



Rebalancing a lopsided global economy

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KEYWORDS

computable general equilibrium models, econometric modelling, fiscal policy, international trade and finance, intertemporal choice, macroeconomics, mathematical methods, structural reform

1 | INTRODUCTION

In 2010, the US Treasury Secretary Timothy Geithner wrote a letter to G20 finance ministers. Concerned about the growth in current account imbalances between 2000 and 2007, he recommended a radical approach: that each G20 country pledge to keep current account surpluses and deficits within 4% of GDP (Davies, 2010).

Geithner's idea was politely rejected. But what he tried to do highlighted the level of concern among policymakers over the growth in global current account and trade imbalances since 2000. These political concerns have intensified significantly since the election of Donald Trump as President of the United States (see Donnan, 2017).

International discussions on global imbalances are helpful to policymakers in understanding the overall effects of their policies, how others view their policies, how policies affect one another and so on. So I think those discussions were useful. –

Ben Bernanke, former Chair of the Federal Reserve, United States, interviewed 7 August 2017

The current account measures the difference between the level of domestic savings and investment in an economy. Many East Asian and European economies have large current account surpluses because their firms, households and governments collectively save more than is invested in the economy. This surplus of savings goes overseas and finances investment in economies which are in the opposite situation: economies which have firms, households and governments that collectively save less than is invested in their economies. These economies, such as the United States, United Kingdom and Australia, have current account deficits.

Having a current account deficit or surplus is not necessarily a bad thing. A country might run a current account deficit because it has strong future development prospects, encouraging its citizens

to smooth consumption by borrowing today in anticipation of a prosperous tomorrow. Conversely, a country might run a current account surplus because it has an ageing population which is saving for retirement, because it has a mature economy with fewer investment opportunities such that its savers explore opportunities offshore, or because the government is accumulating foreign exchange reserves in the light of an insufficient global financial safety net.

But economists such as Maurice Obstfeld,¹ Kenneth Rogoff,² Ben Bernanke³ and Mervyn King⁴ argue that the rise in global imbalances (Figure 1) was intimately linked, if not a key cause of, the global financial crisis by fuelling unsustainable booms in credit and asset prices. More recently, Brad Sester from the Council on Foreign Relations has suggested that global imbalances might be a critical contributor to depressed global interest rates, with implications for long-run stability (Sester, 2016). Current account imbalances can be particularly problematic for deficit economies. Growing deficits raise the risk of a “sudden stop” – a change in sentiment where investors suddenly become unwilling to finance a country's deficit. International linkages and poor cross-border processes for the resolution of troubled banks and financial institutions mean sudden stops can quickly become global events.

Similarly, Blanchard and Milesi-Ferretti (2011) have warned that current account imbalances are, in many instances, not benign because they are being driven by domestic distortions. For deficit economies, these distortions can include poorly regulated financial systems that fuel asset price bubbles or irresponsible fiscal authorities reducing national savings through excessive spending. For surplus countries, distortions can take the form of a lack of social insurance driving up precautionary saving or inefficient financial intermediation leading to low investment. Globally, an inadequate global financial safety net can lead to governments opting to self-insure through the accumulation of foreign exchange reserves.

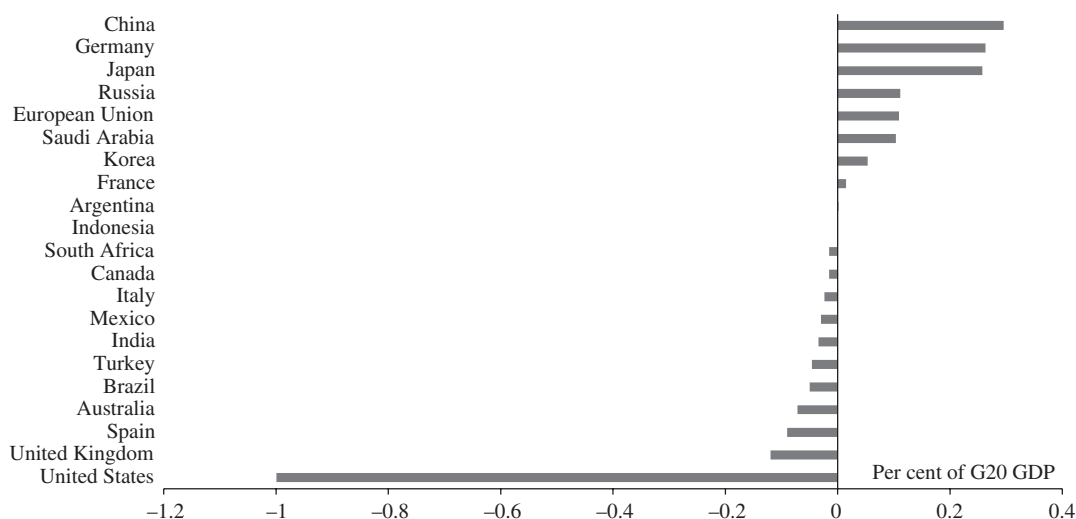


FIGURE 1 Average current account balance from 2000 to 2016 as a per cent of G20 GDP.

Source: IMF world economic outlook database, October 2017

¹See Obstfeld & Rogoff (2018).

²See Obstfeld & Rogoff (2018).

³See Bernanke (2009).

⁴See King (2016).

Concerns about global imbalances are not new. The deflationary bias in the global economy was a critical concern of Keynes in the 1920s and many others since then. The international gold standard which prevailed at the time was supposed to automatically adjust current account imbalances through price rises in the gold-gaining countries and price falls in the gold-losing countries. The problem, as Keynes identified, was that adjustment was “compulsory for the debtor and voluntary for the creditor”. Surplus countries faced little incentive to reduce their surpluses while debtor countries still needed to roll over their debts.

Keynes' clearing union plan of 1941 was designed to address this. It was designed to create pressure on both deficit and surplus economies to return to balance to prevent the build-up of global imbalances. But after being vetoed by the United States, the International Monetary Fund was created to instead provide support to deficit countries facing balance of payments difficulties, provided they corrected their policies (Joshi & Skidelsky, 2010). Many authors have noted, however, that the current system leaves the issue of global imbalances unresolved (see Joshi & Skidelsky, 2010; Mann, 2010; Portes, 2010).

Concerns around global imbalances have been particularly prominent in international forums since 2000.⁵ In 2008, the newly minted G20 leaders' forum picked up this agenda and has continued it ever since. Leaders identified “unsustainable global macroeconomic outcomes” as a root cause of the crisis and committed to move towards “a more balanced pattern of global growth” and “adequate and balanced global demand” (G20, 2008, 2010). They developed the G20 framework for strong, sustainable and balanced growth and a Mutual Assessment Process, with a focus on addressing global imbalances. They described it as “a compact that commits us to work together to assess how our policies fit together” and to “establish a pattern of growth across countries that is more sustainable and balanced”.

The G20 has been largely ineffective on global imbalances. It failed to create a new political consensus that you cannot simply have permanently exporting countries without creating significant imbalances for the rest of the world which, ultimately, creates problems in financial, trade and political systems –

Kevin Rudd, 26th Prime Minister of Australia, interviewed 8 September 2017 Our argument at the Bank of England for reducing global imbalances is that countries could focus more on liberalising trade in services. The countries that tend to have the largest trade deficits in goods, such as the United States, also tend to have a comparative advantage in the export of services. Liberalisation of services trade would help some economies reduce their trade deficits –

Mark Carney, Governor of the Bank of England and Chair of the Financial Stability Board, interviewed 16 February 2018

G20 leaders tasked finance ministers and central bank governors to develop indicative guidelines to identify the nature and root causes of global imbalances. They used the G20's mutual assessment process

⁵In 2003, the G7 warned there were significant risks posed by large imbalances between countries. In 2004, the European Central Bank voiced concern that the large and growing current account deficit in the United States posed significant risks for global financial stability. In 2005, Alan Greenspan added his voice to these concerns, warning that the US current account deficit “could not widen forever.” In June 2007, the IMF's first multilateral consultation looked at this issue. Talks included China, the euro area, Japan, Saudi Arabia and the United States. All countries agreed that reducing global imbalances was a multilateral challenge and that resolving them in a manner compatible with sustained growth was a shared responsibility. They stressed that an orderly unwinding of imbalances was in the interest of the world economy, including because sustained imbalances in trade and current accounts could result in a sharp rise in protectionism.

to develop and monitor country-specific commitments to reduce these imbalances overtime. The imbalances they identified included public debt and deficits as well as private saving and private debt.⁶ But over time, the G20's concern has been primarily focused on current accounts and, more specifically, on three countries, and three policy recommendations, in particular (G20, 2010).

I set out to President Obama what I meant by a global compact to which each continent would sign up. That would require coordinated action: first on imbalances, then on currency reserves, then on monetary and fiscal policies, and then, if possible, on trade –
Gordon Brown, former Prime Minister of the United Kingdom⁷

The first policy prescription from the G20 relates to the United States and its growing fiscal deficit. Among other things, it was argued that the fiscal deficit has acted to reduce national savings in the United States, worsening its large current account deficit, shown in Figure 1.

The second relates to Germany and what the IMF (2017b) argues is insufficient government spending on infrastructure. Reduced government spending means higher national savings, lower investment and a larger current account surplus. Many have also argued that increased spending in Germany would help with the economic recovery in the euro zone periphery (see Krugman, 2017).

The third relates to China and its low level of consumption as a percentage of GDP. While China's current account surplus has narrowed significantly since 2007 (discussed in the following section), the Chinese government and the G20 remain focused on the need to rebalance the Chinese economy to increase domestic consumption and reduce savings which, in turn, means a smaller current account surplus.

How successful has the G20 been in reducing global imbalances? Have the discussions and commitments in the G20 changed the domestic policies of G20 countries or did countries simply do what they would have done anyway? And, if the G20 did implement its agenda, has it identified the right policies? Would these policies reduce global current account imbalances if they were implemented and, if so, at what cost?

To answer these questions, Section 22 starts by looking at the trends in global current account imbalances since 2000. It looks at whether the G20 has been successful in reducing global current account imbalances and which countries have done the heavy lifting.

Section 33 explores whether the G20's policy agenda is the right one for reducing global imbalances and whether it might result in any unintended consequences. It introduces the G-Cubed (G20) model: a multi-country, multi-sector, intertemporal computable general equilibrium model, detailed in McKibbin and Triggs (2018). Using this model, Section 33 simulates the impact of fiscal consolidation in the United States, increased infrastructure investment in Germany, increased consumption in China and the impact of all three policies occurring simultaneously. It shows that the G20's agenda does not necessarily achieve the desired outcome of reducing global current account imbalances, depending on how the reforms are sequenced. Furthermore, when imbalances are reduced, this often comes at the cost of the real economy. The results also provide a compelling explanation for some of the shifts in global current accounts that have been observed since 2007.

⁶They also identified the key culprits in each of these areas. These were China (high private saving and external surplus), France (high external deficit and public debt), Germany (high public debt and external surplus), India (high private saving and fiscal deficits), Japan (high public debt and private saving), the United States (large fiscal and external deficits), the United Kingdom (low private saving and high public debt), the euro area (external surplus and public sector debt) and Spain (external surplus and high public sector debt).

⁷Brown (2010).

Section 44 then uses the results from in-depth interviews with 61 politicians and officials from across all G20 countries to explore whether the G20's agenda on global imbalances has influenced domestic policies or not. Participants included Kevin Rudd, Janet Yellen, Haruhiko Kuroda, Ben Bernanke, Jack Lew, Mark Carney and 55 other politicians and officials to whom I am deeply grateful. The results suggest the G20's influence has not been strong. However, the results highlight several ways in which the G20's influence could be strengthened. Section 55 concludes with a discussion on how the G20's agenda could be reformed to reduce global imbalances into the future.

2 | HAS THE G20 REDUCED GLOBAL CURRENT ACCOUNT IMBALANCES?

Countries agreed that trade imbalances were a potential source of instability, and economic reforms were needed to bring them down before markets took fright or politicians decided to enter the fray with protectionist measures. But each economy was quick to point out why it was not responsible for the imbalances and why it would be so much easier for some other country to push a magic button to make them disappear. The truth was that everyone contributed in some way to the problem, but no one wanted to be part of the solution.

Raguram Rajan, former Governor of the Reserve Bank of India⁸

By definition, the value of the world's current account surpluses will equal the value of the world's current account deficits. The size of current account imbalances among G20 economies can therefore be measured by summing-up the absolute values of each economy's current account balance. A large number implies a large imbalance. A small number implies a small imbalance.

The results are shown in Figure 2, which are presented as a per cent of G20 GDP since the concern is around the size of current account balances relative to the G20 as a whole rather than to each economy domestically. Figure 2 shows that global current account imbalances grew by more than 50% from 2000 to 2008. But the onset of the global financial crisis saw them reduce significantly. From the start of the crisis in 2008 through to 2011, these imbalances fell by 40%. Since then, however, these imbalances have grown once again. From their lowest point in 2011 through to 2018, global current account imbalances have grown by 32%.

Figure 3 shows the current account balances for the G20 countries which have the top 10 largest surpluses or deficits as a per cent of G20 GDP. It shows that the composition of the G20's current account imbalances has shifted significantly since 2000. Before the crisis, the United States had a dominant current account deficit. In 2006, the United States deficit was, in absolute terms, larger than the current account surpluses of China, Japan, Germany, Russia and Canada, combined. The world economy also saw a significant increase in current account surpluses from 2000 to 2008. China's current account surplus grew more than 10-fold over this period and Germany's surplus grew by more than fourfold.

The crisis not only saw a sizeable shrinking in the current accounts in many countries, but also a shift in composition in the imbalances between G20 economies. The deficit of the United States shrunk by more than a third from 2008 to 2018. China's surplus shrank by two-thirds. The surplus in Germany, however, did not shrink at all. Rather, it grew a further 20%. Germany now has the largest current account surplus of any G20 economy. The world's major current account surpluses have also shifted geographically. In 2007, the largest surpluses were in East Asia, whereas in 2018, they were in Europe.

⁸Rajan (2010).

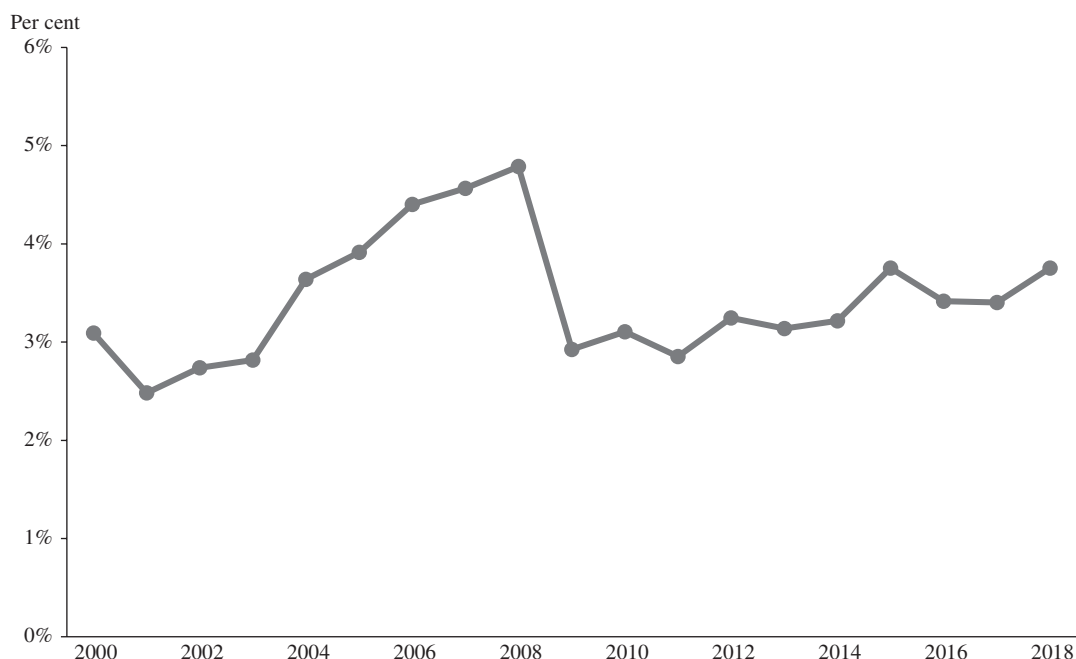


FIGURE 2 The sum of the absolute value of current accounts across the G20 (% of G20 GDP).

Source: IMF world economic outlook database, April 2018

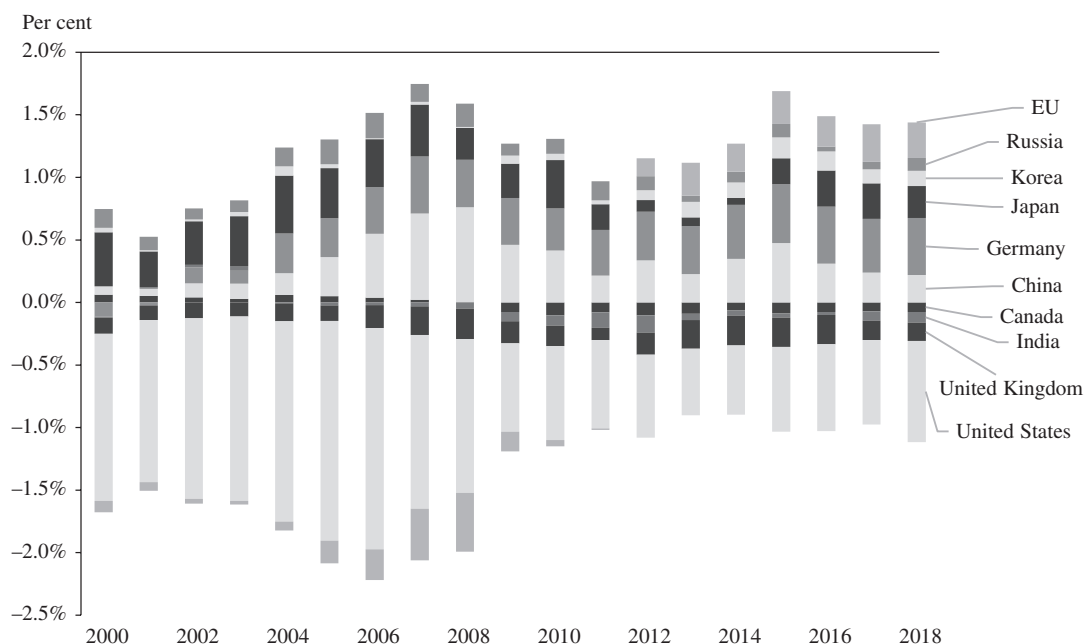


FIGURE 3 G20 countries with the 10 largest current account surpluses or deficits (% G20 GDP).

Source: IMF world economic outlook database, April 2018

Was the G20 successful in reducing global imbalances? Figures 2 and 3 show that global current account imbalances were indeed reduced following the global financial crisis. But there are two reasons why this does not necessarily mean the G20 has been successful.

The first is that, as shown in Figure 2, global current account imbalances have re-emerged since 2011. While they are not quite at their pre-crisis levels, they have grown by around a third and are forecast to grow further. Sester (2016) shows that, if the world's major current account surplus and deficit economies are included (rather than the G20 economies as in Figure 2), global current account imbalances are already back at their pre-crisis levels.

The second issue is that, even if global imbalances were reduced following the crisis, it is not clear that the G20 was responsible for this. The IMF has been tracking the policy progress of G20 economies in reducing current account imbalances since the early 2000s. It concluded in 2017 that much of the reduction in global current account imbalances since 2008 was the result of compressed demand in the advanced economies caused by the global financial crisis, rather than being result of policy changes among G20 economies (IMF, 2017a). The IMF notes that, despite some progress, public debt and/or deficits remain high in many advanced economies (Figures 4 and 5) and most economies are moving in the wrong directions on household savings (Figure 6) and household debt (Figure 7). The IMF (2017b) notes, however, that some individual economies have made progress in policy reform, particularly China through the rebalancing of its economy.

Some of the biggest external imbalances did adjust in the context of the slowdown in major economies: imports collapsed. So, the problem went away, but not for a good reason, and now we have imbalances widening again. Unfortunately, the major players don't really like the issue to be discussed in the context of the G20 –

Catherine Mann, former Chief Economist of the OECD, interviewed 11 April 2017

In sum, while global current account imbalances were reduced after the crisis, they are on the rise once again. Furthermore, the reduction that was achieved post-crisis appears to be primarily because of compressed demand rather than G20 policy changes. While some countries, such as China, have adjusted their policies, there is less evidence of this from the G20 as a whole. The question for the following section is whether the G20's policy prescriptions for reducing these global imbalances are the right ones in the first place.

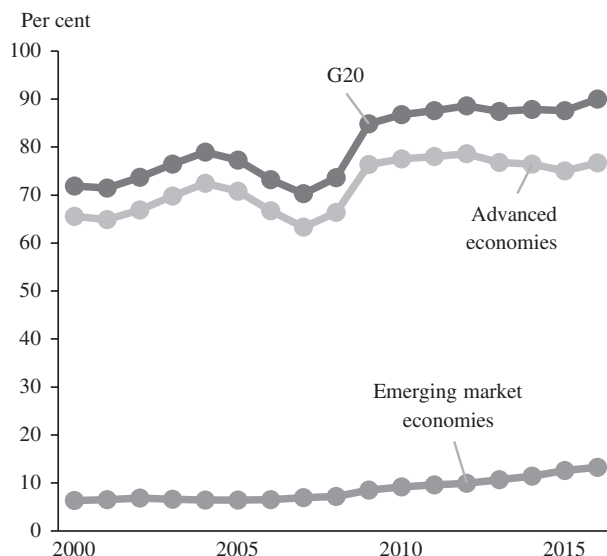


FIGURE 4 Gross debt as a per cent of world GDP.

Source: IMF World Economic Outlook database October 2017

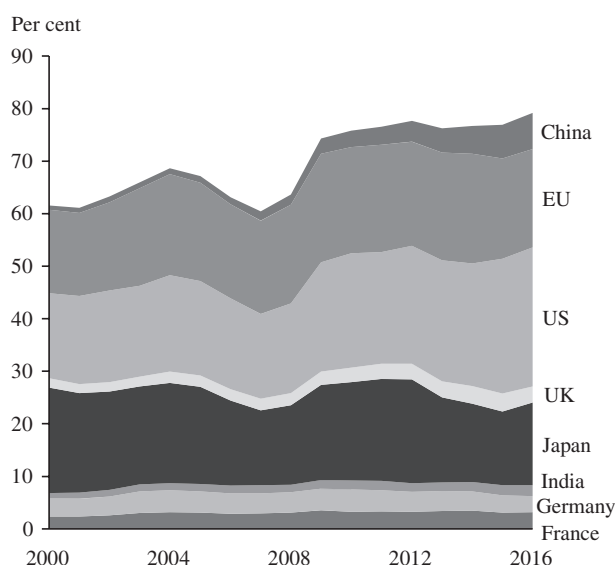


FIGURE 5 Gross debt of eight IMF-identified economies as a per cent of world GDP

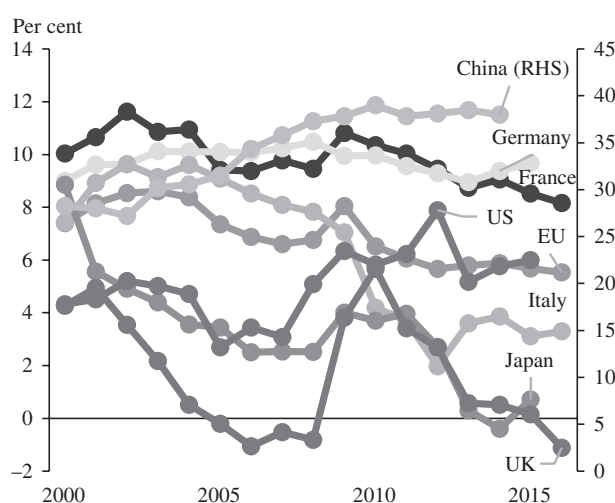


FIGURE 6 Savings as a per cent of household disposable income.

Source: OECD, Household savings, 2016; Bank for International Settlements, Credit to the non-financial sector, 2016

3 | POLICIES TO REDUCE GLOBAL IMBALANCES

The G20's policy prescriptions for reducing global current account imbalances has tended to focus on three issues and three countries in particular:⁹ fiscal consolidation in the United States, increased public infrastructure investment in Germany and increased domestic consumption in China. This section uses the G-Cubed (G20) model to simulate each of these policies individually, and then the implementation of these policies collectively, to explore whether they are effective in reducing global current

⁹The analysis in this section is extracted from McKibbin and Triggs (2018)

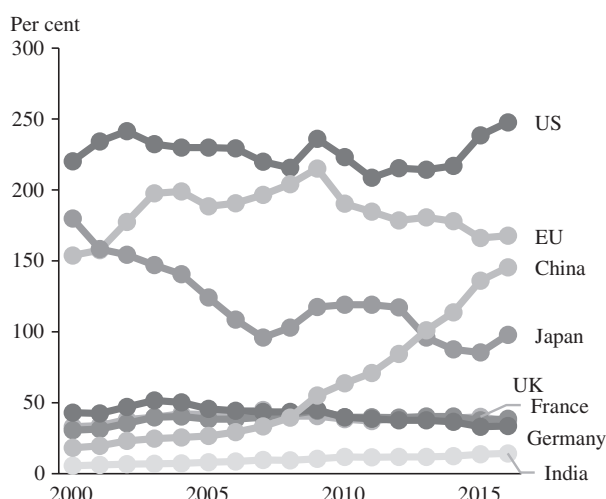


FIGURE 7 Household debt: Total credit to the Non-financial sector as % of world GDP.

Source: OECD, Household savings, 2016; Bank for International Settlements, Credit to the non-financial sector, 2016

account imbalances and, if so, at what cost. First, however, Section 3.13.1 gives an overview of the model, further details on which are available in McKibbin and Triggs (2018).

3.1 | Overview of the G-Cubed model

The G-Cubed (G20) model is a multi-country, multi-sector, intertemporal general equilibrium model. It is designed to bridge the gaps between three areas of research – econometric general equilibrium modelling, international trade theory and modern macroeconomics – by incorporating the best features of each.

Several versions of the model have been developed, which have been incrementally improved and built-on over many years. The version presented in this paper is the newest, and largest, version of the G-Cubed model, designed specifically to study the G20 and the implications of its policy agenda. Previous versions of G-Cubed have been used to study a range of policy areas, including macroeconomic cooperation, international trade, monetary policy, fiscal policy, tax reform and environmental regulation. Studies have shown the effectiveness of G-Cubed in explaining the adjustment process in a number of historical episodes, including Reaganomics, German reunification, European fiscal consolidation in the 1990s, the formation of NAFTA and the Asian financial crisis. G-Cubed has also proven successful in helping to explain the “six major puzzles in international macroeconomics” highlighted in Obstfeld and Rogoff in a 2000 paper.¹⁰ It has also proven useful in understanding the 2009 Global Financial Crisis.¹¹

¹⁰See McKibbin and Vines (2000). Those six puzzles were as follows: (a) the bias in trade towards consuming home goods; (b) the own-country bias in ownership of financial assets; (c) the Feldstein–Horioka result that there is a high correlation between national saving and national investment spending; (d) the international consumption–correlations puzzle — low correlation between growth in consumption across countries — which is also expressed as the puzzle that output growth seems to be more highly correlated than consumption growth across countries; (e) the apparent breakdown of purchasing power parity in the short to medium term or the persistence of changes in real exchange rates; and (f) the “exchange rate disconnect puzzle” — shown by the apparent disconnect between exchange rates and underlying macroeconomic variables.

¹¹See McKibbin and Stoeckel (2018).

The G-Cubed (G20) model represents the world as 24 autonomous blocks: one for each G20 economy (including the rest of the euro zone) and four regions which represent the world's non-G20 economies. These are: the other economies of the OECD, the other economies of Asia, the other oil-producing economies and a catch-all “rest of the world” (Table 1). Each region in G-Cubed is represented by its own multi-sector econometric general equilibrium model with highly disaggregated, multi-sectoral flows of goods and assets between them.

Each region has six industries, which correspond to the production of six goods: energy, mining, agriculture (including fishing and hunting), durable manufacturing, non-durable manufacturing and services. Each good in a region is an imperfect substitute for goods from other regions. Thus, there are effectively 144 goods.

Each country consists of six representative firms, a representative household and a government. The model also includes markets for goods and services, factors of production, money and financial assets (bonds, equities and foreign exchange). Finally, each country or region is linked through the flows of goods and assets. Some of the key features of the G-Cubed (G20) model are as follows:

- Specification of the demand and supply sides of economies.
- Integration of real and financial markets of these economies with explicit arbitrage linking real and financial rates of return.
- Intertemporal accounting of stocks and flows of real resources and financial assets.

TABLE 1 Overview of the G-Cubed (G20) model

<i>Countries (20)</i>	<i>Regions (4)</i>
Argentina	Rest of the OECD
Australia	Rest of Asia
Brazil	Other oil-producing countries
Canada	Rest of the world
China	
Rest of Euro zone	<i>Sectors (6)</i>
France	Energy
Germany	Mining
Indonesia	Agriculture (including fishing and hunting)
India	Durable manufacturing
Italy	Non-durable manufacturing
Japan	Services
Korea	
Mexico	<i>Economic Agents in each Country (3)</i>
Russia	A representative household
Saudi Arabia	A representative firm (in each of the 6 production sectors)
South Africa	Government
Turkey	
United Kingdom	
United States	

- Imposition of intertemporal budget constraints so that agents and countries cannot borrow or lend forever without undertaking the required resource transfers necessary to service outstanding liabilities.
- Short-run behaviour is a weighted average of neoclassical optimising behaviour based on expected future income streams and Keynesian current income.
- The real side of the model is disaggregated to allow for production of multiple goods and services within economies.
- International trade in goods, services and financial assets.
- Full short-run and long-run macroeconomic closure with macrodynamics at an annual frequency around a long-run Solow–Swan–Ramsey neoclassical growth model.
- The model is solved for a full rational–expectations equilibrium (consisting of a mix of rational and rule-of-thumb agents) at an annual frequency from 2015 to 2100.

The model is based on explicit optimisation by firms and households. But the behaviour of firms and households is modified to allow for short-run deviations from optimal behaviour. This could be interpreted as near-sightedness in their decision-making or be due to liquidity constraints on the ability of some firms and households to borrow. These deviations take the form of rules of thumb, which are consistent with an optimising agent that does not update predictions based on new information about future events.

As the below simulations will highlight, these rules of thumb generate the same steady-state behaviour as optimising agents so that, in the long-run, there is only a single intertemporal optimising equilibrium of the model. Short-run behaviour, however, is assumed to be a weighted average of the optimising agents and the rule-of-thumb agents. This allows the model to reflect the inertia observed empirically in investment and consumption decisions (see McKibbin & Sachs, 1991).

For households, aggregate consumption is therefore a weighted average of consumption based on wealth (current asset valuation and expected future after-tax labour income) and consumption based on current disposable income. For firms, aggregate investment is therefore a weighted average of investment which, in turn, is based on Tobin's q (market valuation of the expected future change in the marginal product of capital relative to the cost) and is based on a gradually learning Tobin's q , which partially adjusts to the forward-looking Tobin's q (for rule-of-thumb firms).

The following sections will elaborate further on some of these key features of the model, and further details are available in McKibbin and Triggs (2018). Sections 3.23.2, 3.33.3 and 3.43.4 will consider each the G20's policies for reducing global current account imbalances individually. Section 3.53.5 will then consider the collective impact of these policies should they be implemented simultaneously. Section 3.63.6 will summarise some of the key conclusions that flow from this analysis.

3.2 | The United States: A reduction in the fiscal deficit

The tax cuts and proposed infrastructure plan from the Trump administration in 2017 and 2018 has brought the US fiscal deficit into sharp focus. Although the fiscal deficit is forecast to worsen (see Congressional Budget Office, 2017), fiscal sustainability in the United States has been an issue and concern for many years. It has also been a consistent focus of the G20, particularly on the issue of reducing global current account imbalances (G20, 2010).

The G20's focus on the US fiscal deficit does, however, miss much of the story when it comes to the US current account deficit. The US current account deficit is driven primarily by the savings and investment decisions of US firms and households, rather than the government. The deficit has also been driven by global investors' "flight to quality assets" and shifts in investment portfolios towards dollar-denominated assets (see Greene, 2018; Mann, 1999; Pettis, 2018; Stiglitz, 2018). The purpose



of this section, however, is to explore whether the G20's policy prescription of reducing the US fiscal deficit will be successful in reducing the US current account deficit and what the broader implications of such a policy might be.

This section simulates the implications of having the United States reduce its deficit. It is assumed that the smaller deficit is achieved by a 5% reduction in government spending, rather than tax increases. It is assumed that spending is reduced on goods and services, rather than infrastructure or other investments that would boost productivity (the simulation for Germany, in Section 3.33.3, considers the situation where changes in fiscal policy also impacts productivity). The cut to spending is also assumed to be both immediate and permanent. The implications of these assumptions are discussed below.

Figures 8–13 highlight the key results. As would be expected, the reduction in government spending has a significant effect in reducing the size of the US fiscal deficit, which is 4.5% below the baseline or the “business-as-usual” case (Figure 8). However, there are significant short-term and long-term effects from this policy for the US economy.

Investment contracts by 1% in the first year as firms respond to weaker aggregate demand caused by the sudden fiscal withdrawal (Figure 9). But the long-term implication of this policy is a more favourable, lower-tax environment for business into the future. Forward-looking firms respond by increasing investment above the baseline by the third year, with investment 1.5% higher in the longer term. Lower real interest rates (Figure 10) also boost investment as savings previously locked-up in government debt are now available to finance the supply side of the economy.

Consumption is higher because of reduced government spending: by 0.75% in the second year and up to 2.5% by 2030 (Figure 11). Forward-looking households anticipate higher wealth in the future due to lower future taxes and a stronger economy. They adjust their intertemporal consumption decisions and bring forward future consumption, facilitated by lower real interest rates which encourages higher consumption today.

Since consumption and investment are its largest components, the response of US GDP is not surprising. Figure 12 shows a familiar Keynesian response from reduced government spending. GDP initially contracts by 1.75% as government spending is withdrawn from the economy. But as savings are released from government debt to finance the supply side of the economy, GDP is 1% larger in the longer term relative to the baseline, with a permanently larger capital stock.

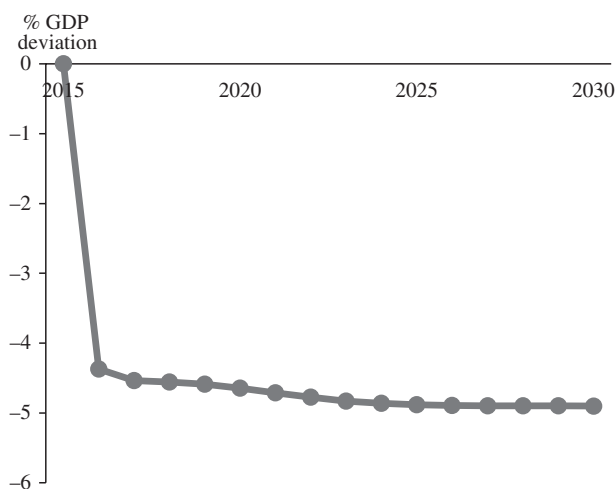


FIGURE 8 US fiscal deficit

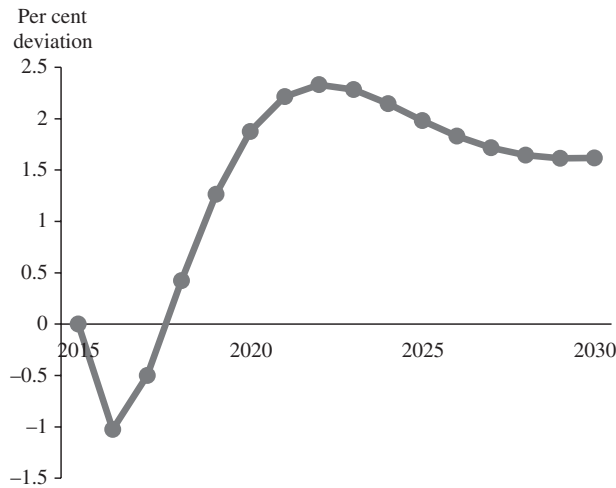


FIGURE 9 US investment

Much of the transition from this policy, particularly the impact on other countries, can be explained by what happens to interest rates, capital flows and exchange rates. Permanently lower interest rates in the United States result in financial capital flowing out of the United States to obtain higher returns overseas. This helps explain the fall in US investment, but also acts to depreciate the US exchange rate.

For the United States, because its exports are now relatively cheaper to those of other countries, a depreciated exchange rate means an improved trade and current account balance of 4.5% in the first year (Figure 13). However, for other countries, a weaker US exchange rate means a weakened trade and current account balance since these countries now have a relatively appreciated currency against the United States.

The impacts on other G20 economies are similar to what you would expect from a gravity model: the countries which trade the most with the United States tend to be the most significantly impacted. The exchange rates of Canada and Mexico, for example, appreciate by 3.5% in the first year (Figure 14). As a result, their trade balances worsen by between 1% and 2% (Figure 15).

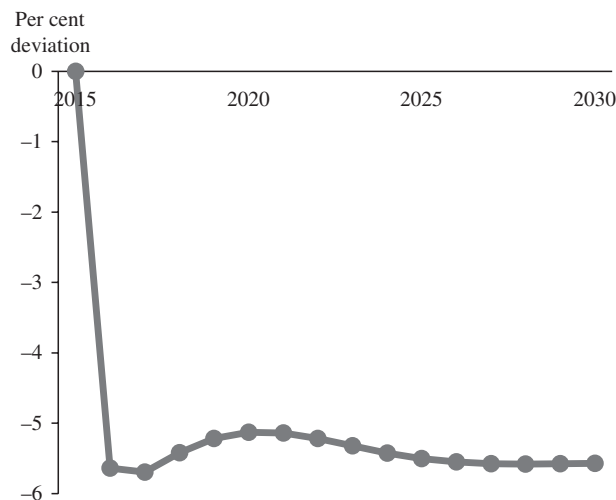


FIGURE 10 US real interest rates, short run

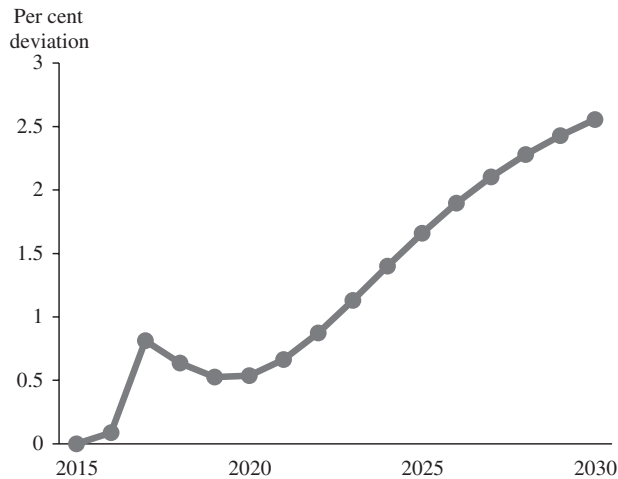


FIGURE 11 US consumption

The effects for China, the largest trading partner of the United States, are more muted because of its exchange rate policy. This is where G-Cubed is particularly useful in understanding differentiated impacts on economies based on their relative differences. China manages its exchange rate against a basket of currencies, which is reflected in the Henderson–McKibbin–Taylor rule for China in G-Cubed. As the US dollar depreciates, Chinese authorities loosen monetary policy to achieve their exchange rate target, which, in turn, stimulates investment in China through lower interest rates and boosts GDP more than other countries (see Figure 16).

For countries negatively affected by a weaker US currency, some of the negative impacts on their trade balance is offset by improvements in investment (Figure 17). Investment in Germany, Canada and Mexico increase by 0.9%, 1% and 1.4%, respectively, as capital flows into these economies from the United States to enjoy higher returns and as the firms in these countries respond to lower global interest rates.

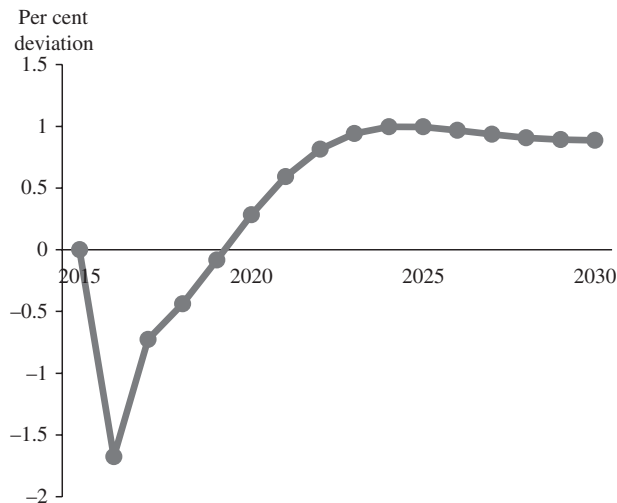


FIGURE 12 US real GDP

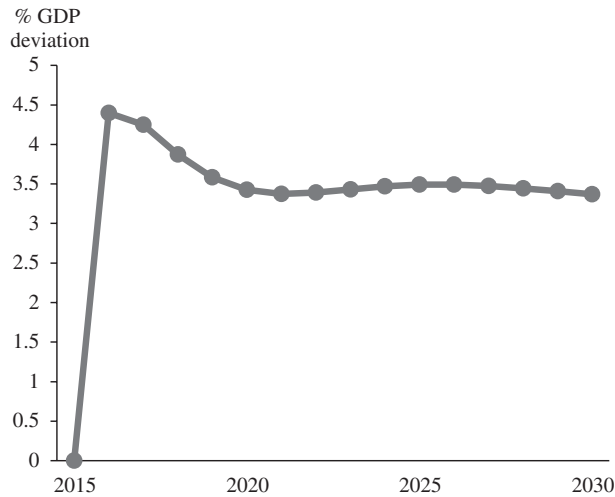


FIGURE 13 US current account balance

The overall impact on other countries' GDP is generally similar to that of the United States, but for different reasons (Figure 18). There is an initial drop in GDP for most G20 economies which is driven by a weakened trade balance, but the increase in investment from capital inflows and lower real interest rates means a permanently larger capital stock which boosts GDP in the long run.

Of key importance for the G20's agenda is what happens to current accounts, particularly for Germany and China. The current account balances of both China and Germany decline from the United States reducing its deficit. For Germany, it declines by 0.4% in the first year and steadily declines thereafter: it is up to 0.7% below the baseline by 2030. China sees a 1% reduction in the first year, which rebounds through exchange rate and investment effects, but then settles back to be 1% below the baseline in 2030 (Figure 19).

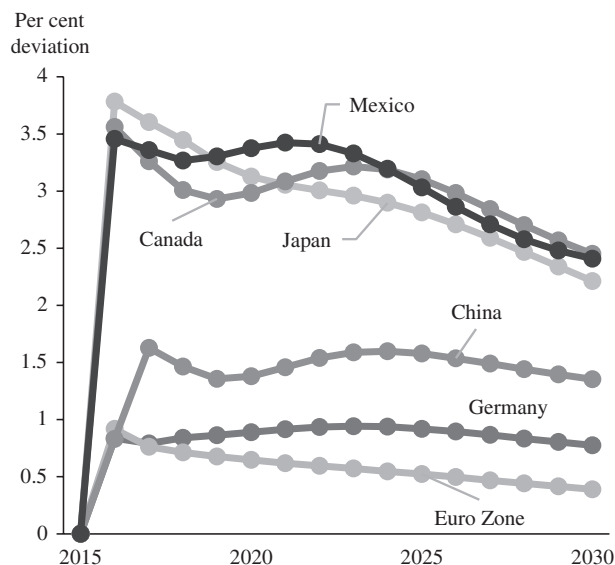


FIGURE 14 Real effective exchange rates

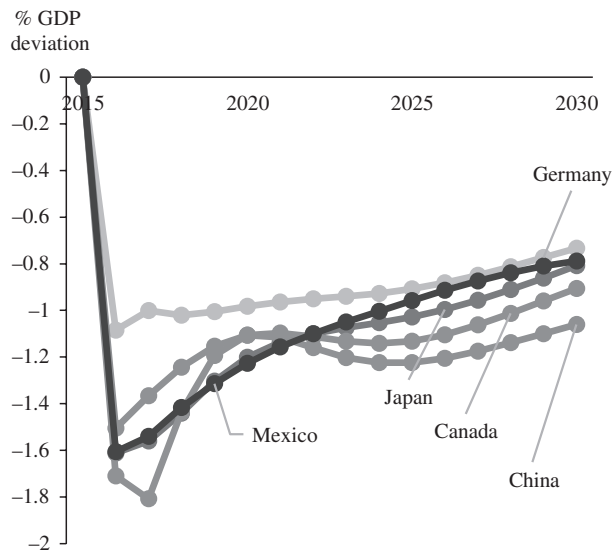


FIGURE 15 Trade balance

Several important insights flow from this analysis. The first is that the US fiscal deficit plays a critical role in both the size of the US trade deficit and global current account imbalances. This is an important consideration in the current political climate where the Trump Administration is undertaking fiscal stimulus while simultaneously lamenting the size of the US trade deficit. This analysis highlights the links between these two variables: that increasing the size of the US fiscal deficit will not only increase the size of the US trade deficit but will also increase the size of the trade surpluses in Germany and China.

The second insight, which flows logically from the first, is that the United States can do a lot to reduce its trade and current account imbalances with Germany and China by acting unilaterally. Although these imbalances are referred to as being “global”, the United States could do much to

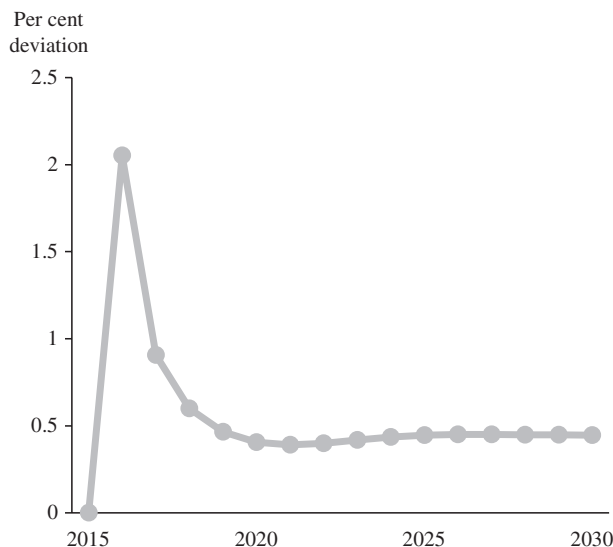


FIGURE 16 China GDP

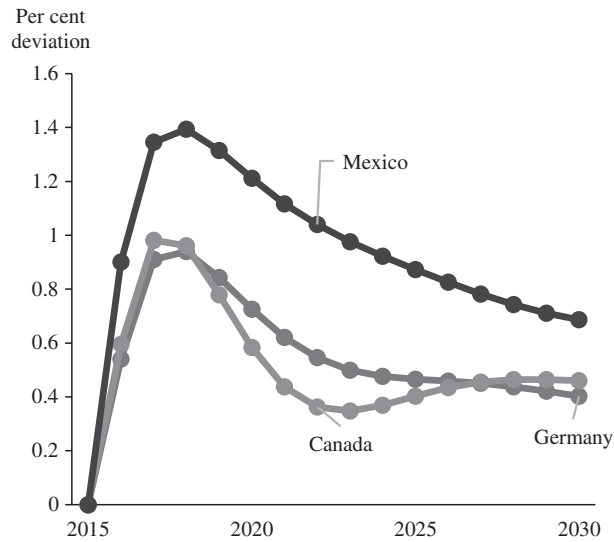


FIGURE 17 Investment

reduce its contribution to them, as well as the contributions of Germany and China, by reducing its fiscal deficit.

3.3 | Germany: An increase in public investment

Figure 3 shows that Germany has the largest current account surplus in the G20. This has prompted many, particularly the IMF (2017b), to recommend that Germany increase its public investment in infrastructure to boost growth, raise productivity and help reduce its contribution to global current account imbalances.

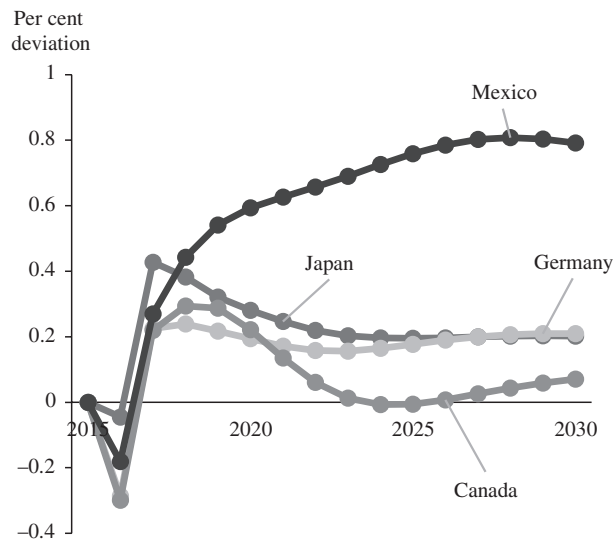


FIGURE 18 Real GDP

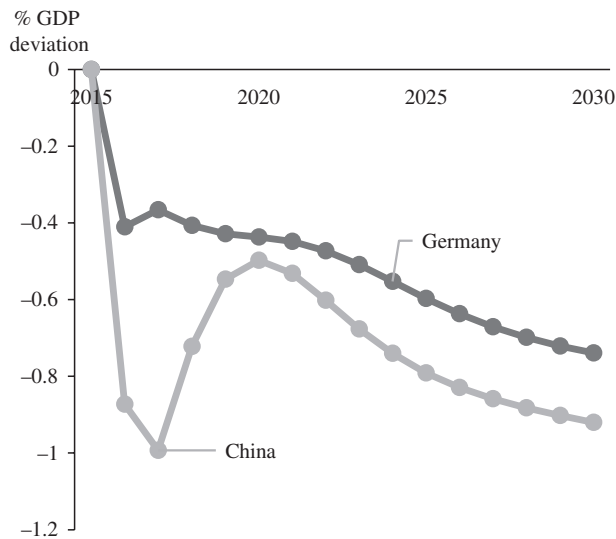


FIGURE 19 Germany and China current accounts

The empirical evidence suggests that increasing the stock of quality infrastructure increases the marginal product inputs into private sector production (see McKibbin, Stoeckel, & Lu, 2012). In the G-Cubed model, an increase in infrastructure investment would show up as an increase in labour augmenting technical change, coupled with a commensurate increase in government spending (assuming the infrastructure is publicly financed) to pay for it.

The simulation below is based on an econometric finding from Calderón Moral-Benito and Servén (2015). They found that for every 10% increase in the stock of infrastructure capital, productivity in private sector output rises by 0.8%. This section uses the IMF's Investment and Capital Stock database to calculate the size of Germany's infrastructure capital stock as well as the fiscal implications of increasing it. It then models, a scenario where Germany increases the size of its infrastructure capital stock by 10% over 15 years. For simplicity, this section assumes the 0.8% improvement in productivity and the fiscal cost incurred by the government occur simultaneously. This means that, in each year for 15 years, productivity is immediately 0.8% higher than the baseline and that government spending as a per cent of GDP is 1.4% higher than the baseline (such that, after 15 years, the infrastructure has been completely paid-off and government spending returns to normal).

The results for Germany from this productivity and spending shock are illustrated in Figures 20–23. The most notable impact is the increase in private sector investment, which does not include the increase in government investment (Figure 20). Investment increases by over 3% in the second year and, in the longer term, is around 0.5% higher than the baseline.

It is useful to break down this shock into its two components. The effect of an increase in government spending, alone, would see a temporary increase in investment as firms respond to higher growth in the short term but, in the longer term, would see investment below the baseline due to a less favourable future business environment and higher taxes to fund the increase in spending (essentially the reverse of the US fiscal consolidation scenario discussed above). But this is not the case when the increase in government spending also boosts productivity. Higher productivity means firms can now produce more with less, and are more profitable and more internationally competitive. This means the short-term increase in investment is larger, but investment also remains above the baseline into the longer term.

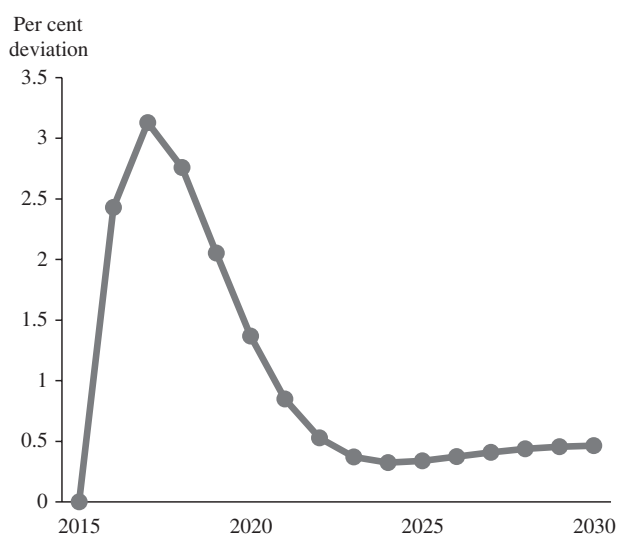


FIGURE 20 German investment

As the demand for investment rises, so too does demand for workers which, along with higher productivity, results in higher real wages. Both backward-looking (rule of thumb) and forward-looking households respond to higher wages by increasing consumption, and forward-looking consumers bring forward more consumption from the future to the present. Consumption is 0.7% higher in the first year and permanently higher in the longer run (Figure 21).

But the savings to finance this increase in investment must come from somewhere. Perfectly mobile financial capital means savings flow in from overseas. But the inflow of this capital appreciates Germany's real exchange rate by 0.7% in the first year and Germany's overall trade balance declines by 2.5%, steadily returning to around 0.5% below the baseline (Figure 22). Hence, the boost in investment in Germany is partially offset by the weakening trade balance.

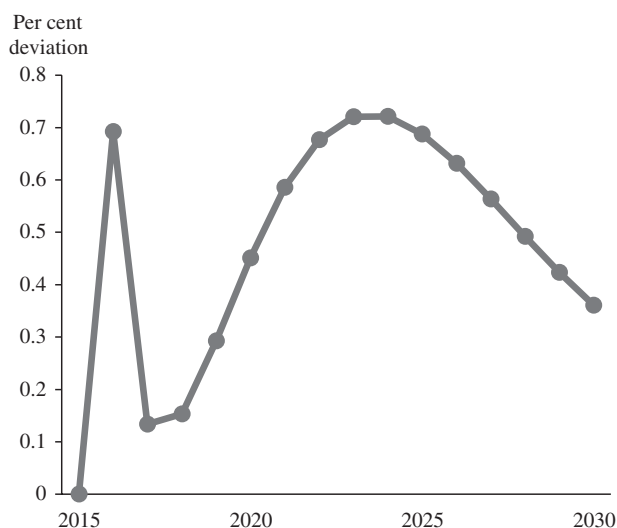


FIGURE 21 German consumption

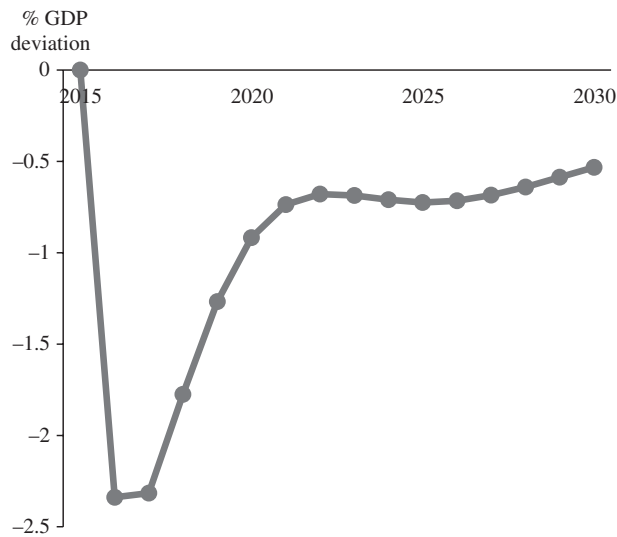


FIGURE 22 German trade balance

The overall effect on Germany's GDP is, unsurprisingly, positive given productivity is permanently higher (Figure 23). GDP is 2.5% larger in the third year and 1.75% larger than the baseline in the longer term. Had this been only a fiscal stimulus shock, GDP would have looked more like the inverse of the US case discussed above: a short-term sugar-hit for increased government spending but a longer-term negative effect as savings are taken from the supply side of the economy to finance government debt. But because the increased spending boosts productivity, longer-run GDP remains above the baseline.

But the critical question is what effect this policy has on other countries and on global imbalances. The immediate effect is through the exchange rate. An appreciated euro means relatively weaker currencies for Germany's trading partners, which, as a result, enjoy a boost to their trade balance (Figure 24).

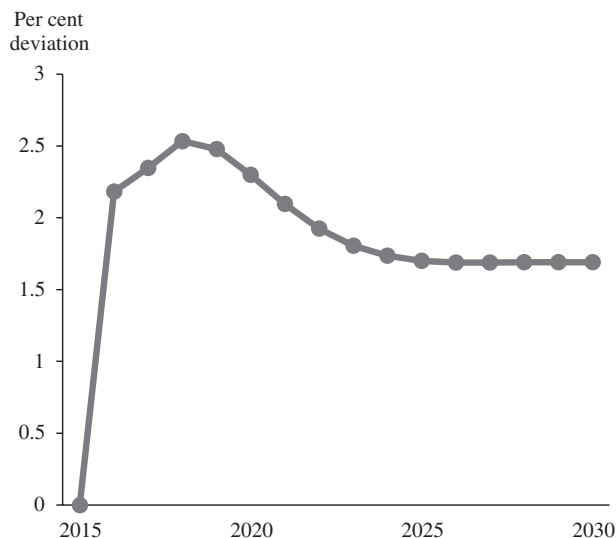


FIGURE 23 German real GDP

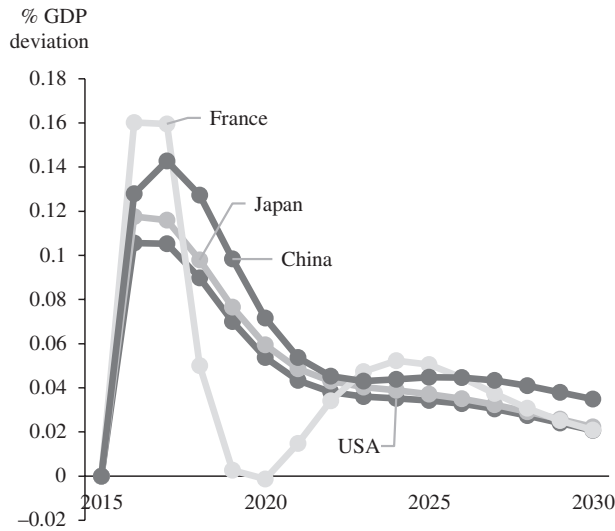


FIGURE 24 Trade balance

But the consequence of savings flowing out of their economies and into Germany means higher real interest rates and a contraction in investment (Figure 25). The overall effect on GDP for other countries is mostly negative (Figure 26). The negative effect on GDP is particularly pronounced for France, Italy and the rest of the Euro Zone (Figure 27). Due to the common currency they share with Germany, these countries also experience an appreciated exchange rate and a sharper outflow of capital but, unlike Germany, do not receive the benefits of higher productivity and fiscal stimulus (Figure 27).

The story for global current account imbalances is one in which Germany's current account balance worsens by more than 2% in the near term and is permanently 1% below the baseline in the long term (Figure 28). While the current account balance of the United States improves, it does so only marginally, and so does China's (Figure 29).

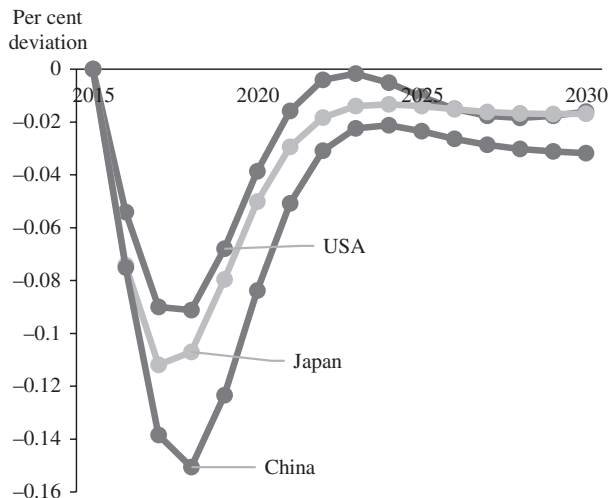


FIGURE 25 Investment

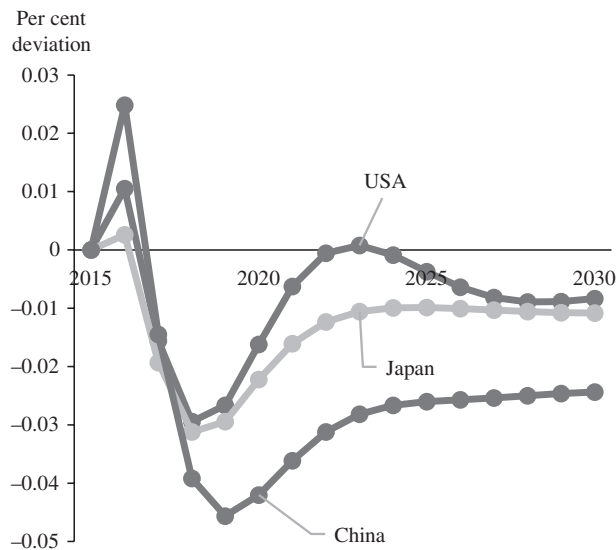


FIGURE 26 Real GDP

The critical insight which flows from this analysis is that, while Germany's current account surplus may be successfully reduced by this policy, this reduction has not come at the benefit of the United States – a key advocate for this policy in the G20. Not only is the benefit to the US current account marginal, but also to the US GDP, investment and consumption contract because of this policy. While the United States may celebrate a political victory for a reduced German current account balance, it does so at the cost of the US economy. This insight flows from the general equilibrium nature of the G-Cubed model in which there are “no free lunches.” When resources are reallocated from one part of an economy to another, there are financial and real economic consequences which tend to be ignored by partial equilibrium analysis or models that do not reflect both the real and financial sectors of the economy.

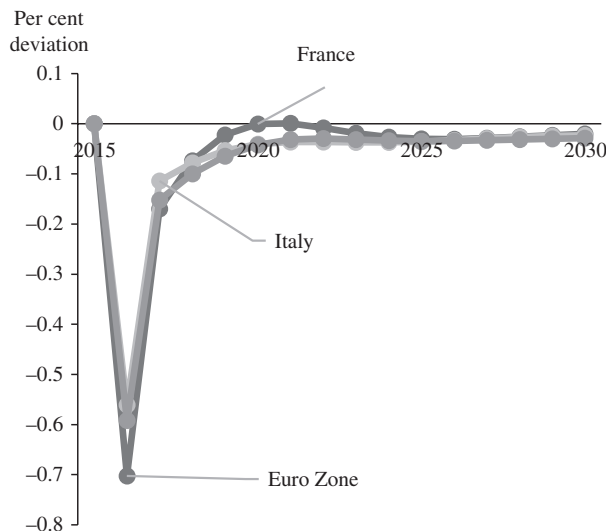


FIGURE 27 France, Italy, Euro Zone GDP

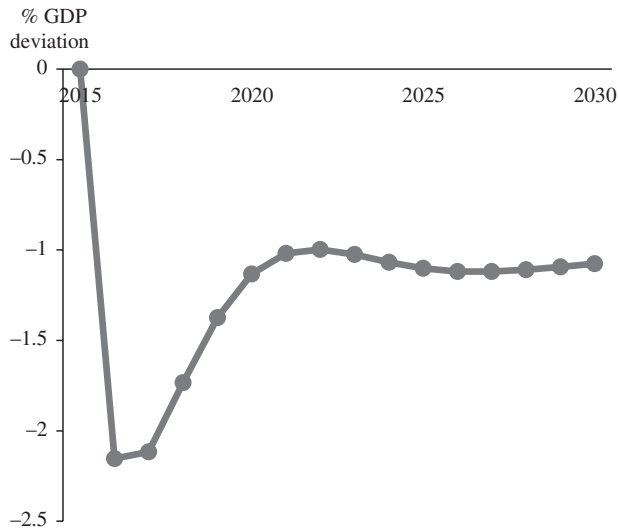


FIGURE 28 German current account

3.4 | Increased domestic consumption in China

Now consider the final reform often advocated by the G20 to reduce global current account imbalances: increasing domestic consumption in China.

Consumption as a per cent of GDP is lower in China than any other G20 country (Figure 30). Given China is a full 15 percentage points below the G20 average, this section simulates a less dramatic policy shock where consumption in China increases to the average level among East Asian and Pacific countries (implying a 10 percentage point increase).

This is modelled as an exogenous shock to consumption which can be thought of as the result of some undefined policy in China. This allows us to explore how consumption shocks are reflected in the G-Cubed model as well as the pertinent question of whether this achieves the G20's objective

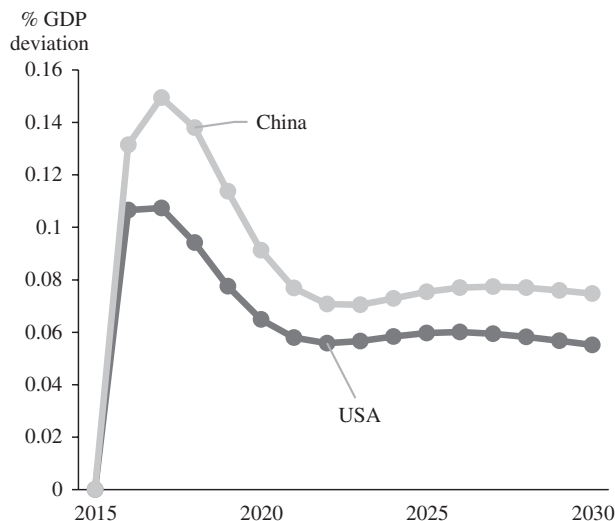


FIGURE 29 Current account: US and China

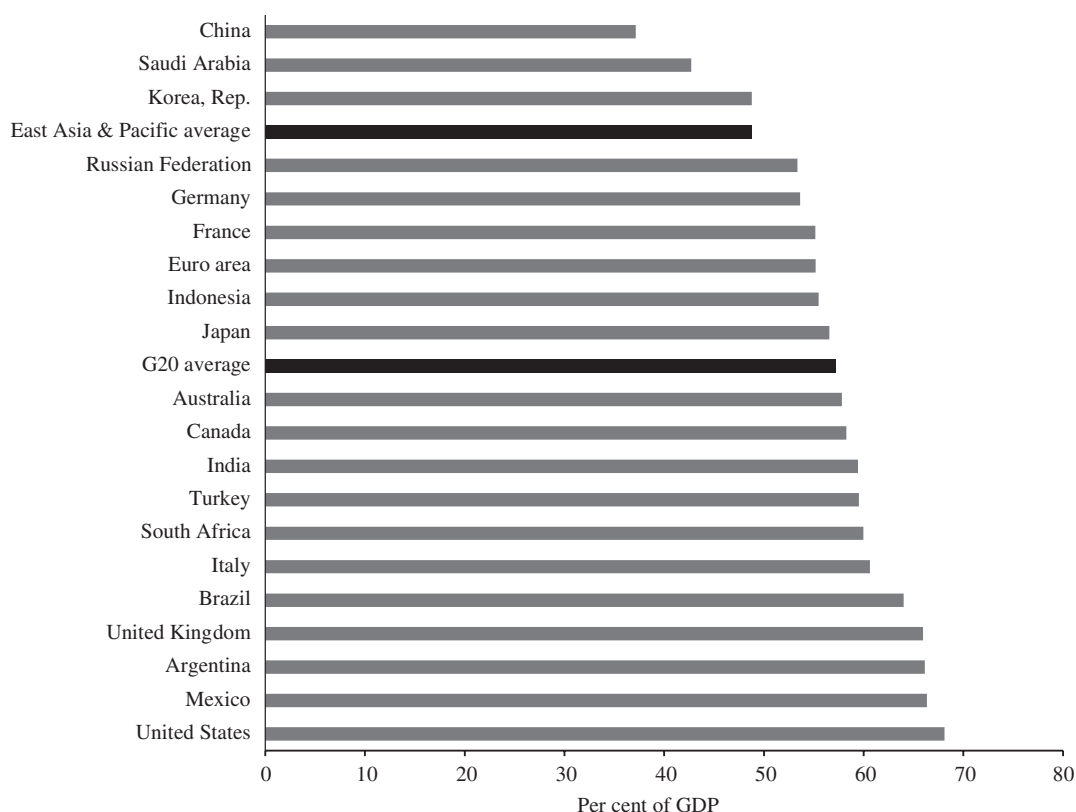


FIGURE 30 Consumption as a per cent of GDP for G20 countries.

Source: IMF world economic outlook database, October 2017

of reducing current account imbalances. It also allows us to explore what unintended consequences might flow from such a policy.

The results of this consumption shock for China are shown in Figures 31–34. An increase in consumption necessarily implies a decrease in savings – up to 10% by 2022 (Figure 31). The increased demand for goods and services because of higher consumption sees an increase in investment in the short term as firms expand to meet demand. But the increased demand placed on savings and the reduction in savings that follows from higher consumption means higher interest rates which, in turn, act to reduce investment in the longer term (Figure 32). As capital flows into China to enjoy these higher interest rates and finance increased investment, China's real effective exchange rate appreciates by a substantial 16%. Among other things, this sees a weakening of China's trade balance by 11% in the first year (Figure 33). This effect, of course, is muted by China's managed exchange rate and capital controls framework.

The overall effect for China's GDP is significant, increasing by 4.1% above the baseline in the first year. But as higher interest rates, weaker investment and a weaker trade balance start to bite, longer-run GDP is below the baseline after 2026 (Figure 34).

As in the previous scenario, an appreciated real effective exchange rate in the shocked economy means a relatively depreciated exchange rate for its trading partners. The United States and Japan both see their real effective exchange rates depreciate by around 5%, boosting the trade balances for most advanced and emerging market economies by around 1.4% (Figure 35).

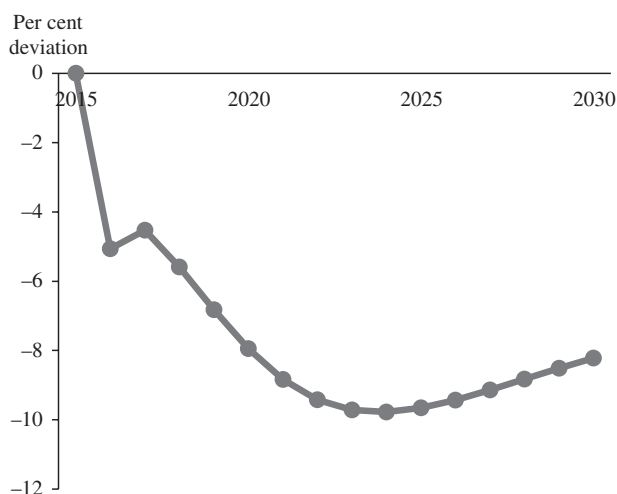


FIGURE 31 Chinese savings

This export boost, however, is offset by a sharp decline in investment in most economies (Figure 36). Investment falls by 1.5% in the United States and 1.6% in Japan below the baseline in years 2 and 3. Consumption also falls as the price of imports from China increases. Consumption falls by up to 0.6% in the first year in the United States, Japan and the Euro Zone in the first year (Figure 37).

The overall GDP effect is negative for most G20 countries (Figure 38). Japan's GDP, for example, is 0.4% smaller in the third year after the shock. Australia's and Germany's GDP are initially boosted by the trade balance, but the reduced investment in the long run means below-baseline GDP after the second year.

This is a striking conclusion given it is often assumed that increased domestic consumption in China would be a benefit to its trading partners. By bringing together the real and financial sectors of the economy, G-Cubed shows that while countries do benefit through the trade balance, the impact of investment and capital flows produces a more complex story over the longer term.

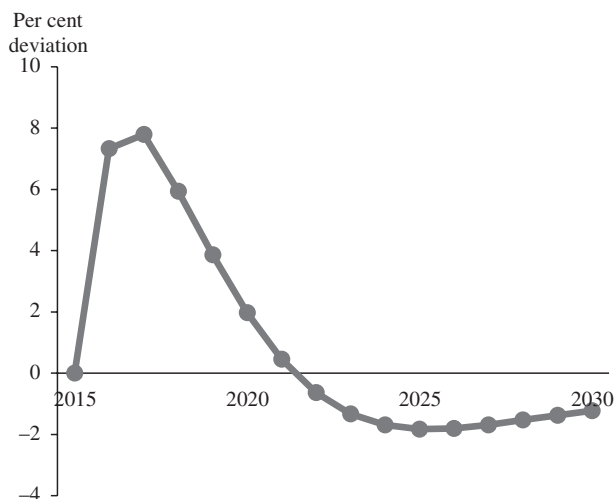


FIGURE 32 Chinese investment

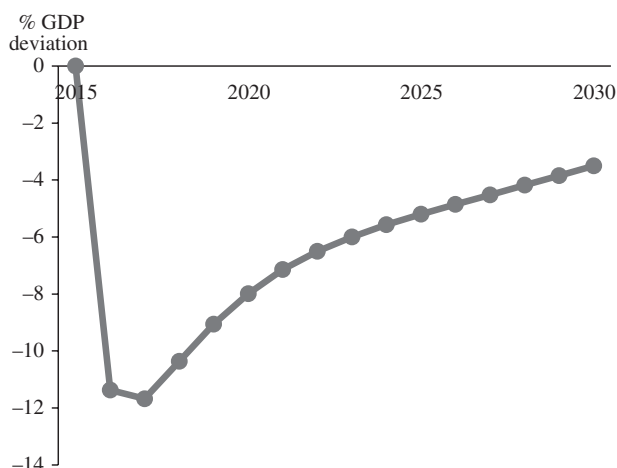


FIGURE 33 Chinese trade balance

But does the G20 achieve its goal of reduced global imbalances? China's current account deteriorates by 11% in the first year and is around 7% below the baseline in the longer term which is, indeed, a significant reduction. The current account also improves for the United States (by 1.6% in the first year and 1.2% in the longer term – Figure 39) which helps further reduce global imbalances.

But Germany's current account surplus also increases because of this shock – by around 1.6% in the second year (Figure 40). It follows that, to some extent, progress in reducing the current account surplus in China might merely transfer that surplus across to Germany.

The first insight from this simulation is similar to that from the German simulation: these policies can reduce global current account imbalances, but they come at a cost to the real economies of most G20 countries. In the case of increased consumption in China, while countries benefit through their trade accounts, these benefits do not necessarily outweigh the cost to their economies of weaker investment and reduced purchasing power which ultimately sees their GDP lower than it otherwise would have been.

The second insight is that, while China's contribution to global imbalances can be reduced by increased Chinese consumption, it also increases the current account surpluses of some of its trading

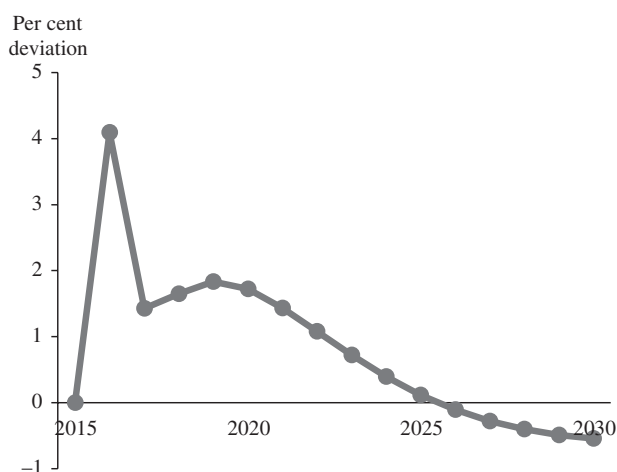


FIGURE 34 Chinese GDP

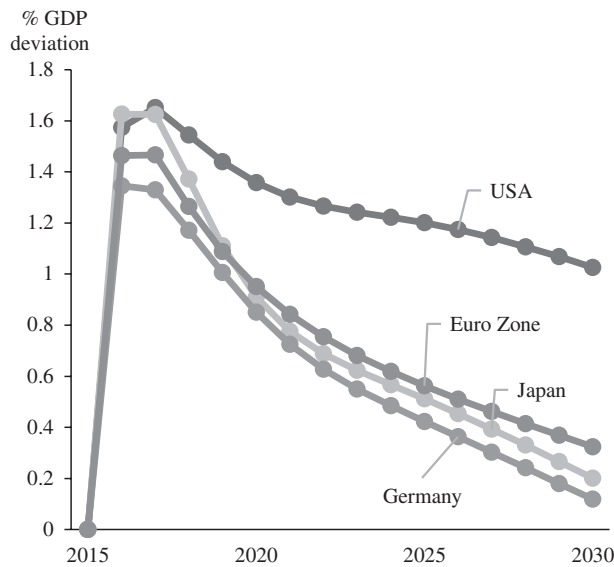


FIGURE 35 Trade balance

partners, notably Germany. This is discussed further in the final section, below, which considers the collective impact of these reforms.

3.5 | The collective impact of all three reforms implemented simultaneously

The G20's focus and commitments on global imbalances envisages a “grand bargain”. In return for the United States reducing its fiscal deficit, China would increase domestic consumption and Germany would increase public investment. This section considers the collective impact of this grand bargain, should it be implemented.

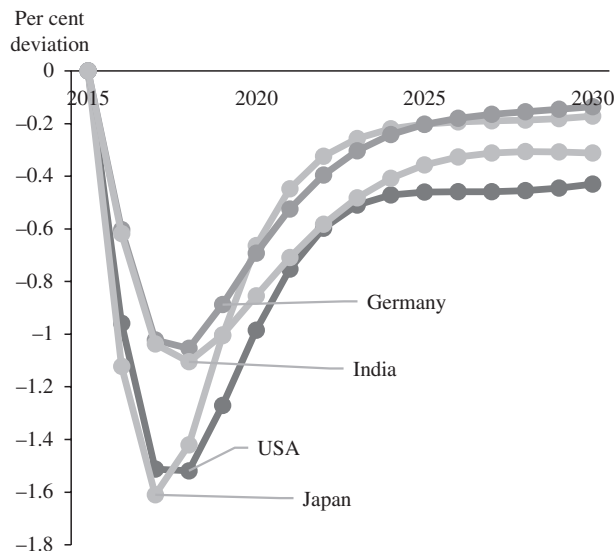


FIGURE 36 Investment

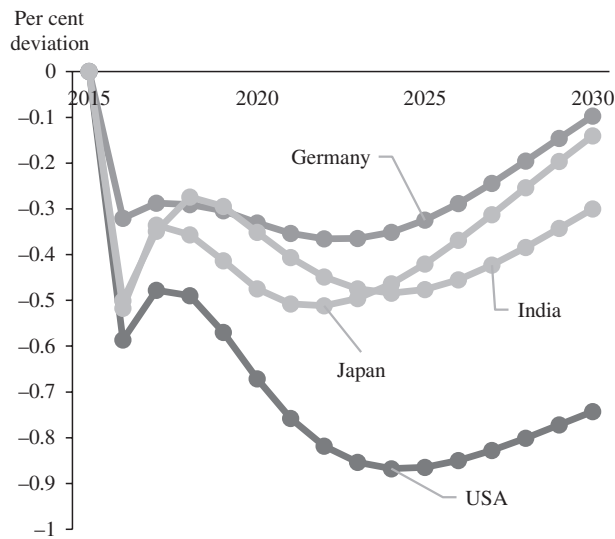


FIGURE 37 Consumption

Consider the perspective of the United States first. In terms of investment, consumption and GDP, Figures 41–44 show that the United States is better off undertaking its policy reform (fiscal consolidation) alone. Fiscal consolidation boosts consumption, and despite contracting in the first 3 years relative to the baseline, investment and GDP are higher when the United States undertakes fiscal consolidation without simultaneous reforms from Germany or China. When Germany and China undertake their reforms at the same time, the United States is worse off in terms of investment, consumption and GDP.

However, the United States does enjoy a larger boost to its current account balance if all countries act together. If an improved current account is the only objective of the United States, then it will prefer the “grand bargain” cooperative outcome. However, as highlighted above, this improvement in

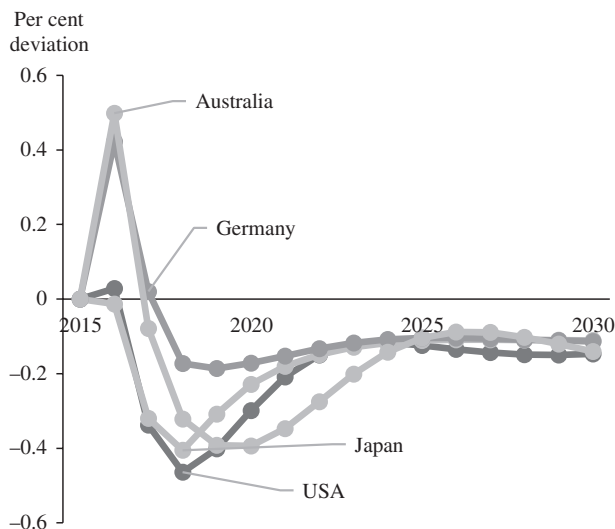


FIGURE 38 Real GDP

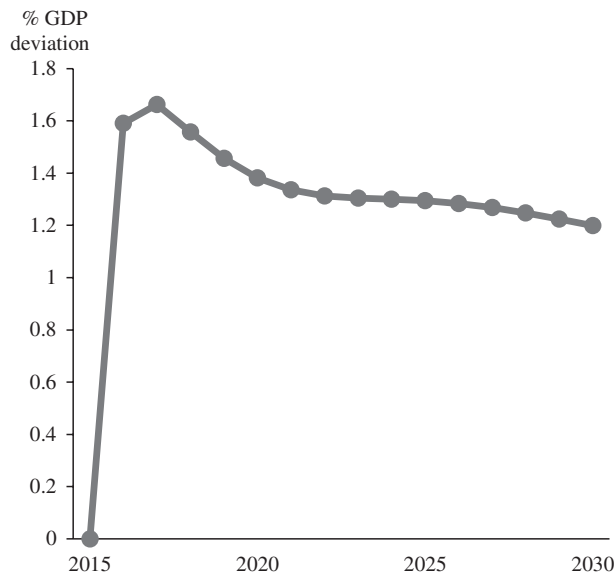


FIGURE 39 US current account

the current account comes at the cost of the real economy. Furthermore, almost two-thirds of this improvement in the current account can be obtained by the United States from acting alone anyway. The key message for the United States, therefore, is that this grand bargain will give it an improved current account balance but will come at the cost of its real economy, with lower investment, consumption and GDP as a consequence.

Now consider Germany (Figures 45–48). In terms of investment and GDP, Germany is marginally better off undertaking reforms together rather than alone, but not significantly so. German consumption is higher if it acts together with the United States and China, but only in the longer term.

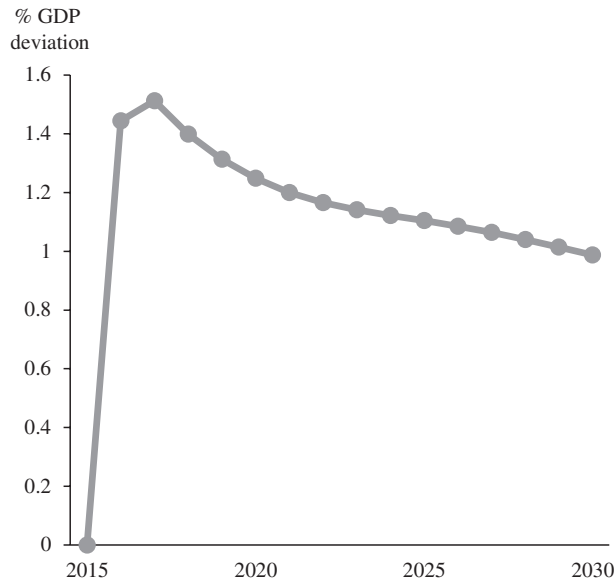


FIGURE 40 German current account

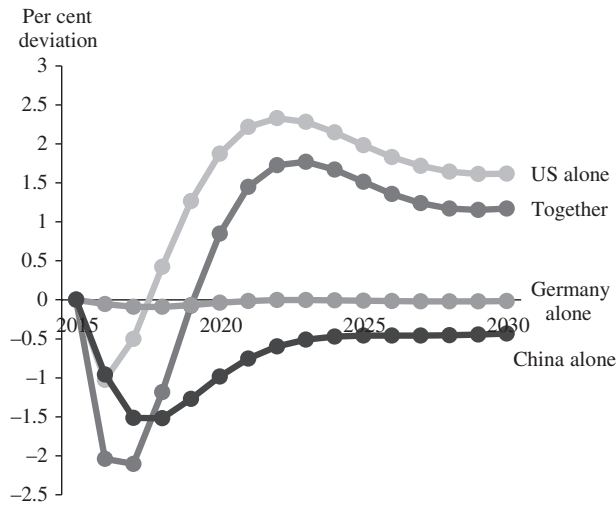


FIGURE 41 US investment

In terms of reducing Germany's contribution to global imbalances, Germany, unlike the United States, is better off acting alone. Reforming alone has a larger effect in reducing Germany's current account surplus than reforming along with the United States and China. The key message for Germany, therefore, is generally one of the relative indifferences between acting together and acting alone.

The most interesting result, however, is for China (Figures 49–52). In terms of investment, consumption and GDP in the near term, China is better off implementing its policies (increasing domestic consumption) together with Germany and the United States, rather than alone. And in terms of reducing its contribution to global current account imbalances, China is also better off acting together with the other countries.

But there is an important observation when it comes to the impact of China acting alone for other countries. China's policies, if implemented alone, would have a significant effect in reducing China's current account surplus. But, as discussed earlier, it would also make Germany's current account surplus larger, thus worsening global current account balances. This finding is perhaps instructive as

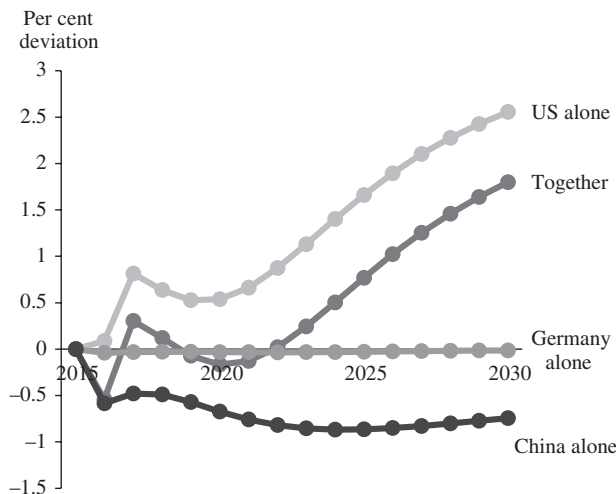


FIGURE 42 US consumption

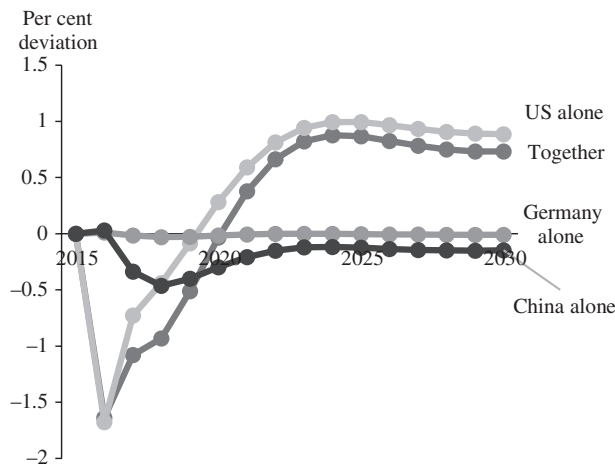


FIGURE 43 US GDP

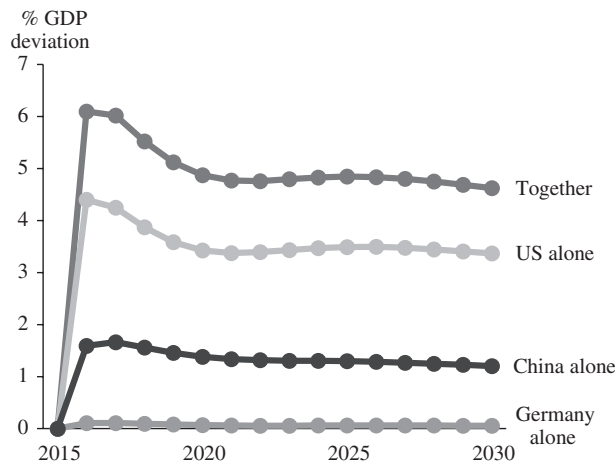


FIGURE 44 US current account

to what has been witnessed in the global economy since 2007. Illustrated earlier in Figure 3, the narrowing of China's current account surplus has occurred while Germany's current account surplus has widened considerably. This is precisely what the G-Cubed model would predict to happen as China continues its efforts to rebalance its economy towards higher domestic consumption.

Overall, the key message for China is that it is better off implementing its policies together with the United States and Germany. The key message for the United States and Germany is that, if they are primarily interested in reducing current account imbalances, they will also want to ensure they work together since, if China acts alone, global current account imbalances will worsen. This cooperation, however, comes at a cost for the United States in terms of lower investment, lower consumption and lower GDP.

3.6 | Key insights from the G-Cubed (G20) model

The contribution of this paper to the G20 discussion is a simple warning: there is no such thing as a free lunch. For the United States, a lowering of current account imbalances from Germany and China comes at a cost of the real economy and, in any event, the United States could do much to improve

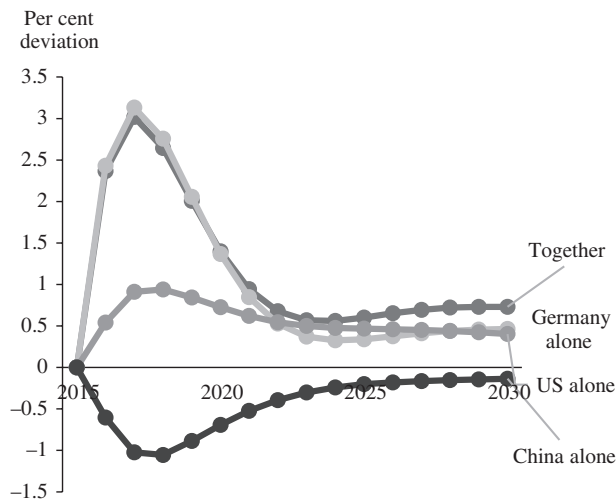


FIGURE 45 German investment

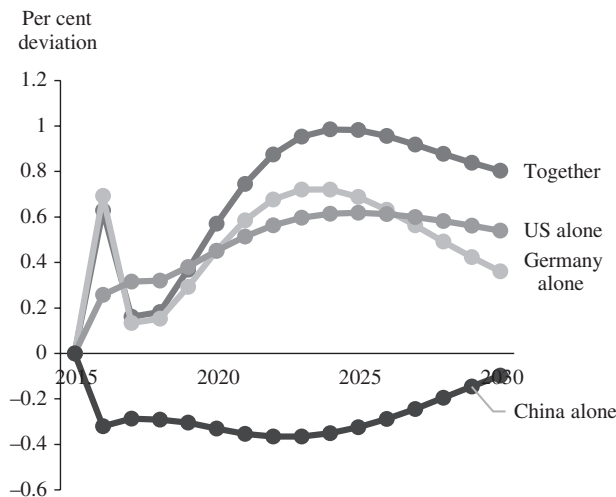


FIGURE 46 German consumption

its trade balance (and reduce those of Germany and China) through policies to reduce the size of its fiscal deficit. While the same is broadly true for Germany, the critical issue is around Chinese reform. If domestic consumption in China increases without action from the United States and Germany, not only is China worse off but the current account surplus of Germany in fact increases.

It follows that, while the G20 has identified policies that will be effective in reducing global current account imbalances, the coordinated implementation of those imbalances is critical. Imbalances can in fact be worsened if there is inadequate coordination between these three countries.

4 | HAS THE G20 INFLUENCED DOMESTIC POLICIES?

Thus far, the paper has argued that the G20 has not managed to significantly reduce global current account imbalances, but if the United States, Germany and China work together, there is much the

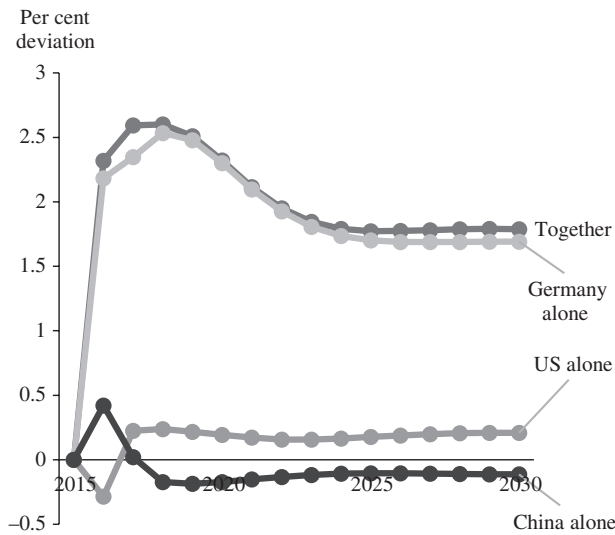


FIGURE 47 German GDP

G20 could do to reduce them. The final question for the paper is whether the G20 has influenced, or can influence, domestic policies in the first place. This is critical for thinking about what role the G20 could play in the future.

There is only one ex-ante transmission mechanism between the G20 and the domestic policies of its members, and that is the policymakers themselves. If policies are directly influenced by the G20, it is because the politicians and officials who attended those meetings changed their domestic policies because of what was agreed and discussed. As the old saying goes: if you want answers, go to the source.

This paper has done exactly that. It reports the results from in-depth interviews with 61 leaders, central bank governors, ministers and officials from across all G20 countries. These are the individuals who make up the G20 and are responsible for shaping the policies in their countries. A breakdown

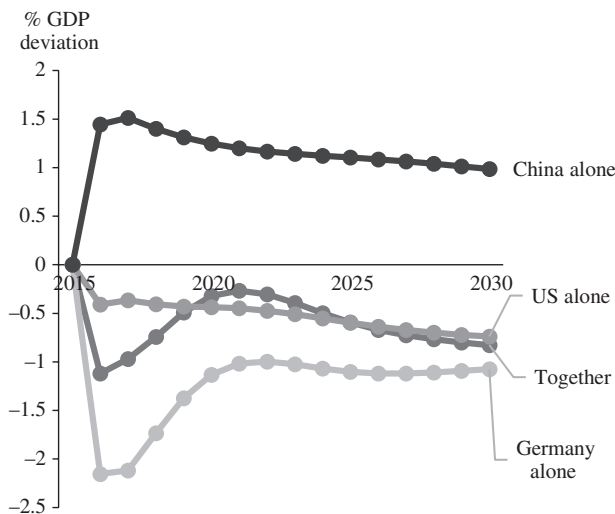


FIGURE 48 German current account

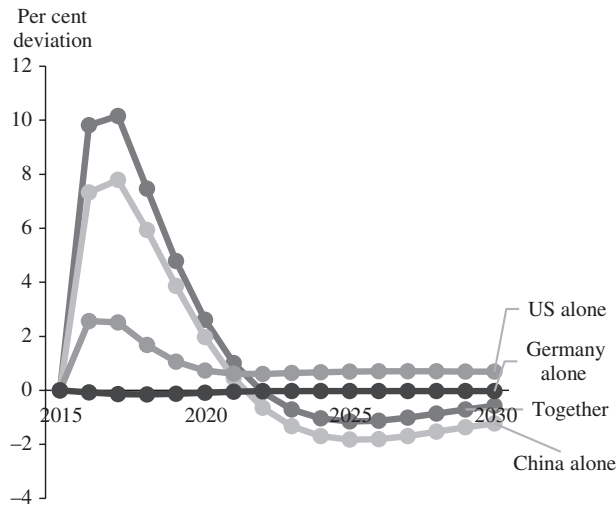


FIGURE 49 Chinese investment

of the sample and the methodology used for these interviews are available in Appendix A. A detailed discussion of the methodology, including its strengths, limitations and reliability, is included in Triggs (2018). Participants were asked whether they believed the G20 had been successful in its focus on global imbalances – leaving them to define what constitutes “success” in this context – and whether this sustained focus by the G20 had resulted in any changes in domestic policies.

4.1 | Was the G20 successful in focusing on global imbalances?

The G20's discussion of global imbalances has, at times, been politically heated.

It was in the context of global imbalances that the politics around the currency war between China and the USA played out. The American and indeed global complaint was

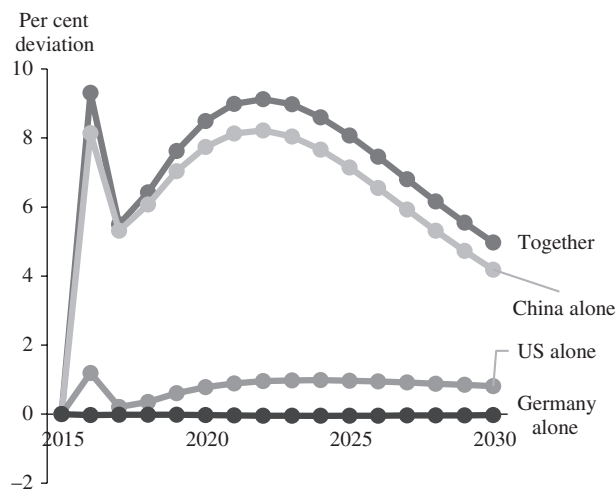


FIGURE 50 Chinese consumption

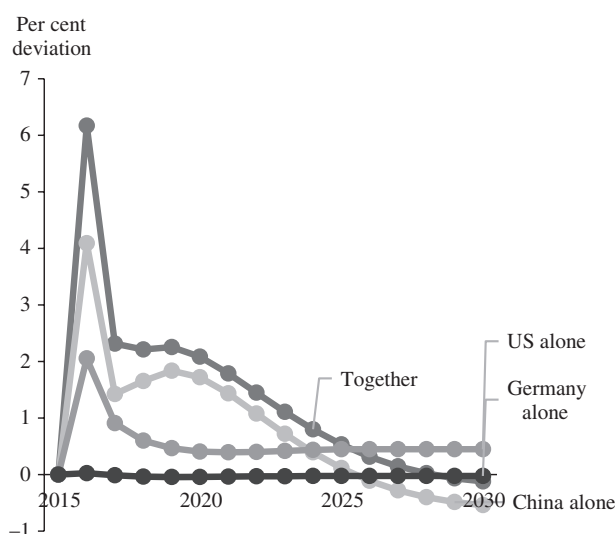


FIGURE 51 Chinese GDP

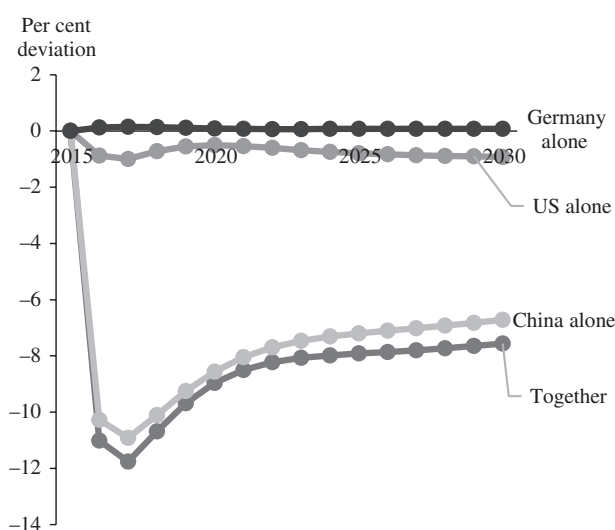


FIGURE 52 Chinese current account

that China was obtaining an ongoing economic advantage by keeping its currency low and this was fuelling its surplus of money to invest –

Julia Gillard, former Prime Minister of Australia¹²

Part of the problem was that at some point the US and Europe, and the G7 more generally, were trying to shift the responsibility for the crisis from themselves to China and emerging economies. This was shameful, incorrect and counterproductive. –

Cecilia Nahón, Former Sherpa, Argentina, interviewed 2 October 2017

¹²Gillard (2014).

When asked whether the G20's focus on global imbalances had been “successful” or not, countries were split. The policymakers from nine economies felt that the G20 had been successful (a roughly even mix of advanced and emerging economies), while 11 felt it had not been successful.

Those which felt it had been successful argued that the G20 brought attention to an important issue (eight economies gave this response) and because it helped shift the policies of some countries, discussed below (seven economies gave this response).

The G20 is a useful forum for central banks for understanding the broader policy context in other economies. It is also a useful forum in which central banks can explain the reasons for their policy decisions. –

Mark Carney, Governor of the Bank of England and Chair of the Financial Stability Board, interviewed 16 February 2018

I think going over the issue of global imbalances 50 times over many years made a difference. Ultimately countries make decisions based on what is in their best interest, but on the margin, it makes a difference to clear up any issues that are causing international tensions. –

Jacob Lew, former Treasury Secretary, United States, interviewed 7 September 2017

I think it has been mixed in terms of success. On the one hand it has been effective in identifying and monitoring the issues and problems, but I can't say it has been successful in it terms of outcomes because these imbalances continue to grow. It has been good at diagnosing the problems but we are short of delivering solutions. –

Mahendra Siregar, former sherpa, Indonesia, interviewed 22 May 2017

Certainly, in hindsight, the G20's approach was useful in putting a spotlight on the issue and seeing it as a multilateral issue and not just a bilateral issue between particular countries. But at the same time, I don't think it really addressed the whole range of drivers that are underlying these imbalances. –

Central Bank official, advanced economy, interviewed 17 August 2017

When it comes to global imbalances, there are arguments in defence of imbalances and arguments in favour of reducing them. It is a very sensitive issue because it implies the questioning of other countries' national policies. Being able to explain these arguments and have these discussions already helps to reduce tensions. At least you can understand each other's position and say “well they have a point here.” That is the first step on the way to find common ground –

Hugo Gobbi, former sous sherpa, Argentina, interviewed 12 May 2017

The discussion maintains pressure and visibility and interest in the nature of exchange rate policies, tariffs and trade policies. The G20 is a useful device for that. But I don't know if it has had any material effect on domestic policies to improve external imbalances –

Gordon de Brouwer, former sherpa, Australia, interviewed 23 February 2017

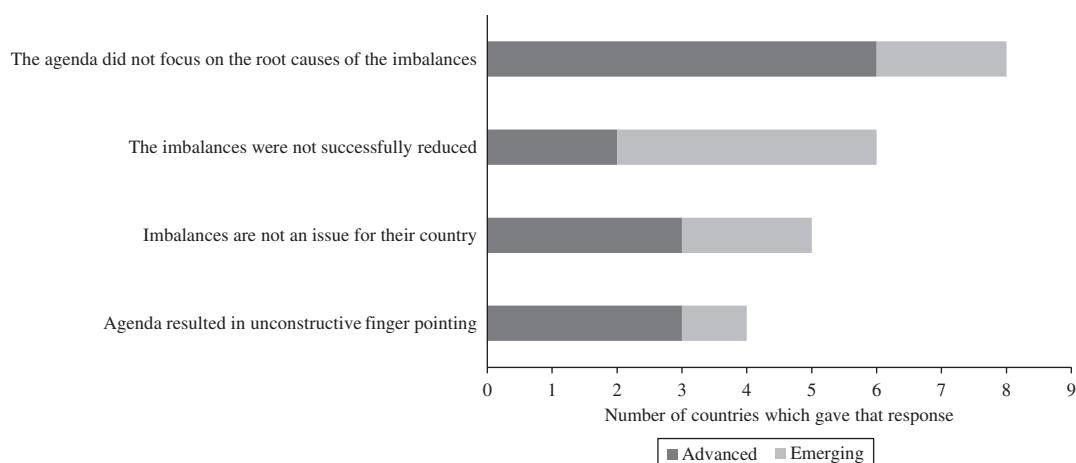


FIGURE 53 The perceived challenges in the G20's focus on global imbalances

Those which felt it had been unsuccessful (Figure 53) argued that the agenda did not focus on the root causes of the imbalances. They argued that the imbalances themselves were not successfully reduced, that the imbalances were not an issue for their economy or that the agenda resulted in unconstructive finger pointing.

The G20 has been largely ineffective on global imbalances. It failed to create a new political consensus that you cannot simply have permanently exporting countries without creating significant imbalances for the rest of the world which, ultimately, creates problems in financial, trade and political systems. –

Kevin Rudd, 26th Prime Minister of Australia, interviewed 8 September 2017

What we need is more analysis on the reasons for the underlying imbalances, which refer to structural factors, such as demographics. It would be useful for the G20 to explore these core drivers in more detail. –

Giuseppe Parigi, Head of International Relations and Economic, Bank of Italy, interviewed 12 April 2017

Global imbalances can be considered a risk for the smooth development of the global economy. Nevertheless, current account balances are not bad per se. It depends on their root causes. If, for example, the loss of competitiveness due to excessive wage growth is the reason for a persistent current account deficit, it is this issue that should be addressed. The same is true if a persistent current account surplus results from encapsulated domestic markets. –

Jelena Stapf, G20 representative, Head of G20 presidency coordination team, Bundesbank, Germany, interviewed 11 October 2017

In Korea's case, there are many products we export into global markets in which we have a competitive advantage — semi-conductors for example. Our surplus is not based on

a competitively devalued exchange rate or anything of that nature so it is very hard to artificially reduce your current account surplus. –

Heenam Choi, former finance deputy, Korea, interviewed 21 August 2017

In a globalised world, there is a lot of noise in the data. Often imbalances are driven by residency issues of corporates or accounting issues. The prevalence of distortions and the extent to which these are driving imbalances should receive more of the focus. –

Frank Moss, Acting G20 central bank deputy, European Central Bank, interviewed 20 February 2017

The G20 may have had some influence at the margin, but broadly the problems are more far-reaching. Some of the earlier rounds of thinking about global imbalances were focused on the exchange rate element. But some of the deeper structural issues were not really addressed. –

Central Bank official, advanced economy, interviewed 17 August 2017

I'm not sure about success. On the one hand, after the GFC there was a recognition that current account balances are not that good at predicting crises. It was better to look at financial risks, debt levels and so on. I think the current account balance is now of secondary importance compared to the 1980s and 1990s. –

Kazou Momma, former central bank deputy, Japan, interviewed 19 June 2017

It follows that the majority of G20 countries (11 of them) considered the G20's agenda on global imbalance to be unsuccessful, and those which considered the agenda to be successful argued, primarily, that this was because it brought attention to an important issue. The critical question, however, is whether countries altered their policies in response to the G20's discussion and commitments or not.

4.2 | Did countries alter their policies?

Given the majority of countries felt the G20's agenda has not been successful, and given the IMF's analysis suggests that much of the reduction in global current account imbalances was not driven by substantive policy change, it is perhaps not surprising that few countries reported changing their policies because of the G20.

Policymakers in 15 countries said the G20 had no influence over their domestic policies. Only five countries said it had a marginal impact (Figures 54 and 55).

Policymakers cited several reasons for the G20's lack of influence. The critical reason given was that the G20 failed to explore the root causes of these imbalances, focusing instead only on the imbalances themselves. Many smaller economies felt that the issue of global imbalances was one for the larger economies and did not apply to them. Some euro area economies said that the influence of the EU on their policies crowded out any G20 influence.

For the G20 to have maximum impact it has to lead to changes in domestic policy. I don't think the G20 has influenced domestic policies as much as it could have because the G20's discussions on global imbalances haven't really gone to the heart of what those

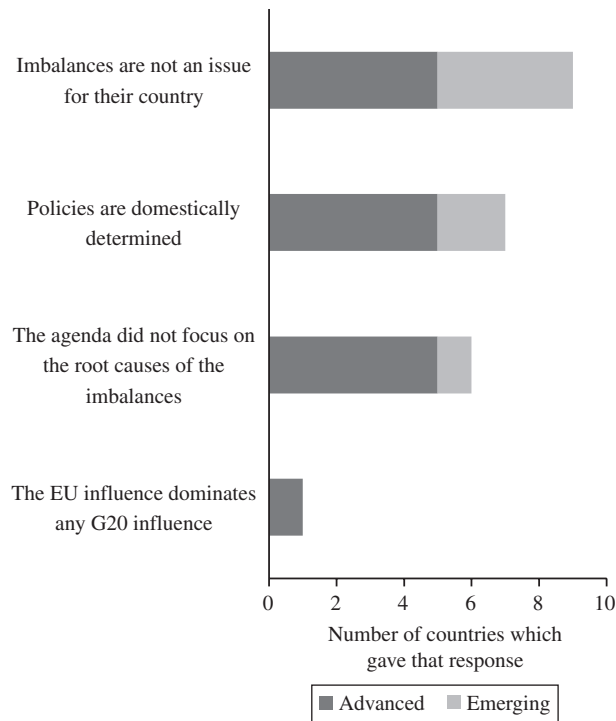


FIGURE 54 Countries which reported no influence from the G20

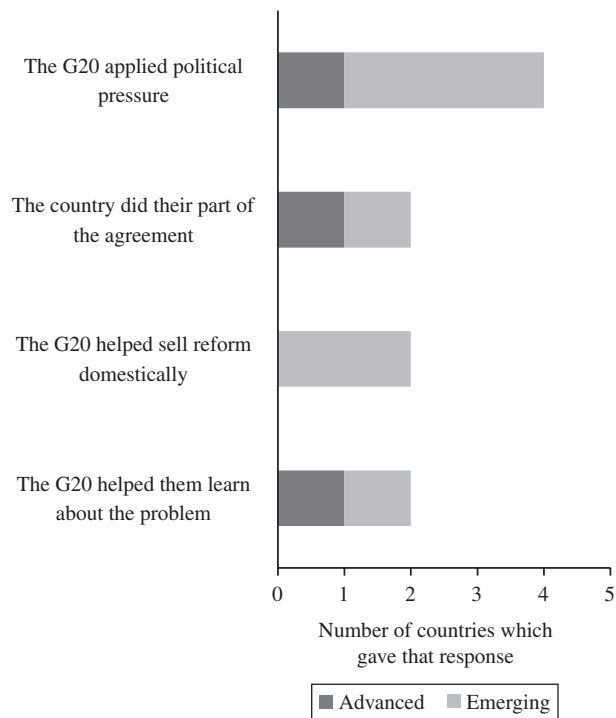


FIGURE 55 Countries which reported a marginal influence from the G20

issues are, except perhaps for the domestic tax treatment of multinational firms. So, on macro coordination and cooperation: a good result. On other more domestic, more micro-oriented policies, still a work in progress. –

Martin Parkinson, Secretary of the Department of the Prime Minister and Cabinet,
Australia, interviewed 30 May 2017

The fiscal commitments we made in 2014 reflected what we were trying to do anyway. In terms of outcomes, we eased up on some tax provisions, and reached a short-term agreement on annual appropriations — but I don't think it was principally because of the G20. Those things had their own domestic momentum. –

Jacob Lew, former Treasury Secretary, United States, interviewed 7 September 2017

The G20's discussion on global imbalances did not change our policies. We knew our fiscal deficit was too high and that it needed to come down. We were not in any intellectual dispute with anyone on this issue. Since there was a global lack of demand no one was going to object if we did not contract as much as we were expected to. –

Montek Ahluwalia, former Sherpa, India, interviewed 10 June 2017

The debate on global imbalances continues and the G20 has tried many ways to solve this problem. It was a good forum to talk about it but there was often no common ground. –

Bruno Cabrillac, central bank deputy, France, interviewed 11 April 2017

In Germany, our surplus is also strongly influenced by another policy which others have advocated: the strongly expansionary monetary policy of the ECB. The ECB has been urged consistently from many quarters to loosen its monetary policy. This pushed the euro down and makes euro zone products more competitive and results, *ceteris paribus*, in a higher surplus. Little wonder the German surplus remains high. –

Holger Fabig, senior G20 official, Germany, interviewed 7 April 2017

For Italy, the problem is debt. This is a complex domestic issue which is also heavily influenced by the EU. –

Giuseppe Parigi, Head of International Relations and Economic Directorate, Bank of
Italy, interviewed 12 April 2017

A critical difficulty in getting traction on the issue of global imbalances is that economies can always put up some argument, either plausible or not, to justify their surplus or deficit. –

Logan Rangasamy, central bank deputy, South African Reserve Bank, interviewed 27
June 2017

The policymakers that did cite a G20 influence (Figure 55) suggested there was some marginal pressure emanating from G20 discussions to alter their policies. The discussion was also informative on the scale of the problem, how policies fit together and the experiences of other countries. Although rare, some suggested the G20 encouraged them to “do their part” in the global agreement. Some also suggested the G20's discussions helped them to sell policies domestically.

We are taking measures to do our part on reducing our internal imbalances and thereby global imbalances. The concerted international efforts on this front add to the arsenal of our policies. —

Senior central bank official, emerging market economy, interviewed 17 May 2017

The G20 discussion has had a notable impact in China, we no longer export as much as possible and have focused on rebalancing the Chinese economy. The G20 played a role in this. —

Lyu Jin, Counsellor, Deputy Chief of Policy Section, Embassy of China in the USA,
interviewed 13 November 2017

Focusing on global imbalances can be a useful political tool. The idea of current account targets were, I believe, used by Timothy Geithner as a way to pressure China on its exchange rate. —

Gordon de Brouwer, former sherpa, Australia, interviewed 23 February 2017

I tried as best I could to use the G20 as an additional reason for domestic action in the US. But the American system is hard to drive that way, and you need to be careful in how you make the case. In the United States, there can be a backlash if you make the argument that you're doing something to comply with international rules rather than as a domestic choice. But the consensus from the G20 was not unwelcome — it certainly helped in getting action from other countries. —

Jacob Lew, former Treasury Secretary, United States, interviewed 7 September 2017

As was often the case in these interviews, policymakers considered the G20 to have a more substantial impact on the policies of other countries compared to their own. The “others” in the context of global imbalances was typically China and Germany. Interviews with policymakers in China and Germany suggest that, to some extent, this was correct.

Germany is a sovereign country like all others but we are also listening to what our partners are saying. What you see now is a boost in public investment in Germany. This is at least partly the result of discussions in the G20 where our partners have asked us to use at least a little of our fiscal space to boost growth. —

Holger Fabig, senior G20 official, Germany, interviewed 7 April 2017

Global imbalances are a very old discussion. Though whether global balance ever existed or not is still in doubt, G20 discussion has had a notable impact and China has been

addressing the issue of global imbalances seriously. In response to both the international concerns and the domestic need to shift the growth model, we no longer pursue trade surplus and have focused on rebalancing the Chinese economy. The G20 played a role in this. –

Lyu Jin, Counsellor, Deputy Chief of Policy Section, Embassy of China in the USA,
interviewed 13 November 2017

Our primary focus was on having the Chinese let the exchange rate appreciate, which they ultimately did. They did it because they perceived, correctly, that it was in their interests to do that – artificially holding it down was preventing the rebalancing of their economy. We put a lot of pressure on them for that but ultimately they did it because they thought it was necessary for them to do it. Was the G20 important? Yes, at the margin. Was that important for addressing imbalances globally? Absolutely. –

Former senior official, United States, interviewed 12 September 2017

In sum, for most countries, the G20's focus on global imbalances has not influenced domestic policies. The primary reason for this appears to be that the G20 failed to delve into the root causes of the imbalances, suggesting a clear area for improvement. This weakened the G20's ability to make progress on these discussions and meant it lacked tangible policy recommendations that could be agreed upon by the membership. This result is consistent with the IMF's observation, explored in Section 22, that much of the reduction in global current account imbalances after the crisis was due to compressed aggregate demand rather than deliberate changes in policies.

5 | CONCLUSION

Globalisation has brought extensive benefits and new risk. The G20, at its best, can be the forum that helps heighten those benefits and mitigate the risk –

Julia Gillard, former Prime Minister of Australia¹³

Current account imbalances between G20 countries increased by more than 50% from 2000 to 2007. Over the same period, savings as a percentage of disposable income increased by almost a half in many emerging market economies while sharply contracting in many advanced economies. Increased spending, tax cuts, bank bailouts and the impact of automatic stabilisers in the wake of the global financial crisis saw a US\$13 trillion increase in debt among G20 economies, particularly the advanced economies.

These forces have created a lopsided global economy, characterised by large lenders and larger borrowers, large savers and large consumers, and large exporters and large importers. Many economists and studies have suggested that these imbalances create a complex set of economic, financial and political problems.

When it was created as a leaders' forum in 2008, the G20 committed to reducing the size of these global current account imbalances. This paper asked three questions: has the G20 been successful in reducing these imbalances? Did the discussions and commitments in the G20 result in countries doing

¹³Gillard (2014).

anything different? And has the G20 identified the correct policy prescriptions for reducing them and, if so, what might the costs of reducing global current account imbalances be?

Global imbalances were indeed reduced following the global financial crisis. From the start of the crisis in 2008 through to 2011, these imbalances fell by 40%. But the paper outlined two reasons why this does not necessarily mean the G20 has been successful. The first was that, among G20 economies as well as globally, global imbalances have increased again since 2011 by more than a third. They are not quite at their pre-crisis levels, depending on which economies are included in the analysis, but they have re-emerged to a significant extent.

The second issue is that, even if global imbalances were reduced following the crisis, the evidence suggests that policy change by G20 countries was unlikely to have been the primary reason for this. The IMF (2017a) concluded that much of the reduction in global current account imbalances since 2008 was the result of compressed demand in the advanced economies caused by the global financial crisis. It notes that, despite some progress, public debt and/or deficits remain high in many advanced economies and most economies are moving in the wrong directions on household savings and debt.

This conclusion is reinforced by the second finding of this paper: that, for most G20 countries, policymakers did not alter or change their policies because of the discussions of commitments in the G20. Through in-depth interviews of 61 politicians and officials from across all G20 countries, only five countries reported changing their policies because of the G20 and these changes were, in any event, marginal. Policymakers generally felt the G20 was successful in its focus on global imbalances, but this success took the form of brining attention to an important issue, rather than catalysing policy changes that reduced the size of global current account imbalances.

Finally, the paper looked at whether the G20's primary policy prescriptions for reducing global current account imbalances are the right ones: reducing the fiscal deficit in the United States, increasing public infrastructure investment in Germany and increasing domestic consumption in China. Using the G-Cubed (G20) model, it simulated the impact of each reform when undertaken individually and when undertaken simultaneously.

The results provide two critical insights, and one warning, for the G20. The first insight is that there is no such thing as a free lunch. Reducing global current account imbalances typically comes at a cost to the real economy. For the United States, for example, the modelling shows that policy action from Germany and China will help narrow the current account deficit in the United States (and reduce the current account surpluses in Germany and China) but will come at the cost of investment, consumption and GDP, which are all reduced because of these policies. While the United States gets a boost to its trade balance from these policies, the impact on capital flows, interest rates and exchange rates result in a net-negative result for real GDP.

The second insight is that coordination is critical. The United States can achieve much to narrow its current account deficit and narrow the current account surpluses of Germany and China by reducing its fiscal deficit. However, if the goal is to reduce current account surpluses, coordination between all three countries is key. The results showed that if domestic consumption in China increases without action from the United States and Germany, not only China is worse off but also the current account surplus of Germany in fact increases — worsening global current account imbalances rather than improving them.

Finally, the warning for the G20 is as follows. Current IMF forecasts suggest that the direction the G20 is currently heading is one in which China continues to rebalance its economy, Germany does little to increase infrastructure investment and the United States increases its fiscal deficit rather than improves it. The findings in this paper suggest that, with this combination of policies, the G20 had better get used to a world characterised by large current account imbalances.

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APPENDIX A

IN-DEPTH INTERVIEW METHODOLOGY

The population for this research — referring to the group that the research intends to generalise its findings across — is summarised in Table A1. It can be organised by G20 stream (left to right) and by seniority (top to bottom), multiplied by 20 countries. The objective of this research was to interview the most senior policymakers possible in each G20 stream from each G20 country. This implies a total sample of 60 individuals. This minimises bias by ensuring representation across all countries and streams of the G20 given different streams often have different areas of responsibility and expertise.

In total, 61 policymakers were interviewed. Table A2 shows the size of the sample and how it is distributed across countries and workstreams. The identities of the policymakers who participated in this research are confidential, except for where they have been directly quoted. All quotes have been approved by those to whom they are attributed.

There are debates in the literature on the appropriate sample size when undertaking in-depth interviews, but a sample of 61 is more than adequate given the specialised nature of this research and the unique position of the policymakers.¹⁴

Although interviewing multiple policymakers within a country is vital to reducing potential bias (see Baxter & Eyles, 2010 on the importance of “triangulation”), the downside is that some countries are overrepresented in the sample (e.g. Australia). To address this, the accounts of policymakers are aggregated by country. Aggregation, however, requires that there be no significant disagreement between the policymakers within a country. This turned out to be the case. It was only in rare circumstances that the accounts of policymakers differed within the same country. Where inconsistencies did arise, they were addressed through follow-up conversations and through a weighting system based on

TABLE A1 The theoretical population for the research

Leaders stream	Finance ministers stream	Central bank governors stream
Leaders	Finance ministers	Central bank governors
Sherpas (advisors to leaders)	Finance deputies	Central bank deputies
Sous-Sherpas	Finance deputy deputies	Central bank deputy deputies
Other officials	Other officials	Other officials

¹⁴As summarised by Dorkin (2012), the concept of “saturation” is the most important guide in determining the appropriate sample size (see also Mason, 2010). Saturation is defined as the point at which the data collection process no longer offers any new or relevant data or “when gathering fresh data no longer sparks new theoretical insights, nor reveals new properties of your core theoretical categories” (Charmaz, 2006, p. 113). Many factors are important in determining the appropriate size of a sample, including the quality of data, the scope of the study, the nature of the topic, the nature of the individuals being interviewed, the amount of useful information obtained from each participant and the qualitative method and study designed used (Morse, 2009).

**TABLE A2** Sample distribution for the interviews of G20 politicians and officials

Country	Total	G20 workstream		
		Leader	Finance	Central bank
Argentina	2	2		
Australia	9	4	3	2
Brazil	1			1
Canada	3	1	1	1
China	2	1		1
European Union	3	1	1	1
France	2	1		1
Germany	3	1	1	1
India	3	1	1	1
Indonesia	2	1	1	
Italy	4	1	1	2
Japan	2			2
Mexico	1	1		
Korea	2		1	1
Russia	3	1	1	1
Saudi Arabia	1	1		
South Africa	3	1	1	1
Turkey	2	1		1
United Kingdom	7	2	2	3
United States	6	2	2	2
Total	61	23	16	22

the policymaker's area of expertise (e.g. monetary policy), the time in which they served and their seniority.¹⁵

Finally, a challenge of any qualitative research is in standardising the data so that it can be reported in a way that is accurate but also digestible. This paper uses the commonly used technique, detailed by Dickey-Bloom and Crabtree (2006), referred to as an “editing approach”. This is where the investigator reviews and identifies themes and text segments much as an editor does in organising text.¹⁶ This allows the results, reported in the sections that follow, to be partially standardised, complemented with direct quotes to flesh out what policymakers meant by their responses.

¹⁵First, the accounts of policymakers who worked within the relevant G20 workstream were given preference over the accounts of policymakers who did not work in that policy stream. The accounts of central bank governors, for example, were given greater weight on the topic of monetary policy than the accounts of Sherpas. Second, the accounts of policymakers who worked on the G20 at the time that an issue was discussed were given preference over the accounts of policymakers who did not work on the G20 at that time. For example, the accounts of finance ministers who were present for the fiscal stimulus discussions in 2009 were given preference over the accounts of finance ministers who worked on the G20 at a later date. Third, the accounts of more senior policymakers were given preference over the accounts of less senior policymakers. The view of a central bank governor, for example, was given preference over the view of a central bank deputy.

¹⁶A team from Ontario, Canada used this strategy to apply more than 100 codes in a study to understand the smoking experience and cessation process (see Dickey-Bloom & Crabtree, 2006).