

# Exchange Rate Arrangements: Fix, Float, or Manage?

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# **Exchange Rate Arrangements:**

### Fix, Float or Manage?

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# Abstract:

The paper tries to provide a concise summary of the main debates on exchange rate arrangements. It a simple taxonomy of exchange rate arrangements, fixed, flexible and managed, and a brief analysis of the main debates about their advantages and disadvantages. It emphasizes the different policy objectives of mainstream and heterodox schools of thought, suggesting that they tend to be more relevant than the specific defense of one particular exchange rate arrangement. In that sense, there are divergences on their preferences within schools of thought. The paper also discusses the causes of currency crises and the role of the dollar in the international monetary system.

JEL Codes: F31, F55

Key Words: Foreign Exchange, International Institutional Arrangements

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#### 1. Introduction

The foreign exchange rate – the domestic price of foreign currencies or, conversely, the foreign price of domestic currency – is one of the essential macroeconomic prices, alongside the rate of interest and wages. The exchange rate regime describes the arrangement adopted by a country with respect to the determination of the price of its currency in terms of other currencies, or a reference currency. This chapter will briefly discuss the mainstream and post-Keynesian approaches to exchange rate policy. A core theme of this chapter will be to emphasize that exchange rate policy is only one instrument and is not sufficient to achieve all macroeconomic objectives at once. Furthermore, different exchange rate policies may be needed at different times depending on the policy priorities, which are constantly changing. In other words, an exchange rate policy that might be adequate for dealing with a balance-of-payments deficit, for example, may not be satisfactory for dealing with an inflationary crisis. In an increasingly interconnected world, often the question is not *whether* to manage the exchange rate, but *for what purpose* and *in whose interest*.

As a result, one will find both post-Keynesian and mainstream authors arguing for a variety of different regimes at different times. The key distinction then between the two approaches is not to be found in the specific policies recommended, but in the fundamental objectives of each. Mainstream authors, with greater faith in the self-equilibrating nature of markets, are most concerned about market distortion and the inflationary dangers of government. Alternatively, post-Keynesian authors beginning from the assumption of insufficient aggregate demand and conflictual income distribution, are most concerned about the policy space required for full employment and the distributional consequences of exchange rate regimes.

The first section of the chapter provides a simple taxonomy of exchange rate arrangements. The following sections provides a brief synopsis of the historical evolution of mainstream and post-Keynesian views on exchange rate policy. The chapter also discusses the alternative views of neoclassical and heterodox authors regarding the effects of exchange rate volatility and currency crises. The chapter concludes with a brief discussion of the problems of the current international monetary arrangement, dominated by the dollar.

#### 2. A Concise Taxonomy of Exchange Rate Arrangements

The International Monetary Fund (IMF) has distinguished ten exchange rate arrangements, subdivided into four subcategories: hard pegs, soft pegs, floating regimes, and residual arrangements. The residual category includes a variety of regimes that are essentially variations of a managed float (Habermeier et al., 2009). The IMF's classification scheme includes *de jure* or the formal policy and *de facto* regimes, i.e., the degree to which actual movements of exchange rates suggest active intervention. This complexity underscores the fact that, in practice, exchange rate regimes are difficult to categorize.

Hard pegs include countries with no domestic currency circulation and countries with a currency board that commits to fully back domestic money with a foreign currency to maintain a fixed exchange rate. When a country fully replaces domestic circulation with a foreign currency, this is commonly referred to as dollarization since, most often, the currency of replacement is the dollar. Historically this would include the gold standard and bimetallic standards.

Since 2007, the IMF has categorized currency unions according to the regime the joint currency abides by. So, for instance, the euro is classified as free floating. However, for the purposes of this chapter, we will consider common currencies like the euro or the African Financial Community Franc, the CFA Franc, as fixed exchange rate regimes. It is however, worth noting that within a currency union, a supra-national central bank, for instance the European Central Bank, can retain monetary policy-making powers in contrast to dollarization or currency board regimes. Member countries may have a say in these decisions to the extent their interests are represented at the supra-national central bank.

Soft pegs include intermediary arrangements between hard pegs and fully market determined exchange rates, often referred to as floating. This category includes the largest number of regimes. Two common quasi-pegged regimes are adjustable pegs, in which the currency is fixed against a foreign currency or a basket of currencies and is not often changed, and crawling pegs, in which the currency is initially fixed but policy-makers subsequently adjust the exchange rate at regular intervals. Bands are slightly more complex quasi-pegged

arrangements involving the announcement of a central exchange rate and a fluctuation band around that central rate, which may or may not be symmetric.

Unlike the currency boards, these soft pegs do not require the government to fully back domestic currency with foreign currency. Instead, it promises to intervene in currency markets either directly, for instance, by using foreign currency reserves to purchase domestic currency or indirectly, by using interest rate policy to induce foreign demand for domestic currency. Managed regimes provide discretionary power to the monetary authorities and try to obtain the advantages of both worlds, so to speak. They are implemented because the authorities recognize the importance of exchange rate stability for the functioning of the economy, but also allow for changes when a particular exchange rate level is deemed unsustainable, and too costly to defend.

Floating arrangements are supposed to grant market forces a significant role in determining exchange rates. Though a full description of the market determinants of exchange rates is beyond the scope of this chapter, they can broadly be characterized as deriving from trade flows, financial flows, associated with asset purchases, and speculative transactions in the foreign exchange market. The IMF distinguishes between two types of floating arrangements: floating and free floating. Floating regimes imply some degree of management to prevent abrupt or wild swings in exchange rates. This has famously been described as the "fear of floating" by Calvo and Reinhart (2002). Since exchange rate interventions can vary from direct buying and selling domestic currency in exchange for foreign ones to indirect prodding of the market in one direction or another, it is unclear what amount of interference is consistent with floating arrangements. Free floating is then supposed to include the most market-determined of exchange rate regimes, with only exceptionally rare interventions.

The IMF's taxonomy captures the difficulty of translating the reality of currency arrangements into fixed categories. However, to clarify the differences between mainstream and post-Keynesian approaches, the following sections will use a simplified tripartite grouping: rigidly fixed exchange rates, intermediary or managed pegs, and pure float arrangements.

#### 3. Mainstream Perspectives on Exchange Rate Arrangements

Both mainstream and post-Keynesian approaches to exchange rate policy have a long and complex history. As noted, this chapter argues that what distinguishes the two traditions is not the advocacy of a particular exchange rate regime, but instead the policy objective. For mainstream authors, there is a fundamental belief that markets can secure the full capacity output level with full employment of the labor force. The great danger then is that government, whether through macroeconomic or regulatory policy, will be incentivized by the political process to generate inflationary conditions. Mainstream authors will then evaluate an exchange rate regime in terms of the degree to which it will tie the hands of government.

One could reasonably begin a description of the mainstream approach to exchange rate regimes in 19<sup>th</sup> century, during the era of the so-called classical gold standard and the first wave of globalization. At the time, the consensus among orthodox economists was founded on the principles of the price-specie-flow mechanism and the Ricardian principle of comparative advantage (Vernengo, 2000). In this framework, the combination of free trade, the free movement of capital, and a commitment to the gold standard would produce a self-equilibrating balance of payments. Trade deficits (surpluses) were supposed to be matched by outflows (inflows) of gold and thus falling (rising) prices. Given the fixed exchange rate, these price movements were supposed to correct the trade imbalance automatically. The fixed exchange rate would then anchor domestic prices and limit governments' ability to increase spending or engage in expansionary monetary policy. In practice, gold did not actually flow in significant quantities, but in the presence of capital mobility, the interest rate had to be set by the central bank to preclude capital flight and currency depreciation.

The collapse of the gold standard in the interwar period and the experience of the global Great Depression led to a historic conference in Bretton Woods, New Hampshire in 1944 to plan the future of the international financial system. In the Bretton Woods system, policymakers maintained monetary policy autonomy and kept interest rates relatively low to promote full employment at home and curb foreign exchange speculation without fear of capital flight. The ability to control domestic interest rates is one of the reasons why Keynes defended capital controls as a necessary complement to the Bretton Woods fixed exchange rate regime

(Vernengo & Rochon, 2000). It must be noted that the fundamental goal for Keynes-and for most economists in the aftermath of the Great Depression and the Second World War was to maintain full employment – a policy objective that reflected the Keynesian revolution and shifting class politics. Exchange rate stability and low interest rates to curb speculation were seen as crucial to achieving that objective, and reduced capital mobility was deemed a small price to pay for full employment. In other words, the Bretton Woods era was a period dominated by exchange rate stability and monetary policy autonomy but without capital mobility.

The limitation on capital mobility was never fully condoned by the mainstream of the profession, and critics of the Keynesian policies of the 1950s and 1960s suggested that fixed exchange rates and low rates of interest led to excessive demand stimulus and demand-pull inflation, particularly in the latter decade. Inflation became the center of policy preoccupations, with unemployment taking the back seat – even though the inflation of the time had other more plausible causes, for instance, cost push factors and wage-price spirals (Vernengo, 2021). Perhaps, more importantly, as noted by Helleiner (1994), the critics of capital controls, particularly those associated with Wall Street's financial interests, pushed to liberalize capital flows. The reduced commitment to full employment and the notion that financial markets were efficient were central to the abandonment of the Bretton Woods system of fixed exchange rates.

The United States abandoned the fixed parity with Gold in 1971, and then the Smithsonian Agreement that maintained some degree of exchange rate stability among the main currencies collapsed in 1973. The new flexible Dollar Standard (Serrano, 2003) implied a general movement towards more flexible exchange rate arrangements and free capital mobility, constraining the ability of central banks to pursue monetary policy to bring the economy to full employment. The notion was both that the economy had a natural tendency to full employment and that fixed rates could be seen as a violation of the sanctity of the market (Friedman, 1953; 1968).

Developments in mainstream thought, in particular by Robert Mundell and Marcus Fleming in the 1960s, came to see the policy choices of countries as constrained by an Impossible Trinity or the Trilemma. Based on an open economy extension of the standard ISLM

model, the Impossible Trinity suggests that countries cannot simultaneously achieve exchange rate stability, monetary policy autonomy, and free capital mobility. A country can achieve any two of these goals, but it must pay the price by forgoing the third. Thus, in the classical gold standard domestic monetary policy was sacrificed for free capital flows and a fixed exchange rate, while in the Bretton Woods system, free capital flows were traded for exchange rate stability and domestic monetary policy flexibility. In the context of the Trilemma, the end of Bretton Woods and the freeing of capital flows would suggest that countries can choose either a fixed exchange rate arrangement or monetary policy autonomy, but not both.

By the 1990s, a consensus developed that intermediate regimes were unsustainable and would lead to financial crises. The only path forward was to let the currency float or establish a credible commitment to a hard peg, a position that was referred to as the "Bipolar View" by Stanley Fischer, the First Deputy Managing Director of the IMF at that time (Fischer, 2001). Attempts to thread the needle of exchange rate stability policy flexibility would end in disaster because markets may question a government's commitment to flexible pegs.

However, in the aftermath of the Tequila crisis of 1994 in Mexico and Asian financial crisis of 1997 – and in light of the subsequent financial crises in Russia in 1998 and Brazil and Turkey in 1999, and the crisis in Argentina in 2001 – the bipolar view was difficult to maintain (Vernengo & Silva, 2010). Given the experience of these currency crises and the decline of the bipolar consensus, the IMF has become more accepting of both managed regimes and the limited use of capital controls, which are part of the set of acceptable macroprudential measures during a period of crisis, to reduce international volatility (Vernengo, 2023). To the extent there is a new consensus, it would recommend greater exchange rate flexibility, inflation targeting, and macroprudential policies to reduce the risks of excessive volatility. Inflation targeting is a key component of this framework because the concern among mainstream authors is the tendency of governments to abuse the policy space associated with flexible exchange rates and generate an inflationary environment. An example would be European Central Bank (ECB), which allows the Euro to float but has a singular commitment to price stability.

#### 4. Post-Keynesian Perspectives on Exchange Rate Arrangements

Post-Keynesian economists have typically argued that the principle of effective demand determines output and employment in both the short and long run, and understood income distribution as a conflictual process. Further, income distribution could have ambiguous effects on economic growth and, hence, on the level of output and employment. Thus, their approaches to exchange rate policy are largely about the extent to which it can provide policy space for demand management and the effect of the exchange rate regime on income distribution and through that channel on output and employment.

It seems only right to begin a discussion of post-Keynesian exchange rate policy with Keynes himself. Despite the fact that after his death, much Keynesian work focused on the closed economy, Keynes spent much of his career trying to understand open economy issues and eventually came to battle with the classical gold standard. As noted earlier, Keynes believed that management of domestic monetary and fiscal policy to maintain full employment would require insulation from international capital flows. He was also quite critical of the deflationary bias of the classical gold standard, which disproportionately placed the burden of adjustment on workers, since the adjustment of the balance of payments took place with a contraction of the economy that reduced the need for imports, but that caused unemployment at home. Many authors in the late 1920s and early 1930s, blamed the Great Depression on the high interest rates associated with the Gold Standard (Temin, 1991). The lesson was that to avoid that kind of deflationary crisis that caused the Depression countries would have to give up the free mobility of capital in order to regain control of the interest rate.

In other words, although Keynes was against the classical gold standard, he defended a relatively rigid, but adjustable in the case of unsustainable balance of payments problems, exchange rate arrangement at Bretton Woods. While post-Keynesians were willing to accept the commitment to relative exchange rate stability in an environment of limited capital mobility, these views became increasingly harder to defend. An increasingly volatile global financial cycle emerged with the end of Bretton Woods (Borio & Disyatat, 2011). This global financial cycle was shaped by a process of financial deregulation and liberalization that led to a large increase in flows of capital and to an increase in the relative size of the financial sector globally, a process

often referred to as financialization (Epstein, 2005). In particular, gross financial flows increased considerably and are correlated with the fluctuations of asset prices, commodity prices, and with the functioning of the real economy. On the basis of the importance of gross flows within the global financial cycle, Hélène Rey (2015) put forward the notion that countries are not faced with a Trilemma, but simply with a Dilemma, or a tradeoff between free capital mobility and independent monetary policy, irrespective of the exchange rate regime.

Some post-Keynesians have, however defended more flexible exchange rate arrangements, arguing that they do indeed provide more policy space and have critiqued fixed or more actively managed regimes. For example, Mitchell, Wray and Watts (2019) argue that a fixed exchange rate is open to speculative attack and might lead to currency appreciation, hurt development by reducing exports and increasing imports, and create unsustainable deficits. In their opinion, flexible rates offer a significant amount of policy space even in the presence of free capital flows.

Other authors in heterodox circles, often more concerned with the negative effects of financial instability, argue in favor of a macroeconomic regime focused on the preservation of a stable and competitive real exchange rate (SCRER). They claim that competitive rates were a principal factor in the rapid growth experienced in many developing countries (Frenkel & Taylor, 2007). This approach was dubbed New Developmentalism (Bresser-Pereira, 2016). It is clear, however, that for developing countries, other factors have been equally important.

In the New Developmentalist view the main tradeoff is between a more depreciated exchange rate that promotes external competitiveness and growth, and a more appreciated exchange rate for economic stability, that would be defended by orthodox economists. However, it is important to note that the exchange rate has important distributive implications. As a result, there is another more relevant tradeoff to understand the implications of exchange rate arrangements, which is not between a depreciated real exchange rate to grow and an appreciated exchange rate to stabilize and keep prices under control. The central tradeoff is distributive, between the exchange rate and wages, a tradeoff that casts doubt on the positive effect of the depreciated real exchange rate on growth. In countries that predominantly export commodities, which are price takers in international markets, the real exchange rate has little

effect on the volume exported. The main effect of the depreciation of the real exchange rate is distributional. A currency depreciation has contractionary effects on the economy, not only in the level of activity, but also on the rate of growth, because it reduces real wages. The worsening of the position of workers, who have a greater propensity to spend, implies, for equivalent levels of autonomous spending, lower levels of effective demand and induced investment (Krugman & Taylor, 1978).

The possibility of a contractionary depreciation can be contextualized in an extensive literature that suggests that the essential constraint to economic growth is the balance of payments (McCombie & Thirlwall, 1994). The idea is relatively simple. If a country exports less than it imports, it must borrow from other countries to buy goods and services. Borrowing, however, is an option only for a certain period of time. After a while, the country must be able to export not only to pay for imports but also to pay interest and principal on the accumulated debt. Therefore, countries cannot grow persistently above their trading partners without incurring into an increasingly larger external debt. External debt in foreign denominated currency cannot grow without limit, and if it grows more than the ability to repay, which is measured by exports, it would lead to an unsustainable path and default (Bhering et al., 2019; Cline & Vernengo, 2016).

In the international arena, post-Keynesians see the external constraint as the core issue, with varying opinions on how exchange rate policy may address it. A persistent theme is that regardless of exchange rate arrangement, capital flows are destabilizing and there is an asymmetric adjustment mechanism in the international financial system between central or advanced economies, and peripheral or developing countries. It must be noted however that key differences remain within the post-Keynesian school. This includes disagreements over the extent to which exchange rates can manage the current account (Blecker, 2009; Davidson, 2007). It also includes perhaps more serious disagreements over the external constraint is binding in the case of floating exchange rates (Vernengo & Pérez Caldentey, 2020).

#### 5. The Dollar and Currency Crises

The collapse of Bretton Woods and the deregulation of financial flows was followed by an increase in the frequency of currency crises and the numbers of countries in default, even though the Dollar Standard is associated with a reduced number of hard pegs. Currency crises are often discussed in the context of a hard peg, but it is possible that rapid depreciation could be described as a crisis in a variety of regimes, including managed floats or soft pegs, possessing some of the same characteristics of a speculative attack on a fixed exchange rate. These crises are usually associated with a depletion of foreign currency reserves as the monetary authority attempts to defend the currency through market interventions.

Among mainstream authors, the exchange rate regime is frequently seen as a tool to ensure monetary and fiscal discipline, and thus currency crises are often associated with an irresponsible government. Thus, the so-called first generation models of currency crises placed fiscal deficits at the center (Krugman, 1979). Krugman's model extends the classic price-specieflow model and includes the hallmarks of neoclassical or mainstream open economy macroeconomics. The model assumes full employment, a direct connection between money supply and prices. It also assumes that exchange rate is determined by the price or price level differentials, with the depreciation of currency of a country that has higher inflation than its trading partners. Thus, the danger that government deficits, that increase money supply and are inflationary, and lead to speculation against the currency. Under these conditions, persistent fiscal deficits would lead to the eventual exhaustion of currency reserves and a collapse of the fixed exchange rate arrangement. Expectations of participants in foreign exchange and asset markets may speed up this process, but ultimately the cause of the exchange rate crisis is the fundamental macroeconomic imbalance.

These models were supposed to reflect the crises in developing countries in the 1970s and 1980s, and in particular the Latin American debt crisis. These were very much portrayed as cases of a lax government finances. Subsequent crises proved more difficult to describe in these terms. The Lira and Pound crisis of the early 1990s and Asian crisis were not characterized by large fiscal deficits in the run up to the currency crisis. Although this could potentially be explained by expectations of future deficits, say to bail out a financial sector, a second

generation of mainstream models emerged that emphasized the self-fulfilling nature of financial market speculation (Obstfeld, 1996).

The core idea in these models is that the macroeconomic fundamentals may be consistent with external balance, but there may also be multiple sets of macroeconomic fundamentals that would also produce external balance. In this case, currency market traders predict the credibility of a government's commitment to a fixed exchange rate. If they believe the government will have to pursue other that conflict with the fixed exchange rate objectives – for example, maintenance of domestic economic activity – they may attack, and lead to a devaluation. That is, the situation before the crisis was not in itself unsustainable – it would not lead to diminishing reserves – but it would become unsustainable in the face of an attack. These models also often featured contagion effects, where imperfect information causes currency crises to spread to neighboring countries.

A third generation of models focused on the coincidence of banking and currency crises in the wake of financial liberalization (Kaminsky & Reinhart, 1999). The story emphasizes large capital inflows that then generate a domestic boom-bust cycle. Insufficient banking supervision and increasingly fragile balance sheets, with large exposures to foreign currency-denominated liabilities, create the conditions for a crisis. It is worth noting that a lax fiscal and monetary stance plays significant roles in all generations of mainstream crisis models. The narrative suggests that the low- and middle-income countries that experience currency crises are characterized by irresponsible and insufficiently committed governments.

Post-Keynesians emphasize external shocks like sudden terms of trade collapses or tightening international credit conditions prompted by interest rate hikes by foreign central banks, or both, as being central for the explanation of currency crisis. These shocks are often the way in which the balance of payments constraint imposes itself. Cline and Vernengo (2016) develop a post-Keynesian model of currency crises emphasizing the currency mismatch between domestic receipts in local currency and foreign spending and indebtedness in foreign currency. In other words, developing countries must import goods and services in foreign currency, and pay interest rates in foreign currency. If the terms of trade fall, and the cost of developing countries obligations go up, or if the interest rate on the foreign denominated

currency goes up, or a combination of both, is such that the central bank runs out of reserves, then a speculative attack on the currency would follow.

The post-Keynesian model flips the relationship between fiscal deficits and external crisis. In the face of terms of trade and foreign interest rate shocks that produce a domestic recession, a fiscal crisis may develop, since a depreciation would cause a recession and that would, in turn, lead to the collapse of taxes, requiring governments to try to intervene to alleviate unemployment. That is, fiscal crises do not cause currency crises in this model, instead, currency crises cause fiscal crises. In that sense, in the post-Keynesian framework, the solution for a currency crisis – which for the mainstream, requires austerity and central bank independence to preclude the monetary financing of fiscal deficits – relies on the accumulation of reserves by the central bank. This is often only possible with the support of the IMF or more directly from the United States.

In the current dollar standard, with a regulatory framework set by the Bank of International Settlements (BIS) that is relatively loose and depending to a considerable extent on the self-regulation by financial agents, the monetary policy of the United States has a significant impact on other countries, since in the Federal Reserve hikes its rate, capital flows tend to respond, causing pressures in most countries particularly those with low reserves in dollars. Similarly, recent work has focused on the inability of developing countries to insulate themselves from global financial conditions, even in cases where they have not borrowed extensively in foreign currency (Carstens & Shin, 2019). Several central banks around the global accumulated large amounts of dollars to protect from the global financial cycle, and the possibilities of crises. Also, as Shin and von Peter (2022) show, many developing countries have avoided borrowing in foreign currency, to prevent the pitfalls associated with foreign debt. Still in the aftermath of the pandemic, with the increase in inflation rates globally, and with the higher rate of interest in the United States, many peripheral countries have suffered, and the possibilities of sovereign defaults have increased.

#### 6. Conclusions

We have seen then that the key distinction between mainstream and post-Keynesian authors centers on the core objective of exchange rate policy. Mainstream authors have traditionally argued that the exchange rate regime can be used to reign in government, either through a fixed rate or through flexible rates with inflation targeting. Post-Keynesian authors have been more concerned about insufficient aggregate demand deriving from the balance of payments constraint and the distributional consequences of the exchange rate arrangement.

Mainstream authors tend to be concerned with inflation and believe in an economy that is self-regulated. For that reason, neoclassical authors have increasingly favored flexible exchange rate arrangements and central bank independence with an inflation target mandate. The post-Keynesian tradition by contrast starts from the core assumption that markets tend toward underemployment generated by insufficient aggregate demand. In addition, this tradition sees income distribution as a site of class conflict. As a result, exchange rate arrangements are evaluated in terms of the policy space they offer governments to achieve full employment and a more equitable distribution of income. In addition, a hallmark of post-Keynesian scholarship on international finance has been the emphasis on the hierarchical nature of the system – distinguished by a core and periphery, and the role of the hegemony of the dollar.

#### References

- Bhering, G., Serrano, F., & Freitas, F. (2019). Thirlwall's law, external debt sustainability, and the balance-of-payments-constrained level and growth rates of output\*. *Review of Keynesian Economics*, 7(4), 486–497. https://doi.org/10.4337/roke.2019.04.05
- Blecker, R. A. (2009). Davidson on Keynes: The open economy dimension. *Journal of Post Keynesian Economics*, *32*(1), 19–41. https://doi.org/10.2753/PKE0160-3477320102
- Borio, C. E. V., & Disyatat, P. (2011). Global Imbalances and the Financial Crisis: Link or No Link? *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1859410
- Bresser-Pereira, L. C. (2016). Reflecting on new developmentalism and classical developmentalism. *Review of Keynesian Economics*, 4(3), 331–352. https://doi.org/10.4337/roke.2016.03.07
- Calvo, G. A., & Reinhart, C. M. (2002). Fear of Floating. *The Quarterly Journal of Economics*, *117*(2), 379–408.
- Carstens, A., & Shin, H. S. (2019, March 15). Emerging Markets Aren't Out of the Woods Yet. *Foreign Affairs*. https://www.foreignaffairs.com/world/emerging-markets-arent-outwoods-yet
- Cline, N., & Vernengo, M. (2016). Interest Rates, Terms of Trade, and Currency Crises: Are We on the Verge of a New Crisis in the Periphery? In A. V. Gevorkyan & O. Canuto (Eds.),
   *Financial Deepening and Post-Crisis Development in Emerging Markets* (pp. 41–62).
   Palgrave Macmillan US. https://doi.org/10.1057/978-1-137-52246-7\_3

Davidson, P. (2007). John Maynard Keynes. Palgrave Macmillan.

Epstein, G. A. (Ed.). (2005). Financialization and the World Economy. Edward Elgar Publishing.

- Fischer, S. (2001). Exchange Rate Regimes: Is the Bipolar View Correct? *Journal of Economic Perspectives*, *15*(2), 3–24. https://doi.org/10.1257/jep.15.2.3
- Frenkel, R., & Taylor, L. (2007). Real Exchange Rate, Monetary Policy, and Employment. In J. A. Ocampo, J. K. Sundaram, & S. Khan (Eds.), *Policy Matters: Economic and Social Policies to Sustain Equitable Development* (pp. 272–285). Zed Books.
- Friedman, M. (1953). The Case for Flexible Exchange Rates. In *Essays in positive economics* (pp. 157–203). University of Chicago press.
- Friedman, M. (1968). The Role of Monetary Policy. The American Economic Review, 58(1), 1–17.
- Habermeier, K. F., Kokenyne, A., Veyrune, R. M., & Anderson, H. J. (2009). Revised System for the Classification of Exchange Rate Arrangements. *IMF Working Papers*, *2009*(211). https://doi.org/10.5089/9781451873580.001.A001
- Helleiner, E. (1994). *States and the Reemergence of Global Finance: From Bretton Woods to the 1990s*. Cornell University Press. https://www.jstor.org/stable/10.7591/j.ctt1tm7jgx
- Kaminsky, G. L., & Reinhart, C. M. (1999). The Twin Crises: The Causes of Banking and Balance-Of-Payments Problems. *The American Economic Review*, *89*(3), 473–500.
- Krugman, P. (1979). A Model of Balance-of-Payments Crises. *Journal of Money, Credit and Banking*, *11*(3), 311–325. https://doi.org/10.2307/1991793
- Krugman, P., & Taylor, L. (1978). Contractionary effects of devaluation. *Journal of International Economics*, *8*(3), 445–456. https://doi.org/10.1016/0022-1996(78)90007-7
- McCombie, J. S. L., & Thirlwall, A. P. (1994). Economic Growth and the Balance-of-Payments Constraint. Palgrave Macmillan UK. https://doi.org/10.1007/978-1-349-23121-8
   Mitchell, W., Wray, L. R., & Watts, M. (2019). Macroeconomics. Bloomsbury Publishing.

- Obstfeld, M. (1996). Models of currency crises with self-fulfilling features. *European Economic Review*, 40(3), 1037–1047. https://doi.org/10.1016/0014-2921(95)00111-5
- Rey, H. (2015). Dilemma not Trilemma: The Global Financial Cycle and Monetary Policy Independence (Working Paper No. 21162; Working Paper Series). National Bureau of Economic Research. https://doi.org/10.3386/w21162
- Serrano, F. (2003). From "static" gold to the floating dollar. *Contributions to Political Economy*, 22(1), 87–102. https://doi.org/10.1093/cpe/22.1.87
- Shin, H. S., & von Peter, G. (2022). Overcoming original sin. *Journal of Globalization and Development*, *13*(2), 411–433.
- Temin, P. (1991). Lessons from the Great Depression. MIT Press.
- Vernengo, M. (2000). What Do Undergrads Really Need to Know About Trade and Finance. In R. Baiman, H. Boushey and D. Saunders (Eds.), *Political Economy and Contemporary Capitalism*. Armonk, NY: Sharpe.
- Vernengo, M. (2021). The Consolidation of Dollar Hegemony After the Collapse of Bretton Woods: Bringing Power Back in. *Review of Political Economy*, *33*(4), 529–551. https://doi.org/10.1080/09538259.2021.1950966
- Vernengo, M. (2023). A Framework to Interpret Macroprudential Policies in an Era of Financialization. In E. P. Caldentey (Ed.), *Financial openness, financial fragility and policies for economic stability. A comparative analysis across regions of the developing world.* (pp. 305–323). Economic Commission for Latin America and the Caribbean (ECLAC).

Vernengo, M., & Pérez Caldentey, E. (2020). Modern Money Theory (MMT) in the Tropics: Functional Finance in Developing Countries. *Challenge*, *63*(6), 332–348. https://doi.org/10.1080/05775132.2020.1747729

- Vernengo, M., & Rochon, L.-P. (2000). Exchange Rate Regimes and Capital Controls. *Challenge*, *43*(6), 76–92.
- Vernengo, M. & Silva, C. S. (2010). Beyond the Bipolar Consensus: An Intermediary Solution. In
  H. Bougrine and M. Seccareccia (Eds.), *Introducing Macroeconomic Analysis*, Emond
  Montgomery Publications: Toronto.