The true impact of a trade war

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One of the principal reasons for heightened market volatility in recent weeks has been President Trump's belligerent attitude towards free trade. His protectionist threats have raised the risks of a serious trade war - the first in over 80 years. It is assumed that this would materially impact US growth.

In assessing how bad the impact could be, the yardstick has been the last real trade war that occurred, the one initiated by the infamous Smoot-Hawley Trade Act of 1930. The range of goods subjected to tariffs was very broad and the impact on GDP was significant, by all accounts. However, the magnitude has been very hard to assess since GDP was also impacted by the collapse of aggregate demand due to mass layoffs, personal bankruptcies, a stock market collapse, and business failures. Efforts to disentangle these different sources of economic contraction have not been successful, in our view. If forced to do so, we would guesstimate that US GDP was reduced by some 8% (per annum) in the 1930s.

VASTLY REDUCED IMPACT OF A TRADE WAR TODAY

1. Rise of an economy of non-tradeable services

The first reason why the impact will be much less than in the past is that 83% of private sector incomes are now generated by service jobs, not by manufacturing jobs or farming. When a trade wars occurs, tariffs are primarily imposed upon manufactured goods and agricultural products, not upon services. This is because services are harder to define than goods such as cars and tons of steel. Thus, administering service tariffs can be very challenging. Furthermore, the public is much more aware of tangible "products" that get imported than they are of services. Politicians thus get a better political bang for the buck by reducing the import of steel rather than the import of "accounting expertise".

The reason the explosion of service-sector jobs matters is that a trade war will exact a dramatically lower loss of jobs and incomes than in the past. This is true because, for the reasons just set forth, services - and hence the overwhelming proportion of incomes - will not be targeted by protectionist measures against the US. In those agricultural and goods markets that are targeted, the laborers are now robots and John Deere farm equipment. While some of this equipment will be idled, few people lose their incomes, which is what depresses GDP growth.

Consider that, in the case of agriculture, employment as a share of the total US workforce has declined by some 98.5% over the past century. The same is true, but to a lesser extent, in manufacturing where the situation is often misunderstood. It is alleged that manufacturing's share of GDP has collapsed when in fact it has not. What has collapsed are the number of human beings who create manufactured goods.

How can we best assess the economic impact of trade barriers that reduce US goods exports? The easiest way is to compute the resulting hit to GDP. Thus, if new barriers on the export of cars is estimated to reduce auto exports by 100,000 vehicles, we can simply multiply the average price of these cars by 100,000, and then subtract this dollar amount from nominal GDP. This yields the percentage decline in GDP from auto tariffs.

Need to analyse Gross National Income – not Product

But in the case of services, it is often quite difficult to assess the impact on the economy as a whole by focusing on changes in Gross National Product. The reduced "quantities of services" due to higher trade barriers on exports is often an ambiguous concept. This makes it difficult to estimate the reduction in the number of "units" of services sold, and at what "price".

A better way to estimate the economic impact of new export tariffs is to assess their impact on Gross National Income - a number that must equal the impact on GDP proper, but which is conceptually very different from GDP (as is reviewed in the Engdnote[1]).

It can also be easier to estimate the GDP impact of tariffs on agricultural products and on certain manufactured goods by focusing on national income rather than on national product. More specifically, if we can more easily estimate the reduction in household income and thus in consumption from the advent of protectionism, we will have indirectly assessed the impact on GDP itself, the variable of greatest interest - because changes in one must equal changes in the other.

Suppose there is an increase in the barriers to exporting soybeans. In the old days of the 1930s, this increase would have hurt incomes a great deal since so many workers earned a living farming and distributing soybeans. Those whose wages were cut or who were fired would curtail their purchases of US goods and services. They would stop dining out, and the local restaurant would close. Additionally, government unemployment assistance programs were scarce, if they existed at all. Thus, as a result of plummeting incomes, consumption was badly hit. Observer that we arrived at this GDP impact by first assessing the GNI.

Today, the same increase in soybean export tariffs would impact some 1/30th as many incomes as back in the 1930s, given the collapse of agricultural employment. Moreover, government assistance programs help stabilise household incomes - as do the advent of two incomes per family, up from one. As a result, it is the John Deere tractors that get idled, not workers. This hurts the owners of farms, whose capital investments in farm equipment now earn a lesser rate of return. It adversely impacts the share of GNI going to capital, but by a very small amount compared to the hit to wages and thus to consumption that used to occur when so many people worked on farms.

The same situation holds true if the production of Ford automobiles was reduced 10% due to a trade war today. Back in the 1930s, a significant percentage of the 59,000 Ford workers in Detroit would have been laid off, without benefits. Consumption would have contracted sharply, and businesses would have closed. Since consumption C is the largest component of GDP, GDP would have fallen significantly.

Today, by contrast, Ford will lay off robots. Human workers have shifted from producing cars to producting services, which are scarcely impacted by higher tariffs. Again, while the profits of companies with idled robots will be impacted and hence returns to capital will fall, the return to labor will drop by only a fraction of what used to be the case. As a result, the impact on GNI and thus on GDP from increased protectionism will be much less than it would have been in the past.

Tradeable versus non-tradeable services

We have already noted that it is often more difficult to raise tariffs on services than on quantifiable goods. Amplifying this point is the fact that some 75% of services are non-tradeable. Thus, even if foreigners put tariffs on the incomes of those giving massages, delivering pizzas, bartending, computing people's taxes, teaching in schools, developing software, waiting at tables, and practicing as doctors, such tariffs would have no impact on the US economy at all. This is because the only places to which pizzas are delivered lie within five miles of the pizzeria. None are delivered to China. In short, with 83% of private sector

incomes generated by service sector jobs, the ability of China or any other country to seriously impact the incomes of American workers grows less by the minute.

To be sure, certain services are tradeable. Consider the consulting fees paid to McKinsey & Co. worldwide. Suppose that an export tariff were levied on McKinsey's services exported to Zurich and Hong Kong. How would this impact US GDP? The answer is very little. The people who produce the overseas consulting fees earn their incomes in the very countries where their services are consumed. For example, in their Zurich office where I consulted for years, the preponderance of consultants were German, Swiss, and French. Thus the incomes of McKinsey workers within the US will scarcely be impacted by higher export tariffs.

The paradox of "globalisation"

The paradox is that, whereas "increasing globalisation" is a valid concept in the case of financial services, it is not very meaningful in most of today's economy. The jobs and incomes of the vast majority of Americans are ever less impacted by developments overseas, including trade wars. Is this "increased globalisation"?

2. Larger and "sparser" input-output matrices

A second reason why the impact of trade wars will be less than expected lies in a transformation of the supply chain within the manufacturing sector. We used to make US products within the USA, and export some of these overseas. If China put a tariff on US goods, US workers would have suffered a loss of income. Yet no worker in China would have been impacted. But today, everything has changed.

As is well-known, many of the US products we consume and also export (such as iPhones) are assembled in China from parts made in Vietnam and the Philippines. Thus, as the American Chamber of Commerce reported two weeks ago, when China targets US goods for higher tariffs, tens of thousands of their own workers can get laid off.

The story we are telling is often referred to as a change in the supply chains within manufacturing. In our view, this concept is somewhat ambiguous. It is better to represent such changes as a transformation of the economy's input/output matrix. This matrix models the US economy in terms of sectors, and it shows the extent to which the output of product x is used as an input into the manufacture of product y, and vice versa, and so on in the case of products v, w, and z.

What has happened is that this matrix has exploded in size, for two reasons. First, there are many more sectors (representing many more products) than there used to be. Furthermore, the matrix must be a global matrix reflecting the extent to which the inputs into US manufacturing come from many more economies than they did before. And vice versa.

Thus the transformed input/output matrix that results is both larger and more sparse than before. Sparseness represents the fact that the entries in each cell of the matrix are much smaller than before, and that there are many more cells - the inputs required to produce batteries now come from eight nations, not two. Moreover, the inputs are typically more numerous as specialisation advances.

> With much less US labor in each unit produced, as a result of ever more robots and foreign workers creating US products, the impact of protectionist trade barriers on US incomes and thus consumption gets smaller and smaller.

CONCLUSION

Given these two different structural changes in the economy, it is reasonable to estimate that the economic impact of a trade war will be at least 75% less than in the Smoot-Hawley era. It could well be 90% less. Regrettably, the data required to arrive at a firm estimate here are not available to the best of our knowledge. All we can do therefore is to contrast "before" and "after" impacts, reflecting the structural changes of the past half century.

In this regard, we estimate the impact of rising unemployment and falling incomes due to significant tariffs on US exports to be around 1% of GNI. Additionally, GNI could drop another 1% due to a reduction in returns to capital. Thus, the total impact on GNI would be 2%, spread over some three years, and likewise for GDP which must equal GNI. This would contrast with the oft-cited 8% reduction in GDP in the Smoot-Hawley era of the 1930s. We suspect the impact would be even less than 2% today, but we are skating on thin ice here.

Furthermore, the incentive for both sides to have a trade war is less than it used to be. For as stated above, China itself loses jobs when it discriminates against American products that are partially produced within China. As a result, we suspect great efforts will be made by both sides to limit protectionism.

ENDNOTES

1. Recall that GDP will always equal GNI, barring measurement errors such as unreported income. GDP captures the dollar values of all goods and services sold in a given year, whereas GNI captures who gets the money generated by the sales of such goods: labor and capital. Their two shares must add to 100%.

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