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A Simulation Exercise for GDP in 2013 and 2014

- This note offers a forecast for real GDP growth in Cyprus in 2013 and 2014; a quantification of trends in components of GDP is conducted, with economic rationale invoked for each, and total growth is extracted from there. Given the extraordinary nature of developments facing the Cypriot economy, unconventional methodologies had to be utilized to reach a forecast. The forecast is preliminary and subject to unusual risks as the MoU between Cypriot authorities and official lenders is yet to be finalised and data availability is low.
- Under the main scenario, which takes into account only the expected impact of measures announced so far, real growth is estimated at -10.9% for 2013 and at -4.8% for 2014. In a more adverse scenario, with additional impact from the credit crunch, corporate defaults and capital controls, we calculate that real GDP could contract in 2013 by 12.9%.

1. Baseline Real GDP growth forecast for 2013 (-10.9%)

Evolution of GDP Components

(a) Private consumption (66.8%of GDP): Private consumption predominantly depends on disposable income. AMECO estimates net nominal disposable income in 2012 at €14.5bn.

A number of strong **contractionary impacts** on economic activity and incomes will operate in the Cypriot economy following the agreement with EC/IMF/ECB for an Adjustment Programme:

1. **Restructuring of the banking sector**: immediate impact and impact on net credit growth. EC's DSA (Draft 9 April 2013) calculates pre-agreement Cyprus' domestic banking sector, including the cooperative credit institutions, at 550% of GDP or ca €98.5bn.[1] The same document also calculates that, as a result of actions undertaken for the restructuring, the Cypriot banking sector has been downsized *immediately* to 350% of GDP or ca €62.7bn.

According to Cyprus' MoU, the ratio of bank assets over GDP should be at EU average by 2017; the latter is estimated to be at 300% by then. Following MoU's forecasts, 2017 GDP should be at ca €16,6bn, hence bank assets should reach €49,9bn.

According to IIF,[1] bank assets of Cypriot banks in Greece (loans) in September 2012 amounted to €18,9bn and bank assets in Eastern Europe to €3,6bn. The former are already sold to Piraeus Bank and the latter are expected to be sold soon; these measures are assumed to have no impact on Cypriot disposable incomes (latent hypothesis: no expected profits of these operations). Hence, bank assets in Cyprus are calculated at €76bn. For these to be reduced to

Table 1: Eurobank Baseline Macroeconomic Projections 2013-2014

	2012 €bn. Nominal	Shares in 2012 GDP	2013 %yoy growth. Real	2014 %yoy growth. Real
Private Consumption	11,948.1	66.8%	-15.9%	-9.6%
Government Consumption	3,587.9	20.1%	-9.0%	-3.7%
Total Consumption	15,536.0	86.9%	-14.3%	-8.2%
GFCF	2,294.8	12.8%	-29.5%	-12%
Domestic demand	17,876.9	99.9%	-16.3%	-8.6%
Exports	8,136.7	45.5%	-7.2%	-3.2%
Imports	8,126.8	45.4%	-19.1%	-11.5%
Real GDP	**17,886.8**		**-10.9%**	**-4.8%**
GDP deflator			1.5%	0%
Unemployment			18%	20%

62.7bn immediately, €13.3bn should come from the resolution of Laiki and the debt-to-equity conversion of the Bank of Cyprus. This constitutes a 13.3/98.5=13.5% reduction in bank assets.

This **Bail-in** of uninsured depositors will cause a loss of wealth, which will reduce private consumption and business investment. However, the wealth effect on consumption is a contradictory issue.[2] In addition, there are no reliable data as to the exact percentage of deposits that actually belong to Cypriots and to international depositors. Hence, we assume that a reduction in bank assets has an equiproportoniate impact on the sector's contribution to GDP. In 2012, the financial and insurance sector contributed 9.2% in Cyprus' Gross Value Added (GVA). Hence, this downsizing should deduce 9.2*0.135=1.2ppts of GDP or 1.5ppts of net nominal disposable income.

2. **Fiscal consolidation measures**. For 2013, fiscal measures of 2.3ppts of GDP are projected. Assuming an equal reduction in net nominal disposable income due to the nature of measures, a reduction of 2.8% in net nominal disposable income will accrue.
3. **Spill-overs** of banks' restructuring on related professional business services and financial services exports. Actually, many economic activities in Cyprus directly depended on the demand created by the financial sector's activities: commerce, transports, hotels and restaurants, real estate, constructions, professional, technical and supporting services, entertainment, other services. All these sectors together account for 51.8% of the Cypriot GVA (€8.4bn). We assume that the reduction in bank assets in 2013 [€13.3/98.5=13.5%] generates an equiproportionate reduction in the contribution of those sectors to GDP (latent assumption: unitary elasticity of financial sector activity to those sectors' demand), i.e. 0.518*0.135*17.9= €1.3bn or 7ppts of GDP or 10.1ppts of net nominal disposable income.[3]

In total, net nominal disposable income is projected to decrease by 14.4%. The MoU assumes a GDP deflator of 1.9% yearly for the entire period 2013-2016. However, given the extraordinary GDP contraction and the simultaneous liberalisation of the labour market incurred by the MoU, this is too high. We pencil a GDP deflator of 1.5% for 2013 (due also to the impact of tax rate hikes) and 0% for 2014. Hence, real disposable incomes should be reduced by -15.9% in 2013.

We assume that the change in consumption will be 100% of the change in disposable income. This means there will be no intertemporal consumption smoothing due to the realization on behalf of households of a lower *permanent* income. Hence, real private consumption will contract in 2012 by 15.9% (against an EC's projection of -12.2%).

(b) Government consumption: (20.1% of GDP) we maintain the MoU projection for a -9% contraction.

Final consumption (86.9% of GDP): -14.3%

(c) Gross Fixed Capital Formation: (12,8% of GDP) Investment is the GDP component which is more sensitive to changes in the economic climate. Furthermore, Cypriot businesses face unprecedented liquidity constraints due to the banking crisis and capital controls. Therefore, the MoU projection for a -29.5% contraction is not unreasonable.

Domestic demand (99.9% of GDP): -16.3% change.

(d) Exports of g&s (45.5% of GDP): Ceteris paribus, a downsizing by 13.5% of sectors representing 61% of the Cypriot economy's GVA would result in a reduction of exports by 8.2%. With flat ULC (i.e. no competitiveness gains) and only marginal increase in international demand (due to near stagnation in EU27 and sluggish growth projected for SE Europe, Cyprus' main export markets), we pencil a real reduction of exports by -7.2%.

(e) Imports of g&s (45.4% of GDP): given that imports comprise, to a large extent, consumer goods of high income elasticity and investment goods, we calculate an income elasticity of imports of 1.2. Hence, a 15.9% reduction of real disposable income calculated above implies a 19.1% real reduction of imports.

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[1] This is in contrast with ECB data, which calculate bank assets in Feb 2013 at €126,4bn or 7.1 times the Cypriot GDP; however, we have to do with calculations on which the Programme is based.
[2] IIF Research Note, Cyprus: Just The Facts, 19 March 2013.
[3]ECB (WP No 1050, May 2009) estimates that the average wealth effect coefficient is 6-16%. This is compatible with calculations made in this note.

2. Adverse Scenario for 2013 Real GDP growth

A number of downside risks to the main scenario for 2013 exist:

1. Worse domestic credit conditions, causing further deterioration of confidence in the banking system. A credit crunch could magnify the contractionary effect beyond the amount already accounted for by the spill over to sectors related to the financial sector.

Household and corporate defaults propagating through the economy: further banking sector losses, worsening of labour market conditions, stronger than expected fall in house prices and a prolonged loss of business and consumer confidence.

Difficulty in removing temporary capital controls and disruptions due to uncertainty hurting international capital flows; this could further reduce business volumes in both domestic and internationally oriented companies. This is extremely difficult to quantify.

A scenario of a –relatively mild- combined shock could be described as following:

(a). Deleveraging and defaults cause net nominal disposable income in 2013 to shrink by 20% (instead of 15.9% in the baseline scenario) and exports to shrink by 10% (instead of 7.2% in the baseline scenario)

(b). Capital controls cause the loss of 15 days of GDP; i.e. a further 0.4% of net nominal disposable income and, correspondingly, a further 0.4% of exports. Then private consumption would shrink by 20.4%, imports by 24.5%, exports by 10.4%. In total, GDP would contract in 2013 by 12.9%.

A better-than-the-baseline scenario would involve, according to the MoU, higher investment activity in the energy sector and improvements in the external outlook, should the Euroarea economic activity strengthen beyond expected. However, the MoU itself admits that the chances of a better scenario materializing are considerably slimmer.

3. Baseline Real GDP growth forecast for 2014 (-4.8%)

Evolution of GDP Components

(b) Private consumption (63%of GDP): above mentioned calculations imply that net nominal disposable income at end 2013 will be ca €12.4bn.

Strong contractionary impacts on economic activity and incomes will continue to be at play in 2014. With the same logic as for 2013:

1. **Restructuring of the banking sector**: as calculated above, bank assets in Cyprus at end 2013 will be €62.7bn and these have to be reduced to €49,9bn by 2017. We assume half of it will be achieved in 2014, i.e. a -10.2% change. This downsizing should further reduce the sector's contribution to GVA by (9.2-1.2)*0.102=0.8ppts of GDP or 1.1ppts of net nominal disposable income.
2. **Fiscal consolidation measures**. For 2014, fiscal measures of 1.9ppts of GDP are projected. Assuming an equal reduction in net nominal disposable income due to the nature of measures, a reduction of 2.5% in net nominal disposable income will accrue.
3. **Spill-overs** of banks' restructuring on related activities: assuming again that the reduction in bank assets in 2014 generates an equiproportionate reduction in the contribution of those sectors to GDP, the impact will be: (0.518-0.07)*0.102*16.2bn= €0.7bn or 4.6ppts of GDP or 6ppts of net nominal disposable income.[4]

In total, net nominal disposable income is projected to decrease by 9.6%. With a zero GDP deflator for 2014, real disposable incomes should also be reduced by -9.6% in 2014. With an income elasticity of consumption of 1, real private consumption will contract in 2012 by -9.6% (against an EC's projection of -5.6%).

(b) Government consumption: (20.5% of GDP): we maintain the MoU projection for a -3.7% contraction.

Final consumption (83.5% of GDP): -8.2% change.

(c) Gross Fixed Capital Formation: (10.4% of GDP): the development of investment will be contingent on rebalancing happening in 2013 as well as the degree of progress in structural reform. Hence, the MoU projection for a -12% contraction is as good as any.

Domestic demand (93.9% of GDP): -8.6% change.

(d) Exports of g&s (47.4% of GDP): Ceteris paribus, a downsizing by 10.2% of sectors representing 52.8% of the Cypriot economy's GVA (financial sector and sectors related to it), would result in a reduction of exports by 5.4%. With 1ppt improvement in ULC (wage cuts overshooting reduced productivity due to recession) and 1.2% increase in international demand, we pencil a real reduction of exports by -3.2%.

(e) Imports of g&s (41.2% of GDP): With an income elasticity of imports of 1.2, a 9.6% reduction of real disposable income calculated above implies a 11.5% real reduction of imports.

[4] These effects encompass the impact on GDP by the respective increase in unemployment and reduction in profit margins. These are compatible with our projection for a 18% unemployment rate (against 12.1% in 2012), which alone would result in a ca 0.5bn or 7.2ppts reduction of net nominal disposable income. Abolishment of wage indexation justifies a projection for flat nominal wages at best.

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