

Does the Fed Care About the Rest of the World?¹

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The United States is an open economy. This is something that its central bank, the Federal Reserve, has had to take into account over its century-long history.

But this simple observation in turn points up a series of not-so-simple questions. To what extent *has* Federal Reserve policy been influenced by international considerations? To what extent *should* Federal Reserve policy be influenced by international considerations? What does a century of history tell us about how and under what circumstances Federal Reserve policy is influenced by international considerations? What are the implications of this history for how Federal Reserve policy should and will be influenced by international considerations going forward?

This is not the first paper on international aspects of monetary policy written for an NBER conference. There is the NBER conference volume edited by Gali and Gertler, *International Dimensions of Monetary Policy*, published in 2010. Friedman and Schwartz's *Monetary History of the United States*, which touches more than incidentally on the role of international factors in Fed decision making, was a publication of the NBER. My personal favorite, William Adams Brown's *The International Gold Standard Reinterpreted*, published by the Bureau in 1940, devotes successive chapters to the United States and its central bank. This short paper differs from these predecessors in that it attempts – as charged – to encompass a century of Federal Reserve history. Given its brevity – again, as charged – it cannot begin to approach these predecessors in rigor or detail.

My argument is that international considerations have repeatedly played a consequential role in the conduct of Federal Reserve policy. This thesis will, I think, challenge the presumptions of many contemporary economists, not least many in this room. They are accustomed to thinking about Fed policy in terms of the institution's dual mandate, which refers to price stability and maximum employment but not to the exchange rate or other international economic or financial variables. They will be used to viewing Fed policy through the lens of the Taylor Rule, whose arguments are inflation and the output gap, and in which the exchange rate and other international variables matter only insofar as they influence inflation and the output gap – which is to say, not very much. Even in these extraordinary times, when we have been passing through not just a U.S. economic and financial crisis but a global economic and financial crisis, the Fed, when making interest-rate decisions, undertaking asset purchases and providing forward guidance, refers to inflation, employment and, occasionally, other developments at home. Only rarely does it comment on the value of the dollar or the U.S. current account deficit.

In fact, this view of the conventional state of affairs is heavily, arguably *too* heavily, shaped by the distinctive and peculiar circumstances of the last three decades, when the influence

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of international considerations on Fed policy has been limited. International considerations played a larger role in earlier phases of the institution's history. It is tempting to cite this as yet another instance of the "pendulum theory" where the preoccupations shaping policy swing from one extreme to the other: from significant attention to international considerations in the Fed's first two decades to relative inattention to such factors in the two-plus decades that followed, back to renewed attention to international aspects of monetary policy in the 1960s, and back finally in the recent period to benign neglect of the international dimension.² This is not to imply that there is anything mechanical or predictable about these swings. But this longer perspective is a reminder that just because the Fed has not attached priority to international aspects of monetary policy in the recent past is no guarantee that it will not do so in the future.

1. International from the Start

The founding of the Fed is commonly portrayed in terms of domestic financial-stability considerations. Prior to 1914 financial crises were frequent. Interest rates spiked in the planting and harvest seasons, giving rise to financial stringency and instability. There was dissatisfaction with how market participants had managed the most recent crisis in 1907. The Fed was therefore created "to furnish an elastic currency...and for other purposes" in the words of the Federal Reserve Act of 1913. Importantly, the Act did nothing to change the international dimension of American monetary policy. The dollar was still convertible exclusively into gold at \$20.67 a troy ounce, as it had been since the Gold Standard Act of 1900. Federal Reserve Banks were now obliged to hold gold in the amount of 40 per cent of their notes (and gold and other eligible assets equal to 35 per cent of deposits and reserves) and to pay out gold at this price.

But this is only part of the story. Political agreement to create a new institution required building a coalition. In addition to those desiring a more elastic currency, there were exporters, importers and financiers interested in establishing a market in dollar-denominated trade credits and, more generally, in elevating the international role of the dollar. Attaining these goals required creating a central bank to provide liquidity to international markets.³ Before World War I, the dollar and New York played little role in financing international trade, including the trade of U.S. importers and exporters. A U.S. coffee roaster seeking to import beans from Brazil would request a letter of credit from his bank, and that bank in turn would arrange a letter of credit, denominated in sterling, with its London correspondent because that was the only instrument that the Brazilian exporter would accept. Taking payment in dollars was unattractive, given the volatility of U.S. markets. Because U.S. banks were prohibited from branching abroad, converting dollar payments back into local currency was not straightforward.

This state of affairs left the New York financial community unable to compete with London for an important source of business. It put U.S. importers and exporters at a competitive disadvantage from having to pay two commissions, one to their local bank and one to its London correspondent, in order to arrange trade credit. Paul Warburg, the German-born financier who was heavily involved in drawing up the blueprint that became the Federal Reserve Act, was familiar from his career in the import-export and banking business in Hamburg and London with the advantages that European economies derived from markets in local currency trade

² Reinhart and Rogoff (2013) similarly offer a pendulum theory of Fed policy with successive swings from concern with financial stability to concern with price stability and, more recently, back to financial stability.

³ Broz (1997) emphasizes the role of these interests in the foundation of the Fed.

acceptances (the contemporary name for trade credits). The Fed was designed, in part, to address this U.S. deficiency. It was internationally oriented from the start.

The Federal Reserve Act thus authorized U.S. banks to branch abroad to originate foreign business. And one of the first initiatives of the new central bank was to take steps to foster a market in trade acceptances.⁴ A key challenge in creating a new financial market is developing liquidity. Without a minimum level of transactions the market will lack liquidity, but if it lacks liquidity no one will transact. This was the chicken-and-egg problem that the Fed, seeking to foster a market in acceptances, faced in the 1920s. It responded by stepping in as buyer and liquidity provider of last resort, purchasing dollar acceptances at or close to the prevailing price when private demand was lacking. For much of the decade it was the dominant purchaser. These efforts succeeded in that New York and the dollar matched and in some years surpassed London and sterling as a source of credit for global trade. This was a startling change from before 1914.

In addition to underscoring the early Fed's international orientation, this episode had two further features relevant to modern central banking. First, "credit easing" – intervention in credit markets with liquidity problems – while a controversial aspect of recent policy is not at all unprecedented. Second, success was fleeting. When international trade declined in the 1930s, the market in trade acceptances declined even more rapidly. The other investors who the Fed had sought to attract by providing liquidity and stabilizing pricing never entered the market in any number. It is tempting to speculate that the Fed's overwhelming buy-side dominance crowded them out. When the central bank, with bigger fish to fry, curtailed its involvement in the 1930s, the market collapsed.

The Federal Reserve Bank of New York was the most active participant in the dollar acceptance market, not surprisingly since the bulk of acceptance business was transacted in New York. The New York Fed similarly took the lead on the new central bank's other international policy initiative, namely, reconstruction and maintenance of the international gold standard. In the spring and summer of 1924, the New York bank cut its discount rate by a cumulative 150 basis points (Figure 1 below) in order to help the Bank of England resume gold convertibility at the prewar parity.⁵ To make its new rate effective, it purchased treasury securities, in the course of so doing helping to establish the efficacy of open market operations. Federal Reserve Bank credit outstanding rose by more than 50 per cent between June and December 1924. After importing gold for 51 consecutive months from December 1920 to April 1925, the U.S. exported gold instead. In January 1925 the Federal Reserve agreed to advance the British Treasury an additional \$200 million in gold while encouraging a banking syndicate led by J.P. Morgan to provide a \$100 million line of credit.

All this reflected the view of Benjamin Strong, the influential governor of the Federal Reserve Bank of New York. Strong saw exchange rate instability as having a "withering effect" on international trade, and international trade as key to U.S. prosperity.⁶ Strong's initiative was criticized by others in the System, for example Adolph Miller, founding governor of the System

⁴ Details are in LaRoche (1993) and Eichengreen and Flandreau (2012).

⁵ See Clarke (1967) on the international motivations for Strong's 1924-5 low interest rate policy.

⁶ The quote is from Strong's testimony to the U.S. House Committee on Banking and Currency in 1927.

and previously professor at the University of California, Berkeley.⁷ Miller argued that monetary policy was inappropriately loose for domestic circumstances. Along with others, he warned that it was fueling real estate bubbles across Florida and from Detroit to Chicago. The consequences when the bubble burst, Miller warned, would not be pretty. This was the first time in the history of the System when there was a full-blown controversy over the relative importance of domestic and international objectives.

The second time was 1927, when Strong again proposed cutting interest rates, this time in order to help Britain stay on the gold standard.⁸ In July eight Federal Reserve Banks sided with New York, creating a majority for rate reductions. Miller would have objected, but he was on summer vacation in California. When he returned he mounted a strenuous attack on the policy as inappropriate for an economy already recovering from a brief recession. Monetary historians have been similarly critical, suggesting that a policy looser than appropriate from a domestic standpoint helped to fuel the commercial real estate boom and Wall Street run-up of the late 1920s, both of which came down with a crash.⁹ Better, they conclude, would have been for the Fed to keep its eye on the domestic ball. That is a normative judgment; the positive statement is that international considerations played an important role in the conduct of policy in this formative period. If the point is overlooked, it is perhaps because economists like those in this room are used to thinking of international considerations as constraining monetary policy – as central banks being forced to keep interest rates higher than they might wish in order to defend a currency peg – whereas the Fed was unconstrained in the 1920s, owing to ample reserves and a strong balance of payments, and international considerations manifested themselves in decisions to keep interest rates lower than otherwise.

The traditional constraint then emerged with a vengeance in October 1931. The depreciation of sterling following Britain's departure from gold on September 21st was a shock to financial markets. The dollar weakened against the continental European currencies, and gold losses mounted rapidly. In part this reflected worries about U.S. competitiveness as it became clear that some two dozen other countries were preparing to follow Britain. Even more important was psychological contagion – the wake-up-call effect – since if one reserve-currency country could depreciate its currency it was no longer inconceivable that another might follow.

At this point the Fed made its priorities unambiguously clear. On October 8th the directors of the New York Fed voted to raise the discount rate by 100 basis points and then a week later by another 100 basis points. Other Reserve Banks followed. This made speculating against the dollar more costly. The wisdom of the decision can be questioned. But it clearly privileged exchange rate stability over price stability, financial stability and economic stability.

The final attack on the dollar came in February-March 1933 in the interregnum between the Hoover and Roosevelt Administrations. Worries that the new president might devalue – something that only he, together with the Congress, and not the Federal Reserve could decide – encouraged capital flight.¹⁰ The decision in February 1933 to let Henry Ford's Union Guardian

⁷ Miller's views are described by Timberlake (2008). Among the others who were critical of Strong's policy was Commerce Secretary Herbert Hoover.

⁸ A good source for those wishing more detail is again Clarke (1967).

⁹ As described in Meltzer (2002), p.14 and elsewhere.

¹⁰ As described by Wigmore (1987).

Trust Company go under – Treasury Secretary Ogden Mills’ Lehman Bros. moment – ignited a nationwide banking panic.¹¹ At this point there was essentially no choice but to embargo gold exports, close the banks and regroup. On his first day in office FDR invoked the Trading with the Enemy Act for the necessary authority.¹²

This was the initial step down the path that brought to a close the first era in which international considerations played a prominent role in U.S. monetary policy. FDR took the next step in April, making clear that abandonment of the gold standard was permanent – that the Secretary of the Treasury would no longer have the discretion to issue licenses to export gold. In October he handed authority to intervene in the gold and, in effect, foreign exchange markets to the Reconstruction Finance Corporation, presumably because the Fed might be less than compliant. In January 1934 he stabilized the price of gold at \$35 an ounce.¹³

This inaugurated a new era in which international considerations played little role in U.S. monetary policy. At its new higher price, the U.S. now possessed gold in abundance. Devaluation enhanced the country’s international competitiveness. As the outlines of World War II became visible, foreign capital fled in growing volumes to American shores. With the problem now not gold and capital outflows but large gold and capital inflows, U.S. policy was unconstrained by international factors. The only question was what agency of government would be responsible for the conduct of policy.

2. On the Horns of the Triffin Dilemma

Toward the end of the 1930s, the Fed sought to regain the ability to influence money and credit markets from the Treasury, which had assumed the dominant role through its gold purchase and sterilization programs. This campaign was unsuccessful: with the outbreak of World War II the Fed was drafted into pegging rates on Treasury bills at 0.375 per cent and Treasury bonds at 2.5 per cent. The practice continued, despite growing Fed resistance, for two years following the war. Controversies over interest-rate pegging are hardly new, in other words.¹⁴ This long period of fiscal dominance then came to an end with the Accord of 1951.

Recent scholarship (Romer and Romer 2002a) portrays monetary policy in the 1950s in a favorable light. More pertinent from the standpoint of this paper, it portrays monetary policy as focusing on inflation and, to a lesser extent, temporary deviations from full employment. There is little emphasis or even mention in the Minutes of the Federal Open Market Committee of the dollar exchange rate, the U.S. balance of payments, or of the impact of U.S. monetary policy on the rest of the world.¹⁵ There is, of course, mention of exports and imports, since these variables were seen by members of the committee as containing information useful for forecasting the future paths of inflation and the output gap.¹⁶ Beyond that, however, international factors do not appear to have impinged on the committee’s deliberations. There was the Bretton Woods

¹¹ On the role of the Guardian Trust failure in the 1933 banking crisis, see Kennedy (1973). A first-hand account of the episode was later provided by the acting Comptroller of the Currency, Francis Gloyd Awalt (1969).

¹² If you are reminded of Gordon Brown invoking the UK Anti-Terrorism Act to prevent the repatriation of Icelandic assets in Britian, then you are not alone.

¹³ At this point responsibility for gold purchases was handed over from the RFC to the Fed.

¹⁴ Eichengreen and Garber (1991) provide details.

¹⁵ Available on line at <http://fraser.stlouisfed.org/publication/?pid=677..>

¹⁶ If we are permitted to put modern terminology in their 1950s mouths.

commitment to continue stabilizing the price of gold at \$35 an ounce and pay out gold on demand to official foreign creditors, but no matter. This was the period of the dollar shortage, when the merchandise trade balance was in strong surplus.¹⁷ Gold held by the U.S. monetary authorities far exceeded the foreign liabilities of the Fed, U.S. commercial banks and the U.S. government.¹⁸ The situation was not much different in this sense from the late 1930s.

This began to change around 1960. 1960 was the year when U.S. foreign monetary liabilities first threatened to exceed U.S. gold reserves. It was when Robert Triffin published the first of a series of books in which he warned that if the dollar remained the only source of global liquidity other than gold, a crisis of confidence in the greenback would ultimately develop.¹⁹ It was when investors worried that John F. Kennedy, if elected president, might follow in FDR's footsteps and devalue the dollar to get the economy "moving again" (to quote his campaign literature).

The expectation that JFK would devalue proved erroneous, but the other worries were not without foundation. The question is how much influence they had on U.S. monetary policy. It is hard to offer a definitive answer, since several different developments affected policy simultaneously. Compared to the 1950s, inflation accelerated and grew more erratic. The goals of Federal Reserve policy shifted from an overarching emphasis on inflation to greater attention to unemployment and economic growth. In another Romer and Romer (2002b) paper, two of our conveners argue that this period saw a revolution in ideas in which policy makers forgot much of what they had learned about the natural rate. They overestimated potential output and succumbed to the temptation to use monetary policy to target real variables. William McChesney Martin believed that the Fed had an obligation to help keep federal debt service at manageable levels, which constrained monetary policy as budget deficits grew. Even if the Fed was increasingly concerned and therefore responsive to gold losses and other international variables, it might nonetheless be hard to detect that concern amongst these other changes.

Bordo and Eichengreen (2008) make an attempt. They conclude that the Fed paid considerable attention to balance-of-payments considerations in the first half of the 1960s, tightening when it grew worried by the pace of gold outflows. In addition to his concern with debt service, Chairman Martin was a firm believer in maintenance of the gold peg. Already in 1960, the Fed abandoned its traditional "bills-only policy" (the policy of buying only short-term Treasury debt) in order to let short rates rise, attract capital flows and strengthen the balance of payments.²⁰ The Minutes of the FOMC regularly refer to balance-of-payments considerations.

¹⁷ "Dollar shortage" refers to the difficulty experienced by other countries in acquiring, whether through exporting or foreign borrowing, the dollars they required in order to finance merchandise imports from the United States. A classic account is Kindleberger (1950).

¹⁸ See Bordo (1993) for data and discussion.

¹⁹ The reference is to Triffin (1960). Triffin's observation was that with the expansion of the global economy there would be growing demands for international liquidity. If dollar denominated claims, and specifically U.S. treasury bonds, were its only source on the margin, then U.S. foreign liabilities would eventually come to exceed U.S. gold reserves, calling into question the ability of the U.S. authorities to convert them into gold at a fixed price of \$35 an ounce and creating the crisis of confidence referred to in the text. Alternatively, if the authorities took steps to limit U.S. current account deficits and foreign lending, the rest of the world would be starved of liquidity and international transactions generally would suffer. Hence the dilemma.

²⁰ Solomon (1977), p.36. This led to the period starting in 1961 in which the Fed cooperated with the Treasury in Operation Twist (in another interesting precedent for recent policy), attempting to push down long rates to stimulate investment while elevating short rates to attract capital flows and strengthen the balance of payments. Kennedy

Many of these statements, in an echo of the 1920s, came from President of the Federal Reserve Bank of New York, now Alfred Hayes.²¹ A count of references in the minutes and memoranda of the FOMC, as available from 1950 through March 1976, normalized by pages, shows mention (and presumably concern) with the balance of payments mounting in the first half of the 1960s and peaking around mid-decade. See Figure 2.²²

Mention is not the same as action, so Bordo and Eichengreen attempt to identify the role of those mentions (and that concern) in the FOMC's policy decisions. They identify 7 occasions when policy action was primarily motivated by international considerations and 23 when it was motivated by a combination of domestic and international factors. The disproportion between 23 and 7 suggests that only rarely were international factors an overriding consideration but that they generally combined with domestic factors to prompt policy action. That there was a total of 30 such instances suggests that international considerations were not inconsequential. The majority of these instances were in the period through 1965.²³ When Bordo and Eichengreen calibrate a Taylor Rule using Orphanides' (2003) real-time data on the output gap, we find that policy was tighter than would be expected on the basis of inflation and the output gap alone in the first half of the 1960s.²⁴ This suggests that policy makers were also responding to other considerations, including we would argue the balance of payments, that are not arguments of the textbook Taylor Rule. This finding that policy was even tighter than expected is striking, given the other influences, detailed by Romer and Romer, making for a bias toward loosening.

What changed between the first and second halves of the decade? For one thing, primary responsibility for balance-of-payments management was assigned to the Treasury, in contrast to the preceding period when it had been a shared responsibility of Treasury and Fed. For another, the Interest Equalization Tax and other measures tantamount to capital-flow taxes and controls gave the central bank some policy room for maneuver.²⁵ Whether this was good or bad is debatable. The acceleration of inflation and mounting political pressure on Chairman Arthur

Administration officials complained that the Fed was more concerned to raise short rates to strengthen the balance of payments than to push down long rates to strengthen the economy. Walter Heller, Chairman of the Council of Economic Advisors, asked out loud in a memo to the president "whether we're getting the twist or the screw." Kettl (1986), p.100. Another innovation of this period was the establishment of standing currency swap lines between the Fed and foreign central banks, something that would receive renewed attention starting in 2008.

²¹ As emphasized by Meltzer (2008).

²² Where dots are missing (as in the first half of the 1950s) there were zero mentions. Normalizing by pages adjusts for the fact that the minutes and memoranda tended to grow longer with the passage of time, although raw counts show basically the same picture. In principle, it should be possible to extend this analysis beyond 1976 when transcripts of FOMC meetings become available. However, the transcripts are sharply discontinuous with the minutes in terms of comprehensiveness; in addition, pagination and font size are quite different, and the pagination and format of the transcripts themselves are not constant over time. This makes trends in both raw and per-page counts more difficult to interpret. I have resisted the temptation. The outlier in mid-1963 is from a meeting in a period of heightened concern about dollar stability (Eichengreen 2000). The System had recently drawn its full \$150 million swap line with the Bundesbank, and dollar weakness had been a prominent topic at the most recent monthly meeting of the Bank for International Settlements, where the System had been represented by Charles Coombs of the Federal Reserve Bank of New York.

²³ Although there were crisis episodes in 1967-8 and 1971 when international considerations were again invoked.

²⁴ Taylor (1999) agrees that policy was unusually tight in the early 1960s. Romer and Romer (2002b), p.57 similarly make the point that balance-of-payments considerations prevented the Fed from being as expansionary as it would have otherwise wanted in the first half of the 1960s.

²⁵ U.S. capital controls in this period are critically assessed by Meltzer (1991).

Burns starting in 1970 suggests that there would have been benefits to the Fed from the external constraint under which it operated in the first half of the 1960s.

3. After the Fall

The 1970s was a decade of mixed signals and uncertainty about Fed policy. Unconstrained by the exchange rate, or for that matter much else, monetary policy drifted. This changed in 1977 when Congress amended the Federal Reserve Act to include the Dual Mandate and in 1979 when Paul Volcker succeeded G. William Miller and made inflation control a priority. From 1983 the Fed funds rate closely tracked the Taylor Rule.²⁶ The touchstones of policy became deviations of inflation from low single digits and fluctuations in the output gap. One finds periodic mention of international considerations in the minutes and transcripts of the FOMC – a gradual upward trend in references to the exchange rate, with a spike in 1971 and again in 1973 with the two-step collapse of Bretton Woods (Figure 2) – but it is clear that these variables mattered principally insofar as they were relevant to the future evolution of inflation and the output gap.

A combination of factors explains why international factors were less influential than in the 1920s, 1930s and 1960s. After the collapse of Bretton Woods, there was no longer an exchange rate or gold peg to defend. The 1977 amendment gave the Fed a mandate to pursue price stability and full employment but said nothing about the exchange rate, balance-of-payments or international financial stability. 1970s experience had taught that a Federal Reserve that failed to achieve price stability would lack the credibility to successfully pursue other economic and financial goals. The U.S. economy was large and closed enough that the Fed could afford to act to a first approximation like the central bank of a closed economy. The U.S. share of world GDP peaked in 1985 at 33 per cent, this being when the Soviet economy was in decline and China's growth spurt had just begun.²⁷ The U.S. trade/GDP ratio was rising but more slowly than in the subsequent quarter century. The explosive growth of international capital flows and deepening of international financial linkages was yet to come. All this permitted the Federal Reserve to formulate and implement monetary policy more or less like a closed-economy central bank.

There were exceptions, of course. Volcker's inflation-control strategy itself had an international dimension; the fact that higher interest rates meant a stronger dollar made for sharper and less inertial disinflation through the channel of lower import prices.²⁸ The Fed's decision to back off from a very tight monetary policy in 1982 may have been influenced by the outbreak of the Latin American debt crisis and the threat this posed to the solvency of major U.S. banks.²⁹ Central bank governors as well as finance ministers were party to the Plaza Agreement

²⁶ The observation of policy in subsequent years of course being what led the eponymous Professor Taylor to develop his rule.

²⁷ One should be careful about these comparisons, since they depend on the exchange rate used to value transactions in dollars; 1985 was when the dollar exchange rate was at a local peak. At purchasing power parity the share is more like 23 per cent and reaches another local peak in 1999. Economists will of course debate which valuation method is more relevant when thinking about the conduct of monetary policy.

²⁸ As argued for example by Sachs (1985). Nelson (2005) argues that the FOMC had something similar in mind when it tightened in 1978.

²⁹ The onset of recession in 1981-2 provides another explanation for the change in monetary policy.

designed to stem the rapid rise of the dollar exchange rate in 1985.³⁰ This led to coordinated foreign exchange market intervention and, in March 1986, coordinated discount rate reductions. Starting in 1986, G7 central bank governors met regularly, together with their finance-ministry counterparts, on the sidelines of the spring and fall meetings of the IMF and World Bank and less formally, including bilaterally, on other occasions.³¹ This facilitated information exchange. It also facilitated coordinated foreign-exchange-market intervention, frequently before the mid-1990s and sporadically thereafter: in June 1998 when the yen depreciated in the wake of the Asian crisis, in September 2000 when the euro weakened reflecting uncertainty about the policies of Europe's new central bank, and in March 2011 in response to the rise of the yen induced by the Fukushima Earthquake and the liquidation of foreign assets by Japanese insurance companies.³²

The global economic and financial crisis is another reminder that there are instances when the Fed cannot afford to neglect the impact of its policies on conditions abroad or the implications of conditions abroad for its policies. In October 8th, 2008, in the wake of Lehman Bros. failure, it coordinated a reduction in the Fed funds rate with the lending rates of the European Central Bank, Bank of England, Bank of Canada, Swiss National Bank and Swedish Riksbank. Irwin (2013), with a little exaggeration, calls this the “first globally coordinated easing in history.” Unusually, the Fed issued a joint statement together with these other central banks announcing the action. I interpret it as clear acknowledgment that coordinating policy with foreign central banks might produce better outcomes under the circumstances.

In addition, the Fed arranged dollar swap lines with 14 foreign central banks starting in December 2007 when the subprime crisis intensified. It renewed five of those lines, notably that with the ECB, in May 2010.³³ These swap facilities were designed to alleviate financial problems abroad and limit the blowback to U.S. markets if foreign banks, unable to secure dollar funding, were forced to liquidate their holdings of U.S. securities. They acknowledged that what happens abroad doesn't stay abroad and, while not modifying monetary policy to take this fact into account, that the Fed must develop ancillary policy instruments to address strains in foreign dollar markets. The Board of Governors in justifying the practice to a critical Congress noted that foreign currency swap lines might also be helpful for addressing financial strains should U.S. institutions experience a shortage of foreign currency-denominated liquidity, although in the most recent instance swaps were not activated for this purpose.³⁴

4. Back to the Future

The questions are whether international considerations will have a more powerful impact on the U.S. economy in the future and how if at all the Federal Reserve should modify the formulation and conduct of policy to take this into account. I posit three trends that will heighten the impact of international variables on the U.S. economy. First, I assume that the U.S. will

³⁰ Also the fiscal measures to which the U.S. committed were for the Congress and the Executive, not the Fed.

³¹ In addition, of course, there are the bi-monthly meetings of senior central bank officials at the BIS.

³² Where, to be clear, these intervention operations are decided in consultation by the Treasury and the Fed. Such operations are typically sterilized with the goal, sometimes questioned by academics, of moving the dollar exchange rate without also moving the monetary base. On the effectiveness of sterilized intervention see inter alia Rogoff (1984).

³³ There had also been swap facilities earlier, for example after 9/11.

³⁴ See Board of Governors (2013).

continue to grow more open to international trade and financial transactions. To be sure, this assumption is contestable. While technological progress works inexorably to reduce the costs of international transactions, openness depends not just on technology but also on policy, which has been known to push in the other direction.³⁵ But bear with me.

Second, I assume that emerging and frontier markets will continue to grow more rapidly than mature economies like the United States, so that the U.S. will come to account for a progressively declining share of the global economy. Again, there is nothing inevitable about this. Whether catch-up and convergence continue will depend on policies. But recent experience makes this assumption a reasonable starting point.

Third, I assume that the dollar will lose its monopoly as funding currency for international banks and as the all but exclusive vehicle and currency of denomination for international transactions.³⁶ This is not to suggest, as in the film *Looper*, that we will wake up tomorrow and discover that all transactions are conducted in renminbi.³⁷ Movement toward other funding and vehicle currencies will be gradual. The end result is apt to be one in which the dollar shares its international role with other national units, not one in which it disappears from the international stage. But there is no fundamental reason why the U.S. should be the only country with deep and liquid financial markets open to the rest of the world. The logic of convergence suggests that the U.S. alone will not be able to provide safe and liquid assets on the scale required by an expanding global economy. It follows that U.S. banks and firms will rely more on foreign currency funding and liquidity in the future than the recent past.³⁸

The common implication of these assumptions is that shocks to the exchange rate and balance of payments will have a larger impact on the U.S. economy and that the implications may extend beyond those for inflation and the output gap. Dollar appreciation which creates competitiveness problems for the traded-goods sector is more of a problem the larger the share of U.S. output and employment that is exposed to international competition. If dollar appreciation causes U.S. firms to exit the market and they then face fixed costs of reentering (as in Baldwin and Krugman 1989), then transitory currency swings may have permanent welfare-reducing effects. This is one explanation for U.S. enthusiasm for the Plaza Agreement. It is an explanation for why other open economies adjust policy in response to movements in the exchange rate. It is an explanation for “fear of floating” in emerging markets (Calvo and Reinhart 2002).

Related is the tendency for large capital inflows, in addition to pushing up the exchange rate, to put unwelcome pressure on housing and other financial markets. Capital inflows into the United States associated with “global imbalances” in the period leading up to the Subprime Crisis are an illustration of the problem that hits close to home (as it were). But the volume of inflows and impact on local markets can be larger the smaller and more open the economy is relative to global markets. At the time of writing, New Zealand is a case in point of a country

³⁵ Notice also the ancillary assumption, that technological progress works to differentially reduce the cost of international relative to domestic transactions, which I would argue is plausible for a number of reasons.

³⁶ See the discussion in Shin (2012).

³⁷ *Looper*, as film buffs know, is set in 2044. In the original script, the protagonist planned to move to Paris “in the future.” When the director found filming in Paris prohibitively expensive, the future was shifted to Shanghai, the Chinese distributor having offered to pay for a crew to film there – see <http://www.imdb.com/title/tt1276104/trivia>.

³⁸ This is argued at more length in Eichengreen (2011).

that is dealing with these kinds of housing and asset market concerns due to exchange-rate and capital-flow pressures.³⁹ It is tempting to point to Ireland and Spain before 2009 as additional examples, but their cases are special for obvious (euro-related) reasons. More generally, a variety of small open economies, and a number of middle-sized countries like Brazil, have complained about the adverse impact of policies abroad on their economies, operating through these channels, and have adjusted monetary and other policies to address them.

Finally, as global markets grow relative to the U.S. and international finance is provided in a wider range of currencies, U.S. banks and firms will rely more on foreign currency funding. As they accumulate liabilities denominated in foreign currency, there may then be growing reluctance to let the dollar exchange rate move for fear of the destabilizing balance sheet effects. Those adverse balance sheet effects are another popular explanation for fear of floating and for why smaller, more open economies sometimes find it hard to commit to regimes of flexible inflation targeting that require benign neglect of the exchange rate.

Assume, as a result of the changes posited above, that the impact of the exchange rate and capital flows more important. Does it follow that the Fed will have to modify the formulation and conduct of monetary policy to take them into account?

The answer, as with many economic questions, is “yes and no.” If excessive reliance on foreign currency funding causes exchange rate movements to have destabilizing balance sheet effects, then the first best response is not to use monetary policy to prevent those movements but to strengthen prudential supervision and regulation of banks and governance of corporations to prevent excessive exposure to this form of balance sheet risk from arising in the first place.⁴⁰ If capital inflows place worrisome upward pressure on housing and other asset markets, then the first best solution is to strengthen lending standards, raise margin requirements, and to otherwise address problems in housing and asset markets directly. Second best will be to address the capital inflows that are the proximate source of the problem by applying inflow taxes and, inter alia, tightening fiscal policy.⁴¹ That makes monetary policy no more than third best. And if the issue is permanent damage to traded-goods sectors because temporary exchange rate movements have permanent effects, then the first best response is to eliminate the financial imperfections forcing incumbents to exit or to use tax and other policies to address their problems directly.⁴²

Listeners will detect echoes here of the “lean versus clean debate.”⁴³ The question in that context was whether central banks should lean against asset bubbles or leave it to other agencies of government – supervisors, regulators, those responsible for the conduct of fiscal policy – to address those problems using other instruments better suited to the task. It was whether, even with less than full confidence that those other agencies of government were up to it, central banks could afford to shun preemptive action and clean up after any resulting damage with only limited repercussions. It would be presumptuous to assert that recent events have decided the

³⁹ See the commentary in Wheeler (2013).

⁴⁰ Mishkin and Savastano (2001) is an early statement of the tradeoff between the strength of supervision and regulation of balance-sheet mismatches on the one hand and policies of benign neglect of the exchange rate on the other.

⁴¹ Which should put downward pressure on interest rates, discouraging carry-trade-motivated inflows, and not incidentally put downward pressure on the exchange rate.

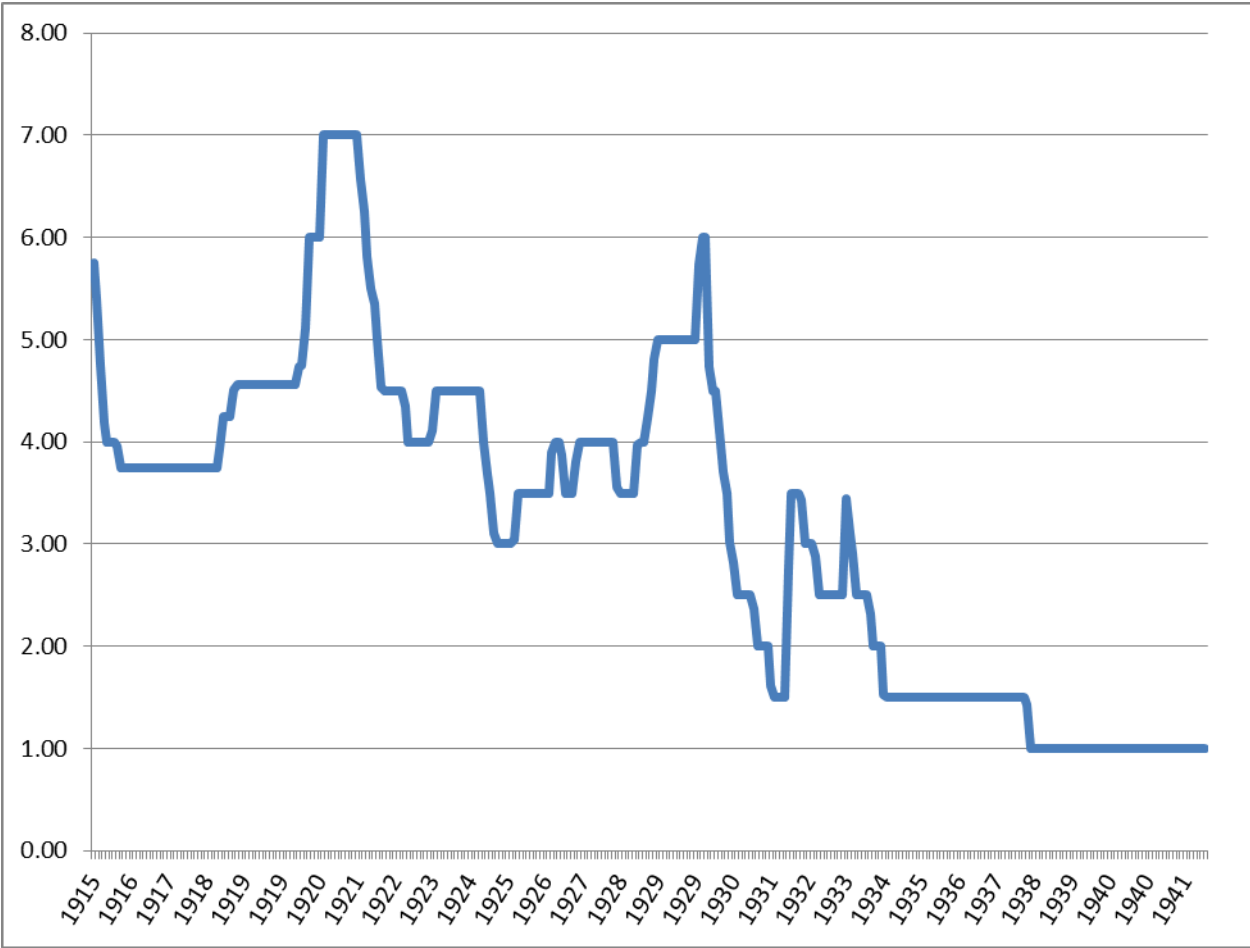
⁴² Assuming that the latter are WTO compliant.

⁴³ See White (2009) and Mishkin (2011).

question in favor of one view or the other. But there is no question that those events have shifted the balance. They suggest that central banks should think harder about the need to take preemptive action both because other agencies of government may not be doing their part and because cleaning up afterwards can be very costly.

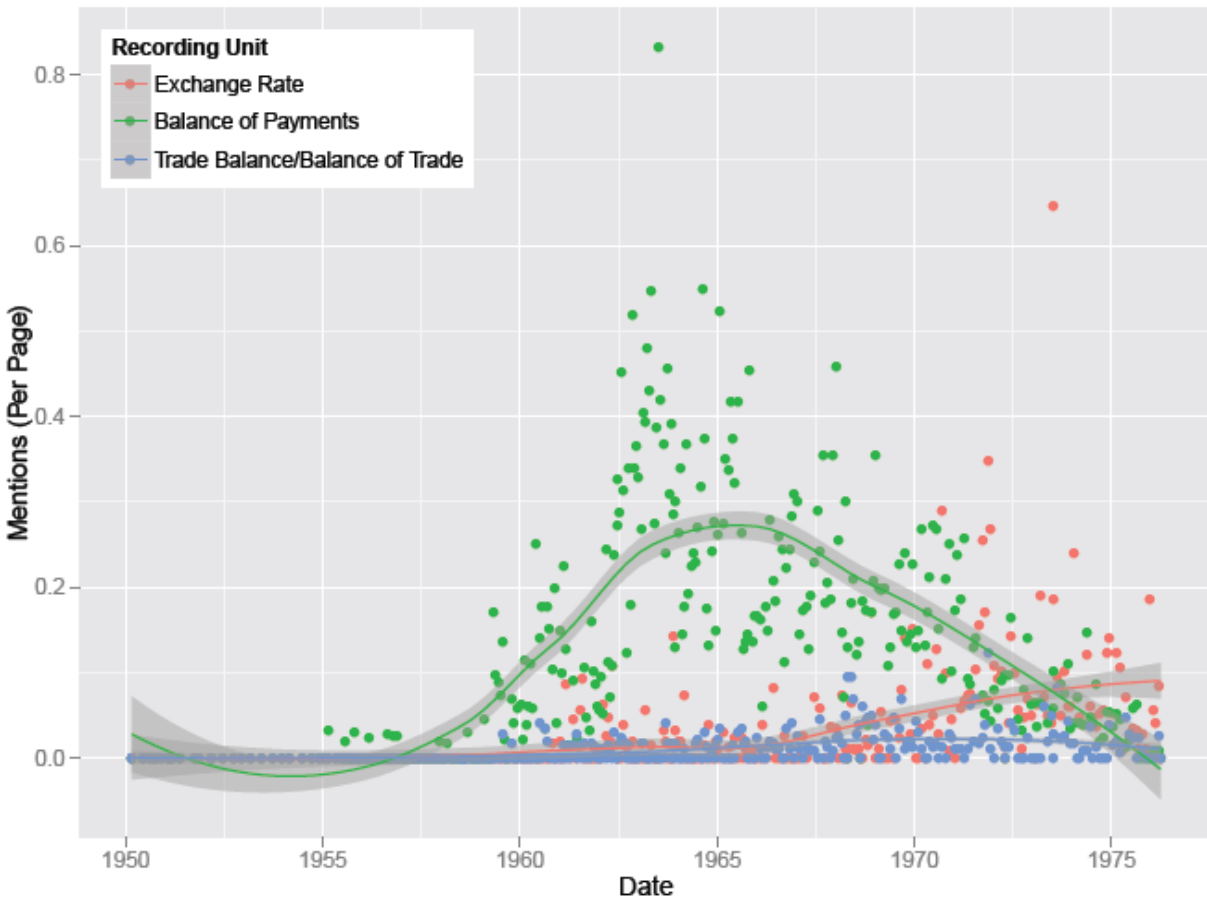
The implication is that precisely the same issues will arise, with growing intensity over time, in connection with movements in exchange rates and capital flows. That, in turn, will create new policy dilemmas for the Fed.

Figure 1. Discount Rate, Federal Reserve Bank of New York



Notes: Data from NBER Macroeconomy Data Base (series 13009).

Figure 2. References to Balance of Payments and Related Terms in the Minutes



Notes: Mentions for each term are taken from minutes and memoranda of discussion for all meetings and telephone conferences of the Federal Open Market Committee from 1950 through March 1976. Data is fit with a 2nd degree local polynomial LOESS regression with span parameter $\alpha=0.75$ (indicating that 75 of the data are used to estimate each local regression) and a +/- one standard error band.

References

- Awalt, Francis Gloyd (1969), "Recollections of the Banking Crisis in 1933," *Business History Review* XLIII, pp.347-371.
- Baldwin, Richard and Paul Krugman (1989), "Persistent Trade Effects of Large Exchange Rate Shocks," *Quarterly Journal of Economics* 104, pp.635-654.
- Board of Governors of the Federal Reserve System (2013), "Central Bank Liquidity Swap Lines," Washington, D.C.: Board of Governors of the Federal Reserve System, http://www.federalreserve.gov/newsevents/reform_swaplines.htm .
- Bordo, Michael (1993), "The Bretton Woods International Monetary System: An Historical Overview," in Michael Bordo and Barry Eichengreen (eds), *A Retrospective on the Bretton Woods System: Lessons for International Monetary Reform*, Chicago: University of Chicago Press, pp.3-108.
- Bordo, Michael and Barry Eichengreen (2008), "Bretton Woods and the Great Inflation," NBER Working Paper no. 14532 (December).
- Brown, William Adams (1940), *The International Gold Standard 1914-1934*, New York: National Bureau of Economic Research.
- Broz, Lawrence (1997), *International Origins of the Federal Reserve System*, Ithaca: Cornell University Press.
- Calvo, Guillermo and Carmen Reinhart (2002), "Fear of Floating," *Quarterly Journal of Economics* 107, pp.379-408.
- Clarke, S.V.O. (1967), *Central Bank Cooperation, 1925-31*, New York: Federal Reserve Bank of New York.
- Eichengreen, Barry (2000), "From Benign Neglect to Malignant Preoccupation: U.S. Balance of Payments Policy in the 1960s," in George Perry and James Tobin (eds), *Economic Events, Ideas and Policies: The 1960s and After*, Washington, D.C.: Brookings Institution, pp.185-242.
- Eichengreen, Barry (2011), *Exorbitant Privilege: The Rise and Fall of the Dollar and the Future of the International Monetary System*, New York: Oxford University Press.
- Eichengreen, Barry and Marc Flandreau (2012), "The Federal Reserve, the Bank of England, and the Rise of the Dollar as an International Currency, 1914-1939," *Open Economies Review* 23, pp.57-87.
- Eichengreen, Barry and Peter Garber (1991), "Before the Accord: U.S. Monetary-Financial Policy 1945-51," in Glenn Hubbard (ed.), *Financial Markets and Financial Crises*, Chicago: University of Chicago Press, pp.175-206.
- Friedman, Milton and Anna Schwartz (1963), *A Monetary History of the United States, 1867-1960*, Princeton: Princeton University Press for the National Bureau of Economic Research.

- Galí, Jordi and Mark Gertler, eds (2010), *International Dimensions of Monetary Policy*, Chicago: University of Chicago Press for the National Bureau of Economic Research.
- Irwin, Neil (2013), *The Alchemists: Three Central Banks and a World on Fire*, New York: Penguin.
- Kennedy, Susan Eastabrook (1973), *The Banking Crisis of 1933*, Lexington, KY: University Press of Kentucky.
- Kettl, Donald (1986), *Leadership at the Fed*, New Haven: Yale University Press.
- Kindleberger, Charles (1950), *The Dollar Shortage*, Cambridge, Mass.: MIT Press.
- LaRoche (1993), “Bankers Acceptances,” *Federal Reserve Bank of Richmond Quarterly Review* (Winter), pp.75-85.
- Meltzer, Allan (1991), “U.S. Policy in the Bretton Woods Era,” *Federal Reserve Bank of St. Louis Review* (May), pp.54-83.
- Meltzer, Allan (2002), *A History of the Federal Reserve, Vol. 1, 1913-1951*, Chicago: University of Chicago Press.
- Meltzer, Allan (2008), “Bretton Woods and the Great Inflation: Comment,” <http://www.nber.org/chapters/c9175.pdf> .
- Mishkin, Frederic and Miguel Savastano (2001), “Monetary Policy Strategies for Latin America,” *Journal of Development Economics* 66, pp.415-444.
- Mishkin, Frederic (2011), “Monetary Policy Strategy: Lessons from the Crisis,” NBER Working Paper no. 16755 (February).
- Nelson, Edward (2005), “The Great Inflation of the Seventies: What Really Happened?” *B.E. Journal of Macroeconomics*.
- Orphanides, Athanasios (2003), “The Quest for Prosperity without Inflation,” *Journal of Monetary Economics* 50, pp.633-663.
- Reinhart, Carmen and Kenneth Rogoff (2013), “Shifting Mandates: The Federal Reserve’s First Centennial,” NBER Working Paper 18888 (March).
- Rogoff, Kenneth (1984), “On the Effects of Sterilized Intervention: An Analysis of Weekly Data,” *Journal of Monetary Economics* 14, pp.133-150.
- Romer, Christina and David Romer (2002a), “A Rehabilitation of Monetary Policy in the 1950s,” *American Economic Association Papers and Proceedings* 92, pp.121-127.
- Romer, Christina and David Romer (2002b), “The Evolution of Economic Understanding and Postwar Stabilization Policy,” in *Rethinking Stabilization Policy*, Kansas City: Federal Reserve Bank of Kansas City, pp.11-78.

- Sachs, Jeffrey (1983), "The Dollar and the Policy Mix, 1985," *Brookings Papers on Economic Activity* 16, pp.117-185.
- Shin, Hyun (2012), "Global Banking Glut and Loan Risk Premium," *IMF Economic Review* 60, pp.155-192.
- Solomon, Robert (1977), *The International Monetary System 1945-1976: An Insider's View*, New York: Harper & Row.
- Taylor, John (1999), "A Historical Analysis of Monetary Policy Rules," in John Taylor (ed.), *Monetary Policy Rules*, Chicago: University of Chicago Press, pp.319-348.
- Timberlake, Richard (2008), "The Federal Reserve's Role in the Great Contraction and the Subprime Crisis," *Cato Journal* 28, pp.303-312.
- Triffin, Robert (1960), *Gold and the Dollar Crisis*, New Haven: Yale University Press.
- Wheeler, Graeme (2013), "Manufacturing Decline Not Just a Dollar Story," Speech delivered to the New Zealand Manufacturers and Exporters Association, Auckland (20 February), <http://www.rbnz.govt.nz/speeches/5150125.html> .
- White, William (2009), "Should Monetary Policy 'Lean or Clean?'" Globalization and Monetary Policy Institute Working Paper no. 34, Dallas: Federal Reserve Bank of Dallas (August).
- Wigmore, Barrie (1987), "Was the Bank Holiday of 1933 Caused by a Run on the Dollar?" *Journal of Economic History* 47, pp.739-755.
- Woodford, Michael (2007), "Globalization and Monetary Control," NBER Working Paper no. 13329 (August).