# The Sky is Not Falling!

by

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# The Sky is Not Falling![§]

**Lawrence J. Lau**[1]

October 2018

**Abstract:** What are the impacts of the ongoing China-U.S. trade war on the Chinese economy? As of October 2018, almost half of U.S. imports from China are subject to new U.S. tariffs at various rates, mostly at 10 percent until the year end of 2018, when the rates will be raised to 25 percent. These tariff rates will prove to be prohibitive for most if not all of the U.S. imports from China. Assuming that U.S. imports from China will be reduced by one half, the initial direct real impact on the Chinese economy may be estimated at a loss of 0.43 percent of Chinese GDP. If indirect effects are included, the full real impact may be estimated at a maximum loss of 1.12 percent of Chinese GDP. These estimated impacts are relatively small and quite manageable, especially for an economy expected to grow at an average annual rate of 6.5 percent--a reduction of 1.12 percent still leaves 5.38 percent, a very respectable rate of growth. There is a possibility that the scope of the U.S. tariffs may be expanded to cover all U.S. imports from China, in which case the full negative economic impact will be doubled to 2.24 percent of Chinese GDP, but still leaving an expected rate of growth in excess of 4 percent. The Renminbi is not likely to be significantly devalued as a result of the trade war. However, there are also longer-term underlying forces at work behind the China-U.S. trade war—the competition for economic and technological dominance and the rise of populism, isolationism and protectionism. It is important for China-U.S. relations, and China's relations with the rest of the world, in particular with the European Union, ASEAN, Japan and Russia, to be carefully managed going forward.



[1] The author is Ralph and Claire Landau Professor of Economics, Lau Chor Tak Institute of Global Economics and Finance, The Chinese University of Hong Kong, and Kwoh-Ting Li Professor in Economic Development, Emeritus, Stanford University. He wishes to thank Professor Xikang Chen, Dr. Stan Cheung, Professor Terence Chong, Mrs. Ayesha Macpherson Lau, Mr. Junjie Tang, Professor Yanyan Xiong, and Professor Huanhuan Zheng for their helpful comments, contributions and suggestions but retains sole responsibility for all remaining errors. The opinions expressed herein are those of the authors and do not necessarily reflect the views of the Institute.

## 1. Introduction

As of October 2018, almost half of United States imports from China are subject to new U.S. tariffs at various rates, mostly at 10 percent until the year end of 2018, when the rates will be raised to 25 percent. These tariff rates will prove to be prohibitive for most if not all of the U.S. imports from China subject to them. What are the impacts of the ongoing China-U.S. trade war on the Chinese economy? Assuming that U.S. imports from China will be reduced by one half, the initial direct real impact on the Chinese economy may be estimated at a loss of 0.43 percent of Chinese GDP. If indirect effects are included, the full real impact may be estimated at a maximum loss of 1.12 percent of Chinese GDP. These estimated impacts are relatively small and quite manageable, especially for an economy expected to grow at an average annual rate of 6.5 percent--a reduction of 1.12 percent still leaves 5.38 percent, a very respectable rate of growth. There is a possibility that the scope of the U.S. tariffs may be expanded to cover all U.S. imports from China, in which case the full negative economic impact will be doubled to 2.24 percent of Chinese GDP, but still leaving an expected rate of growth in excess of 4 percent. Moreover, other sources of additional aggregate demand are likely to be mobilised by China in response to mitigate the decline in the rate of growth. There is no need to panic. The sky is not falling!

In 1997, at the height of the East Asian Currency Crisis, I wrote an essay titled "The Sky Isn't Falling!", explaining why the Chinese economy should be able to manage, and in particular, why the Renminbi should not be devalued at that time.[2] Indeed, the sky did not fall, the Renminbi did not devalue, and the Chinese economy wound up with a real rate of growth of approximately 8 percent. Since then, I have written under the same title a couple of times, immediately after the collapse of Lehman Brothers in the United States in September of 2008,[3] and also after the bursting of the Chinese stock market bubble and the devaluation of the Renminbi in 2015.[4] With the advent of the trade war between China and the U.S., I feel that it is time to write yet another essay under this same title—"The Sky Is Not Falling!"

[2] See Lawrence J. Lau (1998), "The Sky Isn't Falling," *ICBC Economic Review*, No. 305, September-October, pp. 1-12.
[3] Lawrence J. Lau (2008), "The Sky Is Not Falling! (II)," lecture presented at the Chinese Academy of Engineering, Beijing, 15 October.
[4] Lawrence J. Lau (2015), "The Sky is not Falling on China's Economy," *China Daily*, 30 September.

It should be noted that the China-U.S. trade war, at least for the time being, affects only the trade in goods between the two countries. The overall impacts of the trade war on both economies will certainly be negative, but relatively small and manageable, and perhaps proportionately more serious for China than for the U.S. This is because Chinese exports to the U.S. are much greater than U.S. exports to China, and hence China has much more at risk, and at the same time China has a smaller aggregate GDP and a very much lower per capita GDP.

The proximate cause of the current China-U.S. trade war is the large and persistent U.S.-China trade deficit in goods and services. The U.S.-China bilateral trade deficit was considered by the U.S. to be the result of unfair trade practices on the part of China. There are also other U.S. economic grievances not directly related to trade as well.[5] However, there exist significant differences in the official Chinese and U.S. estimates of the magnitude of the bilateral trade deficit itself. For 2017, the U.S. estimate of the trade deficit for goods only is US$375 billion whereas the Chinese estimate is only US$274 billion. The large discrepancy is due to many factors, such as differences in the valuation of exports and imports, differences in the treatment of re-exports through third countries and regions, and whether trade in services, in which the U.S. enjoys a large annual surplus on the order of US$50 billion, is included. After making all the appropriate adjustments, a more accurate estimate is approximately US$300 billion, still a very large number.[6]

U.S. President Donald Trump wishes to reduce the U.S.-China trade deficit by US$100 billion. He proposed to accomplish this objective by imposing tariffs on up to US$250 billion worth of U.S. imports from China[7] (and if necessary on an additional US$267 billion worth of U.S. imports from China, thus practically covering all imports from China). Whether this can be done in a manner consistent with the World Trade Organisation (WTO) rules is not so clear, and China, like the European Union and other countries subject to new U.S. tariffs, have filed

[5] See the discussion in Lawrence J. Lau (2018b), *Competitors and Partners: The Future of China-U.S. Economic Relations*, Hong Kong: The Chinese University of Hong Kong Press, forthcoming, Chapter 10.
[6] See the analysis in Xikang Chen, Lawrence J. Lau, Junjie Tang and Yanyan Xiong (2018), "New and Revised Estimates of the China-U.S. Trade Balance," Working Paper, Lau Chor Tak Institute of Global Economics and Finance, The Chinese University of Hong Kong, October.
[7] The U.S. tariffs were imposed on Chinese imports in three separate batches: a first on US$34 billion in July 2018, a second on US$16 billion in August 2018 and a third on US$200 billion in September 2018. Imports of consumer goods such as cell phones, garments and shoes are at the present time not subject to U.S. tariffs.

complaints with the WTO. However, these complaints are unlikely to resolve the disputes. Predictably, China retaliated with new tariffs on Chinese imports from the U.S. totalling US$110 billion,[8] at various rates but mostly at 10 percent. Under the new tariffs, Chinese exports to the U.S. will most certainly fall, as will U.S. exports to China. However, just as increased voluntary trade between two trading-partner countries raises the aggregate welfare in both countries, an involuntary decrease in the trade between them lowers the aggregate welfare in both countries. It will be lose-lose for both countries.

An alternative way to measure the bilateral trade surplus or deficit is in terms of the domestic value-add that the respective exports generate in the exporting country. The domestic value-added content of a good to be exported is the GDP generated by its manufacture, relative to its export value, which represents its real contribution to the domestic economy. For example, the Apple i-phone is finally assembled in China, with components, parts and technology from all over the world. The export value of an i-phone is approximately US$500.[9] The domestic value-added of its Chinese manufacturer, Foxconn, may be estimated at US$15. Thus, the domestic value-added content is 3 (=15/500) percent. The average domestic value-added content of Chinese exports to the U.S. is approximately 25 percent.[10] The average domestic value-added content of U.S. exports to China is approximately 50 percent,[11] a ratio of two to one compared to the Chinese value-added content. Thus, the U.S.-China trade deficit, if measured in terms of domestic value-added, may be estimated at approximately US$150 billion in 2017.[12] This contrasts with the U.S. official estimate for the trade deficit in goods only of US$375 billion in gross value terms. However, even US$150 billion is a large number. An efficient way to close this trade gap is for China to import from the U.S. goods that it needs but with close to 100-percent U.S. domestic value-added contents, such as oil and gas, agricultural commodities—meat and grains--and services, so that an additional US$150 billion worth of exports in gross-value terms from the U.S., perhaps slightly higher, should suffice. The U.S. definitely has the capacity to increase its supply of these goods, and China has high

[8] The Chinese retaliatory tariffs were also imposed on U.S. imports in three separate batches: a first on US$34 billion in July 2018, a second on US$16 billion in August 2018 and a third on US$60 billion in September 2018. Approximately US$40 billion of U.S. imports, including large aircrafts, integrated circuits and semiconductors are at the present time not subject to Chinese tariffs.

[9] This is the wholesale value, not the retail value.

[10] Xikang Chen and Huijuan Wang (2016), *Touru Zhanyong Chanchu Jishu 投入占用产出技术 (Input-Output-Occupancy Techniques)*, Beijing: Kexue Chubanshe, Tables 2.2 and 2.4.

[11] Ibid. Tables 2.6 and 2.8.

[12] See Xikang Chen, Lawrence J. Lau, Junjie Tang and Yanyan Xiong (2018).

and rising demands for these goods, so that such an increase in the trade between the two countries should be completely feasible, but will take a little time to develop and implement.[13]

However, the trade war itself may also do damage to the longer-term economic relations between the two countries. For example, it may affect the future rate of growth of the trade in services[14] between the two countries, in which the U.S. has a persistent, large and growing surplus, estimated to be US$54 billion by China and US$40 billion by the U.S. for 2017.[15] Education and tourism constitute a significant part of U.S. exports to China. Yet it has been reported that the U.S. Government considered a blanket ban on all Chinese student visas. If implemented, it would reduce the U.S. surplus in trade in services by US$18 billion.[16] The trade war may also affect the flow of direct as well as portfolio investment between the two countries.

In Section 2, the immediate impacts of the new U.S. tariffs on the Chinese economy are discussed. In Section 3, the real impacts on the Chinese economy are analysed and compared with the real impacts on the U.S. economy. In Section 4, the longer-term forces behind the China-U.S. trade war are considered. In Section 5, the promotion of greater mutual economic interdependence is proposed as a means of arresting the deterioration in China-U.S. relations. Some brief concluding remarks, to the effect that the real economic impacts of the trade war, while negative, are quite manageable for both China and the U.S., are made in Section 6.

[13] See Lawrence J. Lau (2018a), "A Better Alternative to a Trade War", *China and the World: Ancient and Modern Silk Road*, Vol 1, No. 2, June, pp. 1850014-1 – 1850014-13.
[14] Exports of services from the U.S. have an almost 100 percent domestic value-added content.
[15] See Xikang Chen, Lawrence J. Lau, Junjie Tang and Yanyan Xiong (2018).
[16] Financial Times, 3 October 2018, p. 1.

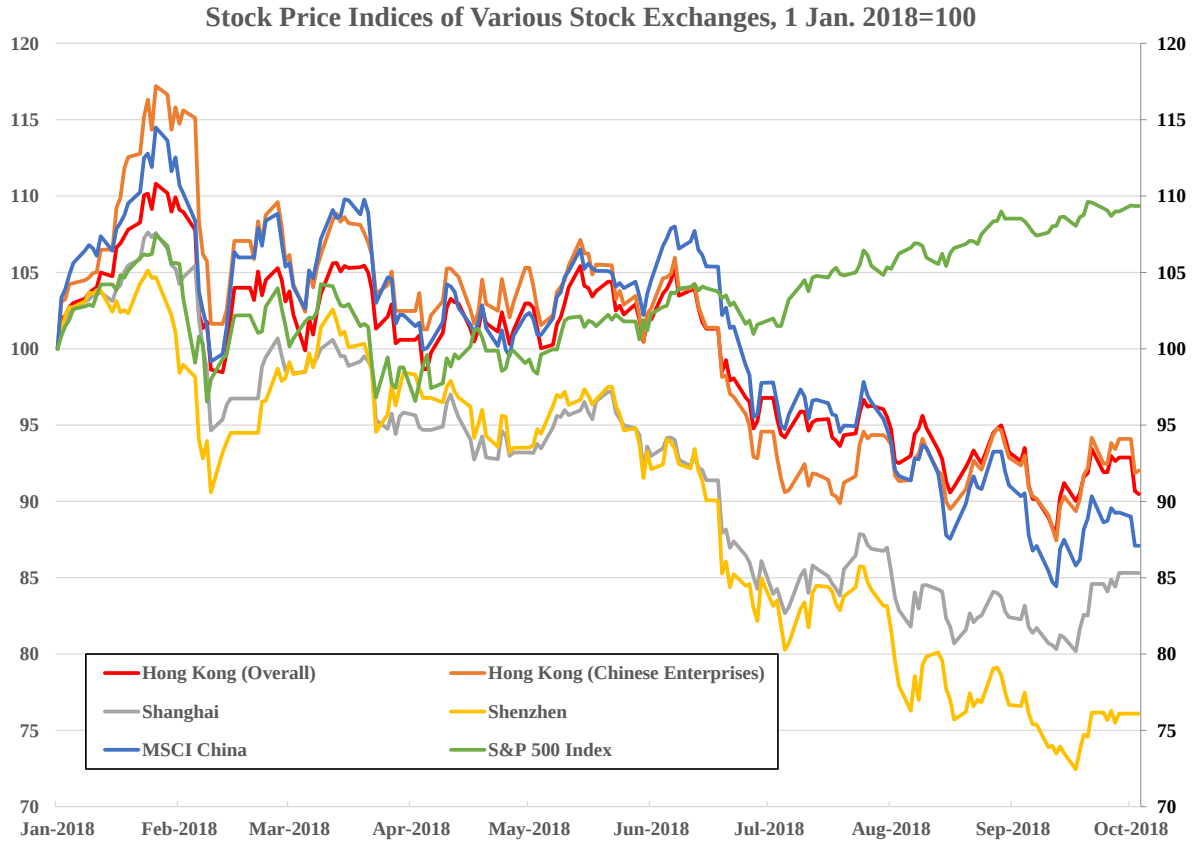
## 2. The Immediate Impacts

The immediate impact of the current trade war was psychological and fell mostly on the Chinese financial markets. As a result of the trade war, uncertainty has increased worldwide. Expectations have turned negative. Confidence of firms and households has slipped. Consumption and investment have been partially put on hold.

Stock markets abhor uncertainty. Any uncertainty will lead to a decline. The Chinese stock markets—Shanghai and Shenzhen, and even Hong Kong—have taken a direct hit from the start of the trade war (see Chart 1). The Shenzhen Stock Exchange has seen its average stock price decline by almost 25 percent since the beginning of 2018. Similarly, the average price level of the Shanghai Stock Exchange has declined 15 percent. The MSCI China Index has declined 13 Percent. Hong Kong overall has declined almost 10 percent, but Mainland Chinese enterprises listed there have declined by somewhat less. In contrast, the S&P 500 has gained approximately 10 percent since the beginning of 2018. However, not all of the declines in the Chinese stock markets can or should be attributed to the trade war. The actual and expected increases in the rate of interest in the U.S. by the U.S. Federal Reserve Board also had a role in the falling prices of assets and exchange rates vis-a-vis the U.S. Dollar in emerging markets.[17]

[17] However, this does not explain why the S&P 500 Index kept hitting new highs—perhaps this is another round of "irrational exuberance".

**Chart 1: The Chinese, Hong Kong and U.S. Stock Market Indices, January-October 2018**



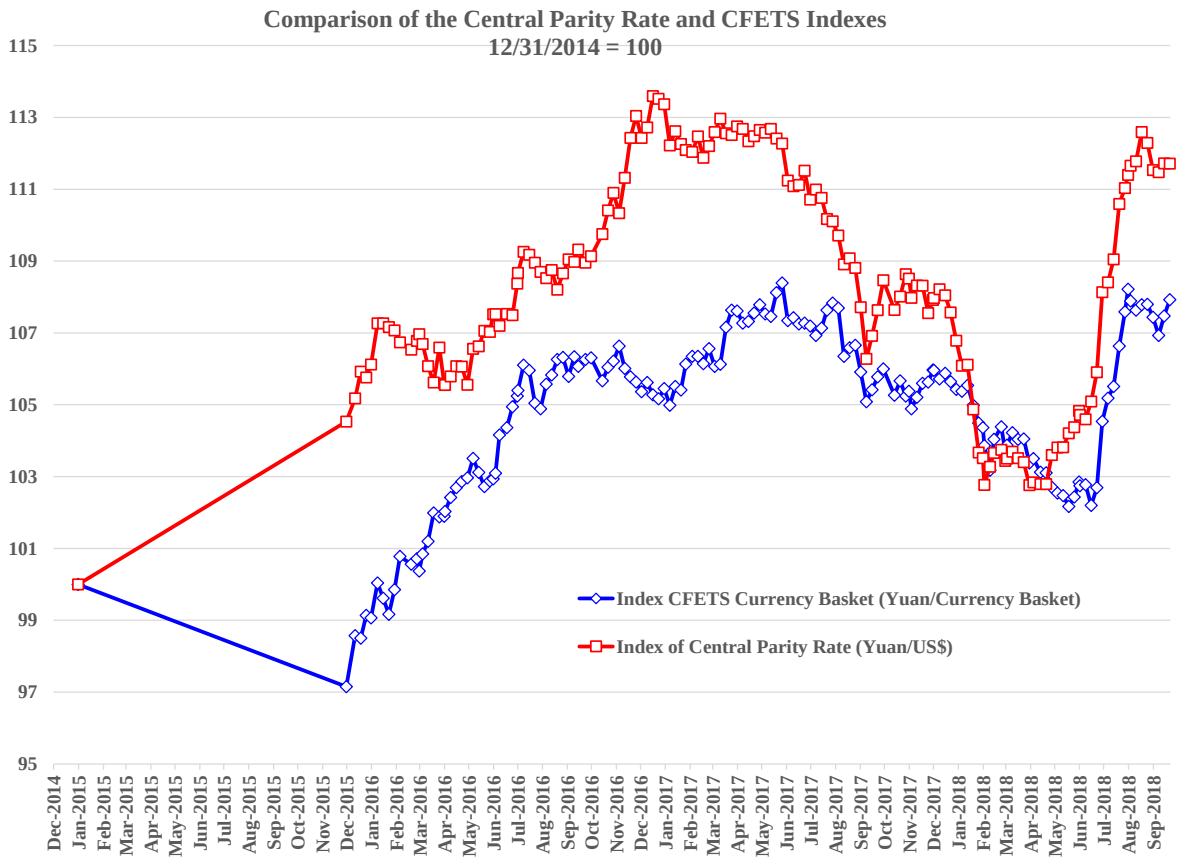

Source: Bloomberg

However, the performance of the Shanghai and Shenzhen stock markets is not a reliable barometer of the state of the Chinese economy. Rather, it is a measure of the degree of "irrational exuberance", to use a phrase coined by Dr. Alan Greenspan, the former Chairman of the U.S. Federal Reserve Board, or the opposite, "irrational gloom". This is because the Mainland Chinese stock exchanges are dominated by individual investors, most of whom are only looking for quick profits through frequent trading. The average holding period of individual Chinese common stock investors is less than 20 trading days and that of institutional investors is between 30 and 40 trading days.[18] Since the trade war looks like it will last for a while, certainly until after the mid-term elections in the U.S. on 6 November 2018, and perhaps even much longer, most Mainland Chinese investors have elected to bail out and stay on the sidelines for now.

[18] This is according to a report by the Capital Market Research Institute of the Shanghai Stock Exchange based on the transactions of all Chinese investors in 2016.

Similarly, the Renminbi exchange rate has also been negatively affected, but also in part because of the actual and expected increases in the U.S. rate of interest. In Chart 2, an index of the Renminbi central parity rate, the rate set by the People's Bank of China (the central bank of China) at the beginning of each daily trading session of the onshore Renminbi, is compared to the China Foreign Exchange Trade System (CFETS) Index, an index of the changes in the value of a Chinese trade-weighted basket of currencies,[19] for the period since 2015.[20] While there was wide divergence between the two indexes at the beginning, they began to move in tandem with each other in the second half of 2017. More recently, while the Renminbi has devalued vis-a-vis the super-strong U.S. Dollar by approximately 9 percent since the end of January 2018, the average absolute deviation of the central parity rate from the CFETS Index has not widened beyond 1.7 percent (see Chart 3).

**Chart 2: The Renminbi Central Parity Exchange Rate and the CFETS Index Since 2015**



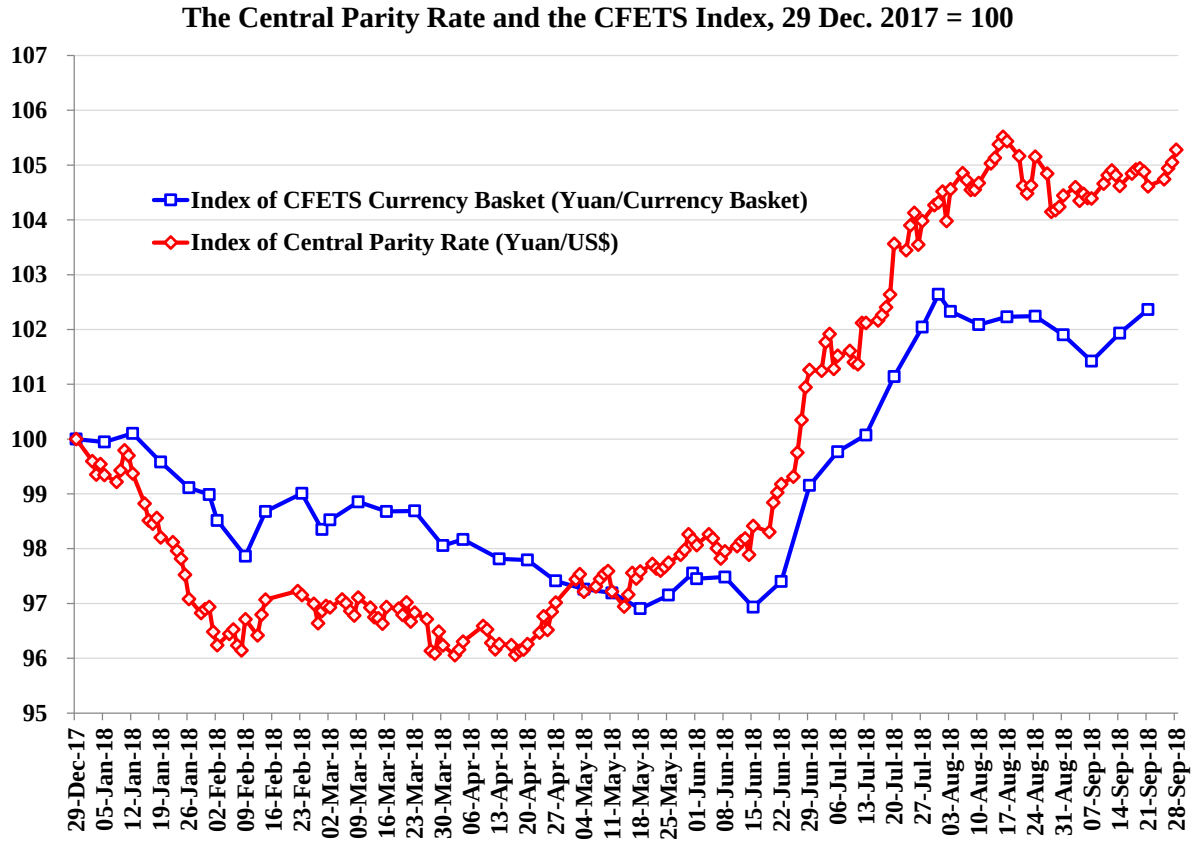

Source: China Foreign Exchange Trade System

[19] The U.S. Dollar had a weight of 26.4% before 2017. On 1 January 2017, the weights of the different currencies were adjusted in accordance with changes in the trade shares of the respective countries and regions. The U.S. Dollar currently has a weight of 22.4%.

[20] Note that the offshore Renminbi exchange rates may be different from the onshore Renminbi exchange rates because capital controls still exist in China.

Chart 3, which compares the movements of the Renminbi central parity rate and the CFETS Index since year-end 2017, shows that the central parity rate has devalued approximately 5 percent with respect to the U.S. Dollar (and 9 percent since the start of the trade war at the end of January 2018), in part also because of the actual and expected increases in the U.S. rate of interest, quite apart from the trade war. However, relative to the CFETS Index, the central parity rate has only devalued by 2.2 percent. A useful way of looking at the CFETS Index is that it measures the average change of the exchange rates of the currencies of China's trading-partner countries and regions relative to the Renminbi. So, if the percentage change of the Renminbi central parity rate is the same as that of the CFETS Index, it means that the Renminbi exchange rate is unchanged relative to the weighted average of the currencies of China's trading-partner countries, even though the Renminbi may have appreciated or devalued vis-a-vis a specific currency such as the U.S. Dollar. Actually, there is no compelling reason for the Renminbi to follow the U.S. Dollar, which implies that the Renminbi will appreciate or devalue with respect to other currencies precisely as the U.S. Dollar. When the U.S. Dollar is super-strong, for the Renminbi to follow the U.S. Dollar effectively amounts to Chinese exporters raising their prices to the importers of all other countries, which does not necessarily make sense. If the Renminbi exchange rate follows the CFETS Index, it amounts to keeping the Renminbi exchange rate approximately constant for the average trading-partner country of China.

**Chart 3: The Renminbi Central Parity Exchange Rate and the CFETS Index (29 Dec. 2017=100)**




Source: China Foreign Exchange Trade System

Another implication of the Renminbi exchange rate following the CFETS Index is that the average purchasing power of the Renminbi overseas will be preserved, that is, kept approximately constant. If the U.S. Dollar is super-strong, U.S. goods will become more expensive, but the goods of other countries will become cheaper, so that the Chinese consumers of imported goods are on average no worse off. Moreover, by following the CFETS Index, the Renminbi exchange rate will have a lower volatility than the U.S. Dollar exchange rate because it will move, in general, in the same direction as the U.S. Dollar but by a smaller amount. This means when the U.S. Dollar appreciates with respect to other currencies, the Renminbi will devalue relative to the U.S. Dollar, and when the U.S. Dollar devalues with respect to other currencies, the Renminbi will appreciate relative to the U.S. Dollar. The Renminbi exchange rate will be less volatile than the U.S. Dollar exchange rate.

Despite widespread expectations that the Renminbi will be devalued significantly in response to the trade war, it is actually quite unlikely. The new U.S. tariffs on Chinese exports of goods are prohibitive and a moderate devaluation of the Renminbi accomplishes nothing

except to make the Renminbi less desirable domestically and internationally as a medium of exchange and a store of value. For a large economy such as China's, with a relatively low degree of export dependence (see Charts 7 and 8 below), devaluation is never a useful strategy. It is also not necessary for the Renminbi to devalue. The Chinese current account will remain in balance, even if Chinese exports to the U.S. decline by one half.[21] The Chinese wage rate in the private sector is still downward flexible, so that economic adjustments can occur without having to tinker with the exchange rate. It is in China's interests to maintain a relatively stable Renminbi exchange rate so that its own citizens will continue to want to hold the Renminbi as a store of value. It is also the only way for the internationalisation of the Renminbi to become a reality eventually.

The people who will really be affected immediately by the U.S. tariffs are the actual U.S. users of Chinese goods, consumers as well as producers, because they are the ones who will have to pay the higher prices as a result of the new tariffs. Since the Chinese imports arriving at U.S. ports have already been paid for by the U.S. importers, the cost of the tariffs will have to be passed on to the actual users in the U.S. to the extent possible. However, it has been announced by the Office of the U.S. Trade Representative that exemptions from the new tariffs for a year may be granted to U.S. importers upon application on a product-by-product basis. At the same time, it has also been reported that very few exemptions have been approved. So it is really not clear how things will end up at this time. The new tariffs have also kicked in on the Chinese side, although there is no similar exemption for Chinese importers of U.S. goods. In this case, China has simply been reacting to the U.S. moves, in a reciprocal but measured manner.

[21] See the discussions in Section 3 below.

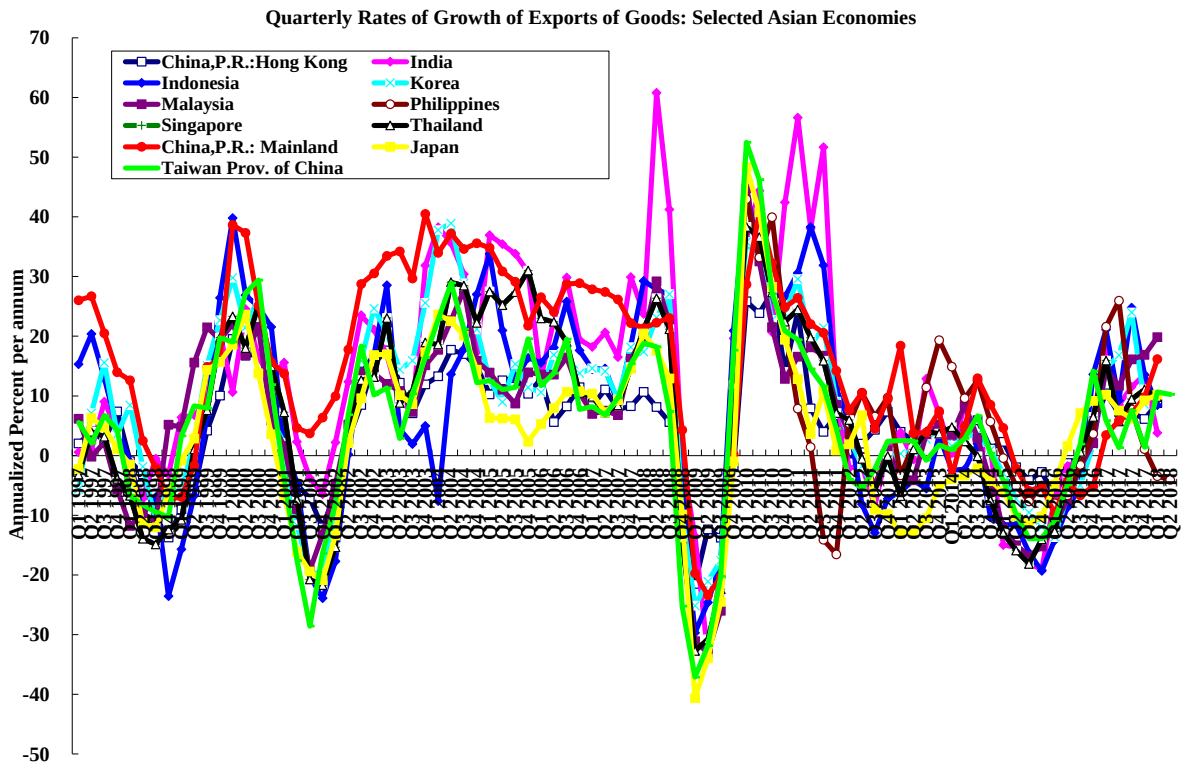
## 3. The Real Impacts

The new U.S. tariffs range at various rates for the first batch of US$34 billion of Chinese imports into the U.S., and are 25% ad valorem for the second batch of US$16 billion and 10% for the third batch of US$200 billion (to be raised to 25% on 1 January 2019). These rates will prove to be prohibitive for most of the goods imported from China as neither the Chinese exporters nor the U.S. importers have the kind of profit margins that can allow them to absorb the cost of these tariffs and alternative sources of supplies are possible. Thus, the new tariffs, if fully implemented, will effectively lead to a complete halt of Chinese exports to the U.S. of goods that are subject to them, resulting in a potential reduction of U.S. imports of goods from China of up to US$250 billion on an "arrival valuation" or equivalently "cost, insurance and freight (c.i.f.)" basis. This translates into a reduction of Chinese exports to the U.S. of approximately US$225 billion on a "departure valuation" or equivalently "free on board (f.o.b.)" basis.[22] What will be the real impacts of such a reduction in exports on the Chinese economy?

First of all, China, as a large continental economy with a huge domestic market, like the United States, has a relatively low export dependence, and has always been relatively immune to external disturbances. During the past two decades, the rates of growth of Chinese exports and imports fluctuate like those of all other Asian economies, large and small. Chart 4 presents the quarterly rates of growth of exports of selected Asian economies and Chart 5 presents the quarterly rates of growth of imports of the same selected Asian economies. The red lines in both charts, representing the Chinese quarterly rates of growth of exports and imports respectively, fluctuate like those of all the other Asian economies. However, the quarterly rate of growth of Chinese real GDP, represented by a red line in Chart 6, has remained positive and relatively stable compared to those of all the other Asian economies, including Japan.

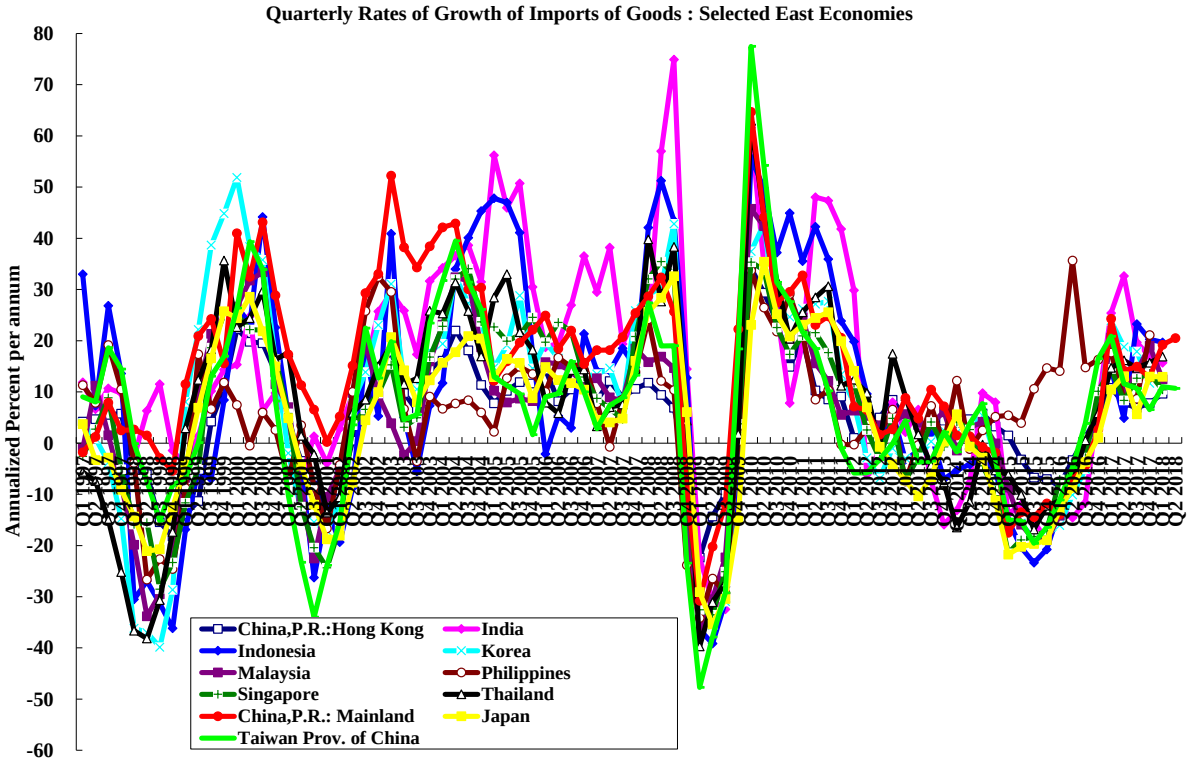
[22] The reduction of U.S. imports from China of US$250 billion on a c.i.f. basis translates into approximately US$227 (=250 x 10/11) billion on an f.o.b., Chinese ports, basis. We shall use the round-off number of US$225 billion.

## Chart 4: Quarterly Rates of Growth of Exports of Goods: Selected Asian Economies



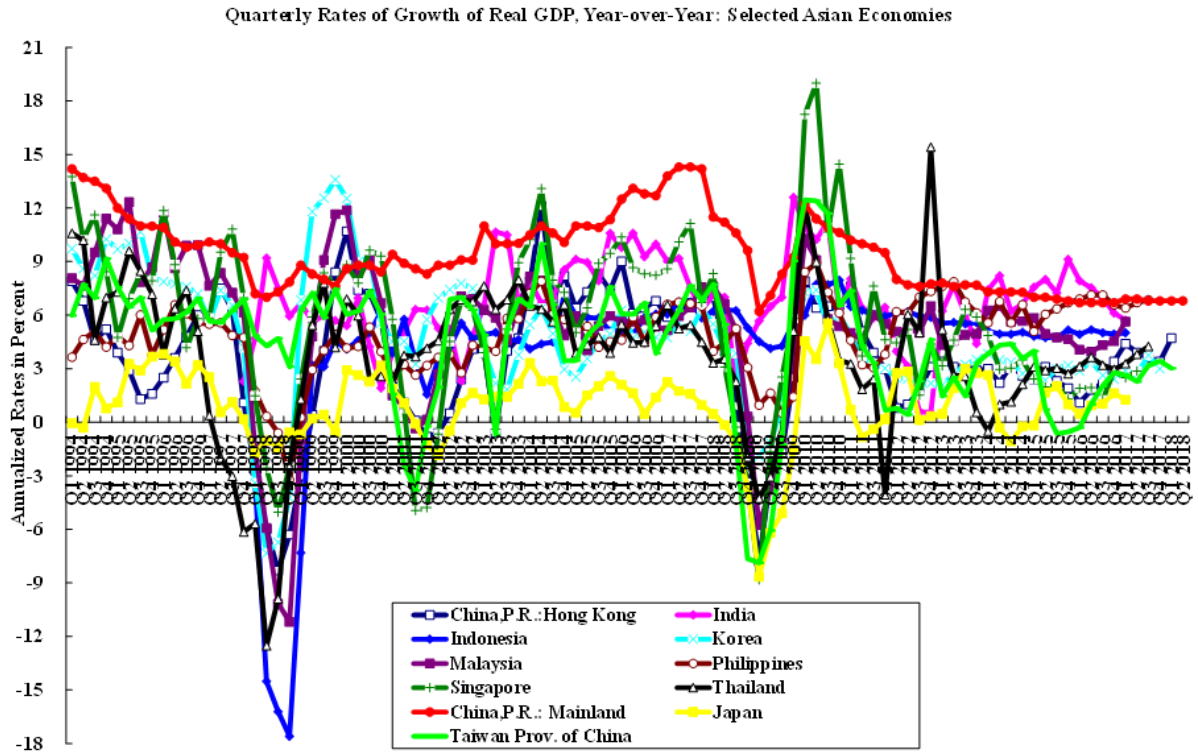

Source: International Monetary Fund, *International Financial Statistics*

## Chart 5: Quarterly Rates of Growth of Imports of Goods: Selected Asian Economies




Source: International Monetary Fund, *International Financial Statistics*

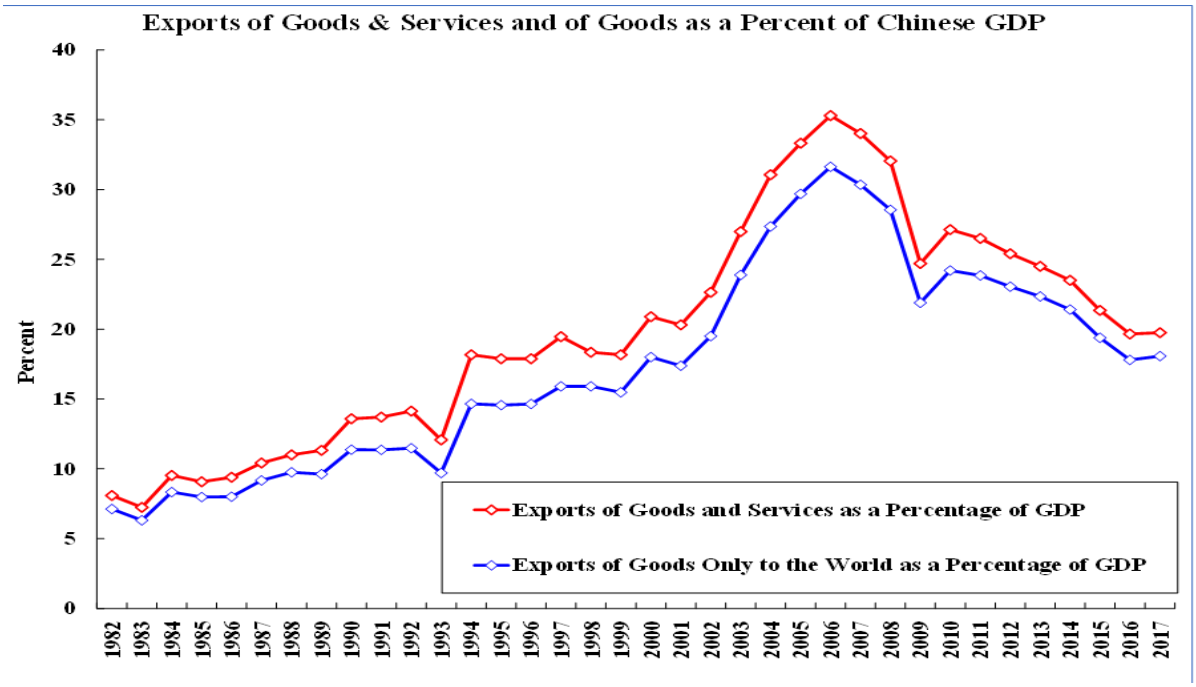
**Chart 6: Quarterly Rates of Growth of Real GDP, Year-on-Year: Selected Asian Economies**




Source: International Monetary Fund, *International Financial Statistics*

Moreover, Chinese dependence on exports has been declining over the past decade. The value of Chinese exports of goods and services to the world as a share of Chinese GDP has fallen from a peak of 35.3 percent in 2006 to 19.8 percent in 2017 (see the red line in Chart 7). Similarly, the share of exports of goods and services to the U.S. in Chinese GDP has also fallen by more than half, from a peak of 7.6 percent in 2006 to 3.5 percent in 2017 (see the red line in Chart 8). For goods alone, Chinese exports to the world and the U.S. were 18.1 percent and 3.4 percent of Chinese GDP in 2017 respectively (see the blue lines in Charts 7 and 8).

**Chart 7: Chinese Exports of Goods and Services and Goods Only as a Percent of GDP**




Source: State Administration of Foreign Exchange, the People's Republic of China

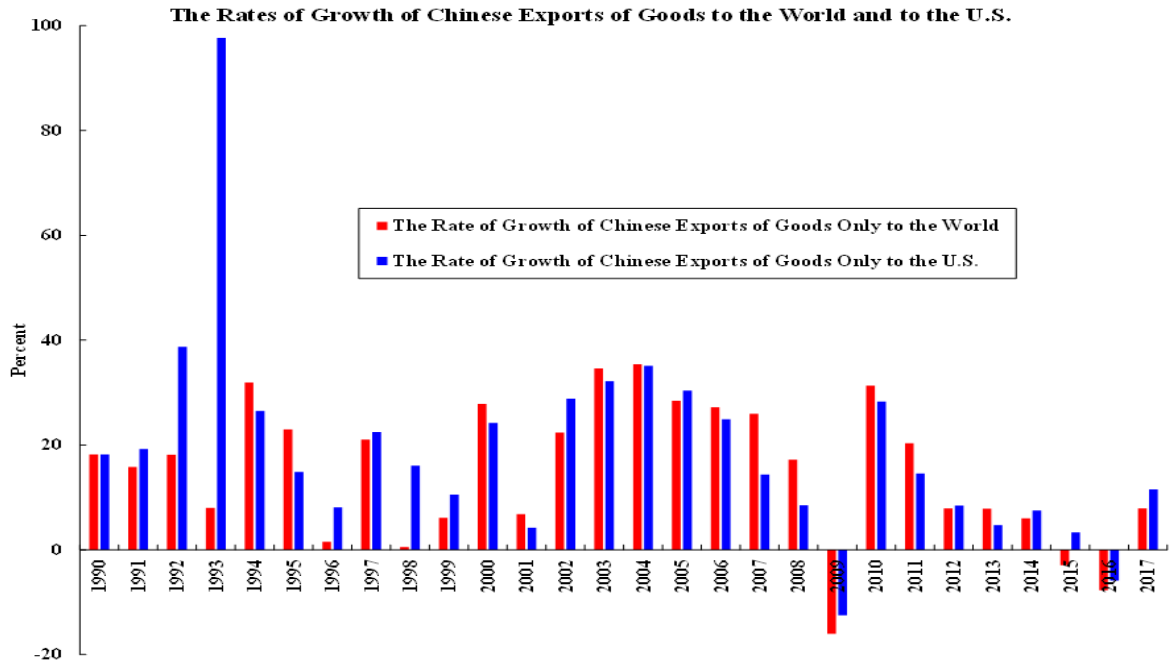
**Chart 8: Chinese Exports of Goods and Services to the U.S. as a Percent of Chinese GDP**


Source: National Bureau of Statistics of China, U.S. Bureau of Economic Analysis

During this same period, the rates of growth of Chinese exports of goods to the world (represented by the red columns in Chart 9) and to the U.S. (represented by the blue columns in Chart 9) have also declined significantly. Chinese exports of goods to the world grew at an

average annual rate of 22.6 percent in the decade 1998-2007, but slowed to only 7.9 percent in the following decade, 2008-2017, in part because of the 2008-2009 global financial crisis and the subsequent European sovereign debt crisis. Similarly, exports to the U.S. grew at 22 percent per annum in the decade 1998-2007, but slowed to less than 7 percent per annum in the most recent decade. The most important engine of Chinese economic growth today is no longer exports, but its domestic demand, driven by its household consumption (especially that of the rapidly growing middle class), infrastructural investments, and public goods consumption such as environmental preservation, protection and restoration, education, health care and elderly care.

**Chart 9: The Rates of Growth of Chinese Exports of Goods to the World and to the U.S. (percent per annum)**




Source: National Bureau of Statistics of China

Total Chinese exports of goods to the U.S. in 2017, on an f.o.b. basis, was US$430 billion according to the National Bureau of Statistics of China, or 3.4 percent of the 2017 Chinese GDP.[23] At present, new U.S. tariffs are levied on US$250 billion worth of U.S.

[23] This is not the place to discuss or reconcile the discrepancy between Chinese and U.S. official data. However, if we add a 10% to c.i.f. adjustment to the reported Chinese exports to the U.S. f.o.b. of US$430 billion, U.S. imports from China would amount to US$473 billion, which is not that far apart from the U.S. official data on imports of good from China in 2017 of US$506 billion. The remaining discrepancy can be mostly attributed to re-exports through a third country or region like Hong Kong.

imports of goods from China. This is approximately equivalent to US$225 billion of Chinese exports of goods to the U.S. on a "free on board (f.o.b.)" basis, or approximately half of total Chinese exports of goods to the U.S. in 2017.[24] Assuming that half of all Chinese exports of goods to the U.S. will be halted because of the prohibitive new tariffs, total Chinese exports of goods to the world, which was US$2.28 trillion in 2017 according to Chinese official statistics, will fall by 9.9 percent. As a comparison, in the aftermath of the collapse of Lehman Brothers in 2008, total Chinese exports of goods declined by 16 percent in 2009, and the Chinese economy still managed to grow 8.7 percent in real terms that year.

What would be the real impacts of such a fall in Chinese exports due to the new U.S. tariffs on the Chinese real GDP? As the total Chinese exports of goods to the U.S. was 3.4 percent of Chinese GDP in 2017, the decline of one half of Chinese exports of goods to the U.S. would amount to only 1.7 (=3.4/2) percent of GDP. Moreover, the direct domestic value-added content of Chinese exports is quite low--averaging 25.5 percent in the aggregate, and slightly lower for exports to the U.S., at 24.8 percent, in 2015.[25] What this means is that every one U.S. Dollar of Chinese exports to the U.S. generates less than 25 U.S. cents of Chinese GDP.[26] In contrast, the direct domestic value-added content of U.S. exports of goods to China may be estimated at 50.8 percent in 2015, slightly more than twice the domestic value-added content of Chinese exports to the U.S.[27] Thus, the maximum loss in Chinese GDP in the first instance, assuming that half of the exports to the U.S. is completely halted, may be estimated at 0.43 (=1.7 x 0.25) percent, a tolerable level, especially for an economy growing at an average annual real rate of 6.5 percent and with a per capita GDP of US$9,137 in 2017, which is way above the subsistence level.

Thus, even if all Chinese exports to the U.S. subject to the new tariffs are halted and in addition are not re-directed elsewhere, the initial reduction in the domestic value-added (GDP) caused directly is less than half a percent. In the subsequent period, the reductions in the intermediate input demands of the Chinese economy caused by the reduction of exports will

[24] Strictly speaking, half of US$430 billion is US$215 billion. However, it is well known that Chinese official data on exports do not include re-exports through third country or region such as Hong Kong, so that US$225 billion may be a reasonable estimate of one half of Chinese exports of goods to the U.S. on an f.o.b. basis. See footnote 22 above.
[25] Xikang Chen and Huijuan Wang (2016), Tables 2.2 and 2.4.
[26] While the domestic value-added content of Chinese exports may have risen since 2015, the increase is not believed to be significant.
[27] Xikang Chen and Huijuan Wang (2016), Tables 2.6 and 2.8.

cause further reductions in the intermediate input demands, accompanied by further reductions in the domestic value-added. This is the indirect second-round effect. These further reductions in the intermediate input demands will in turn cause further reductions of the intermediate input demands as well as domestic value-added (GDP), as the third-, fourth- and higher-round effects kick in, but with the effects becoming successively smaller with each higher round. The total effect on domestic value-added (GDP), taking into account all the rounds, may be estimated at 66 percent of the value of the reduced exports.[28] This implies ultimately a total loss in Chinese GDP of 1.12 (=1.7 x 0.66) percent. In absolute terms, this amounts to US$137 billion in 2017 prices compared to a Chinese GDP of US$12.2 trillion in 2017. A reduction of 1.12 percent from an expected annual growth rate of 6.5 percent leaves 5.38 percent, still a very respectable rate compared to the average of 3.7 percent for the world as a whole in 2018, as forecast recently by the International Monetary Fund.

In order to mitigate the negative economic impacts of the trade war, the Chinese Government can try to increase aggregate demand on the margin by increasing its investments in basic infrastructure and R&D, and in the provision of public goods, such as environmental preservation, protection and restoration—blue skies, green mountains and turquoise waters--and education, health care and elderly care. With all the existing excess production capacities in China, supply is not a constraint—as long as there is demand, there will be supply.

However, even though the real impacts on the Chinese economy in the aggregate are relatively small, they can be more significant for specific individual municipalities, provinces and regions, especially those oriented towards exports. Guangdong, which includes Shenzhen, is the largest exporting province/municipality/autonomous region in China, accounting for more than 16 percent of total Chinese exports, followed by Shanghai and then Zhejiang. Guangdong exports of goods to the world and to the U.S. were respectively 49.9 percent and 8.7 percent of its GDP in 2017, much higher than the respective national averages of 18.1 percent and 3.4 percent.

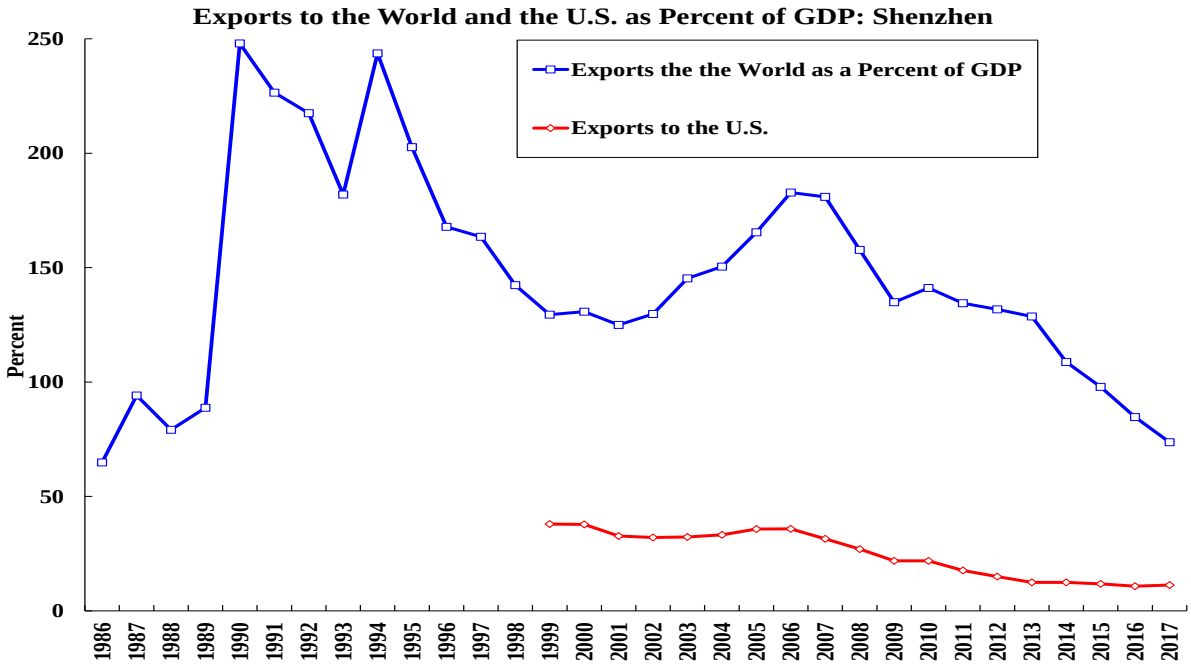
Within the Province of Guangdong, the Municipality of Shenzhen has had the highest exports to GDP ratio. In 1990, Shenzhen exports amounted to almost 250 percent of its GDP (see the blue line in Chart 10). Over the years, its export share has declined to 73.7 percent in

[28] Ibid. Table 2.4.

2017, with the share of exports to the U.S. at 11.3 percent, more than three times the national average of 3.4 percent and higher than the provincial average of 9.6 percent (see the red line in Chart 10). If there is any devastating economic damage from the trade war, we should find it in Shenzhen. Assuming that the domestic value-added content of Shenzhen exports to the U.S. is the same as that of Chinese exports to the U.S. as a whole, that is, 25 percent, the maximum loss in Shenzhen GDP in the first instance, assuming that half of its exports to the U.S. is completely halted, may be estimated at 1.41 (=11.3/2 x 0.25) percent. Such a decline in GDP is manageable for Shenzhen, as the real rate of growth of its GDP was 8.8 percent and its GDP per capita was US$27,123 in 2017.[29] Taking into account the indirect, that is, second-, third-, fourth- and higher-round effects of the reduction of exports from Shenzhen, the total loss of real GDP of Shenzhen may be estimated at 3.7 (=11.3/2 x 0.66) percent. This will represent a significant slowdown for the Shenzhen economy. Even then, the Shenzhen economy will still be growing at an annual rate of 5.1 percent, higher than the average rate of growth of the world economy of 3.7 percent as forecast recently by the International Monetary Fund, and that of neighbouring Hong Kong, projected to be around 4.0 percent. And the relatively high GDP per capita of Shenzhen will also help it to weather the trade war. However, if all of Chinese exports to the U.S. were halted, it would imply a reduction in the rate of growth of Shenzhen of 7.4 (=11.3 x 0.66) percent, leaving Shenzhen with an anemic but still positive annual rate of growth of 1.4 percent. The recently announced Guangdong-Hong Kong-Macau Greater Bay Area Initiative, which involves eleven cities in the Pearl River Delta region, amongst which are Hong Kong and Shenzhen, should provide some economic stimulus to mitigate the impacts of the trade war to the region.

[29] See the Annual Economic Report of Shenzhen, http://www.sztj.gov.cn/xxgk/zfxxgkml/tjsj/tjgb/201804/t20180416_11765330.htm.

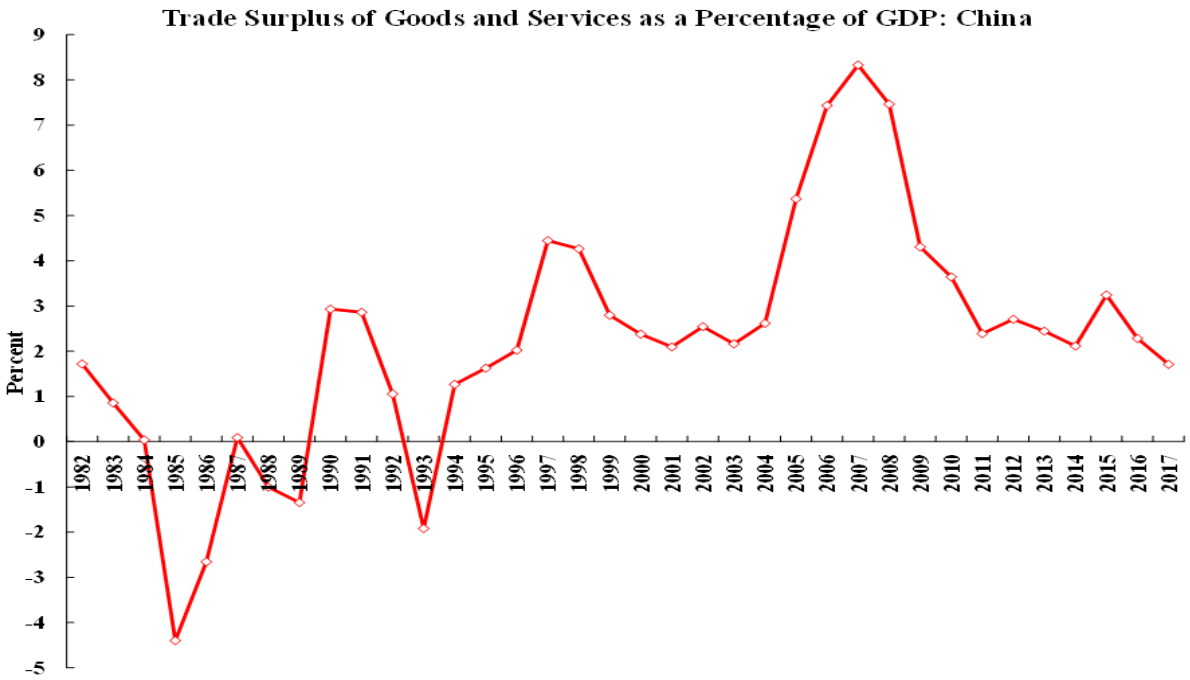
**Chart 10: Exports of Goods to the World and the U.S. as Percent of GDP: Shenzhen**




Source: Statistics Bureau of Shenzhen Municipality, China

Even with a fall in Chinese exports of goods to the U.S. by a half, amounting to 1.7 percent of Chinese GDP, the total Chinese trade in goods and services, which had a surplus with the world equal to 1.71 percent of GDP in 2017, will still remain in balance, without taking into account any potential reduction of Chinese imports from the U.S. (see Chart 11). Thus, there should be little pressure for the Renminbi to devalue as a result of the new U.S. tariffs from balance of payments considerations. In fact, it is probably in the best interests of the Chinese economy to maintain a relatively stable Renminbi exchange rate.

**Chart 11: Chinese Trade Surplus in Goods and Services as a Percent of GDP**



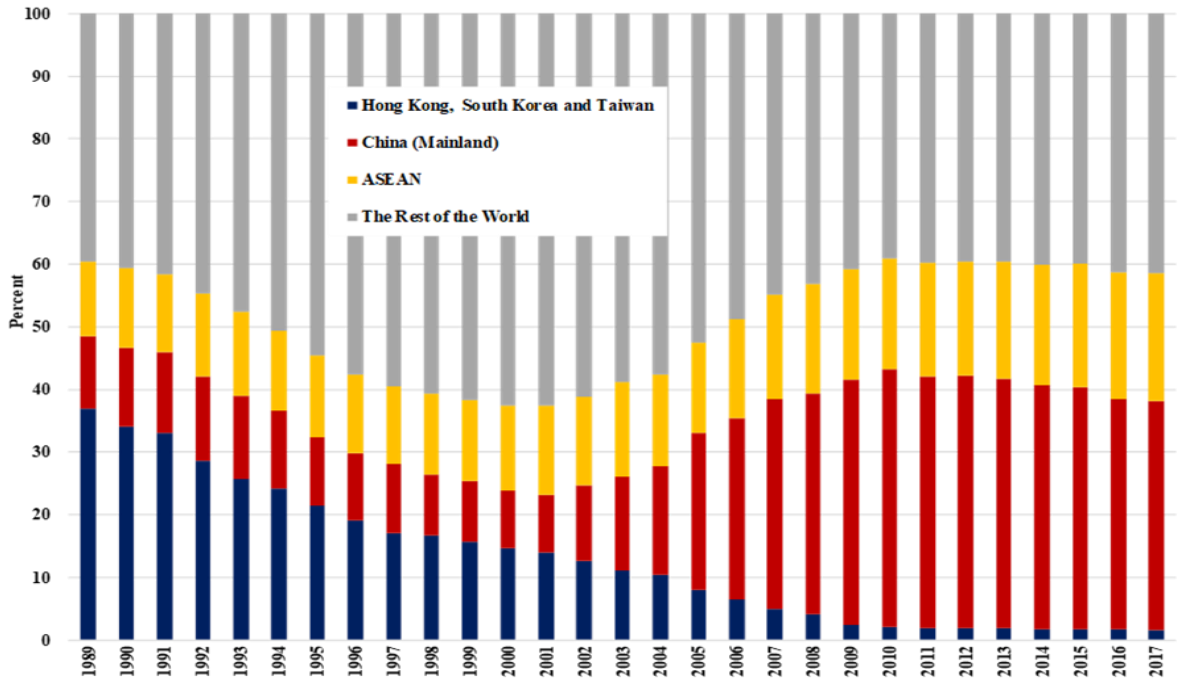

Source: National Bureau of Statistics of China and State Administration of Foreign Exchange, the People's Republic of China

There is a possibility that the scope of the U.S. tariffs may be expanded to cover all U.S. imports from China, in which case the full negative economic impact will be doubled to 2.24 percent of Chinese GDP, but still leaving the Chinese economy an expected rate of growth in excess of 4 percent. If this happens, it is likely that the Chinese Government will undertake an economic stimulus programme focused on investments in basic infrastructure and public goods provision to mitigate the negative impacts of the trader war.

In the longer run, assuming that the tariffs continue on both sides, the U.S. importers will begin to replace Chinese imports by imports from other Asian countries such as Vietnam, Cambodia and Bangladesh, and eventually perhaps even North Korea. That is why the new tariffs against China may not lower the overall U.S. trade deficit with the world. The history of the U.S. apparel trade provides an interesting example. Between 1989 and 2017, the share of Hong Kong, Taiwan and South Korea combined in U.S. apparel imports declined from 36.9 percent to 1.7 percent, replaced by the share of Chinese imports, which rose from 11.7 percent to 36.6 percent (see Chart 12). With new tariffs on apparel imports from China, the Chinese share will fall sharply, to be replaced by imports from Vietnam, Cambodia, Indonesia and Bangladesh. The total U.S. apparel imports may remain more or less the same. But this shift in the sourcing of imports away from China has already been occurring since 2010, because of

the rise in labour costs in China and the appreciation of the Renminbi. This is similar to the earlier shift of the sources of U.S. imports of apparel from Hong Kong, South Korea and Taiwan to Mainland China. The new U.S. tariffs will accelerate this process. The ASEAN and South Asian countries may benefit, but it is really hard to predict by how much because the supply chains today are so internationalised. However, it is unlikely, in most cases, that the tariffs will stimulate new employment-generating domestic production in the U.S.[30]

**Chart 12: The Distribution of U.S. Apparel Imports by Countries of Origin, 1989-2017**




Source: Lawrence J. Lau and Junjie Tang (2018), "The Impact of U.S. Imports from China on U.S. Consumer Prices and Expenditures," Working Paper No. 66, Lau Chor Tak Institute of Global Economics and Finance, The Chinese University of Hong Kong, April, Chart 3.

### The Real Impacts on the U.S. Economy

China has responded to the trade war by imposing new tariffs on US$110 billion of imports from the U.S., at a rate of 25% for the first batch of US$50 billion and 10% for the second batch of US$60 billion. What are the economic impacts of these tariffs on the U.S.? The dependence of the U.S., a large continental economy with a huge domestic market in terms of purchasing power, on exports is even lower than that of China. U.S. exports of goods and services combined as a share of its GDP was 12.1 percent in 2017 (see Chart 13). Its exports

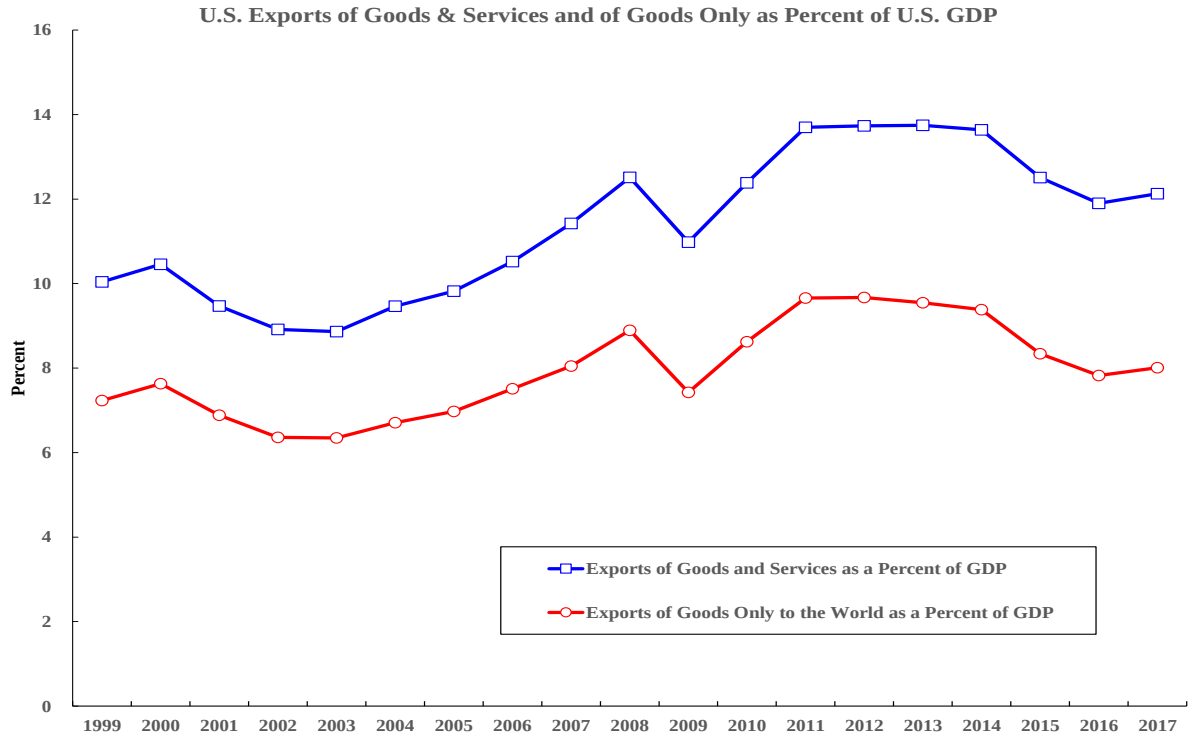
[30] While it may be possible to bring some production back to the U.S., it will be mostly through the use of automation and industrial robots, generating little actual new employment.

of goods alone as a share of its GDP was only 8.0 percent. The shares of U.S. exports of goods and services and goods alone to China in U.S. GDP was 0.97 percent and 0.67 percent respectively in 2017 (see Chart 14), much lower than Chinese exports to the world and to the U.S. as shares of Chinese GDP.

The direct domestic value-added content of U.S. exports of goods to China may be estimated to be 50.8 percent in 2015, about twice the value-added content of Chinese exports to the U.S. of 25 percent.[31] Thus, assuming that all of the exports of goods to China is completely halted, the maximum loss in U.S. GDP in the first instance may be estimated at 0.34 (=0.67 x 0.508) percent, less than the impact on Chinese GDP of 0.85 percent if all of Chinese exports of goods to the U.S. are halted. Moreover, it is unlikely that all of the U.S. exports of goods to China will be halted; for example, computer chips will probably continue to be imported by China in large quantities. Suppose only half of U.S. exports of goods to China is halted, it would amount to a loss of U.S. GDP of 0.17 percent. This is not significant for the U.S. economy as a whole, especially with the recent recovery of the quarterly rate of growth of GDP to 4.2 percent in the second quarter of 2018.[32] U.S. GDP per capita was US$59,518 in 2017.[33] The U.S. economy can easily weather a reduction of 0.17 percent in its rate of growth.

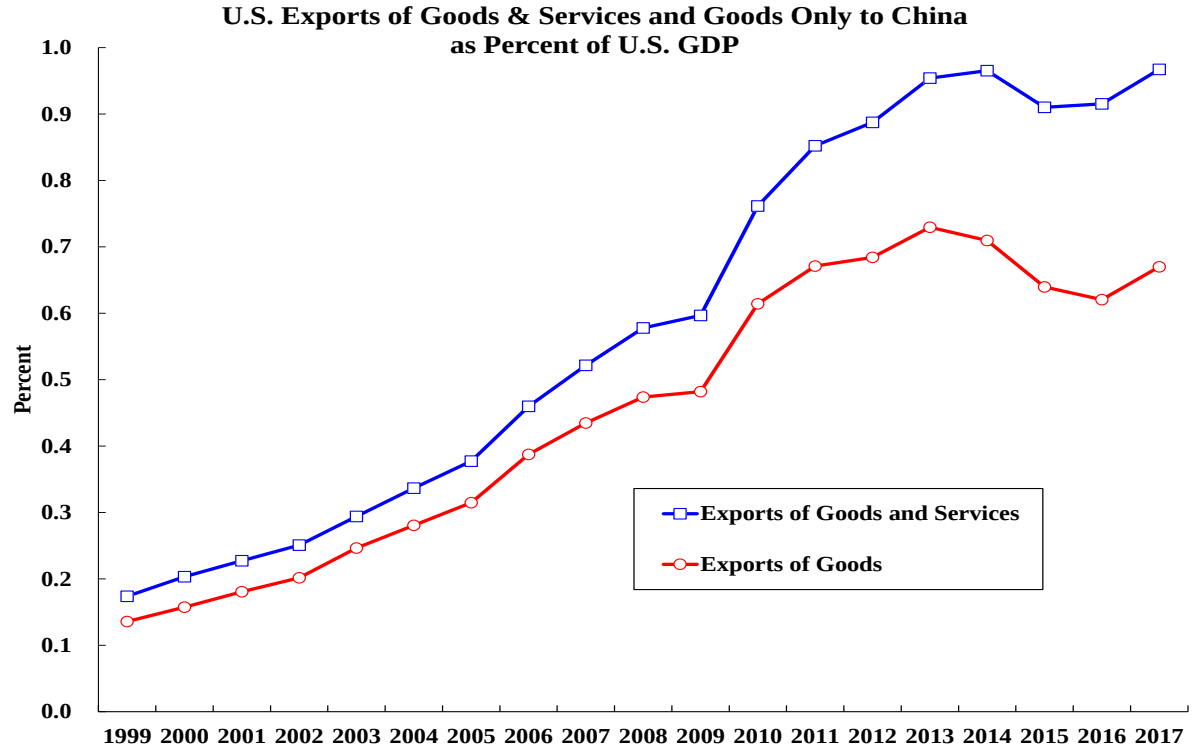
[31] See Xikang Chen and Huijuan Wang (2016), Tables 2.6 and 2.8.
[32] https://www.bea.gov/news/2018/gross-domestic-product-2nd-quarter-2018-third-estimate-corporate-profits-2nd-quarter-2018.
[33] This is calculated by dividing official U.S. GDP of 2017 by official U.S. mid-year population of 2017.

**Chart 13: U.S. Exports of Goods and Services and Goods Only to the World as a Percent of GDP**




Source: U.S. Bureau of Economic Analysis and U.S. Census Bureau

**Chart 14: U.S. Exports of Goods and Services and Goods Only to China as a Percent of U.S. GDP**

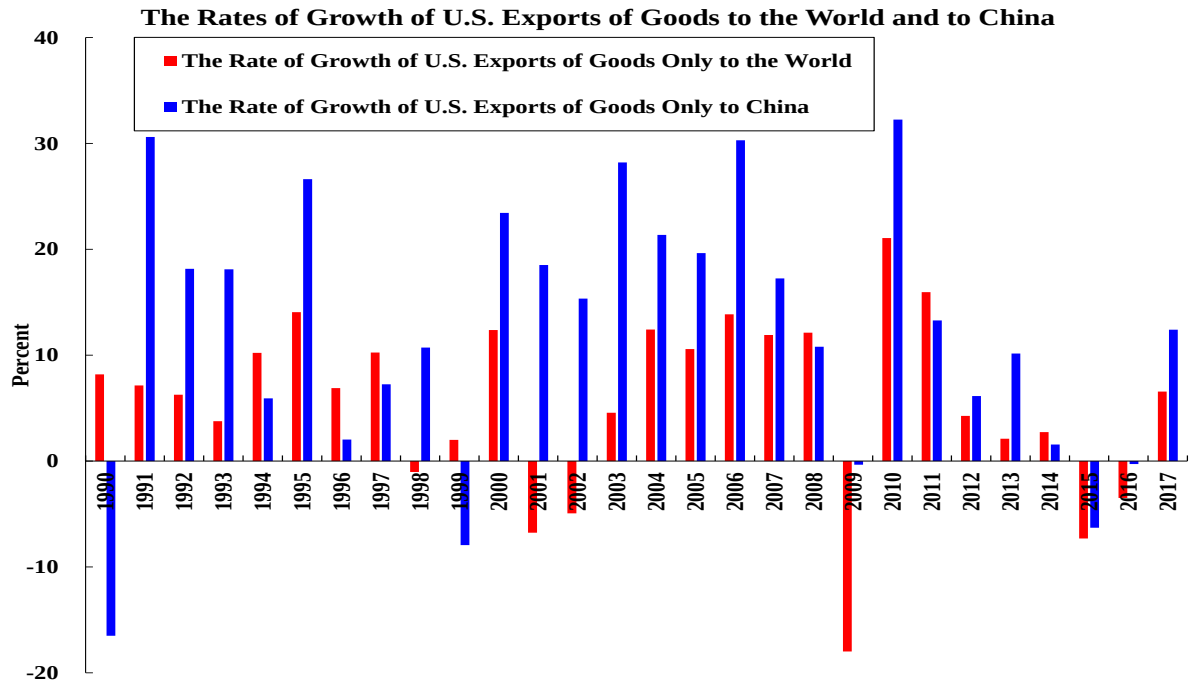



Source: U.S. Bureau of Economic Analysis and U.S. Census Bureau

With the indirect, that is, second-, third-, fourth- and higher-round effects of the reduction of U.S. exports of goods kicking in, the total domestic value-added (GDP) affected increases to 88.7 percent of the value of the reduced exports.[34] This implies ultimately a total loss in U.S. GDP of 0.30 (=0.67/2 x 0.887) percent, assuming that half of U.S. exports to China will be halted. In absolute terms, this amounts to US$58 billion (0.30 x 19.4 trillion) in 2017 prices, less than half of the estimated Chinese loss in GDP of US$137 billion.

However, this is actually not a particularly opportune time for the U.S. to have a trade war with China. U.S. exports to China has been growing at a much higher rate than U.S. exports to the world (see Chart 15). This means that the huge and growing Chinese market can become a major growth point for U.S. exports if it is not interrupted by the trade war.

**Chart 15: The Annual Rates of Growth of U.S. Exports of Goods to the World and to China**




Source: U.S. Bureau of Economic Analysis and U.S. Census Bureau

Imposing tariffs on Chinese exports to the U.S. is unlikely to do the trick of eliminating the U.S.-China trade deficit because of the possibility of retaliation by China, which would reduce U.S. exports to China at the same time. The problem with a trade war is that there are no real winners—both countries lose because the feasible consumption choices open to each of them are artificially restricted and reduced. Exporters in both countries will be hurt because

[34] See Xikang Chen and Huijuan Wang (2016), Tables 2.6 and 2.8.

of the reduction in their exports, and importers in both countries will see their businesses decline. And the consumers and producers who rely on imported goods and inputs in both countries will have to pay higher prices. A serious trade war, however short in duration, is disruptive in the sense that it introduces a great deal of uncertainty in future trade and investment decisions. Moreover, if agreements can be easily overturned and treaties can be readily broken, long-term trade agreements will have little credibility or usefulness. The most likely net outcome of these new country-specific tariffs is the substitution of imports from China by imports from other countries on the part of U.S. importers and similarly by the Chinese importers. Thus, while the U.S. trade deficit with China falls, its trade deficits with other countries rise. The overall U.S. trade deficit with the world will not be significantly altered, and neither GDP nor employment in the U.S. will increase much.

Unfortunately, the trade war is not likely to end soon, certainly not before the U.S. mid-term elections to be held on 6 November 2018. The real concern is that the trade war itself may do damage to the longer-term relations between China and the U.S.

## 4. Longer-Term Developments

It is important to realise that there are two significant long-term developments simultaneously in play in China-U.S. relations here. The first has to do with the competition between major world powers for economic and technological dominance and the second has to do with the rise of populist, isolationist and protectionist sentiments in the world and in particular in the U.S.

### Competition for Economic and Technological Dominance

First, one of the principal causes of the current trade war between China and the United States is actually not trade itself, but the potential competition between China and the U.S. for economic and technological dominance. This competition, whether explicit or implicit, and whether intentional or not, did not begin with President Donald Trump and is not going away even after President Trump leaves office. The "pivot to Asia" and the "Trans-Pacific Partnership (TPP)", both policies supposedly meant to contain China, were initiated under President Barack Obama (but seemingly abandoned by President Trump). Comparison between China and the U.S., and hence implicit competition between the two major world powers, is probably unavoidable. However, such competition can potentially lead to constructive and positive as well as destructive and negative outcomes. For example, the competition on building the fastest super-computer in the world has already resulted in both countries producing better and faster super-computers. The champion in 2018 is the IBM Summit, a U.S. super-computer, which beat the Sunway TaihuLight, the champion in 2016 and 2017, a Chinese super-computer that was built entirely with indigenously designed chips. This is not unlike the launch of the Sputnik I satellite by the Soviet Union back in 1957 which spurred the development of science and technology in the U.S.

However, the targets of competition must be chosen carefully. There is of course no point in China and the U.S. competing in terms of total population. In fact, even China has long ago resigned to ceding the top position in population in the world to India in the mid-2030s. In terms of aggregate GDP, China went from only 20 percent of the U.S. GDP in 2000 to two-thirds in 2017. It is only a matter of time that the Chinese GDP will catch up with the U.S. GDP, given its much larger population and much higher rate of growth, probably in the 2030s. However, in terms of GDP per capita, China is still way behind, with US$9,137

compared to almost US$60,000 for the U.S. in 2017. My own projections suggest that it will probably take until the end of the Twenty-First Century before Chinese GDP per capita approaches the U.S. level, if it does at all. In terms of the number of nuclear-armed warheads, the U.S. is way ahead by at least an order of magnitude in total and even more in per capita terms. This is not a competition that China should wish to join. However, a race to find an effective cure for cancer or Alzheimer's disease would be worthwhile for both countries and indeed for all mankind.

The competition for technological dominance has bred grievances on the part of the U.S. on intellectual property rights protection, forced transfer of technology and cyber-theft. (Note that none of these grievances have much to do with trade per se.) Intellectual property rights protection in China has actually been vastly improved since special intellectual property courts were set up in Beijing, Shanghai and Guangzhou in 2014.[35] Economically meaningful fines have begun to be levied on violators of intellectual property rights in China. It is considered a fundamental property right for an individual or a firm to protect the core knowledge or technology. This was certainly the case in the old days in China--masters would withhold their core competence from most apprentices except their own direct lineal male descendants. As the Chinese begin to innovate on their own (China now grants the largest annual number of invention patents in the world), they themselves will demand that intellectual property rights protection be strengthened in China, and this will apply to all, not only the Chinese, patent holders . This evolution in intellectual property rights protection is no different from the past experiences of Japan and Taiwan.

Forced technology transfer has to do with the Chinese requirements for foreign direct investors in certain industries to take Chinese enterprises as equal joint-venture partners. It is perfectly understandable that General Motors does not want to share trade secrets with Ford Motors, or any other actual or potential competitor. However, the sharing of technology in a joint venture is a voluntary one. The foreign direct investor will have to weigh the benefits of having a local joint-venture partner versus the costs. In any case, the technology used in the current manufacturing process is probably already on the way to becoming obsolete. What is

[35] In fact, the Ministry of Commerce of the People's Republic of China revealed that Chinese enterprises paid almost US$30 billion in intellectual property royalties to U.S. companies in 2017 (Financial Times, 16 July 2018, p. 4). However, part of these payments may show up as service income received by Ireland or Netherlands subsidiaries of U.S. companies instead of the U.S. companies themselves.

more valuable is the next-generation technology that has yet to be implemented. This is what the foreign direct investor can still maintain as its own in its home factories and laboratories. This issue has now become mostly moot, as joint ventures are no longer required of foreign direct investors by the Chinese Government in many industries. For example, in the automobile manufacturing industry, Tesla has been able to establish a wholly-owned subsidiary in Shanghai to manufacture electric cars; and even though it is now possible for General Motors to buy out its Chinese joint-venture partner, it has indicated that it does not intend to do so; and the German automobile manufacturer BMW has also announced that it will pay US$4.1 billion to buy from Brilliance China Automotive Holding Limited, its Chinese joint-venture partner, sufficient shares to give it super-majority (75-percent) control of its Chinese operation.[36] There are also significant liberalisation measures in the financial sector, including allowing foreign life insurance companies to have majority control and to even own 100 percent of their ventures in China in a year or so. These latest moves on the part of China and the new, much shortened negative list on foreign direct investment in China should go a long way towards eliminating the issue of forced technology transfer.

Finally, cyber-theft is an issue that requires the cooperation of both governments to solve. The solution should be a vigourous prosecution of the criminal perpetrators on both sides. I believe instances of state-sanctioned commercial cyber-theft are rare, even though state-sponsored espionage is a game played by everyone. However, one cannot rule out free-lancers being engaged and financed by private individuals and firms and they need to be identified and prosecuted to the fullest extent possible.

Trade in high-technology products and in technology itself, including cross-border investment in high-technology firms, will probably remain problematic as long as there are considerations of both technological competition and national security. The U.S. Government has long restricted the exports of high-technology products to China. It has also discouraged the use of Huawei servers and cell phones in the U.S. For the same national security reasons, the Chinese Government may also eventually decide that it is risky to rely on U.S. high-technology products. It is interesting to note that mobile telephones, including Apple i-phones, are at the present time exempted from the list of Chinese export products subject to the new U.S. tariffs. The potential mutual stand-off is likely to lead to de facto protection in both

[36] "BMW makes US$4.1b push for control in China's car market," Bloomberg, 11 October 2018.

countries, to the benefit of their respective domestic monopolistic producers. But it will also encourage and incentivise indigenous technological development in China. China is in the process of acceding to the WTO Agreement on Government Procurement (GPA), which would allow foreign enterprises to bid for Chinese Government procurement contracts. It is uncertain whether Chinese accession to the GPA would benefit U.S. enterprises but it is a further step in the opening of the Chinese economy and should at least improve the overall atmosphere.

**The Rise of Populism, Isolationism and Protectionism**

Second, the rise of populist, isolationist and protectionist sentiments in the U.S. and elsewhere in the world will also have significant impacts on international trade and investment (and migration too). President Donald Trump did not create these sentiments, but he has been able to tap into them and exploited them very effectively. The root cause is that while economic globalisation (and innovation) have benefitted all countries in the world, including both China and the U.S., the economic benefits have not been widely shared within each country, resulting in the emergence of losers. In principle, there is sufficient overall gain to be shared so that no one needs to lose, but the free market alone cannot and will not make it happen. Thus, there are people who have been left behind and whose well-being has not improved for the past two, three or even four decades. In the meantime, the income distribution has become more unequal in every country. The abnormally low rate of interest during the past decade did not help. The losers believe that the government and the elite establishment have failed them and are eager to try something else, anything. It is easy to lay the blame on globalisation, in other words, on the foreigners, and become isolationist and protectionist.

In addition, it is also natural and instinctive for any individual to entertain the feeling of "us" versus "them". And most people believe that all deals are zero-sum, that is, "more for them is less for us, and vice versa". It is therefore a revelation to many that voluntary trade between two countries benefits both, that is, it is in fact win-win. Unfortunately, it will take a while before the public at large realises that protectionism is a lose-lose proposition. The eventual solution has to be some form of redistribution within each country—taxing the winners to compensate the losers so that everyone wins.

President Donald Trump believes that every deal is zero sum--one country's gain must be another country's loss. Moreover, he also believes that the U.S. can achieve much better

trade deals by negotiating bilaterally with each single country, taking full advantage of the size and power of the U.S., including the fact that the U.S. Dollar has to be used as an international medium of exchange by almost every country. President Trump would like to modify the existing distribution of gains from trade between the U.S. and its trading-partner countries by making full use of the relative bargaining power of the U.S. and he believes that this would work the best in a bilateral rather than multilateral context.[37]

## 5. The Promotion of Greater Mutual Economic Interdependence

A better way to narrow the U.S. trade deficit with China is for the U.S. to increase its exports of goods and services to China, especially newly created goods and services, for example, by producing and exporting meat (beef, pork and poultry) instead of feed grains (corn and soybeans) to China, and exporting the newly developed liquefied natural gas from Alaska and shale oil and gas from the continental U.S. Chinese demands for food and energy will continue to be high and rising for many years. These U.S. exports will lead to genuine increases in GDP and employment in the U.S. because they will consist of new production rather than simple re-direction of existing production. They will also enhance economic well-being in both China and the U.S.[38] However, for both potential U.S. producers and Chinese importers, long-term contracts with credible enforcement mechanisms are necessary in order that both supplies in the U.S. and demands in China are forthcoming and sustained. Another fast-growing component of U.S. exports of services to China that has huge potential for further expansion is education and tourism. The expenditures of Chinese students (currently totalling 350,000, not including the many teenagers enrolled in the summer and winter camps) and tourists in the U.S. have been rising rapidly. Moreover, their presence in the U.S. can enhance the understanding between the Chinese and American peoples and improve long-term ties. U.S. students and tourists in China can also play the same role.

Through these trade transactions and cultural and educational exchanges, it is possible to promote a degree of economic interdependence between the two countries. China can become the largest customer of U.S. energy, food and educational services exports and the U.S. can become China's most important supplier in these areas. A further area of significant

[37] More simply put, a large country does not have to be a price-taker internationally.
[38] See the discussion in Lawrence J. Lau (2018a).

potential win-win collaboration is the deployment of the excess Chinese savings in the U.S. for the financing of the renovation and upgrading of U.S. basic infrastructure [39] and the augmentation of the equity capital of U.S. corporations,[40] especially as Chinese households begin to diversify their wealth portfolios overseas.

One of President Trump's grievances is that the U.S. has not benefitted enough from the China-U.S. economic relations, while China has reaped most of the benefits. However, it is difficult to assess which country has benefitted more. Clearly both countries have benefitted. China has been able to lift 600 million of its citizens out of poverty, initially through the vast expansion of export-oriented light-manufacturing jobs in the coastal provinces. The U.S. consumers have benefitted from two decades of low prices for their consumer goods because of imports from China. Research shows that had the share of U.S. imports from China remained at 1994 levels, the U.S. Consumer Price Index would have been 27 percent higher in 2017, or approximately 1 percentage point higher annually.[41] The lowered rate of inflation has helped to enable a lower rate of interest in the U.S. It has also helped to reduce the living expenses of middle– and low-income households in the U.S. The reduced price of non-oil consumer goods in the U.S. has resulted in an estimated average annual savings for U.S. consumers of US$623 billion between 1994 and 2016, approximately 12 percent of the average annual U.S. non-oil consumer expenditure during the same period.[42]

Whether the U.S.-China trade deficit is a benefit or a cost to the U.S. is not as clear-cut as it may seem. The cumulative U.S.-China trade deficit from 1999 to 2017 amounted to US$2.6 trillion (US$220 billion in 2017) according to Chinese official data. The traditional mercantilist view is that China has greatly benefitted at the expense of the U.S. However, the modern financial view is that the U.S. has greatly benefitted all these years because all it has managed to trade pieces of paper that it can print at will (U.S. Dollars and U.S. Treasury bonds) at almost zero marginal cost in exchange for real goods and services from China. China has kept most of the pieces of paper in its official foreign exchange reserves, approximately US$3

[39] This can be done through Chinese purchases of long-term project bonds. The Committee on Foreign Investment in the United States (CFIUS) should not have to worry about these portfolio investments. In any case, the infrastructure projects are located in the U.S. and under the control and management of U.S. entities.
[40] This can take the form of "Chinese Depositary Receipts (CDRs)" issued by U.S. corporations and traded on the Chinese stock exchanges.
[41] See Lawrence J. Lau and Junjie Tang (2018).
[42] Ibid.

trillion at year-end 2017.[43] It is a tremendous U.S. advantage that no other country has! The U.S. has been able to do so because of the U.S. Dollar's position as the only major international medium of exchange and store of value (this is the seigneurage earned by the U.S.).

Additional benefits for the U.S. include the profits of U.S. corporations earned by their operations in China, such as General Motors and Walmart. The sales of Apple i-phones in China, which, since they are finally assembled within China, are not considered U.S. exports to China, but the bulk of the profits accrues to Apple. These U.S. corporations are clearly the beneficiaries of China-U.S. economic exchanges. Their profits will show up as "factor income from abroad" in U.S. national income accounts if they are repatriated to the U.S. However, if the profits are not repatriated to the U.S., but are credited to subsidiaries of these corporations in third countries such as Ireland and the Netherlands, they will show up as incomes for the third countries instead. Similarly, royalties and license fees paid to U.S. corporations such as Apple and Qualcomm are considered U.S. exports of services. However, such payments to their third-country subsidiaries are no longer U.S. exports of services, but the exports of services to China from these third countries. The official statistics on bilateral trade in services probably understate the true level of U.S. exports of services to China because of the use of these subsidiaries in third-country tax havens by U.S. corporations to receive payments of royalties and license fees.

Finally, there are also potential opportunities for China and the U.S. to cooperate on initiatives of global interest, such as the prevention of climate change, space exploration, and development of a common and universal 5G standard. Both countries can win. The successful conclusion of the Paris Agreement in 2015 is an excellent example of what China and the U.S. can accomplish if they cooperate and work together.

[43] As of mid-2018, Chinese official foreign exchange reserves included more than US$1.3 trillion of U.S. Treasury and Agency securities.
See http://ticdata.treasury.gov/Publish/slt3d.txt and http://ticdata.treasury.gov/Publish/slt1d.txt.

## 6. Concluding Remarks

When will the current trade war end? Since the current trade war is lose-lose, it is in the interests of both China and the U.S. to try to end it soon. Thus, it should and will end eventually, but probably not before the mid-term elections in the U.S. on 6 November 2018. The U.S. President will need to be able to declare victory in the trade war[44] and China will need to maintain that it has not capitulated to U.S. pressure.

Domestically, the Chinese Government should ensure that the workers affected by the trade war are adequately supported with subsistence allowance and retraining grants. Moreover, it should also increase aggregate demand on the margin through additional infrastructural investments, and public goods consumption such as environmental preservation, protection and restoration, education, health care and elderly care.

More generally, it is important that all losers from economic globalisation and innovation in China be adequately compensated. Everyone should be able to share in the gains from economic globalisation and innovation. Thus far, even though the distribution of income in China has become much more unequal in recent years, complaints are relatively few as yet because everyone has gained significantly, albeit to varying degrees, from the policies of economic reform and opening that started in 1978. However, as light manufacturing jobs begin to move away from China to South and Southeast Asia, rising domestic discontent can be expected in the absence of an adequate social safety net, satisfactory public goods provision, and an effective redistributive policy.

Our analysis shows that while the real impacts of the trade war on both the Chinese and U.S. economies are definitely negative, they are relatively small and certainly manageable by both countries. The annual losses in GDP as a result of the trade war may be estimated to be US$137 billion for China and US$58 billion for the U.S. in 2017 prices. Compared to their respective GDPs of US$12.2 trillion and US$19.4 trillion in 2017, these are relatively small numbers for both economies, especially for the U.S. Even the Chinese economy, with its much

[44] It is possible to do so on the basis of the recent Chinese liberalisation of the rules on direct investment, the shortened Chinese negative list on direct investment, strengthened enforcement of intellectual property rights by China, and any new long-term trade deals that have been agreed and signed.

lower GDP per capita, can readily weather the impacts of the trade war. There is no need to panic. The sky is not falling!

However, there are also longer-term underlying forces at work in China-U.S. relations. The competition between China and the U.S., whether friendly or unfriendly, can be assumed to be an ongoing and long-term one. To reduce the probability of an armed conflict between China and the U.S. down the road, both countries should promote greater mutual economic interdependence, to make their relations win-win, so that a war between them would be unthinkable, just as another war between France and Germany is not possible today.

It is difficult to predict how things will end up. China and the rest of the world, except possibly the U.S., will probably continue to uphold the current multilateral trading system under the World Trade Organisation (WTO). After all, they have all benefitted and will continue to benefit from it. This is actually the time for China to continue opening its economy to both international trade and investment, both inbound and outbound. It can lower tariffs unilaterally to all countries not engaged in a trade war with China. It should understand that international trade and cross-border direct investment are always win-win, and that competition, both domestic and international, improves efficiency and encourages innovation. It should therefore try to be as inclusive as possible in terms of its international economic relations.

It is important for China's economic relations with the rest of the world, in particular with the European Union, Japan, the ASEAN and Russia, to be carefully managed going forward. However, China-U.S. relations are concerned with more than just economics, and must be even more carefully managed in the future.

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