

Tariffs and Monetary Policy: A Toxic Mix

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The ratcheting up of tariffs and the Fed's discretionary conduct of monetary policy are a toxic mix for economic performance. Escalating tariffs and President Trump's erratic and unpredictable trade policy and threats are harming global economic performance, distorting monetary policy and undermining the Fed's credibility and independence.

President Trump's objectives to force China to open access to its markets for international trade, reduce capital controls, modify unfair treatment of intellectual property, and address cybersecurity issues and other US national security issues are important and laudable goals with sizable benefits. However, the costs of escalating tariffs are mounting, and the tactic of relying exclusively on barriers to trade and protectionism is misguided and potentially dangerous.

The economic costs to the US so far have been relatively modest, dampening industrial production and business investment. However, the tariffs and policy uncertainties have had a significantly larger impact on China, accentuating its structural economic slowdown, and other nations that have significant exposure to international trade and investment overseas, particularly Japan, South Korea and Germany. As a result, global trade volumes and industrial production are falling. Weaker global growth is now reducing the demand for US goods and slowing gains in US employment.

The Fed has achieved its dual mandate, but it has resumed monetary easing, cutting its policy rate in response to perceived downside risks associated with trade policy uncertainties. Combined with President Trump's inappropriate public pressure on the Fed to cut rates, the Fed's heightened focus on uncertainties and diminished reliance on data dependence increases the risks of a policy mistake that may undercut its public credibility and independence. The July rate reduction will have little if any impact in offsetting the negative shock of tariffs on investment and productive capacity, but by reducing the buffer from the zero lower bound (ZLB), it reduces the Fed's flexibility to implement effective countercyclical policy in response to a future economic downturn.

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The history of tariffs and the ebbs and flows of globalization provide critical lessons and caution about the significant downside risks of the current thrust of US trade policies. The recent era of globalization may have already begun to fade, and the current re-emergence of tariffs—the US is certainly leading, but not the only nation imposing tariffs—is accentuating this drift toward protectionism.

In the face of an escalation of trade barriers, the Fed must continue to pursue its dual mandate but not extend monetary policy beyond its capabilities. The Fed should make clear that escalating trade barriers and policy uncertainties that impose supply constraints on productive capacity and distort global distribution channels are beyond the scope of monetary policy to remedy. It must also emphasize the importance of it being independent to conduct policy without political interference or pressure. It should rebuff inappropriate pressures from the Administration while maintaining its politically neutral stance.

Escalating Tariffs and Their Economic Costs

While campaigning for the US presidency, Donald Trump railed against the current world trade order and touted “America First” with a tilt toward protectionism. These two themes have become a reality, as disruptions to existing trade agreements and a wave of escalating tariffs, particularly aimed at China, have dominated the environment. In 2017, President Trump’s primary policy thrusts were aimed at easing burdensome regulations and tax cuts and reform. Economic performance improved decidedly. Beginning in late 2017, Trump began ramping up tariffs. Most of the tariffs have been imposed without explicit approval of Congress, based on the Administration’s interpretation of existing legislation that either protects industries from imports or addresses foreign trade behavior (particularly of China) that is perceived to be unfair, threatens national security or is considered a national emergency.

Trump’s trade policy initiatives have been driven by a combination of beliefs. Trump dislikes bilateral trade deficits, despite the fallacy that bilateral trade deficits impose economic costs, and tilts toward mercantilism. Trump distrusts China—its ideology, its policies and strengthened economic position and its threat to US supremacy and security. Anecdotal evidence of China’s theft of US intellectual property is abundant. Trump distrusts globalism and the established governmental channels for conducting diplomacy, and favors rough and tumble one-on-one negotiating.

A chronology of Trump's trade policies-the tariffs and other barriers to trade, administrative rationale, and threats-highlights the clear escalation and broadening use of tariffs and foreign retaliation--beginning with solar panels and washing machines (January 2018); steel and aluminum (March 2018); China (March 2018 to present); and automobiles (Chudik 2019 and Fajgelbaum, Goldberg, Kennedy and Khandelwal 2019). To date, tariffs have been increased on an estimated \$283 billion of imports, primarily imports from China, but also imports from Japan, South Korea, Canada and Mexico. Trading partners have retaliated with \$121 billion of tariffs on goods and services imported from the US (Amiti, Redding and Weinstein 2019). These imposed tariffs have been interspersed with threats of more tariffs and disruptions, back peddling and adjustments that have heightened uncertainty about future trade policies (Bown and Irwin 2019).

Several of President Trump's public statements stand out as profound. In March 2018, immediately after imposing tariffs on aluminum and steel imports, Trump stated "trade wars are good, and easy to win". The subsequent escalation of tariffs seems to reflect a miscalculation that China would be more willing to negotiate than has actually been the case. While the US negotiations with China have gone far beyond trade to include issues of treatment of intellectual property, cyber security, cross-border investment and financial policies, and national security issues, Trump's December 2018 statement "I am a tariff man" highlights his preference for imposing tariffs, despite their economic costs. Like many historic diplomatic skirmishes, this one has escalated, and both parties face difficult issues. China's potential economic growth is slowing independently of the tariffs and dragging down global economies, and its leaders face many economic, financial and non-economic issues that complicate the path to resolution. Until a US-China agreement on trade policies is reached, economic performance will suffer.

To date the negative effects on the US economy have been moderate, but more pronounced on global performance. The negative effects of policy-related uncertainties on trade, industrial production and investment have been as large if not larger than the direct impacts of the tariffs. This is most apparent in declining global trade volumes and industrial production, disruptions to global supply chains, loss in business confidence and widespread anecdotal evidence (Chart 1).

Estimates of the impact of the tariffs vary widely, but are negative and sizable. Conventional trade models find that tariffs have increased the costs of US imported goods, imposing burdens on US manufacturers and their production chains, and raising costs to consumers. Amiti, Redding and

Weinstein (2019) estimate the tariffs have increased the cost of US manufacturing by 1 percent, and are forcing a reorganization of global supply chains. A model that estimates the impacts on targeted import and export varieties finds large impacts of tariffs on reducing import volumes and complete pass-through to prices paid by US importers and sizable reduction in US exports (Fajgelbaum, et al 2019). They estimate the net impact on US GDP is 0.4 percent. A sustained drag on business investment reduces the capital stock and lowers productive capacity and potential growth.

The heightened uncertainty related to economic policy weighs heavily in business decisions and economic performance. We note that the economic policy uncertainty index developed by Baker, Davis and Bloom (2016) has a simple 49 percent correlation with US business investment (Chart 2). The softening of global trade volumes and business activity since 2018 is not surprising in light of the spike in the economic policy uncertainty measure that mirrors the erratic ramping up of tariffs.

More rigorous empirical research based on different measures of policy uncertainty estimate large impacts on business activity. Based on a World Trade Uncertainty (WTU) Index derived from the Economist Intelligence Unit (EIU) country reports, Ahir, Bloom and Furceri (2019) estimate that the jump in their WTU index beginning in 2017 through Q12019 reduces global growth by up to 0.75 percentage points in 2019. Based on a measure of trade uncertainty aggregated over the EU, US, China and UK based on text-mining techniques, Ebeke and Siminitz (2018) estimate that the investment-to GDP ratio in the EuroArea is on average 0.75 percentage points lower for five quarters following a one-standard deviation increase in the level of trade uncertainty. They find that the negative impacts of policy uncertainty are much larger for nations that rely more heavily on tradeable goods.

In a recently released (August 2019) study, researchers at the Federal Reserve Board develop different measures of trade policy uncertainty-one on a firm level and two aggregate indicators based on the US economy using newspaper coverage and data volatility on import tariffs-and test for their impacts on investment (Caldara, Iacoviello, Molligo, Prestipino and Raffo 2019). They estimate that the rise in trade policy uncertainty in 2017 and 2018 predicts a decline in aggregate investment of between 1 and 2 percent. This internal Fed research study has contributed to the Fed's heightened concerns about trade policy uncertainties.

Recent US and global economic data trends reflect the negative impact of tariffs and policy uncertainties, and nations with larger trade exposure have been hit hard. US real exports, which had grown at a 4 percent average annual rate in the two years ending in 2Q2018, have fallen 1.7 percent in the last year. Industrial production, following a sizable increase in 2017 and early 2018, flattened and has fallen 1.3 percent since late 2018. Business fixed investment growth has slowed dramatically, from a 5.6 percent pace in the two years ending Q2 2018 to 2.6 percent in the last year—and it fell in Q2 2019 and recent declines in durable goods shipments point to another decline in Q3 2019. Other factors may be at play, but the negative impacts of the tariffs and related uncertainties on exports, industrial production, business investment and confidence have offset the positive impulses of the Trump Administration’s deregulatory and tax reform initiatives.

Global trade volumes have declined 1.4 percent year-over-year, a marked reversal from its strong gains that averaged over 4 percent annually before tariffs were ramped up in mid-2018. Global industrial production is declining, with pronounced declines among China’s largest trading partners that rely on manufacturing exports. Production is down 1.1 percent year-over-year in Japan, -0.4 percent in South Korea and -4.6 percent in Germany. This is generating declines in productivity that have begun to spill into domestic economic activity. China’s growth has clearly softened, and various measures suggest that its official data overstate actual economic performance. Along with China’s natural deceleration of its potential growth, the US tariffs and other trade barriers have adversely affected its high-powered export-related manufacturing sector. In the year ending July 2019, exports have fallen 0.9 percent while imports have declined 3.1 percent, compared to their annualized increases of 7.4 percent and 16 percent increases, respectively, in the two prior years. Industrial production has slowed to 4.4 percent year-over-year, its slowest since early 2009 during the financial crisis and deep global recession.

The longer the tariffs are in place and the longer trade policy uncertainty persists, the larger the cumulative economic impacts will be (Handley and Limoa 2017). Suppressing business investment will have a cumulative negative impact on the stock of capital, which if sustained, would depress productive capacity and longer-run economic performance. The interconnectedness of global supply chains and the international flow of human capital and ideas presumably increase the economic costs of erratic and unpredictable trade policies.

The Trump Administration's goals for China extend well beyond opening up China's markets, and include preventing China's unfair treatment of intellectual property, investment practices that violate standard global practices and cybersecurity violations. Accomplishing these goals would provide significant longer-run benefits. But relying exclusively on escalating tariffs and threats of higher trade barriers as levers to achieve these objectives is inappropriate and costly for economic performance.

Tariffs and Monetary Policy

Tariffs and trade policy uncertainties add several dimensions of difficulty to the Fed's conduct of monetary policy. The Fed has achieved its dual mandate, with inflation slightly below the Fed's 2 percent target, strong labor markets and the unemployment rate at a 50-year low. Where does trade policy fit into the mix? The Fed's discretionary approach to conducting monetary policy has led it to respond to the actual and *anticipated* effects of tariffs on US and global economic conditions, inflation and the US dollar.

Chairman Powell has made it clear that the Fed places a very high priority on avoiding a recession, so that as long as inflation remains below 2 percent, the Fed will tilt monetary policy against downside economic risks. The heightened policy uncertainties have led the Fed to put more weight on downside risks around its economic forecasts and temporarily abandon its "data dependent" conduct of monetary policy. It has also put the Fed into the position of basing its policy on speculation about trade policy outcomes and their economic implications.

The Fed cut rates in both July and September, even though the actual data clearly indicated that the economy is growing in line with the Fed's forecast (and along the Fed's estimate of its potential path) and the Fed characterized labor markets as being strong. Powell emphasized these uncertainties at his Jackson Hole speech in August (Powell 2019): "In principle, anything that affects the outlook for employment and inflation could also affect the appropriate stance of monetary policy, and that could include uncertainty about trade. There are, however, no recent precedents to guide any policy response to the current situation...Trade policy uncertainty seems to be playing a role in the global slowdown and in weak manufacturing and capital spending in the United States."

The Fed has long emphasized the importance of being a “risk manager,” but basing monetary policy on speculation about trade policy uncertainties and hunches on the probabilities of risks moves the Fed’s discretion beyond data-dependence. It is also inconsistent with the Fed’s traditional approach of modifying monetary policy to actual economic responses to fiscal policy changes rather than changing monetary policy *in anticipation of* pending fiscal legislation and how the Fed perceives that legislation will affect the economy. The most recent example was in 2017 when the Fed purposely stated that it would not adjust monetary policy to anticipated changes in fiscal policy.

The Fed’s current assessment that risks are to the downside based on policy-related uncertainties may end up being correct or incorrect. Such reliance moves the Fed further from any kind of systematic (rules-like) approach to monetary policy and toward discretion and guessing. This increases the probability of policy error that may undercut the Fed’s credibility and independence.

A more fundamental factor facing the Fed is whether the erratic ratcheting up of tariffs lowers aggregate demand or productive capacity (supply) in the economy, and whether the impacts are temporary or permanent. These issues are critical in determining the appropriateness and efficacy of monetary responses. Tariffs clearly reduce aggregate demand. Like taxes, they raise prices—of business operating costs and consumer goods. They also disrupt and distort global supply chains, which reduces economic efficiencies. Supply chains take time—in many cases, years—to adjust. These factors slow business investment and GDP growth. Sustained drags on business investment reduce the capital stock and barriers and disruptions to global supply chains reduce efficiencies. These combine to reduce productive capacity and sustainable growth in the intermediate-term.

This poses a dilemma for the Fed: while monetary policy stimulus may offset slumps in aggregate demand, it is incapable of offsetting a trade policy-induced structural shift that reduces productive capacity. Nor is monetary easing capable of offsetting declines in business investment stemming from policy-related uncertainties. That is, a Fed rate cut that lowers the real cost of capital will not offset the constraints that trade barriers and distortions to global supply chains impose on productive capacity (Levy 2019). Nor will it clear up trade-related uncertainties. Persistent monetary ease in the face of supply constraints will not stimulate growth, but will have negative consequences. If the monetary easing actually stimulates aggregate demand, it would generate higher inflation. The lower rates are not harmless: they generate misallocations of resources, excess reliance on debt and other distortions.

Also, by giving the impression that monetary policy is ineffective, it may undercut the Fed's credibility. In real time, the nature of the negative economic impact of trade policy may be uncertain. But if tariffs are imposed for any sustained period and persistent policy uncertainties weigh on capital spending, then research strongly suggests that the efficacy of more and more monetary easing is limited. It is critically important that the Fed incorporates this analysis into its framework for conducting and communicating its monetary policy.

Another nagging issue facing the Fed is President Trump's public criticism of the Fed and his intertwining of the Administration's trade policies with China Fed policy. Trump's statements such as "who is our bigger enemy, Jay Powell or Chairman Xi?" (August 23, 2019) have led some observers to believe that the Administration's trade policy tactics are being used as a lever to force the Fed to cut its policy rate. However inappropriate Trump's behavior or inaccurate the interpretation, it puts the Fed in a bad position and serves to undermine the Fed's credibility in the public's eye.

These observations provide several suggestions. The Fed should be more systematic and guided by rules in its conduct of monetary policy, rely more on data dependence and not succumb to basing policy on hunches about risks and uncertainties. This is particularly true under current circumstances with the economy growing at potential, labor markets strong, bond yields at historic lows and the Fed's policy rate already uncomfortably close to the zero lower bound.

Second, the Fed must be cognizant of the proper scope of monetary policy and not be so quick to cut rates in response to exogenous factors and policies that reduce economic efficiency and productive capacity and are beyond the scope of monetary policy.

Third, the Fed should take every step and opportunity to emphasize its independence in pursuing the dual mandate that was established by Congress. It should also emphasize its political neutrality and sidestep any political debate.

Former President of the Federal Reserve Bank of New York Bill Dudley weighed in on this issue with a statement (Dudley 2019) that required an explanatory follow-up that illustrated the bind the Fed is in, but Dudley really stumbled badly and his suggestions would jeopardize the Fed's credibility as an apolitical, nonpartisan policymaker. Dudley correctly viewed Trump's escalating tariff policies as

harming the economy and Trump's barbs at the Fed as encouraging the Fed to become politicized. But while Dudley later disavowed (Dudley 2019) his original suggestion that the Fed should consider adjusting monetary policy to influence the upcoming presidential election, he still recommended that the Fed should play different political angles in its responses and communications to Trump's economic policies. Moreover, he presumed that monetary policy is capable of offsetting the trade policies even though they are imposing structural constraints on the economy, which are beyond the Fed's control. Dudley also suggested that the Fed's policies should hinge in part on how the Fed perceives they will affect future trade policy. These notions suggest that the Fed should pursue political tactics in order to remain nonpolitical and they convey a misunderstanding of the proper role of the Fed and monetary policy (Thornton 2019). The best way for the Fed to maintain political neutrality and operational independence is to conduct monetary policy independently of political pressures and how it perceives that its policies may affect other (non-monetary) policies, with a full understanding of the proper scope of monetary policy and to communicate these publicly. This involves standing up to President Trump and steering clear of any politics or partisan maneuvering.

The Big Risk: Ending the Second Era of Globalization

The Trump tariffs on China and other countries, the retaliation against the US, and the increase in trade policy uncertainty has resonance for what happened to the global economy during the interwar period when the first great era of globalization collapsed and contributed to a plunge into autarky and depression.

Although history never repeats it often rhymes. Hence understanding the lessons from the past can aid us in avoiding a recurrence of its serious policy errors. The world has experienced two eras of globalization in the past two centuries, Chart 3 (Bordo 2017). An understanding of what happened to end the first era of globalization is a very important cautionary tale for the considerable risks that the global economy faces from the current trade policies pursued by the Trump administration.

The first era of globalization from the mid nineteenth century to August 1914 experienced a massive transformation in international trade, financial globalization and mass migration. The growth of trade relative to population and income began in earnest in the early nineteenth century, driven by

technological change that vastly reduced the costs of shipping goods (the steamship and railroads) and political stability (The Treaty of Vienna and the Pax Britannica).

Empirical evidence for global trade integration comes in two dimensions: 1) the growth of trade relative to income and 2) convergence in the prices of traded goods (Findlay and O'Rourke 2004). On both dimensions, although the process of international integration began with the opening up of the world with the Age of Discovery in the sixteenth century, the major thrust in globalization did not really occur until after the Napoleonic Wars.

The growth of trade from 1500 to 1800 averaged a little over one per cent per year, far outpacing population growth of 0.25 per cent. Between 1815 and 1914 trade measured by exports grew by 3.5 per cent versus income growth of 2.7 per cent. Commodity prices converged dramatically in the nineteenth century. For example, reflecting the sharp decline in transportation costs, the price of wheat in Liverpool relative to those in Chicago fell from 58% to 16% in 1913. In addition to falling transport costs, globalization was spread by big reductions in tariff protection, beginning with Britain's reduction of the corn tariffs after the Napoleonic Wars, culminating in their repeal in 1846. The movement towards free trade spread across Europe in a series of reciprocal agreements beginning with the Cobden Chevalier Treaty in 1860 between Great Britain and France. Within the next two decades virtually all of Europe reduced tariffs (to the 10-15 percent range from 35 percent) in a series of bilateral agreements incorporating Most Favored Nation clauses.

Financial market integration also burgeoned between 1870 and 1914. Many of the instruments of international finance such as the bill of exchange were invented in Italy in the Middle Ages and were perfected in Amsterdam in the seventeenth century (Goetzmann 2016). London succeeded Amsterdam as the key center of international finance by the nineteenth century. Obstfeld and Taylor (2004) portray the first era of financial globalization in the nineteenth century as centered in London, but including the other advanced Western European countries as participants. Capital flowed from the mature economies of Western Europe which had by then gone through the industrial revolution and had reduced the marginal productivity of capital (real rate of return) to the countries of new settlement that had abundant resources and higher real returns (Bordo 2002). The stock of global foreign assets relative to world GDP reached a peak of 20 percent in 1913 and was not surpassed again until late in the twentieth century. The British held the lion's share of overseas investments in 1914 at 57 percent, then France at

22 percent, Germany 17 percent, and the Netherlands at 3 percent. These claims financed up to half of the capital stock of Argentina and 20 percent for Canada and Australia. Net capital outflows reached a peak of 9 percent of GDP for Great Britain just before World War I. For Canada net capital inflows in the decade before the war were on a similar scale. The key factors that fostered the rapid development of global finance were technological change (the telegraph and the transatlantic cable) which was first laid between Britain and North America in 1866 starting a network still used today, and the classical gold standard with London as the center.

Adherence to gold convertibility by the major nations of the world ensured stable exchange rates and acted as a commitment mechanism or a “good housekeeping seal of approval” for countries seeking access to the London capital market (Bordo and Rockoff 1996).

Finally, like global commodity markets and capital flows, international migration surged in the nineteenth century and declined after World War I. The waves of migration in the later nineteenth century were driven largely by economic factors (the lure of higher real wages in the Americas and the supply-enhancing reduced transportation costs).

All of this came to an end with World War I and subsequently the Great Depression, but many of the seeds of its own destruction were planted earlier. In turn globalization may have contributed to the wave of nationalism that led to World War I. The consequences of trade and factor mobility in the Golden Age were the convergence of real wages and per capita incomes between the core countries of Western Europe and much of the periphery. This reflected the operation of classical trade theory.

These forces had important effects on the distribution of income. The massive migrations in the 1870 to 1914 period reduced the returns to land –owners in the land-scarce, labor abundant countries of Europe. At the same time immigration threatened to worsen the income distribution for unskilled workers in countries of recent settlement, as immigrants competed with established workers for jobs in certain sectors. A political backlash ensued in each region. In Europe, landowners in France and Germany successfully lobbied for increased tariff protection of agriculture in the last two decades of the nineteenth century.

By the end of the century, the era of mass migration gave way to a wave of restrictions on the movement of people. The May 1882 US Chinese Exclusion Act was the culmination of decades of social and political lobbying against immigrants, particularly from China. At the end of 1901, Australia, with a much shorter history of immigration than the US, passed its own Immigration Restriction Act aimed at stopping non-white immigration. Other countries of new settlement introduced their own similar restrictions after 1919 and by the early 1920s free migration ceased. The political and social limits to globalization through migration had therefore already been reached in the decades before 1914.

Financial globalization also led to a backlash but much later in the interwar period. Open capital accounts were associated with private investment booms and busts leading to financial crises (both currency and banking crises). Capital flowed from the capital rich mature countries of Western Europe to the capital scarce peripheral countries. But many lacked the institutional development to fully convert the new funds into productive investments and hence the funds fueled asset price booms (Bordo and Meissner 2017). In the absence of central banks (e.g., the US, Canada, Australia) or in the case of peripheral countries that had them but were unable to adhere to the gold standard (Southern Europe, Latin America), currency crises and banking panics would lead to severe economic distress and sovereign debt crises.

Moreover the classical gold standard that underpinned the first era of globalization was under attack. Under the gold standard, the world price level incurred long swings of deflation and inflation reflecting the growth of the real economy relative to the glacially slow growth of the world gold stock. Gold shortages (deflation) would ultimately stimulate technical innovation in gold mining and new discoveries (Bordo 1981, Rockoff 1984). But the timing of these events was adventitious (Keynes 1925). In the US and elsewhere the Great Deflation of 1873 to 1896 led to a populist outcry against gold and in favor of free silver and bimetallism (Eichengreen 2018).

The eruption of World War I in 1914 marked the end of the first era of globalization. Virtually all countries left the gold standard *de jure* or *de facto* once Britain suspended convertibility of sterling into gold after the financial crisis in 1914 (Roberts 2013). Both exchange controls and capital controls were widely imposed (Eichengreen 1992). World War I disrupted trade with tariffs and quotas. Following the war the movement towards protection increased.

The U.S. was the worst offender with the Fordney McCumber Act of 1922 and then the Smoot Hawley Tariff of 1930. Other countries retaliated, e.g., Great Britain with the Ottawa agreement of 1932 establishing Imperial preference and discriminating against the US. The Great Depression led to increasing tariffs to stimulate recovery. By the eve of World War II multilateral trade collapsed into system of bilateral trade and quotas. Finally, capital flows virtually ceased in the early 1930s following widespread sovereign debt defaults and the imposition of controls.

The situation today has some similarities to the interwar period but some key differences. Tariffs were increased markedly in both episodes but so far the magnitude and scope of the imposed tariffs are dramatically less today than in the 1930s. Also, while migration is being restricted, the scale and magnitude of the restrictions are a small fraction of those in the 1930s.

The differences are considerable:

- 1) So far the widespread imposition of capital controls that occurred in the interwar has not occurred.
- 2) The structure of the world economy has changed. The advanced economies, which by the interwar period had already shifted from primary production (agriculture) to manufacturing, have now become much more dependent on services. The economies of many of the emerging countries (e.g., China and East Asia) have grown and matured to where the advanced countries were in earlier decades. This suggests that tariffs on manufacturing will have more of an impact on the emerging countries.
- 3) There also has been greater integration in the production process across the globe. The most important development was the global supply chain, which had developed slowly in the 1980s between the advanced countries of North America, Europe and Japan on the one hand and China and other emerging Asian economies on the other (Baldwin 2016). The development of just-in-time production techniques led to the formation of completely integrated global enterprises, operating world-wide and combining advanced countries knowhow with emerging market lower cost labor (e.g. Walmart). There is evidence that the Trump tariffs have disrupted these processes but the global supply chain had already run into diseconomies of scale which has led many multi-national corporations to localize their production (Economist 2019)

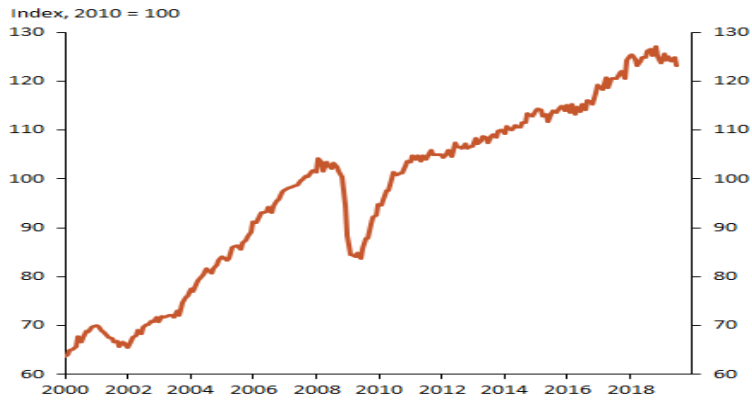
Despite these considerable differences between present and historic conditions, there still is a risk that the rise in tariffs and other barriers and increased trade policy uncertainty may lead to a recessionary chain of events.

Fortunately so far the effects of the US tariffs and the retaliation are far less than what occurred in the 1930s. Research on Smoot Hawley suggests that those onerous tariffs were not the primary cause of the Great Depression, rather a serious exacerbating force (Irwin 2019). Crucini and Kahn (1996 and 2003) show that based on a DSGE model, the Smoot Hawley tariffs and the retaliation that follows created a recession that would be comparable to the garden variety recessions of the post WWII era with real GDP falling by about 2%. Moreover their research finds that accounting for the impact of the tariffs on intermediate goods in the supply chain accounted for most of the drop in output. Today's much more integrated and developed supply chains (with China as the linchpin) increase the potential economic costs of a trade war. Indeed cutting China out of the supply chain, which President Trump recently urged in a tweet, could accentuate the negative impact. The process of substituting production away from China to other emerging countries would eventually alleviate the problem, but such adjustments are very costly and take considerable time. It is important to remember that it took several decades of learning-by-doing for China to have become so tightly integrated with the US and Europe, and it will be very costly for the other emerging market economies to replicate this.

On the other hand, policy makers today have a far deeper understanding of how to stabilize the economy (even when interest rates hit the zero lower bound) with a broader array of policy tools that did not exist 80 years ago. The presence of monetary and fiscal policy tools, automatic stabilizers and international monetary and fiscal policy coordination, as well as the heightened sophistication of financial markets and capital flows greatly reduces the likelihood of a 1930s-type disaster.

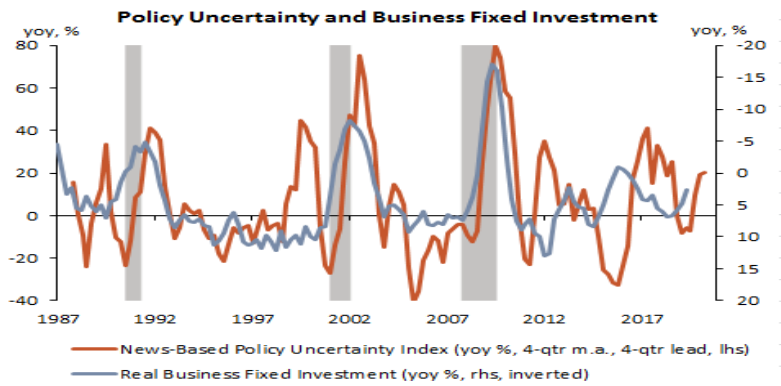
The risk remains, however, that further increases in trade protection and barriers that slow the flows of migration will reverse the economic advances of the second era of globalization (which accelerated following the collapse of Bretton Woods in the 1970s). This would greatly harm US economic performance and lower long-run growth prospects. In present value terms this would translate into significant losses in standards of living and well-being. This would be a tragedy because it would have been caused by preventable policy errors.

Chart 1. World Trade Volume



Source: Netherlands Bureau for Economic Policy Analysis

Chart 2. Policy Uncertainty and US Business Fixed Investment



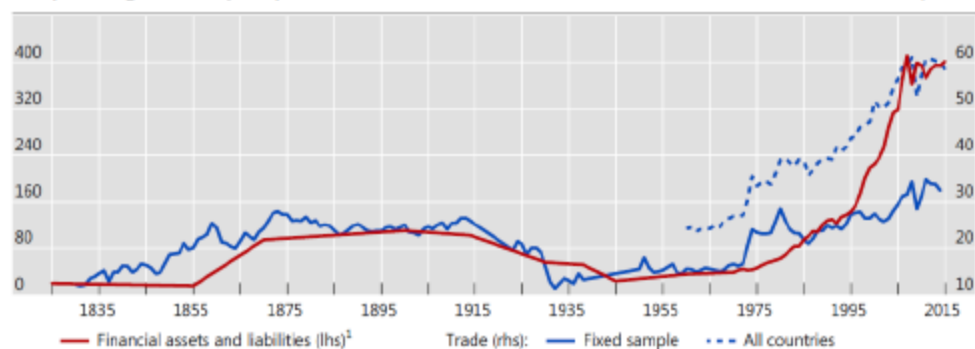
Sources: Baker, Bloom and Davis (2016) and Berenberg Capital Markets.

Chart 3. The Wave of Globalization

The second wave of economic globalisation has outstripped the first

As a percentage of country sample GDP

Graph VI.2



¹ Prior to 1970, calculated as external financial assets multiplied by two.

Sources: Federico and Tena-Junguito (2017); Lane and Milesi-Ferretti (2017); Obstfeld and Taylor (2004); Federal Reserve flow of funds accounts; IMF, Balance of Payments Statistics; World Bank; US Department of the Treasury; McKinsey Global Institute analysis; BIS calculations.

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