LETTER

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE

N°20
October 2007

TRÉSOR-ECONOMICS

Should we worry about current-account imbalances in a monetary union ?

This study was prepared under the authority of the Treasury and Economic Policy General Directorate and does not necessarily reflect the position of the Ministry of the Economy, Finance and Employment.

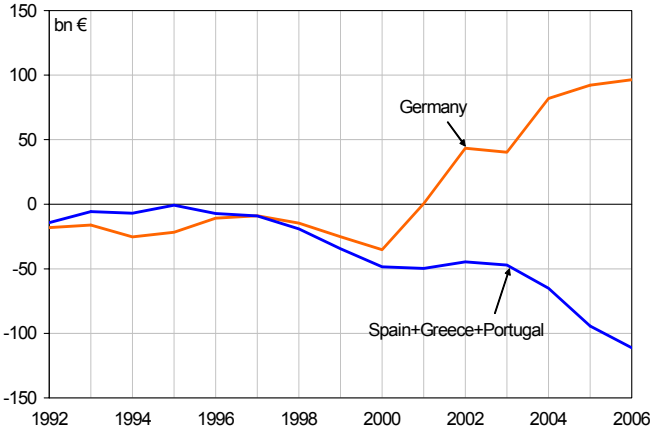
- For the past several years, the eurozone current account has been nearly balanced despite divergent trends in the current accounts of individual member countries. Germany's current account has improved in the recent period, while the current-account deficits of Spain, Portugal, and Greece widened by 8.3, 9.8, and 8.1 points of GDP respectively in 2006.

- In theory, these current-account imbalances are partly due to a better functioning of financial markets and the elimination of exchange-rate risk premiums resulting from monetary union-a development that has arguably lowered some barriers to capital flows and allowed greater use of international financing.

- However, the overadjustment risk should not be underestimated. If current-account deficits move on an unsustainable path, countries belonging to a currency area can no longer rely on a devaluation of the nominal exchange rate, and must turn to other types of adjustments. Competitiveness adjustments are more costly when they require a cut in real wages achieved through higher unemployment. Financial adjustments cannot be ruled out either, although the notion of "country risk" is less relevant in a monetary union.

- Lastly, economic policies have a role to play. Monetary authorities can be attentive to macroeconomic disparities and can act on member-country weightings in their policy management. Fiscal policies can seek to offset the demand differences between countries. Policies to stimulate productivity growth can narrow competitiveness differences, as well as certain tax policies.

Current account balances in the eurozone



Source : Datastream.

DGTPE
DIRECTION GÉNÉRALE DU TRÉSOR
ET DE LA POLITIQUE ÉCONOMIQUE

1. Structural levels of current-account balances are more scattered in a monetary union than under flexible exchange rates

A country's current-account balance measures its net borrowing requirement or net lending capacity. It is defined as the difference between aggregate saving and aggregate investment. An equivalent notion can be applied to an individual economic agent or a variety of aggregates such as regions, institutional sectors, and groups of countries. The current-account balance is equal to the trade balance plus the balance of factor income from labour and capital employed abroad.

In the medium/long term, current-account imbalances in a set of heterogeneous countries are a normal occurrence. The countries with the highest growth rates-whether due to productivity or demographics-or with a greater structural preference for the present will run current-account deficits in the medium term[1] (see box 1).

Gaps in potential growth, as estimated by the Commission, seem to adequately explain the dispersion of the current-account imbalances of the eurozone's four major countries: Germany, France, Italy, and Spain. This analysis is, however, relatively unconvincing for most of the other countries (see charts 1 and 2). Several arguments may be offered to account for the wider differences between current-account imbalances in a monetary union in the medium/long term:

- **A monetary union reduces friction in capital flows** and eliminates the bilateral exchange-rate risk. The harmonization of financial regulations and accounting standards, which lowers uncertainty and improves transparency of information[2], also promotes an easing of the external constraint;
- **Greater competition inside a currency area can contribute to the persistence of structural imbalances[3].** By increasing substitutability between goods produced by different countries (*via* harmonisation of regulations in the goods markets, the extension of the traded-goods sector, or intra-industry specialisation[4]), stronger competition ensures that a variation in the real exchange rate will generate movements in current-account balances;
- In a single-currency system, governments abandon implicit policies that target current-account balances.

Box 1: **Determinants of equilibrium current-account balances in a rigidity-free world**

In a closed economy, the saving/investment equilibrium (IS) determines the national real interest rate. This autarkic rate r is, according to the golden rule, equal to the preference for the present plus the potential growth rate[a], or:

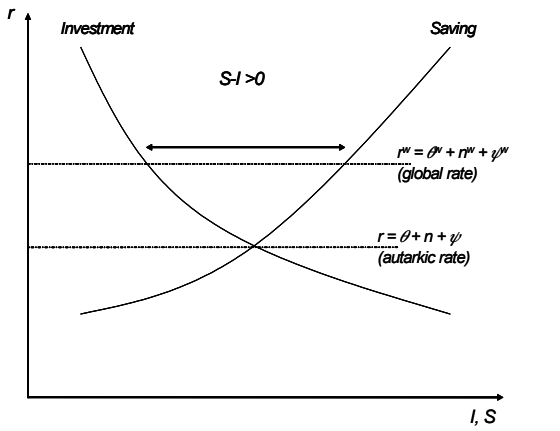
$$r = \psi + \theta + \alpha n + (1 - \alpha)k$$

where θ is total factor productivity, n population growth, k the growth of capital stock, and α the labour share of added value[b].

In an open economy, financial capital circulates freely, equalizing the marginal return on capital between countries. This leaves only a world interest rate, determined by the global saving-investment equilibrium. As the Metzler diagram illustrates, differentials in autarkic interest rates generate current-account imbalances:

The regions whose autarkic rates are lower than the global interest rate run current-account surpluses (saving S exceeds investment I).

Chart 1: saving/investment equilibrium



a. In the new macroeconomic theory, this result can be deduced from Euler's equation for the consumption of an agent's program that maximizes, under the budgetary constraint, the consumption per capita of an agent with an infinite lifetime, a psychological discount factor of $1/(1-\psi)$, and a goods endowment per capita that increases at the pace of technical progress.

b. In the long run, the accumulation of endogenous capital net of depreciated-capital replacement occurs at the same pace as the growth of labour supply (k tends toward n), so that $k = n$ and hence $r = \psi + \theta + n$. The only significant variables in the long term are the productivity and population growth rates.

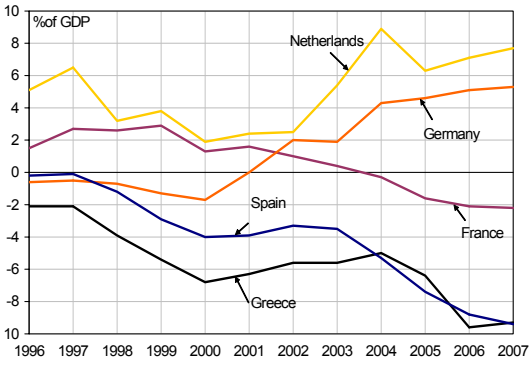
(1) In fact, the methods for estimating equilibrium exchange rates based on current-account balances do not aim at current-account equilibrium but at a target that depends on factors of a more structural kind.

(2) Blanchard, O. and F. Giavazzi (2002): "Current Account Deficits in the Euro Area. The End of the Feldstein Horioka Puzzle?", *Brooking Papers in Economic Activity, 2, pp. 147-186.*

(3) Obstfeld, M. and K. Rogoff (2000): "The six major puzzles in international macroeconomics: is there a common cause?", *NBER Working Paper 7777, and Blanchard, O. and F. Giavazzi (2002).*

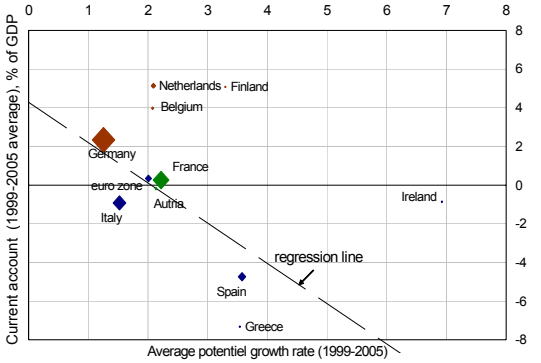
(4) Fontagné, L., M. Freudenberg, and G. Gaulier (2005): "Disentangling horizontal trade and vertical industry trade", *CEPII Working Paper 2005-10.*

Chart 2: Ratios of current-account balances in the eurozone



Source : IMF (WEO, 2006)

Chart 3: potential growth and current-account imbalances in the eurozone



Source : IMF, European Commission, DGTPE calculations.

2. As far as dynamics are concerned, external imbalances can reflect different types of macroeconomic disequilibrium

2.1 Cyclical sources of current-account imbalances in a currency area

Differences in the levels of current-account balances can reflect differences in economic cycles. A country in an expansionary phase will tend to run external deficits because of the vigor of its domestic demand and hence of its imports. Inflationary tensions generated during expansions also lead to competitiveness losses that harm exports and stimulate imports, further aggravating an external deficit.

In a currency area, cyclical differences can play a greater role due to a single monetary policy that, by setting average targets, is always too expansionary for economies in a relative expansion phase and too restrictive for the economies in a comparatively slower phase. In practice, the shift in the saving/investment equilibrium within the eurozone and the widening of imbalances occurred in a ten-year period during which monetary policy was accommodative for Spain, Portugal, and Greece, and restrictive for Germany.

2.2 Economic shock triggered by the adoption of a single currency

A factor often invoked to explain cyclical differences within the eurozone is **the shock created by the adoption of the single currency and by the policies that Member States were forced to enact in order to meet admission criteria.** Empirical and theoretical studies argue that the adoption of a single currency constitutes a lasting asymmetrical shock:

- **First, the steep reduction in external-financing premiums offers greater benefits to the weakest countries.** External-financing premiums are determined by the macroeconomic and institutional context. They are higher in countries suffering from a lack of monetary-policy credibility, evidenced by high inflation. In the eurozone, Spain, Portugal, Ireland, Greece, and Italy[5] have, in particular, benefited from a sharp cut in nominal rates in Phase 2 of Economic and Monetary Union (EMU).
- **Second, entry into a monetary union should accelerate economic convergence**, thanks to closer economic integration and heightened competition between countries, which stimulates productivity gains. Empirical studies have established that the dispersion of income per capita in a group of countries tends to lessen between countries with strong economic ties[6]. The combination of these two economic shocks tends to stimulate the catch-up countries (such as Spain, Portugal, and Greece) more than the leading countries (such as Germany and the Netherlands). We have studied the underlying mechanisms in detail using a dynamic general-equilibrium model developed at DGTPE (see box 2).

(5) In Italy, other factors have curbed the positive impact of the decline in risk premiums: tax consolidation to meet Maastricht criteria, series of unpleasant surprises in regard to productivity gains, and production specialization entailing greater exposure to competition from emerging countries.

(6) Barro, R. J. and X. Sala-i-Martin (1992): "Convergence", *Journal of Political Economy, 100(2).*

Chart 4: current account balances

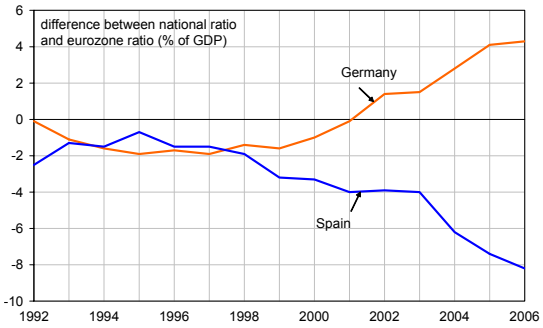


Chart 6: inflation rate

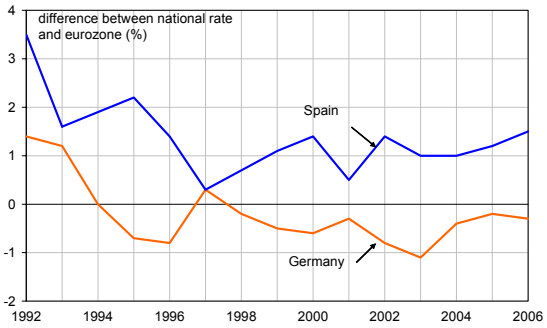


Chart 5: GDP growth

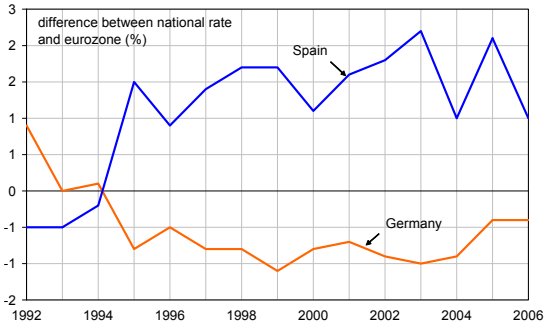
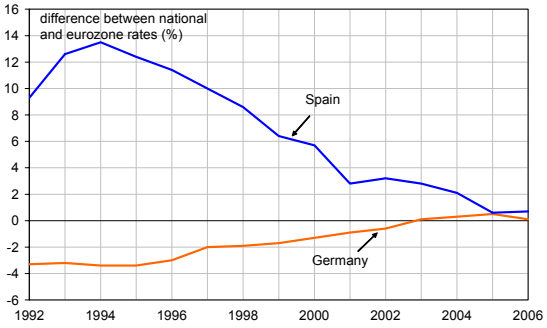


Chart 7: unemployment rate



Box 2: **structural-model analysis of current-account balances in a monetary union.**

Using a structural model developed by the DGTPE,[a] we can analyze the impact of growth gaps between economies on macroeconomic imbalances and current-account balances.

- **Contribution of dynamic and stochastic general-equilibrium models in an open economy.** A significant contribution of this family of structural models, whose theoretical foundations are well established, is that it allows the unification of two major modern theories of international macroeconomics in a single framework: (1) the Balassa-Samuelson model, which explains why catch-up countries should experience higher inflation, and (2) the intertemporal approach to current-account balances, which holds that catch-up countries should post a current-account deficit.
- **The DGTPE's OMEGA3 model.** The DGTPE has developed a general-equilibrium modeling tool, called OMEGA3, with rational expectations and nominal rigidities. The model includes three economies. Two form a currency area with a fixed exchange rate. The third stands for the rest of the world. The exchange rate between the currency area and the rest of the world is flexible. Each economy produces a non-tradable good and a tradable good, which are imperfectly substitutable with the foreign tradable goods. Demand in the economy has three sources: consumption, investment, and public spending.
- **Analytical exercise: assessment of macroeconomic consequences of divergent productivity trends in a monetary union.** The main lessons of this OMEGA3 simulation are the following: (1) The effects of productivity growth on intra-zone current-account imbalances and inflation differences depend on whether the productivity gains are located in the tradable-goods sector or non-tradable-goods sector. (2) Expectations are a powerful channel for shock transmission to the economies: domestic demand in a country engaged in productivity catch-up will rise sharply because of a "rising permanent income" effect (on consumption) and a "rising expected return on capital" (for investment).
  (3) When growth expectations for a single country are more optimistic than for the rest of the currency area, the country will experience both a widening of its current-account deficit and overheating, because of nominal rigidity and a slower adjustment of the real exchange rate (up to its equilibrium level) than in a flexible exchange-rate regime. (4) Monetary policy and the external exchange rate widen short-term macroeconomic divergences, but coordinated fiscal policies can play a significant role in narrowing them.
- **Can such a mechanism explain the size of Spain's current-account deficit?** In the previous exercise, we assumed that the growth gap was due solely to productivity gains. In the case of Spain, the positive growth gap is actually due to rising labour supply, with no increase in labour productivity. A rise in labour supply and productivity growth in the total economy have similar macroeconomic effects except on real wages. The current-account deficit simulated for a "pure" productivity shock thus appears to be an upper bound of the theoretical current-account deficit. But the model enables us to explain no more than one-third of the deterioration in the Spanish current-account balance, accrediting the notion of an unsustainable path.

a. See Carton, Guyon (2007) : "Divergences de productivité en union monétaire: présentation du modèle Oméga3", *DGTPE Working Papers - n°2007 - 8*.

3. Mechanisms for returning current-account deficits to equilibrium levels

Three types of market adjustment mechanisms promoting a return to equilibrium are at work: price adjustment, factor shifts, and financial adjustment. Not all have the same impact on total welfare.

3.1 Price adjustment

Countries running excessive current-account deficits return to sustainability by adjusting competitiveness: when the real exchange rate becomes overvalued, aggregate demand for the products of an overheating country will decline. If prices and wages are rigid, the phenomenon will initially result in higher unemployment, followed by an inflation slowdown.

Chart 8: Unbalanced dynamics and overadjustment risks

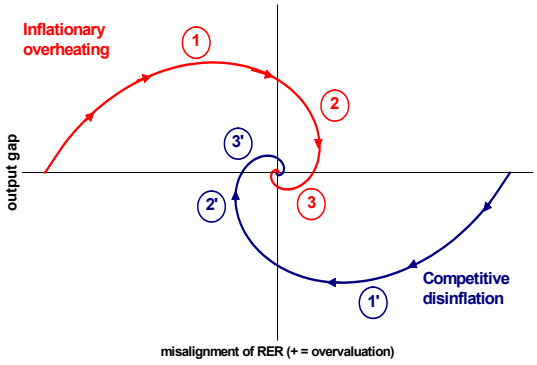


Chart 8 above plots the adjustment dynamics in a currency area in a plane defined by the misalignment of the real exchange rate (RER) and by the output gap (difference between actual and potential output). A country with an undervalued RER (Spain on entering EMU) will experience a long period of inflationary overheating (1) resulting in a real appreciation and therefore a worsening current-account balance. Overheating can last, with persistent inflation pushing the real exchange rate over its equilibrium level (overadjustment) (2). This overvaluation requires, in turn, an adjustment in output, sending it back below its potential (3). An overvalued RER (Germany until 2006, Portugal since 2003) generates a long period of competitive disinflation (1'). Buoyant exports can trigger a recovery in economic activity (2') and prices (3').

The overadjustment risk is heightened in a monetary union by the removal of many sources of friction in the goods and capital markets and by the absence of a correcting mechanism via exchange rates. This makes the competitiveness adjustment costlier.

3.2 Financial adjustment

In a single-currency system, the sustainability of certain paths for net external positions can theoretically be restored through financial channels. In a monetary union, a loss of investor confidence would not entail an abrupt devaluation-as under a flexible-rate regime-but would drive up risk premiums. This financial adjustment would theoretically be more painful than a currency devaluation, for it would restore sustainability from below by lowering domestic demand rather than boosting foreign demand. As a result, the negative effects of the competitiveness channel would be aggravated, and the rise in the unemployment rate more pronounced. (By contrast, an exchange-rate depreciation tends to stimulate employment.)

Financial adjustment-unlike exchange-rate adjustments-would not have an equal impact on all economic agents of a country that belongs to a monetary union. Exchange-rate adjustments do not discriminate between good and bad financial risks. For a similar mechanism to develop in a monetary union, the rise in default premiums would have to generate an identical impact on the good and bad risks in a country heavily indebted at the aggregate level. But "country risk" is, no doubt, a less relevant notion in a monetary union than under a flexible-exchange-rate regime[7]:

- The currency induces risk-sharing: for example, when the government is likely to monetize its public debt, all agents will bear a high inflation-risk premium. With a single currency, that risk is shared by all of the area's agents.
- A currency area implies an integrated financial system, which reduces the financial-information asymmetry between foreign creditors and domestic borrowers by promoting creditor-protection standards and exchange of information on overindebtedness.
- The institutional framework of monetary unions should reduce debt-monetisation risk and the risk of a member State's default. The differentials in sovereign interest rates should narrow, and inflation expectations for the currency area should be pegged at a low level.
- Insolvency crises should be more widely spread across the union and less widely spread within an individual country, owing to the internationalisation of creditors[8].

(7) Catte, P. (1997): "Current accounts: are they still relevant for and within a monetary union?," *in ONB seminar on "Current Account Imbalances in East and West: Do they Matter?"*

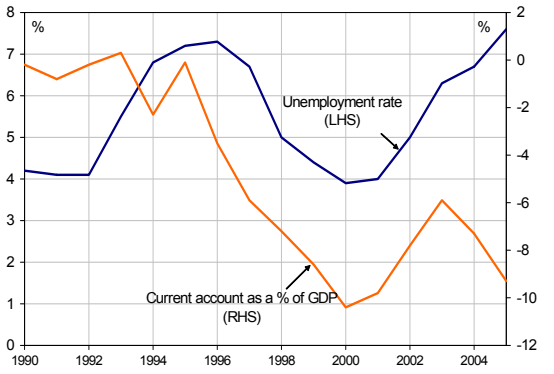
Box 3: **Portuguese current-account deficits according to Olivier Blanchard**[a]

Between 1995 and 2001, Portugal's current-account deficit widened in parallel with the reduction of its unemployment rate. Since 2001, unemployment has been rising again but the current-account deficit has stayed high.

Olivier Blanchard explains that the initial "boom" is linked to expectations in the run-up to EMU entry. The current-account deficit widened because of a conjunction of factors: the steady fall in real interest rates (from 6% in 1992 to 0% in 2001), accession-related growth expectations, accommodative fiscal initiatives, and a nominal wage growth that outpaced productivity gains.

Since 2001, Portugal has experienced a series of bad surprises, most notably a disappointing increase in productivity of only 0.1% a year on average, and rising budget deficits that offset the improvement in private-sector net lending. Without European Monetary and Economic Union, Portugal would have been forced to devalue its exchange rate. The size of the twin deficits rules out the option of expansionary tax measures to stimulate demand over the long term. This reduces policy-makers' maneuvering room.

Chart 9: saving/investment equilibrium



Source: IMF

Blanchard recommends the following solutions: improve productivity, encourage emigration, reduce unit labour costs through a VAT increase offset by a reduction in social contributions, or find a mix between a nominal reduction in wages (*via* structural reforms) and moderate tax incentives.

a. Blanchard, O. (2006): "Adjustment with the euro. The difficult case of Portugal", *MIT Working paper 06-04*.

These arguments therefore put some perspective on the relevance of a financial adjustment at the country level, although the tax risk will remain geographically concentrated. Higher public debt will ultimately result in future spending cuts or a future rise in domestic taxes-a burden mostly shouldered by resident agents. **In the end, the adjustment could concern the area's most heavily indebted agents.**

3.3 Adjustment through migration

As a complement to competitiveness adjustments, endogenous transfers of labour can help reduce costs for countries running large current-account imbalances after an overheating phase.

In the short term, a competitiveness adjustment would raise the unemployment rate in the country running a current-account deficit. The emigration of a part of the population would, in that case, be endogenous: given the growth-rate and income gaps, the unemployed would have a stronger incentive to migrate to the leading countries. The necessary reduction in domestic demand would thus be obtained more through emigration than *via* wage cuts. This adjustment path is more suitable for catch-up countries that have trouble achieving the productivity gains theoretically facilitated by EMU. Despite the potential contribution of emigration to the net external position and the current-account balance (possible emigration of agents' net worth and remittances from migrants abroad), the need for price adjustment would not be sufficiently diminished to ultimately avoid a reduction in labour costs.

A recent study[9] uses a structural VAR model to show that two-thirds of asymmetric shocks on employment and growth in the United States are absorbed by internal labour migrations within a year, compared with less than one-third between euro-zone countries. However, these figures are no doubt overestimated since they fail to distinguish between inter-regional migration due to asymmetrical shocks and migration driven only by structural differences[10].

(8) Mongelli, F.P. and J.L. Vega (2006): "What effects is EMU having on the euro area and its member countries? An overview", ECB Working paper 599, 2006.

(9) L'Angevin, C. (2007): "labour market adjustment dynamics and labour mobility within the euro area", *Trésor Economics, no. 14, April 2007*.

(10) Buiter, W.H. (1995): "Macroeconomic Policy during a Transition to Monetary Union", *CEPR Discussion Paper 1222*.

4. To avoid an over-costly adjustment when the current-account deficit becomes too high, it may be preferable to use certain economic-policy levers rather than let the adjustment occur spontaneously

4.1 Growth policies and structural reforms

The existence of structural rigidities (in prices and wages) can hamper economic activity in countries whose current accounts post large deficits and whose currencies would be devalued in a flexible exchange-rate regime. The necessary real relative depreciation against other countries in the union generates expectations of lower prices and hence higher real interest rates.

Structural reforms (to make prices downward-flexible) may lead to a steeper rise in real interest rates *ex ante*, since they allow prices to adjust faster. In addition to migration and fiscal policies, compensatory policies can be introduced to lessen short-term adjustment costs. A redistributive policy (without higher public spending) could provide effective support for very swift structural reforms such as a reduction in nominal wages. If prices fall quickly enough, expected deflation will be weak, the increase in real interest rates will thus be moderate as well, and external demand will soon make up for the shortfall in domestic demand.

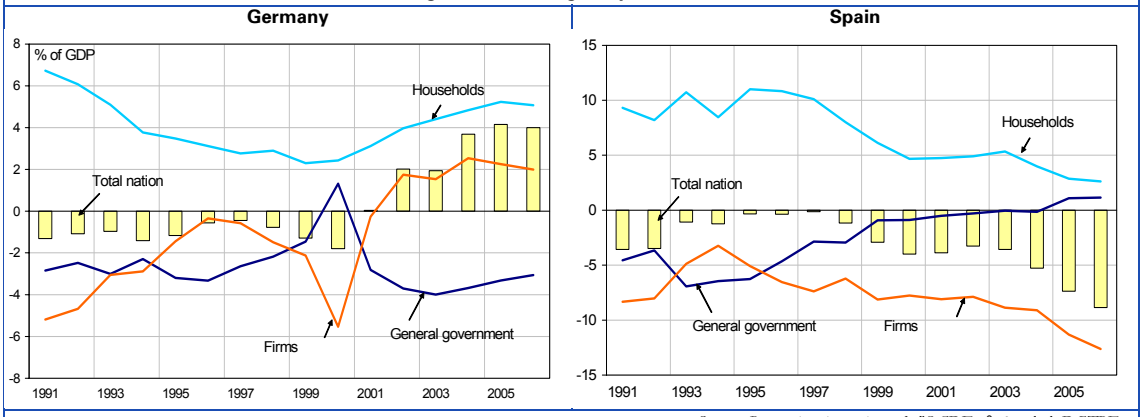
Rapid and effective structural reforms could therefore have an expansionary impact, and the distributive effects of the reforms could be offset by adequate transfer policies.

4.2 Role of macroeconomic policies

4.2.1 Monetary policy has a limited role

Domestic financial imbalances, particularly when they concern large countries, can threaten the macroeconomic and financial stability of the entire area. Central bankers thus necessarily take them into account. As countries with heavy external deficits pose a greater threat to economic and financial stability than high-surplus countries[11], monetary authorities may be tempted to adopt a preventive tightening bias in order to block the formation of unsustainable positions, especially when fiscal policy is insufficiently restrictive. Conversely, when the adjustment has begun (spontaneously or via a suitable national policy), monetary policy can be eased to help the adjustment.

Chart 10: fiscal policy in Spain and Germany: automatix stabilizers or well-tailored policies ?
Net lending (+) / borrowing (-) by institutional sectors



Source : Perspectives économiques de l'OCDE n°79, calculs DGTPE.

Method: households' net saving is calculated as the ratio of the difference between household saving and private residential investment to GDP. Firms' net saving is deduced as the difference between the central government's current-account balance and net lending by the other two institutional sectors.

(11) That is true in an open monetary union, but would not be in a closed zone, for an intra-zone surplus would always be the counterpart to an intra-zone deficit. At the world level, current-account imbalances are as much a problem for deficit countries as for surplus countries.

4.2.2 Should governments resort to more active fiscal policies?

Blanchard admits[12] that fiscal policy is appropriate in a monetary union when an economy suffers from a domestic-demand shortage or excess. The loss of the domestic monetary instrument is an argument in favor of a more forthright use of fiscal policy-the other pillar of macroeconomic policy-making-in order to dampen the effects of asymmetrical shocks. By contrast, fiscal policy is more debatable for dealing with a shortage (or excess) of external demand. The reason is that, unlike the monetary policies of individual countries, which affect both domestic demand (*via* interest rates) and external demand (*via* the exchange rate), fiscal policy has little impact on external demand through prices.

Another school also views current-account imbalances as merely reflecting an optimal saving allocation and therefore as harmless.

However, in the presence of market distortions and market behaviors that are not always rational, fiscal-policy intervention can promote a return to sustainable paths. A restrictive policy would be suitable for large current-account deficits caused by overheating; an expansionary policy may help to jump-start an economy experiencing disinflation despite trade and current-account surpluses.

In practice, economists face the problem of the factual characterization of accommodative and restrictive fiscal policies-especially when the economies in question are subject to long phases of excess demand or inadequate demand, for it then becomes harder to measure a potential growth rate. The reason is that the effects of automatic stabilizers-namely, the cyclical improvement of public finances in economic upswings-can conceal procyclical discretionary policies or insufficiently counter-cyclical policies.

Thibault GUYON

(12) Blanchard, O. (2007): "Current Account Deficit in Rich Countries", *NBER Working Paper 12925*.

Editor:
Ministère de l'Économie, des Finances et de l'Emploi
Direction Générale du Trésor et de la Politique économique
139, rue de Bercy
75575 Paris CEDEX 12

Publisher:
Philippe Bouyoux

Editor in chief:
Philippe Gudin de Vallerin
+33 (0)1 44 87 18 51
tresor-eco@dgtpe.fr

Page layout:
Maryse Dos Santos
ISSN proceeding