Plumbing America's Balance of Trade

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ABSTRACT

By focusing only on the trade deficit, critics miss the full economic benefits of a more open American economy. This paper provides original analysis of the total inflow and outflow of dollars through numerous "pipes" that make up the plumbing of US commerce with the rest of the world. It explains how underlying macroeconomic factors determine the size and direction of America's trade balance, why bilateral deficits with trading partners do not indicate a failure of US trade policy, and why efforts to employ trade policy to fix the overall trade deficit or bilateral deficits would be futile and self-damaging. Among the key policy conclusions: America's net positive inflow of capital year after year indicates the continuing attractiveness of the United States as a destination for foreign investment; imports benefit US consumers as well as producers; and direct foreign investment abroad by US companies is not primarily a platform for importing goods and services back to the United States but for expanding sales to foreign customers.

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The US trade deficit has taken center stage once again as a trade-skeptical Trump administration settles in to Washington, DC. During the campaign and since the election, Donald Trump and his closest trade advisors have put the trade deficit in the crosshairs of what is wrong with US trade policy. They blame the gap between what Americans import and export each year for a wide range of economic ills, and they have pledged to reduce or eliminate the US trade deficit. In their view, bilateral deficits with key trading partners such as China, Mexico, and Germany contribute to the size of the overall deficit and prove that US trade policies have failed and need to be changed.

Now, more than ever, it is important that the American public and policymakers understand the underlying causes of the US trade deficit, what the trade deficit means for the US economy, and the potential consequences of proposals to curb or even eliminate the overall trade deficit and the largest bilateral deficits. Without an economically sound understanding of the US trade accounts, policymakers risk inflicting unintended but serious damage on the US economy.

This paper will explain how America's commerce with the rest of the world must be and always is balanced when taking into account investment flows as well as the exchange of goods and services. The paper examines the many ways Americans trade goods, services, and investment assets with the rest of the world, and demonstrates how those exchanges benefit the US economy and American households. The paper explains how underlying domestic macroeconomic factors determine the size and direction of America's trade balance, why the current account has been in deficit year after year, why bilateral deficits with trading partners do not indicate a failure of US trade policy, and why efforts to employ the tools of trade policy to fix either the overall trade deficit or bilateral deficits would be futile and self-damaging.

Among the most policy-relevant conclusions: America's long-running gap between imports and exports reveals nothing about the success or failure of US trade policy or the competitiveness of US industry. In fact, the net positive inflow

of capital to the United States year after year indicates the continuing attractiveness of the United States as a destination for foreign investment. Imports benefit US consumers as well as producers. And direct foreign investment abroad by US companies is not primarily a platform for importing goods and services back to the United States but for expanding sales to foreign customers.

"America's balance of trade in goods attracts most of the attention when it comes to trade policy, but goods are just one way that Americans trade with the rest of the world."

AMERICA'S BALANCE OF PAYMENTS RESEMBLES A COMPLEX WATERWORKS

America's balance of trade in goods attracts most of the attention when it comes to trade policy, but goods are just one way that Americans trade with the rest of the world. America's balance of payments accounts cover all international transactions involving American residents during a specified time period, typically a quarter or calendar year. It shows the total number of transactions during that period between individuals, companies, and governments involving financial and real assets as well as goods and services.

By definition, the *merchandise balance* includes trade in goods, the *trade balance* includes trade in goods and services, and the *current account balance* includes not only goods and services but also the income generated by investments and unilateral transfers such as remittances and foreign aid. The nation's *balance of trade* is the broadest measure of its commercial interaction with the rest of the world, encompassing both current account transactions and the exchange of assets, including direct and portfolio investment.

In balance of payments accounting, any transaction that causes money to flow out of the United States, such as importing a good or acquiring a foreign asset, is a debit in the balance of payments account; any transaction that causes money to flow in, such as exporting a service or selling a domestic asset to a foreign buyer, is a credit. As with standard double-entry accounting, every debit is offset by a credit of equal amount.

We call it trade for a reason. When foreign residents send US residents a good, provide a service, or transfer title to an asset, they want something in return. They will either spend the dollars they earn on US goods, services, or assets, or they will exchange the dollars for local currency with someone else who wants to buy US exports or assets. Thus, in the fullest sense, America's international accounts are always balanced.

America's balance of payments account can be viewed as a giant subterranean waterworks with dollars flowing through a system of pipes that connect the United States to the global economy. As goods and services and titles to assets trade hands above ground in the real economy, the dollars that finance those transactions flow continuously through the underground channels. Pressure is distributed more or less evenly throughout the waterworks, with an outflow of dollars from the United States offset by an equal inflow of dollars from the rest of the world.

One major set of pipes is the current account, which carries the dollars for all transactions for goods and services. The two largest current account pipes are those that carry dollars in and out of the United States to pay for the cross-border sale of goods. Another pair carries the dollars that pay for the exchange of services. And as the stock of cross-border assets accumulates at home and abroad, a third pair of pipes handles investment income to the owners of the assets. These last pipes carry dollars to pay the profits earned on direct investments, dividends on stock, and interest on bonds, loans, and Treasury bills. Because these payments are in effect a kind of rent for use of the asset, they are assigned to the current account plumbing even though they are tightly linked to the international market for assets.

The current account pipes also include a pair for the inflow and outflow of unilateral transfers. Such transfers mean that dollars flow out of the United States in the form of foreign aid or remittances, with no good or service delivered to the United States in return. The dollars then flow back to the United States to buy American goods and services, which means in effect that Americans send goods and services abroad without receiving any goods, services, or assets in exchange. The same unilateral transfers occur in reverse, with dollars flowing into the United States in the form of remittances or other payments from abroad with no goods or services delivered in exchange.

To reflect the reality of the modern global economy, another set of pipes accommodate the large flows of capital moving across international borders. One pair carries dollars for direct investment, such as a controlling interest in a foreign affiliate. Another transfers dollars for the purchase of portfolio investments

such as equities, corporate bonds, and government bonds. And another transfers dollars for deposit in banks or for direct loans. Those three pairs of pipes together are referred to as the *financial account*. A fourth pair of pipes, called the *capital account*, records the cross-border acquisition and disposal of nonfinancial assets, such as debt forgiveness and certain insurance claims.[1]

A final pipe exists as a kind of safety valve to mop up any overflow for statistical discrepancies, otherwise known as "errors and omissions." The government meter readers cannot always accurately capture the exact amount of dollars flowing through each pipe in the system. When what is flowing out through all the other pipes does not exactly match what is flowing in, the difference is assigned to this final, catchall category.

FOLLOW THE MONEY: HOW AMERICANS DO BUSINESS IN THE GLOBAL ECONOMY

As we picture this international financial waterworks, one key insight for public policy is that the total outflow of dollars each year from the United States to the rest of the world is matched by an equal inflow of dollars from the rest of the world to the United States. There is no need to worry about a "leakage" of dollars siphoning off demand from the domestic economy. Dollars spent on imported goods and services return to the United States, if not to buy US goods and services, then to buy US assets in the form of an inward flow of investment.

Critics of the trade deficit focus exclusively on the outflow of dollars to pay for what the United States imports over what it exports. And it is true that in recent years Americans have chosen to spend hundreds of billions of dollars a year more on imported goods and services than foreigners have chosen to spend on exported goods and services from the United States. But that is just one pair of pipes in the

1. The terms *financial account* and *capital account* are sometimes used interchangeably, but in the official US balance of payments account, the capital account covers a much smaller subset of asset transactions. According to the standard definitions of the two accounts provided by the US Bureau of Economic Analysis, "The capital account consists of capital transfers between residents and nonresidents and the cross-border acquisition and disposal of nonproduced nonfinancial assets. Capital transfers include debt forgiveness and certain disaster-related nonlife insurance claims. Nonproduced nonfinancial assets include natural resources and contracts, leases, and licenses. Capital account transactions are distinguished from current account transactions in that capital account transactions result in a change in the assets of one or both parties to the transaction without affecting the income or savings of either party. The financial account consists of transactions between US residents and nonresidents for direct investment, portfolio investment, other investment, reserves, and financial derivatives other than reserves." See Bureau of Economic Analysis, "US International Transactions: Third Quarter 2016," news release, December 15, 2016.

TABLE 1. ANNUAL AVERAGE OF US CURRENT, CAPITAL, AND FINANCIAL ACCOUNTS, 2011–2015 (MILLIONS OF US DOLLARS)

	$ inflow (exports, credits)	$ outflow (imports, debits)	Balance
Current account			
Goods	1,559,489	2,299,248	(739,759)
Services	695,953	463,756	232,197
Investment income	785,613	573,190	212,423
Unilateral transfers	121,123	251,649	(130,526)
Current account total	3,162,178	3,587,843	(425,665)
Financial and capital account			
Direct investment	272,840	381,070	(108,230)
Portfolio investment	504,685	310,416	194,269
Deposits and loans	42,208	(218,111)	260,319
Capital account and other			
Capital account	1,534	490	1,044
Reserve assets		1,473	(1,473)
Financial derivatives		(21,092)	21,092
Financial and capital account total	821,267	454,246	367,021
Statistical discrepancy	58,644		58,644
Total	4,042,089	4,042,089	–

Source: Bureau of Economic Analysis, US Department of Commerce.

balance of payments waterworks. When we consider all the dollars that flow into and out of the United States each year, the accounts are always balanced.

Table 1 shows the flow of dollars through the various pipes of the US balance of payments system in the five-year period from 2011 through 2015. Those five years have been remarkably stable for the US current account deficit, which averaged 2.7 percent of GDP and fluctuated within a narrow range of 2.3 to 3.1 percent. Taking the average annual transactions during a five-year period can also smooth out year-to-year fluctuations within accounts, offering a more accurate view of recent trends.[2]

When we account for all the dollars flowing out of the United States during an average year between 2011 and 2015, it totals just above $4 trillion. When we account for all the dollars flowing into the United States, with an adjustment for the statistical discrepancy, it totals the exact same amount. The difference between dollars flowing out and dollars flowing in each year is zero.

2. Bureau of Economic Analysis, "U.S. International Transactions, Expanded Detail," International Transactions Table 1.2, accessed February 28, 2017, http://www.bea.gov/international/index.htm.

By focusing exclusively on trade in goods, or even in goods and services, we miss the importance and the benefits of all the other ways that Americans do business with residents of other countries. To have a fuller appreciation of the ways Americans gain from integration in global financial and product markets—and how those transactions are interrelated—here is a more detailed look at how Americans spend and earn dollars in the global economy.

Goods Trade

By far the largest flow of dollars in the current account is for the import and export of goods, with hundreds of billions more flowing out than flowing in. Table 1 shows that for the period of 2011–2015, the United States ran an annual deficit in goods trade of almost $740 billion. This has been rounded up by certain critics of US trade policy to become America's "almost $800 billion trade deficit."[3] Even as a ballpark figure, this is a misleading indicator of America's trade with the rest of the world.

Contrary to common thinking, imports are not a drag on the US economy. Imports make Americans' lives better every day as consumers and enhance Americans' productivity and competitiveness as producers.[4] During the period under consideration, Americans spent an annual average of $2.3 trillion on imported goods, mostly for production, not consumption. The top two major categories of imports were (1) industrial supplies and materials and (2) capital goods except automotive goods. Together they account for 54 percent of US merchandise imports. Consumer goods account for 24 percent more, and automotive vehicles, parts, and engines were 13 percent of imports.[5]

More specifically, the following eight import categories account for more than half of what Americans spend on imported goods each year.[6]

1. Crude oil, petroleum products, and fuel oil

3. ABC News, "Debate Fact-Check: Reviewing What Donald Trump and Hillary Clinton Said during the Debate," October 10, 2016.
4. Of course, it is a widely noted fact that a subset of American producers and their employees do suffer losses because of import competition. It is beyond the scope of this working paper to address those concerns comprehensively. One policy option is to redirect a share of the overall gains to the economy from trade to offset some or all of the losses suffered by the import-competing sectors.
5. BEA, "U.S. International Transactions, Expanded Detail," International Transactions Table 1.2.
6. US Census Bureau, "U.S. Imports from World Total by 5-Digit End-Use Code, 2006–2015," Foreign Trade, Product Detail and Partner Country, North American Industry Classification System (NAICS)-Based, End-Use, accessed February 28, 2017, https://www.census.gov/foreign-trade/statistics/country/index.html.

2. Passenger cars, new and used; and other parts and accessories of vehicles
3. Cell phones and related household goods
4. Telecommunications equipment
5. Computers, computer accessories, and semiconductors
6. Apparel and textiles
7. Pharmaceutical preparations
8. Industrial machines

On the export side, the biggest inflow of dollars from abroad was to buy US industrial supplies and materials, followed by capital goods (except automotive goods); together they account for almost two-thirds of US exports. Consumer goods accounted for another 12 percent, and automobiles and auto parts for about 10 percent.[7]

Half of what Americans earn for exported goods comes from the following categories.[8]

1. Civilian aircraft, engines, equipment, and parts
2. Petroleum products and fuel oil
3. Passenger cars, new and used; and other parts and accessories of vehicles
4. Industrial machines
5. Pharmaceutical preparations
6. Semiconductors
7. Electric apparatus
8. Telecommunications equipment
9. Plastic materials
10. Chemicals
11. Medicinal equipment
12. Computer accessories
13. Nonmonetary gold
14. Industrial engines

7. BEA, "U.S. International Transactions, Expanded Detail," International Transactions Table 1.2.
8. US Census Bureau, "U.S. Exports to World Total."

Notice that several categories are represented among both top imports and top exports. This reflects trade in differentiated products. For example, the large value of imported cars and car parts does not mean that Americans don't make or export their own cars. The United States both imports and exports automotive products, and Americans benefit from the increase in quality, variety, and competitive pricing. The same dynamic is at work for industrial machines, pharmaceutical products, and telecommunications equipment.

Services Trade

Americans run a large annual surplus in services trade. In the five-year period 2011–2015, an average of $464 billion flowed abroad to buy services from foreign providers, while $696 billion flowed back to the United States each year to buy American-provided services, for an average annual surplus of $232 billion. This surplus in services trade offsets a share of the goods deficit, resulting in an overall goods and services deficit during the period of just above $500 billion per year.[9]

The largest outflow of dollars for services was from Americans traveling abroad: 82 percent for personal travel and the rest for business travel. The next-largest category was "other business services," which includes business and management consulting and public relations, as well as technical services such as architectural and industrial engineering. A close third for spending on imported services was transportation, primarily ocean freight and air passenger services.[10]

On the export (credit) side of the services ledger, the largest inflow of dollars was also generated by travel, three-quarters for personal travel to the United States, including travel for education. The next largest generator of inflowing dollars was charges for the use of intellectual property, chiefly for industrial processes, computer software, trademarks, and movies and television programming. Close behind were other business services, primarily business and management consulting and public relations services, research and development (R&D) services, and technical services. Other major service exports are transportation, with almost half

9. US trade in goods and services for 2016 was consistent with the pattern of the 2011–2015 period. According to a report from the Census Bureau, the deficit on goods and services trade for all of 2016 was $502.3 billion, reflecting a $750.1 billion deficit in goods trade and a $247.8 billion surplus in services trade. US Census Bureau, *US International Trade in Goods and Services, December 2016,* FT-900 (16-12), February 17, 2017.

10. Bureau of Economic Analysis, "U.S. Trade in Services, by Type of Service," International Services Table 2.1, December 19, 2016, https://www.bea.gov/iTable/iTable.cfm?ReqID=62&step=1#reqid=62&step=6&isuri=1&6210=4&6200=245.

of the dollar inflow generated by air passenger services, and financial services such as financial management and credit card and other credit-related services.[11]

Our biggest surpluses in services trade are generated by travel, charges for the use of intellectual property, and financial services. One of the few areas where significantly more dollars flow out than in is insurance services.[12]

Investment Income

Investment income represents the second largest flow of dollars in the US balance of payments. It measures the income generated on foreign investment, including profits, dividends, and interest. As with services income, American citizens generate large surpluses in investment income year after year. In the 2011–2015 period, an average of $786 billion flowed into the United States as receipts for the return on assets Americans held abroad, more than $200 billion more than the $573 billion in payments made for the return on assets foreigners held in the United States.

The largest outflow of investment income was payments for returns on portfolio investment ($362.0 billion), accounting for almost two-thirds of the outflow. Most of the rest of the payments were for income earned from direct investment in the United States ($177.8 billion). In contrast, the largest inflow of dollars was for receipts from direct investment abroad ($466.4 billion), accounting for almost 60 percent of investment income. Income from portfolio investment abroad ($278.6 billion) accounted for almost all the rest.[13]

Americans earn a surplus on investment income even though the stock of foreign investment in the United States

"Americans earn a surplus on investment income even though the stock of foreign investment in the United States is about one-quarter larger than the stock of what Americans own abroad."

11. Ibid.
12. Alexis N. Grimm and Maya Ortiz, US Department of Commerce, "U.S. International Services: Trade in Services in 2015 and Services Supplied through Affiliates in 2014," *Survey of Current Business* (December 2016): chart 6.
13. Bureau of Economic Analysis, "International Transactions, Expanded Detail (1999–present)," International Transactions Table 1.2, accessed February 28, 2017, https://www.bea.gov/international/index.htm.

is about one-quarter larger than the stock of what Americans own abroad.[14] Across all categories of assets, Americans earn a higher rate of return on their overseas investments than foreigners earn on their investments in the United States. In total investment returns, Americans earned 3.3 percent annually on the annual average of $23.4 trillion in assets they owned abroad during the 2011–2015 period. They earned 7.2 percent on their direct investments, 3.2 percent on portfolio investments, and 0.4 percent on all other investments abroad, including bank deposits and loans.[15]

Compare that to the more modest 1.9 percent that foreign savers earned each year on the stock of $29.1 trillion they owned in US assets on average for each year during the same period. They earned 3.2 percent on their direct investments, 2.4 percent on portfolio investments, and 0.2 percent on all other investments—all lower returns than Americans earned on their overseas investments in the same class of assets.

We see the financial and capital accounts offering the same win-win benefits of trade as the current account. Foreign savers are willing to settle for a lower return on their investments in the United States in exchange for the security and liquidity offered by the US capital markets. American savers, in turn, are able to realize greater returns on their investments in exchange for their willingness to take more risk in overseas assets.

Unilateral Transfers

The final pair of pipes in the current account section of the waterworks carries receipts and payments for unilateral transfers. These transactions account for the transfer of goods, services, and assets—or their dollar equivalents—for which nothing is exchanged in return. Examples of unilateral transfers are foreign and military aid, remittances, pension payments to a nation's citizens living abroad, and other types of currency transfers. A unilateral transfer can be the actual good, service, or asset crossing the border, or it can be dollars. But there is no equivalent payment or receipt in return.[16]

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14. Bureau of Economic Analysis, "Net International Investment Position at the End of the Period, Expanded Detail (1976–present)," International Transactions Table 1.2, accessed February 28, 2017, https://www.bea.gov/international/index.htm.
15. The annual return on inward and outward investment is calculated by dividing investment income by the average year-end stock on investment of the same asset category.
16. If the US government ships $1 million worth of soybeans overseas in the form of foreign aid, $1 million is entered as a debit under unilateral transfers and $1 million as a credit under exported goods. If the US government sends the foreign aid as a $1 million cash transfer and the $1 million is used to buy US soybean exports, the transaction is recorded in the same way.

Year after year since World War II, the United States has unilaterally sent more goods, services, and assets (or their dollar equivalent) abroad than it has received. The one exception was 1991, when the United States received more than $30 billion in contribution payments from allies in the Gulf War, tipping unilateral transfers to a surplus.[17]

In the half decade of 2011–2015, the United States sent an annual average of $252 billion abroad in unilateral transfers and received $121 billion, for an annual deficit of $131 billion. More than three-quarters of the outflow of dollars was for private transfers, chief among them insurance-related transfers; withholding taxes paid by US companies; charitable donations by US entities; and remittances, which are personal transfers from US resident immigrants to foreign residents.[18]

The rest of the unilateral transfers were US government transfers, primarily nonmilitary and military assistance provided to foreigners in the form of goods, services, or cash under programs enacted by the US Congress. Other government transfers include Social Security and retirement benefits paid to former US residents who live abroad, and contributions to international organizations and commissions to meet the financial obligations of membership and to fund United Nations peacekeeping operations.

The smaller inflow of dollars for unilateral transfers is also mostly private receipts. According to the US Department of Commerce, the private inflow consists primarily of insurance-related transfers; pensions and benefits received principally from Canada, Germany, and the United Kingdom; antitrust-related class-action lawsuits; and remittances received by US residents. The rest of the transfers come to the US government primarily in the form of withholding taxes received and fines levied by US government agencies.

Portfolio Investment

The other major set of pipes in the US balance of payments system carries dollars used for the cross-border acquisition of assets, otherwise known as investment flows. These transactions are captured in the financial account and the capital account. The financial account measures transactions for portfolio investment,

17. Christopher L. Bach, US Department of Commerce, "U.S. International Transactions, Fourth Quarter and Year 1991," *Survey of Current Business* (March 1992), 68.
18. Bureau of Economic Analysis, "U.S. International Transactions in Secondary Income," International Transactions Table 5.1, accessed February 28, 2017, https://www.bea.gov/international/index.htm.

"Without a net inflow of capital year after year, the number of investment opportunities in America that could be seized or created by investors would be limited by the size of Americans' savings, depriving the American economy of investment that enhances its current and future productivity."

which is passive, noncontrolling ownership of common stocks, bonds, or T0reasury bills; for bank deposits or direct loans; and for direct investment, which involves the direct control of an asset by the investor. The category of the capital account is typically much smaller and captures transactions involving nonfinancial assets such as real estate.

Portfolio investment is defined as cross-border transactions and positions involving debt or equity securities other than those included in direct investment or reserve assets held by central banks. In the half decade of 2011–2015, foreign investors increased their holdings of US portfolio securities by an average of $504 billion a year, while American investors increased their holdings of foreign securities by an average of $310 billion, for a net annual inflow of $194 billion. Of the annual inflow of portfolio investment, 90 percent flowed into US debt securities, such as Treasury bills, and the rest flowed into equities, such as stocks and mutual funds. Of the annual outflow of portfolio investment, two-thirds flowed into foreign equity investment and one-third into debt securities.[19]

From a glance at table 1, it appears that the volume of dollars flowing through the portfolio investment pipes is modest compared to what flows through the current account pipes, but that interpretation would be misleading. The financial accounts report the net value of exchanges at the end of the period (usually quarterly or annually). That's because assets, such as stocks and Treasury bills, can be bought and sold across international borders multiple times during the accounting period. In contrast, when a good or service is sold internationally, it is far less likely to be re-exported or re-imported in the same reporting period. So while the current account measures the cumulative transactions during a given period, the financial account measures the net value of transactions at the end of the period compared to the previous period.

19. BEA, "International Transactions, Expanded Detail (1999–present)," International Transactions Table 1.2.

Thus the net cross-border transactions on US securities summarized in table 1 are just the tip of a deep iceberg. According to the US Department of the Treasury, the net capital inflow of portfolio investment is dwarfed by the gross purchases and sales of domestic US assets by foreign investors. During the period 2011–2015, foreign investors purchased an annual average of $27.5 *trillion* in domestic US securities and sold an average of $27.2 *trillion*. The difference of a few hundred billion a year is what is reflected in the net financial account numbers.[20]

The net inflow of portfolio investment to the US economy year after year is hugely important and beneficial. Foreign investment in US stocks and corporate bonds provides capital for US companies to invest in research and development and to expand productive capacity. It also lifts stock prices above what they would be without the net inflow of investment, boosting the value of retirement savings for millions of American workers.

Foreign investment in US Treasury bonds prevents the crowding out of private domestic investment. When the federal government can tap into the global savings pool, it means more of Americans' domestic savings remains available to invest in housing, business expansion, and education. As the *Economist* magazine put it, "Globalized capital breaks the tie between saving and investment."[21] And that is especially good for Americans because the size of the investment opportunities in the United States is so much greater than the amount of savings available only from Americans. Without a net inflow of capital year after year, the number of investment opportunities in America that could be seized or created by investors would be limited by the size of Americans' savings, depriving the American economy of investment that enhances its current and future productivity.

As of September 2016, foreign investors—mostly foreign central banks—owned a cumulative $6.2 trillion in US Treasury securities, which is just below one-third of the US federal government's total outstanding debt. The major holders by far were China and Japan, with about 6 percent of the outstanding debt each, followed by Ireland, Cayman Islands, Brazil, and Switzerland, each holding about 1.3 percent of the total outstanding US debt.[22]

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20. US Department of the Treasury, "TIC Monthly Reports on Cross-Border Financial Flows," Treasury International Capital (TIC) System, TIC Data for September 2016 and previous reports, accessed December 15, 2016, https://www.treasury.gov/resource-center/data-chart-center/tic/Pages/index.aspx.
21. "Capital Mobility: The Good, the Bad and the Ugly," Economist Special Report, October 1, 2016.
22. US Department of the Treasury, "Major Foreign Holders of U.S. Treasury Securities" (MFH table, Portfolio Holdings of US and Foreign Securities), accessed December 15, 2016, http://ticdata.treasury.gov/Publish/mfh.txt.

By raising demand for US Treasuries, the foreign purchasers raise bond prices above what they would be, thus lowering long-term interest rates. The International Monetary Fund estimates that "foreign purchases of U.S. Treasuries are estimated to have had cumulatively reduced long term real yields by around 80 basis points."[23] The impact of a 0.8 percentage point reduction on a homeowner with a 30-year mortgage for $250,000 would be about $115 a month, or $1,380 a year. For the federal government, which must finance its total public debt outstanding of almost $20 trillion, such a reduction in the interest rate translates into an annual savings of more than $150 billion.

Not everyone approves of making it more affordable for the US federal government to borrow money. However, the ability of foreign savers to purchase US Treasuries does contribute to a general environment of lower domestic interest rates, which in turn facilitates productive investment in the private economy. Thus foreign investment helps to reduce the crowding out of domestic private investment that would occur if only domestic savings were available to finance the federal deficit.[24]

For American savers, including aging baby boomers building their 401(k)s and IRAs for retirement, the ability to park a portion of their savings in foreign equities offers more diversification, delivering higher potential returns with lower overall risk.

Foreign Direct Investment

Another pair of pipes in the financial account carries dollars to finance foreign direct investment (FDI). FDI occurs when a foreign investor acquires a controlling interest in the affiliate—defined as an equity stake of 10 percent or more. The gross flows of FDI are far smaller than portfolio investment because FDI investments are longer term, but FDI is hugely important because it represents not only a transfer of capital but also of management expertise and technology.

In the 2011–2015 period, foreign investors increased their direct stake in US-based affiliates by an average of $273 billion a year. Most of this inflow of FDI capital was spent to acquire existing US business operations. A much

23. Iryna Kaminska and Gabriele Zinna, "Official Demand for U.S. Debt: Implications for U.S. Real Interest Rates" (IMF Working Paper, International Monetary Fund, April 2014).
24. One of the concerns about the annual net inflow of foreign investment to the United States is the potential longer-term impact of a large and rising stock of foreign-owned assets in the United States. This is an important topic but one that is beyond the scope of this working paper. For a more detailed discussion, see Daniel T. Griswold, *Mad about Trade: Why Main Street America Should Embrace Globalization* (Washington, DC: Cato Institute, 2009), 82–86, 95–98.

smaller share was spent on building new facilities and plants, so-called greenfield investment.

More than half of the FDI to the United States each year flows into the manufacturing sector. Chemicals and pharmaceuticals are the top draw for FDI, followed by motor vehicles and parts. Outside of manufacturing, the top sectors for attracting FDI are wholesale trade; oil and gas extraction and a range of tanker, pipeline, and storage services; finance and insurance; mining; and professional, scientific, and technical services, including computer systems design.[25]

US affiliates that are majority foreign owned employed 6.4 million US workers in 2014, according to the most recent figures from the Commerce Department. That represents 5.2 percent of US private industry employment. Almost a third of foreign-owned affiliate employment is in manufacturing. Of those 2.4 million US factory workers, the leading sectors of employment are transportation equipment, including motor vehicles and parts, and chemicals and pharmaceuticals.[26] Foreign-owned affiliates in the United States spend heavily on research and development, accounting for 17.6 percent of the total R&D performed by all US businesses in 2013.[27]

In the same 2011–2015 period, US multinational companies increased their stake in overseas affiliates by an annual average of $381 billion. In contrast to inward FDI, most outward FDI from the United States goes into nonbank holding companies. Less than 20 percent goes into manufacturing. In fact, in the 2011–2015 period, the amount of manufacturing FDI flowing into the United States each year exceeds the amount flowing out by $50 billion.[28]

Contrary to a popular perception, US companies do not locate productive operations abroad primarily to export products back to the United States but instead to reach more customers abroad. A presence in the local market can help US affiliates refine their final products to meet local demand, to reduce

25. Data are for 2011–2015. Bureau of Economic Analysis, "Foreign Direct Investment in the U.S., Financial Transactions without Current-Cost Adjustment," International Transactions table, accessed February 28, 2017.
26. Sarah Stutzman, US Department of Commerce, "Activities of U.S. Affiliates of Foreign Multinational Enterprises in 2014," *Survey of Current Business* (August 2016): 8.
27. Ibid., 6.
28. For foreign direct investment in the United States, see US Bureau of Economic Analysis, "Foreign Direct Investment in the U.S.: Balance of Payments and Direct Investment Position Data," Additional detail: Change in the historical-cost position by Account, 2010–2015, https://www.bea.gov/international/di1fdibal.htm. For US direct investment abroad, see US Bureau of Economic Analysis, "U.S. Direct Investment Abroad: Balance of Payments and Direct Investment Position Data," Additional detail: Change in the historical-cost position by account, 2010–2015, https://www.bea.gov/international/di1usdbal.htm.

transportation costs, and to better protect their brand name and intellectual property. Many types of services cannot be exported but must be delivered in the local market.

In today's global economy, US companies sell far more of their branded goods and services through foreign-based affiliates than by exporting from the United States. In 2014, US-owned affiliates supplied $4.49 trillion in goods to foreign customers compared to $1.63 trillion in exported goods. That same year, US-owned affiliates provided $1.66 trillion in services to foreign customers compared to $743 billion in services exports.[29] That means that US producers earn almost three times more from the sale of goods through their affiliates abroad than they do by exporting from the United States, and they earn more than twice as much from the sale of services.

Goods and services produced abroad by US-owned affiliates are overwhelmingly sold abroad. Of the more than $4 trillion in goods that foreign-owned affiliates supplied in 2014, 8 percent were sold as imports to the United States while 92 percent were sold in the host country or in third countries. In China, 96 percent of the goods supplied by US majority-owned affiliates were sold in China or other countries outside the United States. In Mexico, 68 percent of the goods they supplied were sold in Mexico or third countries.[30]

The story was the same for services provided by majority-owned US affiliates located abroad. Of the $1.44 trillion in services that foreign affiliates provided in 2013, 91.7 percent were supplied to foreign persons residing outside the United States. Of the total services provided, 71.4 percent were supplied to the local market where the affiliate was located, 20.3 percent to foreign markets outside the host country, and 8.3 percent to US residents as services imported to the United States.[31]

The dollars that flow out to finance direct investment abroad allow US companies to reach new customers and to expand their market share in global product markets. Those sales not only generate profits but also support employment in the United States at the parent company.[32]

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29. Sarah P. Scott, US Department of Commerce, "Activities of U.S. Multinational Enterprises in the United States and Abroad: Preliminary Results from the 2014 Benchmark Survey," *Survey of Current Business* (December 2016), Table 3.2, https://www.bea.gov/scb/toc/1216cont.htm.
30. Ibid.
31. Alexis N. Grimm and Charu S. Krishnan, US Department of Commerce, "U.S. International Services: Trade in Services in 2014 and Services Supplied through Affiliates in 2013," *Survey of Current Business* (October 2015): table P.
32. An alternative view of the trade deficit would be to take into account, not only the two-way trade in goods and services, but also the earnings from the sale of goods and services through foreign-owned affiliates. Such an ownership-based framework would show a more accurate—and much

Other Investment Assets

Another category of financial flows includes the sale of assets not included in portfolio investment or direct investment. The major sources of these flows are bank deposits and loans. In the 2011–2015 period, the average annual net inflow of dollars for deposits in US institutions or principle for loans from overseas was $42 billion—with a large inflow for bank deposits partially offset by an outflow for loan principle. The net annual outflow of dollars from the United States for loans and deposits during that same period was a negative $218 billion, which represents a net withdrawal from deposits that had been made abroad. That means that a pipe that would normally be expected to carry dollars from the United States to banks and other institutions abroad instead carried a net flow of dollars back to the United States during 2011–2015.

Other categories of financial flows outside portfolio and direct investment are financial derivatives and reserve assets. Financial derivatives are instruments whose value is linked to the prices of underlying items, such as an asset or index. In the 2011–2015 period, an average annual net of $21 billion flowed out of the United States to buy financial derivatives. Reserve assets are cross-border assets that are generally owned by monetary authorities for direct financing of payment imbalances. These transactions are a small part of the overall balance of payments, averaging a net annual $1.5 billion in outflows in 2011–2015.[33]

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smaller—trade deficit. In 2014, US receipts from exports of goods and services and the net income receipts that US parent companies earned from sales by their foreign affiliates totaled $2,812.5 billion. That same year, US payments for imported goods and services and net income payments that foreign parents earned from sales by their US affiliates totaled $3,020.4 billion, for a deficit on goods and services and net income from sales by affiliates of $207.9 billion. That amount is less than half the more conventionally defined deficit on trade in goods and services in 2014 of $508.3 billion. Will US trade policy be turned on its head in an effort to eliminate the trade deficit when, by this more comprehensive measure, it is a mere 1.2 percent of GDP? See Derrick T. Jenniges, US Department of Commerce, "An Ownership-Based Framework of the U.S. Current Account, 2003–2014," *Survey of Current Business* (January 2016).

33. Although it is not explicitly noted in the official balance of payments data, another US asset class that foreign residents acquire is US currency itself. According to the US Federal Reserve Board, more than $1.3 trillion in coin and currency was in circulation in 2015, more than three-quarters of the total in the form of $100 bills. (See US Federal Reserve Board, "Currency in Circulation: Value," Currency and Coin table, last modified February 3, 2017, https://www.federalreserve.gov/paymentsystems/coin_currcircvalue.htm.) About half of all US currency currently in circulation is believed to be held overseas. See Richard Dobbs et al., "An Exorbitant Privilege? Implications of Reserve Currencies for Competitiveness," McKinsey Global Institute, 2009. Based on the Federal Reserve Board data, that means about $40 billion in US currency is "exported" each year for use in other economies. That represents a net gain for Americans, since the bills cost a fraction of their face value to produce, generating a seigniorage benefit for the Federal Reserve Board, while not requiring any interest payments to be made to the foreign investors in the currency.

The Capital Account

The capital account includes the flow of dollars for the acquisition and disposal of nonproduced assets, such as the rights to natural resources and real estate, as well as intangible assets, such as patents, copyrights, trademarks, franchises, and leases. Net inflows and outflows through the capital account pipes are relatively small compared to the huge water mains that carry dollars for portfolio and direct investment transactions. In the 2011–2015 period, the average annual net inflow of dollars through the capital account was $1.5 billion and the average net outflow was $0.5 billion.

Statistical Discrepancy

The statistical discrepancy category, also labeled "errors and omissions," is a residual number. It is determined each year by the discrepancy between inflows and outflows, or between debits and credits. Since debits and credits must be equal in the double-entry accounting system for the balance of payments, the statistical discrepancy is the number needed so that inflows and outflows are exactly equal during each period. In 2011–2015, the statistical discrepancy averaged $58.6 billion a year. The most likely categories contributing to the errors and omissions involve trade in services, delays in payments between reporting periods, interest and dividend receipts, and the temptation companies face to understate the value of exports or to overstate the value of imports in order to reduce tax liability.[34] Statistical discrepancies were a small 1.5 percent of total annual inflows during 2011–2015.

SAVINGS AND INVESTMENT GAP DRIVES THE TRADE DEFICIT

The United States runs a deficit on the current account year after year for one reason: gross domestic investment in the economy exceeds gross domestic savings. According to the national income accounts identity, the difference between what the United States exports and imports in a given year must equal the difference between national savings and investment.[35]

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34. Paul R. Krugman, Maurice Obstfeld, and Marc Melitz, *International Economics: Theory and Policy*, 9th ed. (Boston: Addison Wesley, 2012), 311.

35. The national income accounts identity equation, Y = C + G + I + NX, apportions the nation's economic output (Y) into four categories: private consumption (C), government consumption (G), investment (I), and net exports (NX), which is defined as exports minus imports. Through a few steps of basic algebra (where national savings S = Y − C − G), we can define net exports as NX = S − I. Thus net exports = savings − investment.

If a nation's residents save more than the total amount that is invested in the domestic economy, net exports will be positive—that is, the nation's residents will export more than they import. If the total amount that is invested in the domestic economy is more than is saved by the nation's residents, net exports will be negative—that is, the nation's residents will import more than they export. For the United States, the current account has run an annual deficit for the past four decades for the basic reason that investment opportunities—and the amount of investment in these opportunities—has been consistently higher each year than the gross amount saved by Americans. The gap is filled by an annual net inflow of foreign capital, which exactly mirrors and offsets the trade deficit.

Owners of foreign savings are drawn to the United States because they perceive that the domestic US economy is a profitable home for investment. Foreigners may see an entrepreneurial opportunity to provide new products and services through direct investment, or they may have a different appetite for risk relative to return than American savers. As a result, foreign investors play an important role in creating investment opportunities as well as in financing them.

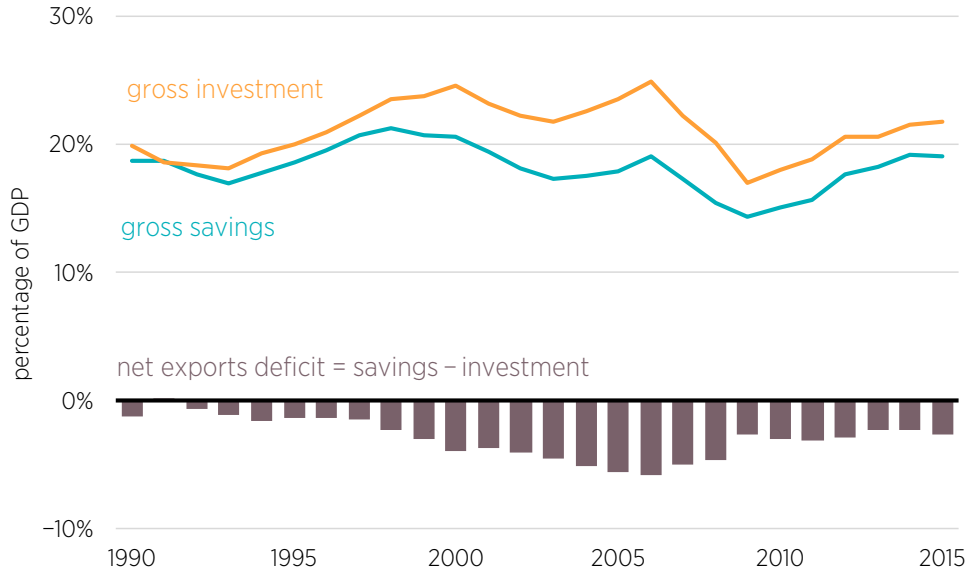
As figure 1 illustrates, since 1990, gross investment in the United States as a percentage of GDP has been higher than gross savings as a percentage of GDP.[36] The result has been a deficit in the current account, or net exports. If investment falls more rapidly than savings, as it did during the Great Recession of 2008–2009, the current account deficit will shrink. If investment grows faster than savings, as it did during the expansions in the late 1990s and again in the first decade of the 21st century, the current account deficit will expand.

The lesson for policymakers is that the current account balance can only be altered if there is a change in the level of either gross domestic savings or gross domestic investment, or if there are changes in both. If policymakers

"If the total amount that is invested in the domestic economy is more than is saved by the nation's residents, net exports will be negative—that is, the nation's residents will import more than they export."

36. Bureau of Economic Analysis, Interactive Data, "GDP & Personal Income," National Income and Product Accounts Table 5.1, "Saving and Investment by Sector," accessed February 28, 2017, https://www.bea.gov/iTable/index_nipa.cfm.

FIGURE 1. US SAVINGS, INVESTMENT, AND EXPORTS, 1990–2015



Source: Bureau of Economic Analysis, Interactive Data, "GDP & Personal Income," Savings and Investment, Table 5.1; Net Exports (Current Account), Table 4.1; and Gross Domestic Product, Table 1.1.5.

are determined to eliminate the trade deficit, they need to pursue policies that would either increase the pool of domestic savings or discourage investment in the domestic economy, or they need to devise some combination of the two policies. Gross savings can be increased either in the private sectors (i.e., household and corporate) or in the public sector, the latter most obviously by reducing the federal budget deficit. A policy mix that seeks to promote domestic investment through higher deficit spending by the federal government, or through reductions in personal and corporate tax rates, whatever their other merits, would have the unintended consequence of increasing the nation's current account deficit by drawing in more foreign capital to finance the investment.

Any federal policy program to reduce the trade deficit that does not close the current gap between national investment and savings would be doomed to failure. It would also increase the risk of disrupting other channels of commerce between American residents and the rest of the world that are beneficial to the US economy.

WHY BILATERAL DEFICITS ARE MEANINGLESS

Just as there is no reason why America's trade in goods and services with the world must be "balanced," there is no reason why trade with individual countries

must be balanced, either. How the overall US trade deficit is distributed among America's trading partners is determined by differing levels of savings and investment, consumer tastes, the comparative advantage of individual industries, and other factors that normally vary from one country to another.

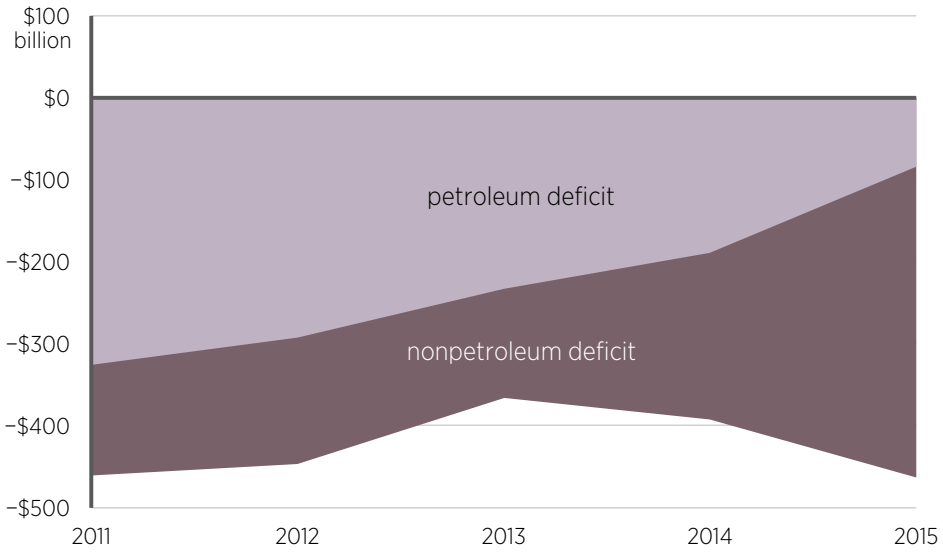
Consider a basic model of three countries—the United States, Japan, and Brazil. Americans buy $100 billion in automobiles from Japan, the Japanese then use the foreign exchange to buy $100 billion worth of soybeans from Brazil, and Brazilians then buy $100 billion worth of jetliners from the United States. Each country would have balanced trade overall, exporting $100 billion worth of goods and importing the same value. But the United States would have a $100 billion bilateral deficit with Japan and a $100 billion bilateral surplus with Brazil. The other two countries likewise would run a surplus with one trading partner and an equal deficit with the other.

The model applies equally on a personal level. An American worker may enjoy perfectly balanced trade with the rest of the world, earning $50,000 a year by "exporting" his or her services to a single employer while "importing" $50,000 in goods and services from various venders. The worker will run trade deficits with the grocery store and the auto mechanic, who will take his or her money for imported goods and services without spending a dime on services from the worker. Among people as well as nations, there is nothing wrong with "unbalanced" bilateral trade. In fact, it would be an odd and unsustainable coincidence if US residents always bought the same value of goods and services from the residents of another country as these foreign residents bought from the United States.

If the US government were to attempt to shrink or eliminate its bilateral deficit with a particular country in order to reduce the overall trade deficit but do so without changing the underlying balance of savings and investment, the effort would be doomed to fail. America can badger another country into buying more US exports, or it can block their imports with tariffs. Either action may shrink the bilateral deficit, but without a change in the underlying macroeconomic factors that determine the overall balance, it would simply reallocate the balance among America's other trading partners.

Today, critics of the trade deficit often focus on US trade with China because of the large bilateral trade deficit. (In the 1980s the focus was on America's bilateral trade deficit with Japan.) These trade critics see reducing the deficit with China and other major deficit partners as the key to reducing the overall deficit. But absent a change in the domestic savings and investment levels in the United States, a change in the China bilateral deficit would be unlikely to impact the overall US trade balance.

FIGURE 2. PETROLEUM AND NONPETROLEUM SHARES OF TOTAL CURRENT ACCOUNT DEFICIT, 2011–2015



Source: US Census Bureau, "Exports, Imports, and Balance of Petroleum and Non-petroleum End-Use Category," U.S. International Trade in Goods table, accessed February 28, 2017, https://www.census.gov/foreign-trade/statistics/historical/index.html.

Consider the recent example of America's trade in petroleum. From 2011 to 2015, the United States experienced a dramatic change in its demand for petroleum imports. The change was caused by America's increased competitiveness in petroleum production, allowing a kind of import substitution that caused a sharp drop in Americans' demand for imported petroleum products (see figure 2).

To better illustrate the point, assume the US petroleum trade is conducted with one country, called Petrostan. Petrostan buys all US petroleum exports and supplies all US petroleum imports. In 2011, the United States exported $113 billion to Petrostan while importing a whopping $439 billion, for a bilateral trade deficit of $326 billion (roughly the same magnitude as the United States' bilateral deficit with China in 2011).[37]

Through an aggressive effort to produce more petroleum in America, our country was able to dramatically reduce its imports from Petrostan, resulting in a much reduced bilateral trade deficit of $85 billion in 2015. The impact on

37. US Census Bureau, "Exports, Imports, and Balance of Petroleum and Non-petroleum End-Use Category," U.S. International Trade In Goods table, February 28, 2017, https://www.census.gov/foreign-trade/statistics/historical/index.html.

America's overall current account deficit was zero. In fact, the current account deficit grew slightly in the same period, from $460 billion to $463 billion. The $241 billion reduction in the bilateral deficit with Petrostan was more than offset by the $244 billion increase in the current account deficit with the rest of the non-Petrostan world. The dollars that were flowing out to buy barrels of oil continued to flow out, but they were used to buy other goods or services or to pay interest on Treasury bills.

Without a change in the underlying levels of savings and investment in America, any change in the bilateral trade balance with one country will be offset by changes in other bilateral balances. That means that even if the US government could force a reduction in the bilateral trade deficit with China through a combination of export promotion and import restraints, any reduction in the deficit would be apportioned to the United States' other bilateral trading partners, leaving the overall balance unchanged.

WHY TRADE RESTRICTIONS AND EXPORT SUBSIDIES ARE FUTILE

Because the size of the trade deficit is determined by underlying macroeconomic causes and differential investment opportunities across countries, any government intervention to boost exports or restrict imports will necessarily affect the flow of dollars for other transactions, such as cross-border investment, thus putting US employment and production at risk.

Consider a policy aimed at reducing bilateral deficits with certain major trading partners. Through a combination of policies, the US government could seek to increase demand for US exports in the targeted countries while limiting imports through tariffs or other measures. If the policy were to succeed at reducing the cumulative trade deficits with the targeted trading partners by $500 billion, the cumulative balance with nontargeted countries could be expected to the increase by the same amount, offsetting any change in the overall balance.

By forcing adjustments elsewhere, intervention could have a disruptive effect on trade, international patterns of specialization, and investment flows, thus reducing US economic growth. It would mean fewer dollars flowing out to pay for imported goods and services from the targeted countries, and more dollars flowing in from the same countries to buy exported US goods and services. Both changes would have the effect of draining dollars from global currency markets, resulting in a stronger dollar as the supply of dollars for other transactions would be constricted.

"An appreciating dollar, in turn, would dampen demand for US exports in other countries while stimulating demand for imports in the United States. Increased exports to the targeted countries would be offset by fewer exports to the rest of the world."

An appreciating dollar, in turn, would dampen demand for US exports in other countries while stimulating demand for imports in the United States. Increased exports to the targeted countries would be offset by fewer exports to the rest of the world. A stronger dollar would mean certain American manufacturers would export fewer civilian aircraft, motor vehicles, industrial machines, pharmaceuticals, plastics, and chemicals. A stronger dollar would also dampen tourism to the United States, as well as the sale of intellectual property and consulting services. The same changes in the exchange rate would stimulate the import of such goods as crude oil, motor vehicles, cell phones, computers, and clothing. The result of an appreciated dollar may in fact be good for American households and the US economy, but it would mute any changes in the overall trade deficit.

If critics of the trade deficit actually succeeded in closing or eliminating it, despite the strengthening dollar, the result would be to reduce the amount of investment funds flowing into the United States. If the trade deficit were eliminated, foreign demand for US bonds and Treasury bills would fall, pushing up interest rates. Home mortgage rates would go up, making housing less affordable for working Americans. The interest rate that the federal government pays on its debt would increase, costing the federal government tens of billions of dollars more to finance its debt at a time when the government is expected to be borrowing even more for infrastructure projects.

Plans for creating or expanding foreign-owned affiliates in the United States would become more expensive, given the increased cost of acquiring dollars, which, in turn, would dampen job creation by such firms. The number of Americans that those affiliates now employ (currently 6.4 million) would be less likely to increase and could even decrease as foreign multinational companies seek better investment opportunities elsewhere. Fewer dollars flowing into US bank deposits would reduce the amount of capital that banks are able to lend for domestic investment.

Any Keynesian stimulus expected from a reduction in the trade deficit would be quickly undone by the decline of capital inflows, followed by an increase in interest rates and reduced investment. Meanwhile, any government intervention in trade flows aimed at reducing the current account deficit would potentially disrupt supply chains and two-way trade, punishing consumers with higher prices, making US workers less productive, and further reducing the overall US rate of economic growth. As Harvard economist and former Council of Economic Advisors Chairman Greg Mankiw succinctly noted, "Even a freshman at the end of ec 10 knows that trade deficits go hand in hand with capital inflows. So an end to the trade deficit means an end to the capital inflow, which would affect interest rates, which in turn influence consumption and investment."[38]

CONCLUSION

America's commercial trade with the rest of the world is a complex, interrelated system. If the government intervenes by turning the spigot to change the flow of dollars through one set of pipes, it will by necessity change the flow through other pipes. It is a fundamental and irreconcilable contradiction in policy to decry the outflow of dollars to buy imports or to invest in other countries while at the same time welcoming and seeking to increase the inflow of dollars to buy US exports or to invest in the United States.

Like any other nation integrated into the global economy, America cannot have one without the other. Constricting the outflow of dollars—through tariffs or other means—would inevitably reduce the inflow of dollars. Reduced imports would lead to reduced exports. Less outward investment would mean less inward investment. The result would not only be an overall reduction in two-way trade and international investment, it would also mean a reduction in the efficiency and productivity growth of the US economy as Americans forfeit the gains from specialization.

Instead of focusing on only one section of America's balance of payments account, US policymakers should pursue policies that allow Americans greater freedom to buy and sell goods, services, and assets in the global marketplace.

38. Greg Mankiw, "Trumponomics," *Greg Mankiw's Blog*, September 29, 2016.

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