Currency Manipulation, Saving Manipulation, and the Current Account Balance

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Abstract

Concern over currency manipulation plays a major role in international economic diplomacy. Unfortunately, the concept is not well defined, and the most coherent explanations apply to a concept more accurately termed "saving manipulation," as it has little to do with market exchange rates. I argue that the costs of currency manipulation are far lower than they are widely assumed to be and that the optimal response is either to do nothing or to boost domestic saving rates.

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Introduction

There are many different ways that economists think about currency manipulation. For example, during the first decade of the 21st century, Japan received a barrage of criticism for its exchange rate policy. The US Treasury Department, as well as many pundits and politicians, attacked Japan for allegedly adopting a weak yen policy. In contrast, several prominent academics accused the Japanese of adopting an excessively strong yen policy, which led to persistent deflation.[1] Few observers seemed to notice the conflict between these two arguments, probably because they reflected radically different policy goals, models, and even language.

As with many terms in macroeconomics, such as "monetary policy" and "fiscal policy," the term "currency manipulation" is not clearly defined. On most occasions, when people argue that currency manipulation is the problem, they are actually talking about a phenomenon that would more accurately be termed "saving manipulation."

What is currency manipulation, and is it a problem that policymakers should be concerned about? Today, many of the currency manipulation accusations previously made against Japan are being directed against China. Discussion of currency manipulation has been linked to concern over aggregate demand shortfalls, worry about job loss from deindustrialization, and a perception that it imposes excessive indebtedness on other countries. These are actually three separate concerns, each raising a number of complex issues.

[1] See Bernanke (1999), McCallum (2000), Krugman (2001), and Svensson (2003).

Six case studies are reviewed to see how countries can manipulate their saving rates, which then affects real exchange rates and current account balances. Only a few of these policies are widely viewed as currency manipulation, and those are not necessarily the policies that have the biggest impact on current account balances. Governments can easily achieve the goals of currency manipulation without engaging in any specific action that is widely viewed as "manipulation."

Even if currency manipulation is a valid concern, the policy implications are radically different from the sorts of retaliatory policies that are often advocated. The appropriate policy response is not to pressure the target country to appreciate its currency, nor is there a persuasive argument for retaliatory tariffs. Rather, the optimal response would be for the deficit country to adopt prosaving policies to boost its own current account balance.

1. What Is Currency Manipulation?

Discourse on currency manipulation occurs across a number of distinct fields, including macroeconomics, international trade, and international finance. Three important analytical frameworks to consider are the relationship between the current account and the savings or investment gap, the distinction between nominal and real exchange rates, and the distinction between short-run and long-run effects.

The term "currency manipulation" can be defined in many different ways. The International Monetary Fund (IMF) Articles of Agreement, Article IV, say that IMF member countries shall "avoid manipulating exchange rates or the international monetary system in order to prevent effective balance of payments adjustment or to gain an unfair competitive advantage over other members."

Of course, one could imagine many other possible definitions. For instance, in one sense currency manipulation is the primary goal of most central banks, which are responsible for stabilizing the value of a currency in terms of its purchasing power over goods and services or in terms perhaps of another currency, as in Hong Kong and Denmark.[2]

While the value of money can be defined in numerous ways, concern over currency manipulation focuses almost exclusively on one specific measure of the price of money—its foreign exchange value. Thus there is often criticism of countries that depreciate their currency in the foreign exchange market, but rarely does one see concern expressed about foreign countries pursuing highly inflationary monetary policies, another form of currency "depreciation." One can better understand this distinction by reviewing the concept of purchasing power parity, as it provides a useful way of thinking about the relationship between a currency's foreign exchange value and its domestic purchasing power.

When purchasing power parity holds, the nominal exchange rate (NER, expressed as foreign price of domestic currency) moves to offset changes in relative price levels:

$$\text{Percentage change in NER} = \text{foreign inflation} - \text{domestic inflation}.$$

Deviations from purchasing power parity reflect changes in the real exchange rate (RER), defined as the nominal exchange rate times the ratio of domestic prices (Pd) and foreign prices (Pf):

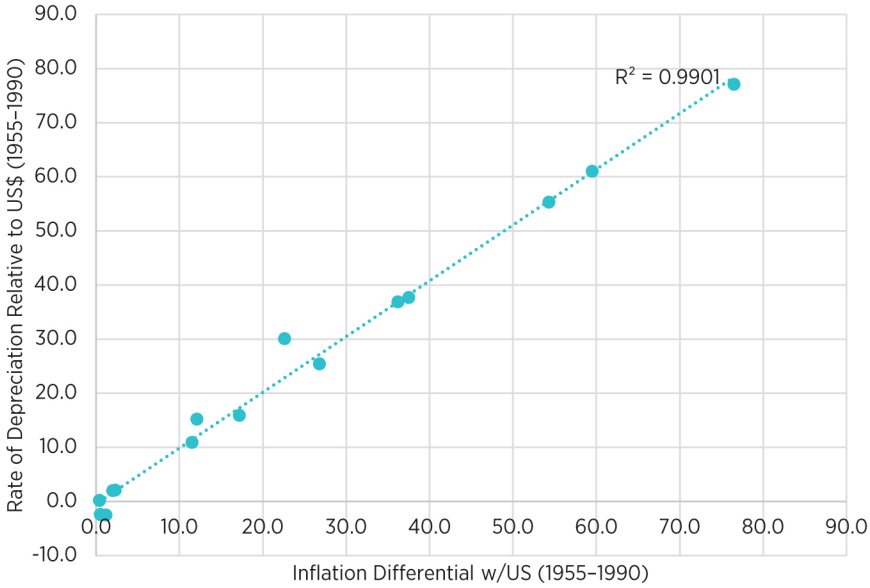
$$\text{RER} = \text{NER} \times (\text{Pd}/\text{Pf}).$$

If money is neutral in the long run, then any monetary policy that affects the nominal exchange rate should not be expected to permanently change the real exchange rate. Not surprisingly, history is full of examples of countries that depreciated their currencies with

[2] The Hong Kong dollar is pegged to the US dollar at a fixed rate, while the Danish krone is pegged to the euro at a fixed rate.

monetary expansion to gain a competitive advantage; these countries then found that the resulting cost advantage was erased by a rising domestic price level. By the 1990s, the policy of "competitive devaluation" had become passé in regions such as Latin America, where rapid currency depreciation was linked in the public mind with high inflation. Figure 1 demonstrates this phenomenon.

Figure 1. Relative Purchasing Power Parity



Note: For a few countries, slightly different time frames were used: Canada and France 1950–1990, Germany and Japan 1953–1990, Peru 1960–1990, United Kingdom 1951–1990.
Source: Author's calculations based on data from Robert J. Barro, *Macroeconomics*, 4th ed. (Hoboken, NJ: Wiley, 1993); International Monetary Fund, International Financial Statistics (database), Washington, DC, various years, https://data.imf.org/?sk=4C514D48-B6BA-49ED-8AB9-52B0C1A0179B.

It would be a mistake, however, to focus only on the long run and simply wave away the short-run nonneutrality of money. Many wages and prices are sticky or slow to change; therefore, it is possible that central bank policies can have important real effects in the short run. However, awareness of the long-run neutrality of money does allow for important distinctions

among various arguments for currency manipulation—especially those that focus on persistent, long-run current account imbalances.

The following example will help to illustrate the distinction between short- and long-run exchange rate policies. In the 1980s and 1990s, the European Union established a fixed exchange rate mechanism. At the same time, China was pegging its currency to the US dollar (until 2005 and then again during 2008–2010). Ironically, the Chinese currency peg was widely condemned as a form of currency manipulation while the European Exchange Rate Mechanism, which also involved currency pegs, was designed *specifically to prevent currency manipulation*. So which is it? Are fixed exchange rates manipulation or a way to prevent manipulation?

These two cases can best be understood by distinguishing between short- and long-run effects. The European Union was aiming to prevent individual countries from engaging in currency depreciation with the goal of obtaining a short-term competitive advantage before wages and prices had adjusted to offset the cost advantage. I will argue that this concern was misguided, but the logic of the argument is consistent with what we know about the short-run nonneutrality of money.

The Chinese case was very different. Western politicians and some economists were concerned that China was artificially depressing its exchange rate below its equilibrium value, and hence gaining a permanent cost advantage in international trade. But how is that possible, given the long-run neutrality of money?

While monetary policy does not have any permanent effect on the *real* exchange rate, other government policies might have a long-run impact on real exchange rates and current account balances. To have this effect, a government would need to somehow change the

relationship between domestic investment and domestic saving, defined as the current account (CA) balance. By definition,

CA balance = domestic saving – domestic investment.

When a country is accused of currency manipulation, the concern is that it is manipulating the exchange rate in such a way as to increase the current account balance (e.g., produce a smaller deficit or bigger surplus). As an accounting matter, this can only be done with policies that boost domestic saving, reduce domestic investment, or both.

Countries generally do not try to reduce domestic investment,[3] at least as a tool of currency manipulation. Thus, as a practical matter, almost all accusations of persistent currency manipulation are de facto accusations that the country in question is pursuing a policy that leads to higher domestic saving rates. The link between high saving policies and current account surpluses is explicitly made in the most sophisticated critiques of currency manipulation, such as Bergsten and Gagnon.

While Bergsten and Gagnon (2017, 2) arguably focus a bit too much on the currency aspect of the problem and perhaps too little on the saving dimension, national saving does play a central role in their analysis, and their description of currency manipulation explicitly excludes monetary stimulus:

> Currency conflicts occur when countries seek an advantage in international trade by positioning their currencies at a level lower than justified by fundamental economic forces and market outcomes. They can do so by directly weakening their currencies through excessive (and thus competitive) devaluation of a fixed rate or depreciation of a flexible exchange rate. More subtly, but now more frequently and with similar economic effects, they can block adequate (or any) upward revaluation. . . . Such "competitive" outcomes are pursued primarily through direct intervention in the foreign exchange markets, which is often labeled "manipulation." It is sometimes argued that quantitative

[3] When they do so, the policy goals are generally unrelated to trade. Thus the Chinese government has recently tried to shift its economy away from investment. The goal, however, was to generate more consumption, not higher net exports.

> easing and other manifestations of unconventional monetary policy by the Federal Reserve and central banks of other advanced economies also represents "manipulation," but those policies are very different from direct intervention and should not be viewed as similar.

Note the use of some subjective, hard-to-define terms, such as "seek an advantage" and "excessive." One of Bergsten and Gagnon's methods for identifying currency manipulation is to identify countries with large current account surpluses and then examine whether they have adopted public policies likely to lead to excessively high saving rates.

To see why "currency manipulation" is a poorly chosen term, consider the recent debate over Chinese exchange rate policies. The Chinese would not have been able to achieve a permanently low real exchange rate merely by holding down the nominal exchange rate for the yuan with monetary stimulus. Instead, domestic inflation would have eventually returned the real exchange rate to its equilibrium value once wages and prices adjusted.

Persistent currency manipulation requires a persistent depreciation in the *real* exchange rate that can only occur if the government enacts a policy that permanently boosts domestic saving. If that happens, an explicit nominal exchange rate policy becomes essentially pointless. Thus, a set of Chinese government policies that boosted domestic saving by $3 trillion over 10 years would achieve essentially the same effect on the current account regardless of whether the Chinese government fixed the nominal exchange rate to the dollar or let it float. Under a fixed exchange rate, the real currency depreciation would occur via lower-than-normal inflation rates. Under floating rates, this real depreciation might involve nominal exchange rate depreciation. Either way, a high saving policy would depreciate the real exchange rate in the long run.

In the long run, currency manipulation does not occur by a country artificially holding the nominal exchange rate below equilibrium; rather, it requires a country to depress the *equilibrium* real exchange rate through a set of policies aimed at boosting domestic saving. It is the high

saving policies that have real effects, which is why they are able to generate persistent current account surpluses.

Before considering the Japanese case study, it will be useful to summarize the two perspectives outlined above. This requires distinguishing between policies that are primarily aimed at the nominal value of a currency and policies that are intended to have real effects.

Nominal exchange rates. Central banks can directly affect the nominal exchange rate. For instance, Singapore's central bank targets the exchange rate at a level expected to produce domestic macroeconomic stability. More often, the nominal exchange rate adjusts based on interest rate targeting policies aimed at other goals, such as domestic inflation. Countries with central banks with low inflation targets, such as Switzerland, will tend to produce policies that, over time, lead to nominal currency appreciation against countries with higher inflation targets, such as Turkey or Argentina.

While these varying monetary policies may produce short-run nonneutralities owing to sticky wages and prices, they do not lead to the sorts of persistent movements in the real exchange rate that are of greatest concern to economists who are worried about currency manipulation.

Real exchange rates. In the long run, governments are able to manipulate real exchange rates only with policies that impact domestic investment or, more likely, domestic saving. The entire debate about "currency manipulation" would have been clearer and more productive if economists had instead used the term "saving manipulation."

Indeed, the term "currency manipulation" is just one unfortunate example of what is sometimes called "reasoning from a price change." This occurs when people try to draw inferences from a change in a price, including a change in the overall price level, from interest rates, or from exchange rates. For example, high oil prices might imply more oil consumption or less consumption, depending on whether the price increase was caused by lower supply or greater demand. Someone claiming that high oil prices will lead to less consumption is reasoning from a price change. (And adding the phrase "ceteris paribus" does not help at all.)

Similarly, a higher price level caused by increased aggregate demand has a very different effect from one caused by reduced aggregate supply. A similar logic applies to interest rates. A low interest rate generated by the liquidity effect from easy money has a different effect from low rates generated by the longer-run income or Fisher effects of tight money. According to the Fisher effect, a contractionary monetary policy that leads to lower inflation expectations can actually *reduce* interest rates. Similarly, if a tight money policy reduces national income, there is less demand for credit, which also depresses interest rates. Both effects occurred during the early 1930s in the United States.[4] Thus, a change in interest rates does not reveal very much about the stance of monetary policy. Low interest rates might reflect easy money or the long-run effects of tight money.

Carrying this argument a step further, instead of speaking of the effect of a given change in the exchange rate, one needs to consider the effect of the policies that cause the exchange rate to change, such as monetary policy, fiscal policy, and foreign exchange intervention. Studies such as Bergsten and Gagnon (2017) do exactly that—their empirical work bypasses the

[4] See Sumner (2015).

exchange rate itself and instead directly estimates the impact of the variables that drive exchange rate changes, such as the net purchases of foreign assets and the fiscal surplus or deficit.

It is a mistake to estimate the impact of changes in exchange rates on various macroeconomic variables. Doing so mixes up temporary changes in real exchange rates caused by the interaction of monetary shocks and sticky prices with the much more long-run changes in real interest rates caused by changes in saving propensities. It makes no sense to talk about the impact of a change in real exchange rates without considering what caused the exchange rate to change. To do so is "reasoning from a price change." A given currency depreciation caused by monetary stimulus will have a much smaller impact on the current account than an equal depreciation caused by an increase in saving. Equally importantly, nominal depreciation caused by monetary stimulus will have only a temporary impact on real exchange rates, while the impact of higher saving may be permanent.[5]

With the preceding distinction in mind, it is possible to reconcile the differing views of US Treasury officials and academic economists as to the appropriate value of the yen in the early 2000–2009 period. Recall that the US Treasury believed the yen was undervalued during this period, while prominent academic economists argued it was overvalued. In a sense, each side might have been correct, depending on how one defines "the" exchange rate.

By the beginning of the 21st century, Japan had experienced nearly a decade of persistent deflation. Thus in one sense the yen was clearly too strong—its value in terms of goods and services was appreciating over time, unlike the currency of almost every other nation (where inflation rates were positive). Japan had good reason to favor a weaker currency, and this helps

[5] Joseph Gruber, Andrew McCallum, and Robert Vigfusson (2016) use a partial equilibrium approach and find that real currency appreciation has a persistent (negative) impact on the trade balance. However, they warn that this does not take into account the impact of factors that caused the currency appreciation, such as monetary policy.

to explain why economists such as Ben Bernanke, Bennett McCallum, and Paul Krugman recommended currency depreciation, with Lars Svensson (2003, 145) calling the idea a "foolproof" way for Japan to escape from its (deflationary) liquidity trap. Under those conditions, a strong yen policy would seem counterproductive, something that would push Japan deeper into deflation. This macroeconomic perspective explains why Bergsten and Gagnon exempt quantitative easing (QE) from the list of factors causing currency manipulation.

The US Treasury view was different, more focused on trade than macroeconomic equilibrium. Treasury officials focused on the large Japanese current account surplus, which was seen as prima facie evidence that the yen was too weak. While US Treasury experts acknowledged the need for Japan to boost its inflation rate, they objected to the specific technique being used—the Bank of Japan's (BOJ) purchase of large quantities of foreign assets.[6]

The academic economists who argued that the yen was too strong were essentially advocating a weaker *nominal* exchange rate. If money is neutral in the long run, then a monetary policy aimed at depreciating the nominal exchange rate should also lead to higher domestic inflation but no necessary change in the real exchange rate. In contrast, the US Treasury was concerned with the Japanese *real* exchange rate. In their view, the problem was excessive saving by the Japanese government that led to an undervalued currency and persistent current account surpluses. They favored a stronger Japanese real exchange rate but no necessary change in the nominal rate.

So who was right? It is possible that both sides were correct, as they were actually considering very different issues. The nominal value of the yen was almost certainly too high, and the real value may have been too low. Both sides of the debate might have accepted a BOJ

[6] See Taylor (2010).

policy that switched from purchasing foreign assets to the purchase of domestic assets (that is, QE). The BOJ would no longer be intervening directly in the foreign exchange market (boosting the real exchange rate), but nonetheless this action might have depreciated the nominal exchange rate with a sufficiently large purchase of domestic assets.

Returning to the United States, on March 18, 2009, the Fed announced its first QE program, and the dollar immediately fell by $0.06 against the euro.[7] This was not because the Fed intended to buy foreign assets; indeed, it announced an intention to buy US Treasury bonds and domestic mortgage-backed securities. Instead, the dollar depreciated because of lower (long-term) interest rates and also because expansionary monetary policies are expected to lead to a higher price level in the long run. A central bank need not buy any foreign assets in order to depreciate its currency.[8]

There is now evidence that a similar policy would have achieved the same effect in Japan. When Prime Minister Shinzo Abe took office at the beginning of 2013, Japan shifted to a more expansionary monetary policy, sharply depreciating the yen exchange rate.[9] Importantly, unlike during the 2000–2009 period, the BOJ focused on the purchase of *domestic* assets. Whereas during 2001–2004 the BOJ purchased a net $434 billion in foreign assets, during 2013–2016 the net purchases of foreign assets totaled only $35 billion.[10] And yet the latter policy was considerably more successful at boosting aggregate demand, despite the much smaller foreign exchange intervention.

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[7] Slightly more than 4 percent. Data are from the Federal Reserve Economic Database.
[8] Nonetheless, by 2010 there were claims (especially by central bankers in emerging markets such as Brazil, who worried about the strength of their own currencies) that the Fed had manipulated the dollar lower. See Frischtak (2016).
[9] The yen was trading at less than 80 yen per US dollar in mid-November 2012, when Abe's proposals for monetary stimulus first became public. Six months later the yen had depreciated to more than 100 yen to the dollar, and this depreciation persisted over the following six years.
[10] Data are from Bergsten and Gagnon (2017). Note that there are other ways to impact the exchange rate, such as diversifying the Japanese national pension system away from domestic bonds toward greater holdings of foreign bonds.

From this perspective, a debate over the foreign exchange value of the yen seems to confuse the issue. There are actually two distinct questions: What sort of nominal exchange rate should Japan have? This is essentially a monetary policy issue. And what sort of real exchange rate should Japan have? Japan's real exchange rate is strongly influenced by Japanese policies that affect domestic saving.

The two issues (nominal exchange rates and monetary policy; real exchange rates and saving policies) can become intertwined on occasion. One can imagine a situation where the BOJ refrains from relying exclusively on domestic asset purchases because of concern about taking on too much risk or political concerns about government purchases of private assets. Nonetheless, any discussion of currency manipulation will be more fruitful if these two perspectives are clearly identified to permit a discussion with clearly demarcated issues.

To better see the difference between "currency" and saving manipulation, consider the case of Germany, which in recent years has been criticized for maintaining the world's largest current account surplus. It might seem odd to accuse Germany of currency manipulation, as it has no domestic currency to manipulate. For instance, John Cochrane (2019) says,

> When, last week, the Treasury issued its currency manipulation report, I thought it was a joke. Treasury put *Germany* and *Italy* on its "monitoring list" of countries suspected of "currency manipulation."
>
> Germany and Italy are, of course, part of the Euro, the whole point of which is that they cannot, individually, "manipulate" their currencies, whatever that means.

It is true that Germany does not control the nominal exchange rate for the euro. But once one recognizes that the real concern is not "currency manipulation" and nominal exchange rates but rather saving manipulation and real exchange rates, then much of the recent policy debate becomes much clearer.

Germany can influence its real exchange rate with policies that affect domestic saving, and (as discussed later) Germany has been accused of running excessively contractionary fiscal policies that depressed its real exchange rate and boosted its current account balance. Whether those accusations are fair is another question, but at least the debate is understandable if framed in terms of saving rates rather than nominal exchange rates.

Reframing the debate in terms of savings manipulation also helps to explain why current account surpluses became more controversial as an increasing number of countries reached the zero bound for nominal interest rates after 2008. Because cash is a safe investment that always earns zero interest, nominal interest rates on other financial assets such as bonds cannot fall very far below zero.[11] Traditional Keynesian models often view saving as a vice when nominal interest rates are near the zero bound—the familiar "paradox of thrift" argument. In the traditional Keynesian view, an attempt to save more at near-zero interest rates depresses national income as nominal interest rates cannot fall further. Thus Paul Krugman became a critic of China's current account surplus during the Great Recession.[12] Back in the 1990s, saving was viewed as a virtue, not a contractionary force for the global economy.

There are two policy areas where currency manipulation is feasible. Monetary policy may lead to nominal currency depreciation, and because wages and prices are sticky in the short run, this may temporarily depreciate the real exchange rate as well. However, as discussed later, it is not at all obvious that an expansionary monetary policy affects either the national saving rate or the current account balance.

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[11] Nominal interest rates on bonds can fall slightly below zero because bonds are a safer way to store large amounts of money.
[12] See Krugman (2009).

Second, government policies that boost domestic saving can lead to a lower real exchange rate, even in the long run. Germany is a prime example. Because much of the discussion of currency manipulation is concerned with long-run current account imbalances, most of the discussion in the next two sections will focus on this issue.

2. Is Currency Manipulation Harmful to Other Countries?

There are three widely cited reasons for why people worry about the impact of currency manipulation. If a country adopts a high saving policy that boosts its current account balance, this may produce one of the following three effects on other nations:

1) depressed levels of aggregate demand
2) deindustrialization and structural unemployment
3) excessive indebtedness and financial risks

The first concern was triggered by policies labeled "beggar thy neighbor" during the Great Depression and again during the Great Recession. The second concern is most famously associated with the "China shock," the surge in Chinese exports after 1990. And the third concern is exemplified by the recent debt crisis in Greece and previously in many other developing countries.

2.1. Currency Manipulation and Demand Management

At first glance, the first two concerns might appear to be two ways of describing the same problem. In fact, the two concerns are quite different, as Paul Krugman argued when discussing the China shock. The following comments by Krugman responded to a paper by Autor, Dorn, and Hanson (ADH), which found evidence that Chinese exports reduced US

employment in a number of regional markets during the period from 1990 to 2007 (before the zero-bound problem occurred):[13]

> OK, what about the effect on overall employment? In general, you can't answer that with a similar computation, because it all depends on offsetting policies. If monetary and fiscal policy are used to achieve a target level of employment—as they generally were prior to the 2008 crisis—then a first cut at the impact on overall employment is zero. That is, trade deficits meant 2 million fewer manufacturing jobs and 2 million more in the service sector. . . .
>
> Up through 2007 we basically had a Fed which raised rates whenever it thought the economy was overheating; in the absence of the China shock it would have raised rates sooner and faster, so you just can't use the results of the cross-section regression—which doesn't reflect monetary policy, which was the same for everyone—to predict how things would have turned out.

Just to be clear, Krugman praises the ADH study and specifically agrees with the authors' claim that China contributed to a loss of industrial jobs in the United States. But he is critical of their assertion that Chinese exports reduced overall employment levels during the 1990–2007 period, and his critique is based on well-established macro principles. When the economy is not at the zero bound, monetary policy is generally set at a position expected to lead to appropriate growth in aggregate demand. Trade shocks that might otherwise reduce aggregate demand are offset by countervailing changes in monetary policy.

It is true that the Fed cannot always adjust monetary policy perfectly, but there is no obvious reason to assume that it underestimates the accommodation required to offset contractionary shocks rather than overestimates what needs to be done. This is especially true in the long run, where the 2 percent inflation target leads to monetary policy actions that neutralize other forces affecting aggregate demand. As a first approximation, foreign current account surpluses have no impact on demand in countries with independent monetary policies that are not stuck at the zero bound.

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[13] See Krugman (2016).

Paul Krugman became one of the most famous critics of protectionism during the late 1990s, most notably in his popular book *Pop Internationalism*. When he eventually began criticizing Chinese exchange rate policies during the Great Recession, he was careful to differentiate his criticism from cruder protectionist arguments, such as the claims made by top officials in the Trump administration.

A recent paper by two Trump officials, Peter Navarro and Wilbur Ross (2016, 5), referenced the aggregate expenditure equation (GDP = C + I + G + NX) in arguing that current account deficits reduce output:

> The growth in any nation's gross domestic product (GDP)—and therefore its ability to create jobs and generate additional income and tax revenues—is driven by four factors: consumption growth, the growth in government spending, investment growth, and net exports. When net exports are negative, that is, when a country runs a trade deficit by importing more than it exports, this subtracts from growth. . . .
>
> In 2015, the US trade deficit in goods was a little under $800 billion while the US ran a surplus of about $300 billion in services. This left an overall deficit of around $500 billion. Reducing this "trade deficit drag" would increase GDP growth.

The GDP identity, however, does not have any *causal* implications. For instance, in a closed economy, GDP = C + S + T. But it would be bizarre to argue that higher taxes cause higher GDP.

By definition, a current account deficit is equal to the capital account surplus, which is the excess of domestic investment over domestic saving. If the current account balance is −$500 billion (a deficit), then domestic investment is $500 billion greater than domestic saving. Thus, in an accounting sense, the extra investment exactly offsets the loss of output from the current account deficit. Alternatively, imports show up as a negative in the trade sector but as an equal positive in consumption and investment accounts. That does not mean current account

deficits are not a problem, but accounting relationships are not sufficient to show this.[14] Thus the Navarro and Ross argument is not taken seriously by most economists.[15]

During the Great Recession, Paul Krugman argued that Chinese trade policies had become a drag on the global economy due to their impact on global saving. With much of the world stuck at the zero bound, Krugman argued that high-saving countries were depressing global aggregate demand—essentially the traditional Keynesian "paradox of thrift" argument. This view has become very popular in recent years and helps to explain why Bergsten and Gagnon were concerned that currency manipulation had become an especially serious problem in the 21st century.

The argument for a global paradox of thrift is much weaker than many proponents imagine. This hypothesis was well outside the economic mainstream as recently as 2007. At that time, there was a widespread view that monetary policy remained effective at the zero bound for interest rates. For instance, the number-one monetary economics textbook by Frederic Mishkin[16] expressed that view quite forcefully in its 2007 edition:

> *Monetary policy can be highly effective in reviving a weak economy even if short term rates are already near zero.* [Emphasis in original.]

Back in 1999, Ben Bernanke had written a paper that was quite dismissive of arguments that the BOJ was out of ammunition at the zero bound, and indeed he was highly critical of the BOJ for allowing Japan to fall into persistent deflation. He suggested that there was no limit to

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[14] Dan Griswold (2017) provides a good explanation of the difference between international accounting identities and causal relationships.

[15] *Business Insider* reported,

> "The Navarro-Ross paper is well beyond voodoo economics," the Harvard professor and Democrat [Larry Summers] said of the duo's September report on Trump's growth plans. "The logic of it, the arguments made, are so far out of the mainstream of any kind of responsible economic thinking that they are the economic equivalent of creationism." (Smith 2017)

[16] Mishkin is a mainstream economist who served on the Federal Reserve Board with Ben Bernanke during 2007. The quotation is located on page 607.

money creation in a fiat money system, and hence central banks could always generate the desired amount of inflation.[17]

Even Paul Krugman was a strong supporter of relying on monetary stimulus at the zero bound, and in a 1999 paper he was quite dismissive of those who suggested that Japan rely on fiscal stimulus:[18]

> What continues to amaze me is this: Japan's current strategy of massive, unsustainable deficit spending in the hopes that this will somehow generate a self-sustained recovery is currently regarded as the orthodox, sensible thing to do—even though it can be justified only by exotic stories about multiple equilibria, the sort of thing you would imagine only a professor could believe. Meanwhile further steps on monetary policy—the sort of thing you would advocate if you believed in a more conventional, boring model, one in which the problem is simply a question of the savings-investment balance—are rejected as dangerously radical and unbecoming of a dignified economy.
>
> Will somebody please explain this to me?

Over time, the views of Mishkin, Bernanke, Krugman, and many other economists changed, becoming more skeptical of the effectiveness of monetary stimulus at the zero bound. Why did the consensus view of the economics profession change during the Great Recession toward the view that monetary policy is not very effective at the zero bound and that increased saving is contractionary?

This is a difficult question to answer, and I would argue that the entire issue is shrouded with misconceptions. For instance, many people seem to believe that Ben Bernanke tried to do what he recommended for the Japanese and that it did not work. But it is not true; the Fed never tried level targeting, which means returning the price level to its previous trend line after it temporarily dips below trend during a contraction. Nor did the Fed engage in open market operations "à outrance," that is, to the extreme required, as Bernanke recommended for the Japanese. Others seem to believe that the Fed was "out of ammunition" during the Great

[17] See Bernanke (1999).
[18] See Krugman (1999).

Recession and slow recovery,[19] whereas Bernanke continually insisted that the Fed could do more stimulus but was concerned about the costs and risks of doing more. Many believe the Fed was at the zero bound during the 2008 financial crisis, and this is not true. Indeed, the European Central Bank (ECB) was never at the zero bound during the entire 2008–2013 period.

Perhaps some observers assumed that the slow recovery from the Great Recession showed that monetary policy was ineffective at zero rates. But the Great Depression in the United States and also the Japanese experience in the early years of the 21st century had already shown that low rates and QE do not necessarily generate inflation. Herbert Hoover's Fed adopted both very low interest rates and QE during 1932, and the Japanese did the same in the 2000–2009 period, when their monetary base increased by roughly 70 percent.[20] So even in 2007, when the consensus view of Western economists was still dismissive of the claim of monetary policy ineffectiveness at zero rates, *we already understood the effect of the policies that were later adopted by the Fed during the Great Recession*, and more particularly we already knew that they were not adequate. It is not clear what sort of "new information" could have led to a reevaluation of monetary policy after 2007.

In the preceding quotation discussing the ADH study, Paul Krugman argued that Fed policy would offset any contractionary effects on US aggregate demand arising from Chinese current account surpluses. The same logic would seem to apply to fiscal stimulus, at least when interest rates are positive. Any positive impact of fiscal stimulus on aggregate demand would be offset by a tighter monetary policy to keep overall spending at a level consistent with the Fed's dual mandate.

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[19] According to Christina Romer, President Barack Obama held this view. He may have been influenced by Treasury Secretary Summers, who argued that monetary policy was relatively ineffective at zero interest rates.
[20] The Japanese monetary base rose by 69.5 percent between December 2000 and December 2004. See Bank of Japan (n.d.).

Once rates fell to zero, however, a debate developed over the question of whether monetary offset applied at the zero bound.[21] To understand why mainstream economists began worrying about the contractionary impact of Chinese current account surpluses, it will be necessary to make a brief digression and examine the literature on monetary offset of fiscal stimulus at the zero bound.

Krugman has cited several studies that seem to suggest that fiscal policy was effective at near-zero interest rates; that is, not subject to monetary offset.[22] One study, by Emi Nakamura and Jon Steinsson,[23] looks at the effects of US defense spending in various states. Another study by Olivier Blanchard and Daniel Leigh looks at the correlation between growth forecast errors and fiscal consolidations during the Great Recession period of near-zero interest rates.[24] Unfortunately, both of these studies are subject to the exact same problem that Krugman identified in the ADH study—monetary offset.

It is quite likely that increased government spending will boost output in a particular region within a monetary union. That clearly applies to the Nakamura and Steinsson study as all states are part of the same currency zone, with monetary policy determined by the Fed. But it is also a problem for international studies of developed economies, which generally feature many countries within the eurozone. If Germany engages in monetary stimulus and the ECB offsets the effects to keep eurozone aggregate demand growing at a steady rate, then non-German eurozone output will decline.

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[21] DeLong and Summers (2012) suggest that monetary offset applies when interest rates are positive and the Fed is targeting inflation but not when rates are stuck at zero.
[22] See Krugman (2017).
[23] See Nakamura and Steinsson (2013).
[24] See Blanchard and Leigh (2013).

Both Kevin Erdmann[25] and Benn Steil and Dinah Walker[26] found that the positive correlation between fiscal stimulus and growth disappears if these studies are reestimated using only countries that have an independent monetary policy, even at the zero bound. This means that there is little or no evidence that fiscal stimulus was effective during the Great Recession, at least for areas with an independent monetary policy (such as the United States).

An interesting test of monetary offset at the zero bound occurred in 2013. At the end of 2012, there was mounting evidence that Congress would enact fiscal austerity during 2013. There would be substantial tax increases as well as cuts in federal spending. This austerity reduced the budget deficit sharply, from roughly $1,050 billion in calendar 2012 to roughly $550 billion in calendar 2013. Here it is appropriate to use calendar years as the austerity began on January 1, 2013, not at the beginning of the fiscal year (October 1).

A number of prominent Keynesians warned that this austerity would slow economic growth and even suggested that the action risked pushing the economy into recession. Indeed, 350 economists signed a letter warning of the contractionary impact of the policy.[27] A group of economists called "market monetarists" challenged this view, arguing that the austerity would be offset by monetary stimulus and citing Fed officials who justified the third QE program and more aggressive forward guidance (announced in late 2012) partly on the basis that the Fed needed to offset the drag of fiscal austerity.

In early 2013, several Keynesian economists, including Paul Krugman, argued that the fiscal austerity would provide a "test" of the market monetarist claim that monetary policy can

[25] See Erdmann (2013).
[26] See Steil and Walker (2015).
[27] See HoundDog (2012).

offset fiscal austerity, even at the zero bound.[28] They expected economic growth to slow, discrediting the idea that monetary offset is effective at the zero bound. No single "test" is decisive because GDP growth data are noisy. It is worth noting that economic growth actually sped up in 2013, however, and that real GDP growth (year-over-year) had reached 2.6 percent by the 4th quarter of 2013, well above the 1.5 percent rate in the fourth quarter of 2012.[29] Monetary offset passed this particular "test" with flying colors.

Foreign examples of fiscal policy have also been misunderstood. There is a widespread view that the Japanese tax increase of 2014 had a strongly negative impact on Japan's economy. In fact, the unemployment rates declined smoothly from 2010 to 2018, with no perceptible impact in 2014 (see figure 2).

Figure 2. Harmonized Unemployment Rate: Total—All Persons for Japan (percent, seasonally adjusted)

Source: Organisation for Economic Co-operation and Development (OECD), "Harmonized Unemployment Rate: Total: All Persons for Japan (Percent, Seasonally Adjusted)," 2019; in FRED Economic Data, Federal Reserve Bank of St. Louis, https://fred.stlouisfed.org/series/LRHUTTTTJPM156S.

[28] See Krugman (2013).
[29] Information taken from the Federal Reserve Economic Database.

Japanese GDP did fall briefly after the tax increase, but that was mostly because many Japanese consumers bought big-ticket items in the quarter immediately before the national sales tax was raised from 5 percent to 8 percent.

Another widely misunderstood example occurred in the eurozone during the double-dip recession of 2011–2013, and many pundits wrongly attributed this to fiscal austerity. The United States did even more austerity but experienced no recession. Instead, the cause of the recession was a tight money policy by the ECB, which raised interest rates several times during early 2011. Because the eurozone was not at the zero bound at any time during 2008–2013, there was no lack of "ammunition" preventing monetary offset of fiscal contraction—the ECB simply misdiagnosed the situation and adopted an excessively contractionary monetary policy.

There's one other important flaw in the claim that currency manipulation hurts the United States through the aggregate demand channel. Even some of the most prominent supporters of this theory, such as Bergsten and Gagnon, acknowledge that the Fed could have and should have done more monetary stimulus during the Great Recession. Indeed, Gagnon published some of the most highly respected work on the effectiveness of QE and found that the policy had a substantial impact on the economy. Further, he found no evidence of decreasing returns from QE, suggesting that an even larger QE program would have provided even more stimulus.

> Studies overwhelmingly agree that QE does ease financial conditions and there is no reason to doubt that it supports economic growth. QE can be especially powerful during times of financial stress, but it has a significant effect in normal times with no observed diminishing returns. Rarely, if ever, have economists studying a specific question reached such a widely held consensus so quickly. But this consensus has yet to spread more broadly within the economics profession or the wider world.[30]

[30] See Gagnon (2016, 1).

More recent studies continue to confirm this result,[31] including one by Debortoli, Gali, and Gambetti:[32]

> The zero lower bound (ZLB) irrelevance hypothesis implies that the economy's performance is not affected by a binding ZLB constraint. We evaluate that hypothesis for the recent ZLB episode experienced by the U.S. . . . We find little evidence against the irrelevance hypothesis, with our estimates suggesting that the responses of output, inflation and the long-term interest rate were hardly affected by the binding ZLB constraint, possibly as a result of the adoption and fine-tuning of unconventional monetary policies.

Macroeconomists have recently suggested a wide range of feasible monetary regimes that do not suffer from the zero-bound problem. There are differences of opinion as to whether this is best accomplished by raising the inflation target to 4 percent (which was considered quite low during the 1980s), adopting price level targeting, or adopting nominal GDP level targeting. But policymakers certainly have the ability to devise a monetary regime that ensures adequate growth in aggregate demand. If they fail to do so, that is not the fault of countries with current account surpluses.

2.2. Currency Manipulation and Deindustrialization

The more sophisticated opponents of currency manipulation acknowledge that the Fed can offset the effects of increased foreign saving on total spending in the United States, at least during periods such as 1990–2007, when the United States was not close to the zero lower bound for interest rates.[33] Some pundits have pointed to another downside of large current account deficits, however—the traumatic economic dislocation that occurs as resources are

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[31] Other examples include "Announcement-Specific Decompositions of Unconventional Monetary Policy Shocks and Their Macroeconomic Effects," a 2019 paper by New York Fed economist Daniel J. Lewis, and "The Federal Reserve Is Not Very Constrained by the Lower Bound on Nominal Interest Rates," a 2018 paper by Eric T. Swanson.

[32] See Debortoli, Gali, and Gambetti (2019, 1).

[33] Some have argued that the effective lower bound is actually closer to −0.75 percent.

reallocated from manufacturing industries hit by surging imports toward services, construction, and other domestic industries.[34] As noted, the ADH study of the China shock found substantial economic dislocation in regions that were especially hard hit by Chinese exports, effects that did not quickly dissipate.

It seems clear that the "China shock" did have some of the negative effects cited by people who worry about currency manipulation. Nonetheless, there are a number of weaknesses in the argument as usually presented. First, there is a tendency to mix up the trade part of the China shock with the currency account surplus aspect of the shock. Even if China's current account had always been roughly balanced (as it is today), the emergence of a country of 1.3 billion people from communist autarchy to relatively open trade would have undoubtedly been a disruptive force, especially given China's strong comparative advantage in many manufacturing industries.[35] The China shock is mostly about rapidly changing comparative advantage, not current account surpluses.

China's current account surplus peaked at 10 percent of GDP in 2007, when it was $353 billion. Bergsten and Gagnon argue that China's current account would have been roughly balanced in 2007 if not for excessively large purchases of foreign exchange. However, a reduction in China's current account surplus would have impacted all countries, not just the United States. Thus only a modest portion of America's $711 billion current account deficit in 2007 was owing to Chinese currency policies. Even under the assumption that China's current account surplus was entirely owing to currency manipulation, China was probably not the primary cause of America's deficit.

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[34] Autor, Dorn, and Hanson (2016); Bergsten and Gagnon (2017).
[35] Bhagwati (1982) shows how changing comparative advantage may lead to protectionist policy responses.

However, even using Bergsten and Gagnon's methods, the estimated impact of China would have been dramatically smaller in 2006, probably adding less than $50 billion to a US current account deficit of $805 billion. So 2007 was a bit of an outlier. Further, their estimates are based on the assumption that China's accumulation of foreign assets was wildly excessive. Given the recent memory of the 1998 East Asian crisis as well as the risk of a trade war with America, it does not seem unreasonable that a country the size of China would wish to accumulate large holdings of foreign exchange. Note that during the relatively mild exchange rate crisis that occurred between 2014 and 2016, China saw its stock of foreign exchange quickly plunge by nearly a trillion dollars, from $4,059 billion to $3,123 billion. During 2007, China's nominal GDP was growing at well over 20 percent per year, meaning that substantial accumulation of foreign exchange would be required merely to keep the stock stable as a share of GDP.

Despite the fact that China's current account surplus has shrunk significantly while Germany and Japan continue to have very large surpluses, China's current account is still a major concern of US policymakers. Further, this is the case even though many goods exported from China were formerly made in other developing countries and are unlikely to ever again be manufactured in the United States, whereas many exports from Germany and Japan are in industries where the United States is also highly competitive, such as capital goods and chemicals.

Many pundits also tend to overlook the fact that there are many causes of current account surpluses, including structural issues such as demographics as well as cultural attitudes toward saving. We will see that countries in northern Europe and East Asia tend to run large current account surpluses for a wide variety of reasons, not just currency manipulation. Thus it is

difficult to estimate how much of China's current account surplus during the first decade of the 21st century was owing to currency manipulation, and how much was owing to other factors.

For the moment, assume that the demand-side impact of currency manipulation can be offset by monetary stimulus, and also assume that in the very long run the economy can adjust to the China (or East Asia) shock as the United States reorients its economy around new industries. That leaves the short- to medium-term "adjustment shock," which is still a very real problem for communities containing millions of workers. How should this problem be considered?

I do not wish to argue that these complaints have no merit; rather, I would point to two factors that put the problem in context.

1) Only a very small portion of the recent deindustrialization in America's Rust Belt was caused by currency manipulation. The larger share was caused by technological innovation and other changes in the economy.[36]
2) The China shock was a unique historical event that is unlikely to be repeated. Thus, even if the shock was poorly handled and should have been stretched out over a long period of time, this fact does not have obvious policy implications going forward.

I have already discussed one reason why people tend to overestimate the impact of Chinese currency manipulation—much of the job loss in America was due to the normal effects of "creative destruction" as East Asian economies came on the scene and were able to gain a comparative advantage in many manufacturing activities. China was likely to be the place where iPhones were manufactured, regardless of the country's current account balance.

In addition, trade is not the only cause of deindustrialization and probably not even the primary cause. Consider the enormous job loss in the coal industry, where employment in the

[36] Michael Hicks and Srikant Devaraj (2017) estimate that 87 percent of job losses in manufacturing during 2000–2010 were owing to automation.

United States fell from 870,000 to 110,000 even as total output surged higher and the United States became a major coal exporter. The job loss was caused by dramatically improved productivity as production moved from underground eastern mines to the vastly more capital-intensive western surface mines. These job losses devastated small communities in places like West Virginia and Kentucky, and yet few pundits argued that the government should slow down technological progress to prevent the job loss from creative destruction. But why not?

The economy can adjust to any current account balance, given enough time. Critics of currency manipulation worry about sudden changes in the current account balance, which can lead to import surges that destabilize local communities. But most of the damage from bigger current account deficits was done long ago. By 1987, the Rust Belt was already severely depressed, but China had not yet become a major player in international trade. Today, the US current account deficit is actually smaller than in 1987 as a share of GDP. Thus, over the past 32 years there has been *no net job loss owing to increases in the US current account deficit*.[37]

Again, there have certainly been job losses associated with the rapid emergence of China as the world's top exporter, and if China had adopted policies leading to smaller current account surpluses during the 2000–2012 period, then many industrial cities in the United States would have done somewhat better. But overall, the US current account deficit has not been getting worse since 1987, and the vast majority of US job losses in manufacturing and coal mining has been owing to either technological progress or the normal impact of international trade from a fast-rising superpower, leading to a rapid pace of specialization and creative destruction. The undeniable fact that China's rise damaged many local manufacturing areas in the United States is not conclusive evidence that China's rise damaged those areas *via currency manipulation*.

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[37] See the Federal Reserve Bank of St. Louis (n.d.).

Even ADH acknowledge that the China shock is mostly in the past. There is no plausible "second China" on the horizon that is about to dramatically impact the market share of US manufacturing. Indeed as Chinese wages continue to rise rapidly, some manufacturing is likely to return to the United States. So even if, in retrospect, policy was too complacent during the period of surging Chinese exports, the future policy implications of this sui generis event are not at all obvious.

Indeed, if there is another major transformational shock to the US economy, it is just as likely to come from gains in artificial intelligence that could rapidly replace large numbers of low- and medium-skilled jobs with robots or self-driving vehicles. So one might reasonably argue that the logic of those concerned about the China shock suggests that it would be prudent to slow the rate of technological change. That is not my view (and I see very few people making that argument), but it seems like an implication of the argument that the China trade should have been managed in such a way as to avoid such rapid and traumatic disruption to many local communities.

ADH's famous study of the China shock also provides a good example of how it is easy to overlook the distinction between an aggregate demand argument and a labor reallocation argument. At times, ADH seem to suggest that the actual problem is not deficient aggregate demand but rather structural unemployment caused by the process of creative destruction. That is a more plausible argument than demand shortfall, as the Fed was targeting demand during the 1990–2007 period studied by ADH (as Paul Krugman argued). Unfortunately, this quite plausible structural unemployment argument gets undercut elsewhere in the paper, when they suggest the real problem is not creative destruction but rather trade deficits:

> In the German case, the impact of rising Chinese import competition between 1988 and 2008 was compounded by an even more rapid growth of imports from Eastern Europe

> following the fall of the iron curtain. Distinct from the U.S. case, German manufacturers sharply increased exports to these lower-wage countries, resulting in a more modest trade deficit with China and a trade surplus with Eastern Europe. The employment gains related to these export opportunities roughly offset the job losses from import competition in the case of China, while actually raising German employment in the case of trade with Eastern Europe.[38]

In fact, if creative destruction really were the problem, then Germany should have been hit just as hard as America. The rapid growth in imports from China and Eastern Europe should have sharply raised the unemployment rate, as German workers facing import competition would have had difficulty reallocating to growing sectors such as exports, construction, and services. It is not clear why ADH believe that a trade surplus makes this reallocation process easier for Germany than the United States. Is it easier for unemployed clothing and textile workers in Germany to reallocate into jobs at capital goods exporters than into housing construction?

Unfortunately, ADH seem to alternate between an implausible "deficient demand" argument and a more plausible structural story. But even a structural story is of questionable relevance for the post–China shock period. Consider the recent increase in the US budget deficit, which soared by $542.4 billion between 2015 and 2019, and even more in cyclically adjusted terms. According to the Bergsten and Gagnon study, this fiscal stimulus (which occurred during a period of low unemployment and hence was not justifiable in terms of standard Keynesian stabilization models) should have increased the US current account deficit by $292 billion.[39] This dwarfs the estimated impact of China's currency manipulation, even at its peak in 2007. Going forward, fiscal policy is likely to have a far greater impact on the US current account than is currency manipulation.

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[38] See Autor, Dorn, and Hanson (2016, 27).

[39] Their coefficient estimate of 0.54 applies to the impact of the cyclically adjusted budget deficit on the current account. But 2015–2019 was a period of falling unemployment, and hence the rise in the cyclically adjusted budget deficit was presumably even larger than $292 billion.

Some might argue that fiscal policy is expansionary whereas foreign saving is contractionary. But again, that argument does not apply during the non-zero-bound period of 1990–2007, nor does it apply to the recent fiscal stimulus, which occurred during a period where the Fed raised interest rates *nine times* to keep aggregate demand growing at a level it estimated was consistent with its dual mandate. If the demand effects are offset by monetary policy, then all that is left is the impact on the real exchange rate, the current account, and the manufacturing sector. And yet, in contrast to the widespread complaints about the impact of Chinese currency manipulation on US manufacturing, there are few complaints that recent budget policies are hurting manufacturing.

2.3. Currency Manipulation and the Problem of Excess Indebtedness

Current account deficits are often wrongly assumed to represent an increase in national indebtedness. While the two issues are often linked, imports can actually be paid for with a wide variety of assets, including stocks and real estate, not just debt. Imagine that the Chinese send 1,000 TV sets to Australia in exchange for a brand new condo valued at $500,000 on the Gold Coast. This transaction adds $500,000 to Australia's current account deficit, but it does not make Australia any more indebted. Chinese labor builds the TV sets and Australian labor builds the condo. It is an exchange of physical capital for consumer goods. Arguably, the term "deficit" may not be appropriate for this sort of international transaction, illustrating the point that a current account deficit is an arbitrary accounting concept.

Not all current account deficits, therefore, are alike; not all lead to increased indebtedness. However, countries experiencing excessive indebtedness often have run large current account deficits, as in the cases of Greece and Iceland prior to the Great Recession. Further, total worldwide current account balances (measured accurately) must balance out to

zero. This has led some in the media to argue that countries that intentionally run large current account surpluses are "forcing" deficits on the rest of the world. And some would even argue that these current account surpluses force the deficit countries into a position of increasing net indebtedness.

The preceding claim mixes up valid and invalid arguments. It is true that the world's current account deficits should net out to zero. But Greece's government was not forced to run up a public debt equal to 180 percent of GDP—this was the result of irresponsible policy decisions, running large fiscal deficits at a time the economy was booming with no thought given to what would happen in a bust (and with no Greek drachma to devalue).

Foreign current account surpluses did not force the Trump administration to recently adopt a fiscal policy that dramatically boosted the US budget deficit during a stage in the business cycle when deficits are usually trending lower as a share of GDP. Indeed that fiscal policy is likely one factor behind the recent increase in America's trade deficit, which is ironic given that President Trump made the large US trade deficit a central issue in his campaign.

Of course, there is also private debt to consider. But foreign current account surpluses did not force the United States to adopt a tax regime that favors debt over equity or that discourages saving by taxing future consumption at a much higher rate than current consumption. If US regulators were encouraging excessive borrowing for home mortgages during the period leading up to 2007, then the solution is a better regulatory regime, not trying to prevent a housing boom by pressuring foreign countries to avoid current account surpluses.

There are good reasons why some countries should run surpluses, and even under the best of circumstances, anti–currency manipulation policies are likely to have only a small impact on the problem of imprudent governments running up excessive debts.

In 2017, Martin Feldstein expressed the standard view of economists regarding trade deficits:

> But foreign import barriers and exports subsidies are not the reason for the US trade deficit. The real reason is that Americans are spending more than they produce. The overall trade deficit is the result of the saving and investment decisions of US households and businesses. The policies of foreign governments affect only how that deficit is divided among America's trading partners.
>
> The reason why Americans' saving and investment decisions drive the overall trade deficit is straightforward: If a country saves more of total output than it invests in business equipment and structures, it has extra output to sell to the rest of the world. In other words, saving minus investment equals exports minus imports—a fundamental accounting identity that is true for every country in every year.
>
> So reducing the US trade deficit requires Americans to save more or invest less. On their own, policies that open other countries' markets to US products, or close US markets to foreign products, will not change the overall trade balance.[40]

That is the theory, but what does the empirical evidence show? Joe Gagnon discusses some of the recent literature:

> A series of research studies identifies the fundamental factors behind trade imbalances (Chinn and Prasad 2003; Gruber and Kamin 2008; Chinn, Eichengreen, and Ito 2011; Gagnon 2012; IMF 2012; Gagnon 2013; Bayoumi, Gagnon, and Saboroski 2015; and Gagnon et al. 2017). The most important factors include fiscal policy, intervention in currency markets, trend economic growth rates, per capita income levels, and prospective population aging. Barriers on financial flows have an important interaction with these factors; when financial markets are open, these factors generally have a larger effect on trade imbalances. Many studies focused on long-term factors, but business cycles may also be an important temporary factor. None of the studies found any role for trade barriers.[41]

Most of those factors have clear links to saving and investment. Even currency intervention can boost national saving if domestic residents do not view foreign assets as perfect substitutes for domestic assets.

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[40] See Feldstein (2017).
[41] See Gagnon (2017).

3. Six Examples of High Saving Policies and Current Account Surpluses

What is generally called currency manipulation has little to do with the exchange rate and is better described as saving manipulation. But what does it mean to manipulate a country's saving rate? How do policymakers do this? How can saving manipulation be recognized? Which types of saving manipulation are in some sense justifiable? There are no easy answers to these questions, but six case studies of countries that have recently experienced large current account surpluses shed some light on these issues.

With the exception of a few oil producers in the Middle East during years of high oil prices, the "problem" of current account surpluses is almost entirely confined to two regions—northern Europe and East Asia. Thus I will consider three countries in each region. I will also consider three big countries that have had large surpluses in absolute terms and three small countries that have had especially large surpluses in per capita terms. These six countries achieve their high saving rates in a variety of different ways.

3.1. Germany

Germany has the world's largest current account surplus—roughly $290 billion or 7.3 percent of GDP in 2018.[42] As we have seen, however, Germany is a member of the Eurozone and thus does not have its own (nominal) exchange rate, nor does it intervene in foreign exchange markets by buying lots of foreign assets.

There are two German policies, however, that have come under close scrutiny. First, the German government has been accused of running a contractionary fiscal policy. Germany is a part of the euro, and hence German public saving has only a very limited effect on the nominal

[42] Current account surplus data are from the IMF (2019).

exchange rate euro, which is mostly determined by the policies of the ECB and other major central banks. However, the country's fiscal austerity may have boosted the overall German saving rate and therefore reduced the *real* exchange rate in Germany.

While all members of the eurozone have identical nominal exchange rates, their real exchange rates will vary with the national price levels. Recall that the real exchange rate is the nominal exchange rate times the ratio of the domestic and foreign price levels:

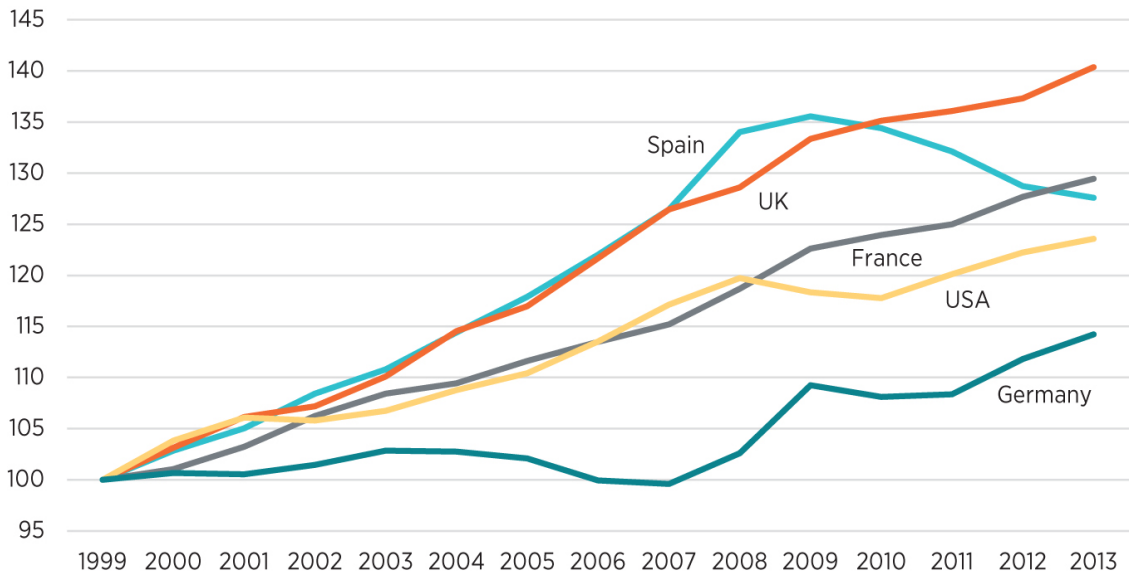
$$RER = NER \times (Pd/Pf).$$

The so-called Hartz reforms of 2003 helped to reduce German labor costs. These reforms reduced benefits to the unemployed and facilitated the creation of low-wage jobs for less skilled workers via wage subsidies.[43] By making the German labor market more competitive, the Hartz reforms tended to depress prices in Germany relative to the other eurozone members and thus helped to depreciate the German real exchange rate. Does this represent currency manipulation? Here it may be helpful to compare the German situation in the 2000–2009 period with the case of Japan.

In 2004, Germany was widely regarded as the "sick man of Europe," with an unemployment rate of roughly 11 percent. Because the German mark had been abolished, Germany was not able to depreciate its (nominal) exchange rate to restore competitiveness. The only avenue open to reduce the real exchange rate was internal devaluation, reducing wages and prices to make its exports more competitive. As figure 3 shows, German labor costs rose much more slowly than the costs of its competitors during the 2000–2009 decade.

[43] See Hopp (2019).

Figure 3. Labor Costs across Countries (unit labor costs, 1999 = 100)



Source: Author's calculations based on data from OECD, "Unit Labour Costs," accessed February 12, 2020, https://data.oecd.org/lprdty/unit-labour-costs.htm.

As the German real exchange rate depreciated, their current account surplus rose sharply, reflecting the high saving rate in Germany.

Here it is helpful to compare Germany with Japan. During the first decade of the 21st century, both Germany and Japan faced a problem of deficient aggregate demand. In the German case this manifested itself as high unemployment, whereas in Japan the primary problem was falling prices. But in both cases there was a need for additional monetary stimulus, which would inevitably lead to a weaker currency. Germany was unable to adopt monetary stimulus and thus addressed its competitiveness problem with internal devaluation. Japan waited until 2013, at which time their central bank began aggressive monetary stimulus aimed at a weaker nominal exchange rate for the yen.

In 2018, Peter Navarro suggested that Germany's decision to use the euro was a sort of de facto currency manipulation. Jeromin Zettelmeyer of the Peterson Institute argued that this accusation was baseless:[44]

> Germany chose to adopt the euro more than 20 years ago. Its motive was not to enhance German competitiveness but to strengthen European economic and political integration. Like all other euro members, Germany entered the currency union at the—unmanipulated—market exchange rates prevailing at the time. In fact, the initial consequence of euro membership was not to make Germany more competitive. Quite the reverse: Because of north-south capital flows and faster productivity growth in the poorer euro member countries, Germany quickly became overvalued within the euro area, triggering a recession in 2003. The euro's undervaluation today is largely a consequence of the euro crisis. So the assertion that German euro membership constitutes currency manipulation is baseless for two reasons: Euro membership did not reflect any decision, on behalf of the German government, to steer its exchange rate in any particular direction. Nor is Germany's competitiveness a structural feature of euro membership. Euro membership merely implies that the real exchange rate—Germany's price level relative to others, expressed in a common currency—takes longer to adjust to shocks and crises than would be the case in a floating system.

While Germany does not engage in what is traditionally regarded as currency manipulation, Germany does have a set of high saving policies, most notably a budget surplus of roughly 1.4 percent of GDP (in 2018). Bergsten and Gagnon estimate that budget surpluses in open economies are actually more effective at boosting the current account than an equal quantity of foreign exchange intervention, as surpluses tend to directly boost a country's saving rate.

In contrast, a government purchasing foreign exchange is merely swapping domestic assets for foreign assets. Indeed, in some "efficient market" models this has almost no impact on the saving rate. Foreign and domestic assets are almost perfect substitutes, and thus sterilized intervention merely tends to swap domestic for foreign assets.

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[44] See Zettelmeyer (2017).

Bergsten and Gagnon argue, however, that swapping domestic for foreign assets does tend to boost national saving because of home bias among domestic investors. Their preference for domestic assets means that the sale of domestic assets to foreigners leads domestic private citizens to boost their saving rates. But even Bergsten and Gagnon admit that the effects are modest; they estimate that in open economies an increase of $1 in net official flows results in an increase of $0.31 in the current account balance.

Given the recent fiscal problems among several eurozone members, it is not surprising that countries like Germany would wish to reduce their public debts as a share of GDP. Because many experts approve of "prudent" fiscal policies, these policies do not get condemned in quite the same way as more traditional forms of currency manipulation (the purchases of foreign exchange), even though the policies are actually more effective in boosting national saving rates (and hence current account surpluses).

If there were an international treaty in which countries agreed to refrain from "currency manipulation" via the purchase of foreign exchange, then one might expect some countries to switch to fiscal austerity—*if the goal is indeed large current account surpluses*. However, it is not at all clear that current account surpluses are actually the goal of countries with high saving policies.

3.2. Norway

Norway had a current account surplus of roughly 8.1 percent of GDP in 2018.[45] Its budget surplus, however, is much larger than Germany's, roughly 7 percent of GDP. Whereas Germany ran a small budget surplus to ensure that it would avoid a Greek- or Italian-style

[45] Current account data for Norway, the Netherlands, and Switzerland are from the IMF (2019).

fiscal crisis, Norway's motivation is to save a large portion of its large profits from oil production. The Norwegian government has done what many experts recommended, putting a large share of its oil revenue into a sovereign wealth fund so that the benefits can be spread out over future generations. If the money were used to fund current social programs, then Norway would be faced with enormous fiscal challenges when the oil ran out.

This is not to say that there is no room to criticize the Norwegian government. Bergsten and Gagnon argue that Norway saves too much and that standard models of consumption smoothing suggest that the budget surplus should be considerably smaller (although still positive). Even so, it is hard to be too critical of Norway given all the uncertainties associated with future fiscal deficits, especially considering the aging of the population and the rapidly rising cost of healthcare. The optimal fiscal surplus is very sensitive to predictions of the future path of spending.

3.3. Switzerland

Switzerland's current account surplus reached over $72 billion in 2018 or 9.8 percent of GDP. This surplus is much larger than China's 2018 surplus (roughly $49 billion), even though China has 150 times as many people as Switzerland. While Switzerland does have a small fiscal surplus (0.9 percent of GDP), other factors probably play a larger role.

Because the Swiss franc is a safe-haven currency, funds from less stable parts of Europe have flooded into Switzerland, increasing the demand for the Swiss currency. This has boosted the Swiss National Bank's (SNB) balance sheet to roughly 100 percent of GDP. In theory, the SNB could have chosen to boost the monetary base by purchasing domestic assets. In fact, they have purchased substantial quantities of euro assets in an attempt to keep the franc from

becoming too strong. The SNB fears that a strong franc would harm Swiss exporters and push Switzerland into deflation.

Despite the fact that Switzerland has both large current account surpluses and substantial foreign exchange intervention, there is considerable doubt as to how much of Switzerland's current account surplus is owing to "currency manipulation" as generally defined. Switzerland is a highly affluent northern European country with relatively low taxes on capital income—exactly the sort of place that one would expect to run large current account surpluses.

Consider the Netherlands, another small, affluent northern European country. The Netherlands ran a current account surplus equal to 10.9 percent of GDP, slightly larger than that of Switzerland. And the Netherlands runs a fiscal surplus of 1.2 percent of GDP, again slightly larger than Switzerland's fiscal surplus. And yet the Netherlands does not have its own currency and does not engage in the sort of massive foreign exchange intervention for which the Swiss have been criticized. Thus it is not obvious that the Swiss current account surplus would be significantly smaller even without official intervention in the foreign exchange markets.

3.4. Singapore

Like Switzerland, Singapore is a highly affluent country with a tax regime that treats saving and investment favorably. Singapore's current account surplus in 2018 was an astounding 17.9 percent of GDP.[46] Yet its fiscal deficit was only 0.5 percent of GDP. In recent years, its foreign exchange intervention has fallen dramatically from the early 2010s, and yet its current account surplus has remained at extraordinarily high levels.

[46] Current account data for Singapore, China, and Japan are from the IMF (2019).

Bergsten and Gagnon suggest that Singapore's current account surplus is partly owing to the Singapore government's purchasing foreign assets for its sovereign wealth funds, and the surplus also reflects the fact that the central bank conducts monetary policy by purchasing foreign assets. The overarching issue here, however, is that Singapore has chosen a high saving model for its economy, featuring low taxes on capital income and high levels of forced saving for retirement and health insurance. Singapore has essentially replaced the traditional welfare state with a fully funded set of retirement plans and health savings accounts. As a result, Singapore has an extremely high national saving rate, and this results in a large current account surplus.

Singapore's fiscal regime is pretty close to what would occur if an economic regime were set up by orthodox economists, not politicians. And to a lesser extent, this is also true of the other three countries we have examined. All have engaged in "prudent" fiscal and tax policies that try to avoid the failings that exist in most countries around the world—where politicians having a short time horizon have set up unfunded social insurance regimes and made promises that will be difficult to keep as the population ages and the cost of healthcare keeps rising. To a large extent, the countries that are viewed as "villains" in the currency manipulation literature are seen as paragons of virtue in the public finance literature. Admittedly, the profession has recently become more skeptical of the virtues of saving, but these current account surpluses were built up well before the onset of negative interest rates began to lead to a reconsideration of orthodox public finance.

Any country that wishes to achieve a current account surplus can do so without engaging in any of the concrete actions that the US government considers to be currency manipulation, such as buying lots of foreign assets. All that is required is a prosaving fiscal regime featuring

low tax rates on capital income, forced saving for retirement and healthcare, and budget surpluses. And note that, unlike current account balances, saving is not a zero-sum game. Not all countries can simultaneously boost their current account balances, but all countries can simultaneously boost their national saving rates—assuming appropriate monetary policy.

3.5. China

China's current account surplus has shrunk from roughly 10 percent of GDP in 2007 to only 0.3 percent of GDP in 2018. This is perhaps the example that best fits Bergsten and Gagnon's model of currency manipulation because movements in the country's current account balance closely track movements in the Chinese government's purchase of foreign assets.

China attracted a lot of criticism during the first two decades of the 21st century owing to the rapid growth in its foreign exchange holdings.[47,48] Yet China was far from unique and stood out primarily owing to its size. Other East Asian economies such as Singapore, South Korea, and Taiwan ran far larger current account surpluses in per capita terms as the 1997–1998 East Asia crisis led to a widespread perception that huge reserve holdings were needed for the next crisis.[49]

US Treasury securities are perhaps the safest asset during a period of financial instability, such as 1998 and 2008. It is not surprising that countries with rapidly growing GDPs would wish to accumulate substantial holdings of this asset. Indeed, the term "exorbitant privilege" has been coined to describe the benefits the United States receives from being able to borrow money at low interest rates owing to a strong preference of foreign governments for this safe asset.

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[47] See Krugman (2011).
[48] Foreign asset holdings data are from Bergsten and Gagnon (2017).
[49] Current account data are from the IMF (2019).

China illustrates some of the problems with moving the concept of currency manipulation into the political arena. In recent years, China's current account surplus has fallen to very low levels, and it no longer engages in what has traditionally been viewed as currency manipulation—sizable purchases of foreign assets. Thus it does not meet two of the three criteria used by the US government to determine whether a country has engaged in currency manipulation.[50]

And yet, China was recently labeled a currency manipulator by the US government. Although there are many issues (including intellectual property rights) at stake in the US-China trade war, the number one concern for the Trump administration is the large US trade deficit with China. This is despite the fact that economists almost universally view bilateral deficits as meaningless. If current account balances matter at all, which is unclear, then what matters is the balance vis-à-vis the rest of the world, not any individual country. The United States might have had a legitimate complaint about Chinese currency manipulation during the first two decades of the 21st century; it certainly does not have one today.

As noted earlier, there is also a great deal of confusion about the relationship between China's current account and its exchange rate policy. Consider John Tatom's discussion of the Chinese exchange rate policy:[51]

> The consensus view explained here is that a renminbi appreciation is not likely to fix either the trade imbalance with China or overall. If these perceived benefits of a managed float are small or non-existent, then perhaps they should be pursued anyway because of small costs or even benefits for China.

While that argument is defensible, it is misleading to discuss currency appreciation in the abstract. We cannot really know whether Chinese currency appreciation would impact the

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[50] A bilateral trade surplus with the United States exceeding $20 billion, an overall current account surplus exceeding 3 percent of GDP, and foreign exchange intervention exceeding 2 percent of GDP.
[51] See Tatom (2009, 301).

current account deficit unless we know *why* the currency appreciated. In this case, Tatom is discussing a move toward a floating exchange rate. If that is associated with a tighter monetary policy, then any appreciation in the nominal exchange rate is likely to be offset by lower inflation, leaving the real exchange rate unchanged. On the other hand, if the appreciation is achieved through a decline in Chinese government saving, then it might well lead to a smaller current account surplus.

3.6. Japan

In 2003, Lars Svensson (2003, 145) suggested a "foolproof" way for Japan to escape its liquidity trap. This policy would have involved a one-time depreciation in the yen, followed by a crawling peg system that would gradually depreciate the yen until inflation returned to a 2 percent target path. Why didn't Japan adopt this system? In 2001, Krugman claimed that the Japanese were afraid of being accused of currency manipulation by the United States:[52]

> For the real tragedy right now is that however innovative and open-minded Mr. Koizumi may be, he will fail unless other important players—mainly the Bank of Japan, but also the U.S. Treasury Department—are prepared to learn from Andrew Mellon's mistake. And all the evidence is that they are not. The head of the Bank of Japan insists that the country's continuing slump is the result of inadequate reform—that is, insufficient purging of the rottenness. And although the details are in dispute, the U.S. Treasury secretary, Paul O'Neill, appears to have warned Japan not to let the yen weaken too much.
>
> Poor Japan. It is the victim of those who refuse to learn from the past, and thereby condemn others to repeat it.

Japan's GDP deflator declined by roughly 15 percent between 1994 and 2013, and this period of deflation is widely misunderstood. Media accounts often imply that the BOJ tried to

[52] See Krugman (2001).

prevent the deflation but failed owing to the zero-bound problem. Even as far back as 2004, however, Bernanke, Reinhart, and Sack saw that the story was much more complex:[53]

> An important recent example of a conditional commitment is the zero interest-rate policy of the Bank of Japan. The BOJ reduced the call rate to a level "as low as possible"—to zero, for all practical purposes—in February 1999. In April 1999 then-Governor of the BOJ Masaru Hayami announced that the BOJ would keep the policy rate at zero "until deflationary concerns are dispelled," clearly indicating that the policy commitment was conditional. However, in a case of what might be called commitment *interruptus*, the BOJ then raised the call rate to 25 basis points in August 2000. In February 2001, following a subsequent weakening in economic conditions, the rate increase was partly retracted.

Bernanke, Reinhart, and Sack did not know it at the time, but Japan would repeat this "mistake" again in 2006, raising interest rates just as consumer price inflation briefly rose above zero. Thus it makes much more sense to view these actions as a conscious policy choice. Japan had an official policy of stable prices that it seemed to interpret as zero inflation. The BOJ tightened policy each time inflation rose to zero. That is consistent with a central bank that views zero inflation as a ceiling, not a floor. Japan ended up with a relatively stable consumer price index (CPI) from 1993 to 2012 and roughly 1 percent per year deflation of the GDP deflator.

Then in 2013, Japan switched to a 2 percent inflation target, and the actual inflation rate moved slightly above zero. It is hard to see any evidence that the BOJ had previously failed to hit its targets; Japanese CPI inflation averaged roughly −0.1 percent from 1994 to 2013, which is quite close to zero. Since then it has averaged about 1 percent. That is consistent with a central bank that viewed 0 percent inflation as a ceiling until 2013, but not after.

Back in 2001, Japan returned to mild deflation a year after the error identified by Bernanke, Reinhart, and Sack, and the BOJ once again cut interest rates to zero. At this point the BOJ switched to QE as a method of preventing deflation. This involved the purchase of both

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[53] See Bernanke, Reinhart, and Sack (2004, 10–11).

Japanese government bonds as well as US dollar assets such as Treasury bonds. By 2004 the purchase of dollar assets had become highly controversial. Here is John Taylor in 2010, recalling his actions as a US Treasury Department official in 2004:[54]

> The U.S. policy toward the Great Intervention by Japan was part of a strategy to support Japanese efforts to increase money growth to levels achieved before the start of their deflation. So it did relate to quantitative easing. By not registering objections to the intervention, the U.S. made it easier for Japan to increase money growth. The strategy worked this way: When the Bank of Japan intervenes and buys dollars in the currency markets at the instruction of the Finance Ministry, it pays for the dollars with yen. Unless the Bank of Japan offsets—sterilizes—this increase in yen by selling (rather than buying) other assets, such as Japanese government bonds, the Japanese money supply increases. In the past, U.S. Administrations had leaned heavily against the Japanese intervening in the markets to drive down the yen. By adopting a more tolerant position toward the intervention—especially if it went unsterilized—we could help to increase the money supply in Japan. So when Zembei Mizoguchi, the vice Minister at the Japan's Ministry of Finance, discussed the possibility in late 2002 that currency intervention was going to increase, I did not object, as the U.S. Treasury usually does.

Taylor makes two important points in this passage. First, the US Treasury usually objects to this sort of Japanese monetary stimulus. Second, Taylor was more forgiving in this particular case as he recognized the need for Japan to fight deflation. But even Taylor had his limits:[55]

> By the summer of 2003, the data began to show that the Japanese economy was finally turning the corner. Though it was too early to be sure about the recovery in Japan, it seemed to me that the Japanese could soon begin to exit from their unusual exchange rate policy of massive intervention. For the next few months we worked with the Japanese on an exit strategy. By early February 2004, the Japanese decided to complete the exit and Zembei called me to outline their exit strategy: They would intervene even more heavily in the next month and then stop. The idea seemed strange to me, but the Japanese had never tried to mislead me, so I knew that this was indeed their strategy.
>
> Intervention did increase and it was not until March 5, 2004 that we really saw the beginning of the end of the intervention. At 8:30 that morning, Washington time, the U.S. Labor Department released their monthly employment report. Employment for the month of February was up by only 21,000 jobs, much less than we or the market had anticipated. News like this would normally have a negative impact on the dollar because weaker jobs data would lower the chances of an interest rate increase by the Fed, thereby making the dollar slightly less attractive to investors seeking higher interest rates. But the dollar did

[54] See Taylor (2010).
[55] See Taylor (2010).

> not weaken and on March 5 the Japanese had purchased $11.2 billion dollars that day which made the dollar appreciate rather than depreciate as one would expect. They were not simply smoothing the market, they were working against it. Zembei had told me that they were going to do more intervention before they did less, but this was simply excessive. He was working against market fundamentals. I called him over the weekend to complain that this type of intervention was completely unwarranted and I was as forceful as a friend and ally could be.

Notice that Taylor cites improving data out of Japan, leading him to suggest that there is no further need for this sort of extraordinary intervention. In retrospect, it appears that Taylor was premature in that appraisal; Japan had still not achieved a durable exit from its deflationary trap. The US view that Japan did not need further yen weakness turned out to be incorrect. Although Taylor's views were more nuanced and understanding that those of a typical US policymaker, America's anti–currency manipulation policy still ended up slowing the Japanese recovery from deflation.

At the time of Taylor's complaints to the Japanese, the United States was still recovering from the 2001 recession. The Fed had cut interest rates to 1 percent, but the rate of job creation remained more sluggish than during previous recoveries. The US Treasury's view was that currency depreciation in Japan would worsen the US current account deficit and hence was a threat to the US economy. In fact, by 2004 the US economy was in the early stages of a sharp rebound. If Japan's current account surplus had been a problem, then the appropriate response for the United States would have been greater monetary stimulus in America, not a policy of discouraging Japanese monetary stimulus.

A week after Taylor's complaint, the Japanese ended this currency intervention program. Japanese officials may have feared retaliation from the United States, perhaps recalling the various trade barriers enacted during the 1980s when the Japanese "threat" first became a major political issue.

There seem to be two factors contributing to the long period of mild deflation in Japan. First, BOJ officials were excessively cautious in their various monetary stimulus programs, often ending the stimulus before Japan had achieved a durable exit from deflation (as in 2000 and 2006). In addition, Japan seemed reluctant to push currency depreciation too far, perhaps out of fear of retaliation from the United States.

Thus far, I have assumed that Japanese monetary stimulus might have depressed aggregate demand in the United States. It is far from clear, however, that Japan's monetary stimulus had any adverse effect on other countries. Lars Svensson[56] pointed out that the impact of currency depreciation caused by monetary stimulus is ambiguous because there is a both an income and a substitution effect. A weaker currency causes consumers to substitute domestic goods for foreign goods. However, currency depreciation caused by monetary stimulus also leads to higher incomes, tending to boost imports.

Even economists such as Prachi Mishra and Raghuram Rajan, who worry about the spillover effects of monetary policy, are careful to distinguish between beggar-thy-neighbor policies and monetary stimulus aimed at ending deflation. Mishra and Rajan discuss the income and substitution effects of monetary stimulus that works through the exchange rate channel:[57]

> Recently, Kamin (2016) in an ongoing study uses some back-of-the-envelope estimates to provide evidence for an exchange rate channel of monetary transmission in the United States. He shows that a U.S. monetary easing that lowers U.S. Treasury yields by 25 basis points causes the dollar to depreciate by 1%. He, however, finds that while a 25 basis point decline in yields lowers foreign output by 0.05% through the "demand switching" channel, it increases foreign output thorough the "demand creating" channel by exactly the same magnitude.

The Great Depression provides an excellent example of the importance of the income effect. During 1933, Franklin Delano Roosevelt devalued the dollar sharply against gold and also

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[56] See Svensson (2003).
[57] See Mishra and Rajan (2018, 17).

against most foreign currencies, an action that is often (incorrectly) viewed as an example of currency manipulation. Between March and July of 1933, industrial production soared by 57 percent. This rapid growth drew in so many more imports that the trade balance actually declined in the months after the devaluation. The income effect had dominated the substitution effect. Something similar happened after the August 1971 devaluation of the dollar as the US current account deficit increased (i.e., became more negative). Thus it is not at all clear that currency depreciation caused by monetary stimulus would have the sort of trade impact that US policymakers fear.

A recent study by Eggertsson, Mehrotra, Singh, and Summers[58] had a different view:

> In a global secular stagnation, expansionary fiscal policy carries positive spillovers implying gains from coordination, and fiscal policy is self-financing. Expansionary monetary policy, by contrast, is beggar-thy-neighbor with output gains in one country coming at the expense of the other.

But the positive correlation between international stock returns and monetary announcements casts doubt on this beggar-thy-neighbor argument. If currency depreciation actually hurt a country's trading partners, then one might have expected European stock indices to have fallen after the Fed's March 18, 2009, QE announcement, which raised the price of euros by $0.06. In fact, European stock indices actually opened higher on the following day. Indeed, one often observes worldwide stock rallies in response to major monetary policy stimulus in one country—even at the zero bound. Here is a typical headline from 2015 following a contractionary move by the ECB, which appreciated the euro:[59] "Global Stocks Slammed by ECB; Euro Jumps Most since 2009."

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[58] See Eggertsson et al. (2016, abstract).
[59] See Carew (2015).

The ECB could be said to have "manipulated" the dollar, yen, and pound lower, and yet stocks in those countries declined. Why? The only plausible interpretation of these global stock market reactions is that the income effect (less exports due to weaker global growth) dominates the substitution effect (more net exports due to depreciation in the dollar, yen, and British pound).

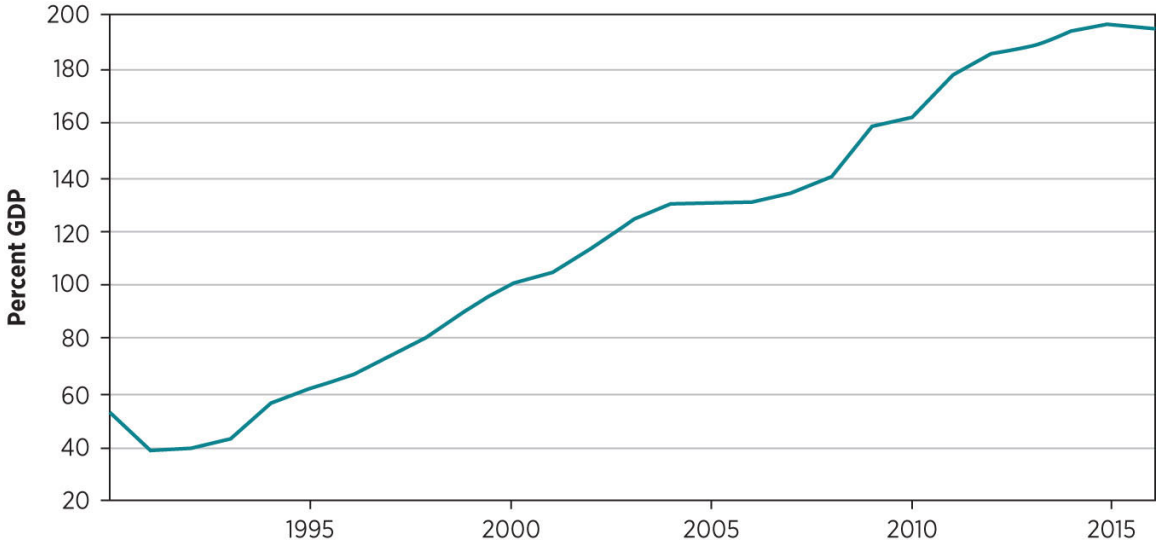
Those who follow global stock market reactions to Fed policy surprises will have seen many similar correlations. US monetary stimulus tends to be good for foreign equity markets, even if it causes their currencies to appreciate.

Though there is now pretty strong agreement among economists that Japanese monetary stimulus is appropriate, even when it leads to yen depreciation, critics of Japanese policy occasionally point to the fact that, in the first decade of the 21st century, Japan was artificially boosting its saving rate by purchasing large quantities of foreign assets. The problem is not the yen depreciation; in their view, *it is the method used.*

After 2011, however, this policy ended, and Japan's foreign reserves leveled off at roughly $1.2 trillion. Despite this fact, Japan continues to run huge current account surpluses—roughly $175 billion in 2018. Germany is the only other country with a current account surplus in excess of $100 billion.

And unlike in Germany, Japan runs large and persistent budget *deficits*; they are especially large when one considers that Japan has had very little growth in its nominal GDP since 1993. Japan's net national debt has soared from less than 40 percent of GDP in 1991 to over 180 percent in 2012, hardly evidence of an excessively tight fiscal policy. Ironically, fiscal policy actually tightened once Abe took office in 2013; it was monetary stimulus that boosted nominal GDP growth in Japan after 2012 (see figure 4).

Figure 4. Central Government Debt, Total (% of GDP) for Japan



Source: World Bank, "Central Government Debt, Total (% of GDP) for Japan," 2019; in FRED Economic Data, Federal Reserve Bank of St. Louis, https://fred.stlouisfed.org/series/DEBTTLJPA188A.

To summarize, Japan is perhaps the best example of the danger of looking at "currency manipulation" as an exchange rate issue. Japanese monetary policy has been consistently too tight to hit its inflation target, which means the yen has been too strong in nominal terms. In contrast, the *real* foreign exchange value of the Japanese yen has been relatively weak, leading to large current account surpluses that reflect Japan's high saving rate. Massive fiscal stimulus did not fix either problem as deflation continued while Japan ran current account surpluses.

4. How Should the United States Respond to Currency Manipulation?

This analysis casts some doubt on the claim that currency manipulation is a problem. My own view is that a policy of benign neglect is optimal—policymakers should focus on domestic stabilization policies. But suppose that this complacent view is wrong and that there are valid

reasons to worry about foreign current account balances. What then? What policy is called for in response?

Recall that currency manipulation is not actually about currencies; if there is any issue at all, it is *saving manipulation*. Thus it would seem to make no sense to adopt policies such as nominal exchange rate adjustments or tariffs and quotas. Those policies do not significantly impact the saving and investment dynamic and hence have little direct impact on the current account. Instead, it would make more sense to fight fire with fire.

Bergsten and Gagnon point out that when currency manipulation occurs, the optimal response for the United States would be to purchase a quantity of foreign assets equal to the foreign exchange purchases of the country that the United States is accusing of currency manipulation. In my view, a reduction in the budget deficit would be even more effective, and this is consistent with the empirical estimates in Bergsten and Gagnon's 2017 study. The basic point is simple. If a country wishes to reduce its current account deficit, then policymakers need to increase saving or curtail investment. It is generally not desirable to reduce investment, so a policy boosting saving is the most logical option. And the most straightforward way to do that is through a reduction in the budget deficit.

The deeper question is whether the discussion of currency manipulation does more harm than good. There are a number of reasons to be skeptical of the entire currency manipulation debate. Here are just a few examples.

1) The debate is ostensibly about exchange rates, but in practice it appears the actual concern is saving manipulation. If policymakers are unable to correctly diagnose the issue, it is likely they will prescribe the wrong medicine, such as trade barriers.

2) When there are high-level negotiations over trade, countries tend to consider increased market access to foreigners to be a "concession." For more than 200 years, economists have told policymakers that this is wrong, but policymakers remain unconvinced. This means that policymakers will evaluate currency manipulation accusations with the wrong model, as in the Navarro and Ross paper cited earlier.
3) Because policymakers are not always aware of the sort of sophisticated critique of currency manipulation provided by Bergsten and Gagnon and others, they will wrongly assume that legitimate attempts to depreciate a currency for the purpose of boosting aggregate demand constitute currency manipulation. In fact, *any* successful central bank policy to end deflation is likely to depreciate the currency in foreign exchange markets. Thus, inappropriate pressure on the central banks of countries suffering from deflation will make it more difficult to battle deflation. As Barry Eichengreen and Jeffrey Sachs[60] demonstrated, "beggar-thy-neighbor" policies were entirely appropriate during the 1930s, even though most politicians and even historians thought otherwise.
4) Because currency manipulation is actually saving manipulation, it is extremely difficult to define and identify currency manipulation. Even if it were possible to gain an international agreement to ban foreign exchange intervention, which seems very unlikely given the large amount of dollar debt in many countries and the accompanying need for adequate foreign exchange holdings, this ban would not stop saving manipulation. Countries would try to boost national saving rates using a wide

[60] See Eichengreen and Sachs (1985).

variety of alternative measures, including tax and fiscal policy as well as sovereign wealth funds.

5) Many policymakers wrongly believe that currency manipulation reduces aggregate demand in the rest of the world. That is certainly not true when a country is not at the zero bound, and it is not even true at the zero bound if central banks adopt any of the suggested policy options available once nominal interest rates hit zero, such as price level targeting or nominal GDP level targeting or a higher inflation target.
6) Many policymakers wrongly assume that current account balances should be close to zero and that a nonzero current account balance is some sort of unfortunate disequilibrium. This is not the case—there are very sound reasons why some countries have current account deficits and others have surpluses. Policies that try to artificially push current account balances toward zero may well distort optimal financial flows.

Of course, there are counterarguments to all of these points. There is no doubt that some foreign countries have occasionally adopted suboptimal saving policies, impacting both their own current accounts and the current accounts of their trading partners. In that case, one can always construct "game theory" arguments for pressure tactics to get them to reverse these policies. But I see little evidence that these policies will work.

Take the case of Japan. One might argue that pressure from the United States caused Japan to sharply reduce its intervention in foreign exchange markets. But there are many ways to boost domestic saving rates. Thus the Japanese Government Pension Fund has gradually shifted its portfolio toward a larger share of foreign stocks and bonds, tending to boost overall saving

rates if Japanese investors have home bias, which seems to be the case.[61] In fact, Japan continues to run large current account surpluses despite sizable budget deficits and despite a lack of explicit foreign exchange intervention. There is more than one way to skin a cat.

If the US current account deficit actually were a big problem, then one option for the United States would be to sell a large amount of newly issued public debt and to use the funds to create a sovereign wealth fund comprised of both domestic and foreign assets. The extra debt would help to meet the world's increasing appetite for safe assets and also provide more "ammunition" to purchase if the Fed were to again face the zero-bound problem. Given the home bias of US investors, this should tend to boost domestic saving and depreciate the real exchange rate of the dollar.

5. Conclusion

Not all accusations of currency manipulation involve economic fallacies or mercantilist ideology. Bergsten and Gagnon, for instance, provide a quite sophisticated critique of various types of currency manipulation with a focus on the excess saving channel. There is a danger, however, that political attacks on currency manipulation will become entangled in cruder arguments against very justifiable and even necessary public policies.

Consider the following three 21st-century economic problems:

1) inadequate saving to meet the needs of an aging global population
2) inadequate policies to end deflation in places such as Japan
3) economic nationalism and protectionism

[61] The data are available at Government Pension Investment Fund (n.d.).

Proponents of aggressive policies aimed at stopping currency manipulation run the risk of putting weapons in the hands of those who wish to avoid prudent long-run fiscal policies. Attacks on currency manipulation make it harder for countries such as Japan to escape deflation. Even worse, much of the currency manipulation rhetoric employed by politicians plays into the hands of crude protectionists looking for excuses to enact trade barriers against nations with current account surpluses.

It might be argued that countries such as Japan and Switzerland could theoretically address deflation by purchasing lots of domestic assets rather than foreign assets. However, it is equally true that the supposed victims of currency manipulation could offset any impact on demand with more progressive monetary policies, such as price level targeting, nominal GDP level targeting, or QE pursued to the extent necessary to hit their inflation target. Whenever there is a public policy concern such as inadequate aggregate demand, the first place to look should be domestic policies, not the policies of other nations.

Finally, international agreements to prevent currency manipulation are likely to be largely ineffective. If a country is truly determined to boost its current account balance, there are numerous methods for doing so that do not constitute "currency manipulation" as conventionally defined. Thus, attacks on currency manipulation might have unfortunate side effects in other policy realms without even achieving the desired outcome of moving current account balances close to zero.

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