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Some Global Effects of President Trump's Economic Program

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Abstract

The economic agenda of the Trump Administration, if implemented, will have large and long-lasting impacts on the US and global economies. This paper uses a global economic model to assess the consequences of President Trump's likely economic program on the world economy. The model has 17 major economies and regions each with six sectors of production and trade as well as a capital goods producing sector. The paper shows how President Trump's economic policies affect the global economy through trade and capital flows induced by increases in global interest rates. Using a consistent global economic model shows the contradictions in the aims of the President's economic program particularly in the effects on the manufacturing sector. In the medium-term the policies imply increased likelihood of trade protection ultimately causing a recession.

1. Introduction

Throughout the 2016 election campaign, Candidate Trump espoused a host of economic policies all with the aim of boosting growth and jobs for Americans, particularly in manufacturing. The main economic policies announced covered six areas: tax cuts, deregulation, infrastructure spending, defense spending, immigration, and trade[1].

Specific policies in the above areas remain uncertain on two counts. One is that details (at time of writing) are still unclear even though President Trump assumed office six months ago. Second, most of the policy changes require Congressional approval. That makes forecasting the economic impacts of a Trump Administration challenging. Despite having a clear agenda (promises made in the campaign are intended to be kept), in practice the final form policies might take will depend critically on the support of and negotiations with Republicans in Congress[2]. But with that caveat over uncertainty in mind, to assess the possible effects of the Trump Administration agenda in this paper we spell out what those policies might be and then simulate their impact using an empirical global model. In our assessment, the best indicator of what the policies might be is from Donald Trump's "Contract with America" (National Public Radio 2016) made late in the election campaign. The processes to implement that agenda have already started.

This paper begins with an overview of the likely economic policies of the Trump Administration in section 2. Section 3 summarizes the G-Cubed multi-country model that is used to evaluate these policies. Results for a number of policy simulations are presented in section 4. A summary and implications are outlined in section 5.

2. President Trump's main economic agenda

Evaluating what policies might or might not eventuate is complicated because President Trump appears to be 'right wing' on social, environmental and immigration policy and 'left wing' on trade and economic policy. He does not neatly fit into a divided set of fundamental beliefs typically espoused by the main groupings within Congress. Therefore, every significant policy shift will need to be negotiated through a divided Congress. The majority of Republicans in the House and Senate will not guarantee adoption of the Trump Administration's policies as initially proposed. Therefore, the focus of this paper is not on the detail of the policies which is likely to change but the key implications of their main features.

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[1] In this paper, we concentrate on the areas mentioned. The first four areas have direct implications for the budget and deficit and can be grouped under fiscal policy.
Other important policies promised during the election campaign will have economic effects such as pulling America out of the Paris climate change agreement and the repeal of the Affordable Health Care Act, commonly known as 'Obamacare.' We list these for completeness but do not assess their effects.

[2] In trade policy, the President does have substantial discretion, but anything that requires funding approval will need Congressional support.

It is useful to consider each area of potential policy change separately although many of them overlap in the way they are funded. Tax cuts and extra spending on infrastructure and defense have direct implications for the budget deficit and are grouped under 'fiscal policy.' These policies are discussed first. Immigration policies have their primary economic impact through the labor market; trade policies work through changing relative prices between industries and in effect transferring payments from consumers to domestic producers 'off budget'. Finally, for context, we include a brief discussion of 'other economic policies' that we do not simulate but which could have measurable economic effects at some point.

a. Fiscal Policy

A key economic issue relates to fiscal policy, both tax policy for corporations and households as well as government expenditures including defense, infrastructure, government agencies and the big areas of Medicaid and social security. Both the size of the spending and tax changes and the impact on the overall fiscal deficit will matter for the US economy as well as the spillovers through trade and capital markets to the rest of the world. Candidate Trump promised not to touch the large entitlement programs of Medicaid and Social Security which takes a large part of the spending reform off the table. President Trump's initial attempt to reform the Affordable Health Care Act of President Obama was a failure[3].

Tax cuts and tax reform

The shape of a final tax reform package is unclear. Candidate Trump promised to cut taxes on individuals from seven tax brackets to three with a top rate of 33 percent. He also promised to cut the company tax rate from the current 35 to 15 percent.

Early in the Trump Presidency, there was discussion and support given to the plan proposed by the Republicans in Congress to not only lower the overall tax on business but to change from a tax based on the income of companies to a Destination Based Cash Flow Tax with Border Adjustments (DBCFT). This DBCFT works in a similar way to a value added tax with additional deductions for payroll taxes. Imports would no longer be tax deductible as an input and profits from exports would not be taxed. While this has academic support, and is attractive for many reasons, the transitional process of moving the US economy from the current system to the new system would be very disruptive. Some companies such as Walmart would face heavy increases in tax burden (indeed the business model would need to change dramatically) while other companies that export would receive large reductions in their tax burden. This policy would also make it attractive for US firms to relocate back to the US as the advantage of earning income offshore would no longer be relevant. Both the border tax adjustments and the relocation of US capital back into the US economy would likely lead to a large appreciation of the US dollar. The radical nature of the DBCFT change plus the political complexity of explaining it and securing passage through Congress means we have assumed this policy does not go ahead. Also, the current tax regime encourages US firms to 'book' profits overseas and some $2.6 trillion in overseas earnings is believed to be held by US firms. A one-off concession to repatriate these profits home could see some revenue raised but is likely to be small judging from

[3] This divisive policy reform was probably not the best place to expend significant political capital in the first 100 days.

past experience (Wells 2017)[4].

The tax reform is unlikely to be revenue neutral. The large reduction in the tax burden on companies and individuals, would need to be financed by a large rise in government debt as cuts to spending programs could not support such a shift. Supporters of this major tax reform argue that the revenue from tax cuts would be self-financing because of a stronger economy. As this was not the experience of the Reagan tax cuts in 1981 or the Bush tax cuts of 2001 and 2003, it is unlikely to be self-financing but the model we use in this paper allows for the extra tax revenue from an expanded economy so we can offer an additional assessment of this question.

Nunn et al. (2016) have estimated the revenue loss from the tax cuts both with and without the extra interest costs on the extra debt resulting from the loss of revenue and the macroeconomic effect of extra economic activity (and hence some extra tax collections). They find:

> *Federal revenues would fall by $6.2 trillion over the first decade before accounting for added interest costs and macroeconomic effects. Including those factors, the federal debt would rise by at least $7.0 trillion over the first decade and by at least $20.7 trillion by 2036.*

Three quarters of the revenue shortfall is expected to come from the cuts to the company tax rate, so any compromise outcome with Congress on this proposed cut would have the biggest effect on revenue and debt projections.

Infrastructure and defense spending

On top of the tax cuts, a significant increase in infrastructure spending ($1 trillion over ten years) is proposed to be financed by tax breaks to the private sector. In practice, the infrastructure that is needed in the US is in the 'public goods' category. It is not likely these types of projects would be funded if the private sector was given an incentive to undertake infrastructure spending. If the infrastructure spending goes ahead it is likely it would need to be financed by higher debt. The same applies to the $50 billion proposed to be spent on building a wall between the US and Mexico, although, so far a proposal for this spending has not gone to Congress.

In March, the Administration requested an additional $30 billion of military spending. Greater spending on the military has support in Congress, but the current proposal to pay for it by massive cuts in the budgets of the government agencies such as the Environmental Protection Agency and the State Department are unlikely to get through Congress unscathed. As reported by the media, the compromise as of early May 2017 seems to have settled at $15 billion of extra funding for the military (CNN 2017). Without passage of a final budget, the best assumption is for the extra spending on various programs to be funded by more government debt.

Summary of fiscal simulations

Each of these fiscal policies would have the effect of raising the US budget deficit and therefore increase future US government debt significantly. With so much uncertainty surrounding final spending plans, there is no definitive figure to put on the impact on the extra budget outlays. Given the focus in this paper is on the effects of the extra spending and the transmission channels to overseas economies, the approach we follow is to make an explicit and transparent assumption

[4] There are other elements to the tax package proposed such as repeal of the inheritance tax but the revenue implications are small compared to the corporate tax cuts which we concentrate on here.

about the scale of the spending. Doing so allows the reader to 'scale' model results should the outcome from stimulus package prove to be less or more for one reason or another.

Revenue collected by taxes, interest payments on debt (and interest rates themselves), as well as any extra revenue from the macroeconomic stimulus are all endogenous in the model as explained later. Thus as a rough guide the simulation to capture the most relevant aspects of the likely policy package is the following:

- Cut corporate tax rate by half
- Cut household tax rate by a quarter
- Increase spending on goods and services by 2 percent of GDP

b. Immigration

Another major area of policy reform with significant potential economic impacts is the Trump Administration's policies on immigration. The main proposal with economic consequences from the "Contract with America" is to begin expelling two million illegal immigrants with criminal records. Researchers at the Pew Research Centre estimate that in 2014, almost 5 percent of the local US labor force was illegal workers (Krogstad et al 2017). More interestingly, illegal immigrants made up 26 percent of the workforce in farming and 15 percent of the workforce in construction. Removing all of these illegal workers from the United Sates would increase costs in these sectors. It would reduce the potential rate of economic growth in the US by a significant amount. Moreover, it would be a major negative supply shock at a time when demand in the economy was expanding due to fiscal spending increases and tax cuts. The timing of these cuts would add further pressure on inflation and interest rates.

The outcome of the proposal to deport illegal immigrants is uncertain. Again, since the focus is on effects of the policy, the best way to proceed is to make an explicit and transparent assumption for simulation in the model. Our simulation is that total employment of foreign workers is reduced by 1.5 percent on average with the largest falls in agriculture and durable manufacturing proportionately allocated as per the Pew Research Centre study.

c. Trade Policy

Another key area of economic policy is trade policy. Throughout the election campaign, Candidate Trump expressed strong views on proposed trade agreements (the Trans-Pacific Partnership or TPP for short) and the need to renegotiate existing trade agreements such as the one with Mexico and Canada (known as NAFTA). Doubts were also raised about the entire conceptual framework of a rules-based global multilateral trading system with the World Trade Organization at its core. Indeed, at one point during the election, Candidate Trump threatened to pull out of the WTO if the US could not get satisfaction on other trade issues (Financial Times 2016). President Trump does not need Congressional approval to change US trade policy including pulling the US out of the WTO.

So far, actions taken have proved the protectionist intent apparent in the campaign rhetoric is real. After his inauguration, President Trump revoked the TPP agreement with member countries

negotiated under President Obama. Also, his appointments to key positions in his Administration reflect either a protectionist position or greater adherence to existing trade remedy rules such as anti-dumping to counter unfair trade practices. Other appointments not usually associated with trade protection seem to go along with the adopted stance. For example, in a jointly written news article, the National Security Adviser and the director of the National Economic Council emphasize the G7 communiqué calling for members to stand firm "against all unfair trade practices" (McMaster and Cohn 2017). The weapon usually deployed against 'unfair' trade practices is anti-dumping duties. But applying anti-dumping rules with vigor becomes a protectionist measure in effect because of the way evaluations are done in the US (and many other countries). These evaluations of anti-dumping under WTO rules concentrate only on 'injury' to domestic producers; they ignore wider benefits to consumers (Fisher and Stoeckel 2014). There is no national interest test. Thus findings are always biased against the foreign exporter. It is *de facto* protection[5]. The WTO has estimated that anti-dumping duties, countervailing duties and safeguard measures have had a significant negative impact on trade (WTO 2013). This year the US has imposed anti-dumping duties on Canadian softwood lumber imports, and steel and aluminum imports are under review as to whether these impose a threat to "national security." An investigation into the 'theft' of American intellectual property by China has begun.

During the election campaign last year Candidate Trump often threatened to label China as a "currency manipulator" on his first day in office. Under US law such a move would trigger first, negotiations, then possible retaliatory action. Candidate Trump had threatened to impose a 45 percent tariff on Chinese imports to counter 'unfair' trade practices which included currency manipulation. It is easy to see how this could get out of hand since China has a history of imposing retaliatory measures of its own in response to such actions. In the event, China has not been labeled a currency manipulator since the inauguration of President Trump. Instead, China has offered some trade concessions on US exports of beef and better access on financial investments.

More worrying is the mistaken view by the President and some in the Administration over the cause and significance of trade deficits. The US runs a large trade deficit (a big component of their current account deficit) with the rest of the world. This overall trade deficit comprises a series of bilateral trade deficits with many countries, the significant ones being China, Japan and Germany. These bilateral trade deficits are taken to be a sign that America is not doing well on trade; that it is being treated unfairly; and that those countries with large bilateral trade surpluses should be buying more American exports. Following the President's overseas trip in May this year, senior White House officials wrote:

> *"While meeting with European Union leaders in Brussels, the president reiterated his concern about our trade deficits with many European nations. He also emphasized the importance of reciprocity in trade and commerce. Simply put, America will treat others as they treat us." H.R. McMaster and Gary D. Cohn, May 30, 2017, WSJ*

The main worry about this apparent concern with bilateral trade deficits and reciprocity in trade is

[5] There are four channels for the Trump administration to protect against imports — anti-dumping, countervailing duties, safeguards and national security. Anti-dumping is the most common measure used by the US followed by countervailing duties (Brown 2017). For the purposes of this paper they all have the effect of protection; the differences being what test (or tests) are to be used by which US agency, who has the final say on the duties to be applied, and against whom(specific countries or everyone). The current steel and aluminum case is dangerous because it is under national security grounds (Section 232 of the Trade Expansion Act 1962). This option is considered to be the "nuclear option", since it can be easily copied by others in retaliation (eg China imports of wheat from the US). Widespread use of this option risks the demise of the WTO, making a trade war more likely.

that they are economically irrelevant for trade policy. The overall trade deficit reflects the fact America invests more than private savings (the private balance) and the government spends more than its tax revenue (the government balance). America must borrow the difference from the rest of the world, generating a capital inflow. From the national accounts, the capital inflow must be matched by a current account deficit (and hence a trade deficit). How the overall trade deficit is distributed bilaterally across countries depends on the mix of goods and services produced by each country, their comparative advantage and the preferences of American consumers. Restricting imports into the US will not improve the trade balance unless it changes the private savings-investment balance or the government balance (and there will some effects from changes to trade policy). The main effect from restricting imports will be to restrict exports, the mechanism being an appreciation of the US dollar. That is, a tax on imports is in effect a tax on exports — an old proposition familiar to most economists (Irwin 1996). The size of the overall trade deficit is the wrong metric by which to assess America's trade performance and bilateral trade balances are even less meaningful.

Here then is the worry about the misunderstanding of what the US trade deficit really means. The fiscal policies proposed by President Trump all have the effect of making the trade deficit worse! Tax cuts make it attractive for firms to invest, which encourages borrowing, dragging financing from overseas. Tax cuts worsen the budget deficit, which means more borrowing by government; again dragging in some monies from overseas. The extra capital inflow means a deterioration of the current account, which means a larger trade deficit. It will be impossible for President Trump to achieve all the objectives he promotes. Something will give. The worry is that this contradiction over policy becomes obvious around the time of the next set of congressional elections (2018) or as late as the next Presidential election (2020). The last election campaign saw the rise in popularity of trade protection and there is no reason to expect any less next time.

A trade war at this early stage of the political cycle is unlikely. There is substantial evidence that a world of rising tariffs and rising protection could cause a global recession and hurt the US economy. But the political imperative to boost trade performance may prove hard to resist come the next elections. While the shape of any trade restrictions or whether it leads to a trade war is speculative, it would be a bigger mistake to ignore the possibility just because any scenario is necessarily 'speculative'. One review of the President's economic strategy found that his view that America has done badly out its trade arrangements with the rest of the world to be a theme of "rare constancy" (The Economist 2017).

The arguments for why we may see a rise in protection boil down to several factors:

- Automation and the adoption of robotics will continue unabated, causing job losses in manufacturing, but easily (albeit wrongly) attributed to 'unfair' trade;
- The President and some senior members of the Administration are overtly protectionist;
- The US trade deficit will worsen due to the fiscal policies adopted which must draw in extra capital inflow causing the exchange rate to appreciate and the current account to worsen;
- There will be elections in 2018 and 2020;
- The President has greater autonomy on trade matters to act without approval of Congress, including, say, to take the US out of the WTO;
- There is a common misunderstanding by large numbers of the voting public about the basis of trade. They wrongly believe that "exports are good, but imports are bad" — the basic misunderstanding behind mercantilism.

To gauge the importance of possible protection to the US and world economies we use two trade scenarios; one where the US acts unilaterally and imposes tariffs on Chinese imports, the other is where there is retaliation, the US either leaves the WTO or ignores its findings so that a trade war

breaks out as each economy seeks to look after itself in the absence of a rules-based international order. The scenarios could go like this: given the bilateral trade deficit with China is so large (and wrongly believed to be important), the first scenario imposes a 40 percent tariff on imports from China of manufactured goods. Geopolitical concerns such as US - China tensions over sanctions against North Korea could also have a bearing here. But China would challenge this action in the WTO, which they could win, and retaliate with tariffs on US imports (as it has done previously with other countries). President Trump would likely ignore the WTO findings and even leave the organization. Combined with rising use of protection measures like anti-dumping and 'national security' provisions, without any adherence to a rules-based trading system by the world's largest economy, other countries also start breaking the rules and a trade war breaks out. As Brown (2017) puts it:

> *….the escalating [US]trade barriers and the means through which the Trump administration is motivating their use have the potential to severely weaken the rules-based trading system. Rather than blowing it up by simply withdrawing, the end result of the Trump administration's tactics may be that the WTO implodes from within.*

Thus the simulation in the second scenario is all countries lift tariffs by 10 percent (that is, if tariffs were 5 percent, they become 15 percent).

d. Other economic policies not simulated

Monetary Policy

Monetary policy also has a large impact on macroeconomic outcomes so the reaction of the US Federal Reserve to the changes in fiscal policy and outcomes from the economic package will be important. During the election campaign there was speculation about the independence of the Fed and who might be appointed as Chair and on the Board. There are several vacancies on the Board and who is appointed can affect whether a 'dovish' or 'hawkish' stance to policy settings is adopted. In the absence of concrete actions to the contrary it is assumed that the Fed will remain independent and continue to target full employment and a 2% inflation target as they do now.

What that policy stance means is that at a time when the US economy is near full employment and the Fed is already in a tightening cycle, adopting the fiscal policies described above implies a switch towards tighter monetary policy and loose fiscal policy. It will look like the period from 1979 to 1985. This was a period of large capital flows into the US economy attracted by strong growth, rising real interest rates and a strong dollar. This change in global interest rates would further hurt economies with significant amounts of private, public or foreign debt; yet another reason to use a global model to assess the effects of President Trump's policies.

We assume a continuation of the current monetary regime with the Fed responding to changes in inflation and output gaps by adjusting short term interest rates.

Deregulation, Energy and Climate Policy

Another area where policies will have economic impacts is in the goal to reduce regulation. One

area where deregulation can matter is to free up land and ease regulations on oil and gas exploration. Just how much the supply of energy can change under a more liberal policy is debatable, but this policy would likely reduce the price of gas and oil. It would be a further positive stimulus to the US economy as it was during the shale fracking boom from 2009.

The problem for the Trump Administration is that lower prices for gas and oil would drive even more substitution out of coal fired electricity generation into gas fired generation. The main loss of coal jobs from 2009 to 2016 was not due to President Obama's climate policy but was largely market driven by the lower price of gas relative to coal. Thus, the promise to 'bring back coal' is not consistent with the Trump Administration policy on oil and gas. If coal is to survive as promised during the election campaign, a substantial redirection of coal production into export markets would be necessary. Such a redirection will be affected by the size of exchange rate effects from the other stimulus policies as well as energy policies abroad. It would have important implications for countries like Australia, Japan and China directly in terms of the economic implications but also indirectly through the impact on existing climate policies aimed to achieve the Paris Climate targets.

President Trump has announced the United States will withdraw from the Paris climate agreement. The United States is a large user of energy and emitter of greenhouse gasses. Changes to energy policy in the US could have large economic effects and these will be analyzed in a separate paper using a special climate version of the model used in this paper (McKibbin, Morris, Wilcoxen and Liu (2017). In passing though, it is worth noting the decision to take the US out of the Paris climate agreement reaffirms President Trump's "America First" approach to international policy. It emphasizes the real, albeit small, risks that the trade policy scenarios described earlier could eventuate.

3. The model

Broad features required to assess the economic package

President Trump's proposed economic policies will affect the US and world economies in several ways. Increased spending and personal tax cuts will increase domestic consumption. More government spending and less revenue will increase the budget deficit. Company tax cuts will increase profits, lift the return on capital and promote investment. The larger government deficit will increase debt, and, combined with higher corporate borrowing to fund the extra investment, will put upward pressure on interest rates. More borrowing and higher interest rates will stimulate more capital inflow so the exchange rate will rise and there will be knock-on effects for exports and imports and the trade deficit will worsen. But an appreciating exchange rate will lower import prices and initially at least keep the lid on inflation, offsetting the tendency for more inflation from more domestic spending and activity. Any trade protection will affect prices of tradeable goods and services and will also have exchange rate effects. Deporting illegal immigrants will affect the size of the workforce and will also have sectoral impacts given the large share of these workers in sectors like agriculture.

Underlying all of these effects is a time dimension; investments require up-front spending and borrowing before they generate a profit stream; government debt has to be serviced so there is a rising interest bill to consider. Plus, households and firms will form views about future events — all in an uncertain environment — and that will affect outcomes today. That is, expectations and risk have to be formally incorporated into the analysis. Borrowing and lending means explicit treatment of holdings of financial assets.

The best way to capture all of these influences and interactions over time — some compounding, some offsetting — is to use a comprehensive dynamic global model. Enough sectoral detail is required to capture the differential effects of relative price changes. The G-Cubed model used in this paper incorporates all of these interactions in a dynamic and global setting, with sectoral detail. It is an ideal tool to assess the potential global impacts of a wide-ranging economic program as President Trump has proposed.

Next, we detail the specifics of the model used; non-technical readers may prefer to skip to the results but noting that this model has been successfully used over twenty years to analyze global events with many findings published in peer reviewed journals. The model is rich in contemporary economic theory but is empirically calibrated to current real world outcomes, including real world 'frictions' such as adjustment costs in physical capital accumulation and 'sticky' wages which cause unemployment in the short run. Driving the results is that consumers and producers respond to changed incentives and policy makers adjust macroeconomic levers to achieve their goals for economic activity, employment and target inflation. Consumers respond in predictable ways to changes in relative prices, incomes, wealth and expectations about future outcomes. Producers respond in predictable ways to changes in discounted expected profit streams. Before they expand they weigh up the expected marginal returns and costs of capital, risks, as well as expected wage costs and then invest and hire accordingly.

Specific features of model

The G-Cubed model is an intertemporal general equilibrium model of the world economy. The theoretical structure is outlined in McKibbin and Wilcoxen (1998 and 2013)[6]. A number of studies—summarized in McKibbin and Vines (2000)—show that the G-cubed modelling approach has been useful in assessing a range of issues across a number of countries since the mid-1980s.[7] Some of the principal features of the model are as follows:

The model is based on explicit intertemporal optimization by the agents (consumers and firms) in each economy but with allowance in the short term for rule of thumb behaviour. In contrast to static CGE models, time and dynamics are of fundamental importance in the G-Cubed model. The G-Cubed model is known as a DSGE (Dynamic Stochastic General Equilibrium) model in the macroeconomics literature and a Dynamic Intertemporal General Equilibrium (DIGE) model in the computable general equilibrium literature. It is slightly different to both approaches in detail and so it best described as a Hybrid of these approaches.

In order to track the macro time series, the behaviour of agents is modified to allow for short run deviations from optimal behaviour either due to myopia or to restrictions on the ability of households and firms to borrow at the risk-free bond rate on government debt. For both households and firms, deviations from inter-temporal optimizing behaviour take the form of rules-of-thumb, which are consistent with an optimizing agent that does not update predictions based on new information about future events. These rules-of-thumb are chosen to generate the same steady state behaviour as optimizing agents so that in the long run there is only a single intertemporal optimizing equilibrium of the model. In the short run, actual behaviour is assumed to be a weighted average of the optimizing and the rule-of-thumb assumptions. Thus aggregate consumption is a weighted average of consumption based on wealth (current asset valuation and

[6] Full details of the model including a list of equations and parameters can be found online at: www.gcubed.com

[7] These issues include: Reaganomics in the 1980s; German Unification in the early 1990s; fiscal consolidation in Europe in the mid-1990s; the formation of NAFTA; the Asian crisis; and the productivity boom in the US.

expected future after-tax labor income) and consumption based on current disposable income. Similarly, aggregate investment is a weighted average of investment based on Tobin's q (a market valuation of the expected future change in the marginal product of capital relative to the cost) and investment based on a backward looking version of Q. In the model software it is possible to change the information set of forward looking agents after a scenario begins to unfold.

There is an explicit treatment of the holding of financial assets, including money. Money is introduced into the model through a restriction that households, firms and government are required to use money to purchase goods.

The model also allows for short run nominal wage rigidity (by different degrees in different countries) and therefore allows for significant periods of unemployment or overemployment, depending on the labor market institutions in each country. This assumption, when taken together with the explicit role for money, is what gives the model its "macroeconomic" characteristics. (Here again the model's assumptions differ from the standard market clearing assumption in most CGE models.)

The model distinguishes between the stickiness of physical capital within sectors and within countries and the flexibility of financial capital, which immediately flows to whereexpected returns are highest. This important distinction leads to a critical difference between the quantity of physical capital that is available at any time to produce goods and services, and the valuation of that capital as a result of decisions about the allocation of financial capital.

As a result of this structure, the G-Cubed model contains rich dynamic behaviour, driven on the one hand by asset accumulation and, on the other by wage adjustment to a neoclassical steady state. It embodies a wide range of assumptions about individual behaviour and empirical regularities in a general equilibrium framework. The interdependencies are solved out using a computer algorithm that solves for the rational expectations equilibrium of the global economy. It is important to stress that the term 'general equilibrium' is used to signify that as many interactions as possible are captured, not that all economies are in a full market clearing equilibrium at each point in time. Although it is assumed that market forces eventually drive the world economy to neoclassical steady state growth equilibrium, unemployment does emerge for long periods due to wage stickiness, to an extent that differs between countries due to differences in labor market institutions.

The version of the model used here has 6 sectors (energy, mining, agriculture, manufacturing durables, manufacturing non-durables and services) plus a capital goods producing sector and 17 countries/regions as set out in Table 1.

Table 1: G-Cubed model countries/regions (version 140V)

United States	China
Japan	India
United Kingdom	Indonesia
Germany	Other Asia
Rest of Euro Area	Latin America
Canada	Other Emerging Economies
Australia	East Europe & Former Soviet Union
Korea	OPEC
Rest of Advanced Economies	

4. Results

a. Fiscal policies

The combination of company tax cuts, personal tax cuts and the extra spending of an extra 2 percent of GDP, all unfunded, expand the fiscal deficit. The net effect on the deficit is shown in the top left panel of figure 1 which is to expand the fiscal deficit by an extra 5 percent of GDP (with little variation) relative to the baseline or 'business-as-usual' case. There is an immediate boost to consumption (next panel right) of 3 percent above baseline in 2017, this falls to 1 percent in 2018, stays that way until 2024 and thereafter declines to be below baseline by 2 percent beyond 2040. The reason for that pattern is the extra debt to fund the consumption has to be paid for, in effect bringing future consumption forward.

The company tax cuts boost after-tax profits, lifting the return on capital and encouraging new investment (next panel in sequence). Investment rises to nearly 4 percent above baseline in 2018 and thereafter declines quickly to 1 percent above base before tapering back to baseline thereafter. Commensurate with the incentive to invest, there is an incentive to hire workers so real wages rise, peaking at 2.4 percent above baseline in 2022 in the pattern shown in the right hand panel of figure1.

Since consumption and investment are large components of GDP (a common measure of economic activity), the next panel shows the spike that can be expected. Real GDP could spike at 1.7 percent above base in 2017 and fall close to baseline by 2022 and remain thereafter. The way to think about the net gain to domestic output from the fiscal policies is the integral under the real GDP curve. This gain is in terms of extra GDP over the *level* of real GDP that would have prevailed in the absence of the stimulus. In familiar growth terms (the year-on-year change), the next right hand panel shows the extra 1.5 percent growth in 2017 but slightly lower growth than otherwise in the years to 2024 because the extra boost to activity is declining after 2017. It makes it obvious that the short term benefits of Trump's fiscal policies are at the expense of the future.

Higher real wages and more activity initially sounds impressive, which it is, but the trouble is GDP is a measure of economic activity in the country regardless of who owns the productive assets. The substantial borrowing by the US, as a consequence of the fiscal policies, means we should consider net payments abroad of interest, profits, dividends and rents — something the G-Cubed model does. In other words, we should consider the total income earned by residents of a country. That is, gross national product (GNP) is a better measure of the welfare of US residents[8]. Once we consider payments abroad, the extra borrowings, capital inflow and what happens to the trade balance, the picture is not as rosy.

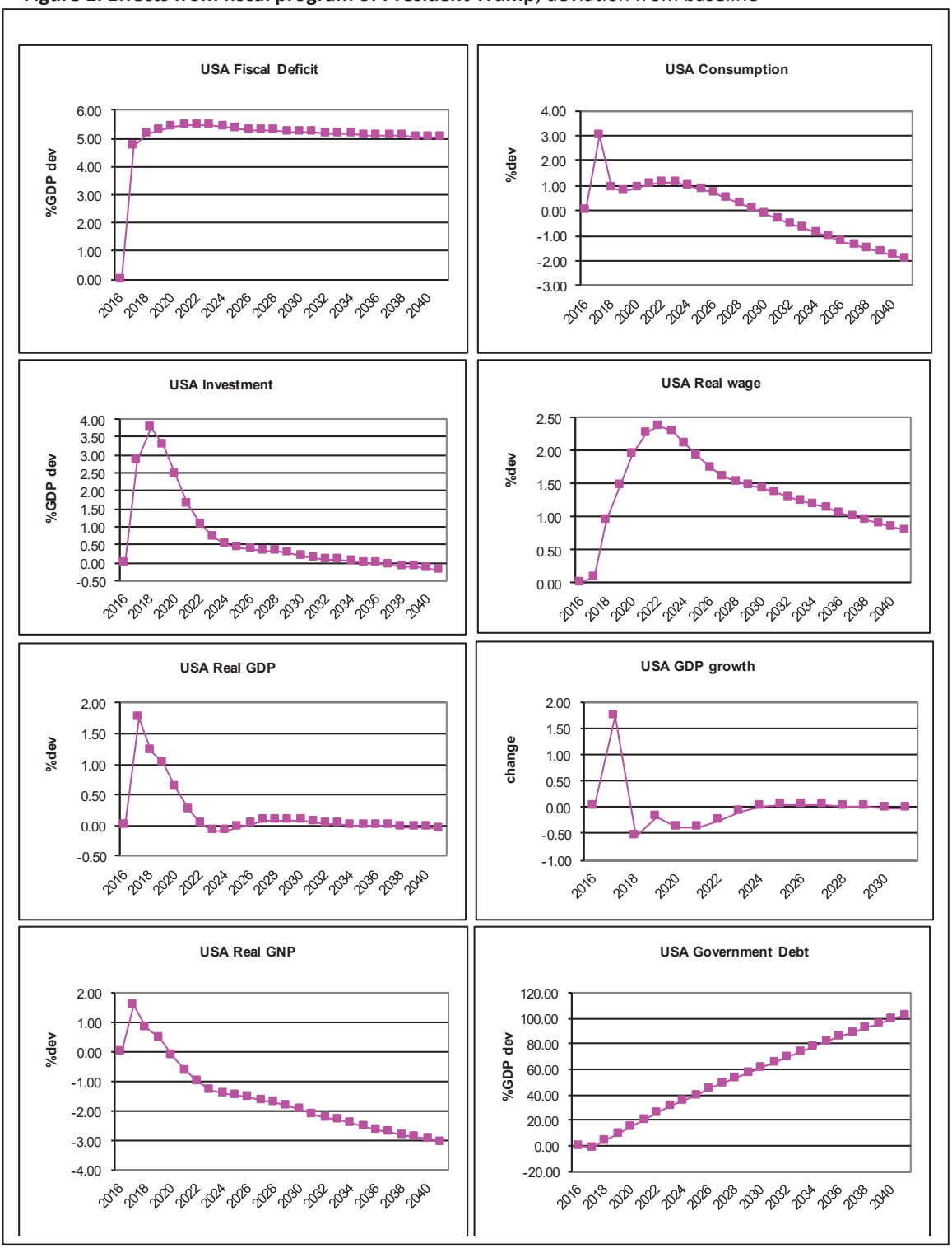
Real GNP (bottom left panel of Figure 1) is higher than baseline in 2017 in line with the extra GDP but is back to baseline by 2020 and steadily declines below baseline thereafter with the on-going borrowings needed to fund the deficit and therefore rising interest payments abroad. The net gain to US residents (the integral under the real GNP curve) is now negative.

Of course, a string of extra deficits and borrowings expands the government debt which could be double by 2040 (right hand panel) from what it might otherwise be. This outcome is problematic: CBO projections of future government debt in the US under existing policies show a large and rising debt burden to around 150 percent of GDP by 2047 (CBO 2017). Recall that this model incorporates any extra tax revenue from the extra domestic activity, but these results show that the tax cuts dominate. The expansion is not 'self-financing'.

It might be thought the extra early stimulus would boost inflation in the US. It tends to but there is more going on; the capital inflow necessitated by the extra corporate and government borrowing causes the exchange rate to appreciate, lowering import prices, the fall being enough initially to offset any tendency for inflation to rise. Inflation could fall to 0.7 percentage points below baseline in 2018 (top left panel figure 2). Note short term rates rise (right panel) because, under the monetary policy rule the Fed is targeting both activity and inflation and there is some policy tightening as a result.

[8] GNP = GDP + net income from (or payments to) abroad

Figure 1: Effects from fiscal program of President Trump, deviation from baseline



Source: Simulations with G-Cubed model (version 140V)

Extra borrowing to fund the deficit causes long term interest rates to rise (left panel); rates settling at nearly one percentage point higher than otherwise over the long term. Higher rates encourage capital inflow which must be matched by deterioration in the current account deficit. This deficit (as a percentage of GDP) is 5.7 percent worse in 2018 than it would otherwise be. The trade balance shows a similar pattern early on since it is a large component of the current account but later there is a difference (right panel). The deviation from baseline in the trade deficit gradually narrows, and, although not shown on the chart, would turn positive at some distant point in the future to fund the increasing interest payment component of the current account on the balance of payments. This initial deterioration of the trade balance will cause a problem for the Trump Administration, given their rhetoric on this measure outlined earlier.

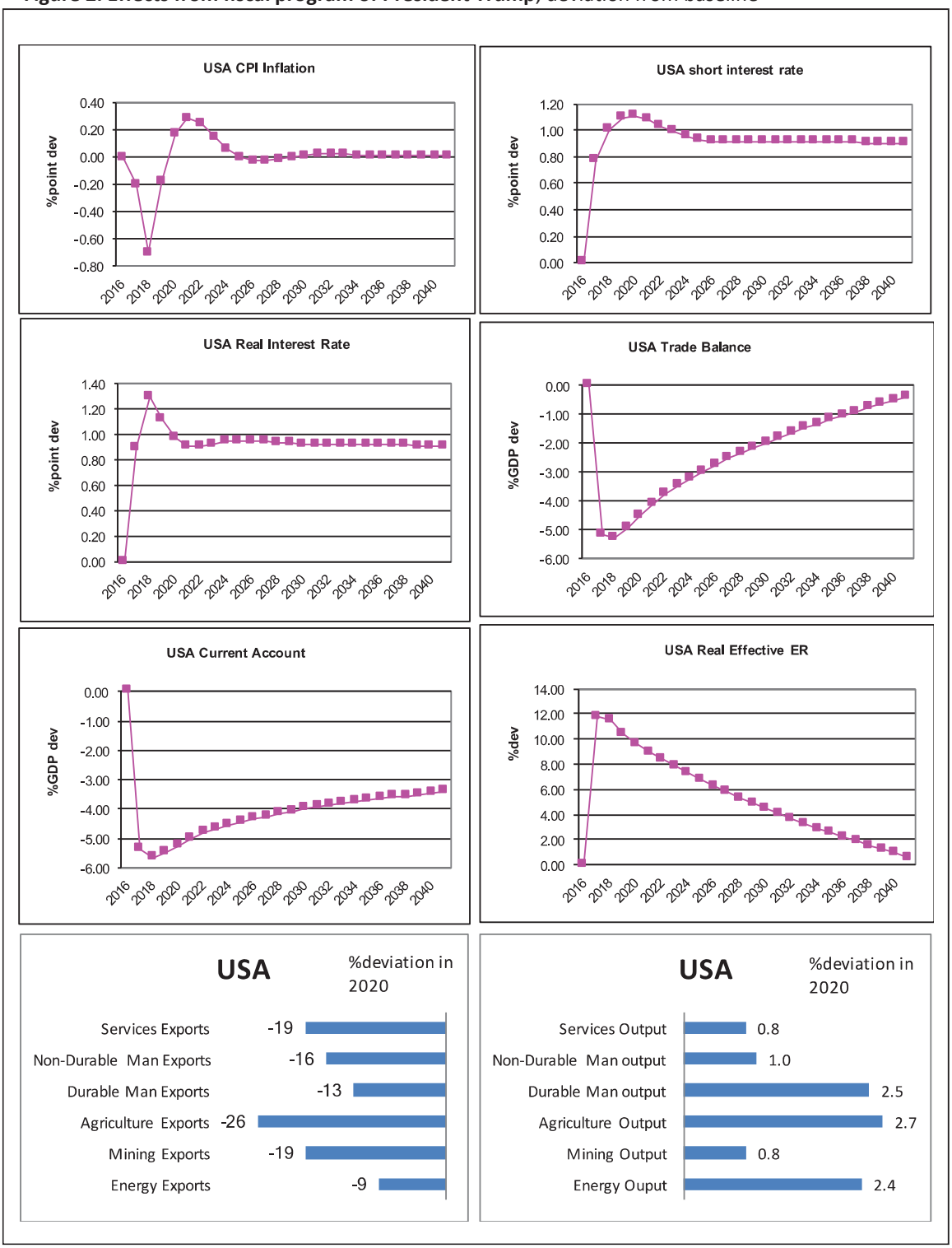
The mechanism by which the trade balance deteriorates to enable the capital inflow is an appreciation of the real exchange rate. The US dollar could be 12 percent higher in 2017 (expressed in real effective terms) than what it might otherwise be. The appreciation encourages imports (and seen earlier keeps inflation low) and discourages exports. Agricultural exports are hit the hardest (bottom left panel of figure 2) and could be 26 percent below baseline in 2020, the year of the next presidential election. Note that total agricultural output will still be higher in 2020 (right panel) because domestic consumption (around 80 percent of production by volume) is higher as a result of the extra total domestic consumption shown earlier in figure 1. But, had an even more disaggregated model been used, it would show some mid-western states heavily dependent on agricultural exports would be worse off under the higher dollar, creating political problems come election time.

The decline in exports is across the board, so a similar set of arguments will apply to manufacturing, even though the value of total domestic manufacturing output should be slightly higher in 2020 because total consumption is higher. Under current policy proposals, it will not be possible for President Trump to stimulate the domestic economy *and* promote exports. That is why it is important to understand the economics behind the policies and avoid a resort to trade protection being the resolution of this contradiction — seen later to make matters even worse. First, we look at some effects on two other countries that have large current account surpluses and bilateral trade surpluses with the United States that have already drawn the ire of President Trump[9] — China and Germany.

The effects of President Trump's fiscal program on Germany and China are shown in Figure 3. The extra borrowings by America to fund the expansion has to come from domestic and overseas sources. Germany and China are two such sources. So the capital outflow from these two countries

[9] In May this year President Trump described Germany's trade surplus with America as 'very bad' and it needed to change (Jacoby, 2017).

Figure 2: Effects from fiscal program of President Trump, deviation from baseline



Source: Simulations with G-Cubed model (version 140V)

must cause their current account surpluses to rise and with it the trade surpluses (top four panels Figure 3). In 2017 Germany's trade surplus could rise by 1.9 percent (as a share of GDP) over baseline and for China the increase could be 1.6 percent. Notice the different trends between the

trade balance and current accounts. As income earnings continue to rise on the extra loans made to America, the current account (as a share of GDP) continues to increase over baseline. But eventually this extra income will be spent and the trade balance would fall below baseline if the graphic was extended far enough out.

The end result is that for Germany and China, net exports rise, especially in the early years, and mirrors the deterioration of the trade balance in the United States. The mix of export changes is different across the sectors though shown in the middle panels of Figure 3. The differences are due to changing exchange rates across countries due to differences in comparative advantage and in capital flows.

More net exports could be thought to encourage more investment in Germany and China. But higher interest rates in the US also lead to higher interest rates in Germany and China due to linkages between capital markets. This effect dominates and so investment in both Germany and China falls initially below baseline (second bottom panel of Figure3). This fall in investment is more important in China than for Germany since investment in China as a share of GDP is much higher (over 40 percent of GDP). So although net exports in China are higher, this positive effect on activity is outweighed by the negative effect of investment and GDP falls below baseline by 1.4 percent in 2017 (bottom panel). For Germany, investment as a share of GDP is smaller than for China and net exports larger so on balance there is a small initial boost to GDP which rises by 0.6 percent in real terms in 2017. It falls below baseline after that because the boost from net exports declines while the fall in investment continues to grow for another two years before returning to baseline. Longer term China and Germany as worse off in terms of real GDP by around 0.4 percent below baseline.

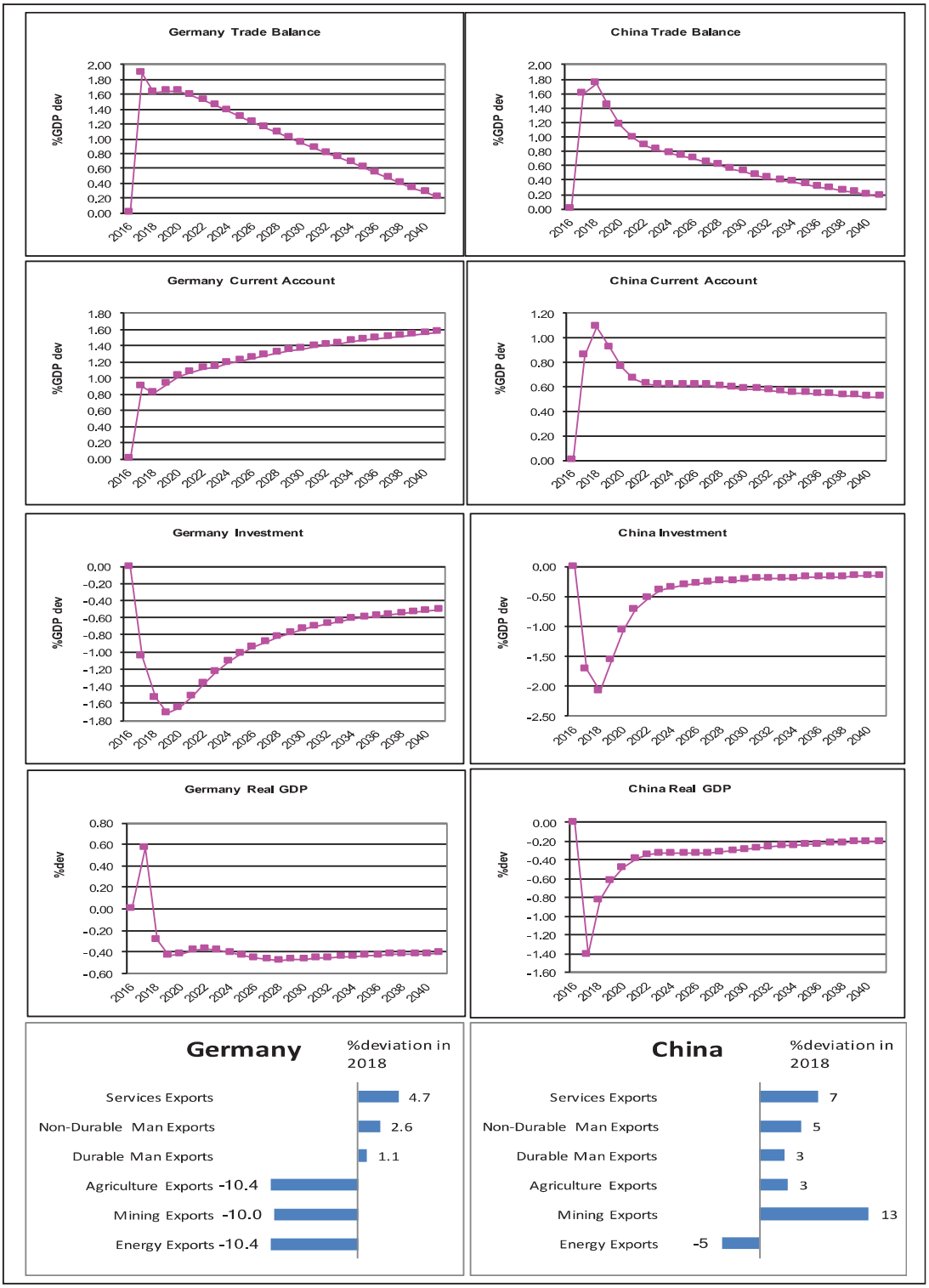
Some Caveats

The advantage of using a formal model to analyse the effects of President Trump's economic program is that it forces analysts to be explicit about what is included and what is excluded. Two exclusions that could be important are any productivity effects from the extra spending on infrastructure and the possible effects of perceptions of increased risk by financial markets as the government debt to GDP ratio doubles over the next twenty-five years from what it might otherwise have been. The first effect of higher productivity from more infrastructure spending would have a positive effect on the results but any higher risk premia from the large build-up of debt would have a negative effect.

How big could these effects be? Calderon, Moral-Benito and Serven (2009) find that for every 10 percent increase in the stock of infrastructure capital, productivity in private sector output rises by 0.8%. Using this result and translating to the case of emerging economies shows the potential gain from more infrastructure spending could be significant (McKibbin, Stoeckel and Lu 2014). The effect is worthy of further investigation.

In the case of debt and the effect on growth, work by Kumar and Woo (2010) shows higher debt to GDP has a negative effect on growth. And the size of the effect from the doubling of government debt to GDP ratio over baseline up to 2040 suggests the effect could be important; again, worthy of investigation.

Figure 3: Effects on Germany and China from US fiscal program, deviation from baseline



Source: Simulations with G-Cubed model (version 140V)

b. Immigration

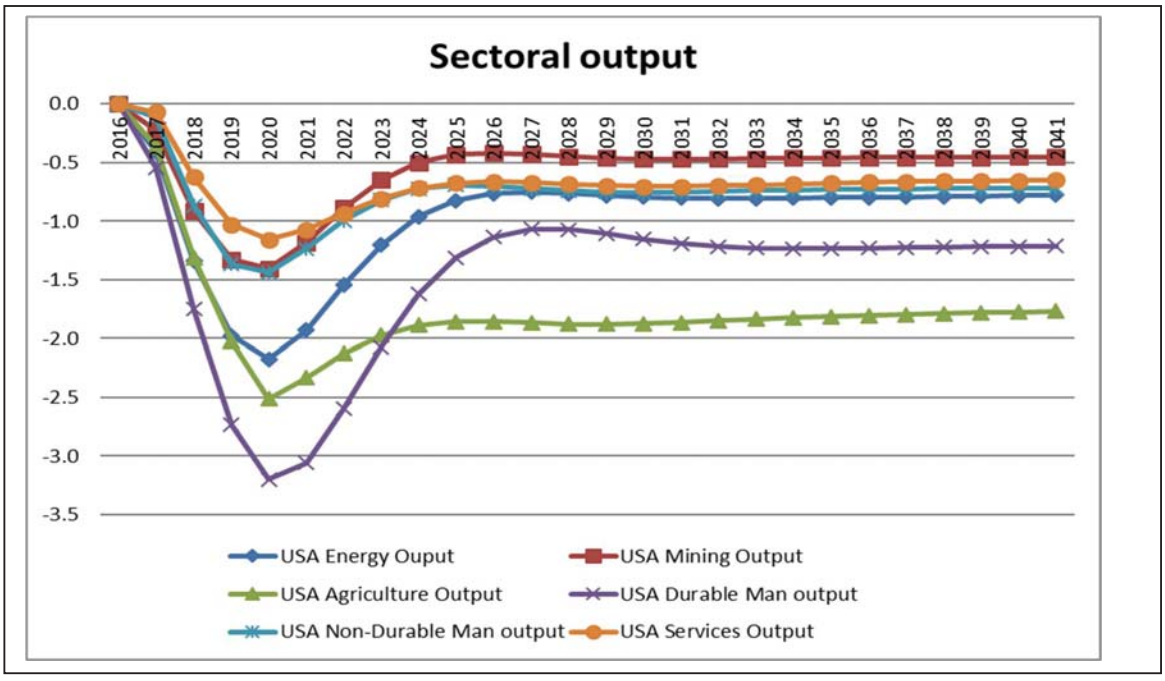
Deporting illegal immigrants reduces the available workforce and reduces output. Since there are more illegal immigrants in some sectors than others, the effects on sectoral output are shown in Figure 4. Durable manufacturing and agriculture are initially the hardest hit because that is where the reductions in workforce are highest and the durable goods sector is also adversely affected by the loss of investment caused by the loss of output. Output in durable manufacturing could be 3.2 percent below baseline in 2020 and for agriculture, 2.5 percent lower. Longer term, agriculture fares badly and output could be nearly 2 percent below baseline.

With less output in each sector, aggregate real GDP must be lower and is shown in Figure 5. Real GDP could be 1.6 percent below base in 2020 before settling at 1 percent below what it might otherwise have been from 2023 onwards because the workforce is permanently smaller. Note that this decline in domestic activity will largely offset any gain from the domestic fiscal stimulus.

The decline in output means there is less need for the existing stock of capital, which means less investment than otherwise. Investment could be 1.4 percent lower in 2019 and 2020 than baseline (right panel figure 5). Again this will offset roughly half of the boost to investment from the fiscal program described earlier.

Less activity and less investment means less demand for borrowed funds so real interest rates are less than baseline by some 450 basis points in 2017 and 2018 (bottom panel figure 5). Less borrowing than otherwise, some of which would have come from overseas means the current account deficit (as a % of GDP) is not as large and the temporary gain is shown in the bottom right panel of figure 5. That implies the trade balance is better than otherwise (not shown), the equilibrating mechanism being a small initial real depreciation of the real exchange rate. The trade implications are small relative to the effects from the fiscal program so in this case the international repercussions are small.

Figure 4: Effects on USA output from deporting illegal immigrants, % deviation from baseline



Source: Simulations with G-Cubed model (version 140V)

Figure 5: USA macroeconomic effects from deporting illegal immigrants, deviation from baseline.

c.Trade Policy

The effects of protection against manufactured imports from China with a 40 percent bilateral tariff are shown in figure 6. Some of the obvious effects are the effects on China are far greater than those on the United States (charts are roughly to the same scale for comparison). There is virtually no deviation of US real GDP from baseline but there is a slight negative effect on investment from baseline. There is virtually no effect on the US trade balance. The effect on China is significant though; there is a loss of investment from baseline of -1.6 percent in 2018 and explains the drop in Chinese real GDP shown in figure 6. Note that the imposition of tariffs on Chinese goods, while hurting Chinese exports to the US actually helps China's trade balance. The reason is less domestic need for investment leads to more capital outflow than otherwise, causing a rise in the trade balance. China's real exchange rate devalues by 5 percent below baseline in 2018.

There are two of the reasons the effects on the US from the bilateral tariff on manufacturing imports from China are small. One is that imports of goods from other countries combined are four times those from China even though it is the largest single source of imports of goods. Secondly, the US is able to substitute Chinese imports for other imports from elsewhere. But the story is different once the possibility of tariffs being imposed against everyone which happens in the trade war scenario.

The effects of a much larger trade war scenario are set out in Table 2. These results draw on an earlier analysis of a trade war using this model in McKibbin and Stoeckel (2009). The table shows the effects of each country imposing an extra 10 percent tariff on imports from all other countries (that is if say Japan had an average import tariff of 5 percent, this would become 15 percent). The first column of table 2 shows the effect of all countries imposing an increase of 10 percent on their import tariffs, that is, a global trade war scenario. The other columns show the effects from just one country (or region[10],) imposing the tariff increase, so along each row adds up to the first column. The first row (USA) shows that a world trade war (first column) whereby all countries raise tariffs, lowers US GDP by 1.3 percent below baseline in the year following the rise. This loss is made up of a loss of 0.3 percent of GDP from the US lifting its own barriers, a loss of 0.1 percent from Japan alone lifting tariffs, a loss of 0.3 percent of baseline GDP from the Europeans increasing tariffs alone and so on.

The first column of Table 2, that is, a global trade war, shows all countries loose. The loss to Germany, China and other Asia all have real output lower by three or more times the loss the United States — but everyone loses. Looking at the diagonal entries of Table 2 shows something else; for most countries, their biggest loss comes from their *own actions*. So if Japan imposes a tariff increase of the magnitude described, it would lead to a loss of its real GDP of 0.6 percent below baseline, which is greater than from the actions of any other country acting alone. The biggest loss to Japan is when all countries/regions lift tariffs.

These results show the demand side stimulus from the switching of imports to domestic goods is outweighed by the fall in investment due a rise in the price in imported capital goods and a fall in the return to capital in sectors where protection rises. This gives an important result, as McKibbin and Stoeckel (2009) put it: "Tariff increases are not just beggar-thy-neighbour policies but are beggar-thy-self". Unlike many simple analytical models of tariff changes where aggregate supply is taken as given, this model shows the contraction in supply dominates the stimulus to importables. In the model here, capital accumulation is endogenous and so is trade in durable capital goods so that aggregate output changes nationally and globally in response to tariff changes.

[10] Noting the different regional groupings defined in the footnote to the table

Figure 6: Effects of 40% US bilateral tariff on imports of Chinese manufactured goods

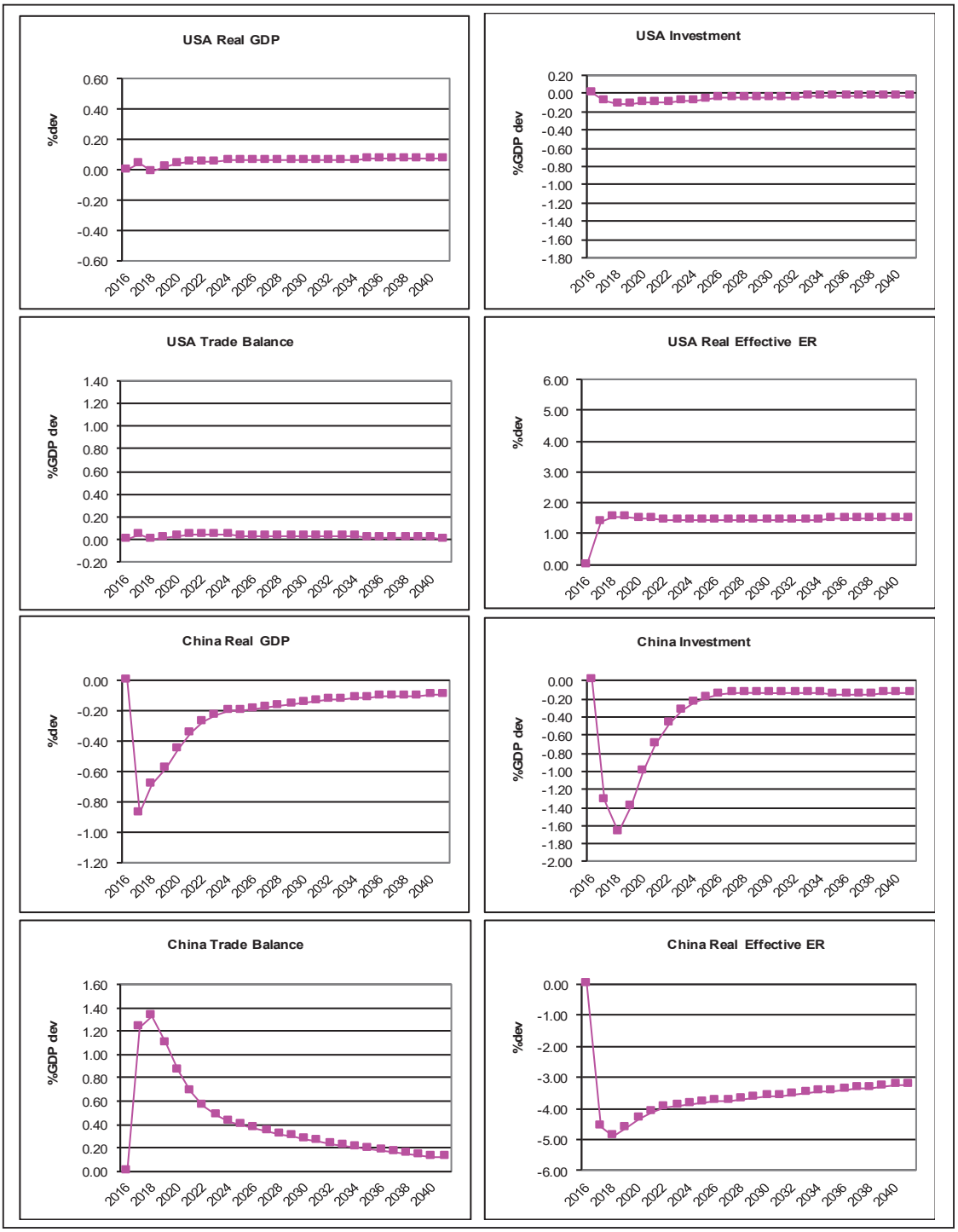


Table 2: GDP consequences of Tariff Changes in first year, percent deviation from baseline

	Source of Tariff Change								
	Global	USA	Japan	Europe [1]	OOECD[2]	China	India	EEFSU	ODCs[3]
United States	-1.3	-0.3	-0.1	-0.3	-0.3	0.0	0.0	0.0	-0.3
Japan	-1.7	-0.4	-0.6	-0.1	0.0	-0.1	0.0	0.0	-0.4
United Kingdom	-2.1	-0.3	0.0	-1.5	-0.2	0.0	0.0	-0.1	-0.1
Germany	-3.8	-0.3	0.0	-2.6	-0.3	0.0	0.0	-0.4	-0.1
Euro Area	-2.9	-0.3	0.0	-1.8	-0.2	0.0	0.0	-0.2	-0.3
Canada	-2.2	-1.8	0.0	-0.3	-0.2	0.0	0.0	0.0	0.1
Australia	-1.4	-0.3	-0.2	-0.3	-0.2	-0.1	0.0	0.0	-0.3
ROECD	-3.7	-0.4	-0.1	-1.7	-1.2	0.0	0.0	-0.2	-0.1
China	-4.3	-0.9	-0.3	-0.3	0.1	-1.1	0.0	-0.1	-1.6
India	-1.5	-0.2	0.0	-0.2	0.0	0.0	-0.6	0.0	-0.5
Other Asia	-3.9	-1.0	-0.2	-0.3	0.0	-0.4	0.0	0.0	-1.9
Latin America	-1.6	-1.3	0.0	-0.3	0.1	0.0	0.0	0.0	-0.1
Other LDC	-1.4	-0.5	0.0	-0.6	0.1	0.0	0.0	-0.2	-0.1
EEFSU	-3.5	-0.6	-0.1	-2.0	-0.1	-0.1	0.0	-0.6	-0.1
OPEC	-4.4	-0.9	-0.4	-1.0	-0.2	-0.2	-0.1	-0.1	-1.6

Notes: Source G-Cubed Model from McKibbin and Stoeckel (2009); [1] Europe is UK, Germany & Euro Area; [2] OOECD is Canada, Australia & ROECD; [3] ODCs is other Asia, Latin America other LDC and OPEC

The message from these trade simulations is that unilateral protection by the US applied bilaterally against China does not help the United Sates. But the effect is tiny since the predominate effect from bilateral tariffs is a switching of imports away from China but from other sources, making the net domestic stimulus small relative to the extra costs and lower capital accumulation. China is worse off from the bilateral tariff.

If the tariff increase on Chinese imports by the US was expanded to all countries it removes the incentive to switch from China towards other suppliers but still the extra domestic stimulus is outweighed by subsequent supply side cost increases, lower investment and less capital accumulation. The US is worse off and all other countries suffer too.

Were a trade war to break out and all countries lifted tariffs, everyone is worse off (first column of table 2). This last result confirms what many economists know; that trade protection would make the world worse off and is one of the powerful arguments for promoting free trade. Lack of awareness of what is in a country's own national interest has been shown to be one factor limiting progress towards a more open world trading system and lies behind the failure of the Doha round of trade negotiations (Stoeckel and Fisher 2008). Promoting these concrete estimates with explicit description of the mechanisms at work from trade protection is one of the ways better outcomes for the world economy can be secured. Decisions will not be made in the national interest if people do not know what is in the national interest[11].

[11] Stoeckel and Fisher (2008), p.xvii

5. Summary and Implications

The main elements of President Trump's proposed economic program are a fiscal stimulus (comprising tax cuts and infrastructure and defense spending), deporting illegal immigrants with criminal records and protection of trade through a mix of renegotiated trade deals, rigorous application of rules against 'unfair' trade that causes injury, use of rules to protect national security, and possibly use of bilateral import tariffs against countries with large bilateral trade surpluses with the United States.

The final shape of all these elements is an unfolding story for many reasons— the principal one being the uncertainty of getting legislation passed by Congress. The Republican dominated House and Senate does not guarantee passage of legislation; witness the initial rejection and subsequent delay of new healthcare legislation. But President Trump does have more autonomy on trade policy which could be a cause for concern.

The worry is a contradiction between the aims of the elements of the economic program. On one hand, the President wants to reduce America's trade deficit (imports greater than exports) because (he wrongly believes) it shows it is unfairly being discriminated against, hurting its interests. On the other hand, the President wants to expand the domestic economy through tax cuts and spending which must be funded by more borrowing, some of which will come from overseas. The extra capital inflow will cause the real exchange rate to appreciate and the trade deficit to worsen. Our results show this is significant.

There is also a contradiction between the fiscal stimulus and deporting immigrants; the stimulus expands the economy while deporting illegal immigrants contracts it.

The contribution of this paper is that we use a large quantitative model of the US and world economies to measure the size of these possible effects and highlight the contradictions in policy. This model has been used on many occasions to study global shocks, such as the Asian and global financial crises. Although we admit the final shape of any economic program is uncertain, to demonstrate relative magnitudes and linkages at work with other countries, we take as a starting point Trump's 'Contract with America' he announced in the late stages of the election campaign. The numbers are significant, some of the main findings from the fiscal program being;

- US output (real GDP) to be greater than otherwise over the period to 2020; but
- US government debt would be double by 2040 what it would be without the stimulus; so that
- Americans would face a rising interest bill paid to foreigners, a bill big enough to cause national income (real GNP) of Americans to fall over time from what it might otherwise be. That is, even though America was producing more, they would 'own' less of it and in income terms they would be worse off.
- The capital inflow from the fiscal program could cause the real effective exchange rate to initially appreciate by 12 percent above baseline; causing
- the trade deficit to worsen, initially by over 5 percent of GDP and then to take over twenty-five years before it was back to where it might have been in the absence of the stimulus.
- Exports would be lower than base for all sectors; agricultural exports faring worse (lower by 26 percent in 2020), then mining and services exports (lower by 19 percent in 2020). Durable

manufacturing exports are estimated to be 13 percent below base in 2020 while for non-durables the fall is 16 percent. The fiscal program worsens America's trade performance by the President's metrics of expanding exports and reducing the trade deficit.

- America's worsening trade balance means an expanded trade surplus for other countries, two of the largest surplus economies being Germany and China. Germany's trade surplus could initially rise by 1.9 percent (as a share of GDP) over baseline and for China the increase could be 1.6 percent but this is positive for Germany but insufficient to offset other effects in China.
- America's real interest rate could settle at nearly 100 basis points above baseline to meet their extra borrowing requirement, this rise would be (partly) transmitted to Germany and China (and others) through financial linkages. Therefore, investment in Germany and China would initially fall, even though their net exports rise.
- The net effect is an initial boost to real GDP in Germany (an extra 0.6 percent above base) since the gain from net exports is greater than the loss from investment. For China, investment is a much larger share of GDP so this loss outweighs the boost from net exports and real GDP initially falls by 1.6 percent below base.

The fiscal stimulus from tax cuts and extra spending does expand the economy in the early years. This expansion leads to some claw-back of tax revenue but the cut in rates (if the intended cuts eventuate) is greater than the expansion of the economy. The tax cuts are not 'self-financing'. We have not however, imputed any productivity gain, either from the tax cuts or the extra infrastructure spending — a gain if they do exist. But neither have we imputed any extra financial risk from a vastly expanded government debt to GDP— a loss if this eventuated.

In economic terms, deporting illegal immigrants has the effect of reducing the workforce, so less is produced. Because these immigrants are concentrated in agriculture and manufacturing, these sectors fare badly if such a program is followed to the extent outlined in Trump's "Contract with America". Our modeling shows;

- Output from durable manufacturing could be 3.2 percent below baseline in 2020 due to the combination of fewer workers and less investment since activity in the economy is lower.
- Output from agriculture could be 2.5 percent less than baseline by 2020.
- By 2020, real GDP could be 1.6 percent lower than base, offsetting the gains to real output from the fiscal stimulus.
- Lower output means less investment so there is less borrowing requirement and the deficits on the current account and the trade account are smaller than otherwise, but the effects are a tenth the size of the deterioration from the fiscal stimulus (in the initial years at least).

On trade, some trade protection is already happening by stealth (Canadian lumber) and the TPP trade agreement (although not ratified) has been cancelled. The worry is more is to come. It is a worry because President Trump and some senior members of his administration espouse a mercantilist approach to trade: that exports are good, but imports are bad. The metrics by which the President judges trade performance are exports and the size of the trade deficit, with particular focus on bilateral trade deficits. The biggest bilateral trade deficit is with China — a country where trade tensions are already high, including over sanctions against North Korea. Two trade scenarios were simulated, one where a 40 percent bilateral tariff is put on Chinese imports into the US and another where the WTO rules based system falters and a trade war breaks out with a 10 percentage point increase in all tariffs by each country/region. These simulations show;

- Bilateral tariffs on Chinese imports barely changes US output or the overall trade balance: simply, the principal effect is to cause a switching in the source of imports from China to elsewhere and the little extra stimulus to domestic production on newly protected goods is

offset by a contraction in overall investment as the cost of capital goods rises.

- Tariffs imposed by the US on all imports from all countries would leave all countries and regions worse off. A US tariff increase on all imports gives an extra incentive to switch demand to local goods and services but the supply side contraction from lower capital accumulation is also greater and this effect dominates. The US is still worse off under this scenario.
- Under a trade war scenario, all countries are worse off, some more than others due to their trade exposure. The losses to China, Germany and 'other Asia' are some three times larger than for the US.
- Countries lose from protection because we allow for endogenous capital accumulation and trade in capital goods. The finding is that a rise in tariffs by one country reduces that country's GDP as well as reducing GDP in other economies. A global tariff war accentuates the losses. So although it is tempting for countries to raise tariffs on imports to switch expenditure from foreign to domestic goods to support domestic demand, this paper finds that the negative supply consequences on investment and more expensive imported durable goods far outweighs any benefit of expenditure switching.
- Since everyone loses from a trade war suggests such a scenario is unlikely. But the implication is that everyone would gain from lower global trade protection and that incentive was not sufficient to lead to a successful outcome from years of trade negotiations under the Doha Round of talks launched in 2001. Nor is the result that countries lose from their own trade protection sufficient to stop rising trade protection; witness developments in the US with incremental steps in that direction. It seems the political attraction to protect is a powerful one, even if wrong so these trade scenarios are real, albeit remote. The problem is the other elements of the Trump administration economic program exacerbate the wrong-headed thinking about trade, making these scenarios less remote. The contradictions between the aims of the President's economic program will surface one way or another.

Overall, the Trump economic program could give some short-term gain to domestic output but this comes at the expense of the future. The expansion is financed from extra borrowing, so less of the return from domestic output will accrue to Americans over time. In terms of long-run Gross National Product, Americans will be worse off. The deporting of illegal immigrants, in economic terms, erodes some of short-term gains to output and some sectors, particularly agriculture and manufacturing, bear the brunt of the contraction. The extra borrowing to fund the fiscal expansion worsens the trade deficit, increasing the risk of the current tendency to trade protection to worsen. Trade protection leaves the US worse off, and offsets some of the short-term gain to output.

The bottom line is that President Trump's economic package is a mixed bag; it has some positive and some negative effects on the economy with some contradictory elements whereby some effects weigh heavily against the manufacturing sector - a sector the President has said needs reviving.

Whether or not reviving the manufacturing sector in its previous form is a sensible policy in the face of ongoing automation remains an open question. But the obvious way to enhance the President's economic program is to cut out the negative elements affecting the economy, leaving the positives.

That would mean dropping the trade protection stance, even if means better policies to allow people to adjust to economic change; allowing immigration to continue, even if it means switching from illegal to legitimate channels; and funding the tax cuts through savings elsewhere (such as removing business concessions) since it is the extra borrowings that weighs heavily on the economy

over time. The infrastructure spending component of the fiscal program should pay for itself. Given the US economy is at full employment now, the imperative for immediate large fiscal stimulus is not there, so better that time is taken to design a well-founded and funded tax system. The acid test for any proposed policy change should be: "Does this lift US productivity?"

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