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COMMISSION STAFF WORKING PAPER
SCOREBOARD FOR THE SURVEILLANCE OF MACROECONOMIC
IMBALANCES: ENVISAGED INITIAL DESIGN

Introduction

Agreement has been reached between the European Parliament and the Council on the legislative proposals to enhance economic governance in the EU, including on the regulations to establish a surveillance procedure to prevent and correct macroeconomic imbalances. These regulations are expected to enter into force by the end of 2011, in time for the start of the next European semester. The new regulations provide for the drawing up of a scoreboard to provide an early-warning signalling device of potentially harmful macroeconomic imbalances in Member States. As outlined in the relevant recital of the regulation, the scoreboard will be set up in close cooperation with the Council and the Parliament.

In order to allow the swift application of the new regulations on macroeconomic imbalances as soon as they enter into force, this Commission Staff Working Paper presents the envisaged design of the initial scoreboard of early-warning indicators which is fully in line with the relevant article of the regulation on the prevention and correction of macroeconomic imbalances. In accordance with the relevant recital of the regulation, the envisaged design of the scoreboard will be presented to the competent committees of the European Parliament and the Council. However, both institutions have already been involved in the technical discussions on the design of the scoreboard as a part of the trilogue negotiations, and on a technical basis in the Economic Policy Committee and the Economic and Financial Committee. After the discussion with Parliament and Council, the scoreboard design will be finalised.

A scoreboard to facilitate the early identification of potential macroeconomic imbalances

In the new excessive imbalances regulation, the scoreboard indicator results are subject to an economic reading by the Commission in its Alert Mechanism Report (AMR). The economic reading will be based on the results of the scoreboard but there is no automaticity. The overall number of breaches of thresholds, the severity of individual breaches as well as the combination of breaches, potentially signalling broad based problems, will all be taken into account. Moreover, the AMR will draw, when appropriate, on other relevant economic and financial indicators with a view to get a more complete picture. Based on the economic reading, the Commission will identify the Member States it considers may be affected by, or may be at risk of being affected by imbalances. Taking due account of discussions in the Council and the Euro group on the AMR, the Commission will determine the list of Member States where further in-depth reviews are needed. It is these in-depth reviews, and not the AMR, which provide the basis for any recommendations to be addressed to countries under the preventive or corrective arm of the new excessive imbalances regulation.

Principles underpinning the design of the scoreboard

First, the choice of indicators should focus on the most relevant dimensions of macroeconomic imbalances and competitiveness losses, with a particular focus on the smooth functioning of the euro area. For this reason, it is envisaged that the scoreboard consists of indicators which can monitor external balances, competitiveness positions and internal imbalances, and encompass variables where both the economic literature and recent experiences suggest associations with economic crises.

Secondly, the scoreboard (indicators and thresholds) need to provide reliable signalling device for potentially harmful imbalances and competitiveness losses at an early stage of

their emergence. This would justify having a combination of stock and flow indicators which can capture both shorter-term rapid deteriorations as well as the longer term gradual accumulation of imbalances. Moreover, indicative thresholds should be set at prudent levels, which on the one hand avoid excessive numbers of 'false alarms', but which on the other hand are not set so stringently that they only identify problems once they are entrenched. To this end, thresholds should be established with a statistical approach based on the distributions of the indicators' values identifying the thresholds as the lower and/or upper quartiles of the distributions: such thresholds are consistent with the values found in some empirical studies in the available economic literature.

Thirdly, scoreboard has an important *communication role*. For this purpose, the scoreboard should consist of a limited number of indicators. Moreover, the choice of indicators and transformations should be kept as simple and straightforward as possible. Data transformation should be transparent and tractable so that they can be replicated by third parties. The choice of indicators should complement indicators/targets used in other EU surveillance exercises. The scoreboard indicators will be made publicly available on the Commission's website.

Fourth, the indicators should be of *high statistical quality* in terms of timeliness and comparability across countries. To this end, they should be derived from data compiled according to the principles of the European Statistics Code of Practice of the European Statistical System (ESS). Where available, EUROSTAT sources should be used so that the data comparability and statistical quality can be assured. Otherwise, when EUROSTAT data are not available, the highest quality alternative data source should be chosen (e.g. the ECB).

Envisaged design of the scoreboard

- 3 year backward moving average of the **current account balance** as a percent of GDP, with the a threshold of +6% of GDP and - 4% of GDP;
- **net international investment position** as a percent of GDP, with a threshold of -35% of GDP;
- 5 years percentage change of **export market shares** measured in values, with a threshold of -6%;
- 3 years percentage change in **nominal unit labour cost**, with thresholds of +9% for euro-area countries and +12% for non-euro-area countries.
- 3 years percentage change of the **real effective exchange rates** based on HICP/CPI deflators, relative to 35 other industrial countries, with thresholds of -/+5% for euro-area countries and -/+11% for non-euro-area countries;
- **private sector debt** in % of GDP with a threshold of 160%;
- **private sector credit flow** in % of GDP with a threshold of 15%;
- year-on-year **changes in house prices** relative to a Eurostat consumption deflator, with a threshold of 6%;
- **general government sector debt** in % of GDP with a threshold of 60%;
- 3 year backward moving average of **unemployment rate**, with the threshold of 10%.

The economic reading of the scoreboard

All indicators should be examined for their contribution to problematic macroeconomic imbalances. In particular, surveillance of public debt under the new regulation will be limited to its contribution to macroeconomic imbalances as the sustainability of public finances is already covered by the SGP. The indicator on the evolution of unemployment shall be read in

conjunction with other more forward-looking scoreboard indicators and be used to better understand the potential severity of macroeconomic imbalances in terms of their likely persistence and the capacity of the economy to adjust.

The critical importance of taking due account of country specific circumstances and institutions should be recognised when undertaking an economic reading of the scoreboard indicators. In addition to indicators in the scoreboard, additional indicators and considerations should be taken into account in line with the regulation. This will include the need to cater for nominal and real convergence inside and outside the euro area. In particular, the net external debt as well as the share of foreign direct investment should be taken into account as important additional information in the economic reading of the scoreboard. Also, the capital account balances will be considered for Member States where they are important. Similarly, other elements will be taken into account such as alternative indicators of private sector debt based on consolidated data, where available, or alternative indicators providing more insights into potential imbalances accumulating in housing or financial markets. Also broader indicators of developments in the real economy such as different measures of productivity developments should be considered as they reflect the potential for the development of imbalances as well as the adjustment capacity of an economy.

The importance of the role of financial markets in the current crisis is recognised in the scoreboard. Some indicators, notably on credit developments and house prices, reflect this. It is envisaged to develop a wider indicator of the banking/financial sector by the end of 2012 and in time for the subsequent European semester.

Table 1. Envisaged indicators and indicative thresholds (*)

	External imbalances and competitiveness					Internal imbalances				
Indicator	3 year average of current account balance as a % of GDP	Net International Investment Position as a % of GDP	% change (3 years) of Real Effective Exchange Rate , HICP deflators relative to 35 industrial countries (a)	% change (5 years) in export market shares	% change (3 years) in nominal unit labour cost (b)	y-o-y % change in deflated house prices (c)	private sector credit flow as % of GDP (d), (e)	private sector debt as % of GDP (d), (e)	general government debt as % of GDP (f)	3 year average of unemployment rate
Data source	Balance of Payments statistics EUROSTAT.	Balance of Payments Statistics, EUROSTAT.	DG ECFIN indicator data base on Price and Cost competitiveness.	Balance of Payments statistics, EUROSTAT.	EUROSTAT	Harmonised house price index by EUROSTAT, completed with ECB, OECD and BIS data.	Transactions AFA, EUROSTAT for annual data and QSA, ECB for quarterly data.	Balance Sheet AFA, EUROSTAT for annual data and QSA, ECB for quarterly data.	EUROSTAT (EDP – treaty definition).	EUROSTAT LFS data.
Indicative thresholds	+6/-4%	-35% Lower quartile	+/-5% for €A +/-11% non€A Lower and Upper Quartiles of EA - /+ s.d. of EA	-6% Lower quartile	+9% €A +12% non-€A Upper Quartile €A3 p.p	+6% Upper quartile	+15% Upper Quartile	160% Upper Quartile	+60%	+10%
Period for calculating thresholds	1970-2007	First available year (mid-1990s)-2007	1995-2007	1995-2007	1995-2007		1995-2007	1994-2007		1994-2007
Some additional indicators to be used in economic reading	<i>Net lending/borrowing vis-à-vis ROW (Capital Account + Current Account as % of GDP)</i>	<i>Net External Debt as % GDP</i>	<i>REER vis-à-vis rest of the euro area</i>	<i>Export market shares based on volumes of goods; Labour productivity; Trend TFP growth</i>	<i>Nominal ULCs (changes over 1, 5, 10 years); Effective ULC relative to rest of euro-area Other measures of productivity</i>	<i>Real house price (changes over 3 years); Nominal house price (changes over 1 and 3 years) Residential construction</i>	<i>Indicator on change in financial liabilities of the non-consolidated financial sector and the debt over equity ratio</i>	<i>Private sector debt based on consolidated data</i>		

Notes: (a) for EU trading partners HICP is used while for non-EU trading partners, the deflator is based on a CPI close to the HICP in methodology; (b) index providing ratio of nominal compensation per employee to real GDP per person employed; (c) changes in house prices relative to the consumption deflator of EUROSTAT; (d) private sector is defined as non-financial corporations; households and non-profit institutions serving households; (e) sum of Loans, and Securities other than shares; liabilities, non –consolidated; (f) the sustainability of public finances will *not* be assessed in the context of the EIP given that this issue is already covered by the SGP. However this indicator is part of the scoreboard because public indebtedness contributes to total indebtedness of the country and therefore to the overall vulnerability of the country.

(*) It is envisaged to develop a wider indicator of the banking/financial sector by the end of 2012.

Formulas for the indicators' transformations

Indicators	Formulas for data transformation
3 year backward moving average of CURRENT ACCOUNT BALANCE as a % of GDP	$\frac{\left(\frac{CA}{GDP}\right)_t + \left(\frac{CA}{GDP}\right)_{t-1} + \left(\frac{CA}{GDP}\right)_{t-2}}{3} * 100$
NET INTERNATIONAL INVESTMENT POSITION as a % of GDP	$\frac{NIIP_t}{GDP_t} * 100$
% change (3 years) of REAL EFFECTIVE EXCHANGE RATE with HICP deflators relative to 35 other industrial countries (a)	$\frac{(REER_HICP_35)_t - (REER_HICP_35)_{t-3}}{(REER_HICP_35)_{t-3}} * 100$
% change (5 years) in EXPORT MARKET SHARES	$\frac{\left(\frac{EXP_c}{EXP_{world}}\right)_t - \left(\frac{EXP_c}{EXP_{world}}\right)_{t-5}}{\left(\frac{EXP_c}{EXP_{world}}\right)_{t-5}} * 100$
% change (3 years) in NOMINAL UNIT LABOUR COST (b)	$\frac{(ULC)_t - (ULC)_{t-3}}{(ULC)_{t-3}} * 100$
y-o-y % change in DEFLATED HOUSE PRICES (c)	$\left(\frac{\frac{HPI_t}{DEFL_t} - \frac{HPI_{t-1}}{DEFL_{t-1}}}{\frac{HPI_{t-1}}{DEFL_{t-1}}} \right) * 100$
PRIVATE SECTOR CREDIT FLOW as % of GDP (d), (e)	$\frac{PSCF_t}{GDP_t} * 100$
PRIVATE SECTOR DEBT as % of GDP (d), (e)	$\frac{PSD_t}{GDP_t} * 100$
GENERAL GOVERNMENT DEBT as % of GDP	$\frac{GGD_t}{GDP_t} * 100$
3 year backward moving average of UNEMPLOYMENT RATE	$\frac{(UR)_t + (UR)_{t-1} + (UR)_{t-2}}{3}$

Notes: a) For EU trading partners HICP is used while for non-EU trading partners, the deflator will be based on a CPI close to the HICP in methodology ; (b) index providing ratio of nominal compensation per employee to real GDP per person employed; (c) changes in house prices relative to the consumption deflator of EUROSTAT; (d) private sector is defined as non-financial corporations; households and non-profit institutions serving households; (e) sum of Loans, and Securities other than shares ; liabilities, non –consolidated.

Annex 1 A description of each indicator

Current account balance as a percent of GDP

The scoreboard should include an indicator on current account balance as a percent of GDP. This is a widely known and understood indicator, which has been extensively explored in economic literature. It is envisaged that the transformation for the scoreboard is calculated as the three years backward moving average of the current account balance as a percent of GDP so as to control for short-term fluctuations of the annual figures. In addition, the latest available data should be used in the economic reading of the scoreboard. Data on the current account balance are derived from the Balance of Payments statistics reported by EUROSTAT. The simple statistical distribution analysis provides deficit thresholds of -4%. This value is also broadly in line with the evidence from the empirical literature on balance of payment crises and sustainability of current account imbalances. The upper value of the threshold is envisaged to be set at +6% of GDP.

In the economic reading of the scoreboard, additional information should be taken into account that might have bearing on correct interpretation of the indicator, in particular the specificities of catching up economies. In this respect, the sum of current account and capital account should be explicitly considered for Member States for which this information is relevant¹.

Net international investment position (NIIP) as a percent of GDP

To complement the flow indicator on current account balance with a stock indicator, the international investment position (NIIP) as a percent of GDP should be included in the scoreboard. This is an important indicator of the net asset position of the domestic sectors of the economy vis-à-vis the rest of the world. Data on the net international investment position are derived from the Balance of Payments statistics reported by EUROSTAT, i.e. the same data source used for the current account balance. The statistical analysis gives -35% of GDP as an indicative threshold.

Also in this case, account should be taken of additional relevant information in the economic reading of the scoreboard. In order to cater for the specificities of external positions of catching up Member States and in particular the FDI inflows, other appropriate indicators will be explicitly considered, in particular the Net External Debt (NED) for countries for which this information is available².

Real effective exchange rate (REER) based on the harmonised index of consumer prices deflators (HICP)

As a measure of persistent changes in price competitiveness relative to the major trading partners of the respective country, an indicator on the real effective exchange rate (REER) based on the harmonised index of consumer prices deflators (HICP/CPI) should be included³. This indicator

¹ Conceptually, the sum of current account and capital account determines the net lending/borrowing of a country and is thus the flow counterpart of the net foreign financial asset position/net international investment position. While typically small, capital account balance can be non-negligible in a number of catching up Member States as a part of structural/cohesion funds is recorded here.

² By focusing on external debt liabilities, i.e. those that require payments of principal and/or interest, it is argued that NED better reflects the riskiness of a country's external asset position.

³ For EU trading partners HICP is used while for non-EU trading partners, the deflator is based on a CPI close to the HICP in methodology.

will capture global price-competitiveness developments. It is not meant to trigger discussions on the euro exchange rate policy. It is defined as the 3-year percentage change of the REER relative to 35 other industrial countries and is calculated by DG ECFIN as part of the data base on price and cost competitiveness indicators⁴. The advantage of such a data transformation is that it is not heavily biased by the trend appreciation that some catching-up Member States have experienced in the latest decade. In line with the Task Force report, a differentiation in the indicative thresholds between euro area and non-euro area countries is envisaged to reflect greater nominal exchange rate variability in the latter group. The thresholds corresponding to the lower and upper quartiles of the distribution over the sample including euro-area countries are -5% and +5% respectively. To account for the nominal exchange rate variability in non-euro area countries, the indicative thresholds for the euro-area countries were extended by 6 p.p. which corresponds to one standard deviation (6%) of the distribution within the euro-area. This approach gives thresholds of -11% and +11%.

For euro area countries, an additional indicator measuring REER with respect to the other 16 euro area countries should be considered in the economic reading of the scoreboard. Additionally, the possibilities to monitor REER developments in a broader group of competitors that would also include emerging economies such as China, India and Brazil will be explored together with the ECB.

Export market shares

The scoreboard should include an indicator on the percentage change in export market shares to measure slow and persistent losses in competitiveness. This is an outcome indicator that in a synthetic way captures components of competitiveness such as non-price competitiveness or the ability to exploit new sales opportunities due to increased demand of emerging economies. To capture the structural losses in competitiveness that can accumulate over longer time periods, the indicator is calculated as the percent variation over 5 years of the value of exports of goods and services of each country as share of the world exports of goods and services. The indicator is based on the Balance of Payments statistics from Eurostat. The statistical distribution of the indicator gives a lower threshold of -6%.

The proposal to use value of exports (as opposed to volume of exports) is based on a careful consideration of pros and cons of both measures. Using export market shares in volumes has an advantage that it excludes changes in export market shares due only to relative export prices developments. On the other hand, this data is only directly available for goods but not services (due to limited data availability of world's service exports in real terms). In addition, also changes in export market shares for goods in volumes should be investigated as part of its background analysis to support the economic reading of the scoreboard. When a reliable indicator on export market shares in volumes becomes available, it could replace the existing indicator in the scoreboard.

Unit labour costs

An indicator should be included on percentage change in nominal unit labour cost (ULC) as a measure of cost competitiveness. ULC measures the average cost of labour per unit of output. It is a widely used indicator which provides a direct link between costs and productivity. The envisaged indicator is calculated as the 3-year percentage change of the ratio of nominal

⁴ http://ec.europa.eu/economy_finance/db_indicators/competitiveness/index_en.htm

compensation per employee to real GDP per person employed. The original data on nominal compensation per employee, GDP and employment derive from EUROSTAT. The three-year change controls for the cyclical behaviour of this indicator and keeps memory of the competitiveness losses building up more than the year-on-year variation. The threshold corresponding to the upper quartile of the statistical distribution over the sample of euro-area countries is 9%. For non-euro area countries, a threshold of 12% is obtained by adding 3 p.p. to the euro-area threshold. This differentiation is justified by the fact that the majority of non-euro area countries have experienced a major trade liberalisation in the period covered by our data (since 1995) which entails a natural process of factor price equalisation towards the levels of the trade partners⁵.

In the economic reading of the scoreboard, developments over shorter (1 year) and longer time periods (5 or 10 years) should be analysed. In addition, divergences in nominal unit labour costs developments among euro-area countries as measured by the effective ULC relative to the rest of euro-area countries will be considered.

The House Price Index (HPI)

The scoreboard should include an indicator of house prices developments as housing market have figured prominently in many of the previous financial crises and proved to be an important source of macroeconomic imbalances. They have a potential impact on GDP growth and other macroeconomic developments through wealth effects, investment decisions, inter-sectoral substitution effects and the correlation with credit fluctuations. Against this background, the envisaged indicator is the year-on-year change in real house prices, more specifically the house price indicator relative to a Eurostat consumption deflator. The Eurostat house price index (HPI) will be used as the data source as soon as it is available for all Member States (a substantial number of Member States already provide HPIs and full coverage is expected at the latest as from the third quarter of 2012). Meanwhile, the ECB Residential Property Prices (RPP) will be used to complement the missing data. An indicative threshold of house price increases of 6% will be used, which is derived from both a statistical method and the economic literature.

As part of the economic reading of the scoreboard, the real house price increases over longer time periods (e.g. 3 years) should be considered to complement the short-run indicator. Moreover, due attention will be paid to other measures that can help better interpret the developments in real house prices such as nominal house price indexes, volume indicators, in particular the indicators of residential construction and value-added in construction as a share of GDP, or price-to-income and price-to-rent ratios.

Private sector credit flow (transactions)

To complement the private debt indicator (see below), an indicator on credit flows to the private sector should be included. High credit flows appear to be one of the best indicators to predict crises incidence early on. Large credit fluctuations can be very often associated with boom and bust cycles in asset markets, potential banking system vulnerabilities, house price bubbles and also current account imbalances. The scoreboard indicator will capture private sector credit flows (transactions) as % of GDP, and it includes loans and securities other than shares (as in the case of private sector debt, the subcategory "other accounts receivable/payable" is not included). The data sources will be the same as in the case of private debt indicator and the indicator will for the

⁵ Therefore adding a 1% margin for each year to non-euro-area Members States should account for such issues.

time being based on non-consolidated data. The threshold of private sector credit flow is 15% of GDP which corresponds to the upper quartile of the distribution of the indicator.

In the economic reading of the scoreboard, it could be useful to look at wider indicators of the financial market developments, including the change in financial liabilities of the non-consolidated financial sector and the debt over equity ratio. Also the change in private sector debt stock should be analysed in the economic reading of the scoreboard. Given that both price and volumes effects determine variations in debt stocks, Eurostat could be invited to look further into the possible disentangling of price and volume effects, given that the quantification of price effects may provide useful information.

Private sector debt

An indicator on private sector debt should be included as excessively high levels of debt imply significant risks for growth and financial stability and increase overall vulnerability of a country. The envisaged indicator measures private sector⁶ debt level as a % of GDP and is calculated as the sum of loans and securities other than shares; the subcategory "other accounts receivable/payable" is not included. The sources of data are the annual financial accounts and balance sheets (AFA) collected by Eurostat and the quarterly financial accounts (QFA) collected by the ECB. The threshold of private sector debt is 160% of GDP derived from the statistical distribution of the indicator.

The envisaged indicator is based on non-consolidated data, i.e. including intra-sector liabilities such as intra-enterprise loans. Once availability of consolidated data is improved in the future, the relative merits of consolidated versus non-consolidated data can be reconsidered. Nevertheless, to account for economically relevant national specificities, consolidated data should be considered, where available, as part of the economic reading of the scoreboard. In particular, the reasons for large differences between consolidated and nonconsolidated data should be examined.

General government (public) sector debt

The scoreboard should include an indicator in the scoreboard on general government sector debt as a percentage of GDP to consider the potential contribution of public debt to macroeconomic imbalances. It should be emphasised that the indicator for public sector debt is not included in the scoreboard with a view to monitor risks of unsustainable public finances. This aspect is clearly covered by the SGP. Instead it should be considered as a complement to the indicator on private debt offering a broader picture for Member States' indebtedness and therefore their overall vulnerability. The definition of general government consolidated gross debt is the one used in the EDP. Data source is Eurostat. The Treaty reference value of 60% will be considered as the indicative threshold for the public sector debt.

Unemployment rate

An indicator measuring the evolution of unemployment should be included. This indicator is intended to monitor high and persistent rates of unemployment. This indicator points towards a potential misallocation of resources (mismatch) and general lack of further adjustment capacity in the economy. It should thus be read in conjunction with other more forward-looking scoreboard

⁶ Private sector is defined as non-financial corporations and households and non-profit institutions serving households. The sector non-financial corporations include both private and public corporations classified outside the general government debt sector.

indicators and be used to better understand the potential severity of macroeconomic imbalances in terms of their likely persistence and the capacity of the economy to adjust. The (backward) average over 3 years of the unemployment rate based on the Labour Force Surveys annual data from the EUROSTAT should be used. The statistical approach delivers an indicative upper threshold of 10%.