



WORKING PAPER

QUANTIFYING ECONOMIC GROWTH AND JOB CREATION FROM A COMPETITIVE DOLLAR

**Jeff Ferry (Chief Economist)
and Steven Byers (Senior Economist)**

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The persistent overvaluation of the US dollar presents serious problems for the United States affecting jobs and the health of our manufacturing and agriculture sectors. However, the exact benefits of adjusting the dollar to a competitive price have never previously been modeled.

This study presents, for the first time, (1) an estimate of the amount of adjustment needed to achieve a competitive dollar price¹ using an econometric model of the whole US economy; and (2) the domestic economic benefits that would arise, over a period of six years. Specifically, we find that:

1. The dollar price adjustment necessary to achieve a current account balance over a six-year period is 27%. The adjustment amount is generally consistent with other

estimates of dollar misalignment, but the estimation method is unique in that it is based upon a multi-year economic model of the entire US economy.

2. The rate of real gross domestic product growth is 1.2 percentage points higher than baseline growth resulting in an economy nearly \$1 trillion (or 4.8%) larger than it would otherwise be in 2024.

3. Job creation accelerates dramatically, resulting in up to 6.7 million additional jobs in 2024 over the baseline case;

4. Export volume grows five times faster than baseline while imports continue to grow, but more slowly;

5. Industries producing tradable goods benefit significantly from employment growth in relation to non-tradable sectors. Manufacturing alone would add nearly 2 million additional workers by 2024.

This paper is structured as follows. Part 1 examines the relationship between exchange rates and global current account imbalances. Part 2 describes the econometric model we used and how we determine relationships between dollar price changes and net trade changes over time. Part 3 describes the results of our simulations in terms of domestic economic growth, job creation, balance of trade, and sectoral impacts. Part 4 provides a summary.

¹ This paper does not examine the methods available to adjust the dollar price. Separately, the Coalition for a Prosperous America has examined the merits of a market access charge that would adjust the dollar price by moderating the volume of foreign capital inflows to the United States. Historically, governments and exchange management authorities across the world have utilized various practices to manage the price of their currencies.

1. US Dollar Overvaluation and its Relationship to the Current Account

The United States has recorded trade deficits in every year since 1976, a run of 43 consecutive years of deficit unprecedented for any nation in history. Between 1945 and 1975, US international trade was generally in surplus, due to our competitive advantage over other industrial powers. In the 1970s, the US trade balance deteriorated as imports grew faster than exports, for a variety of reasons. At the same time, the abandonment of the Bretton Woods fixed exchange rate system in 1973 led to rapid growth in international capital flows. Freely floating exchange rates for the world's major currencies created a need for central banks, corporations, and investors to hold assets in several of the world's major currencies, especially the dollar. At the same time, deregulation of international financial markets increased the opportunities for investors to profit by investing in financial assets denominated in currencies other than their home currency. Demand for the US dollar drove the foreign exchange value of the dollar—its “price” in other currencies—to new highs.

In the 1970's and 80's, Japan pioneered, a technique of running a permanent export surplus and investing the receipts in US financial assets (chiefly Treasury bonds). This strategy restrained expansion of Japanese domestic consumption, while supporting continued export-led growth. The investment of billions of dollars into US financial assets pushed the dollar price higher than it would otherwise have been.

The financial pressures driving up the dollar's value accelerated in the 1990s due to several

new developments in the world economy. Other Asian so-called “tiger” economies like South Korea and Singapore mimicked Japan's strategy, adding to the upward pressure on the dollar.

In 1994, China joined this club when it implemented reforms to build a so-called “socialist market economy.” It devalued its currency, the renminbi, by 33%, and began to invest aggressively in export industries, especially basic industrial materials like steel and chemicals. China went from a deficit to a current account surplus of 1.2% of GDP in 1994. After the year 2000, China began to dramatically increase its current account surplus for many years, reaching a peak of 9.9% in 2007. Since then, China's surplus has come down to a more modest 1%-2% range, as its growing middle class spends more on tourism and moves capital overseas.

During its modern growth period, China has consistently repressed consumption at home, holding it to just 52.6% of GDP, a near-unprecedented 20 points below the levels of most other major economies. China has also invested its surplus billions in dollar assets, pushing the price of the dollar higher in relation to the renminbi and other major currencies. It became the largest overseas holder of US assets, holding as much as \$4 trillion of US financial assets at one point.

The 1997 Asian financial crisis shocked the world financial system. Several emerging economies reacted to the crisis by devaluing their currencies and reorienting their domestic economic management to ensure they could run near-permanent trade surpluses, essentially by suppressing domestic consumption. They did not wish to be dependent on unreliable borrowing from foreign creditors. Thailand proved to be an

outstanding example of such a policy. It went from a current account deficit of 8% of its GDP in 1996 to a surplus of 12.5% of GDP by 1998. In 2017, Thailand's surplus was still high, at 10.6% of GDP. Most of that surplus was invested in US dollar assets, adding to the upward pressure on the dollar.

In the early 2000s, economists began to notice the effect of drastically increased capital inflows and a rising dollar on the US economy. The inflow of capital into the United States was pushing up the value of the dollar, making American industry less competitive globally, driving up the trade deficit, and eliminating domestic jobs. In an important speech in 2005, Federal Reserve Board Governor Ben Bernanke labeled the problem a “global savings glut.” In the past, economists felt that US domestic savings was determined by the decisions of American individuals, but Bernanke recognized that the level of savings in the US was being determined by the financial policies of foreign governments. He argued that the increase in savings flowing into the US explained “both the increase in the US current account deficit and the relatively low level of long-term real interest rates”² in the US and the world.

Other economists have endorsed the Bernanke view, arguing that global capital flows have led to many misaligned

currencies. Former Obama administration Treasury official Brad Setser argued in 2016³ that East Asian savings have fluctuated between 4% and 10% of world GDP, leading to large financial imbalances, dangerous financial bubbles, manufacturing decline, and “toxic risk” in banking systems in deficit countries like the US. The IMF commented last June that “about 40-50% of last year's global current account balances were deemed excessive (that is not explained by countries' fundamentals and desirable policies).”⁴ The IMF highlighted that these imbalances, including the overvaluation of the US dollar, pose serious threats to global economic stability.

In 2015, C. Fred Bergsten, founding director of the Peterson Institute of International Economics, said that action should be taken to address the problems of currency manipulation and misalignment. “The problem of currency misalignment remains acute...every 10% rise in the dollar adds about \$350 billion to the trade deficit and reduces the level of US economic activity by about 1.65% (with a corresponding loss of about 1.5 million jobs).”⁵

The US Treasury has displayed an equivocal approach to the value of the dollar. While occasionally speaking in favor of a strong dollar, the Treasury Department's most recent report to Congress highlighted the dangers of

² Remarks by Governor Ben S. Bernanke, March 10, 2005, “The Global Saving Glut and the US Current Account Deficit.”

³ Setser, Brad, “The Return of the East Asian Savings Glut,” CFR Discussion Paper, October 2016.

⁴ IMF, 2018 External Sector Report, published June 28, 2018, pg. 1.

⁵ Bergsten, “Time for a Plaza II” in “International Monetary Cooperation” Edited by Bergsten C. Fred and Green, Russell A., Columbia University Press, 2016, pg. 286, 294.

an excessively strong dollar: “Continued dollar strength would likely exacerbate persistent trade and current account imbalances.”⁶

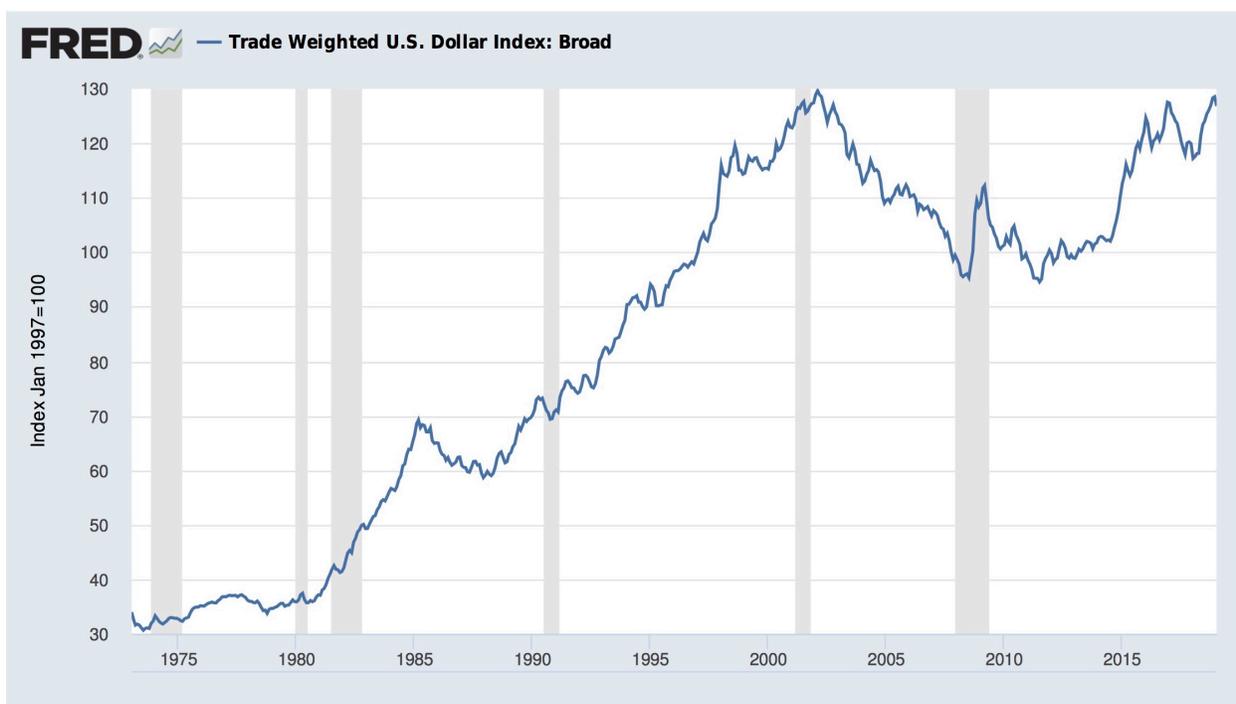
Figure A shows that an index of the US dollar’s foreign exchange value has risen from about 32 in 1973 to 128 at the end of 2018, despite persistent US current account deficits totaling several trillion dollars over that time period. The latest phase of

dramatically in the majority of tradable goods sectors, including manufacturing, mining, and agriculture. Millions of good-paying jobs have been lost.

2. The Econometric Model

We report the results of the first effort to use an econometric model to calculate (a) how much adjustment would be needed to balance the US current account and (b) the expected

Figure A. The trade-weighted value of the US dollar since 1973.



Source: Board of Governors of the Federal Reserve System (US) myf.red/g/mlyY

appreciation, beginning in 2014, has made US goods less competitive compared to most of our major trading partners.

In summary, the global glut of savings flowing into the US has driven up the value of the dollar, reducing our global competitiveness and harming our economy. Output and employment have declined

benefits to the US economy when we no longer absorb the global oversupply of foreign capital.

Our model results do not depend on the cause of dollar overvaluation nor upon any particular method of adjusting the dollar price. Rather, our model shows the benefits that would accrue to the US economy if the

⁶ The U.S. Department of the Treasury Report to Congress, Macroeconomic and Foreign Exchange Policies of Major Trading Partners of the United States, October 2018, page 12.

dollar exchange rate was adjusted by any means.

A reduction in the dollar's exchange value would stimulate the US economy by making US production more competitive in foreign markets and in the US market relative to imports. The question remains: how much dollar price adjustment is necessary to balance trade flows?

Other economists have determined that large adjustments in the dollar exchange value would be required to balance trade. Economists Maurice Obstfeld and Ken Rogoff found that a correction to the US trade balance is likely to entail a very large change in the real effective exchange rate. They estimated that, for all the world's major regions to return to a current account balance, the US dollar would have to move downward some 33 percent.⁷ Olivier Blanchard, Francesco Giavazzi, and Filipa Sa determined that the actual dollar exchange rate adjustment necessary to balance the current account deficit would be even larger, as much as 65%.⁸

We used the REMI econometric model to develop a current estimate of how much dollar depreciation would be required to achieve balanced trade. REMI is a widely-used, well-regarded econometric model that combines the features of computable general equilibrium models with input-output features of trade models as well as the macroeconomic features of forecasting models. It allows a dynamic projection of results over a period of

years rather than the static "before and after" results of standard trade models.

We started with actual 2017 GDP data and converted to chained 2009 dollars, which are real dollars rebased to 2009 prices. On that basis, US GDP in 2017 was \$17,096.6 billion, US total employment was 199,821,000.

Next we updated the model's baseline growth forecast by using estimates from the Congressional Budget Office's August 2018 updated Report to Congress.⁹ The CBO projects GDP growth of 3.0% (2018), 2.8% (2019), 1.9% (2020), 1.6% in (2020-2023), 1.7% (2024), 1.8% (2025), 1.6% (2026), and 1.8% (2027-2028). The CBO forecast shows non-farm payroll employment increasing by 211,000 jobs per month (1.27% per year) in 2018, 62,000 per month (0.37% per year) in 2019 and 2020, and 30,000 jobs per month (0.18%) in 2021. These forecasts are in keeping with mainstream consensus forecasts for the growth prospects of the US economy in the next several years.

We then used historical data to determine the timing relationship between a dollar price change and trade balance results. In 1985, an agreement between the governments of the US, West Germany, Japan, France, and the United Kingdom resulted in the Plaza Accord that initiated a very rapid dollar depreciation of some 40%. However, the US current account did not respond immediately to the change. Rather, it continued to deteriorate for another two years before turning around and beginning a climb back towards positive

⁷ Obstfeld and Rogoff, "Global Current Account Imbalances and Exchange Rate Adjustment", Brookings Institute, May 2005.

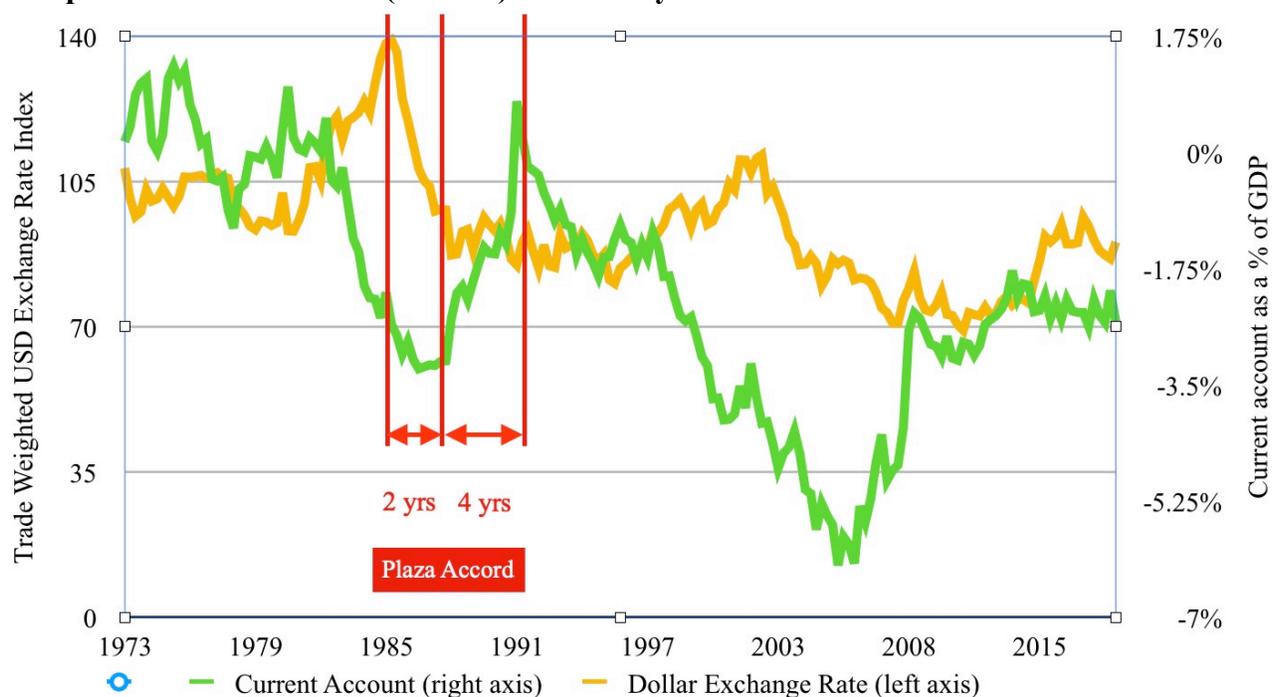
⁸ Blanchard, Giavazzi and Sa, "The US Current Account and the Dollar", NBER Working Paper 11137, February 2005.

⁹ "An Update to the Economic Outlook: 2018 to 2028", Congressional Budget Office, August, 2018.

territory. It was not until 1991 that the US achieved a current account surplus of \$2.85 billion, its first and only annual current account surplus since 1981 (based on World Bank data). The six-year lag between the Plaza Accord depreciation and current account balance in 1991 led us to model a six-year process for dollar price adjustment, delivering a balanced current account (see Figure B).

prices of US exports. A study by Ihrig, Marazzi, and Rothenburg estimated that import price pass-through rates are 32% of the exchange rate change. In other words, a 10% decline in the dollar's value produces only a 3.2% increase in import prices.¹⁰ However, Goldberg and Wiske Dillion¹¹ determined that the export price pass-through rate is stronger at 70% of the exchange rate change.

Figure B. US current account (green line) achieves balance in 1991, six years after the depreciation in the dollar (red line) initiated by the Plaza Accord of 1985.



The next critical issue is how dollar exchange rate changes affect export and import prices. The weight of empirical evidence shows that the pass-through rate is not one-for-one. In other words, a 1% change in the dollar exchange rate does not result in a 1% change in US import prices or a 1% change in foreign

The reasons for this weak import exchange rate pass-through include: (1) most US imports are invoiced in dollars, and thus the dollar prices of imported goods tend to remain fixed for a period when exchange rates change; and (2) foreign producers,

¹⁰ Ihrig, Jane E., Mario Marazzi, and Alexander D. Rothenburg. 2006. "Exchange-Rate Pass-Through in the G-7 Countries." Board of Governors of the Federal System International Finance Discussion Papers, no 2006-851, January.

¹¹ Goldberg, Linda, and Wiske Dillion, Eleanor. 2007. "Why a Dollar Depreciation May Not Close the U.S. Trade Deficit." Current Issues in Economics and Finance: Federal Reserve Bank of New York. Volume 13, Number 5, June 2007.

wishing to remain competitive in the highly desirable US market, resist raising the dollar price of their exports for American customers. The export pass-through rate is stronger because US exporters, faced with a reduction in the price they can charge overseas customers, do not cut prices to the full extent but instead take some of the benefit in increased volume.

The export price pass-through rate is stronger because US exports are priced in dollars while the foreign buyer is paying in their home currency. Therefore, a decline in the dollar exchange rate produces an immediate, but not one-to-one, drop in US export prices.

Lastly, we assumed a dollar price change over a period of years rather than an immediate, one-time adjustment. The longer adjustment period is more desirable because it allows time for the US and other economies to adjust.

By including timing and pricing relationships into our model, we were able to

determine the level of exchange rate adjustment that would produce current account balance in a six-year time frame. We then carried out an iterative process to model results from a variety of dollar exchange rate moves. Table 1 shows the changes in export prices and import prices for different magnitudes of dollar adjustment. For example, a 10% change in the trade weighted exchange rate is simulated by decreasing the price of US exports to the rest-of-the-world by 7% and increasing the price of imports from the rest-of-the-world by 3.2%. Because of the two-year lag between a change in the exchange rate and the impact on import and export prices, the full depreciation is realized over 4 years, at an annual incremental rate shown in columns 4 and 5.

Model simulations showed that a 27% adjustment of the dollar is needed to deliver balanced trade in the year 2024. (See Table 1). A lesser adjustment does not eliminate the trade deficit during any time period. A greater adjustment results in the US achieving a trade surplus.

Table 1: Comparing Different Magnitudes of Dollar Adjustment

USD Value Change	Change in Price of US Exports (%) Paid by Foreign Consumers	Change in Price of Imports (%) Paid by US Consumers	Change in Price of Exports % per year over 4 years	Change in Price of Imports % per year over 4 Years
10%	-7.0%	3.20%	-1.75%	0.80%
24%	-16.8%	7.68%	-4.20%	1.92%
25%	-17.5%	8.00%	-4.38%	2.00%
26%	-18.2%	8.32%	-4.55%	2.08%
27%	-18.9%	8.64%	-4.73%	2.16%
28%	-19.6%	8.96%	-4.90%	2.24%

Part 3: Results

The results of the simulation provide quantitative estimates of the economic costs of an overvalued dollar and the benefits of adjusting to a competitive dollar. We compared the forecast, assuming a 27% dollar adjustment over the period from 2020 to 2024, to the baseline forecast with no dollar adjustment. The results are striking.

The growth rates of key economic variables like real GDP, employment, and exports are two to three times higher than in the baseline forecast. (See Table 2).

Balance of trade changes are very positive. Due to asymmetry in exchange rate pass-through rates, import and export volumes are impacted differently. Figure C shows that export growth is dramatically improved, driving a large portion of the overall growth in the domestic economy. Imports continue growing, but the rate of growth is slower than in the baseline case.

The growth rate of total employment more than triples from 0.24% to 0.89% per year. This results in a large increase in employment of up to 6.7 million additional jobs over the baseline by 2024.

Table 2. Comparing Baseline vs 27% Dollar Adjustment Forecasts (2020-2024)

	Baseline Forecast	27% Dollar Adjustment
	<i>Avg. Annual % Change</i>	<i>Avg. Annual % Change</i>
Real GDP	1.63%	2.84%
Employment	0.24%	0.89%
PCE Inflation	2.23%	2.96%
Exports	2.68%	6.29%
Imports	2.38%	1.38%

The stimulus to real GDP is very significant. The annual growth rate shows a substantial increase of 1.2 percentage points per year, from 1.63% to 2.84%, compounding each year. Over the four-year time period of 2020-2024, US GDP increases above the base case by \$962 billion by 2024 in 2009 dollars. (The figure would be even higher in current dollars). This increased GDP positively impacts many other important economic variables, including wages, profit, investment, and government tax revenues.

The export led growth in jobs primarily benefits tradable goods sectors like manufacturing and natural resources. Table 3 shows that employment growth compared to the base case, in natural resources and manufacturing is 310,000 and 2 million jobs respectively. These are higher-paying sectors than service jobs at comparable skill levels.

The service sector has the largest employment increase in absolute terms, at 2.3 million additional jobs over baseline, followed by substantial gains in finance, insurance and real estate. The net effect of rebalancing the

Figure C: Export and Import Volume - Comparing Baseline vs 27% Dollar Adjustment Forecasts (2020-2024)

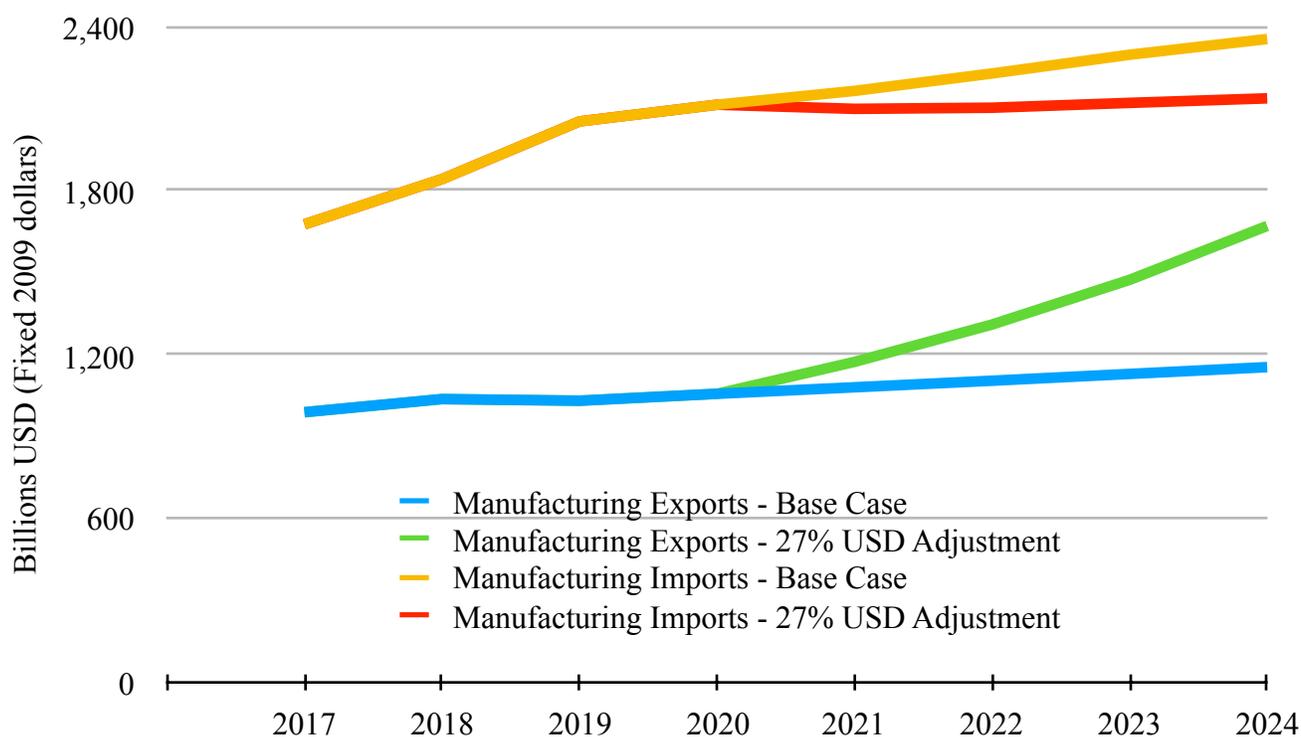


Table 3: Employment Growth - Comparing Baseline vs 27% Dollar Adjustment Forecasts (2020-2024)

	Base Case		27% Dollar Adjustment	
	<i>Rate per year</i>	<i>Change from 2020-24 (thousands)</i>	<i>Rate per year</i>	<i>Change Relative to Base Case (2020-24) (thousands)</i>
Natural Resources	0.45%	48.87	2.79%	310.31
Construction	-0.21%	-164.16	0.41%	334.61
Manufacturing	-1.07%	-573.39	1.81%	1977.23
Retail and Wholesale	-0.03%	-92.01	0.08%	155.21
Transportation and Public Utilities	0.20%	58.7	1.52%	557.98
Finance, Insurance & Real Estate	0.39%	297.02	1.11%	739.61
Services	0.63%	2349.95	1.11%	2328.18
Government	-0.11%	-165.52	0.18%	366.44
TOTAL				6769.57

economy in favor of manufacturing and mining is to improve the quality of jobs and average employee earnings.

Higher inflation is sometimes cited as a risk of adjusting the dollar price to competitive levels. Our model shows that inflation rises by a modest 0.73% (see Table 2 above) from 2.23% per annum to 2.96% per annum. The boost to inflation is relatively small because, as explained above, only one-third of the dollar adjustment is passed through to import prices—and the impact on finished consumer goods is even smaller. Further, imports make up a relatively small portion of the US economy, at 14.5% of US GDP.

Economists generally agree that the rate of inflation has been stubbornly low throughout the most recent expansion. An increase of less than a percentage point a year in inflation is not substantial.

There are legitimate questions as to whether the US has enough potential workers to fill the additional 6.7 million job openings that the model projects. While the US is in a period of low unemployment, there exists substantial slack in the labor market as evidenced by the labor force participation rate for prime age workers, which is still 2.4% lower than its 1998 peak, as per the latest Bureau of Labor Statistics (BLS) data. The BLS also reports that there are 5.1 million people not in the labor force today who say they would take a job. If it turned out that labor slack was insufficient to meet the new demand, the effect would likely be increased wage appreciation delivering higher incomes to workers. So the benefits would be felt in terms of both rising employment and rising real incomes.

Another question is whether the Federal Reserve would raise interest rates as the economy grows faster, the job market tightens further, and workers have an opportunity to demand higher wages. The Federal Reserve could respond to a perceived risk of rising inflation by raising interest rates. Doing so would likely curtail the full GDP and employment growth shown by our simulation.

Action to adjust the dollar's value downward is not currency manipulation, neither by economic principles nor by current US legislation. Manipulation is action to gain an unfair competitive advantage while moving or maintaining a nation's current account out of balance. US action to adjust the dollar would move our currency closer towards balance, and therefore is a positive step for world economic stability and growth. On the legislative side, the US Congress in the 2015 Trade Facilitation and Enforcement Act¹² quite rightly made a "material current account surplus" one of the requirements to declare a country a currency manipulator and the US has not run a material current account surplus in decades.

4. Conclusion

This analysis reveals the dramatic quantity of job creation and economic growth that the US foregoes by failing to address persistent dollar overvaluation and resulting trade deficits. For nearly half a century, the US economy has been hampered by an overvalued dollar. Currency manipulation by nations seeking to profit at America's expense is a contributing factor at times, but not the primary cause. The fundamental driver of US dollar overvaluation is an international currency

¹² Trade Facilitation and Enforcement Act of 2015, section 701.

system that leads to huge financial inflows into dollar assets. This overvaluation is the root cause of the US trade deficit which reduces US economic growth, undermines vital industries, and destroys jobs in a broad range of industrial sectors.

Our analysis demonstrates that adjusting the dollar to a competitive price produces very substantial economic benefits. Six years after the initiation of the policy, the US economy would generate up to 6.7 million additional jobs as well as nearly one trillion dollars in additional gross domestic product. In today's internationally competitive world, the importance of the value of the dollar cannot be overstated. A competitively priced dollar would provide growth to many tradable goods sectors, restoring the health of US manufacturing. It could also result in increased incomes and the return of some US industries lost in recent years.