ANNEX C

Fiscal Consolidation Model Assumptions

Summary of key assumptions underlying fiscal sustainability scenarios

This annex provides information regarding the assumptions underlying the model utilised to calculate the estimated fiscal consolidation efforts required by governments to stabilise and reduce public debt as a ratio of GDP by 2026. The model estimates the fiscal consolidation efforts required to stabilise or reduce *gross* debt-to-GDP ratios. The size of these efforts may differ in terms of *net* debt-to-GDP ratios. The assumptions underpin the data presented in Indicator 15 of Chapter IV (Strategic Foresight and Leadership). Data for Indicator 15, as well as the information presented here, are drawn from the Preliminary Version of the *OECD Economic Outlook*, No. 89 released in May 2011 and are subject to revision in future Outlook publications.

Assumptions underlying the baseline scenario

Fiscal consolidation efforts refer to the total change required in the underlying primary balance between 2010 and 2026 in order to either stabilise or reduce public debt. These estimations for Figures 15.1 and 15.2 are conditional upon assumptions regarding: *i)* macroeconomic factors; and *ii)* countries' fiscal policies and trajectories. The assumptions change over time over the period 2010-26.

Macroeconomic assumptions

- Long-term growth projections are underpinned by projections of potential GDP output. The model assumes that the gap between actual and potential output is eliminated by 2015. Thereafter, GDP grows in line with potential output. There are some exceptions however, where the output gap remains large in 2012. In these cases, for every 2 percentage points by which the output gap exceeds 6% at the end of 2012, it is assumed to take an additional year to close the gap. This means that for Greece the output gap closes in 2018. For Ireland, Portugal and Spain the gap closes in 2016. Once the gap is closed, GDP grows in line with potential output.
- The effects of pension reforms legislated up to 2009 have been incorporated.
- Unemployment returns to its estimated structural rate by 2015. Historical estimates of the structural unemployment rate are based on Gianella *et al.* (2008), on which is imposed a post-crisis hysteresis effect. The structural unemployment rate is assumed to eventually return to pre-crisis levels but at a speed which differs across countries based on previous historical experience (Guichard and Rusticelli, 2010); for those countries with more flexible labour markets structural unemployment returns to pre-crisis levels by 2018 and for other countries by 2026.

- Non-oil commodity prices remain unchanged in real terms, while oil prices rise by 1% *per annum* in real terms after 2012.
- Exchange rates remain unchanged in real terms in OECD countries; real exchange rates for non-OECD countries appreciate in line with growth differentials (through the so-called Balassa-Samuelson effect) from 2012.
- Policy interest rates continue to normalise as output gaps close and beyond that are directed to bring inflation in line with medium-term objectives. For Japan it is assumed that once the output gap has closed and inflation returns to 1% in 2015, the target rate of inflation for monetary policy will be fixed at 2%.
- The adverse effects on the level of potential output resulting from the crisis (through adjustments to capital intensity, structural unemployment and labour force participation) have reached their peak by about 2013.
- After 2012, non-OECD economies show a slow convergence to US growth rates in per capita income (measured in purchasing power parity) (Duval and de la Maisonneuve, 2009).
- For the period 2015 to 2026, OECD countries experience a slow convergence to annual labour productivity growth of 1¾ per cent.

It is important to note two exceptions with regards to the estimations for the fiscal consolidation efforts needed to stabilise debt: for Japan and the United States, the required consolidation to stabilise debt is so large in 2012 that is it not achieved in the baseline scenario by 2026 given the assumed pace of consolidation. The estimated number of years of consolidation for these and other OECD countries is provided in Table 4.3 of the *OECD Economic Outlook*, No. 89 and is an estimate of when debt would be stabilised assuming consolidation continues at the assumed place.

Fiscal assumptions

- The change in the underlying fiscal primary balance required to stabilise or reduce debt-to-GDP ratios to the stated targets takes 2010 as the base year; for 2011 and 2012, the model assumes governments consolidate in line with the *OECD Economic Outlook*, No. 89 fiscal projections for each country; from 2013 onwards, in countries where the debt-to-GDP ratio is rising, there is a gradual and sustained increase in the underlying fiscal primary balance sufficient to ensure the ratio of government debt-to-GDP is stable over the medium term given long-term growth and current long-term interest rates. In countries where the ratio is falling from 2013 onwards, it is assumed they do not undertake fiscal expansion.
- The number of years of fiscal consolidation required beyond 2012 varies by country. The model assumes a reduction in the primary deficit of ½ per cent of GDP for each year in which the debt-to-GDP ratio is not stable (*e.g.* Figure 15.1) and/or does not meet the stated targets (*e.g.* Figure 15.2).
- There are no further losses to government balance sheets as a result of asset purchases or guarantees made in dealing with the financial crisis.
- Effects on budgets from population ageing and continued upward pressures on health spending are not explicitly included, but are implicitly assumed to be offset by other budgetary measures.

See Box 4.1 and Tables 4.1- 4.3 of the Preliminary Version of the *OECD Economic Outlook*, No. 89 for country-specific information regarding the aforementioned assumptions.

Projected changes in ageing-related public spending for selected OECD countries

- OECD projections for increases in the costs of health and long-term care have been derived assuming unchanged policies and structural trends. The corresponding hypotheses are detailed in OECD (2006) under the heading "cost-pressure scenario". For European countries, projections of pension expenditures are drawn from the European Commission Sustainability Report (2009). An exception is Greece where the pension expenditure estimates incorporate OECD estimate of the effects of very recent pension reforms. For non-EU countries, projections of public pension spending are taken from the CBO (2010) Long-term Budget Outlook and Visco (2005) for the United States, from the Office of the Parliamentary Budget Officer (2010) and Visco (2005) for Canada, from Fukawa and Sato (2009) for Japan, from Commonwealth of Australia (2010) for Australia, from New Zealand Treasury (2009) for New Zealand, from Visco (2005) for Switzerland and from Dang *et al*. (2001) for Korea. In some cases this has required linear interpolation to derive the effects over the period 2010-26.

See Box 4.2 for further information. See "Bibliography" in this publication for complete references.