Centre d'analyse stratégique

European economic governance:
What indicators should be used to prevent imbalances and reinforce convergence?

The crisis has revealed that even countries whose public finances were balanced before the crisis are subject to heavy financial imbalances. Everyone in the euro zone agrees on the need to implement systemic-risk-prevention mechanisms that are more extensive than those currently provided by the Stability and Growth Pact. This reform, passed by the European Council in March 2011, is currently being debated in the European Parliament and is part of a broader mechanism to reinforce macro-prudential surveillance in the euro zone. It provides mainly for the implementing of a procedure for preventing and correcting "excessive" macroeconomic imbalances and would formalise the widening of multilateral surveillance to criteria that are not exclusively fiscal. However, while there is a consensus that such an extension is needed, there is still a debate on which indicators of imbalances to use. As they currently stand, the proposals reveal at least two, non-exclusive interpretations of potential sources of instability within the euro zone: one blames excessive imbalances on gaps in competitiveness between member-states, while the other blames an expansion in credit along with a sharp increase in valuations of both securities and real-estate assets. The purpose of this paper is to test the relevance and solidity of the indicators being reviewed and to submit proposals based on lessons learnt from previous crises[1]. ■

PROPOSALS

1 Opt for indicators that are based less on accounting than economics and that help to prevent from a too mechanical interpretation of divergence from normal. Focus on a combination of indicators that have proven their stability over the long term. Three indicators that meet this requirement are the ratio of private sector credit to GDP, the price-earnings ratio, and the price-to-rent ratio.

2 Set up an EU-wide committee of "wise men" to guarantee a neutral and impartial review process.

[1] See "Des indicateurs avancés de stabilité financière pour la zone euro", Centre d'analyse stratégique, Working Paper N° 2011-03, June.

THE CHALLENGES

The financial crisis that has weakened the euro zone has brought issues of European economic governance and the mechanisms of financial solidarity between member countries back to the fore. The reform of the Stability and Growth Pact and the implementation of a procedure to deal with excessive imbalances address this issue in part. This procedure requires indicators for alerts of imbalances. Because these indicators ultimately help determine the corrective measures that may be recommended to governments that have been deemed to be in a situation of "excessive imbalance", it is truly important to have an informed discussion of this issue.

⊘ PREVENTING IMBALANCES IS THE KEY TO REINFORCING EUROPEAN ECONOMIC GOVERNANCE

The issue of sovereign debt after the financial crisis has highlighted the shortcomings of the economic stabilisation mechanism provided by the Stability and Growth Pact

The increasingly critical situation of Greece, as well as countries such as Ireland and Spain, whose public accounts were in surplus prior to the crisis, is raising fears of contagion that ultimately poses a threat to the monetary union's stability. This shows that the Stability and Growth Pact's fiscal criteria are incomplete and makes a reform of the current European system of economic governance necessary.

⊘ **Inset 1:**

The euro zone is not an optimum monetary zone

The euro zone's wide discrepancies between various countries[2], which makes it vulnerable to an asymmetric shock, is not offset by either a highly mobile labour force (as in the United States), or by coordinated national budgets or a counter-cyclical European fiscal policy. Economic theory recommends revenue transfers between countries sharing a common currency in order to replace the currency-based adjustment mechanism, with these transfers then playing the role of a cushion.

Given the lack of fiscal transfers between states, a monetary union requires binding mechanisms for coordinating national economic policies. These aim to promote convergence between countries that, while sharing a common currency, have diverging collective preferences and retain the prerogative over their fiscal policies. Meanwhile, the impossibility for European governments to default on their debts (i.e., to have recourse to restructuring), as was the case under the gold-exchange standard, for example , have deprived the euro zone of the last adjustment lever in a fixed-exchange rate regime.

Since the creation of the Economic and Monetary Union, there has been a consensus on the need to coordinate policy to make convergence work (Inset 1). However, there has been much less agreement on the instruments to be used in implementing it.

Since 1999, the Stability and Growth Pact[3] has regulated the member-states' obligation to coordinate their fiscal policies under the multilateral surveillance of the Council and Commission. To do so, it has instituted a control procedure including a corrective arm, along with sanctions for non-compliance with its discipline criteria, including balancing the budget in the medium term, keeping the public deficit below 3% of GDP and debt below 60%. Even so, member-states have never truly and fully complied with these restrictions. The reasons most commonly put forth to explain this failure are the fact that the Pact is not truly binding. Sanctions are not much of a deterrent and are seldom enforced, and that has weakened a mechanism whose credibility had already been undermined by the gradual loosening of its founding rules and it has thus failed to prevent fiscal excesses and moral hazard.

As an instrument of governance of "real" convergence of member-states, the Lisbon strategy, which in June 2010 became the Europe 2020 strategy, sets common objectives in terms of competiveness and social cohesion but provides for no community financing, or punishment for non-compliance, or even an articulation with short-term economic objectives.

Beyond the internal criticisms of the Stability and Growth Pact, the current euro crisis reflects above all the limits to coordinating national policies in just their fiscal parameters. The crisis in public finances is due in part to debt accumulation by other economic actors, with the state acting as an "insurer of last resort"[4] for financial losses

(2) For an analysis of the nature and degree of the growing split between southern and northern euro zone countries, see Artus P. (2011), "Stabilisation of the euro zone through federalism or through restrictive rules?", *Flash Economics, Natixis,* N° 285, April.

(3) The Pact is based on three texts dating back to 1997 and amended in 2005 to formalise the March 2005 political agreement to relax its restrictions: Rule (CE) n° 1466/97 amended by 1055/05, Rule (CE) n° 1467/97 amended by 1056/05 and Resolution of European Council on the Stability and Growth Pact, appended to the European Council's June 1997 Amsterdam conclusions.

(4) See Brand T. and Passet O. (2010), "The Sustainability of Public Finances during the Crisis : an International Analysis", *La note d'analyse*, n° 191, September.

suffered by private residents, in the event of a threat of systemic spread of the crisis. The sustainability of public debt is thus due to underlying imbalances, which could be prevented by extending surveillance to a broader range of macroeconomic parameters.

> **The need to protect the euro zone from a systemic crisis convinced member-states of the urgency of a reform to "have a solid crisis-resolution framework"[5]**

European economic governance is now being reformed in two complementary directions:

▶ managing crises, when necessary, by setting up an automatic mechanism of fiscal stabilisation at the European level. Passed by the European Council at its March 2011 meeting, the European Stability Mechanism (ESM) prolongs the European Financial Stability Fund (EFSF) after 2013 by allocating it 500 billion euros and authorising it to buy public debt on the primary market. This step towards financial solidarity can also be interpreted as a required guarantee, particularly for Germany. After long opposing a "union of transfers", Germany agreed, as long as convergence and fiscal discipline criteria for potential beneficiaries were tightened.

▶ preventing crises, by reinforcing convergence between governments and deepening multilateral surveillance of economic and fiscal risks (*see Inset 2*).

⌄ Inset 2:

Overview of European crisis-prevention governance reforms

Under existing treaties, European governance has been reformed on the basis of parallel, competitive and ultimately, converging initiatives. These are viewed in some quarters as a complicated arrangement that has yet to prove itself. Specialists agree that the adoption of the "reverse majority" rule, which requires a qualified majority of member-states to counter the Commission's sanctions in the event of excessive imbalances, tends to reinforce the Commission's powers. The following timetable shows the various initiatives and explains how they relate to one

another, keeping in mind that, in practice, they constitute different dimensions of a renovated governance involving the complex inter-workings of the Commission, member-states, the European Parliament and the ECB.

• **The Van Rompuy task force:** decided by the European Council in March 2010 meeting and headed by the Council chairman, it is composed of the 27 EU finance ministers. It met six times and rendered its final conclusions on 28 and 29 October 2010. Even through the Commission kept making announcements on the governance package before task force meetings, the task force is considered one of the key venues for designing, consulting and harmonising the governance package.

• **The legislative governance package** is composed of six separate texts. Four proposals deal with fiscal aspects, particularly the reform of the preventive and corrective arms of the Stability and Growth Pact[6]. This makes the debt change criterion as important as the deficit criterion; it introduces a range of graduated sanctions approved by a "reverse majority"[8]; and it makes deposit obligations[9] more automatic. The two other proposals aim to uncover excessive macroeconomic imbalances and to remedy them[10] (See *infra*). The package was approved by the Commission at its 29 September 2010 meeting after the 12 May and 30 June 2010 statements. It was reviewed by the European Council at its 15 March 2011 meeting. The six legislative proposals adopted by the European Parliament on 23 June 2011 modify the content of some substantive points, including more automatic warnings and sanctions, the right to plenary hearings of member-state finance ministers, and greater symmetry between sanctions on deficits and surpluses.

• **The European semester:** proposed by the task force, it was approved by the Ecofin Council at its 7 September 2010 meeting and has been in effect since 1 January 2011. It sets steps for coordination and institutional approval of national orientations[11]. This timetable aims to ensure that fiscal decisions and national reform plans are in compliance with "Europe 2020" and the new outlines of the governance package. The cycle begins in January with the Commission's annual analysis of challenges facing the EU and an assessment of member-states, based on the previous year's objectives. It concludes in July with strategic orientations sent to each member-country's Council.

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[5] Based on the terms of the mandate entrusted to the Van Rompuy working party by euro zone heads of states government in their statement of 25 March 2010, which approved the principle of assistance to Greece.

[6] Proposed Regulation amending the legislative corrective arm (COM (2010) 522) and preventive arm (COM (2010) 526) of the Stability and Growth Pact and Proposed Regulation on efficient implementation of fiscal surveillance in the euro zone (COM (2010) 524).

[7] Member-states whose debt exceeded 60% of GDP will have to pledge to reduce that debt at a pace defined as one 20th of the difference with the 60% threshold observed over the last three years.

[8] The sanction proposed by the Commission will be considered as adopted, unless the Council rejects it on a qualified majority.

[9] The preventive arm requires an interest-bearing deposit in the event of "non-prudent" fiscal policy, while the corrective arm requires a non-interest-bearing deposit of 0.2% of GDP for countries in a situation of "excessive" debt, a deposit that could be converted into a fine for non-compliance with the Commission's recommendations. Meanwhile, interest on deposits and fines will be redistributed to "virtuous" countries.

[10] Proposed rule on preventing and correcting macroeconomic imbalances (COM (2010) 527) and proposed rule on enforcement measures to remedy excessive macroeconomic imbalances in the euro zone (COM (2010) 525).

[11] Adopted by the Ecofin Council at its 7 September 2010 meeting, the European Semester institutes an annual surveillance cycle, under which: 1) in March the European Council sets strategic policy orientations on the basis of the Commission's "annual growth survey"; 2) on the basis of these orientations, in April the member-states present their medium-term fiscal strategies in their stability and convergence programmes as well as in the national reform programmes; 3) in June and July the Commission and Council debates these programmes and sends their opinions to members states before they draw up their final budgets for the following years.

• **The "Euro Plus Pact" or "Pact for the Euro"**: this government initiative is an amended version of the competitiveness pact proposed by Germany and France in February 2011. It includes the members of the euro zone plus those who want to join the monetary area (Poland, Bulgaria, Denmark, Romania, Lithuania and Latvia). Each year governments make additional commitments to stimulate competitiveness and employment, to ensure the sustainability of public finances and reinforce financial stability. It does not have a truly binding character.

Of all the items of the reform, the most important in governance terms is with no doubt the surveillance and prevention of "excessive" imbalances

The implementation of a surveillance and prevention procedure for "excessive" macroeconomic imbalances comes from the recognition of potential sources of instability within the euro zone other than public deficits. Indeed, the countries that have been most weakened by the crisis, Ireland and Spain in particular, were running budget surpluses in 2007. Moreover, the Commission and the ECB had already alerted the Council that the surveillance procedure was incomplete, that gaps in competitiveness between euro member countries created systemic risk, as did divergences in national private debt trajectories and trends in certain asset prices[12]. The Pact's reforms now make it possible to detect and prevent such risks of imbalances.

The procedure pertaining to excessive imbalances provides for a periodic valuation of the risks of imbalances based on a scoreboard to be defined. It comes with an alert mechanism and rules for undertaking corrective action. The proposed rule on preventing and correcting macroeconomic imbalances establishes a four-stage mechanism:

▶ the Commission regularly publishes the results of the scoreboard as well as "a report to identify any potentially contradictory signal from these various indicators"; on this basis, it draws up a list of member-states who may present a risk of imbalance;

▶ this list is discussed by the Council and the Eurogroup;

▶ the Commission undertakes an "in-depth review" of the situation of the member-state(s) that the alert mechanism has indicated as being in a situation of excessive imbalance or risk. This review should include a "complete analysis" of sources of imbalances, taking into account "each country's own economic conditions and circumstances" along with "qualitative data";

▶ based on this in-depth review, if the Commission detects an imbalance or risk of imbalance, it asks the Council to make "preventive" recommendations to the member-state concerned; if they are "severe imbalances or imbalances that jeopardise the proper functioning of the Economic and Monetary Union", it asks the Council to recommend "corrective action" to the member-state, i.e., implementing "prescriptive" recommendations by a given deadline.

The proposal of rules establishing "enforcement measures to remedy excessive imbalances in the euro zone"[13] makes the mechanism binding by providing for a fine of 0.1% of GDP of the member-state that continually fails to comply with the Council's recommendations under this procedure.

❯ HOW RELEVANT ARE COMPETITIVENESS INDICATORS FOR THE ZONE EURO?

While there is general agreement that multilateral surveillance should be widened to criteria that are not exclusively fiscal, the choice of indicators is still open to discussion

The choice of indicators depends closely on the underlying definition of "excessive" imbalance, i.e., the interpretation of the potential sources of instability within the euro zone.

The list of the scoreboard's alert indicators must be drawn up by the Commission (in a separate document from the rules) and approved by the Council. They must be "practical, simple, measurable and available" based on the terms of the Van Rompuy working group, given that the scoreboard's first purpose is "early detection of unsustainable or dangerous trends" within member-states.

There is a consensus on what qualities these indicators need to have, including their methodological robustness, their statistical availability and their predictive capacity. The scoreboard is also intended to include a sufficiently large number of indicators (between five and ten) to "cover all possible major imbalances" and to be "updated

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(12) See "EMU@10: Successes and challenges after ten years of economic and monetary union", COM(2008)238 final.
(13) COM (2010) 525.

as needed" to reflect trends in risks to macroeconomic stability or that of the statistical data. So it is considered especially important that the indicators be able to evolve.

Both the Commission and the Van Rompuy working group also stress that the alert thresholds[14], i.e., the "normal" limit values of the indicators, should not be likened to objectives. A current account deficit that exceeds the alert threshold for this indicator, for example, could fail to trigger a procedure for excessive imbalance if the in-depth review of the country showed that, as this country is in a catch-up phase with high investment needs, this deficit could be considered as normal. In other words, there is no "automatic link between the findings of the scoreboard and political repercussions".

Beyond these basic prerequisites, the choice of indicators is open to discussion. They depend on the definition of "excessive" imbalance, i.e., the economic reasoning, given the risks of euro zone instability likely to result from an economic crisis in a member-state. As things now stand, the Commission's proposals refer to "measures of the trade position and competitiveness in terms of price and costs" as well as to "internal indicators"[15].

In reality, and to simplify, current proposals of indicators are based on two distinct, not mutually exclusive readings of the sovereign-debt crisis in Europe: one blames excessive imbalances on the widening of competitiveness gaps between member-states; the other blames an expansion in credit, accompanied in many cases by a sharp run-up in the prices of certain assets.

The widening gap in competitiveness between member-states of a monetary union cannot be automatically interpreted as a vector of instability

The ECB has blamed the crisis on "excessive and persistent divergences" of relative competitive positions[16]. It therefore suggests establishing peer surveillance, with priority given to an indicator of unit labour costs, member-countries' current accounts deficit and their foreign debt[17]. Increasing the convergence of these variables is an objective in and of itself, given that, in a "quasi-fiscal federation", in the words of Jean-Claude Trichet, the higher the structural homogeneity between member-states, the lower the risk of euro zone monetary instability.

Table 1:
Change and rank for every country, based on its indicators of competitiveness, 1999-2010

	Unit labour costs (% change)		Exports / world exports (% change)		Current account (difference in pts of GDP)		External debt (difference in pts of GDP)	
	1999-2007	1999-2010	1999-2007	1999-2010	1999-2007	1999-2010	1999-2007	1999-2010
France	15.6 (2)	22.6 (3)	-29.9 (7)	-40.1 (7)	-4.1 (5)	-5.3 (8)	-0,4 (2)	-10.6 (3)
Germany	-2.6 (1)	4.4 (1)	-0.8 (1)	-12.5 (1)	9 (1)	6.4 (1)	26.3 (1)	39 (1)
US	20.1 (3)	21.7 (2)	-32.7 (6)	-31.1 (4)	1.9 (4)	-0.2 (3)	-5 (4)	-10.8 (4)
UK	23 (5)	36.3(7)	-34.2 (5)	-44.3 (5)	-0.2 (2)	0.2 (2)	-2.6 (3)	6.3 (2)
Greece	25.5 (6)	37.5 (8)	-13.1 (3)	-29.2 (3)	-8.9 (8)	-4.9 (7)	-76.3 (8)	-63 (5)
Ireland	32.1 (8)	32.9 (5)	-30.4 (8)	-38.3 (8)	-5.6 (6)	-0.5 (4)	-68.4 (7)	149.8 (8)
Spain	27.6 (7)	34.4 (6)	-1 (2)	-12.2 (2)	-7.1 (7)	-2.5 (6)	-60.3 (5)	-64.5 (6)
Portugal	22.5 (4)	28.3 (4)	-14.4 (4)	-25.5 (6)	-1.4 (3)	-1.6 (5)	-61.4 (6)	-78.7 (7)
Euro zone	12.4	19.8	-7	-6.4	-0.2	-0.3	-10.2	-9.3

Note: France's unit labour costs rose by 15.6% from 1999 to 2007 (pre-crisis) and by 22.6% from 1999 to 2010 (taking the crisis into account). This is a relatively low increase compared to other sample countries, ranking second and third, respectively (the rank is given in parentheses). Its market share in exports, as measured in the percentage of total global exports, are among those that have fallen the most, by 29.9% from 1999 to 2007 and by 40.1% when the crisis period is included.

Sources: OECD, Lane and Milesi-Ferretti (2007)[18], IMF International Financial Statistics, ECB.

[14] In its 30 June 2010 statement, the Commission suggests calculating alert thresholds based on 75 and 25 percentiles of statistical distributions (by country and chronological) of each variable (See (COM(2010) 367 final). But it acknowledges that this proposal does not rely on any economic evidence.

[15] In its June 2010 statement, the Commission suggested the following list as an indication: "trends in current accounts, net foreign assets, the real effective exchange rate (based on the unit labour cost and a GDP deflator), the increase in real property prices, public debt and the ratio of private sector credit to GDP".

[16] See European Central Bank (2011), *Opinion of the European Central Bank on Economic Governance Reform in the European Union*, CON/2011/13, published on 22 February.

[17] Net foreign debt (or net foreign assets) amounts to all financial liabilities, net of financial assets, held by a country's residents. Its variation depends on both fluctuations in the current account (the accounting of all flows of goods and services and capital exchanged between a country and the rest of the world), and the effects of asset and liability valuations. Unit labour costs refer to the average cost of labour for one unit produced. They are calculated as total labour costs on a total product or the ratio of average cost per hour to productivity (produced per hour).

[18] Lane P. R. and Milesi-Ferretti G. M. (2007), "The external wealth of nations mark II: Revised and extended estimates of foreign assets and liabilities, 1970-2004". Journal of International Economics, 73(2), p. 223-250.

However, links between various competitiveness indicators are not easy to interpret. As table 1 results show, trends in each country's unit labour costs and market share (defined here by the ratio of exports to global exports) can differ substantially, as also noted by Broyer and Bruner[19]. Hence, while salary inflation in Ireland was twice as high as in France during the period prior to the crisis, market shares shrank by the same extent (about 30%).

Links between changes in these cost-competitiveness indicators and current account, and net foreign assets are also more complex than they seem. The UK, for example, has lost market share, which is not reflected in its current accounts balance, while its net foreign assets have even increased. More generally, of the eight countries in the sample, only in Germany are all these indicators converging.

These results are corroborated by recent analyses, including that of Éric Chaney[20] based on a comparative analysis of the trajectories of Germany and Spain in the 10 years prior to the crisis. It shows that imbalances are produced first from the diverging attractiveness of member-countries, which themselves are due to divergences in domestic demand resulting from structural factors (diverging macroeconomic policies, along with uneven social preferences) and economic factors ("monetary doping" from the euro switchover). Jacques Le Cacheux[21] also stressed a sub-optimum specialisation in low-productivity sectors "where bubbles engendered heavily biased growth" in crisis-hit countries. The real causes and initial conditions of external imbalances thus differ widely from country to country, and financial integration, also according to J. Le Cacheux, is meant precisely "to allow such divergences". Competitiveness differentials are therefore not dangerous by nature. Relying an analysis of intra-zone imbalances on these indicators might lead, in the words of Paul Krugman[22], to formulating "easy answers to complex problems".

However, the importance of the current accounts balance must not be underestimated today, as it makes it possible to move beyond strictly fiscal imbalances to private financial imbalances in synthetic fashion[23]. However, it must be supplemented by an analysis of foreign debt, to determine how sustainable it is.

Table 2 :

Differences between change in net foreign assets (2010-1999) and cumulative current accounts balance, 1999-2010

	France	Germany	US	UK	Greece	Ireland	Spain	Portugal	Euro zone
Change in net external position	-10.6	39.0	-10.8	6.3	-63.0	-149.8	-64.5	-78.7	-9.3
Sum of current account	2.9	41.3	-53.2	-26.2	-99.2	-23.4	-69.9	-106.6	2.4

Note: The US net foreign assets worsened by 10.8 points of GDP between 1999 and 2010, while the accumulation of US current accounts deficits and surpluses came to −53.2 points of GDP over the same period. The ratio is the opposite for France, whose current accounts are mostly in balance (2.9 cumulative points of GDP from 1999 to 2010) but with lower net foreign assets (−10.6 points of GDP from 1999 to 2010).

Sources: OECD, Lane and Milesi-Ferretti (2007)[24], IMF International Financial Statistics, ECB.

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(19) See Broyer S. and Brunner C. (2010), "L'évolution récente des parts de marché intra-UE n'a rien à voir avec la compétitivité coûts", *Flash Natixis* n° 193, April.

(20) See Chaney É. (2010), "Déséquilibres européens: assez de lieux communs!", *Telos*, 8 April.

Cacheux J. (2010), "How to herd cats: macroeconomic policy coordination in the euro zone in tough times", *Journal of European Integration*, January.

(22) Krugman P., "Competitiveness: a dangerous obsession", Foreign Affairs, March-April 1994.

(23) A nation's financing needs is equal to the sum of the financing needs of its private agents (households and companies) and the public sector's financing need. Some economists have proposed an external stability pact: Dullien S. and Schwarzer D. (2009), "An External Stability Pact for Europe", Project Syndicate, http://www.project-syndicate.org/commentary/dullien2/English. Moreover, it would appear that the financial markets are increasingly sensitive to the sum of both public and private financing needs, as seen in the correlation between interest-rate spreads and balance of payments.

(24) Lane P. R. and Milesi-Ferretti G. M. (2007), *op. cit.*

The latter offers a comprehensive approach to a country's wealth situation. It addresses both cumulative deficits and asset and liability valuations. A precise analysis of the quality of assets and the structure of liabilities helps assess a country's financial solidity more clearly. Indeed heavy liabilities are not as important if they are backed with profitable, high value assets. As suggests Patrick Artus[25], this makes it possible to take into account the relative return on capital for each country. Moreover, the very structure of liabilities plays a significant role in risk assessment. Direct investments carry less illiquidity risk than more volatile securities or money-market investment. Table 2 shows that there can be a rather strong discordance between an interpretation of flows and an interpretation of inventories. Although from 1999 to 2010, France showed a slight current accounts surplus, its net foreign assets declined. It was the opposite for the UK, which means that capital transformation is more efficient there than in France[26]. In Ireland, net foreign assets more accurately reflect its financial weakness than a mere look at the current accounts balance. These findings therefore show that net foreign assets are a useful complement of the current accounts balance.

⊘ WHAT FINANCIAL INDICATORS SHOULD BE USED FOR EXCESSIVE IMBALANCES?

If having a synthetic vision of a nation's financial imbalances is important, it is worth separating the dynamics of public and private debt. The recent crisis reminds us that excessive private debt can serve as a leading indicator of a decline in sovereign debt quality. These debt movements, as seen in the private-sector credit indicator, must be compared with asset price trends. The definition of excessive dynamics in these variables is nonetheless imprecise, that's why an approach that compares them with their economic underlyings is ultimately preferable.

> **The coexistence of a phase of excessive credit expansion and a sharp increase in securities and real-estate assets and immovable asset prices has been a source of financial instability for two decades**

For 20 years, excess credit has been a cause of almost all crises. As Michel Aglietta[27] notes, this diagnosis suggests that macro-prudential rules should be consolidated, particularly control over debt leverage during expansion phases. It thus suggests establishing a standard based on a long-term relationship between credit and potential growth and to regularly assess credit's deviations from this standard. Moreover, based on the analysis of the Conseil d'analyse économique (CAE)[28], the credit overrun indicator should be joined to share price overrun indicators. The same type of indicators should be used for real-estate prices, in accordance with the recommendations of the IMF[29], which stress that "given the uncertainties linked to shocks and the effects of interest rates on asset price bubbles, real-estate prices should be one way to appreciate the balance of risks prospectively".

Many recent empirical studies[30] have come to the same conclusions, and the CAE notes that "a consensus is emerging on some variables with predictive properties… that are reasonably robust", the first of which are credit, share prices and real-estate prices. Developing an efficient scoreboard therefore requires *a priori* the development of indicators that express the gaps vs. a *normal* situation of these three variables.

In this area, the proven methodology in financial indicator literature[31] is based on real-time estimates (i.e., which reflect information available at the time when the diagnosis is awaited on whether a bubble is being formed). It also requires determining the thresholds above or below which deviations in the variable vs. the trend are considered meaningful.

(25) Artus P. (2011), "La très grande difficulté d'utilisation d'indicateurs standardisés pour juger des déséquilibres dans un pays, surtout s'ils ne portent pas sur les politiques monétaires", Flash Economie, n° 155, 1 March. He also suggests including a country's level of development and prospects for ageing, which orient member-countries' savings and investment behaviour, leading some to take on debt and others to hold assets on the rest of the zone.

(26) See Passet O. and Schaff C. (2008), "Réalités et apparences du déficit extérieur américain", *La note de veille*, Centre d'analyse stratégique, n° 94.

(27) See Aglietta M. and Scialom L. (2010), "A Systemic Approach to Financial Regulation: a European Perspective", *International Economics*, n° 123, July.
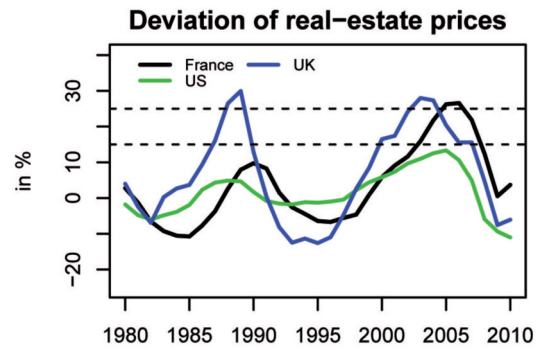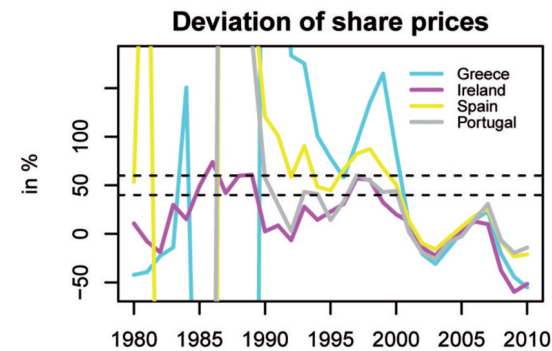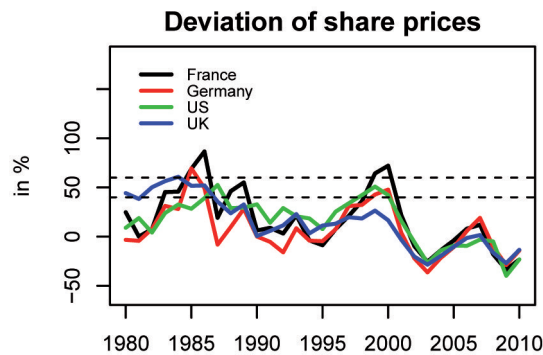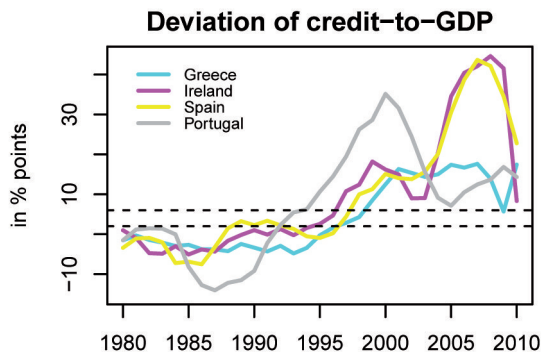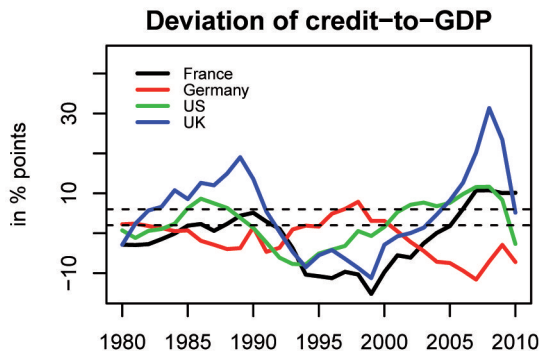
(28) Boyer R., Dehove M. and Plihon D., *Les crises financières*, Conseil d'analyse économique, 2004, note, for example, that crises are more likely when "credit pro-cyclicity resonates with the pro-cyclicity of other assets".

(29) See IMF (2008), "Housing in the business cycle", *World Economic Outlook*, April.

(30) For a list of these studies, see "Évaluer la performance économique, le bien-être et la soutenabilité", report of the Conseil d'analyse économique and German Council of Economic Experts, December 2010.

(31) See in particular Borio and Lowe (2002a), *op. cit.*, p. 43-54.

Chart 1:

Deviations from trend of private-sector credit as a percentage of GDP, real share prices and real-estate prices, 1980-2010

Deviation of credit-to-GDP

Deviation of credit-to-GDP

Deviation of share prices

Deviation of share prices

Deviation of real-estate prices

Note: In 2008, the credit-to-GDP ratio was more than 10 points above its trend for the UK, the US and France, and even more so for euro zone countries that are most distressed today. Real equity prices were more than 50% above trend for large developed countries in the mid-1980s and late 1990s. However, this was not the case prior to the 2007 crisis for these same countries (See methodology in the appendix).

Sources: Borio and Lowe (2002a)[32], OECD, IMF International Financial Statistics, Federal Reserve - Flow of Funds, Shiller Online Data, CAS calculations.

The findings of this type of estimates are summarised in the figures. They show rather clearly two boom periods, one in 2000 and the second in 2008. The two periods are characterised by a high debt-to-GDP ratio, along with a boom in share prices in 2000 and in real-estate prices in 2008. These findings provide a clear demonstration that the coexistence of unusually rapid growth in private-sector credit (corporate credit prior to 2000, mortgage credit thereafter) and an increase in asset prices can be a leading indicator of crisis. Historically, it is credit booms that lead to asset inflation, and then to the formation of a bubble, which, when it bursts, drives agents into insolvency. The crisis, which is initially financial, then spreads to the rest of the economy. The nature of inflated assets combined with excess liquidity also varies with agents' anticipations: tomorrow it could be the commodities, which should mean that the scoreboard would have to include an indicator of deviation in their prices, in order to reflect trends in the nature of risks.

However, there are limits to interpreting deviations of asset prices from their trend, particularly relating to their sensitivity to the state of the economy (i.e., level of interest, exchange and inflation rates, in particular). This sensitivity leads to an overestimation of the risk of bubble formation during periods of *justified* share price increases. Hence, in the late 1980s and early 1990s, very steep disinflation, combined with a significant fall in real interest rates led to a sharp deviation of share prices from their trends. We estimate that the alert thresholds of Borio and Lowe (2002a) would have been systematically triggered. Nowadays, the 1987 crash is however considered a minor economic event.

(32) Borio et Lowe (2002a) "Assessing the risk of banking crises", *BIS Quarterly Review*.

Meanwhile, findings are heavily influenced by the calculation methods used for assessing the trend that underlies the normal criterion for changes in credit or asset prices (*see chart 2 and methodology in the appendix*). Setting alert thresholds is thus subject to contradictory assumptions and is often the subject of debate. For example, it is difficult to justify, theoretically, why the credit-to-GDP ratio must stick to a particular trend, particularly in the case of economies in the catch-up phase or countries that have seen a change in the structure of their financing.

❤ Chart 2:

Real US share price trends, 1970-2010
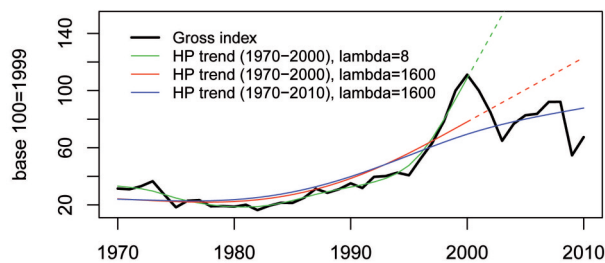
Note: See methodology in the appendix.

Source: Shiller Online Data, CAS calculations

The complexity of implementing this type of indicators and the ambiguous results thus confirm that they are non convenient to policy-makers in a context in which there must be a consensus on the final scoreboard for governments with sometimes divergent interests to agree on its value.

(The use of indicators that compare private credit and asset prices to their economic underlying factors enhances crisis prediction

Can these limits be exceeded? Is it possible, without going so far as a 3%-type criterion, to make indicators that are complex by nature, more efficient in practice? The analyses of Robert J. Shiller[33] tends to answer yes, as long as an economic underlying factor is used, i.e., comparing the change in the given variable to that of another decisive variable that is thought to move at the same pace, all other things being equal. For example, just as credit rises with wealth produced, share prices rise proportionally with firm profits, and real-estate prices with rents. Rather than analysing each of these variables individually, they should be analysed in relation to their benchmarks in order to detect possible imbalances.

❤ Chart 3:

Trends in *price-earnings ratios*, 1970-2010
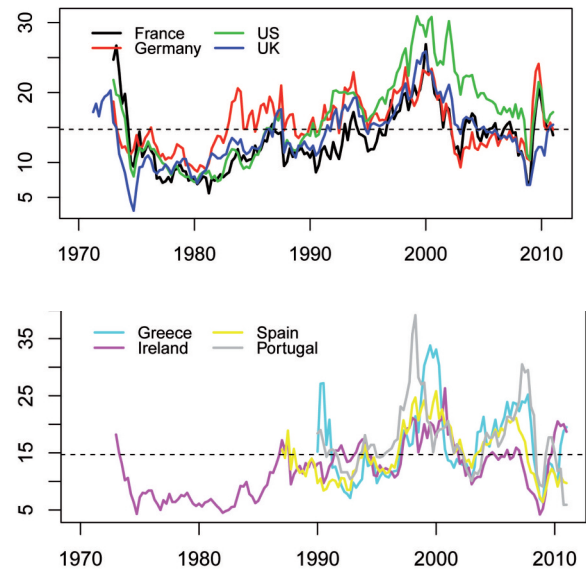
Note: This chart presents PER for each country in the sample since 1970, as well as the average (dotted line) for each group of countries. Share prices compared with earnings were at a peak prior to the bursting of the Internet bubble in 2000, and especially for Spain, Greece and Portugal prior to the 2008 crisis.

Sources: Datastream.

In addition to being more economically meaningful, ratio-based indicators help minimise the problem of determining alert thresholds, since the historical average may be considered as the normal level[34]. Moreover, the information in this type of indicators makes analysis possible without the use of econometric assumptions having a heavy influence or potential bias on their interpretation.

The *price-earnings ratio* (PER), which indicates how much an investor is willing to pay for each euro of profits (current or anticipated) generated by a company, delivers much more reliable information on the overvaluation of equities in the late 1990s, as seen in chart 3.

Unlike the series deflated by the consumer price index (*see chart 1*), PERs and the trends vs. real interest rates, which are reproduced on chart 4, suggest no major distortion on the equity markets in the second half of the 1980s, but much more in the late 1990s, with a clear underestimation of the risk premium. PERs therefore do discriminate between justified run-ups in share prices and unjustified run-ups, unlike the index of deviation of share prices from their trends.

(33) See Shiller, R.J. (2000), *Irrational Exuberance*, Princeton University Press, which summarises its academic works of the 15 previous years.

(34) These ratios must then be compared to real long-term interest rates to reflect changes in the risk premium.

Chart 4:
The difference between *earning yields* (1/PER) and real long term bond yields, 1970-2010
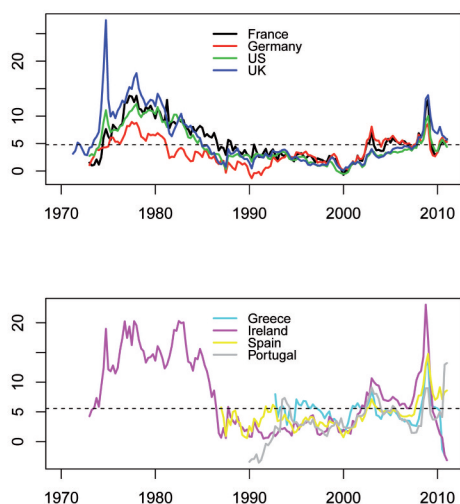
Note: This chart presents the difference between earnings yield, (1/PER, representing forecast earnings per invested euro) and real long yields on bonds deemed risk-free: the markets priced in an increasingly low risk premium over government bond yields as the Internet bubble developed. These premiums rise following the bursting of the Internet bubble towards their long-term value, with a sudden spike in the fourth quarter of 2008 and first quarter of 2009 after the Lehman Brothers bankruptcy.

Sources: Datastream, OECD.

PERs did not signal a financial crisis in 2008, and rightfully so, since share valuations vs. earnings were not far off the fundamentals. Real-estate assets, however, were overvalued from the start of the 2000s. This is confirmed by an analysis of price-to-rent ratios (PRR) in France, the US and the UK (chart 5).

PRRs show that housing prices have been significantly overvalued compared to rents in these three countries for the last 10 years. Following the 2008 crisis, there has been a significant correction in housing prices only in the US, which lowered this ratio to its level of the 1990s. The correction was of a much lower extent in the UK and France in particular and, based on 2010, the ratio appears to be rising again.

Just as the strong expansion in credit (as a share of GDP) in the 1990s led to a clear overvaluation of equity markets in most European countries, a sharp increase in mortgage credit in the 2000s fed a bubble on a new asset market, real-estate this time.

As a result, a combination of the credit-to-GDP ratio, the price-earnings ratio and the price-to-rent ratio provides a good indicator of coming financial imbalances.

Chart 5:
Price-to-rent ratios, 1970-2010
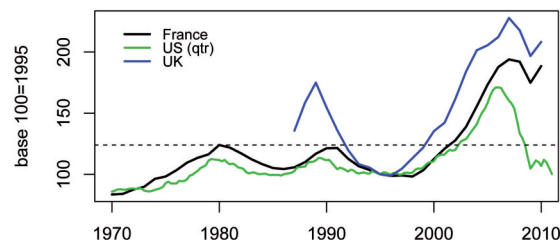
Note: This chart presents price-to-rent ratios. As this indicator is based on housing prices and rent indices and not on book values, it can supply only the PRR. Unlike PER, PRR can therefore only be interpreted in terms of its variation, without referring to a long-term value or to real interest rates.

Sources: For real-estate prices, Freddie Mac-FHFA, single-family houses in the US; UK government's real-estate price index; INSEE real-estate price index for France (and based on Jacques Friggit's work on the CGEDD website). For rent indexes, INSEE for France, Office for National Statistics, Real Price Indices, for the UK and FRED for the US (Consumer Price Index for All Urban Consumers: Rent of Primary Residence).

PROPOSAL 1

Opt for indicators that are based less on accounting than economics and that help to prevent from a too mechanical interpretation of divergence from normal. Focus on a combination of indicators that have proven their stability over the long term. Three indicators that meet this requirement are private sector credit compared to GDP, the price-earnings ratio, and the price-to-rent ratio.

Indicators should not be interpreted mechanically but rather through a qualitative analysis to place the diagnosis in its own context. For this purpose, and remembering that confidence in indicators often depends on the mode of governance chosen, it may be useful to entrust such an analysis to an independent committee like the German Council of Economic Experts, nicknamed the "Five Wise Men" (Inset 3). Appointed by the 17 euro zone member countries, it would work in cooperation with the European Commission to provide a more in-depth analysis of countries in a situation of "excessive imbalances" and would operate on a consensual basis. It would report on potential imbalances and their risks of systemic spread. Like the German council, its reasoned, conditioned and independent opinion would be on a case-by-case basis and based on the crossing of several indicators.

Inset 3:

How the German "Five Wise Men" council works

Established in 1963, the German Council of Economic Experts is a group of economists who advise the German federal government and parliament on economic issues. Each year, the Council prepares an annual report published around 15 November. Eight weeks later the government releases its observations and comments. The German Council of Economic Experts is often called the "Five Wise Men". Its five members are nominated by the federal government and appointed by the German Head of State.

PROPOSAL ②

Set up an EU-wide committee of "wise men" to guarantee a neutral and impartial review process.

CONCLUSION

The reform of the Stability and Growth Pact recognises that stepped up political coordination is needed within the euro zone beyond mere compliance with common fiscal discipline. The implementing of a community framework for preventing excessive imbalances is a notable step forward in the area of governance. This new procedure requires a consensus on the diagnosis of potential sources of instability within the euro zone. It is this shared diagnosis that will determine the nature of alert indicators to trigger the procedure. However, measures taken in order to limit divergences in competitiveness will require a delicate balance between price-based and non-priced-based instruments. At least as sensitive is how to limit excesses in credit and in asset prices, which is up to governments for the prudential dimension and, where applicable, the central banks for the financial stability objective. The coordination between these objectives is still being debated.

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LA NOTE
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APPENDIX

Methodology and analysis of chart 1:

Trends for each series are estimated using a Hodrick-Prescott filter[35]. The trend is re-estimated annually, using the difference between the last point in the series and the last point in the trend[36]. Chart 1 presents the deviations in percentage points vs. the credit-to-GDP ratio and in percentage vs. the trend of real prices of shares and real-estate[37]. The threshold ranges are taken from Borio and Lowe (2002a) and Borio and Lowe (2002b)[38]. They show that the indicator combining credit deviations (with an alert threshold 4 points above the trend) and share price deviations (with a threshold alert 40% above the trend) predicts almost two thirds of crises in industrialised countries on a maximum three-year timeframe[39]. The main difficulty in studying the behaviour of deviations from trends in each series, particularly during the 2008 crisis, lies in the fact that the various thresholds were estimated from 1960 to 1999. Our test is therefore out-of-sample.

Methodology and analysis of chart 2:

Several assumptions are used in defining a trend and are worth recalling, given the considerable influence they have on the interpretation of the bubble phenomenon.

On the one hand, care must be taken not to give into the retrospective illusion of seeing a bubble only once it has burst. For, the estimate of the trend is highly sensitive to the latest known point, which is called a "side effect". An example is provided by the deviations seen when applying the filter to real US share price (in blue). This is why we prefer real-time methods.

Moreover, there is a battery of filtering methods, from linear trends to quadratic trends, from moving averages to the ARIMA process, or from the Kalman filter to the Hodrick-Prescott filter.

And, finally, the choice of parameters within the same method has a very great impact on results. Hence, depending on whether trend change assumptions are conservative (lambda: 1600, in red) or in favor of multiple breaks (lambda: 8, in green), the bubble phenomenon will be assessed differently (see projections made in 2000, for example). And these choices are ultimately governed by economic analyses, depending on whether or not the new economy of the 1990s is considered an inexhaustible source of productivity.

[35] This filter is just one technique for extracting trends.

[36] For example, for 1995, the 1970-1995 series is filtered and, for the credit-to-GDP ratio, the difference is taken between the real point of 1995 and the trend point of 1995.

[37] These series are detailed in the charts provided in the appendix of the working paper over a longer period (1970-2010), as well as for series of real effective exchange rates.

[38] Borio and Lowe (2002b), "Asset prices, financial and monetary stability: Exploring the nexus", *BIS Working Papers*, 114.

[39] An additional constraint is to minimise the type I prediction errors (i.e., not to predict a crisis and one occurs) and type II prediction errors (i.e., predict a crisis and none occurs).

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