

On the Adjustment of the Global Economy

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- Consistent with the message from the November 2011 G-20 summit in Cannes, this article shows that the implementation of a set of policies could lead to balanced global economic growth and an orderly resolution of global imbalances over the medium term.
- Such an outcome would require fiscal consolidation in the United States and Europe, flexible exchange rates and structural policies to stimulate domestic demand in the emerging-market economies of Asia, and structural reforms in Europe and Japan.
- We also present possible scenarios in which a delay in implementing these measures leads to a significantly weaker global economy and undermines the correction of global imbalances.
- The scenarios also suggest that aggressive fiscal consolidation in advanced economies that is not accompanied by flexible exchange rates and structural reforms in the emerging-market economies of Asia, as well as by growth-enhancing reforms in Europe and Japan, could lead to even weaker growth in global output and near-term deflationary pressures.

Current account deficits reflect low domestic savings relative to investment or, alternatively, excessive aggregate spending relative to domestic income. The opposite is true for current account surpluses: domestic savings are high relative to investment, and aggregate spending is low relative to domestic income. When surplus countries use their savings to finance more-profitable investment opportunities in deficit countries, current account imbalances can benefit the global economy. In normal circumstances, these imbalances would tend to be limited, since deficit economies cannot finance large current account imbalances indefinitely. Imbalances also tend to correct themselves when market-based adjustment mechanisms—based on movements in relative prices (i.e., real exchange rates) and/or relative income—function without frictions.

Over the past decade, however, the world economy has been experiencing much larger and more-persistent current account imbalances compared with the historical norm. For the most part, these global imbalances have taken the form of sizable and persistent deficits in the United States, mirrored by surpluses in other countries, particularly in Asia and in major oil-exporting countries. Although cyclical factors have led to a temporary narrowing of global imbalances, they remain significant and, without the set of policy measures described in this article, could increase as the global

◀ *Over the past decade, the world economy has been experiencing much larger and more-persistent current account imbalances*

recovery takes place. These global imbalances are a major source of concern for two main reasons. First, it is possible that the flows from high-savings (surplus) economies are being used to finance non-productive investment, unsustainable government deficits or excessive credit-fuelled consumption (e.g., the run-up in housing and consumption observed in the United States before the 2007–09 financial crisis). Second, frictions (e.g., capital controls and inflexible exchange rates) and structural factors (e.g., relatively underdeveloped financial markets) in the surplus economies may be forestalling the necessary adjustment from taking place.

For example, a real depreciation of the exchange rates in deficit countries, which facilitates switching expenditures from foreign goods to domestic goods in those countries, may not occur because surplus countries prevent their exchange rates from adjusting freely. More generally, the prevalence of interventionist policies in surplus countries, such as capital controls, reserve accumulation and trade barriers, may prevent an orderly correction of global imbalances. As Little and Lafrance (2006) state, “the longer these imbalances persist, the greater the risk of a sharper reversal that could destabilize the world economy and undermine growth.” Persistent global imbalances may also provoke abrupt swings in exchange rates and sudden corrections in capital flows, disrupting global financial markets (Beaton et al. 2010). Furthermore, these imbalances may lead to an accumulation of financial risks and instability, similar to the environment that preceded the global financial crisis that started in 2007 (Bini Smaghi 2011; Obstfeld and Rogoff 2009; Santor and Schembri 2011).

In this article, we use the Bank of Canada’s GMUSE and BoC-GEM-Fin models¹ to present three possible scenarios for the global economy. We first show a “baseline” scenario that encompasses policies consistent with those outlined in the communiqué from the G-20 Cannes Summit in November 2011, in which there is sustained global economic growth and the resolution of global imbalances over the medium term. Note that the baseline scenario should not be considered the Bank of Canada’s official projection; rather, it is a possible scenario in which a set of conditions and policies is put in place to gradually resolve global current account imbalances. Furthermore, we conduct our simulations using data up to June 2011.² Alternatively, we consider a scenario where the implementation of all of the suggested policy measures is delayed until the end of 2015, leading to global imbalances persisting for a longer time and global economic growth being substantially reduced over the medium term. Finally, a second alternative scenario illustrates that more-aggressive fiscal consolidation in advanced economies, without policies to stimulate domestic demand in emerging-market economies or growth-enhancing structural reforms worldwide, could generate significant near-term deflationary pressures and lead to even weaker growth in global demand.

◀ *The longer these imbalances persist, the greater the risk of a sharper reversal that could destabilize the world economy and undermine growth*

¹ GMUSE has been the main projection model used in the International Economic Analysis Department of the Bank of Canada since 2011. It is a macroeconomic model comprising blocks for the United States, the euro area, Japan, China and the rest of the world. The Bank of Canada’s Global Economy Model with Financial Frictions (BoC-GEM-Fin) is a multi-sector dynamic stochastic general-equilibrium model encompassing the world economy and featuring a detailed financial sector. This model is used for policy analysis at the Bank (de Resende and Lalonde 2011).

² The inclusion of recent data would not change the main conclusions of this article.

The Baseline Scenario: Adopting the Cannes Policy Reforms

We developed a baseline scenario to examine the potential implications for global economic growth if the types of policies outlined at the G-20 Cannes Summit were implemented.³ The baseline scenario assumes the following:

- (i) A credible fiscal consolidation is undertaken in the United States and Europe, where primary deficits⁴ are gradually reduced and the ratio of debt to gross domestic product (GDP) is stabilized in the United States and on a declining path in Europe by 2015.⁵
- (ii) A rotation of demand within the emerging-market economies of Asia away from exports and toward domestic spending is induced by
 - (a) structural reforms stimulating domestic demand in these regions, and
 - (b) adjustments in their real effective exchange rates.
- (iii) Structural reforms are implemented in Europe and Japan that gradually increase the level of potential GDP by 2 per cent by the end of 2015.

Fiscal consolidation in the United States and Europe

Chart 1 shows the recent evolution of the ratios of the total U.S. fiscal deficit and federal debt to GDP, as well as their projected paths.⁶ Note that the primary surpluses in the early 2000s and again in late 2007 turned into a growing primary deficit that peaked at 7.8 per cent of GDP in mid-2009, as government revenues declined and welfare spending increased, and the fiscal stimulus was implemented in response to the Great Recession. Meanwhile, U.S. Treasury debt held by the public relative to GDP reached almost 65 per cent in the second quarter of 2011, compared with its pre-crisis level of approximately 35 per cent.

The fiscal consolidation measures included in the baseline scenario are consistent with the communiqués from the G-20 summits in Toronto in 2010 and Cannes in 2011. In the near term, we assume that additional fiscal stimulus is supplied to support economic growth. Beyond that, the primary deficit for the consolidated government sector falls from about 6 per cent in mid-2011 and becomes a surplus in 2014 (Chart 1). This reduction in the primary deficit is consistent with the total deficit being cut in half by the end of 2013, as outlined in the Toronto Summit agreement. We assume that fiscal consolidation will be implemented gradually over the medium term, resulting in the U.S. federal debt held by the public stabilizing at approximately 80 per cent of GDP by 2015. The fiscal consolidation in the United States helps to reduce the U.S. current account deficit, since a lower government primary deficit (in this case a surplus) increases total domestic savings, given the same level of investment.

3 See "Cannes Summit Final Declaration—Building Our Common Future: Renewed Collective Action for the Benefit of All," G-20, November 2011. Available at <<http://www.g20-g8.com/g8-g20/g20/english/for-the-press/news-releases/cannes-summit-final-declaration.1557.html>>.

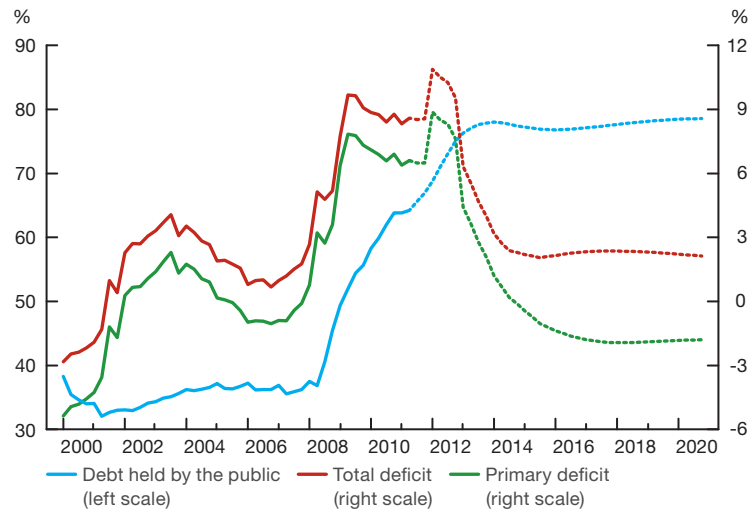
4 The primary deficit (surplus) is defined as the total government deficit (surplus), excluding net interest payments, namely, interest expenditures minus interest revenue. It measures the ability of the government to pay for its current spending out of the revenue it generates.

5 The baseline scenario also incorporates fiscal consolidation in Japan but, given the stimulus implemented by the Japanese government in response to the earthquake and tsunami in March 2011, the expected consolidation over the 2012–15 period is not sufficient to stabilize the ratio of debt to GDP over the next five years.

6 Based on recent macroeconomic developments, the current path of the U.S. fiscal deficit would likely be higher than the one highlighted in the baseline scenario.

Chart 1: Total U.S. government deficit and federal debt held by the public

As a percentage of GDP



Note: Dotted lines indicate projections.

Sources: GMUSE and BoC-GEM-Fin simulations

Last observation: June 2011

In the European Union, gross government debt increased from less than 60 per cent of GDP in 2007 to more than 80 per cent of GDP in 2011. In the baseline scenario, we assume that announced fiscal-consolidation measures are put in place. Although there are large variations across countries, this fiscal consolidation is consistent with a declining ratio of debt to GDP by 2015 for the region as a whole.

Rotation of demand in China and the other emerging-market economies of Asia

China and the other emerging-market economies of Asia have been experiencing persistently large current account surpluses, reflecting notably both structurally high savings rates and export-driven policies to support economic growth, such as management of the exchange rate and accumulation of reserves.⁷ As a result of these policies, domestic demand in the emerging-market economies of Asia has been relatively low.⁸

In the baseline scenario, we assume that a rotation of demand in China and the other emerging-market economies of Asia is gradual, reflecting two main policy measures taking place over the next 10 years. First, structural policies will reduce the propensity to oversave and stimulate domestic demand in both regions, boosting it by around 4.5 per cent of GDP by 2020.⁹ Second, we assume less government intervention in foreign exchange markets, leading to a gradual but significant appreciation of their real exchange rates by the end of 2020. GMUSE endogenously determines that a permanent appreciation in the Chinese real effective exchange rate of 20 per cent relative

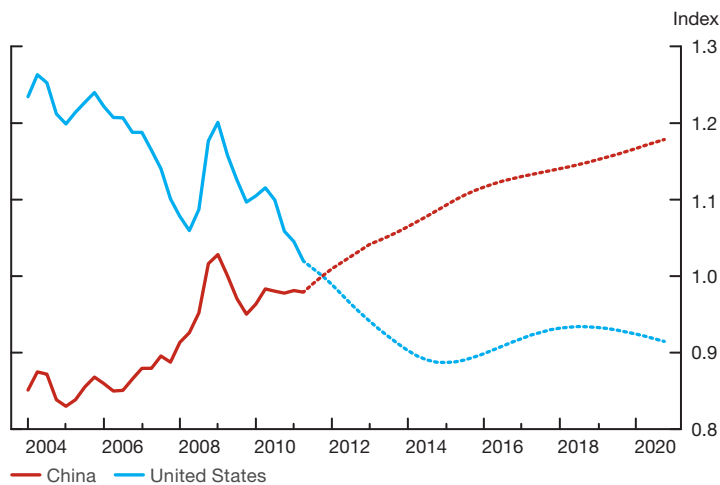
⁷ While the current account surpluses have decreased since the beginning of the global financial crisis, this adjustment reflects mainly cyclical factors.

⁸ For example, in China, private consumption spending represents only 30 per cent of total aggregate demand.

⁹ GMUSE does not specify which policies are implemented; it indicates only their size and timing. The figures reported above are conditional on the starting values for domestic demand and current account balances relative to their respective paths for balanced growth. The underlying policies are in line with China's twelfth five-year plan, which aims to increase the share of the service sector in GDP by 4 percentage points by implementing policies ranging from deepening financial markets and developing the domestic banking sector to improving social safety nets and reforming the tax system.

Chart 2: Baseline scenario—real effective exchange rates in China and the United States

Index: 2011Q4 = 1



Note: Dotted lines indicate projections.

Sources: GMUSE and BoC-GEM-Fin simulations

Last observation: June 2011

to its level in the second quarter of 2011 is consistent with the stabilization of the Chinese current account (as a percentage of GDP) over the long run.¹⁰ Consistent with the appreciation of the renminbi, the model also projects a 10 per cent depreciation in the real effective exchange rate of the U.S. dollar by the end of 2020 (Chart 2). These adjustments to exchange rates play an important role in facilitating the rotation of domestic demand away from the regions with current account deficits, such as the United States, toward those with current account surpluses, such as Asia.

◀ *Adjustments to exchange rates play an important role in facilitating the rotation of domestic demand away from the regions with current account deficits toward those with current account surpluses*

Structural reforms in Europe and Japan

The baseline scenario also assumes the implementation of structural reforms in Europe and Japan designed to create greater flexibility in their labour markets and increase competition in their goods markets. Based on Bouis and Duval (2011), we assume that the productivity gains from these reforms gradually increase the level of potential GDP in Europe and Japan by 4.5 per cent over a five-year horizon. We also assume that the benefits of these reforms will only start to be felt by mid-2013, boosting the potential level of GDP by about 2 per cent by the end of 2015.¹¹

Outcomes under the baseline scenario

Chart 3 shows the historical and projected paths for the current account balances, as a share of GDP, in the regions featured in GMUSE.¹² Under the policy measures described above, by 2020, the U.S. current account deficit gradually reaches 1.5 per cent of GDP, while China's current account

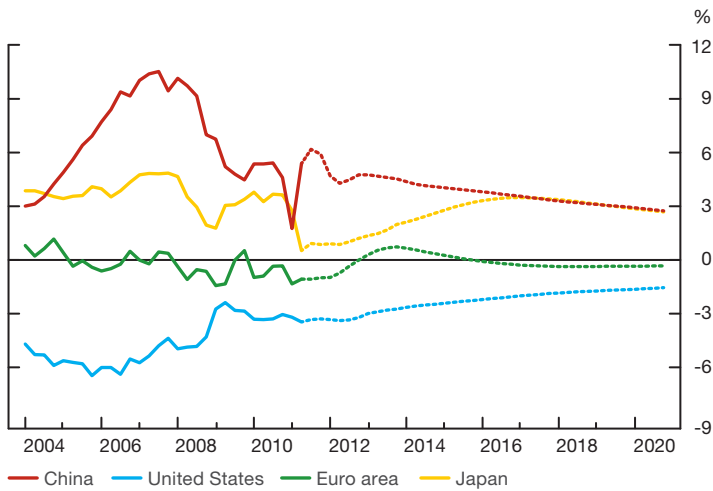
¹⁰ The appreciation needed to stabilize the global current account balances depends in part on the assumed desired long-run positions of net foreign assets to GDP.

¹¹ Later in the article, we provide a sensitivity analysis of the effect of this assumption on world economic growth. There is considerable uncertainty around the timing of the benefits of the structural reforms. The timing is clearly conditional on the political situation associated with the current sovereign debt crisis in Europe and on the pace of Japan's recovery from the effects of the 2011 earthquake and tsunami.

¹² While GMUSE features the euro area as a separate region, the discussion of fiscal consolidation and structural reforms is concerned with Europe more broadly.

Chart 3: Current account balances

As a percentage of GDP



Notes: Dotted lines indicate projections. The euro-area current account is compiled by the European Central Bank on the basis of transactions between euro-area countries and countries outside the euro area. Sources: GMUSE and BoC-GEM-Fin simulations Last observation: June 2011

surplus shrinks to below 3 per cent. The gradual adjustment of the global imbalances is explained by (i) the timing assumed for both the fiscal consolidation in the United States and Europe and the rotation of demand in China and emerging Asia; and (ii) a delayed response of the current account to movements in real exchange rates.¹³

Chart 3 illustrates that if policy assumptions embedded in the baseline scenario are put in place, global current account imbalances are likely to be reduced over the medium term. Overall, conditional on the implementation of policies addressing internal and external imbalances at the country level, the baseline scenario is consistent with the G-20 Framework for Strong, Sustainable and Balanced Growth, which was adopted at the 2009 G-20 summit in Pittsburgh and reaffirmed at both the 2010 summit in Toronto and, more recently, in Cannes.

We now turn to two plausible alternative scenarios in which the main policy initiatives of the G-20 are either delayed or not implemented.

Alternative Scenario 1: Delayed Fiscal Consolidation and Reforms

In Alternative Scenario 1, we consider the possibility of a delay until the end of 2015 in the fiscal consolidation in advanced economies (specifically, the United States and Europe) and structural reforms supporting growth in domestic demand in China and other emerging-market economies in Asia, including increased flexibility in exchange rates. In addition, we assume that the recommended structural reforms in Japan and Europe do not occur.

◀ The baseline scenario is consistent with the G-20 Framework for Strong, Sustainable and Balanced Growth

¹³ The outcomes are also conditional on our assumed response of monetary policy, which is to remain close to the effective lower bound in the United States until mid-2014, as well as in Europe and Japan for most of this period. In the two alternative scenarios presented in this article, the policy rates remain constrained in these countries.

Delayed fiscal consolidation in the United States and Europe

In this scenario, the U.S. federal government debt rises by an additional 25 per cent of GDP by the end of 2015. In Europe, the delayed fiscal consolidation causes the ratio of debt to GDP to increase by approximately 10 percentage points over the same period.¹⁴ We assume that the higher and steeper trajectory for government debt in both regions implies a rise in sovereign risk premiums relative to the baseline scenario. Using estimates for the elasticity of interest rates in response to changes in debt from Laubach (2003) as a guide, we assume that premiums increase relative to the baseline by 250 and 275 basis points in the United States and Europe, respectively.¹⁵ We also assume that interest rates for corporations and consumers rise accordingly, reducing private spending and economic activity in those regions.¹⁶

Beginning at the end of 2012, the increase in interest rates, owing to the rise of the risk premium, starts to dampen investment spending, as well as demand for housing and durable consumption. Delayed fiscal consolidation in countries experiencing current account deficits, such as the United States, reduces the prospects for the correction of global imbalances in the medium term by lowering domestic savings.

Lack of adjustment and a “hard landing” in China and the other emerging-market economies of Asia¹⁷

In Alternative Scenario 1, we also assume that China and other emerging-market economies in Asia will (i) prevent their real effective exchange rates from adjusting, and (ii) *not* implement structural reforms to stimulate the rotation of total demand away from exports and toward domestic demand until the end of 2015.

Chart 4 compares the path of the Chinese real effective exchange rate in Alternative Scenario 1 with that in the baseline scenario. By the end of 2015, the lack of appreciation in the Chinese currency implies a difference of about 10 per cent relative to the baseline.

In this alternative scenario, we suppose that the delayed adjustment of the exchange rates in China and the other emerging-market economies of Asia, in conjunction with the absence of structural reforms (notably in the financial sector), implies that interest rates are kept exceptionally low. This induces a mispricing of risk, which, combined with the incentive for high precautionary

¹⁴ The increase in debt in the United States is comparable with the increase observed from 2008 to 2011, following the financial crisis. In Europe, we assume that countries currently under severe fiscal stress, such as Portugal, Ireland, Italy, Greece and Spain, consolidate their budget. Because of the absence of a fiscal block for Europe in GMUSE, the simulation for the increase in debt in the United States and Europe is done in BoC-GEM-Fin.

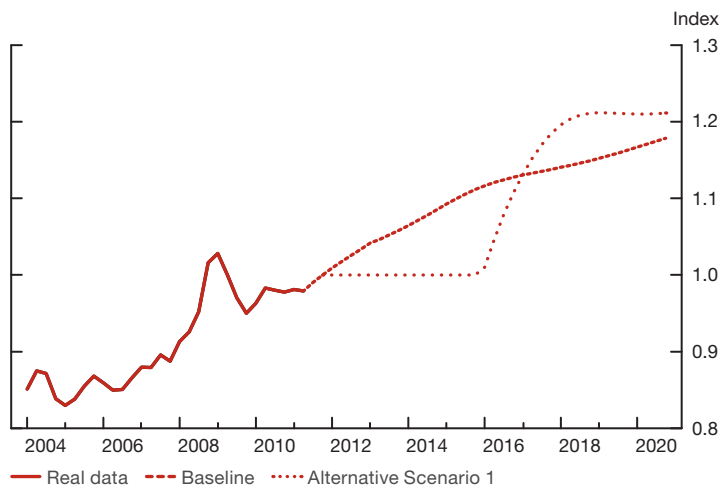
¹⁵ There is considerable uncertainty around the assumed elasticity of the risk premium to the ratio of debt to GDP. Laubach (2003) reports that government bond rates increase by 2 to 4 basis points following an increase of 1 percentage point in the ratio of debt to GDP. In our simulation, we double these estimates, in line with Baldacci and Kumar (2010); Laubach (2011); and Schuknecht, von Hagen and Wolswijk (2010), who find that elasticities could be much larger, given threshold effects and non-linear responses to large levels of indebtedness. Moreover, we assume additional spillovers, amounting to 175 basis points in Europe and 150 basis points in Japan, which are included in the figures discussed above.

¹⁶ Without the lower-bound constraint, the policy rate would have fallen by more than 2 per cent within the first two years of the shock to the risk premium in the United States. The lack of additional monetary policy response, beyond the equivalent of a 50-basis-point reduction in interest rates from the quantitative easing (QE) program (see note 24), is crucial for the significant decreases in output observed in this scenario. A larger QE program than the one specified would offset a larger part of the increase in spreads, reducing the negative impact on the economy.

¹⁷ Given that GMUSE does not include a separate block for the other emerging-market economies of Asia, in this section, China's exchange rate and domestic demand figures are used to illustrate emerging Asia.

Chart 4: Alternative Scenario 1—Chinese real effective exchange rate

Index: 2011Q4 = 1



Note: Dotted lines indicate projections.

Sources: GMUSE and BoC-GEM-Fin simulations

Last observation: June 2011

savings and the relatively underdeveloped capital and credit markets in the region, leads to abnormally high demand and prices for housing and financial assets.

We also assume that the sterilization of reserve accumulation in this region contributes to a buildup of distortions in the domestic banking system (resulting, for example, from low returns on the bonds used for sterilization purposes) that will eventually force authorities to reduce this practice. The reduced sterilization, combined with the buildup of imbalances described above, eventually leads to higher inflationary pressures,¹⁸ resulting in a rapid increase in interest rates, which considerably restrains economic activity. The increase in interest rates and the slowdown in economic activity then results in a significant decline in housing and equity prices, aggravating the decline in domestic demand growth.¹⁹

In addition, we suppose that the exposure of banks to unprofitable investment projects reduces the availability of credit, further amplifying the effects of the tightening of monetary policy and leading to a banking crisis.²⁰ We also assume that the misallocation of resources caused by the long exposure to undervalued currency (for example, a disproportionately high investment in the export and real estate sectors and neglect of other sectors that could be more productive) will have permanent negative effects on potential output.²¹

¹⁸ We assume that the buildup of imbalances lasts for two years.

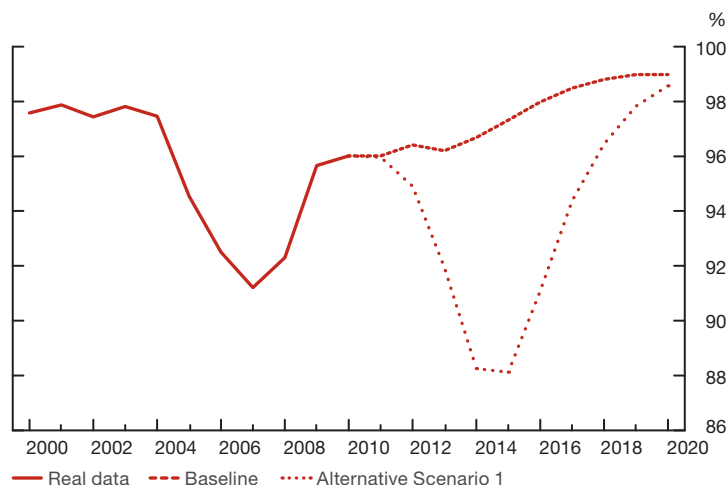
¹⁹ We assume that the declines in asset prices are as large as those experienced during the 1997–98 Asian financial crisis (Reinhart and Rogoff 2009). Specifically, we assume that housing prices decline by 40 per cent in China and 30 per cent in the other emerging-market economies of Asia, while their stock markets drop by 60 per cent and 50 per cent, respectively, compared with our baseline scenario. The wealth effects of these asset-price shocks on domestic demand are consistent with the long-term elasticity found in Peltonen, Sousa and Vansteenkiste (2009) and Ciarlone (2011).

²⁰ A banking crisis unfolds as lower growth in GDP leads to a large increase in non-performing loans. The exposure of banks to unprofitable investment projects leads to severe deleveraging, which reduces credit availability. The size of the additional shock to domestic demand needed to capture the financial-accelerator and bank-capital mechanisms is estimated by comparing the effect of shocks in versions of the BoC-GEM-Fin that include and exclude financial frictions.

²¹ To account for these permanent negative effects, we introduce exogenous reductions in potential output of 4.5 per cent and 3 per cent in China and emerging Asia, respectively. These permanent declines are in line with historical experiences found by Cerra and Saxena (2008).

Chart 5: Alternative Scenario 1—domestic demand in China

As a percentage of GDP



Note: Dotted lines indicate projections.

Sources: GMUSE and BoC-GEM-Fin simulations

Last observation: 2010

Chart 5 illustrates the possible implications for China’s domestic demand in Alternative Scenario 1 compared with the baseline scenario. The share of domestic demand in China’s GDP shrinks to less than 90 per cent by mid-2014, compared with about 97 per cent in the baseline scenario. This shock is transmitted internationally through trade, financial and confidence channels.²²

Outcomes under Alternative Scenario 1

We illustrate that the delay in implementing the policy initiatives described in the baseline scenario could cause imbalances to grow over the 2011–20 period. Both the deficit in the U.S. current account and the surplus in the Chinese current account are larger in Alternative Scenario 1 than in the baseline scenario. The U.S. current account declines to -4.4 per cent of GDP by 2015, while the Chinese current account increases to above 12 per cent (Chart 6), compared with -2.3 and 3.9 per cent of GDP, respectively, in the baseline scenario.²³

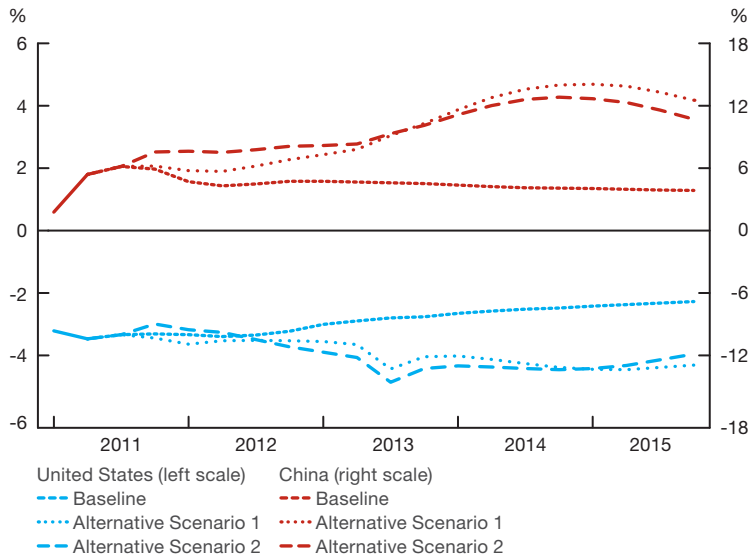
The insufficient demand generated in Alternative Scenario 1, combined with the constraint on nominal policy rates from the effective lower bound in Europe, Japan and the United States, leads to higher real interest rates.

²² We assume a decline of 20 per cent in the stock markets of other emerging-market economies and a decline of 15 per cent in those of the United States, Europe and other advanced economies relative to the baseline scenario. Given the sovereign debt crisis in Europe, the greater uncertainty in China and other emerging-market economies in Asia leads to an additional rise in the perceived risk of the European sovereign debt (sovereign risk premiums increase by 40 basis points) and a 3.5 per cent decline in outstanding loans relative to the baseline scenario.

²³ This is comparable with the results obtained by the International Monetary Fund for the G-20 Mutual Assessment Process (MAP), in which the adoption of fiscal consolidation, rebalancing policies and structural reforms leads to a decline of 7 percentage points in China’s current account surplus and a decline of 1.6 percentage points in the U.S. current account deficit over the 2011–16 period (IMF 2011). Moreover, in the MAP scenario, the U.S. real effective exchange rate depreciates by about 10 per cent over 2011–16, while the Chinese real effective exchange rate appreciates by roughly the same amount, which is also similar to the results obtained in our simulations. In contrast to our scenarios, however, the simulations for the G-20 MAP do not contain the important assumptions leading to a severe contraction in output due to (i) the increase in risk premiums following the failure to consolidate on the part of the United States and Europe, and (ii) the hard landing in China and the other emerging-market economies of Asia.

Chart 6: Alternative scenarios—current account balances in the United States and China

As a percentage of respective GDP



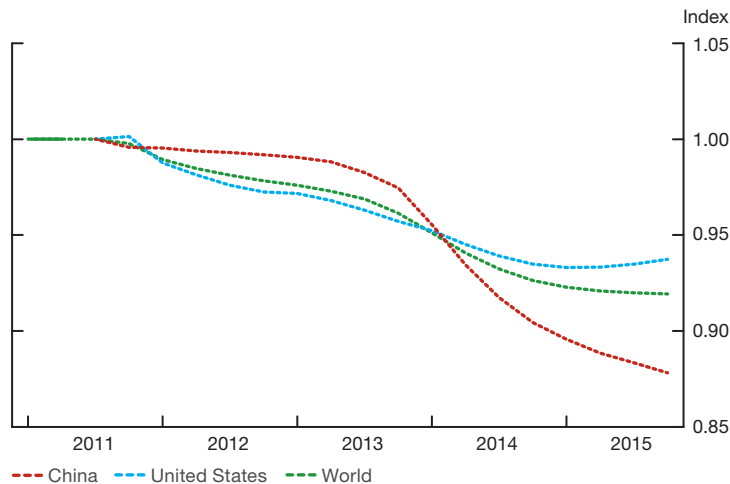
Note: Dotted lines indicate projections.

Sources: GMUSE and BoC-GEM-Fin simulations

Last observation: June 2011

Chart 7: Alternative Scenario 1—GDP relative to the baseline scenario

Index: 2011Q2 = 1



Note: Dotted lines indicate projections.

Sources: GMUSE and BoC-GEM-Fin simulations

Last observation: June 2011

This insufficient demand also generates strong deflationary pressure in developed countries that will last until 2016, with inflation rates reaching a trough of approximately -2.5 per cent in the United States and Europe.²⁴

In terms of economic growth, Alternative Scenario 1 results in reduced GDP across regions (Chart 7). By 2015, the lack of required policy measures produces an 8 per cent loss in world GDP (US\$6 trillion at 2009 prices) relative

²⁴ The negative effect of deflation on aggregate demand is somewhat dampened by the implementation of quantitative easing (QE) measures in the United States and Europe. We assume that these measures would result in a persistent reduction of 50 basis points in the long-run interest rates. This is in line with most estimates of the effect on Treasury yields of the 2008 Treasury bond purchases by the Federal Reserve (Kozicki, Santor and Suchanek 2011). However, considerable uncertainty remains regarding the size and effectiveness of the QE measures.

to the baseline scenario. During the same period, the U.S. GDP is lower by 6 per cent relative to the baseline scenario, while the decline in Chinese GDP is 12 per cent.

Alternative Scenario 2: Front-Loaded Fiscal Consolidation in the United States and Europe

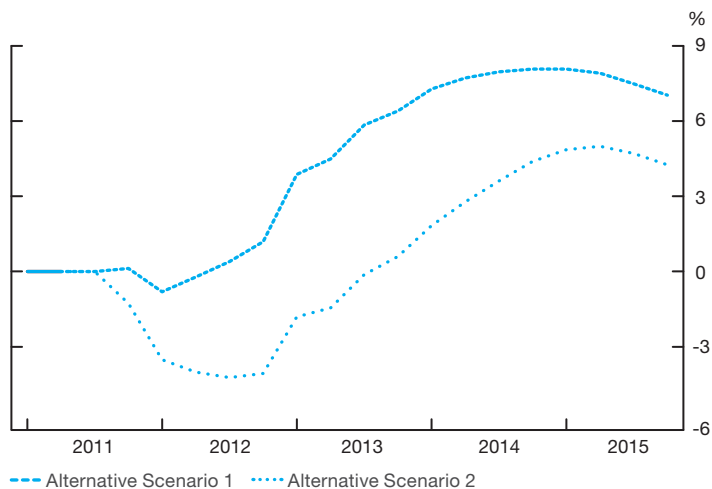
In Alternative Scenario 2, we maintain the lack of adjustments to exchange rates and structural reforms in China and the other emerging-market economies of Asia, as well as the absence of structural reforms in Europe and Japan. We assume, however, that the fiscal consolidation in the United States and Europe is front-loaded, compared with the baseline scenario. In addition, we assume that concerns about the sovereign debt crisis in Europe lead to a rise in sovereign risk spreads of about 190 basis points.²⁵

The projected paths for budget deficits in the United States and Europe are fairly similar. In the United States, the front-loaded fiscal consolidation results in a decline in the ratio of the deficit to GDP by about 4 percentage points by late 2012, relative to the baseline scenario (Chart 8). By mid-2013, however, the spillover effects on U.S. GDP resulting from the hard landing in the emerging-market economies of Asia and from the lack of structural reforms in Europe and Japan cause the deficit-to-GDP ratio to rise above the level in the baseline scenario.²⁶

In Europe, the front-loaded fiscal consolidation implies a deficit reduction of more than 5 percentage points by mid-2013, compared with Alternative Scenario 1 with delayed fiscal consolidation. In the long run, the ratio of deficit to GDP in Alternative Scenario 2 stabilizes at the same level as in the baseline scenario, which is about 2 percentage points lower than that in Alternative Scenario 1.

Chart 8: U.S. government deficit

Difference from baseline, as a percentage of GDP



Note: Dotted lines indicate projections.

Sources: GMUSE and BoC-GEM-Fin simulations

Last observation: June 2011

²⁵ This is roughly similar to the 160-basis-point increase in government spreads (the rate for 10-year government bonds versus rates for the Euro OverNight Index Average (EONIA)) observed between October 2010 and January 2012, despite the fiscal-consolidation efforts undertaken in many countries over this period. Given that spreads have remained relatively stable in the United States over the same period, we do not impose an increase in spreads in the United States in this scenario.

²⁶ The magnitude of the change in the fiscal deficit in Alternative Scenario 2 is similar to that in the baseline scenario.

Outcomes under Alternative Scenario 2

In our simulation, the front-loaded fiscal consolidation in the United States and Europe mitigates, but does not resolve, global imbalances. Although both the current account deficit in the United States and the surplus in China are lower in this scenario by 2015, relative to Alternative Scenario 1 (in which fiscal consolidation is delayed), they remain larger than in the baseline (Chart 6). In this scenario, the lack of adjustment in exchange rates and domestic demand in China and the other emerging-market economies of Asia prevents the resolution of global imbalances.

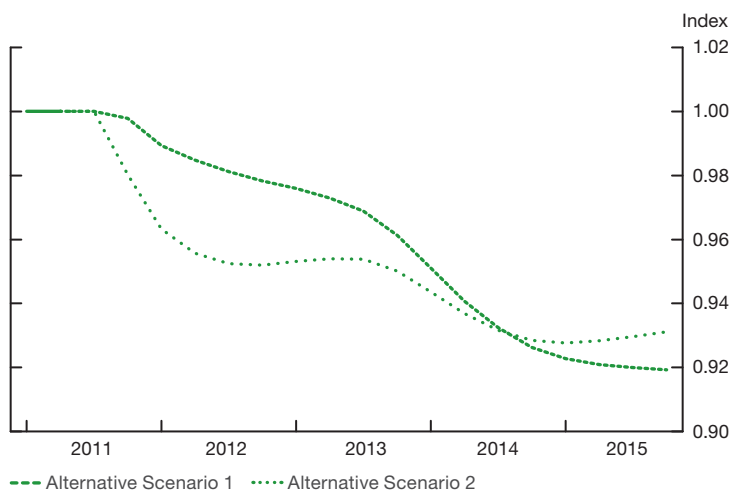
When the United States and Europe undertake front-loaded fiscal consolidation, global GDP is lower than when fiscal consolidation is delayed—until late 2014, after which there is a reversion. In both Alternative Scenario 1 (delayed fiscal consolidation) and Alternative Scenario 2 (front-loaded fiscal consolidation), global GDP is substantially lower by 2015 than in the baseline scenario (Chart 9)—by 8 per cent and 7 per cent, respectively. Weaker growth in output in the first two years causes advanced economies to experience significant deflation.²⁷ In Alternative Scenario 2, the trough in inflation (around -4 per cent in the United States) is lower than in Alternative Scenario 1 (around -2.5 per cent in the United States). Moreover, in Alternative Scenario 2, the trough in inflation is reached one year earlier, at the end of 2012. Eventually, permanently lower government bond spreads in the United States and Europe, relative to Alternative Scenario 1, outweigh the short-term negative effect on GDP from the front-loaded fiscal consolidation. Nevertheless, when the GDP losses observed in the two alternative scenarios relative to the baseline scenario are computed in terms of net present values (using the BoC-GEM-Fin real discount rate of 3 per cent per year), cumulative losses under Alternative Scenario 2 are almost 10 per cent greater than those under Alternative Scenario 1. Thus, in Alternative Scenario 2, the lack of domestic demand in China and the other emerging-market economies of Asia needed to offset the lost demand resulting from the fiscal adjustment in advanced economies plays a crucial role in explaining the shortfall in global demand.

◀ *The front-loaded fiscal consolidation in the United States and Europe mitigates, but does not resolve, global imbalances*

◀ *In Alternative Scenario 2, the lack of domestic demand in the emerging-market economies of Asia plays a crucial role in explaining the shortfall in global demand*

Chart 9: Alternative scenarios—global GDP relative to the baseline scenario

Index: 2011Q2 = 1



Note: Dotted lines indicate projections.

Sources: GMUSE and BoC-GEM-Fin simulations

Last observation: June 2011

²⁷ When interest rates are near the effective lower bound, deflation poses many risks to the economy, including the possibility of unanchored inflation expectations, which would increase real interest rates and, consequently, real debt burdens. These risks can lead to a protracted weakness in the domestic economy.

Sensitivity Analysis

To gauge the importance of the main assumptions in Alternative Scenario 1 (with delayed fiscal consolidation), we divide the total loss of global output (8 per cent) relative to the baseline scenario, according to the contribution of the various components (Table 1). The delayed fiscal consolidation in the United States and Europe explains approximately 3.6 percentage points of the loss in output, while the delayed adjustments in China and the other emerging-market economies of Asia account for another 3.6 percentage points. Finally, the lack of structural reforms in Europe and Japan explains 0.8 percentage point of the total loss. Thus, in Alternative Scenario 1, not implementing the policy measures in advanced economies and in emerging-market economies in Asia accounts for roughly equal shares of the total loss of global output.

◀ *In Alternative Scenario 1, not implementing the policy measures in advanced economies and in emerging-market economies in Asia accounts for roughly equal shares of the total loss of global output*

Table 1: Sensitivity analysis of the loss of global output

| Components of Alternative Scenario 1 | Contribution to the decline in global gross domestic product (percentage points, by the end of 2015) |
|--|--|
| Delayed fiscal consolidation in the United States and Europe | 3.6 |
| Lack of adjustment and a hard landing in China and the other emerging-market economies of Asia | 3.6 |
| Lack of structural reforms in Europe and Japan | 0.8 |

Concluding Remarks

Under a baseline scenario characterized by a combination of fiscal consolidation in the United States and Europe, flexible exchange rates and structural policies to stimulate domestic demand in the emerging-market economies of Asia, and structural reforms in Europe and Japan, we find that global current account imbalances could be gradually reduced over the medium term. Our first alternative scenario illustrates that if all the necessary policies described above are delayed, not only could the correction of global imbalances be undermined, but world economic growth could also be reduced. Our simulations also suggest that, in a second alternative scenario in which only the United States and Europe implement some of the policies favourable to reducing global imbalances, these imbalances could be reduced but would remain far from the convergence observed in the baseline. As well, global GDP would be lower than in the baseline scenario by 2015, and the losses relative to the baseline, when measured in terms of real net present values, would be almost 10 per cent greater than in the first alternative scenario over the next five years. Overall, our analysis suggests that if left unresolved, the global imbalances could have severe negative consequences for global economic growth and financial stability.

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