

Monetary Definition, Exchange-Rate Determination, and a Pathway toward Global Monetary Integration: World Currency

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ABSTRACT

This research initiative on “World Currency,” based on my original concept, began in the year of 1995 and was formally proposed and submit as a research paper, during the year in 2003-2004 as part of the MSc Economics Project at HKUST. The definition of money and the determination of exchange rates have long been central concerns in macroeconomics. This formation and evolution of monetary institutions, together with the pricing of currencies, have contributed significantly to the development of modern monetary economics. Nevertheless, despite the extensive use of theoretical assumptions and formal models, economists have found it difficult to derive a single, empirically reliable measure of a currency’s “fundamental” or fair exchange rate. The market values of major international currencies fluctuate continuously, and these movements cannot always be explained by conventional monetary or exchange-rate theories. Foreign-exchange markets are driven by enormous financial flows: trading in major currencies amounts to trillions of monetary units each day [1-7]. Yet exchange-rate determination depends not only on transaction volume. It also reflects expectations, market sentiment, portfolio allocation, policy intervention, and the strategic behaviour of major participants, including the central banks, G7 economies and large hedge funds. The extent to which such actors can influence exchange rates remains an important theoretical and empirical question. This paper proposes a conceptual pathway model for analyzing global monetary integration. It examines how monetary formation mechanisms influence currency values and how monetary structures are organized. The central argument is that a currency’s value has both internal and external dimensions. These may include foreign-exchange reserves, natural resources, technological capacity, national economic strength, institutional credibility, and public confidence. Currency’s value (intrinsic/extrinsic) & Exchange rates therefore reflect not only macroeconomic fundamentals but also collective outcome and collective expectations with social perceptions of economic security. This paper reviews selected insights from modern monetary and financial economics, identifies limitations in the existing international monetary system, and considers institutional reforms that might improve global

welfare. In particular, our refinement is given to the possibility of a global single currency, a new basket-based valuation mechanism, coordinated monetary governance, and an international system for liquidity provision with collective outcome and welfare transfers.

Keywords: global single currency, exchange-rate determination; global monetary integration; international monetary system; currency basket; repeated games; central banking; collective outcome.

Introduction

This paper explores the possibility of global monetary integration through the creation of a universally recognized unit of account. Under an idealized version of the law of one price, identical goods would tend to have the same price across locations in the absence of transportation costs, trade barriers, taxes, and other transaction costs. A common global currency could reduce the exchange-rate uncertainty associated with international transactions and provide a unified basis for comparing prices, income, assets, and liabilities.

A genuinely global currency would transcend the monetary sovereignty of individual states. Its issuance and monetary management would be entrusted to a universally recognized international central bank. Such an institution could establish a common policy interest rate, provide central-bank liquidity through facilities analogous to discount windows, and coordinate the international supply of money. At a deeper institutional level, a global monetary system could support mechanisms for transferring resources and promoting human welfare across countries and regions.

The purpose of monetary integration would not be limited to simplifying international payments. It would also improve the stability and efficiency of the global financial system and to reduce the frequency and severity of financial crises. Our reform proposal therefore begin with a study of the current international monetary order, including its dependence on the United States dollar and the systemic risks associated with a predominantly dollar-centred structure.

The analysis proceeds from the premise that monetary reform should be gradual, institutionally credible, and responsive to the distributional consequences of exchange-rate arrangements. A transition toward global monetary integration may involve several intermediate stages: deeper domain in regional monetary cooperation, multilateral clearing arrangements, the establishment of a shared unit of account, and eventually the adoption of a common currency.

The Current International Monetary System

Most economies currently operate under formally flexible exchange-rate regimes, although in practice many governments manage their currencies through interest-rate policy, foreign-exchange

intervention, capital-flow measures, macroprudential regulation, and communication strategies. This arrangement is commonly described as a managed float or, in more critical terminology, a “dirty float.” The essential point is that exchange rates are rarely determined by an entirely unrestricted market. Public authorities intervene to varying degrees in foreign-exchange markets in pursuit of price stability, external competitiveness, financial stability, or broader economic objectives.

The post-war international monetary system was initially organised around the Bretton Woods framework established in 1944. Under that system, the United States dollar was linked to gold at a fixed official price of US\$35 per troy ounce, while other currencies were pegged to the dollar. The suspension of dollar convertibility into gold by the United States in 1971 brought the Bretton Woods system to an end and contributed to the subsequent transition toward widespread flexible exchange rates. The present system is therefore best understood not as a purely free-floating regime but as a heterogeneous collection of managed and flexible arrangements within a dollar-centred international monetary order.

The dollar’s international role provides substantial liquidity and facilitates global trade and finance. At the same time, dependence on a dominant reserve currency may transmit the monetary and financial conditions of the issuing country to the rest of the world. Changes in the monetary policy of the reserve-currency issuer can affect capital flows, exchange rates, debt-servicing costs, asset prices, and financial conditions in economies that use the dollar extensively or borrow in dollar-denominated markets.

Exchange Rates as Strategic Outcomes

Exchange-rate determination can be interpreted not only through asset-pricing and macroeconomic models but also through the framework of strategic interaction. Exchange-rate policy can consequently become an arena in which national authorities pursue rational strategies that generate collectively efficient outcomes. When such interactions are repeated indefinitely, the incentives of joining the global currency domain may rise. Repeated interaction can encourage cooperation when the long-term benefits of stable monetary relations exceed the short-term gains from unilateral action.

This argument implies that repeated games can automatically produce more significant outcomes for monetary unification. In a repeated game, cooperation can lead to a more consolidated outcome than punishment. Which, cooperation depends on credible commitments, monitoring, enforcement, compatible domestic objectives, and an equitable distribution of benefits. Nevertheless, repeated interaction provides a useful theoretical basis for examining why countries might gradually move from non-cooperative monetary strategies toward regional coordination

and, ultimately, more integrated monetary institutions. In the long run, deeper trade and financial integration may create incentives to the exchange rates to converge and adopt common rules governing exchange-rate management. Such convergence would eliminate differences in productivity, fiscal capacity, and economic structure.

The Case for Monetary Integration

The principal economic rationale for monetary integration is the reduction of transaction costs and exchange-rate uncertainty. A global single currency can facilitate trade, investment, price comparison, cross-border contracting and reduce transaction cost. It may also reduce the need for firms and households to hedge currency risk. However, the benefits of integration must be considered against the loss of independent monetary policy and the difficulty of responding to asymmetric shocks.

A global monetary arrangement would therefore require more than a common medium of exchange. It would need an integrated institutional framework containing at least five components:

1. A clearly defined unit of account and currency-issuance rule.
2. An independent and accountable global monetary authority.
3. Common rules for liquidity provision and lender-of-last-resort operations.
4. Mechanisms for fiscal transfers or international welfare support.
5. Transparent procedures for resolving balance-of-payments and sovereign-debt problems.

The creation of a global central bank could reduce certain forms of monetary risk in fragmentation. A centralised issuer can become politically accountable, with equality allocate credit, which reduce moral hazard. The legitimacy of such an institution would depend on constitutional safeguards, representation of member economies, transparent decision-making, and effective supervision. Therefore, a global monetary system should also distinguish between the functions of money and the medium of exchange. A reform in the unify global single currency that focuses exclusively on exchange-rate stability can provide a more financial stability, income distribution, and the capacity of monetary institutions to respond to crises. For this reason, global monetary integration should be evaluated according to its effects on economic welfare rather than according to currency unification alone.

Suggestion**A Basket-Based Pathway**

This paper proposes a gradual pathway based on a basket of currencies and economic indicators. The unit would be determined by a transparent basket reflecting the relative economic importance, external stability, and institutional credibility of participating economies [8-11].

Let the value of the proposed global currency, denoted by G , be represented by:

$$G_t = \sum_{i=1}^n w_{i,t} C_{i,t},$$

where $C_{i,t}$ is the value of currency or economic component i at time t , and $w_{i,t}$ is its corresponding weight. The weights would satisfy:

$$\sum_{i=1}^n w_{i,t} = 1, w_{i,t} \geq 0.$$

The weights should be including gross domestic product (GPD) of those countries. In addition, a broader index could incorporate trade shares, financial-market depth, population, fiscal sustainability, inflation performance, foreign-exchange reserves, institutional quality, and exposure to external shocks. The design of the weighting formula is therefore a central issue rather than a technical detail.

The basket could be introduced initially as a unit of account for international trade, development finance, and official reserves. Participating central banks could establish bilateral or multilateral clearing arrangements based on the unit. Over time, the basket could support a regional settlement system and eventually become the basis for a global single currency.

The principal advantage of a basket-based system is diversification. It could reduce the risks associated with dependence on a single national currency and distribute adjustment costs more broadly. Its disadvantages include governance complexity, disagreement over weights, possible instability if the basket is revised too frequently, and the continuing need for credible institutions to manage convertibility and liquidity.

Institutional Design and Transition

A feasible transition toward monetary integration should be staged rather than instantaneous. The first stage could involve enhanced cooperation among existing international and regional monetary

institutions. The second could establish a shared basket-based unit of account and a multilateral clearing mechanism. The third could expand the use of the unit in trade invoicing, official reserves, development lending, and cross-border financial contracts. Only after sufficient institutional convergence would the creation of a common currency become a realistic option. A world monetary authority would need clearly defined responsibilities. These might include issuing the global unit, setting or guiding a common policy interest rate, managing international reserves, providing emergency liquidity, and supervising the stability of the global payments system. Regional central banks could act as intermediaries, distributing liquidity and implementing agreed monetary policies within their jurisdictions.

The proposed system could also include an international asset-assessment agency responsible for evaluating the quality and value of financial and real assets. Such an agency would have to operate under strict transparency requirements and independent oversight. Its role should be limited to improving information and comparability; it should not become an instrument for arbitrary independently (political) control over national assets. The monetary system should be anchored by external balance. Persistent trade imbalances can generate political tension, excessive indebtedness, and destabilising capital flows. A rules-based framework could therefore monitor external positions and encourage timely adjustment by both surplus and deficit economies. The objective would not be to impose identical trade balances but to prevent imbalances from becoming structurally unsustainable.

Policy Implications

This research paper suggests several policy directions. First, international monetary reform should reduce excessive dependence on any major reserve currency. Second, regional currency cooperation and multilateral clearing arrangements could serve as practical intermediate steps. Third, a diversified currency basket may provide a more balanced reference for a future global unit of account. Fourth, monetary integration must be accompanied by financial regulation, crisis-management procedures, and mechanisms for supporting countries facing severe external shocks.

The distributional effects of reform are equally important. A global currency could benefit households and firms by reducing exchange-rate uncertainty, but the transition could impose adjustment costs on workers, exporters, banks, and governments. Reform should therefore include safeguards for employment, public services, financial inclusion, and the orderly restructuring of debt. Future research should estimate the optimal composition of the currency basket, test the sensitivity of exchange rates to alternative weighting schemes, examine the credibility of different governance models, and quantify the effects of monetary integration on trade, investment, inflation, financial volatility, and welfare. Game-theoretic analysis could be combined with

empirical macroeconomic modelling to assess whether cooperation remains stable under asymmetric shocks and changing political conditions.

Conclusion

Reforming the international monetary system requires a credible framework for defining money, valuing currencies, managing liquidity, resolving external imbalances, and distributing the benefits and costs of monetary integration. This paper has proposed a gradual, basket-based pathway toward a common global monetary system. A diversified basket of currencies and economic indicators could provide a more balanced basis for a future international unit of account. This proposal would ultimately require a global monetary authority, regional implementation institutions, transparent rules, and mechanisms for international welfare support. Global monetary integration depends on sustained cooperation, credible enforcement, political legitimacy, and the management of balance of trade and asymmetric economic conditions. Nevertheless, the repeated nature of international economic interaction creates incentives for countries to move beyond from short-term, non-cooperative strategies to a more coherent and alignment strategies, that make the single world currency become possible with collective outcome. If designed carefully, monetary cooperation could contribute to a more stable, equitable, and efficient international monetary order with the ideal situation that can solve Triffin Delima. Hope our paper can contribute to the world and society.

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