**ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA (ESCWA)**

# ASSESSING THE IMPACT OF THE CONFLICT ON THE SYRIAN ECONOMY AND LOOKING BEYOND

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**Introduction**

This paper aims to chart the potential main challenges for post-conflict reconstruction in the Syrian Arab Republic. To do so, the economic and social impact of the crisis must first be assessed. Using loss estimates and the most recent available data from government and other sources, this report is based on a realistic order of magnitude of the losses.

Several assumptions have been made in order to define plausible development of the Syrian crisis. This is not, however, an exercise in forecasting, for which general equilibrium models are not the best tools. The definition of a benchmark using major exogenous hypotheses is intended merely to define a baseline scenario with which alternative policy scenarios can be compared in order to isolate their specific impact. That the value of the exogenous variables is set on an a priori basis, within a realistic confidence interval, does not have major consequences. Where the impact of alternative economic policies is assessed, it has been verified that these choices have little impact on the amplitude or positive or negative tendency of the variations in the different aggregates relative to the baseline scenario.

The main technical tool used is a disaggregated social accounting matrix (SAM) on the Syrian Arab Republic prepared by ESCWA in 2007. Information for the new SAM comes mainly from the World Bank's 2006 Input Output (IO) table, which focuses on the energy sector, and the SAM put together in 2008 by the United Nations Development Programme, which focuses on agriculture and food processing. Other sources, including national accounts, the government budget, data on labour and the balance of payments, as well as agricultural statistics and the annual statistical abstract, have been used mainly to update information in the IO table and SAMs. The report uses a computable general equilibrium (CGE) model for the simulation. The first section outlines a baseline scenario. The next section provides an assessment of the impact on the economy and specific sectors thereof of the first years of the conflict (2011-2013). The following section looks at the impact of two further years of conflict on growth, unemployment, specific sectors of production and the fiscal situation. In the final section, we look at the public investment required to return to the pre-crisis level of gross domestic product (GDP) and the fiscal and macroeconomic implications of such an investment programme.

## I. THE BUSINESS AS USUAL SCENARIO

The business as usual (BaU), or baseline, scenario reflects the path that the Syrian economy would have taken in the absence of the conflict, as set forth in the 2010 article IV consultation report of the International Monetary Fund (IMF).

*Growth hypotheses*

Using the IMF 2010 article IV report as a reference, the rate of growth in GDP is set for the period until 2015 in order to estimate a growth rate for total factor productivity (table 2). Labour market supply was expected to continue growing steadily, with a slight decline from 2.7 per cent annual growth in 2011 to 2.5 per cent in 2015.

*Economic policies implemented in the BaU scenario*

We assume here that the Government continues its policy of fiscal stabilization. Budget spending continues to represent an important share of GDP, passing from 25.0 per cent in 2011 to 25.3 per cent in 2015, reflecting the public sector's role as a key source of economic growth. Neither current nor capital expenditures experience major change over the simulation period (2011-2015). The most notable changes in the budget appear in the relative importance of oil and non-oil revenues. In 2011, oil revenue represents 4.1 per cent of government revenue, while non-oil revenue represents 17.4 per cent. Oil revenue in 2015 declines by around 0.3 per cent, which is offset by a rise in non-oil revenue.

*The Syrian economy without the conflict*

Under this scenario, growth in GDP rises from 5.7 per cent in 2011 to 5.9 per cent in 2015, while unemployment falls from 8.3 per cent to 7.4 per cent. Those figures translate to a growth-employment elasticity of -3, which is good by international standards. Sound fiscal policy would keep foreign and domestic borrowing at their initial levels, which was one of the main achievements of Syrian economic policy over the past decades.

TABLE 1. PUBLIC FINANCES UNDER THE BAU SCENARIO
(*Percentage of GDP*)

|  | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|
| Gross public debt | 21.5 | 21.6 | 21.6 | 21.6 | 21.5 | 21.5 |
| Oil revenue | 5.4 | 4.1 | 4.1 | 4.0 | 3.8 | 3.8 |
| Non-oil revenue | 16.1 | 17.4 | 17.5 | 17.6 | 17.7 | 17.7 |
| Expenditure | 25.9 | 25.0 | 25.1 | 25.3 | 25.3 | 25.3 |
| Current expenditure | 16.4 | 15.5 | 15.5 | 15.7 | 15.7 | 15.7 |
| Development expenditure | 9.6 | 9.6 | 9.6 | 9.5 | 9.5 | 9.5 |
| Overall balance | -4.4 | -3.4 | -3.5 | -3.7 | -3.8 | -3.8 |
| Non-oil budget balance | -9.8 | -7.6 | -7.6 | -7.7 | -7.6 | -7.6 |
| Gross public debt | 22.4 | 20.8 | 21.7 | 22.9 | 24.3 | 24.3 |
| Domestic | 13.3 | 12.7 | 14.4 | 16.1 | 18.1 | 18.1 |
| External | 9.1 | 8.1 | 7.4 | 6.8 | 6.3 | 6.3 |

*Source*: IMF article IV consultation, 2010.

TABLE 2. ECONOMIC PROJECTIONS UNDER THE BAU SCENARIO

|  | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|
| Growth (%) | 3.44 | 5.7 | 5.8 | 5.4 | 5.8 | 5.9 |
| Labour force growth (%) | 2.7 | 2.7 | 2.6 | 2.5 | 2.5 | 2.5 |
| Unemployment rate (%) | 8.613 | 8.3 | 8.3 | 8.1 | 7.8 | 7.4 |
| Public investment (as % of GDP) | 9.6 | 9.6 | 9.6 | 9.5 | 9.5 | 9.5 |
| Current expenditure (as % of GDP) | 16.4 | 15.5 | 15.5 | 15.7 | 15.7 | 15.7 |
| Government revenue (as % of GDP) | 21.5 | 21.6 | 21.6 | 21.6 | 21.5 | 21.5 |
| Total factor productivity | 1 | 1 | 0.99 | 0.99 | 0.99 | 1 |
| Tax collection rate | 1 | 1 | 0.5 | 1 | 1 | 1 |
| Foreign debt (as % of GDP) | 9.1 | 8.1 | 7.4 | 6.8 | 6.3 | 6.3 |
| Domestic debt (as % of GDP) | 13.3 | 12.7 | 14.4 | 16.1 | 18.1 | 18.1 |
| Nominal external interest rate (%) | 4.9 | 5.1 | 5.2 | 5.4 | 5.6 | 5.6 |
| Nominal external interest rate (%) | 4.9 | 5.1 | 5.2 | 5.4 | 5.6 | 5.6 |
| Public deficit (as % of GDP) | -4.5 | -3.5 | -3.5 | -3.6 | -3.7 | -3.7 |
| External borrowing (as % of GDP) | 1 | 1 | 1 | 1 | 1 | 1 |
| Internal borrowing (as % of GDP) | 3.5 | 2.5 | 2.5 | 2.6 | 2.7 | 2.7 |

*Source*: IMF article IV consultation, 2010.

# I. ASSESSMENT OF THE ECONOMIC IMPACT OF THE FIRST YEARS OF THE CRISIS (2011-2013)

The absence of public data has fuelled speculation about the impact of the first years of the crisis on the economy. In this section, we have cross-referenced available data with the results of a CGE model using the 2007 Syrian SAM.

## A. THE HYPOTHESIS

*Capital destruction*

Capital destruction by sector occurs as set out in table 3.

TABLE 3. CAPITAL DESTRUCTION BY SECTOR
(*Percentage*)

|  | 2012 | 2013 | 2014 |
|---|---|---|---|
| Cereal production | 70 | 43 | 90 |
| Cotton production | 70 | 43 | 90 |
| Other agricultural products | 70 | 43 | 90 |
| Animal production | 70 | 43 | 90 |
| Mining | 30 | 33 | 90 |
| Agro-food industry | 80 | 63 | 90 |
| Tobacco | 100 | 100 | 90 |
| Textiles | 60 | 100 | 90 |
| Leather products | 50 | 100 | 90 |
| Paper production | 50 | 100 | 90 |
| Wood production | 80 | 63 | 90 |
| Fuel production | 80 | 63 | 1 |
| Other chemical production | 80 | 63 | 1 |
| Metal production | 80 | 50 | 90 |
| Other manufacturing | 80 | 63 | 90 |
| Electricity distribution | 80 | 94 | 90 |
| Water distribution | 80 | 94 | 90 |
| Construction | 80 | 63 | 90 |
| Commercial sector | 70 | 100 | 90 |
| Transport | 85 | 71 | 90 |
| Real estate | 100 | 60 | 90 |
| Other services | 90 | 56 | 90 |
| Government services | 73 | 69 | 90 |

*Source*: Authors' calculation using a CGE model.

*Labour force*

The labour force shrinks by 10 per cent.

*Foreign reserves*

According to The Economist Intelligence Unit, the Central Bank of the Syrian Arab Republic injected more than 12 billion United States dollars ($) into the economy during the first three years of conflict. Data in the *Joint Arab Economic Report 2012* suggested that the Syrian Arab Republic had $5.5 billion left in foreign reserves in 2012, excluding its gold treasury. A number of facts and assumptions have led us to revise this number down (figure I).

**Figure I. Foreign reserves**
(*$ billion*)
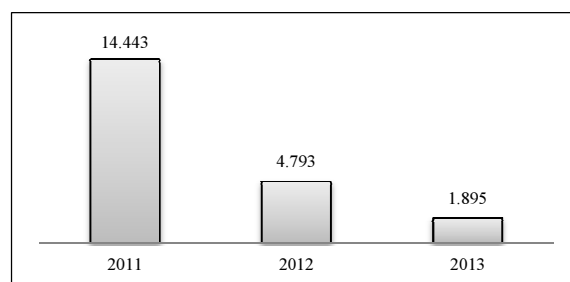


*Source*: Authors' calculation.

*Foreign borrowing*

- The Islamic Republic of Iran has provided a line of credit for $3.7 billion (of which $1 billion has so far materialized). We assume that it will be consumed at a rate of $1 billion per year ($700 million in 2015).

*International transfers*

- It is estimated that transactions amounted to around $3 million a day in 2012;
- During late 2013 and early 2014, the European Union released approximately $500 million in frozen Syrian assets for food and medication expenses.

An estimated $7 billion in excess liquidity left the country during the first year of the crisis in different currencies.

## B.  SIMULATION RESULTS

The destruction of capital is reflected in the contraction of the Syrian economy that started in 2011. According to available data, the rate of growth was -6.8 in 2011, -28.2 in 2012 and -16.7 in 2013 (table 4).

*Government revenue*

Under the simulation for the period, tax revenues (both direct taxes and indirect taxes on consumption and imports) may have dropped by as much as 58.7 per cent in 2011 compared to 2010, with further falls in 2012 and 2013 of 69.3 per cent and 33.6 per cent respectively.  Government revenue thus represents only 10.7 per cent of GDP in 2013 compared to 21.5 per cent in 2010.

*Government fiscal balance and debt policy*

The increase in current expenditure (from 16.4 per cent of GDP in 2010 to 34.5 per cent of GDP in 2013), the decrease of capital expenditures (from 9.6 per cent of GDP in 2010 to only 2.5 per cent of GDP in 2013) and the above-mentioned decline in government revenue as a portion of GDP have all had an impact on the government budget.  In addition, the public sector deficit expanded from 4.5 per cent of GDP in 2010 to 26.3 per cent in 2013.  Options for financing the deficit are limited, given the political situation in the country.  Domestic borrowing therefore, in spite of damage to the financial sector, plays a growing role in financing the public deficit, rising from 3.5 per cent of GDP in 2010 to more than 23.0 per cent in 2013.  The rise is most likely due to an increase in money supply (M3) rather than the result of official financing through the private banking system.  In spite of the embargo placed on the country by many States, foreign debt rises from 9.1 per cent of GDP in 2010 to 16.5 per cent in 2013 under the simulation.  The higher public deficit, falling national rate of savings and growing dependence on foreign borrowing are fuelling inflation and depreciation of the local currency (Syrian pound, LS).

*Unemployment*

The simulation suggests that the impact on employment of the crisis is not proportional to the economic recession.  While GDP declines by 6.8 per cent in 2011 compared to 2010, unemployment grows at three times that rate, rising from 8.6 per cent in 2010 to 22.3 per cent in 2011. In 2012 and 2013, it reaches around 40 per cent and 54 per cent of the active population respectively.  Rising unemployment is a direct knock-on effect of the destruction of capital, which reduces by a given proportion jobs in all sectors of the economy.

The effects of the crisis on jobs can be observed in the short run. However, in later years, a "war economy" develops and standard unemployment figures become irrelevant.

*Sectoral implications*

Under this scenario of continued armed conflict, many factors contribute to a major transformation of the Syrian economy, including the destruction of capital, the drop in public and private investment and the significant decline in productivity.

In 2013, production falls in all sectors but at uneven rates. Agriculture, mainly cotton and cereal production, and textiles and mining are among the least affected. The steep drop in productive capacity affects the Syrian economy in the short and medium term even if the conflict ends. The slowdown in sectors where physical capital is the main production factor makes Syrian products less competitive and puts a brake on the economy's capacity to create jobs.

Mining and textiles, which rely more on natural resources and labour than physical capital and investment, could be the engine for reconstruction in the Syrian Arab Republic if and when the conflict ends. The rest of the industrial sector will be more heavily affected and experience greater difficulty in restoring productive capacity. Table 5 displays the impact on production by sector.

TABLE 4. MACROECONOMIC IMPACT OF THE CRISIS, 2010-2013

|  | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|
| GDP growth (%) | 3.44 | -6.80 | -28.20 | -16.70 |
| Exchange rate (LS to $1) | 103.69 | 101.61 | 102.12 | 102.63 |
| GDP (LS billion) | 28205.88 | 26287.88 | 18874.70 | 15722.62 |
| Unemployment rate (%) | 8.61 | 22.37 | 39.91 | 53.53 |
| Total investment (as % of GDP) | 27.49 | 19.26 | 23.39 | 8.79 |
| Total imports (as % of GDP) | 40.84 | 40.55 | 37.40 | 37.68 |
| Total exports (as % of GDP) | 32.42 | 29.95 | 27.31 | 31.05 |
| Tax collection rate (%) | 100.00 | 58.71 | 69.30 | 33.57 |
| Government revenue (as % of GDP) | 21.50 | 15.10 | 14.90 | 10.70 |
| Government current expenditure (as % of GDP) | 16.40 | 24.20 | 31.90 | 34.50 |
| Public investment (as % of GDP) | 9.60 | 6.30 | 5.00 | 2.50 |
| Government fiscal balance (as % of GDP) | -4.50 | -15.40 | -22.00 | -26.30 |
| Domestic financing (as % of GDP) | 3.46 | 13.80 | 19.46 | 23.24 |
| Foreign financing (as % of GDP) | 1.04 | 1.60 | 2.54 | 3.06 |
| Domestic debt (as % of GDP) | 13.21 | 25.29 | 54.38 | 87.75 |
| Foreign debt (as % of GDP) | 9.10 | 9.63 | 13.69 | 16.56 |

*Source*: Authors' calculation using a CGE model.

TABLE 5. PRODUCTION BY SECTOR, 2011-2013
(*Percentage*)

|  | 2011 | 2012 | 2013 |
|---|---|---|---|
| Cereal production | 87.11 | 38.41 | 35.02 |
| Cotton production | 83.64 | 8.41 | 3.91 |
| Animal production | 92.40 | 70.92 | 65.68 |
| Other agricultural products | 97.51 | 71.90 | 70.53 |
| Agro-food industry | 94.69 | 66.14 | 65.08 |
| Leather products | 125.60 | 78.90 | 99.68 |
| Mining | 83.84 | 52.32 | 44.61 |

TABLE 5 (*continued*)

| | 2011 | 2012 | 2013 |
|---|---|---|---|
| Fuel production | 87.89 | 56.65 | 45.96 |
| Other chemical production | 85.67 | 52.40 | 46.43 |
| Other manufacturing | 77.29 | 55.63 | 35.03 |
| Metal production | 66.37 | 43.71 | 26.58 |
| Paper production | 73.27 | 52.33 | 31.76 |
| Textiles | 92.14 | 55.07 | 57.88 |
| Tobacco | 104.37 | 62.92 | 65.67 |
| Wood production | 95.56 | 68.33 | 58.89 |
| Commercial sector | 81.96 | 53.31 | 44.54 |
| Construction | 66.89 | 56.74 | 19.96 |
| Electricity distribution | 93.71 | 58.34 | 53.26 |
| Transport | 107.77 | 69.63 | 67.64 |
| Water distribution | 100.33 | 66.42 | 60.92 |
| Real estate | 96.96 | 58.73 | 56.01 |
| Government services | 134.69 | 131.90 | 111.18 |

*Source*: Authors' calculation using a CGE model.

### III. THE ECONOMIC IMPACT OF CONTINUED CRISIS IN 2014-2015

#### A. THE HYPOTHESIS

- The Government freezes all public investment programmes;

- Capital stock stops decreasing;

- Tax collection remains at the 2013 level;

- The Government continues to use its foreign reserves;

- From 2014, if government domestic borrowing exceeds 40 per cent of its 2013 borrowing levels, it will surpass total domestic savings;

- The Government either cuts current and military expenditure or finances it through foreign borrowing.

#### B. SIMULATION RESULTS

A key consequence of the ongoing crisis is likely to be a further decline in GDP, by 4.1 per cent in 2014 and 3.5 per cent in 2015 respectively. We note a slowdown in the rate of decline in 2014-2015 when compared with the period 2011-2013, mainly because destruction of productive capacities was already so extensive in the first years of the crisis.

Unemployment is expected to reach around two thirds of the active population by 2015. However, the expected high level of unemployment will not be fully reflected in levels of poverty. Experience in countries in conflict shows that, when the formal economy declines, the informal sector takes over a large share of productive capacity, thereby offsetting a significant portion of the economic and social losses caused by the crisis.

Public finances will continue to suffer. The deterioration will affect not only revenue but also expenditure, which in turn will have a negative impact on the rest of the economy. Tax revenue in 2015 will be only one third of the level in 2010. Although the volume of GDP in 2015 will be half that of 2010, government revenue will still only represent 12.6 per cent of the total, roughly equivalent to 8 per cent of the country's GDP in 2010. Revenue that year was 21.5 per cent of GDP. The ability of the Government to

finance reconstruction will thus be very limited. Current expenditure is generally difficult to reduce and its share of GDP is expected to rise from 16.4 per cent in 2010 to almost 50 per cent in 2015. The gap will be financed through domestic and foreign borrowing, which should also be used to mitigate the effects of inflation and depreciation of the local currency.

It is assumed that no more capital destruction will take place from 2014 on, meaning that the impact of the crisis on production will be much more limited than in the previous years (2011-2013). For example, fuel production dropped by 11 per cent from 2010 to 2011. In 2015 it is expected to decline by a further 4 percentage points. Most capital intensive activities have been completely or partially destroyed. Only small enterprises, mostly labour-intensive family businesses, will be left to continue their activities partially or totally.

TABLE 6. MACROECONOMIC IMPACT OF THE CRISIS: 2010 VERSUS 2014-2015

| Row labels | 2010 | 2014 | 2015 |
|---|---|---|---|
| GDP growth (%) | 3.44 | -4.14 | -3.46 |
| Exchange rate (LS to $1) | 103.69 | 88.41 | 85.99 |
| GDP (LS billion) | 28205.88 | 15072.23 | 14551.46 |
| Unemployment rate (%) | 8.61 | 56.78 | 60.21 |
| Total investment (as % of GDP) | 27.49 | 22.19 | 20.89 |
| Total imports (as % of GDP) | 40.84 | 46.79 | 48.58 |
| Total exports (as % of GDP) | 32.42 | 16.49 | 15.21 |
| Tax collection rate (%) | 100.00 | 33.57 | 33.57 |
| Government revenue (as % of GDP) | 21.50 | 12.71 | 12.64 |
| Government current expenditure (as % of GDP) | 16.40 | 35.05 | 49.16 |
| Public investment (as % of GDP) | 9.60 | 0.00 | 0.00 |
| Government fiscal balance (as % of GDP) | -4.50 | -22.35 | -36.52 |
| Domestic financing (as % of GDP) | 3.46 | 0.00 | 0.00 |
| Foreign financing (as % of GDP) | 1.04 | 22.35 | 36.52 |
| Domestic debt (as % of GDP) | 13.21 | 92.64 | 86.46 |
| Foreign debt (as % of GDP) | 9.10 | 39.53 | 78.94 |

*Source*: Authors' calculation using a CGE model.

TABLE 7. IMPACT ON PRODUCTION BY SECTOR, 2014-2015
(*Percentage*)

| | 2014 | 2015 |
|---|---|---|
| Cereal production | 25.82 | 24.04 |
| Cotton production | 0.10 | 0.05 |
| Animal Production | 55.99 | 53.47 |
| Other agricultural products | 62.46 | 60.33 |
| Agro-food industry | 64.76 | 64.78 |
| Leather products | 81.98 | 87.97 |
| Mining | 34.19 | 31.59 |
| Fuel production | 36.17 | 32.60 |
| Other chemical production | 33.60 | 30.90 |
| Other manufacturing | 32.49 | 28.12 |
| Metal production | 16.81 | 13.21 |
| Paper production | 29.47 | 24.99 |
| Textiles | 36.78 | 33.99 |
| Tobacco | 65.06 | 63.54 |
| Wood production | 41.84 | 38.70 |

TABLE 7 (*continued*)

|                         | 2014   | 2015   |
|-------------------------|--------|--------|
| Commercial sector       | 38.67  | 36.92  |
| Construction            | 43.45  | 39.69  |
| Electricity distribution| 44.12  | 41.88  |
| Transport               | 65.28  | 64.56  |
| Water distribution      | 61.32  | 60.75  |
| Real estate             | 56.66  | 55.72  |
| Government services     | 106.09 | 105.45 |
| Other services          | 59.53  | 60.21  |

*Source*: Authors' calculation using a CGE model.

## IV.  A 2010 GDP CATCH-UP SCENARIO

In this section we estimate the amount of public investment that would be needed to return GDP to its level of 2010.

### A.  THE HYPOTHESIS

- The rate of recovery should pass from 60 in 2016 to 100 in 2020 (figure II), where 100 represents GDP in 2010.

**Figure II.  The catch-up path**
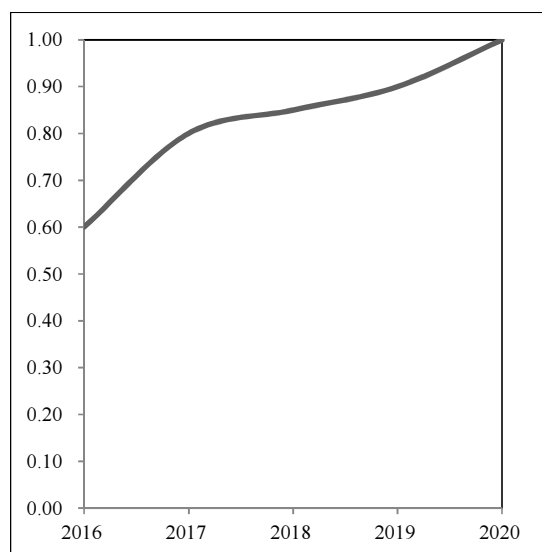


- Total factor productivity reaches its BaU level in 2016;

- In 2016, 10 per cent of inactive capital returns to the economy.  The rest, it is assumed, will have been destroyed;

- The labour force reaches its baseline level in 2016;

- The rate of tax collection reaches 2010 levels by 2020;

- The Government finances its deficit through external borrowing;

- The sectoral make-up of public investment returns to pre-conflict patterns.

## B. SIMULATION RESULTS

The estimated total requirement in public investment between 2016 and 2020 represents 89 per cent of the country's GDP in 2010 ($57 billion). Such spending should induce $42 billion in private investment. The main conclusion of the simulation is that recovery and reform should not be limited to a return to the status quo ante of 2010. The Syrian Arab Republic can no longer pursue a policy of public employment and low wages. Unemployment is high and poverty reaching dangerous levels, and the Government will not enjoy oil revenue in the short to medium term. The private sector, including foreign investors, will have a key role in building a new economic system. The results of the simulation show clearly that, even with sustained and high GDP growth rates, the Syrian Arab Republic will be unable to make significant progress on reducing unemployment. More important than the GDP growth rates themselves will be the structure of growth, which should be based on labour-intensive activities. However, the Syrian Arab Republic cannot rely on activities involving unskilled and lowly paid workers and should work to attract investors in new areas able to absorb highly qualified job-seekers.

The simulation shows how macroeconomic recovery might be achieved. The issue of human development is another question. Profound policy reforms would put the Syrian Arab Republic on a much higher growth path, stimulated by competition and modernization. Implemented over the next decade, a strategy to maximize the impact of existing productive capacities and comparative advantages could add 2 to 3 percentage points to annual real GDP growth and raise per capita incomes by more than a quarter.

Tables 8 and 9 show results at the macroeconomic level and by production sector respectively. The most challenging issue is how to finance government deficits and the investment required to fund recovery, improve the business climate and attract private investors. The simulation shows that, in order to return to the 2010 level of GDP, major public investment is necessary. The initial period from 2016 to 2020 will be too early to expect private investment to play a significant role in reconstruction. The Government will therefore have to invest massively to offset losses in capital stock. In 2017, for example, public investment will have to reach 36.5 per cent of GDP in order to boost growth by 33.3 per cent. Even in 2020, public investment will need to be 13.8 per cent of GDP, compared with 9.6 per cent in 2010. Since government revenues are not expected to grow, the additional investment will ultimately have to be financed through borrowing. Foreign borrowing is expected to reach around 41.7 per cent of GDP in 2016 and 54.5 per cent in 2017. Thanks to the relative recovery of economic activity by 2018, by which time GDP will represent around 85 per cent of its level in 2010, foreign financing should decrease to 53.9 per cent of GDP, and 47.3 per cent in 2020.

The Government will face serious fiscal policy challenges, with 56 per cent of GDP used only to cover current expenditures in 2020. Total government expenditure, which in 2010 represented only 26 per cent of GDP, will reach an unprecedented two thirds of GDP in 2020. A clear strategy for prioritizing specific sectors requiring intervention will be needed with a view to reducing pressure on public finances and making foreign borrowing less problematic.

TABLE 8. MACROECONOMIC IMPLICATIONS OF A 2010 CATCH-UP SCENARIO

| | 2010 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|
| GDP growth (%) | 3.44 | 16.30 | 33.33 | 6.25 | 5.88 | 11.11 |
| Exchange rate (LS to $1) | 103.69 | 86.89 | 80.00 | 86.10 | 92.51 | 97.46 |
| GDP (LS billion) | 28205.88 | 16923.53 | 22564.71 | 23975.00 | 25385.29 | 28205.88 |
| Unemployment rate (%) | 8.61 | 60.09 | 47.98 | 49.23 | 50.01 | 47.37 |
| Total Investment (as % of GDP) | 27.49 | 27.33 | 53.83 | 44.88 | 34.52 | 28.60 |
| Total imports (as % of GDP) | 40.84 | 46.94 | 53.90 | 48.97 | 44.22 | 41.24 |
| Total exports (as % of GDP) | 32.42 | 14.74 | 9.22 | 13.10 | 18.46 | 23.46 |
| Tax collection rate (%) | 100.00 | 60.00 | 80.00 | 85.00 | 90.00 | 100.00 |
| Government revenue (as % of GDP) | 21.5 | 17.5 | 22.83 | 22.11 | 21.49 | 22.26 |
| Government current expenditure (as % of GDP) | 16.4 | 49.37 | 40.86 | 47.66 | 53.92 | 55.79 |

TABLE 8 (*continued*)

| | 2010 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|
| Public investment (as % of GDP) | 9.60 | 9.80 | 36.46 | 28.36 | 18.79 | 13.76 |
| Government fiscal balance (as % of GDP) | -4.50 | -41.67 | -54.48 | -53.92 | -51.22 | -47.28 |
| Domestic financing (as % of GDP) | 3.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Foreign financing (as % of GDP) | 1.04 | 41.67 | 54.48 | 53.92 | 51.22 | 47.28 |
| Domestic debt (as % of GDP) | 13.21 | 66.98 | 45.26 | 38.38 | 32.66 | 26.49 |
| Foreign debt (as % of GDP) | 9.10 | 108.43 | 140.56 | 180.49 | 207.23 | 214.68 |

*Source*: Authors' calculation using a CGE model.

Table 9 shows the outcomes for production by sector. Recovery will not be homogeneous across sectors for two main reasons. First, public investment will target mostly infrastructure, not productive sectors. The results show which sectors will recover best and most rapidly, based on their respective comparative advantages and the efficiency of using available production resources. Accordingly, the leather sector experiences the most growth, which is the result of the initial level of destruction compared with the other sectors of the economy. Heavy public investment in the priority areas of construction, electricity, water and transport will lead to their production levels surpassing those of 2010.

TABLE 9. IMPACT ON PRODUCTION BY SECTOR, 2016-2020
(*Percentage*)

| | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|
| Cereal production | 25.11 | 23.67 | 31.54 | 47.12 | 70.22 |
| Cotton production | 0.07 | 0.10 | 4.95 | 20.64 | 46.30 |
| Animal production | 57.91 | 65.10 | 71.39 | 78.55 | 88.45 |
| Other agricultural production | 63.18 | 65.74 | 71.91 | 78.83 | 87.44 |
| Agro-food industry | 64.74 | 64.72 | 67.02 | 74.32 | 85.40 |
| Leather products | 104.85 | 105.56 | 141.11 | 178.58 | 212.95 |
| Mining | 37.44 | 47.27 | 53.70 | 61.95 | 75.04 |
| Fuel production | 38.93 | 53.05 | 60.59 | 68.46 | 80.99 |
| Other chemical production | 36.32 | 42.28 | 50.84 | 61.65 | 76.82 |
| Other manufacturing | 36.35 | 55.47 | 64.60 | 70.55 | 79.78 |
| Metal production | 18.68 | 29.06 | 35.97 | 43.17 | 54.74 |
| Paper production | 34.00 | 59.04 | 64.38 | 67.21 | 75.37 |
| Textiles | 37.06 | 38.11 | 46.04 | 57.15 | 71.97 |
| Tobacco | 67.49 | 76.77 | 83.33 | 89.60 | 98.11 |
| Wood production | 44.92 | 49.04 | 62.00 | 77.07 | 95.38 |
| Commercial sector | 45.90 | 57.34 | 65.51 | 74.96 | 89.49 |
| Construction | 59.22 | 151.87 | 134.87 | 110.77 | 103.02 |
| Electricity distribution | 47.14 | 55.97 | 68.66 | 83.93 | 104.28 |
| Transport | 69.74 | 84.28 | 94.02 | 103.73 | 116.12 |
| Water distribution | 67.90 | 83.62 | 93.14 | 101.35 | 113.32 |
| Real estate | 60.01 | 73.16 | 77.08 | 82.07 | 91.38 |
| Government services | 121.51 | 129.37 | 142.70 | 155.41 | 167.62 |
| Other services | 66.92 | 80.58 | 93.90 | 107.32 | 123.56 |

*Source*: Authors' calculation using a CGE model.

# V. THE NECESSARY INVESTMENT FOR ACCELERATED
# CATCH-UP SCENARIOS

Figure 3 compares the levels of private and public investment that would be needed in 2020 to catch up with the projected BaU scenario (i.e. without conflict) for the economy for each year between 2010 and 2014. During that time, public spending rose from 58 per cent to 65 per cent of GDP. In order to offset lost economic performance in 2010-2014 over the baseline scenario for that period, the volume of public investment would need to increase at an average annual rate of 13.3 per cent, against 5.0 per cent for private investment.

The result of growing public deficits and reliance on foreign financing is rising foreign debt. Expressed as a percentage of GDP, foreign debt represents 214.7 per cent of GDP in the scenario of catch-up with 2010 baseline levels by 2020 and 222.4 per cent with respect to catching up to the projected 2014 baseline. This is too high for a developing country and would be viewed critically by potential donors and financial institutions. The state of the Syrian Arab Republic's public finances in terms of deficit, growth in expenditure and low revenues raises the question of where it could source foreign loans. The volume and cost of loans needed may exceed the country's capacity.

**Figure III. Public and induced private investment needed for catch-up scenarios, 2010-2014**
(*$ billion*)
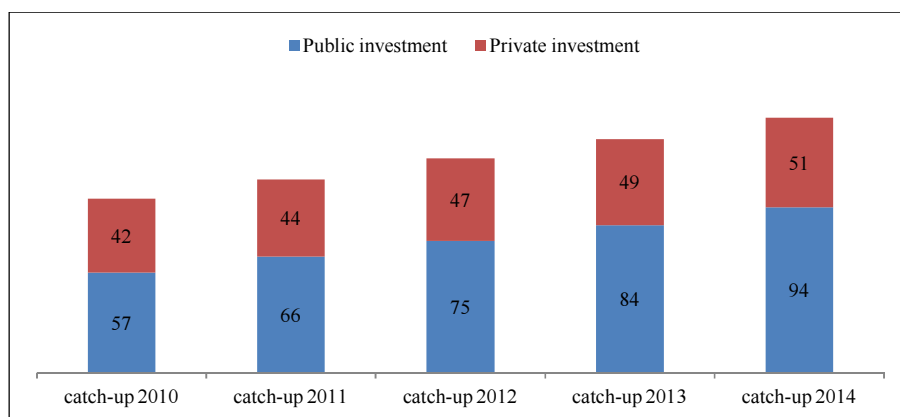


*Source*: Authors' calculation using a CGE model.

**Figure IV. Catch-up implications for debt in 2020**
(*Percentage*)
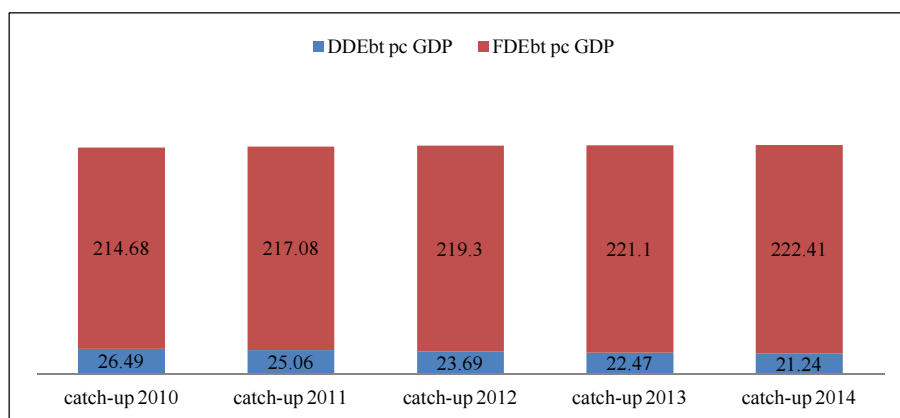


*Source*: Authors' calculation using a CGE model.

## VI.  CONCLUSION

The financial cost of recovery or catching up requires careful thought and sound reforms. A comprehensive "behind-the-border" policy reform agenda focusing on financial services can help to attract much needed domestic and foreign investment, reduce the costs of merchandise and enhance the economy overall.  An expanding and more efficient financial services sector supplying an increased set of differentiated and customized products to consumers and investors can improve industrial competitiveness. An inefficient public financial sector, with its limited access to credit, is a major impediment to trade expansion and investment.  Financial services are a major component in the production of goods and services — including agriculture.  They can account for a major share of the total cost of production and therefore constitute a key factor in determining the competitiveness of firms.

Financial services reform can play an important role in creating the employment opportunities needed to allow adjustment to occur, and to absorb new entrants into the labour force.  An important benefit of financial services reform is that, unlike with merchandise liberalization, all areas of the financial sector will employ *domestic* labor.  All foreign banks need local labor.  Thus, while allowing the entry of private firms will inevitably put pressure on domestic public sector firms, the former will absorb additional labour.

## ASSESSMENT OF ACCELERATED CATCH-UP SCENARIOS

TABLE A1. MACROECONOMIC IMPLICATIONS OF A 2011 CATCH-UP SCENARIO

| | 2010 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|
| GDP growth (%) | 3.44 | 16.30 | 40.93 | 6.25 | 5.88 | 11.11 |
| Exchange rate (LS to $1) | 103.69 | 86.89 | 77.68 | 85.26 | 92.51 | 98.43 |
| GDP (LS billion) | 28205.88 | 16923.53 | 23850.89 | 25341.57 | 26832.25 | 29813.61 |
| Unemployment rate (%) | 8.61 | 60.09 | 44.44 | 46.2 | 47.20 | 44.46 |
| Total investment (as % of GDP) | 27.49 | 27.33 | 59.83 | 48.18 | 36.24 | 28.27 |
| Total imports (as % of GDP) | 40.84 | 46.94 | 56.26 | 50.07 | 44.69 | 41.08 |
| Total exports (as % of GDP) | 32.42 | 14.74 | 7.93 | 12.48 | 18.48 | 24.63 |
| Tax collection rate (%) | 100.00 | 60.00 | 80.00 | 85.00 | 90.00 | 100.00 |
| Government revenue (as % of GDP) | 21.50 | 17.50 | 23.42 | 22.31 | 21.50 | 22.07 |
| Government current expenditure (as % of GDP) | 16.40 | 49.37 | 38.36 | 46.12 | 52.96 | 55.30 |
| Public investment (as % of GDP) | 9.60 | 9.80 | 42.16 | 31.73 | 20.69 | 13.58 |
| Government fiscal balance (as % of GDP) | -4.50 | -41.67 | -57.10 | -55.55 | -52.14 | -46.82 |
| Domestic financing (as % of GDP) | 3.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Foreign financing (as % of GDP) | 1.04 | 41.67 | 57.10 | 55.55 | 52.14 | 46.82 |
| Domestic debt (as % of GDP) | 13.21 | 66.98 | 42.82 | 36.31 | 30.90 | 25.06 |
| Foreign debt (as % of GDP) | 9.10 | 108.43 | 142.05 | 184.26 | 211.41 | 217.08 |

TABLE A2. MACROECONOMIC IMPLICATIONS OF A 2012 CATCH-UP SCENARIO

| | 2010 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|
| GDP growth (%) | 3.44 | 16.30 | 49.11 | 6.25 | 5.88 | 11.11 |
| Exchange rate (LS to $1) | 103.69 | 86.89 | 75.52 | 84.57 | 92.46 | 99.38 |
| GDP (LS billion) | 28205.88 | 16923.53 | 25234.24 | 26811.38 | 28388.52 | 31542.80 |
| Unemployment rate (%) | 8.61 | 60.09 | 40.58 | 42.91 | 44.15 | 41.32 |
| Total investment (as % of GDP) | 27.49 | 27.33 | 65.48 | 51.12 | 37.98 | 27.87 |
| Total imports (as % of GDP) | 40.84 | 46.94 | 58.51 | 51.04 | 45.18 | 40.92 |
| Total exports (as % of GDP) | 32.42 | 14.74 | 6.85 | 11.99 | 18.45 | 25.85 |
| Tax collection rate (%) | 100.00 | 60.00 | 80.00 | 85.00 | 90.00 | 100.00 |
| Government revenue (as % of GDP) | 21.50 | 17.50 | 23.99 | 22.49 | 21.52 | 21.88 |
| Government current expenditure (as % of GDP) | 16.40 | 49.37 | 36.00 | 44.67 | 52.00 | 54.86 |
| Public investment (as % of GDP) | 9.60 | 9.80 | 47.48 | 34.78 | 22.62 | 13.33 |
| Government fiscal balance (as % of GDP) | -4.50 | -41.67 | -59.49 | -56.97 | -53.09 | -46.30 |
| Domestic financing (as % of GDP) | 3.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Foreign financing (as % of GDP) | 1.04 | 41.67 | 59.49 | 56.97 | 53.09 | 46.30 |
| Domestic debt (as % of GDP) | 13.21 | 66.98 | 40.47 | 34.32 | 29.21 | 23.69 |
| Foreign debt (as % of GDP) | 9.10 | 108.43 | 143.57 | 187.75 | 215.40 | 219.30 |

TABLE A3. MACROECONOMIC IMPLICATIONS OF A 2013 CATCH-UP SCENARIO

| | 2010 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|
| GDP growth (%) | 3.44 | 16.30 | 57.16 | 6.25 | 5.88 | 11.11 |
| Exchange rate (LS to $1) | 103.69 | 86.89 | 73.67 | 84.01 | 92.37 | 100.30 |
| GDP (LS billion) | 28205.88 | 16923.53 | 26596.89 | 28259.2 | 29921.50 | 33246.11 |
| Unemployment rate (%) | 8.61 | 60.09 | 36.74 | 39.65 | 41.12 | 38.21 |
| Total Investment (as % of GDP) | 27.49 | 27.33 | 70.33 | 53.62 | 39.60 | 27.32 |
| Total imports (as % of GDP) | 40.84 | 46.94 | 60.48 | 51.86 | 45.65 | 40.74 |
| Total exports (as % of GDP) | 32.42 | 14.74 | 6.03 | 11.60 | 18.38 | 27.08 |
| Tax collection rate (%) | 100.00 | 60.00 | 80.00 | 85.00 | 90.00 | 100.00 |
| Government revenue (as % of GDP) | 21.50 | 17.50 | 24.49 | 22.64 | 21.56 | 21.71 |
| Government current expenditure (as % of GDP) | 16.40 | 49.37 | 33.94 | 43.40 | 51.13 | 54.50 |
| Public investment (as % of GDP) | 9.60 | 9.80 | 52.04 | 37.40 | 24.40 | 12.90 |
| Government fiscal balance (as % of GDP) | -4.50 | -41.67 | -61.49 | -58.16 | -53.97 | -45.69 |
| Domestic financing (as % of GDP) | 3.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Foreign financing (as % of GDP) | 1.04 | 41.67 | 61.49 | 58.16 | 53.97 | 45.69 |
| Domestic debt (as % of GDP) | 13.21 | 66.98 | 38.40 | 32.57 | 27.71 | 22.47 |
| Foreign debt (as % of GDP) | 9.10 | 108.43 | 144.93 | 190.76 | 218.94 | 221.10 |

TABLE A4. MACROECONOMIC IMPLICATIONS OF A 2014 CATCH-UP SCENARIO

| | 2010 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|
| GDP growth (%) | 3.44 | 16.30 | 66.27 | 6.25 | 5.88 | 11.11 |
| Exchange rate (LS to $1) | 103.69 | 86.89 | 71.86 | 83.45 | 92.24 | 101.48 |
| GDP (LS billion) | 28205.88 | 16923.53 | 28139.51 | 29898.23 | 31656.95 | 35174.39 |
| Unemployment rate (%) | 8.61 | 60.09 | 32.34 | 35.94 | 37.66 | 34.68 |
| Total investment (as % of GDP) | 27.49 | 27.33 | 75.07 | 56.11 | 41.29 | 26.20 |
| Total imports (as % of GDP) | 40.84 | 46.94 | 62.43 | 52.69 | 46.15 | 40.42 |
| Total exports (as % of GDP) | 32.42 | 14.74 | 5.31 | 11.23 | 18.29 | 28.74 |
| Tax collection rate (%) | 100.00 | 60.00 | 80.00 | 85.00 | 90.00 | 100.00 |
| Government revenue (as % of GDP) | 21.50 | 17.50 | 25.00 | 22.81 | 21.61 | 21.49 |
| Government current expenditure (as % of GDP) | 16.40 | 49.37 | 31.89 | 42.11 | 50.23 | 54.23 |
| Public investment (as % of GDP) | 9.60 | 9.80 | 56.49 | 40.03 | 26.28 | 11.88 |
| Government fiscal balance (as % of GDP) | -4.50 | -41.67 | -63.37 | -59.34 | -54.90 | -44.62 |
| Domestic financing (as % of GDP) | 3.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Foreign financing (as % of GDP) | 1.04 | 41.67 | 63.37 | 59.34 | 54.90 | 44.62 |
| Domestic debt (as % of GDP) | 13.21 | 66.98 | 36.30 | 30.78 | 26.19 | 21.24 |
| Foreign debt (as % of GDP) | 9.10 | 108.43 | 146.28 | 193.76 | 222.55 | 222.41 |

TABLE A5. MACROECONOMIC IMPLICATIONS OF A 2015 CATCH-UP SCENARIO

| | 2010 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|
| GDP growth (%) | 3.44 | 16.30 | 76.08 | 6.25 | 5.88 | - |
| Exchange rate (LS to $1) | 103.69 | 86.89 | 70.22 | 82.92 | 92.09 | - |
| GDP (LS billion) | 28205.88 | 16923.53 | 29799.74 | 31662.23 | 33524.71 | - |
| Unemployment rate (%) | 8.61 | 60.09 | 27.55 | 31.91 | 33.93 | - |
| Total investment (as % of GDP) | 27.49 | 27.33 | 79.42 | 58.50 | 42.99 | - |
| Total imports (as % of GDP) | 40.84 | 46.94 | 64.24 | 53.50 | 46.67 | - |
| Total exports (as % of GDP) | 32.42 | 14.74 | 4.73 | 10.88 | 18.17 | - |
| Tax collection rate (%) | 100.00 | 60.00 | 80.00 | 85.00 | 90.00 | - |
| Government revenue (as % of GDP) | 21.50 | 17.50 | 25.49 | 22.97 | 21.67 | - |
| Government current expenditure (as % of GDP) | 16.40 | 49.37 | 29.94 | 40.86 | 49.34 | - |
| Public investment (as % of GDP) | 9.60 | 9.80 | 60.60 | 42.56 | 28.16 | - |
| Government fiscal balance (as % of GDP) | -4.50 | -41.67 | -65.05 | -60.45 | -55.83 | - |
| Domestic financing (as % of GDP) | 3.46 | 0.00 | 0.00 | 0.00 | 0.00 | - |
| Foreign financing (as % of GDP) | 1.04 | 41.67 | 65.05 | 60.45 | 55.83 | - |
| Domestic debt (as % of GDP) | 13.21 | 66.98 | 34.27 | 29.07 | 24.73 | - |
| Foreign debt (as % of GDP) | 9.10 | 108.43 | 147.49 | 196.57 | 226.03 | - |