollars – which ever the IMF's choice (Graham 1944, p.84). Along with many other proposals existing on the sidelines of the Bretton Woods meetings, the CRC proposal was given scant attention.

Below are the 4 primary advantages of the CRC initially put forward at Bretton Woods, and extended on here to illuminate and contrast their emphasis with Keynes.

1. Real Exchange Rate Stability and Global Balance

While Keynes's Bancor would give a reprieve to deficit countries allowing them to increase their borrowing and stimulate world demand through forced spending by the surplus countries, Graham's motivations were quite different. Graham's creation of the CRC as an additional reserve asset is not based on reciprocal debt or the accommodation of imbalances. Rather he distinguished his system as a coinage rather than credit mechanism since it had 100 percent backing for all new currency issues.

Low income commodity producing countries generally import more merchandise than they export. Under a CRC such countries would have an alternative to the accumulation of debt, foreign aid, selling of their assets, or a fight to have trading partners lower their tariffs and accept their goods – they could coin reserves by producing more commodities even when the goods are not at that moment wanted by the creditor nations. This in turn would generate income and production through a 'commodity multiplier' similar to the foreign trade multiplier of Harrod.⁹ CRCs will afford every country that can produce commodities "the opportunity to transmute its

⁹ This multiplier was better explained later by Kaldor (see below), who emphasized that the stabilization of the commodity unit at a price would equilibrate global imbalances and the terms of trade between commodities and manufactured goods.

own productivity into sound international monetary units free from the demoralizing fluctuations in exchange values” (Graham 1944, p.90).

Graham believed that the stock piling of commodity units were clearly better things for creditor nations to own than claims against issuers, or claims against the IMF in terms of Bancor, and their value was less ambiguous , such as gold(Graham 1944, p.90). A surplus can be easily converted into material inputs for their manufactured goods from the ICC whenever they want without driving commodity up prices (Hayek 1943) or raising interest rates on another nation’s sovereign debt.

While the issuance of a commodity reserve currency means the accumulation of reserves by surplus countries, it does not necessarily mean the accumulation of deficits, thus reducing the potential for global imbalances that occurs with key country currency reserves. While Graham accepted that the extension of reserve debts in Bancor may still be necessary he did not directly feel the need to constrain private capital flows with a CRC in existence. Rather he believed that a CRC would subordinate the international currency to the production of useful merchandise.

2. Price Stability

By stabilizing the average price of raw materials Graham felt that it would be a significant stabilizer on the price of finished goods and overall inflation worldwide. Frank Graham was more accepting of the diversity of prices across countries and Keynes’s concern that wage inflation in manufacturing would be a greater issue for inflation than commodities (Keynes 1943) hence his advocacy for flexible rates. Whether fixed or floating, the international presence of a real anchor would create a benchmark for management of domestic inflation and exchange rate policies more relevant than gold or the dollar.

3. Existence of Buffer stocks

Graham's proposal provides the world with generally self-financing and interest free raw material buffer stocks due to the monetization of these stocks, and the stocks would not threaten commercial markets within the 10 percent price range. Like Keynes, Graham was acutely aware of the great fear that businessmen held of buffer stocks and their potential downward impact on prices. But by making commodities liquid the CRC could negate the market's abhorrence of stocks that ordinarily put downward pressure on prices.

The ICC would not only remove price manipulation from commodity monopolies, it would encourage output expansion by removing income uncertainty, especially for small farmers. While market proponents may advocate price certainty through futures markets and diversification away from commodities. In contrast, buffer stocks offer certainty of supply to consumers at a macro level and thus solves spot and future price volatility.

Graham called his CRC proposal his *groceries first* proposal. Such merchandise is essential to economic growth and the CRC proposal would be a way to create an abundance of it, supporting temporary famines, investment in production and research into technological advancements in energy, food, material inputs and minerals.

4. *Expanding World Growth*

Graham saw the commodity reserve currency as one that would expand trade, and like Keynes he promoted but did not insist on completely 'free trade.' Graham argued that a CRC would solve trade disputes in commodities by allowing autonomy in policies rather than "demonizing trade barriers as pure mischief" (Graham 1944, p.11). While stabilizing an index would be less effective than stabilizing individual commodity prices in negating the effects of specific commodity subsidization programs, at least the basket of buffer stocks would not lead to an excess build up of one particular commodity out of proportion with world production and

trade unlike Keynes's plan. However, the primary goal was the same, to promote investment and improve productivity in the production of commodities so that we live in a world of abundance and sound management principles, rather than an unstable and unfair commodity market system which creates bubbles, famines, monopolies, and uncertainty.

Nicholas Kaldor

While affiliated with the United Nations, Kaldor was the primary draftsman of two bold international coordination policies. The 1949, *National and International Measures for Full Employment* (see Turnell and Ussher 2008) and in 1964, *The Case for an International Commodity Reserve Currency*.¹⁰ Both proposals dealt with maximizing the productive use of each economy's resources and promoting economic progress - moving the world to its production possibility frontier. Politically, the latter proposal was an attempt to address the one-sided character of the existing international trading system, put in place by the advanced countries. The CRC proposal was submitted in 1964 to the first meeting of the United Nations Conference on Trade and Development (UNCTAD). Despite getting limited attention in official discussions, Kaldor continued to promote commodity buffers stocks as a central component of international monetary reform until his death in 1986.

Initially Kaldor strongly advocated Graham's index storage plan. After 1972 he conceded that such a plan may have been too ambitious and complex to be politically feasible and advocated Keynes's simpler plan of independently stabilizing the price of individual commodity buffer stocks.¹¹ However, with either method, commodities would be used to back the

¹⁰ Though in the name of three authors Hart, Kaldor and Tinbergen, the sole draftsman was Kaldor (Hart, 1991, p. 562) in consultation with Hart, while Tinbergen was primarily a signatory (Toye and Toye 2004, p. 221).

¹¹ In an interview in 1972 (Kaldor 1972a, p.9), and footnotes in articles (Kaldor 1973, p.87; Kaldor 1983, fn.16), Kaldor advocates warehouse receipts of individual buffer stocks to back IMF SDRs, rather than a commodity index.

international reserve currency, which must be independent of any individual nation's currency to avoid Triffin's dilemma (see Triffin 1960).

His promotion of a CRC was to achieve three primary goals. First he wanted to resolve the international liquidity crisis of the 1960s where the limited growth in gold reserves had pushed the US dollar into the role of the key currency reserve, and whose growth was dependent on unsustainable US balance of payment deficits (Hart *et al* 1964). A new currency, independent of any nation would allow the ongoing expansion of reserves without requiring a nation to have a persistent balance of payments deficit. Kaldor believed that this international monetary system should allow for independent monetary and fiscal policy for each sovereign nation which meant adjustable or flexible exchange rates. Secondly, he wanted to promote industrialization of the world's poorest countries by improving and stabilizing the terms of trade between primary commodities and manufactured goods. While it had been generally accepted that national welfare depends not only on the size but the distribution its income, it was not accepted at the international level. And yet Kaldor believed that by accepting this, one could better think about intersectoral balance between primary and secondary producing regions that would promote overall welfare and growth. Thirdly, Kaldor wanted to remove destabilizing speculation and excessive commodity volatility which he saw as a cause for the declining terms of trade for commodity producers in relation to manufactured goods.

In honor of Keynes, Kaldor in 1964 called his commodity reserve currency *Bancor*. While he initially proposed to stabilize the gold weight of the commodity index, he recognized that this could be some other measure. However he was at pains to point out that the US too should have the option to devalue their currency. This was in contrast to Hart (1976) who, like Graham, gave examples of stabilizing the US dollar price of the basket, which removes ability of

the n^{th} currency, or the US dollar, to devalue. Overall, Kaldor was less concerned with the manner in which the price target was measured for stabilizing commodity prices than with creating a “universal reserve medium which would command acceptance on account of its evident stability in *real value*” independent of paper currency (Hart *et al* 1964, p.144).

As with Keynes and Graham the eligible commodity units would be of standardized commodities, such as those quoted on commodity exchanges that have a low cost of storage and appropriate inventory management to minimize spoilage. The composition of the basket would be determined by international agreement; ideally, the basket would be composed of a wide range (e.g. 30 to 60) commodities which are universally used and whose values therefore, taken individually, would not be greatly changed by their use as a reserve medium. An example of a Kaldor buffer stock is given in Table 1.

Table 1. Standardized and storable commodities for possible inclusion in an international commodity reserve currency.

Agricultural Raw Materials	Edible Oils	Metals and Energy
Cotton	Rapeseed	Copper
Wool	Canola	Zinc
Rubber	Palm Oil	Tin
Wood		Lead
Paper Pulp	Food and Beverages	Aluminum
	Sugar	
Wheat	Coffee	
Corn	Tea	Columbite-tantalite*
Rice	Cocoa	Natural Gas*
Soybeans	Pork bellies, frozen	Ethanol*
Oats	Orange Juice, frozen	Bio-diesel*
	Dried Milk	Carbon Permits*

*Commodities not in previous the Graham or Kaldor plans, though many more can be added. ¹²

In contrast to Graham, Kaldor excluded commodities like coal and oil from the indexed buffer stock basket. He felt that commodities with large volumes of trade and volatile prices would have too large a price impact on the other commodities in the basket, and that only commodities that were relatively free of price manipulation should be included. The relative

¹² The suggestion of Carbon permits comes from Lietaer (2004).

proportions of the commodities in the basket would be determined by their share of world trade (periodically re-evaluated). Kaldor estimated the necessary size to be similar to Graham's or larger. The stockpile would be 30 percent of a year's worth of world trade in all primary commodities, approximately US\$20 billion in 1964. Since only 30 commodities might be eligible, at least initially, under this scenario each commodity would be stock piled in a range of 90 to 125 percent of its own world trade in a year, or 25 percent of world production in these eligible commodities (Hart *et al* 1964, p.149). Graham had noted that normally private stocks averaged around 25 to 33 percent of yearly production (Graham 1944, p.48).

Kaldor's spread between the buy and sell of the ICC was just 4 percent, much tighter than Graham's 10. As with Keynes and Graham, Kaldor assumed that the targeted index or prices would in principle be assured by arbitrage operation of private traders who would bundle up a commodity basket in the open market for the purpose of tendering to the ICC, or buy commodities from the ICC for the purpose of tendering in the open markets whenever there is a profit in doing so (Hart *et al* 1964, p.156). Any tendency for prices to fall below the price corridor, the ICC would buy commodities, increasing CRC income to primary producers and adding to world liquidity. The opposite when prices rise above the corridor.

Like Graham, the target basket index would be based on some historical average valuation, e.g. past 10 years, and re-evaluated to meet the goal of a long-run relatively stable inventory as a percentage of world trade. Kaldor suggested that the quantity of commodity-reserves might grow at 3 per cent per year and this could be less than world growth depending on the degree to which commodities remain as inputs into an economy's measure of output. Hence while the buffer stocks growth rate could be different from the rate of growth in industry, it

should be a rate that brought these two sectors into balance and stabilized the terms of trade.

Growing stock piles of commodities had to be viewed in terms of overall need for such goods:

“While any given rate of expansion of primary production may be more than is required to support the industrial expansion of the countries which are *already fully industrialized*, it can be viewed as ‘excessive’ only if we ignored the possibilities of accelerated industrialization in all those areas which still have large labor reserves in agricultural sectors, and whose industrialization could be stepped up very considerably under favorable conditions” (Hart *et al* 1964, p.164).

After 1972 Kaldor started advocating Keynes’s plan of individual commodity buffer stocks to back a CRC over Graham’s basket, he nevertheless wanted to allow for relative price changes. Instead of targeting the complete stability of the average price level of the commodities, the individual “adjustment of price would be circumscribed by carefully laid down rules, relating the movement of the stock/turnover ratio of a particular commodity deviating from the average in excess of a permitted range of variation... [individual] buffer stock scheme[s] linked to the issue of SDRs would thus provide the world with a basic money unit which can be guaranteed to be stable in terms of basic commodities” (Kaldor 1983, p.243). Kaldor never gave a lot of detail on how this plan would actually be implemented, rather he referred back to Keynes (1974).

Kaldor along with Triffin (1960) called for international monetary reform prior to the breakdown of Bretton Woods. He was never enthused with the proposal to a fictitious currency exchangeable into other paper currencies (e.g. SDR), believing that it would always remain in the shadow of the US dollar (Hart *et al* 1964, Kaldor 1972a). As a chartalist, Kaldor believed that money as medium of exchange came from the rules and taxes imposed by a sovereign nation on its people – a nation could create their own paper money, make it ‘legal tender’ and enforce its use. However, a supranational body, like the IMF, had no way of enforcing use of an SDR and its value would depend entirely on the willingness of other countries to accept it rather than gold

or US dollars. The SDR had no 'real' cover and would remain illiquid so long as international agreements were not binding (Kaldor 1972a p.201). In terms of supply an SDR would not offer automaticity in issuance, rather its issuance would require conditionality to limit credit creation and protect those currencies backing it up. Most likely this conditionality would be interpreted as unfair to the borrowing country (Hart et al 1964 p.140).

However, if an SDR was used to stabilize commodity prices and issued through the private sale of commodities, then it would be a currency that had use value and would become a trusted asset even if it were not initially widely used. Indeed, while Keynes, Graham and Kaldor all proposed an international reserve currency that was to be traded amongst central banks only, the CRC alone could easily be traded privately and issued privately (see Lietaer 2004) and thus enable it to compete for liquidity in a modern financial world where most financial assets are privately created.

While at the United Nations Kaldor was a colleague of both Singer and Prebisch and appears to have adopted their center-periphery dichotomy on development but disagreed with their more pessimistic inevitability or remedy of isolationism. Kaldor did not view the terms of trade as inevitably pitched against commodity producers due to the *income inelasticity* for primary commodities relative to manufactured goods (Singer 1949, 1950; Prebisch 1950). He was more inclined to believe that the problem lie with the US dollar as the international reserve system (Kaldor 1971 and 1974); the volatility of US dollar denominated commodity prices; and Gunnar Myrdal's (1957) 'circular cumulative causation,' (Kaldor 1964, p.viii). The declining terms of trade and unequal growth could be resolved with monetary reform through a CRC. Each is considered below.

1. Exchange Rates for Global Trade Balance

Kaldor (1983) believed that the right monetary system would equalize trade balances on manufactured goods between countries. Currency unions were not the solution. With fixed exchange rates and Verdoorn's law Kaldor described a manufacture based economy that becomes a leader in international trade among its competitors. Increasing returns to scale, both internal and external, allow for rising productivity, greater market share and again rising productivity (Verdoorn's law) – an effective real devaluation of its currency. This positive feedback, also called 'circular cumulative causation' can occur even in the face of high employment and rising wages if productivity is rising faster. These 'go-ahead' countries (he was describing Germany and Japan at the time) have a more competitive efficiency wage that shifts manufacturing away from other periphery countries and to their center. The periphery then imports more, de-industrializes and advances by either the financialization of their economy or putting up protective trade barriers.¹³ The typical solution in such a world under fixed exchange rates would be for the periphery to devalue and peg to a lower exchange rate.

However currency realignment has not always been successful in reducing surpluses. In Kaldor's study of appreciations of Japanese and German exchange rates in the 1960s and 70s, even with rising labor costs relative to their trading partners, their share of world trade continued to increase at the expense of the US and UK (Kaldor 1983). Kaldor concluded that the appreciation of the Japanese and German currency at that time compensated for rising prices of food, industrial materials and oil relative to other manufacturers. Along with productivity increases from Verdoorn's law, this allowed these countries' to remain competitive with low efficiency wages and thus growing trade surpluses. Kaldor's answer to this dilemma, counteracting the forces of cumulative causation and setting the right exchange rate was to focus

¹³ Such a process was recently described by Martin Wolf in his grasshopper and ant fable in the *Financial Times* (May 25th, 2010) between Germany and Greece.

on the terms of trade between manufactured goods and commodities - the raw materials essential to industry.

Countries that are the most efficient in producing goods should be the ones to have a competitive edge in exporting. But currency devaluation can be unfair and Kaldor felt that the CRC would internalize the costs incurred through the pursuit of export-led policies –impose a trade off between a country’s income from exports and its competitiveness. In the dollar system a manufacturing exporter (e.g. China) that imports raw materials, by devaluing its currency to the US dollar, in which most trade is denominated, will raise its cost of raw materials and create domestic inflation possibly leading to rising wages and slower productivity growth. Ordinarily, this would raise the cost of manufactured exports and lower competitiveness. But this only occurs when countries are alone in maintaining a low exchange rate relative to the international standard (e.g. the US dollar). If there are many other emerging market nations, including those that primarily sell commodities, that are also devaluing their currency to develop their manufacturing base through export-led growth, then this trade off does not occur (Kaldor 1972b). The price of the ‘value added’ by processing activities in terms of basic inputs (food and raw materials) does not decline and there is no real cost to devaluing.

Kaldor concluded that if manufactured exports were priced in commodity units this would offer a better trade balance in manufactured goods between the highly industrialized nations and prevent the industrially dominating ‘go-ahead’ countries from growing through ‘unrequited exports,’ *at the expense* of other industrial countries, effectively stopping deficit countries from harnessing their own growth potential and ability to pursue policies of full employment (Kaldor 1972).

On the other hand developing countries who primarily export commodities and have the natural resources internally to promote industrialization might still benefit from a devaluation under a dollar standard and continue to promote their manufactured exports. However, if everyone does this it will put downward pressure on commodity prices reducing their terms of trade. Under a commodity reserve currency commodity prices would remain steady on average, CDDC could still devalue to promote export led growth, but it would not have the negative spillover effects they now have.

2. Intersectoral Balance

Kaldor wrote about balancing intersectoral growth between the ‘primary’ and ‘secondary’ sectors. This was central to his explanation of the inherent global disparity in economic development between the industrialized North and the commodity-producing South (see Kaldor, 1976, 1979, 1981, 1983). But this disparity occurred at all levels, within a country, and between countries. While his economic policy interventions dealt mostly with commodities, central to this was a recognition that the industrial sector was the most dynamic and modernizing component of a country’s economic development, though its rate of growth was mainly determined by the demand for its products from *outside* the sector (Kaldor 1983 p.242). This could be export demand, or demand coming from the agricultural sector *within* a country. Since not all countries can be net exporters, in the limit wealth from the outside is generated by surpluses from land and natural resources (a similar view to the Physiocrats). If growth and income in agriculture is sped up, then their spending will also multiply through to growth in the industrial sector – as a commodity multiplier. In an open economy this type of exogenous demand can also come for exports, à la Harrod’s foreign trade multiplier. These multipliers were seen as more effective than exogenous government spending when a country has many leakages to imports.

In Kaldor's view, natural resources such as agricultural, mineral, or energy resources, are 'neoclassical' commodities. That is, their stocks are generally 'fixed' in the short run, market clearing is obtained through price adjustments, and for a given technology they have decreasing marginal returns to factor use. Kaldor believed that productivity gains in agriculture were typically from 'land saving' rather than labor saving techniques. In contrast the manufacturing sector, which transforms primary commodities into capital or consumption goods, exhibits increasing returns to scale and has monopolistic features - each firm needs to increase market share or its products will be squeezed out of the market.

In the long run resource limits for non-renewables may ultimately constrain capital accumulation, though technological progress has generally proved this false. The labor market is likewise demand constrained given the mass of underemployment in the developing world, especially in its rural areas, and the ready supply of labor from immigration to advanced countries if they choose. Hence with inputs to goods unconstrained by supply, then generally speaking the accumulation of capital is limited only by the demand for these goods (Kaldor, 1983, p. 534). Firms usually operate at less than full capacity with administered (mark-up) prices on costs. Disequilibria in manufactured goods markets are reconciled by changes in the quantity produced (and attendant changes in unemployment, real income, and capacity utilization), while prices of manufactured goods remain fixed.

If there is a fall in commodity prices, conventional theory suggests that the rise in purchasing power of the industrial sector should stimulate additional demand within this sector. But instead there will be a fall off in demand for manufactured goods by the primary sector, this will lead to a reduction in world investment in the primary sector, which is normally financed from the industrial sector, again leading to a fall in manufactured goods. Thus a fall in

commodity prices relative to manufactured goods has the tendency to depress rather than stimulate growth (Hart *et al* 1964, p.163).

For Kaldor, one of the main objectives of the CRC scheme would be to help poor countries, more effectively than any other policy, and balance intersectoral growth. Unfortunately, this also creates political opposition: the automatic operation of a CRC system would remove the need for discretionary aid and thus political advantages of donor countries; and if a CRC improved the terms of trade for primary producers over manufacturers then it becomes a scheme to redistribute income from the industrial sectors of the world to the primary goods sectors (Kaldor 1972 p.202). But this opposition is short sighted, since the dynamics put in place by such financial architecture would create long run growth and improve the welfare of both sectors.

3. *Commodity Volatility and Speculation*

Kaldor (1986) characterized commodity prices in unregulated markets as a yo-yo, moving up and down by very large amounts, even within a year or less.

The efficiency of this [market] mechanism ... depends crucially on the professional traders' willingness to absorb stocks or release stocks in response to variations in market prices that were not unduly large. This in turn depended on the traders having a *firm* expectation of a long run normal price for each commodity, deviations from which would be considered as temporary. The firmer or the more certain the expectation of a normal price ...the greater was the traders' willingness to increase their stocks in response to a fall in prices and *vice versa*. Once this belief is impaired or destroyed by the instability of actual prices, the traders' subjective appreciation of the risks incurred in holding stocks is increased, with the result that they require a higher expected compensation for any departure – upwards or downwards – from their normal commitments (their normal stock/turnover ratio). But this means in turn that any variation in the carry-over of stocks from period to period will be associated with a even greater variation of prices, which in turn will have further repercussions on the traders' willingness to take risks. (Kaldor 1983 p.238 - 240).

Volatility in commodity prices will make professional traders shy away from commodity stockpiling causing even more volatility. Speculators will sell when prices are

falling and buy when prices are rising due to changing norms. The large positive feedback that speculators can have on commodity prices can in turn change accepted norms among the mind-set of other herding speculators. A commodity reserve currency would offer an anchor and promote speculation that is a stabilizing force.

Kaldor strongly believed that steady and fair returns to commodity producers would promote 'land-saving' innovation and investment in renewables - it was volatility that was the greatest threat to limited supplies, and small farm holders. Kaldor argued that it was volatility itself that would portended a deterioration in terms of trade between commodities and manufactured goods (Kaldor 1975). This was because investment and productivity in raw materials would decline, industry would substitute to and from different suppliers, the industrialization of low income commodity producing countries would be hampered, and incomes for both primary and secondary sectors would contract.

While generally in favor of an improvement of the terms of trade for commodity producers, excessively high commodity prices, will likely lead to long run slumps, either through lags explained by cobb-web cycles à la Kaldor (1934), or from their contribution to inflation in importing countries and a tightening of their monetary policy and ultimately lower demand for commodities, or by jeopardizing the manufacturing competitiveness of commodity exporting countries if commodity booms lead to overvalued exchange rates. Thus letting the market determine the level of resource investment often leads to price volatility, or long run slumps and impoverishment of small stake holders and CDDC, or high prices and over the long run a Dutch diseases and deindustrialization. The market by itself, it cannot ensure a long-run compatibility between the growth of available primary products and the growth of industry.

Conclusion

Trading in non-fuel commodities today accounts for 14 percent of global trade and fuel another 7 percent; combined, they account for more than one-fifth of global trade. Raw materials are 40% of Latin American exports. Of developing countries 95 out of 141 depend on commodities for more than half of their export earnings. For 70 of these, such revenues were generated by only three commodities (Fréchette 2003).¹⁴ Even though commodities constitute a declining share of economic activity, world demand for them will continue to grow in absolute terms.

Despite the attempt by CDDCs to be less dependent, after 25 years of market reforms, the commodity sector continues to be the mainstay of many developing country economies in generating income, savings and foreign exchange, as well as employment and livelihood. Under the Washington Consensus, the well-worn policy advice given to developing countries to acquire the financial skills to minimize risk and to diversify production so as to stabilize income or export revenue, has missed the need for an increase in supply and an integrated model of agriculture and industry at a national and international level. The production of primary commodities is essential to world growth, in rich and poor countries alike. Diversification comes with industrialization and growing rural labor productivity from rural-urban migration. Artificially imposing restrictions and diversification is a second best response to commodity price volatility, as investment in commodity production remains intrinsic to industrial development. Kaldor emphasized that economies progress in stages, and at every stage commodities are essential, even if they become a smaller and smaller share of employment

¹⁴ Among sub-Saharan and African countries commodities typically exceed 50% of total exports, especially for Burundi (97%), Madagascar (90%), and Zambia (88%). Even among a few developed countries (Australia, Iceland, Norway, New Zealand, and Canada), the share of primary commodities in exports is quite high (54%, 56%, 63%, 36%, and 16% respectively) (Cashin et al., 2002).

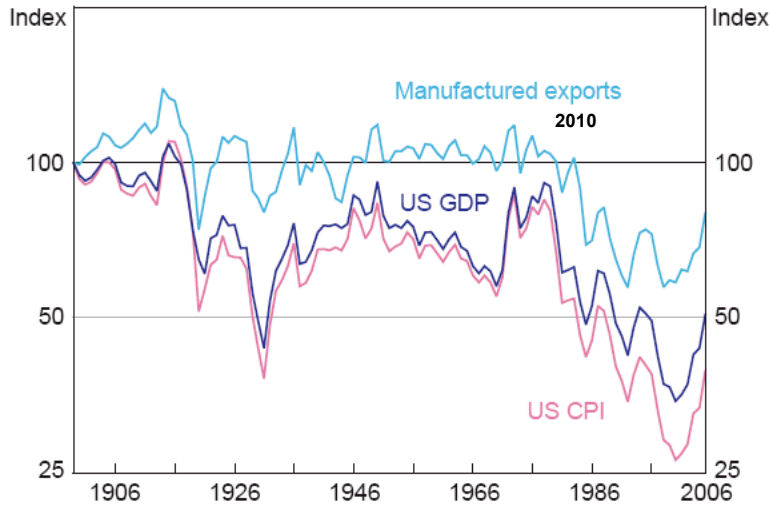
(Kaldor 1967). Ironically, while poor and developing countries are the most dependent on commodity exports, it is the OECD industrialized countries that continue to export the bulk of all agricultural exports, approximately 60 percent of the world total (OECD-FAO 2007, p.40), even though agriculture represents a tiny fraction of their total GDP. Maintaining self sufficiency in resource markets has always been of great political and strategic economic importance. Kaldor (1996) exemplifies this in his simple two-sector model where it is not necessary that agriculture and industry grow at the same rate, but their growth must be balanced with one another, else overall growth will be constrained.

The period of falling commodity prices is tied to a slowing of world growth and positive feedbacks can turn such events into long slumps. If we look at Figure 1 we see that real non-fuel commodity prices deflated by manufacturing prices, declined only in the 1980s following the break down of Bretton Woods and the dramatic increase in exchange rate volatility along with the breakdown of price supports and depletion of national stock piles advocated by the Washington Consensus. The oil price shocks and later collapse up to the mid 1980s and the break up of the Soviet Union all raised volatility and stymied investment in primary commodities. The terms of trade of agriculture and individual farmers was especially hit, see Figure 2 and the decline in agriculture versus minerals, adding to the burdens of the rural poor.

Figure 2 also highlights the improvement in the terms of trade since 2002 for all commodities, which should come as no surprise given the lack of investment in commodities in the proceeding years. Given the need for commodities by the industrialization of China and India, one can say that this long run need for supply was foreseen (Hart *et al* 1964, p.164, Meadows *et al* 1972). Thus the cause of the current high prices (excluding excesses in speculation) is due to a reliance on short-term market forces to determine prices and investment

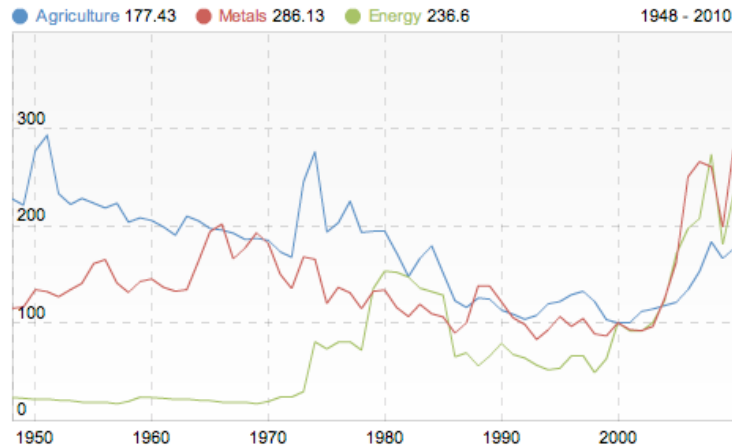
levels that resulted in almost two decades of low investment and which sowed the seeds to the current situation of low inventories and high prices.

Figure 1. Real Commodity Prices
1900=100, log scale, deflators as indicated



Source: RBA Bulletin April 2007 and compiled from the Grilli & Yang (1988) index of 24 traded non-fuel commodities, modified by Pfaffenzeller et al. (2007).

Figure 4. Real Commodity Price Indices
(MUV deflated) (2000 = 100)



Source: World Bank, Development Prospects Group

Accessed: <http://economistsview.typepad.com/economistsview/2010/07/placing-the-200608-commodity-price-boom-into-perspective.html>

Commodity supply insecurity may lead to geopolitical jostling and to exclusionary practices to lock up supplies. Rising commodity prices may elicit a tightening of monetary policy in industrializing countries such as India and China, which would reduce growth of their

imports from developing countries. An unwinding of the US current account deficit means reduced reliance on US consumption as a driver of global demand. These trip wires threaten not only world growth but also world peace, and are addressed in the commodity plans put forward by Keynes, Graham and Kaldor.

The central advantage of their schemes was that an increase in primary production will generate a proportionate increase in effective demand for industrial products – since any excess of supply over demand at existing prices will be absorbed by the commodity buffer stock. This income will be a powerful multiplier, and it will induce investment in the industrial sector, “as it will have found a large and reliable market for its goods in the primary goods sector” (Hart *et al* p.164).

The history of commodity prices is one of extreme volatility where trends are difficult to discern and highly variable. Graham and Kaldor strongly agreed with Keynes, that fluctuations in demand for most goods is unavoidable and markets should be left to their own devices except through aggregate demand management, but not so:

“in the case of the great staple raw materials, most of which can be readily stored without serious deterioration, by direct measures affecting the individual commodity. Assuredly nothing can be more inefficient than the present system by which the price is always too high or too low and there are frequent meaningless fluctuations in the plant and labour force employed” (Keynes 1938, p.451).

The best response would be international in scope, with both consumers and producers best interests, and limited conditionality over private markets. Hence all three proposed an ICC to hold commodity buffer stocks - an ancient old device for stabilizing both supply and prices independent of private operations, while at the same time reducing risk and promoting investment in commodities, and introducing a counter cyclical lever onto the world business cycle.

The innovation that separated these schemes from the usual buffer stock plans was their financing with an endogenously created international reserve currency. No longer was the commodity buffer stock to be stymied by the financial largesse required to maintain such buffer stocks, or the difficulty in attaining and maintaining the far-sighted cooperation and discipline required between importing and exporting countries. This buffer stock could even be replicated in the private sector to draw on international reserves. In 1964 Kaldor wrote “I am confident that *some day* the world will come to accept some variant of it [the CRC] – though I am equally sure that this will not come about until numerous other schemes have been explored and found wanting” (Kaldor 1964, p.xviii) John Maynard Keynes famously stated that what stops us in creating positive futures is not a shortage of good ideas, but our inability to let go of the past.

We need to take a fresh look at commodity buffer stocks and our system of primary production. In a world where resource security and global warming are of increasing importance and Millenium goals in rural areas remain unmet, commodity buffer stocks with an ICU and/or ICC that issues Bancor and/or CRCs may go beyond the role of equalizing trade and wealth between countries and might actually dampen capital flows through the replacement of recycled US dollars with a *groceries first* approach. Quoting Frank Graham, “international finance must be the handmaiden of international trade and that, when she forgot her function and set up on her own account, she made a sorry mess of things” (F. Graham, 1943, p. 335).

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