Overheating in Small Euro Area Economies: Should Fiscal Policy React?

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ABSTRACT/RÉSUMÉ

Overheating in Small Euro Area Economies: Should Fiscal Policy React?

This paper reviews first the fiscal policy recommendations by the EU, the IMF and the OECD for Finland, Greece, Ireland, Luxembourg, the Netherlands, Portugal and Spain. All these countries had inflation above the euro area average in early 2001, some by a considerable margin. The fiscal policy prescriptions deviate little, the EU, the IMF and the OECD generally recommending an active use of fiscal policy. There are some exceptions, however. The next section examines indicators of excess demand in these countries. This is followed by a review of the factors that help or hinder market-based adjustment, including simulations to gauge their effect. Market-based adjustment to demand shocks depends critically on whether the effect of a lower real interest rate is strong relative to the loss in competitiveness, on the size of wealth effects, on wage and price setting behavior, on the supply response and on the strength of trade integration. Simulations suggest that market-based adjustment is fairly rapid in the small economies in returning demand shocks to baseline. Finally, the strength of fiscal policy in damping the cycle in small euro area countries is assessed. The automatic stabilisers help indeed to smooth the impact of a demand shock, but only to a limited extent and the fiscal multipliers are fairly small in open economies. With low fiscal multipliers, big swings in expenditure or revenues would be needed to damp the cycle. Such volatility would undermine the effectiveness of fiscal policy and would not be compatible with a sound medium-term fiscal strategy.

JEL classification: E6, H6
Keywords: European Union, fiscal policy

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Surchauffe dans les petites économies de la zone euro: la politique budgétaire devrait-elle réagir?

Cet article passe d'abord en revue les recommandations de politique budgétaire de l'UE, du FMI et de l'OCDE concernant la Finlande, la Grèce, l'Irlande, le Luxembourg, les Pays-Bas, le Portugal et l'Espagne. Tous ces pays avaient une inflation supérieure à la moyenne de la zone euro au début de 2001, dans certains cas de façon très marquée. Dans ce contexte, les prescriptions de politique économique de l'UE, du FMI et de l'OCDE à ces pays ne diffèrent guère et recommandent en général une utilisation active de l'instrument budgétaire. Des exceptions existent cependant. La deuxième partie de cet article examine les indicateurs d'excès de demande dans ces pays. Elle est suivie d'une revue des facteurs qui favorisent ou empêchent un ajustement de l'économie grâce aux mécanismes de marché à partir notamment de simulations évaluant l'importance de leurs effets. En cas de choc de demande, l'ajustement induit par les forces de marchés dépend de façon cruciale de l'importance relative de l'impact de la baisse des taux d'intérêt réels par rapport à celui de perte de compétitivité, de l'ampleur des effets richesse, des mécanismes de détermination des salaires et des prix, de la réponse de l'offre et du degré d'intégration de l'économie au commerce mondial. Les simulations suggèrent qu'après un choc de demande, l'ajustement induit par les marchés vers le scénario de référence est relativement rapide dans les petites économies. Enfin, on évalue l'efficacité des politiques budgétaires pour réduire l'ampleur des cycles dans les petits pays de la zone euro. Les stabilisateurs automatiques contribuent en effet à amortir l'impact des chocs de demande, mais seulement dans une mesure limitée, et les multiplicateurs budgétaires sont assez faibles dans des économies ouvertes. Compte tenu de la faiblesse de ces multiplicateurs, de fortes variations de dépenses et de recettes seraient nécessaires pour amortir les cycles. Une telle volatilité nuirait à l'efficacité de la politique budgétaire et ne serait pas compatible avec une bonne stratégie budgétaire à moyen terme.

Classification JEL : E6, H6
Mots-clés : Union Européenne, politique fiscale

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OVERHEATING IN SMALL EURO AREA ECONOMIES: SHOULD FISCAL POLICY REACT?

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Introduction and summary

1.   In the current depressed economic climate, a paper on overheating may come as a surprise. Indeed, the worries about overheating in some small euro area countries have rapidly receded or have evaporated completely as excess demand has vanished. In some countries even a large negative output gap has emerged in the meantime. However, the overheating issue could quickly resurface again, if the projected recovery were V-shaped. Moreover, the policy issues surrounding overheating are largely symmetric to the case of overcooling. Monetary policy, which is set for the whole area, will always be more closely aligned to the domestic needs of the three largest economies, while it will only seldom fit the requirements of the smaller countries. The policy issue on how to respond to a large cyclical divergence, be it generated by a too lax or too tight monetary policy stance or other factors, will thus likely also receive attention in the future.[2]

2.   This paper focuses on excess demand in small euro area countries, which implies that there will be no or little spill-over to the rest of the common currency area. The ECB, which focuses on price stability for the area as a whole, will thus not react to local excess demand. With no monetary policy instrument at the national level, there is a prima facie case for the use of fiscal policy to smooth the cycle, as this would reduce the volatility of both output and inflation. On the other hand, an active use of fiscal policy would increase the volatility of taxation and spending programmes while market-based adjustment, for instance, via a loss in competitiveness, could be fairly effective anyway in damping down cyclical swings in small open economies. This paper first reviews the fiscal policy recommendations of the EU Council, the IMF Executive Board and the OECD's Economic Development and Review Committee (EDRC) for Finland, Greece, Ireland, Luxembourg, the Netherlands, Portugal and Spain. All these countries had inflation above the euro area average in early 2001, some by a considerable margin. The next section reviews indicators of excess demand in these countries. This is followed by a review of the factors that help or hinder market-based adjustment, including simulations to gauge their effect. Finally, the strength of fiscal policy in damping the cycle in small euro area countries is assessed.

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1.   Most of the material in this paper was presented at an informal seminar under the auspices of the OECD's Economic Development and Review Committee on 19 October 2001. The paper benefited from the discussions in the seminar. The authors would also like to thank Andrew Dean, Jorgen Elmeskov, Vincent Koen, Val Koromzay, Annabelle Mourougane, Alain de Serres, Wim Suyker and Paul van den Noord for their comments and suggestions. Special thanks go to Nathalie Macle for the technical assistance in preparing the document.

2.   The issue has also been analysed by the Commission (EC, 2001*b*), the ECB (1999), the ECB watchers (Alesina *et al.,* 2001) and the IMF (Ford and Gerson, 2001).

3.   The main findings of this paper are:

- The EU Council, IMF Executive Board and OECD assessment of the cyclical position is very similar. Also the policy prescriptions deviate little, all institutions generally recommending an active use of fiscal policy. There is not always agreement though. In the cases of Ireland and Luxembourg, for instance, the EU argues for fiscal policy activism, while the OECD does not.

- Skimming indicators, ranging from output gaps to residential property prices, does not lead to strong conclusions about the existence or risk of overheating. On the other hand, a ranking along these indicators matches the inflation ranking pretty well. In 2000 and early 2001, even where the current situation looked most serious, the situation appears to have been benign, if compared with earlier overheating episodes in Finland, Sweden and the United Kingdom. Moreover, inflation dispersion in the euro area was not much above that in US census regions and similar to that of the Canadian provinces.

- Inflation differentials may not be due to excess demand, but rather reflect a catch-up process. Estimates of the so-called Balassa-Samuelson effect give a wide range of results. A regression analysis that focuses on domestic and external sources of inflation and price level convergence indicates that price level convergence can only explain a small part of the current inflation differentials.

- While there is a prima facie case to use fiscal policy in the face of asymmetric demand shocks as this would reduce the volatility of both output and inflation, adjustment could also be left to market forces. Market based adjustment to demand shocks depends critically on whether the effect of a lower real interest rate is strong relative to the loss in competitiveness, on the size of wealth effects, on wage and price setting behavior, on the supply response and on the strength of trade integration. Simulations suggest that market based adjustment is fairly rapid in the small economies in returning demand shocks to baseline. In this respect, deeper integration (stronger trade linkages, greater migration and an anchoring of expectations in area wide inflation) would help to smooth adjustment. However, a deepening of capital markets, if that would imply a stronger wealth effect, would go in the opposite direction.

- Concerning fiscal policy, the automatic stabilisers help to smooth the impact of a demand shock, but only to a limited extent and the fiscal multipliers are fairly small in open economies. With low fiscal multipliers, big swings in expenditure or revenues would be needed to damp the cycle. Such volatility would undermine the effectiveness of fiscal policy and the credibility of a rules-based fiscal policy. Moreover, the rapid change in the economic fortunes of Finland -- activity expanding by 6 per cent in 2000, but the economy stagnating already in mid-2001 -- shows vividly how difficult it could be to get the timing of a pro-active fiscal policy right.

1. The policy recommendations by the EU, the IMF and the OECD

4.   The EU's Broad Economic Policy Guidelines, the IMF's Executive Board Assessment and the Assessment and Recommendations section of the OECD's *Economic Surveys* provide an assessment of the cyclical situation in member countries and policy prescriptions. Table 1 provides a synopsis of policy recommendations and Box 1 brief excerpts from these documents. Overall, the EU, IMF and OECD views on the existence of excess demand as well as the policy implications are very similar. Risks and signs of

overheating are often spotted and in most cases the prescription is to tighten fiscal policy or to stand ready to tighten. But there is not always agreement. For instance, for Ireland and Luxembourg, the EU's point of view is more hawkish than the OECD's. There is little indication in these documents about the size of fiscal tightening that would be required, the *Economic Survey of Finland* (OECD, 2000) being an exception. The fiscal policy recommendations come against the background of a fiscal stance that was projected by the OECD to be loosening in Finland between 2000 and 2001, to be neutral in Ireland and the Netherlands and to be tightening in Greece, Portugal and Spain.[3]

5.   The EU and IMF documents also include a recommendation on wage moderation for many countries. This is less prevalent in the EDRC recommendations, but there are often recommendations for changing the bargaining process. On the other hand, the IMF and the EDRC often recommend increased vigilance on behalf of the financial market supervisors, which is not the case in the EU documents.

(Table 1: A synopsis of policy recommendations)

Box 1. **OECD Country Survey, EU Council and IMF Executive Board recommendations**

Finland

OECD (July 2000): A substantial positive output gap is projected to emerge, highlighting a serious overheating risk. Fiscal policy should be tight to prevent a boom-bust cycle.

EU (December 2000): The economy may overheat and excessive demand may add to inflationary pressures. A tight fiscal stance is necessary to contain risks of overheating.

IMF (August 2000): To avoid an emergence of inflationary pressures, the macroeconomic policy stance needed to be complemented by other measures. On the fiscal front, continued restraint on the growth of public expenditure is crucial, but needed to be complemented by significant tax cuts on labour income.

Greece

OECD (February 2001): The rapid expansion of credit, the upward drift in underlying inflation and a widening current account deficit highlight overheating risks. Fiscal policy should tighten to stem overheating risks.

EU (March 2001): Persisting inflationary pressures in a context of strong economic activity would call for a more stability-oriented budgetary stance.

IMF (March 2001): Directors expressed concern about the rise in core inflation. Accomodative monetary conditions need to be counterbalanced by a tight fiscal stance. Additional spending restraint is required, if signs of widening macroeconomic imbalances emerge.

Ireland

OECD (June 2001): The inflation differential with euro area countries has reflected a relative price adjustment exacerbated by excess demand. Concerns about the risk of a hard landing are exaggerated. It would be politically difficult to continue to increase an already large government account surplus.

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3.   This assessment is based on the change of the structural balance between 2000 and 2001. There is only little change in structural balances between 2001 and 2002, except for Greece and the Netherlands, where some tightening was projected. No data for Luxembourg are available.

EU (March 2001): A rapidly expanding economy with overheating and inflationary pressures. The budget for 2001 is pro-cyclical and aggravates overheating and inflationary pressures. Prepare a budget that contributes to an orderly easing of the pace of demand.

IMF (August 2000): Directors called for a tight fiscal policy to help dampen excess demand and contribute to the moderation of inflation.

Luxembourg

OECD (February 2001): Although these tax cuts will also stimulate demand at a time when the economy is already growing strongly, they are unlikely to provoke overheating in view of the elastic labour supply and the high import content of consumer expenditure.

EU (April 2001): Stand ready to tighten the stance of fiscal policy if inflationary risks become more evident.

IMF (May 2000): There are no underlying price or wage pressures. Directors noted that the scope for effectively counteracting by fiscal management any shocks that might occur would be limited in view of the openness and specialization of Luxembourg's small economy.

Netherlands

OECD (June 2001): In view of the still tight conditions in the labour market, it is important to avoid a further easing of fiscal policy through the use of revenue windfalls for additional spending.

EU (December 2000): Inflationary pressures are emerging. The government should ensure that the stance of fiscal policy will be firmly oriented to limiting inflationary pressures.

IMF (July 2001): Labour markets have become very tight. Directors recommended a prudent fiscal policy. Fiscal stimulus should be avoided until inflationary pressures subside. Limit expenditure increases and do not cut taxes.

Portugal

OECD (April 2001): The current account deficit has widened and could be a sign of overheating. The process of restoring a better balance to supply and demand will require strong support from fiscal policy.

EU (April 2001): Excess demand calls for a tighter budgetary stance.

IMF (November 2000): Growing signs of macroeconomic imbalances. Directors agreed that further fiscal consolidation was necessary to slow aggregate demand.

Spain

OECD (June 2001): The slower pace of activity in 2001 will probably not be sufficient to lower underlying inflation, and fiscal policy should be vigilant.

EU (April 2001): If inflationary pressures should persist, the authorities should tighten fiscal policy.

IMF (November 2000): There are risks of overheating. If growth and revenues remain buoyant, the authorities should endeavor to achieve a small nominal surplus next year.

2. Overheating: fact or factoid?

2.1 What can indicators tell?

6.   Figure 1 shows underlying inflation in Ireland, the Netherlands, Portugal, Spain, Greece and Finland and compares it with a GDP weighted average of the other euro area countries — the "other" country grouping. On this measure, which excludes food, tobacco, alcohol and energy, inflation was indeed higher in September 2001 in these countries than in the "other" country grouping — by more than double for Ireland and the Netherlands.[4] Over time, inflation dispersion across the euro area countries had decreased considerably until the end of 1999, but it has become higher again since then (Figure 2).

(Figure 1: Underlying HICP inflation)
(Figure 2: Inflation dispersion in the euro area, the United States, Spain and Canada)

7.   One would expect inflation rates to be different across regions in a monetary union for various reasons, but it is difficult to establish *a priori* how large such differences might be. A comparison across regions in OECD member countries can shed some light on this issue. Figure 2 shows the dispersion of HICP inflation rates across the euro area, and CPI inflation across US census regions, Spanish regions and Canadian provinces. The dispersion across Spanish regions is consistently lower than across the euro area. This is expected as inflation differentials rise with distance (Engel and Rogers, 1996), and Spanish regions are much closer geographically than euro area countries. On the other hand, the dispersion of inflation rates across US census regions is only somewhat smaller than in the euro area and across Canadian provinces it is actually similar. Given the greater market segmentation that still exists in Europe as compared to the United States and Canada and the greater potential for the Balassa-Samuelson effect to play a role, the observed inflation differential in the euro area does not appear to be particularly high.

8.   A variety of indicators has been used in the OECD country surveys to establish the existence or a risk of overheating.[5] The following Figures compare such indicators concerning Finland, Ireland, the Netherlands, Spain, Portugal and Greece[6] with a GDP weighted average of the other euro area countries. Most data refer to the OECD *Economic Outlook 69,* published in June 2001, and do thus not include the following downgrading in economic prospects.

−   Figure 3 shows that unit labour cost pressures are indeed higher in the overheating countries than in the "other" country grouping, except for Finland due to the strong productivity gains in the high-tech sector. Output gaps, on the other hand, would appear to suggest little overheating, except for Ireland, which is a clear outlier in this respect. Including projected values for output gaps would not change the picture by much. The output gap was projected to rise only in Greece, while it was projected to be stable in Finland and Spain and to decline in Ireland, the Netherlands and Portugal.

−   While inflation has diverged, inflation expectations may have converged at the same time. The Eurostat consumer survey on inflation expectations is based on the following question: By comparison with what is happening now, do you think that in the next 12 months: prices will increase more rapidly; increase at the same rate; at a slower rate; about the same rate; or fall slightly. This is why also the rate of inflation is shown in Figure 4. The Figure suggests that not only inflation, but also inflation expectations have diverged for consumers, except for Spain and Ireland, where they are closely in line

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4.   For the Netherlands, government measures raised inflation by about 1¼ percentage points in 2001.

5.   An IMF paper (Ford and Gerson, 2001) and an EU study (EC, 2001*b*) show a similar range of indicators.

6.   Luxembourg is not included, as many indicators are not available.

with the "other" country grouping. There is thus little sign that inflation expectations are already aligned with the ECB's inflation objective as consumers in most countries with above average inflation also expect a sharper acceleration than elsewhere. The picture is different for producers. In this case Eurostat asks whether selling price expectation are up, unchanged or down. The dispersion of inflation expectations for industry is much smaller than for consumers and for most countries not much different from the "other" grouping. Price expectations are even lower for Ireland and Finland than for the "other" grouping, probably reflecting a large share of high-tech products with declining prices. These data suggest that industry is selling in a common market with considerable competitive pressure.

− One would expect that overheating would be associated with a loss in competitiveness and large current account deficits. There is indeed a fairly tight link between them (Figure 5). A stunning feature, though, is that Finland and Ireland actually gained competitiveness to a considerable extent and Finland actually had the highest current account surplus as a per cent of GDP in the OECD after Norway and Switzerland. Ireland was still close to balance in 2001 despite very rapid domestic demand growth. The gains in competitiveness in these two countries largely reflect the rapid productivity gains in the high-tech sector. For Portugal, on the other hand, the loss in competitiveness and rapid domestic demand growth have led to the highest current account deficit in the OECD after Iceland.

− A financial market indicator of overheating is credit growth (Figure 6). It has been very strong in all overheating countries, except Finland and appears to be strongly correlated with the decline in nominal interest rates that occurred in some countries in the run-up to joining the single currency area, while in other countries above average inflation has reduced real interest rates. Credit growth of above 15 per cent that is observed in all "overheating" countries, except Finland, appears to be unsustainable. However, in some of the countries (Greece, Portugal and to a lesser extent Spain) the rapid credit expansion has come from a low level of credit and may be partly an adjustment in the credit/GDP ratio to levels observed in other countries.

− Rapid credit growth has fuelled a rapid rise in residential property prices in the overheating countries (Figure 7). There is a stark contrast with the "other" countries, where property prices did only rise marginally since 1995. On the other hand, property prices were still below their previous cyclical peak in Finland and Spain, but far above in Ireland and the Netherlands.

(Figure 3: Output gaps and unit labour costs)
(Figure 4: Inflation and inflation expectations)
(Figure 5: Competitiveness and the current account)
(Figure 6: Credit growth and the change in real interest rates)
(Figure 7: Residential property price increases)

9. To establish a ranking of the overheating risks across the countries (including the "other" grouping), points from 1 to 7 were allocated to the indicators, 1 for the country with the lowest pressure and 7 for the country with the highest pressure. Concerning the current account, for instance, Portugal was given 7 points and Finland 1 point, with the other countries in between. Such a ranking across the indicators gives Portugal as the winner (41 points out of a maximum of 56 points), followed by Greece, Ireland, the Netherlands and Spain, while Finland has the least (20 points out of a minimum 7 points), just above the "other" grouping. Except for Finland, the number of points clusters closely between 35 and 41 points. The ranking matches the ranking of countries concerning underlying inflation pretty well (Figure 1), especially if one takes into account that inflation in the Netherlands was influenced by an indirect tax hike.

10.   Even where the evidence for overheating is currently strongest, the current situation looks much more benign as compared to the overheating episodes in the United Kingdom, Sweden or Finland in the late 1980s. Only output gaps are presented here (Figure 8). The Figure shows that only the Irish output gap in 2001 was as large as in these countries during the overheating episode. Also most other indicators point in the same direction. All three countries experienced unit labour cost growth of close to 10 per cent, a rapid deterioration of competitiveness and a sharp rise in the current account deficit, while real property prices doubled or nearly doubled in the five years before the bubble burst.

(Figure 8: Peak output gaps in earlier overheating episodes)

2.2 Why have inflation rates diverged?

11.   In some countries, the argument has been made that above average inflation is the outcome of a catch-up process that reflects a change in relative prices, the so-called Balassa-Samuelson effect (Balassa 1964; Samuelson, 1964).[7] The likely size of the Balassa-Samuelson effect has been gauged in various studies by decomposing productivity and wage differentials in the open and sheltered sectors. Swagel (2000) found that the Balassa-Samuelson effect contributed 1¾ percentage points annually to inflation in Greece, 1¼ percentage points to inflation in Portugal and ½ per cent to Dutch inflation between 1990 and 1996. Alberola and Tyrväinen (1998) show that due to the Balassa-Samuelson effect inflation rates in the European Union could vary between 1.3 per cent in Germany to more than 3 per cent in Belgium and Spain. Finally, Sinn and Reutter (2001) suggest a sustainable inflation differential of Finland with respect to the euro area average of 1¾ percentage points. Their estimate for Ireland is 1½ percentage points and for Spain and the Netherlands ½ percentage point, while Portugal is close to the average. There is clearly quite some uncertainty about the likely size of the Balassa-Samuelson effect across these studies. Moreover, in recent years other temporary factors could have been at work. For instance, countries may have entered EMU at too low an exchange rate. IMF and EU studies suggest that this is the case for Finland, Ireland, the Netherlands and Spain (Ford and Gerson, 2001 and Hansen and Röger, 2000). In fact, given that the "overheating" countries have current account surpluses or are close to balance (except Greece and Portugal) suggests that undervaluation is a plausible explanation in some cases. This would have an important policy implication: if inflation simply reflects an initial undervaluation of the exchange rate, should policy act? In principle, it should not prevent the necessary adjustment from taking place, but it may want to lean against the wind to avoid an overshooting.

12.   It is difficult to disentangle the various factors that have shaped inflation developments because part of the differences has domestic origins, while part is due to developments abroad and price level convergence. The importance of the various factors in shaping inflation developments has been gauged by estimating first a standard Phillips curve -- regressing the change in inflation rates on the output gap or its change, and supply shocks in the form of import or oil prices.[8] Then consumer price level differences were added to see, whether they add information (Table 2).[9] The equations were estimated as a system, and

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7.   The Balassa-Samuelson effect explains the following empirical regularity: The traded-goods sector in less advanced countries usually shows very rapid productivity growth — much faster than in advanced countries. This translates into fast growing wages that spill over to non-traded sectors, where productivity growth is much lower. This implies that the aggregate price level of less advanced countries and per-capita incomes are catching-up to the levels in the more advanced countries. The ensuing persistent inflation differential has no implications for the competitiveness of the less-advanced countries.

8.   The specification is the same as in the OECD's small global forecasting model (Rae and Turner, 2001).

9.   The estimated equation is as follows:

$\Delta p = \alpha\, \Delta p(-1) + \beta\, gap + \gamma\, Pdiff + \delta\, pimport,$

where coefficients were found not to differ significantly they were restricted to be the same. A significant output gap effect was found for all the countries in the sample, but a price level effect only in Austria, Finland, Ireland, the Netherlands, Spain and Portugal. No price level effect could be detected for Germany, France and Italy. The results imply that price level convergence has raised inflation most in Spain and Portugal, by about ½ per cent annually over the last five years, while it has damped inflation in Austria and Finland somewhat. Placing the restrictions on coefficients in a different way gave very similar results and introducing GDP per capita as an additional variable that could capture catch-up factors yielded poor results. Very similar to this exercise, a recent study by Rogers (2001) attempts to explain inflation differences across the euro area by regressing HICP inflation rates at the end of 2000 on the price level, GDP growth (speed limit effects), the output gap, relative per capita GDP and the openness to non-EU trade. He finds stronger price level effects, often nearly double, but the contributions to inflation have the same sign in every case.

(Table 2. Differences in inflation developments: regression results)

13.   The estimates of the Balassa-Samuelson effect show a wide range of results and also the regression results on price level convergence presented here differ considerably from the study by Rogers (2001). However, when setting policy it would be important to be able to distinguish a difference in inflation that is sustainable from one that is not. The following abstracts from the issue of price level convergence and focuses on the issues related to excess demand.

3. Leaving adjustment to market forces: let it boom?

3.1 A simple analytical framework

14.   In the following discussions, a simple analytical framework is used (Box 2) to better understand the factors that hinder or help a smooth adjustment to a demand shock or that are likely to become more prominent with further integration. It follows closely a two country-model exposition by van Aarle and Garretsen (2000). Model simulations then highlight the relative importance of these factors.

Box 2. A simple analytical framework

Supply and wages and prices

(1) $s = -\beta(w - p)$ s = supply

(2) $w = \mu pc$ w = wages

(3) $pc = \gamma p + (1 - \gamma)p^*$ pc = consumer prices; p^* = import prices

(4) $p\text{-dot} = w\text{-dot} + vy$ p = output prices; y = output gap

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where p stands for CPI inflation, gap for the OECD's standard output gap measure, Pdiff is the difference of a country's consumer price level from the euro area average and pimport is the import or oil price change and Δ is the first difference operator. The price level difference refers to the difference in the level of the private consumption deflator as defined in the OECD's purchasing power parity calculations with respect to the euro area average. In Rogers (2001) price level differences are calculated using a large

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Demand

(5) $d = \alpha c - \delta r + \sigma y^* + \eta f$ d = demand; y^* = foreign demand; f = fiscal stance

(6) $c = p - p^*$ c = competitiveness

(7) $r = i - p\text{-dot}$ r = real and i = nominal interest rate

The supply (s) equation is very simple, supply depending only on real wages ($w - p$), while wages depend on consumer prices (pc). Consumer prices (pc) are a weighted average of output prices (p) and import prices (p^*), while output prices (p) are related to wages and the output gap. Aggregate demand (d) is a function of competitiveness (c), the real interest rate (r), foreign output (y^*) and the fiscal stance (f). Competitiveness is affected by differences in price developments between the two countries ($p - p^*$) and the real interest rate is defined as the common interest rate minus inflation. If prices adjust only sluggishly to demand shocks, the model displays Keynesian features in the short-run. Sluggish output and price adjustment creates room for fiscal stabilisation that could reduce the amplitude of business cycle fluctuations.

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15.   The framework provides the following insights:

−   With inflation higher in the overheating country, it is critical, whether the effect of the lower real interest rate (crowding in effect) is strong relative to the loss in competitiveness (crowding out effect). A relatively strong competitiveness effect implies rapid adjustment, while a relatively strong real interest rate effect implies a long drawn out adjustment process (see parameters α and δ).

−   Wealth effects are still small in most continental European countries (Boone *et al.*, 2001). However, with financial markets evolving quickly, wealth effects could become stronger in Europe, which could exacerbate underlying demand pressures. The effect would be close to a strong real interest rate impact on domestic demand.

−   Wage indexation and inflation expectations are also important for the adjustment process. When nominal wage rigidity prevails ($\mu = 0$), prices and output adjust more smoothly compared with the case of real wage rigidity ($\mu = 1$). If inflation expectations are anchored in the euro area wide inflation objective or wages closely aligned to those in big countries via an incomes policy, inflationary pressures will be lower for the same demand shock. This is close to the case of nominal wage rigidity. On the other hand, if prices react strongly to the output gap (high ν), this will result in greater inflation and output variability (the latter depending on the relative strength of the crowding in and out effects), but adjustment will be faster.

−   A fairly flat supply curve implies that inflationary pressures will never be strong (the case of Luxembourg as argued in OECD (2001) or of the US states as argued in a large body of literature). An inelastic supply curve, on the other hand, would imply a strong inflation response to demand shocks. In the "overheating" countries the supply response was actually fairly vigorous as illustrated in Figure 9 and has created room for more buoyant demand, but it was not strong enough to avoid the building up of excess demand pressure altogether.

(Figure 9: Potential output growth)

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sample of prices in the various countries. The equation estimated here should not be interpreted as a long-term structural relationship.

- Deep integration helps, as demand shocks are partly transmitted to other countries (parameters α and γ are high and σ is low). High parameters imply a quick loss in competitiveness, less demand pressure because the share of demand from the slowly growing countries is higher and a higher share of imports from low inflation countries. On the other hand, a quick loss in competitiveness coupled with relatively low foreign demand could lead to a large current account deficit and issues about external credit worthiness could arise.

3.2 Simulation results

16.   The Irish sub-model of the OECD's global Interlink model, which contains the mechanisms outlined in the simple framework above, but is obviously much richer, was simulated to evaluate the quantitative effects of varying these parameters. Before doing that, a reference scenario was constructed that shows the adjustment process to an asymmetric demand shock. As the focus is on market-based adjustment, fiscal policy does not affect the scenarios (the budget balance is kept unchanged). This implies that not even the automatic stabilisers are allowed to play a role.

17.   The reference scenario. To establish a reference case, exports and private consumption were boosted both by 0.5 per cent of GDP over a 10-year period (Figure 10). That raises GDP by ½ per cent and total domestic demand by about 1 per cent initially. The ensuing inflationary pressures cause a loss in competitiveness and reduce the initial boost to demand. The output gap is closed after three years and inflation reverts to baseline after 5 years. This is not the end of the story, however, because with the shock once in motion, GDP and inflation undershoot and the cycle continues. The simulation suggests that market-based adjustment would be pretty powerful in a small economy as the loss in competitiveness would have a considerable damping effect on demand. A series of simulations follows highlighting the factors that hinder or help adjustment or that are likely to become more prominent with further integration.

18.   The competitiveness effect. The external competitiveness effect is powerful in stabilising the economy, which is illustrated here by setting the price elasticity of exports and imports to zero (Figure 10). With a very weak external competitiveness effect, inflation would be higher and more persistent, even though the economy would also turn around, but later on.

(Figure 10: The competitiveness channel)

19.   Deeper trade integration. In the future, one would expect that greater trade integration and stronger competition would raise the stabilising force of the external crowding out channel. This is illustrated by raising the price elasticity of export and import demand by 50 per cent (Figure 11). This would indeed help to damp the cycle as compared to the reference scenario to some extent.

(Figure 11: A stronger competitiveness effect)

20.   Interest rate effects. In the Interlink model, inflation that enters the real interest rate calculation is a distributed lag of past inflation. Inflation expectations could be shaped in a different way in the future, and for example, become anchored in expected euro area wide inflation. To illustrate this case the real interest rate effect in the consumption and investment equations has been halved (Figure 12). This implies less internal crowding in and would indeed have a fairly strong impact on domestic demand. The effect on GDP and inflation is more muted as also the countervailing competitiveness effect is smaller.

(Figure 12: Reducing the interest rate sensitivity of consumption and investment)

21.   Wealth effects on consumption are currently lower in continental Europe than in the United States and the United Kingdom (Boone *et al*., 2001), but could become more important in the future.

Stronger wealth effects have not been simulated as the consumption functions of the European Interlink sub-models do not include a wealth effect, but they would clearly go in the opposite direction of the interest rate simulation and amplify the cycle. With stronger wealth effects, local asset bubbles could become an important issue in the future.

22.   Inflation expectations in wage setting anchored in euro area wide inflation. Also wages are currently largely anchored in a country's own past inflation. This is also the way wages are modeled in Interlink. Also this could change in the future. The anchoring of inflation expectations in euro area wide inflation is illustrated by a complete switch-off of wage indexation (Figure 13). This would lead to a much smoother adjustment, even though lower unemployment would still raise wages. It is not clear to what extent regional wages in OECD countries are affected by regional, rather than by national inflation as no data on regional inflation expectations are available. On the other hand, there has been work on regional wage setting for US regions and regions of certain European countries (Blanchflower and Oswald, 1994 and Baddeley, Martin and Tyler, 2000). In these studies, however, regional wages are modeled with respect to national deflators or regional or time dummies are relied upon to play this role.

(Figure 13: Inflation expectations in wage setting anchored in euro area wide inflation)

23.   Simulating an incomes policy. In this simulation it is assumed that an incomes policy leads to moderate wage settlements despite the demand shock. As an extreme case, the wage rate is kept at the reference case level, even though labour demand is stronger. This would be close to the Belgian case, where wage increases can not surpass an average of the three major trading partners, and also the Dutch, Austrian, Irish and Finnish incomes policies come to mind. The simulation shows that this would have a powerful effect, with higher GDP at low inflation throughout the whole period. The economy is just better off. This simulation vindicates the calls of the Commission for wage moderation. The simulation tends to exaggerate the case though, because the effects of stronger demand on profit margins appears to be very small in this model and there may be wage drift. Moreover, it could be difficult to pursue an incomes policy that sticks in very tight labour market conditions.

(Figure 14: The role of incomes policy)

24.   More migration. Flexibility could be enhanced, if migratory flows were bigger, here illustrated by a simulation, in which the labour force is growing in line with employment in the simulation. This would mimic to some extent the case of Luxembourg and of the US States, where migration is an important factor in smoothing cyclical divergences. The simulation suggests indeed that the inflationary response to the demand shock would be much smaller and the output response much more drawn out than in the reference case.

(Figure 15: Increased migration)

25.   A stronger reaction of prices and wages to demand pressures. If prices and wages would react more strongly to excess demand (in the simulation the sacrifice ratio is halved by raising the output gap effect on prices and the unemployment effect on wages and by reducing nominal rigidities), the boost to inflation would be greater initially, but the output response smaller. This implies a trade-off between a speedier adjustment and greater inflation volatility.

(Figure 16: A stronger reaction of prices and wages to demand pressures)

26.   The same simulations have been run with the Spanish Interlink model. Spain is a much less open economy than Ireland, the average of exports and imports amounting to only 31 per cent of GDP for Spain, but to 89 per cent for Ireland. The simulations for Spain are not discussed in detail, but only the reference case and one of the simulations is presented (Figure 17). As expected, the reference scenario shows that

adjustment would be much more drawn out, the inflation response much stronger and the loss in competitiveness much larger than in the Irish case. Switching off the competitiveness channel in the Spanish case, would lead to virtually no adjustment over the whole simulation period.

(Figure 17. The case of a less open economy)

27.   Overall, the simulations suggest that the competitiveness effect is strong in small countries and does help in stabilising output and inflation following a demand shock fairly rapidly. An incomes policy would have a strong smoothing effect, even though there are likely to be limits to its sustainability over long periods. Looking forward, deeper trade links and large migration flows would help, both arguably being important in providing for a smooth adjustment across US States.[10] If inflation expectations would become anchored in the area as a whole, this would also help to smooth the adjustment to a demand shock. On the other hand, deeper financial markets could ease liquidity constraints and boost asset price inflation in the case of excess demand and wealth effects may produce long-lasting output and inflation divergence in the future.

4. Fiscal policy: to act or not to act?

28.   Economic shocks can be categorised into symmetric and asymmetric, temporary and permanent and demand and supply shocks. Fiscal policy can play a useful role in fostering a smooth adjustment for some of these shocks, while in others it does not (OECD, 1999). In particular, fiscal policy is not well suited to respond to supply side shocks. On the other hand, a demand shock such as the one implemented in the reference case would provide an *a priori* case for some role of fiscal policy as it would speed up adjustment and reduce inflation and output volatility. The fiscal policy discussion that follows will be fairly brief as most issues are well rehearsed and the Commission has recently issued a comprehensive report on public finances in EMU (EC, 2001*a*).

29.   Higher inflation in the "overheating" euro area countries is not related to a loosening of the fiscal stance. Indeed, judged by the change in the structural budget balance, it has become significantly tighter in all the overheating countries in recent years. On a cumulative basis, Finland tightened most, by 3.8 per cent of GDP and Portugal the least, by 1.4 per cent of GDP between 1997 and 2001,[11] which is considerably more than the change in the fiscal stance of France or Germany (both tightened by 0.3 per cent of GDP). On the other hand, policy has only become tight in Finland and Ireland, which showed large cyclically-adjusted budget surpluses in 2001, while Portugal still showed a structural deficit (Figure 18). Moreover, the tightening of the fiscal stance and the automatic stabilisers did not hinder output growth from outpacing potential growth. For Finland, Ireland and Spain output slack was reduced by more than 4 percentage points between 1997 and 2001, while the changes were smaller for Greece and the Netherlands at somewhat more than 1 percentage point.[12]

(Figure 18: Structural budget balances)

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10.   Federal transfers are also thought to be important, but are not discussed here.

11.   These data are again based on the OECD *Economic Outlook 69*. Between 2000 and 2001, the fiscal policy stance eased in Finland, became tighter in Greece and Portugal and remained about the same in the other countries.

12.   As noted above, only Ireland displays a large output gap in 2001. For the other countries, output gaps were still small in 2001 as there was still considerable spare capacity in 1997.

4.1 How important are the automatic stabilisers in smoothing adjustment?

30.   The most important factors that determine the cyclical sensitivity of the fiscal position is the size of general government, the tax structure, the progressivity of taxes and the generosity of the unemployment benefit system (van den Noord, 2001). Not surprisingly, the automatic stabilisers are typically higher in Europe than in the United States and Japan, as the government sector is bigger, the progressivity of taxes often steep and the unemployment benefit system generous. However, even though fiscal stabilisers are relatively strong, they have clearly been too small to prevent the building up of inflationary pressures in the "overheating" countries. Their effect on damping the cycle is highlighted by switching on the automatic stabilisers in the reference scenario (Figure 19).

(Figure 19: The role of automatic stabilisers)

31.   The simulation results show that the automatic stabilisers help in reducing inflation and output volatility, with the amplitude of the cycle being reduced by about 20 per cent in Ireland.[13] Results for Belgium and Spain, that are not reported, suggest a similar amount of stabilisation. The differences in the smoothing potential are relatively small across these countries because the differences in the size of tax receipts is not very large and tax elasticities partly compensate for these differences.

32.   Various estimates of the effect of the automatic stabilisers on reducing the cyclical volatility of output growth suggest that different approaches to estimating them give quite different results (Table 3). Similar to the above exercise, van den Noord (2001) simulates the Interlink model between 1991 and 2000, with the automatic stabilisers switched on and off, volatility being measured by the root mean square of the output gap. Barrell and Pina (2000) use NiGEM and apply the OECD revenue and expenditure elasticities and subject their model to a vector of shocks between 1993 and 1999. They find a much smaller degree of stabilisation than the OECD. The Commission's results, based on the Quest model (EC, 2001*a*) are closer to the OECD results but also highlight that the stabilising role would depend to a considerable extent on whether a shock mainly affects consumption, which is taxed or exports, which are not taxed. Overall, while smoothing the cycle to some extent, the automatic stabilisers are not strong enough to reduce output volatility by much more than 20 per cent on average and in the case of NiGEM, by less.

(Table 3: Results of studies of automatic fiscal stabilisation)

4.2 How large would discretionary action need to be to significantly reduce demand pressures?

33.   As the effect of the automatic stabilisers on output and inflation volatility is relatively small, the question arises what sort of discretionary fiscal policy action would be needed to achieve a more significant damping of the cycle. This can be gauged by the size of the fiscal multipliers (Figure 20). A sustained negative government expenditure shock of 1 per cent of GDP would reduce output by about ½ per cent initially in Ireland, Belgium and Spain. Less inflation that will follow will improve competitiveness and crowd in foreign demand and for Ireland, output would revert to the baseline already after 3 years, while this would take longer for Belgium, and especially Spain. Similar simulations with the EC's Quest model and NiGEM highlight some uncertainty as to the size of the multipliers, which is model dependent (Table 4). Moreover, the Commission simulations point to a considerable difference between the tax and spending multipliers. Fiscal action on the expenditure side is more effective, because it feeds directly into demand, while on the tax side, part is saved or dis-saved.

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13.   Volatility is measured by $[\sum_t (y_1^t/y_0^t*100-100)^2]^{\frac{1}{2}}$, where y_1^t et y_0^t are output in period t in the simulation and the baseline scenario.

(Figure 20: Fiscal multipliers for Ireland, Belgium and Spain)
(Table 4: Fiscal revenue and expenditure multipliers)

34.   Such multipliers can provide a rough guide to infer the amount of discretionary fiscal action needed to close an output gap or to reduce actual to potential growth. For a small country with a sizeable output gap it would need to be considerable. Using the expenditure multipliers, Ireland would have had to raise its government surplus by 10½ per cent of GDP to close the output gap. Similarly, the *OECD Economic Survey of Finland* (OECD, 2000) suggested that it would take a government spending reduction of 1 per cent of GDP to reduce growth by ½ per cent. Reducing actual growth of some 5 per cent to potential growth of 3½ per cent would have implied a severe tightening and would still not have led to a closing of the output gap. Such a significant tightening in countries with a high surplus and high taxation is very difficult to sell politically. Moreover, the rapid change in the economic fortunes of Finland — activity expanding by 6 per cent in 2000, but grinding to a halt in mid-2001 — shows vividly how difficult it can be to get the timing of a more pro-active fiscal policy right.

35.   Clearly, the overall size of any tightening, its composition and its timing are important in getting fiscal policy right. That this might not be easy is illustrated in Figure 21, where an attempt was made to run an activist policy. Government spending was adjusted annually so as to approximately double the effect of the automatic stabilisers (Figure 19). This does smooth the cycle further, but the ragged profile of net lending shows that it is not easy to get the dosage right, because fiscal policy is chasing a cycle. Moreover, a stronger dose of fiscal activism increases uncertainty about spending programmes and tax rates. In this example the volatility of government spending rises considerably, even though the amount of further smoothing remains fairly small. Moreover, if tax and spending changes were perceived as temporary, this would probably undermine the effectiveness of an activist fiscal policy.

(Figure 21. Pursuing a discretionary fiscal policy)

BIBLIOGRAPHY

Alberola, E. and J.M. Marquès (1998),
    "Inflation Differentials in a Monetary Union: The Case of Spain", mimeo.

Alberola, E. and T. Tyrväinen (1998),
    "Is There Scope for Inflation Differentials in EMU? An Empirical Evaluation of the Balassa-Samuelson Model in EMU Countries", *Bank of Finland Discussion Papers*, No. 15/98.

Alesina, A., O. Blanchard, J. Gali, F. Giavazzi and H. Uhlig (2001),
    Defining a Macroeconomic Framework for the Euro Area, Monitoring the European Central Bank 3, CEPR.

Baddeley, M., R. Martin and P. Tyler (2000),
    "Regional Wage Rigidity: The European Union and United States Compared", *Journal of Regional Science*, Vol. 40, No. 1.

Balassa, B. (1964),
    "The Purchasing Power Parity Doctrine: A Reappraisal", *Journal of Political Economy,* No. 72.

Barrel, R. and A. Pina (2000),
    "How important are Automatic Stabilizers in Europe", *EUI Working Papers*, No. 2000/2.

Boone, L., N. Girouard and I. Wanner (2001),
    "Financial Market Liberalisation, Wealth and Consumption", *OECD Economics Department Working Papers*, No. 308.

Brunila, A., M. Buti and D. Franco (2001),
    The Stability and Growth Pact. The Architecture of Fiscal Policy in EMU, St. Martin's Press and Palgrave Publishers, Hamphire and New York.

Buti, M., J. von Hagen and C. Martinez-Mongay (eds.) (2001),
    The Behaviour of Fiscal Authorities — Stabilisation,Growth and Institutions, Palgrave.

ECB (1999),
    "Inflation Differentials in a Monetary Union", in *Monthly Bulletin* of the ECB, October.

EC (2001*a*),
    "Public Finances in EMU - 2001", *European Economy, Reports and Studies,* No. 3.

EC (2001*b*),
    "The EU Economy: 2001 Review", *European Economy,* No. 73/2001.

Engel, C. and J.H. Rogers (1996),
    "How Wide is the Border?", *American Economic Review*, Vol.86, No.5.

Ford, R. and P. Gerson (2001),
  "Cyclically Advanced Euro-Area Economies: Consequences and Policy Options", *IMF Selected Issues Paper on the United Kingdom of the Netherlands*, IMF Country Report, No. 01/95.

Hansen, J. and W. Röger (2000),
  "Estimation of Real Equilibrium Exchange rates", *EC DG ECFIN Economic Papers*, No. 144.

OECD (1999),
  EMU: Facts, Challenges and Policies, Paris.

OECD (2000),
  Economic Survey of Finland, Paris.

OECD (2001),
  Economic Survey of Luxembourg, Paris.

Rae, D. and D. Turner (2001),
  "A Small Global Forecasting Model", *OECD Economics Department Working Papers*, No. 286.

Rogers, J.H. (2001),
  "Price Level Convergence, Relative Prices, and Inflation in Europe", *International Finance Discussion Papers,* No. 699, Board of Governors of the Federal Reserve System.

Samuelson, P. (1964),
  "Theoretical Notes on Trade Problems", *Review of Economics and Statistics,* No. 46.

Sapir, A. and M. Buti (2001),
  "EMU in the Early Years: Differences and Credibility", *CEPR Discussion Paper*, No. 2832.

Sinn, H.W. and M. Reutter (2001),
  "The Minimum Inflation Rate for Euroland", *NBER Working Paper Series*, No. 8085.

Swagel, P. (2000),
  "The Contribution of the Balassa-Samuelson Effect to Inflation: Cross-Country Evidence", IMF mimeo.

Van Aarle, B. and H. Garretsen (2000),
  "Fiscal Stabilisation in EMU", *Review of International Economics*, No. 8(4).

Van den Noord, P. (2001),
  "Automatic Stabilisers in the 1990s and Beyond", in: M. Buti, J. von Hagen and C. Martinez-Mongay (eds.), *The behaviour of fiscal authorities — Stabilisation, growth and institutions*, Palgrave.

Table 1. **A synopsis of policy recommendations**

		Overheating	**Tighten fiscal policy**
Finland	OECD	Serious risk	Yes, but poses dilemma
	EU	Risk	Yes
	IMF	Pressures emerging	Restrain spending, cut taxes
Greece	OECD	Risk	Yes
	EU	Risk	Yes
	IMF	Risk	Stand ready to tighten
Ireland	OECD	Risk, but often exaggerated	No
	EU	Already exists	Yes
	IMF	Excess demand exists	Yes
Luxembourg	OECD	No	No
	EU	Pressures emerging	Stand ready to tighten
	IMF	No	No
Netherlands	OECD	Risk	Tightening desirable
	EU	Pressures emerging	Stand ready to tighten
	IMF	Risk, but easing	Tightening desirable
Portugal	OECD	Signs of overheating	Yes
	EU	Excess demand exists	Stand ready to tighten
	IMF	Excess demand exists	Yes
Spain	OECD	Excess demand, but diminishing	Stand ready to tighten
	EU	Excess demand exists	Stand ready to tighten
	IMF	Risk, but easing	Stand ready to tighten

See Box 1 for more detail on the recommendations and in particular on the timing of the reports.

Source: OECD.

Table 2. **Differences in inflation developments: regression results**

A. Regression results (sample period is 1995H1 to 2001H1)[1]

	Price level difference	Δ (Inflation lagged)	GAP	Change in import or oil price
France		**-0.774**	**0.00141**	**0.339**[6]
Germany			**0.00088**[3]	**0.011**[8]
Italy			0.00456[4]	
Austria	**-0.000107**	**-0.330**	**0.00141**	0.399[7]
Belgium		**-0.330**	**0.00088**[3]	**0.011**[8]
Finland	**-0.000107**	**-0.330**	0.00228[4]	**0.011**[8]
Ireland	**-0.000107**	-0.370[2]	**0.00088**[3]	**0.339**[6]
Netherlands	**-0.000107**		0.00259[5]	
Spain	-0.000208	**-0.774**	**0.00141**	
Portugal	**-0.000107**	**-0.774**	0.00285[3]	

B. Price level effect contribution to inflation change

	Average inflation	Price level difference with the euro area average		Effect on inflation change	
	1995h1-2001h1	1995	2001h1	1995	2001h1
Austria	1.55	14.32	7.26	-0.3	-0.2
Finland	1.65	21.36	15.31	-0.5	-0.3
Ireland	2.82	-14.48	-6.47	0.3	0.1
Netherlands	2.49	6.25	4.88	-0.1	-0.1
Spain	2.78	-17.64	-15.28	0.7	0.6
Portugal	2.89	-27.76	-25.13	0.6	0.5
Euro area	1.88				

1. All coefficients are statistically significant at the 1 per cent level except lagged inflation for Ireland which is significant at the 5 per cent level. A common parameter restriction has been imposed on coefficients in bold.
2. Δ (Inflation (-2))
3. GAP (-1)
4. Δ (GAP)
5. GAP (-2)
6. Import price
7. Import price (-1)
8. Oil price

Source: OECD.

Table 3. **Results of studies of automatic fiscal stabilisation**

Amount of cyclical smoothing in per cent

| | INTERLINK | NIGEM | QUEST | |
			Consumption	Exports
Austria	7	12	23	14
Belgium	22	5	24	12
Finland	58	7	20	15
France	14	7	23	14
Germany	31	18	31	10
Greece	14	--	22	17
Ireland	10	7	26	9
Italy	23	5	21	12
Netherlands	36	6	20	10
Portugal	--	10	30	19
Spain	17	13	17	11

Source: OECD, Barrel and Pina (2000) and EC (2001*a*).

Table 4. **Fiscal revenue and expenditure multipliers**

| | QUEST | | NIGEM |
	Revenue	Expenditure	Expenditure
Austria	0.1	0.5	0.6
Belgium	0.1	0.5	0.5
Finland	0.3	0.4	0.7
France	0.1	0.5	1.1
Germany	0.2	0.4	1.6
Greece	0.1	0.5	--
Ireland	0.1	0.4	0.5
Italy	0.1	0.5	0.8
Netherlands	0.1	0.4	0.9
Portugal	0.0	0.7	0.6
Spain	0.1	0.5	1.1

Source: EC (2001*a*) and Barrel and Pina (2000).

Figure 1. Underlying HICP inflation (1)
September 2001
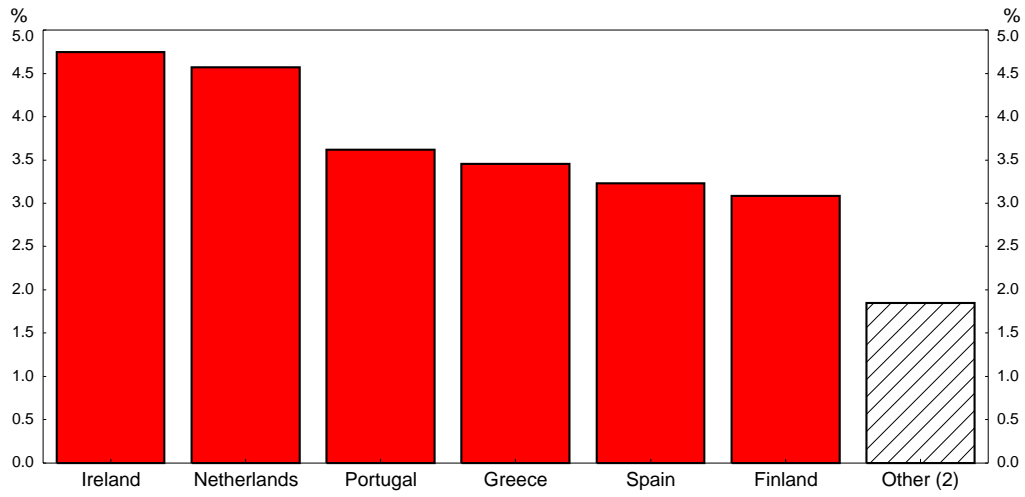
1. Excluding food, tobacco, alcohol and energy.
2. GDP weighted average of the other euro area countries.
Source: OECD.

Figure 2. Inflation dispersion in the euro area, the United States, Spain and Canada (1)
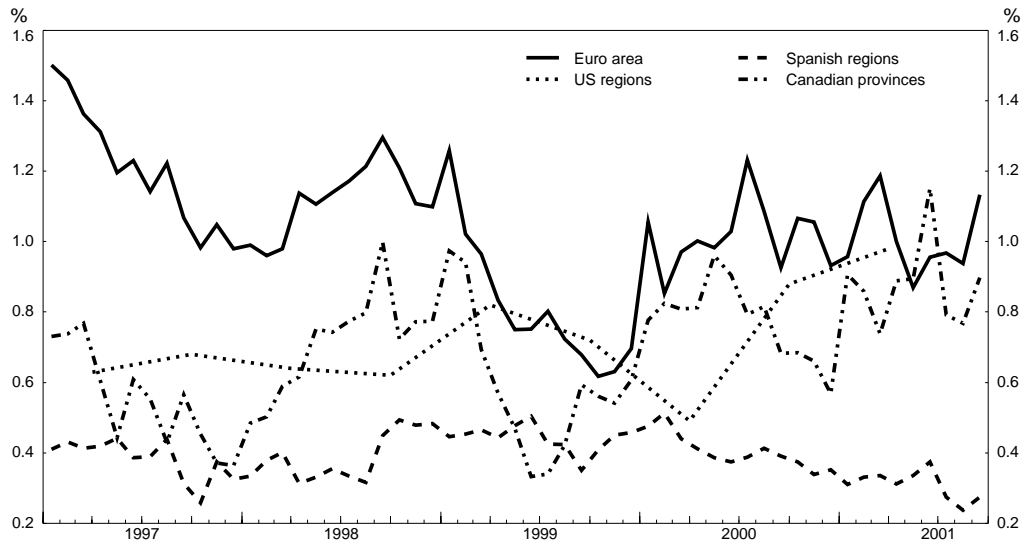
1. Standard deviation.
Source: OECD.

Figure 3. Output gaps and unit labour costs
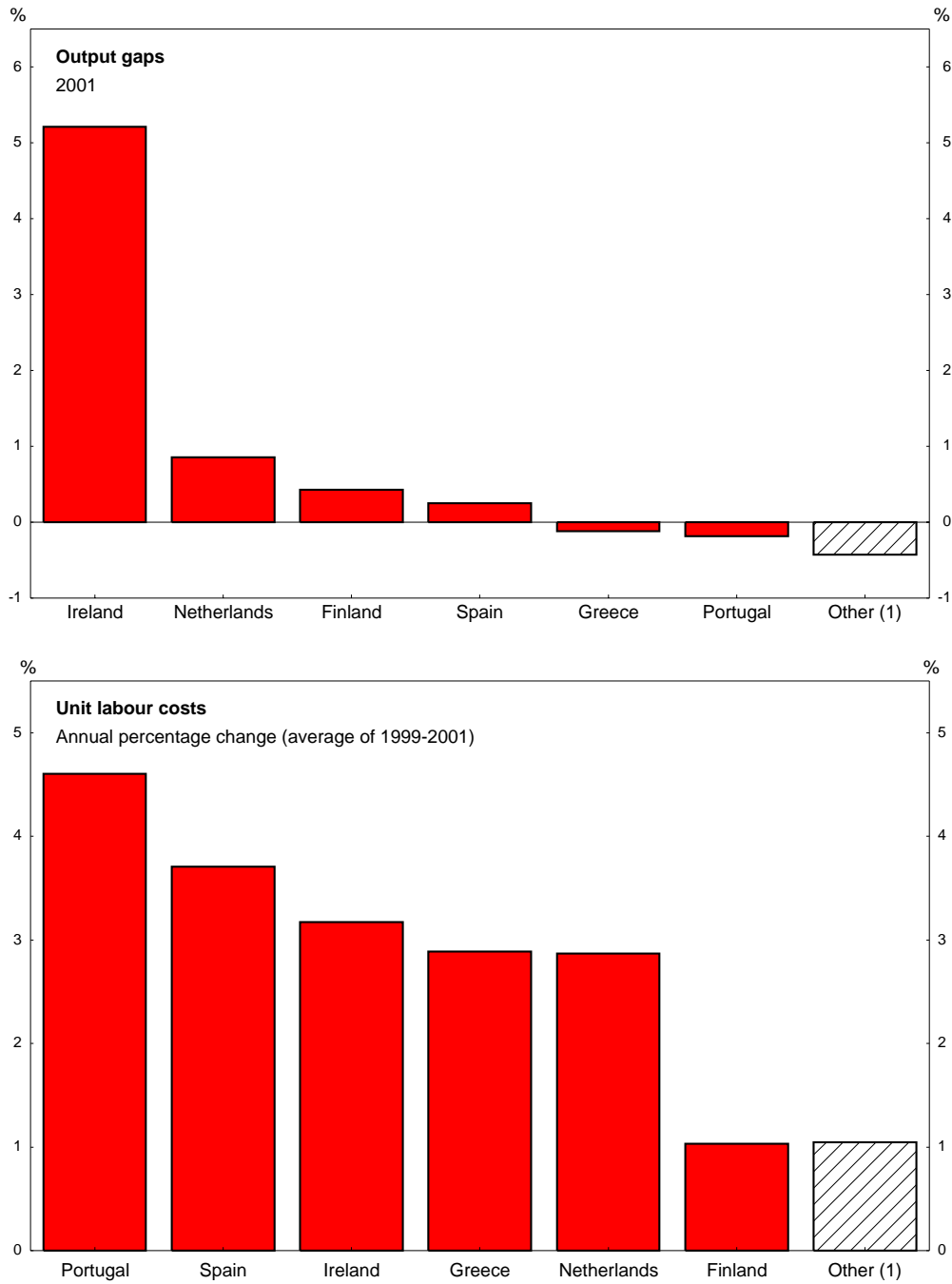
1. GDP weighted average of the other euro area countries.
Source: OECD.

Figure 4. Inflation and inflation expectations
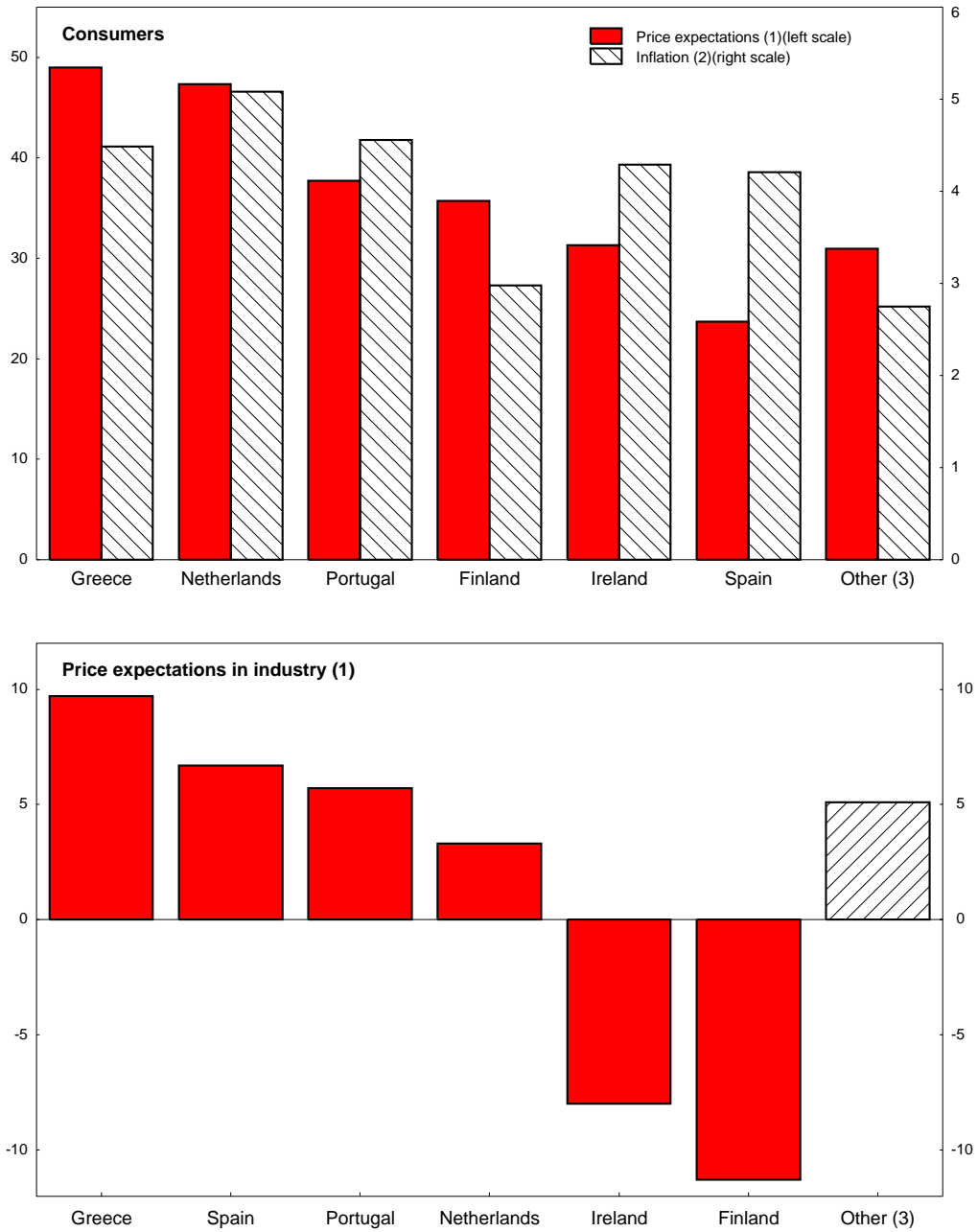
1. Average April-May-June 2001.
2. HICP inflation in June 2001
3. GDP weighted average of the other euro area countries.
Source: OECD.

Figure 5. Competitiveness and the current account
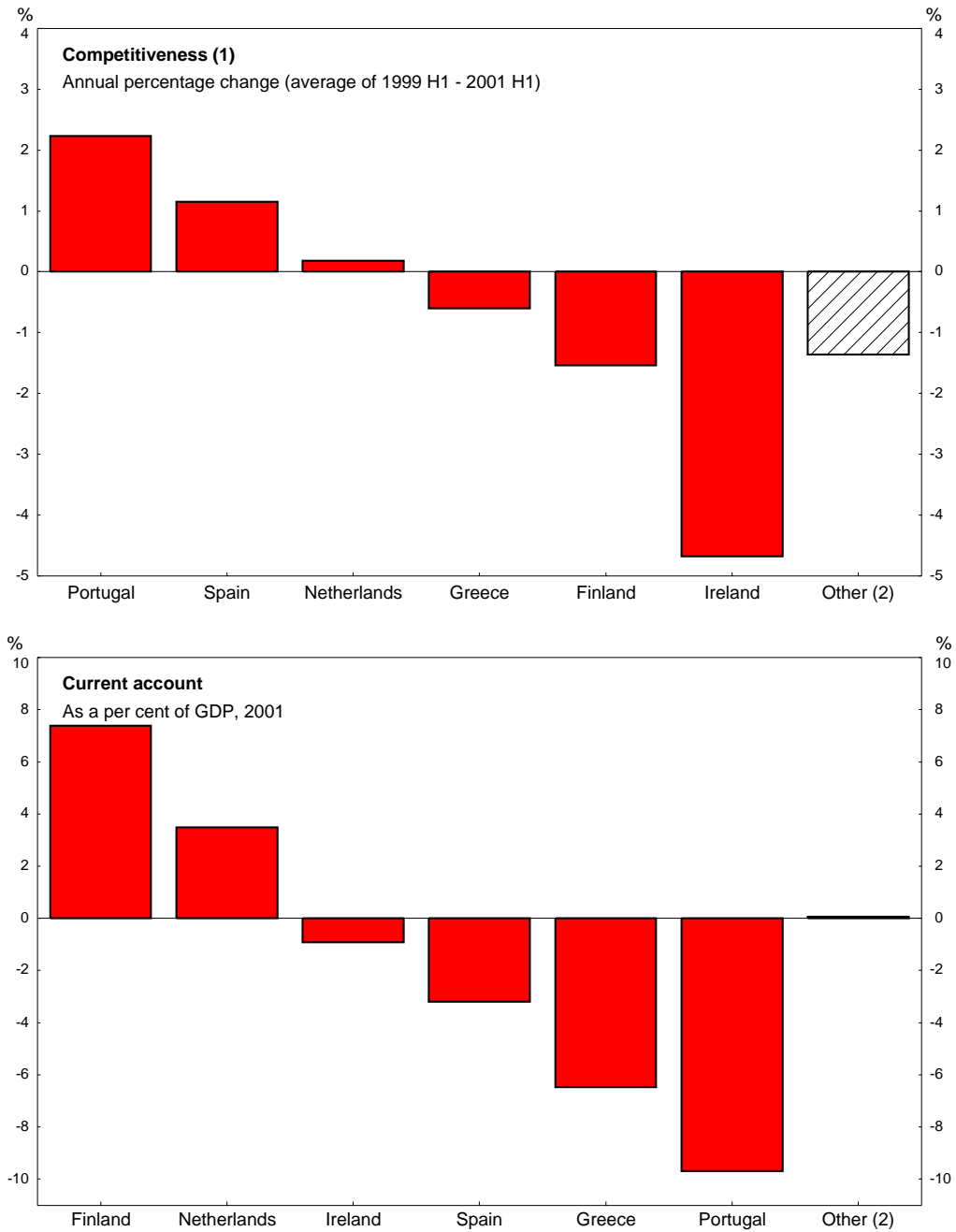
1. Real effective exchange rate based on unit labour costs.
2. GDP weighted average of the other euro area countries.
Source: OECD.

Figure 6. Credit growth and the change in real interest rates
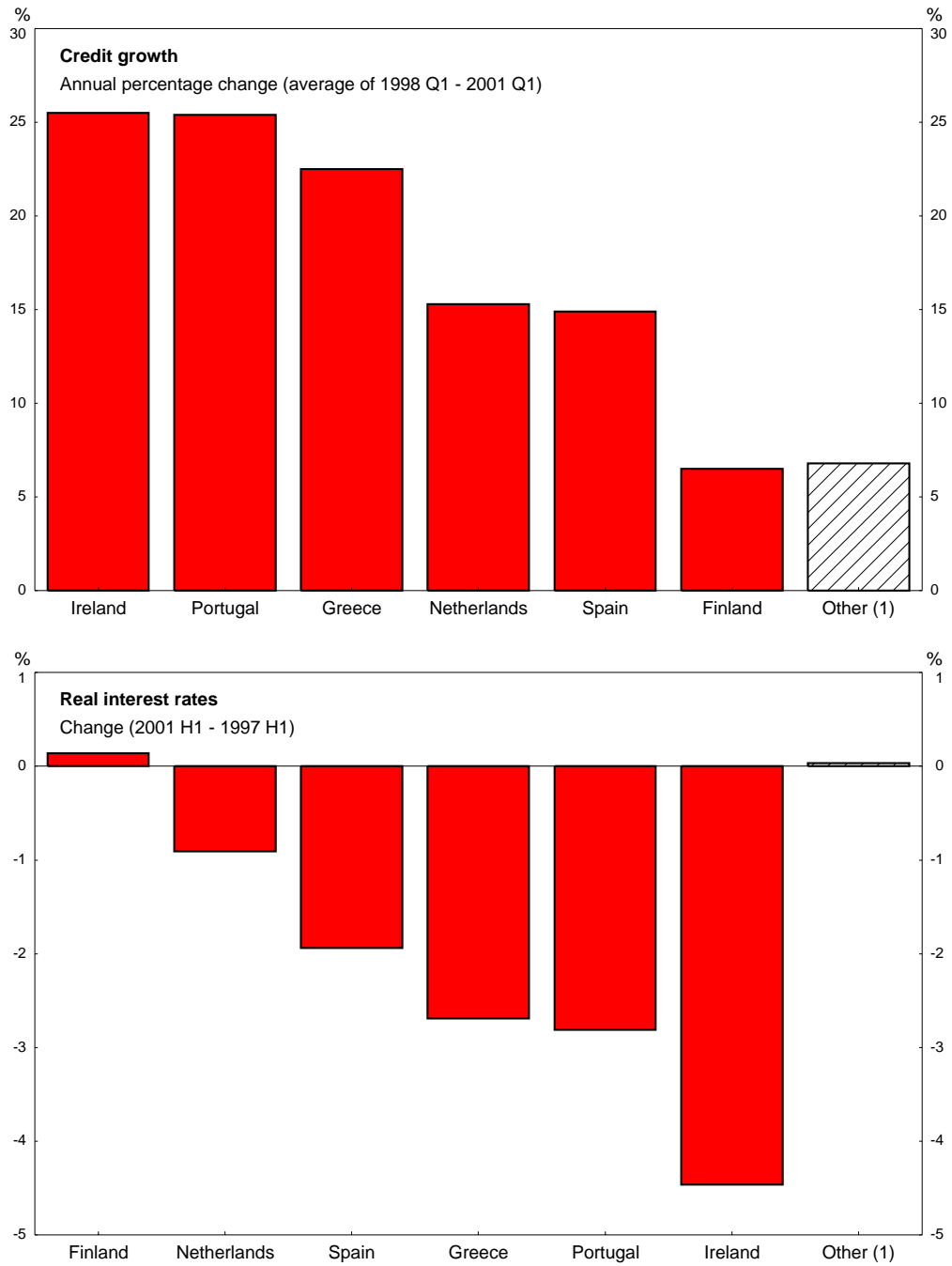
1. GDP weighted average of the other euro area countries.
Source: OECD.

Figure 7. Residential property price increases
Percentage change (1995 Q4 to 2000 Q4)
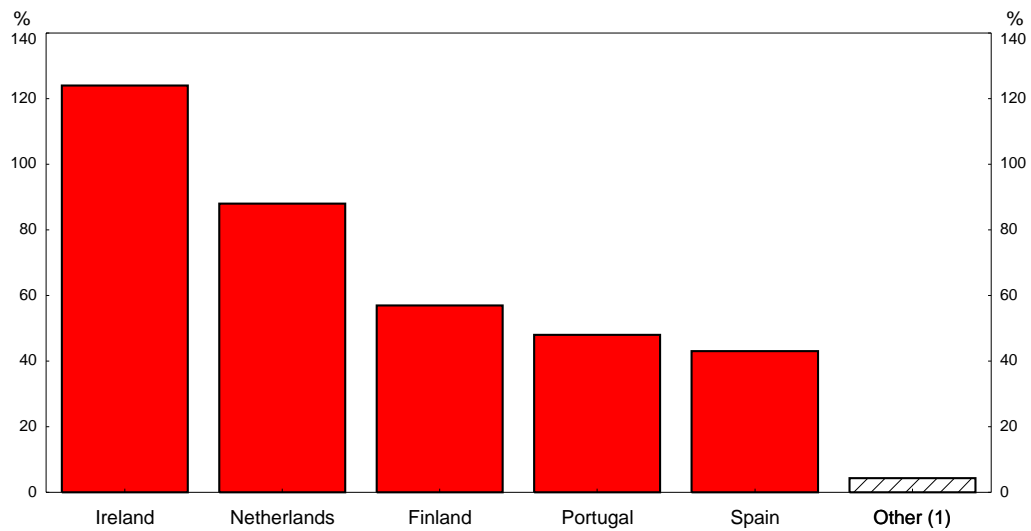
1. GDP weighted average of the other euro area countries.
Source: BIS and Confidencial Imobiliário Newsletter (for Portugal).

Figure 8. Peak output gaps in earlier overheating episodes
Between 1988 and 1993
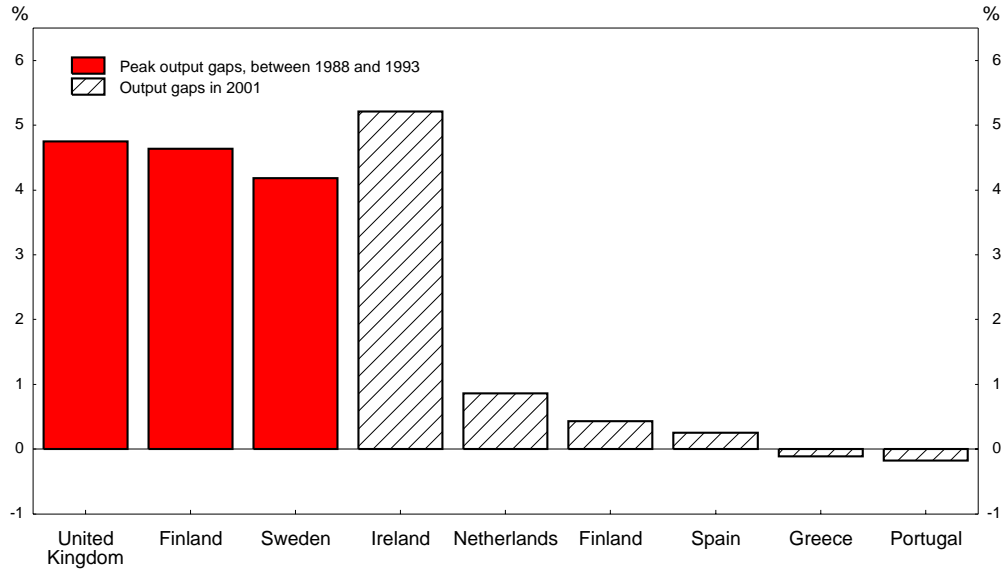
Source: OECD.

Figure 9. Potential output growth
2001
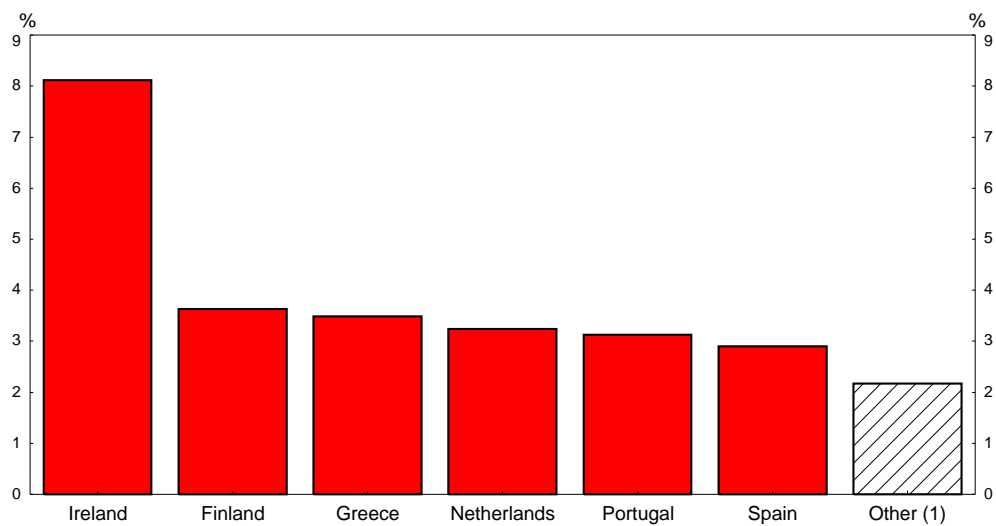
1. GDP weighted average of the other euro area countries.
Source: OECD.

Figure 10. The competitiveness channel
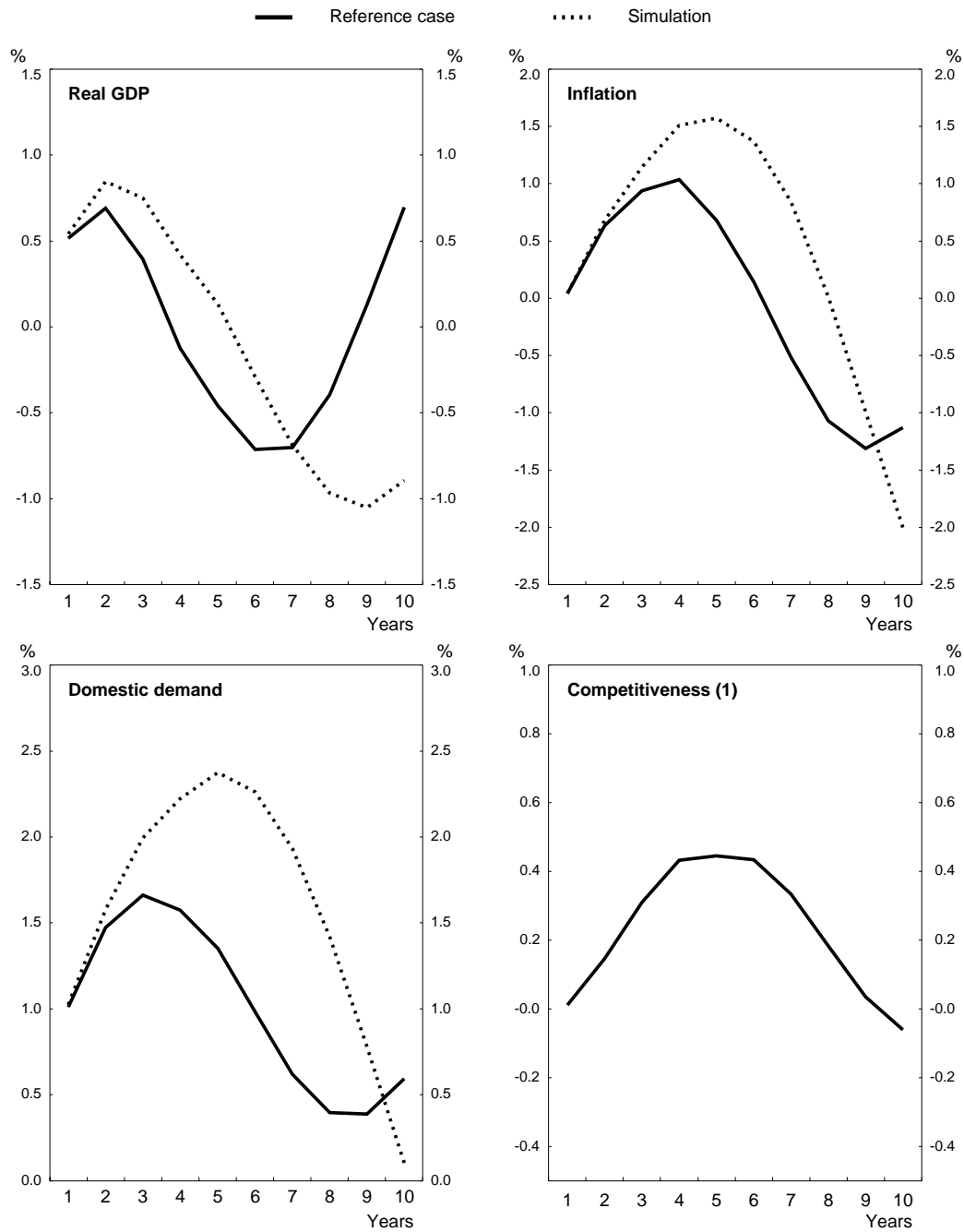
──── Reference case ⋯⋯ Simulation

1. The competitiveness channel does not affect the simulation results.
Note: In the simulation, the price elasticity of exports and imports is set to zero.
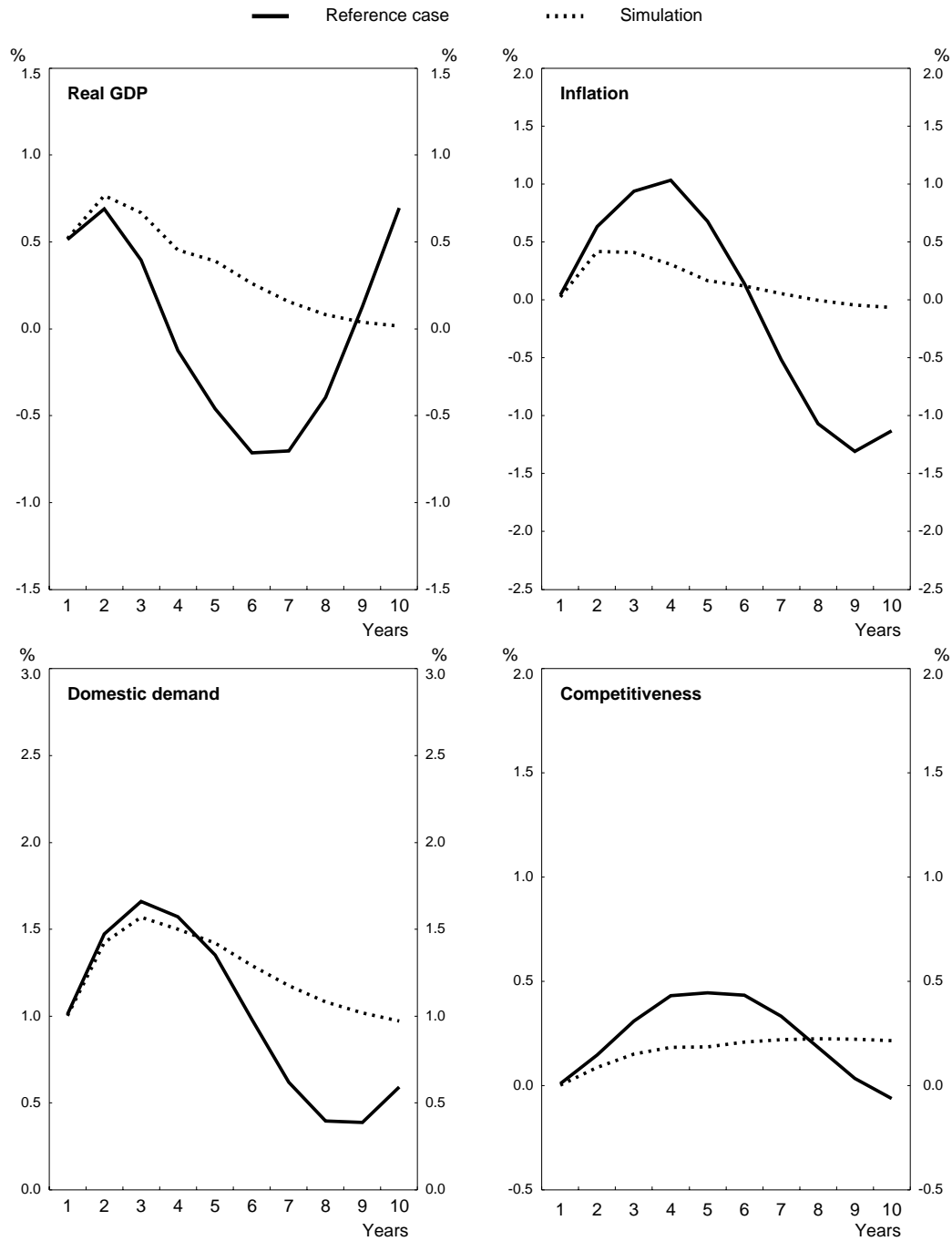Source: OECD.

Figure 11. A stronger competitiveness effect

——— Reference case   ····· Simulation
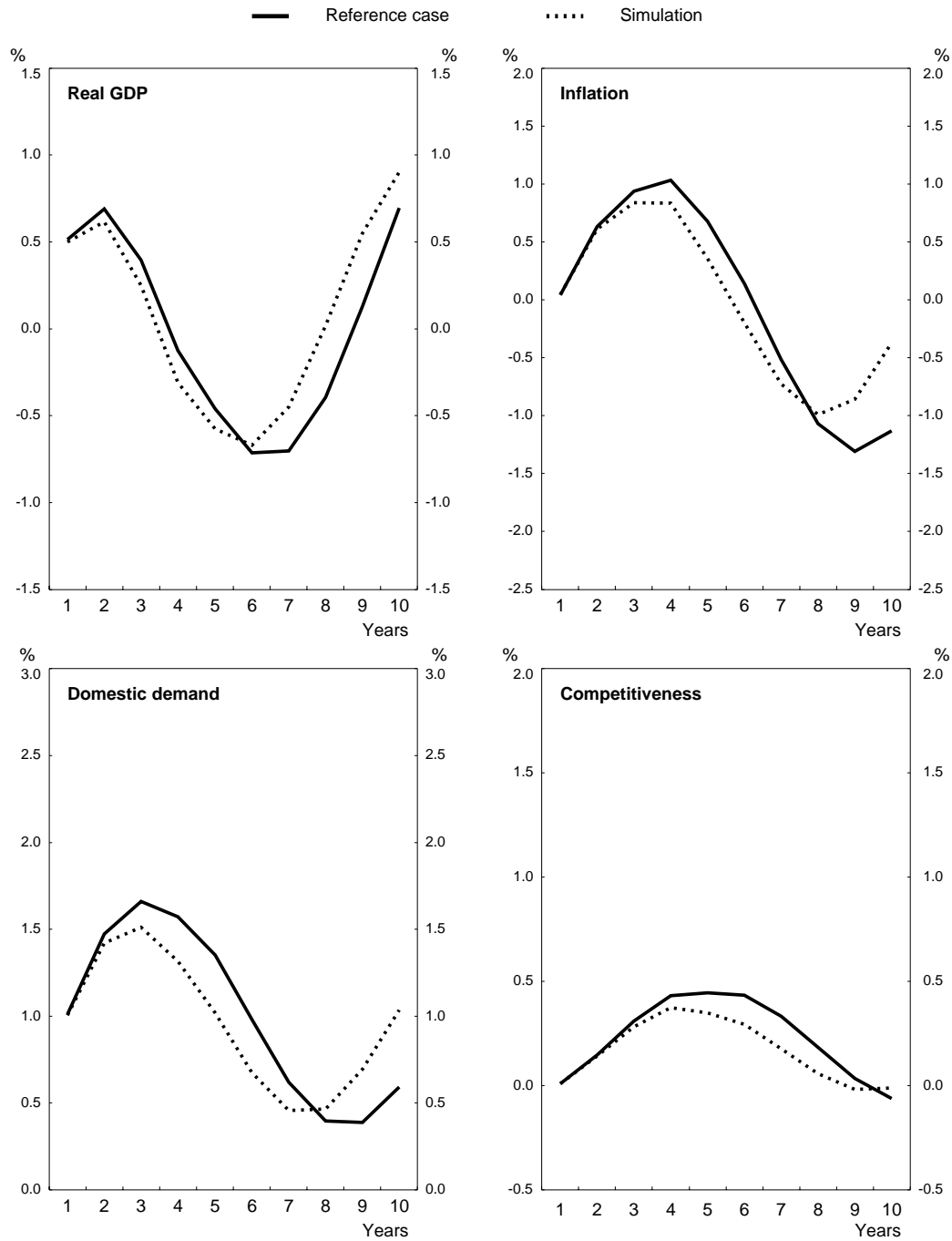
Note: In the simulation, the export and import price elasticities are increased by 50 per cent.
Source: OECD.

**Figure 12. Reducing the interest rate sensitivity of consumption and investment**

Reference case   ····· Simulation
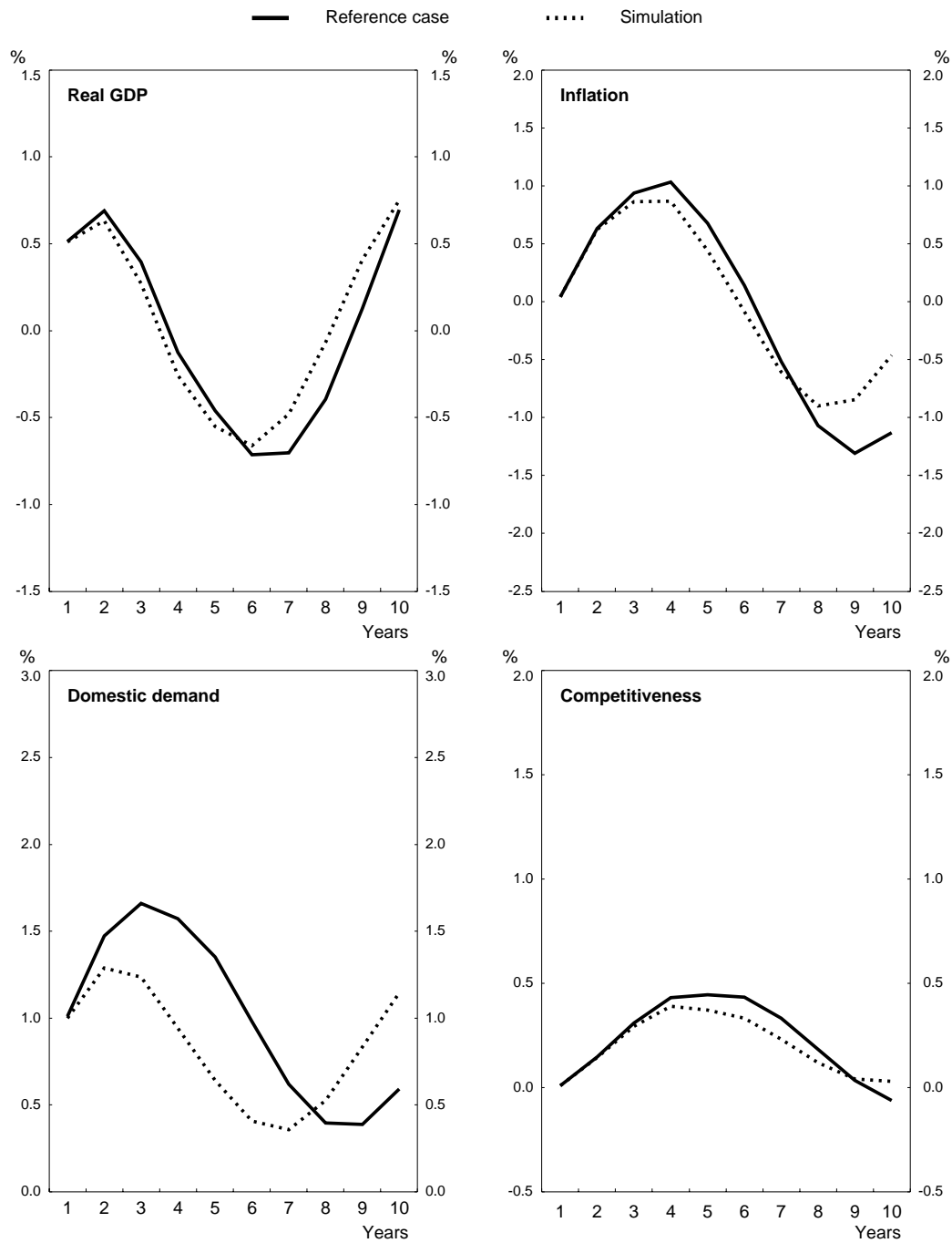
Note: In the simulation, the real interest rate coefficient in the consumption and investment equations has been halved.
Source: OECD.

**Figure 13. Inflation expectations in wage setting anchored in euro area wide inflation**

Reference case ····· Simulation

Note: In the simulation, the inflation coefficient in the wage equation is set to zero.
Source: OECD.

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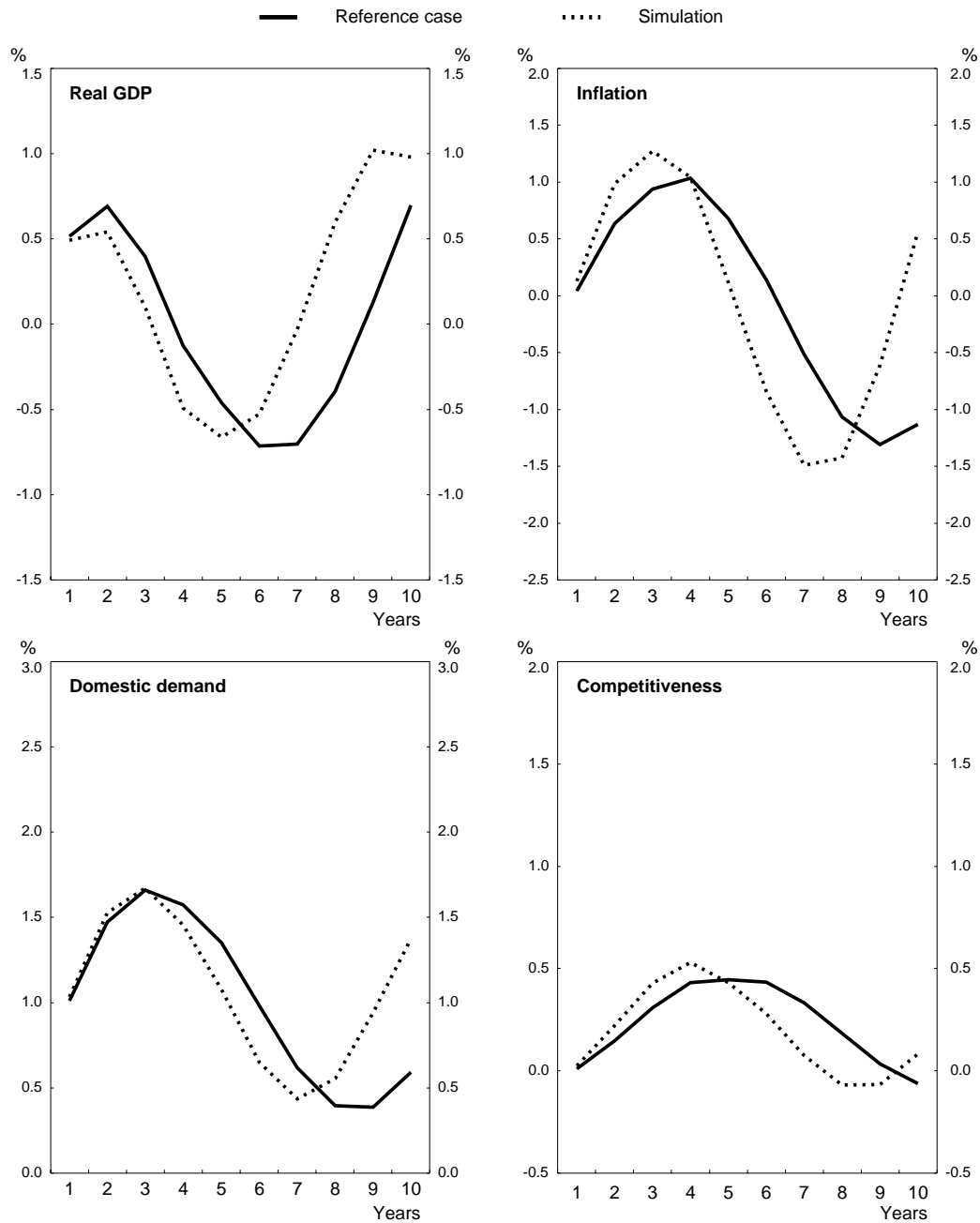**Figure 14. The role of incomes policy**

Reference case ⋯⋯ Simulation
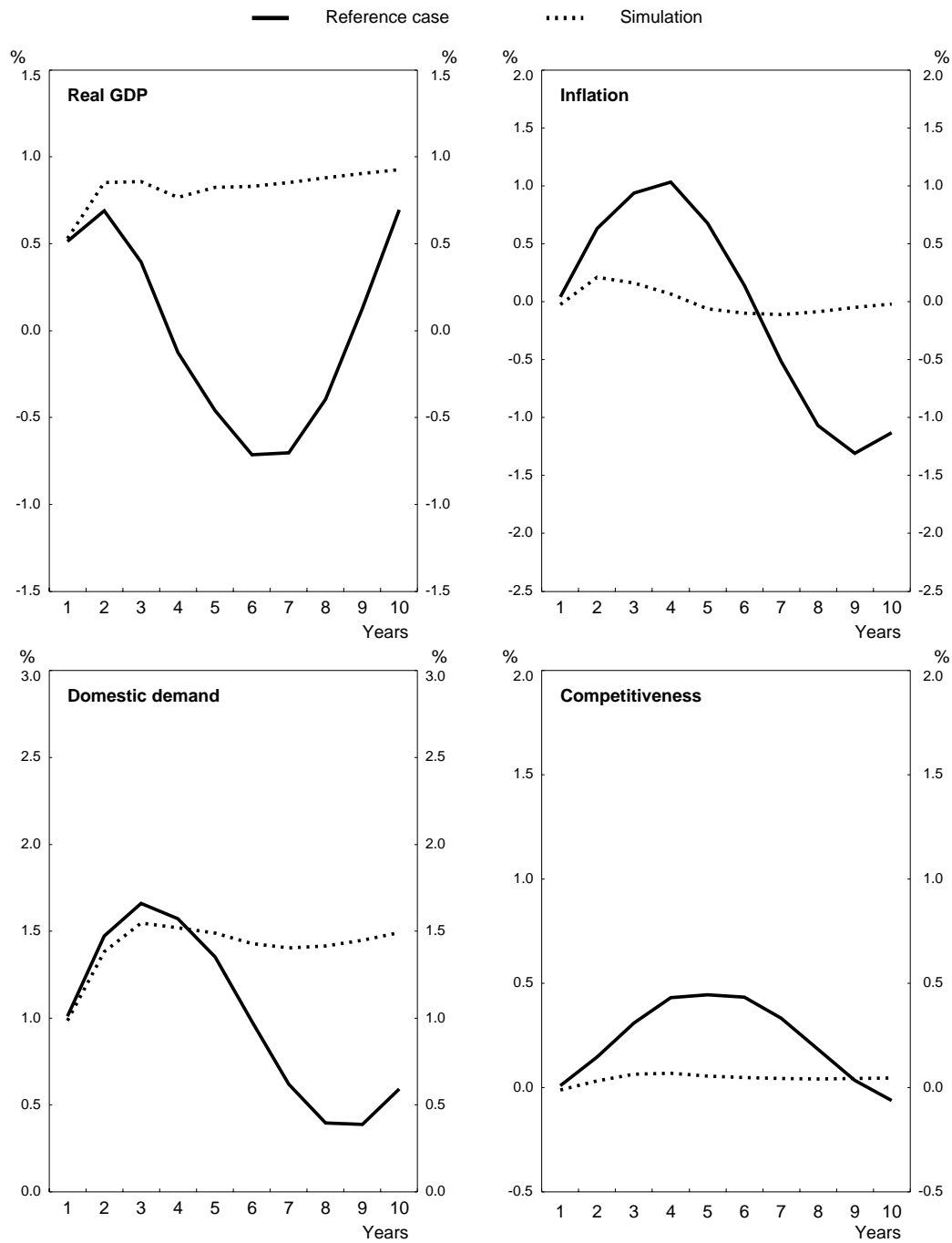
Note: In the simulation, the wage rate is kept at its reference case level.
Source: OECD.

Figure 15. Increased migration

Reference case .... Simulation
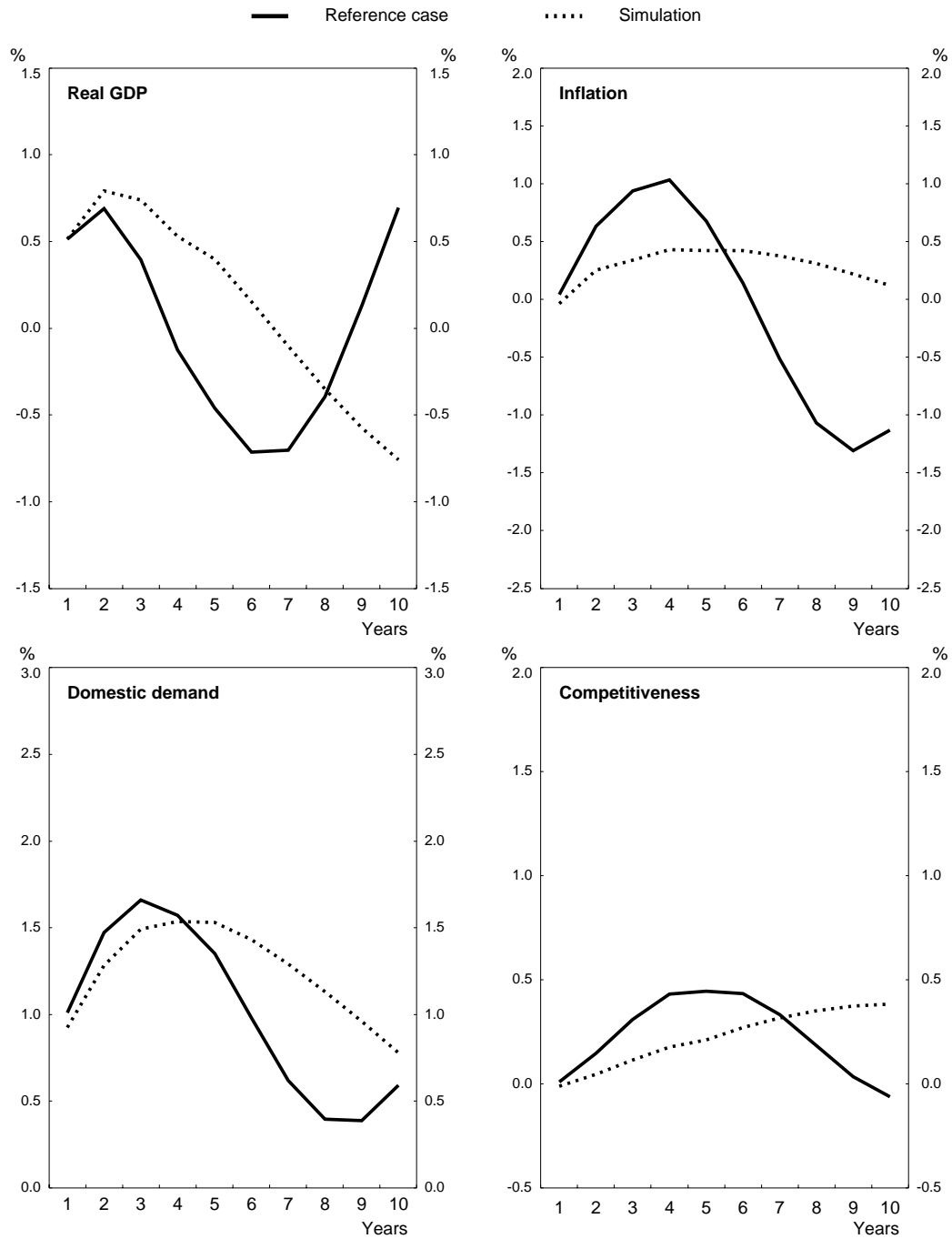
Note: In the simulation, the labour force grows in line with employment.
Source: OECD.

37

Figure 16. A stronger reaction of prices and wages to demand pressures


Note: In the simulation, the output gap elasticity of the price equation and the unemployment elasticity of the wage
    equation are raised by 35 per cent, while nominal rigidities in both wage and price equations are reduced by
    the same amount. Overall the sacrifice ratio is halved in the simulation relative to the reference case.
Source: OECD.

Figure 17. The case of a less open economy
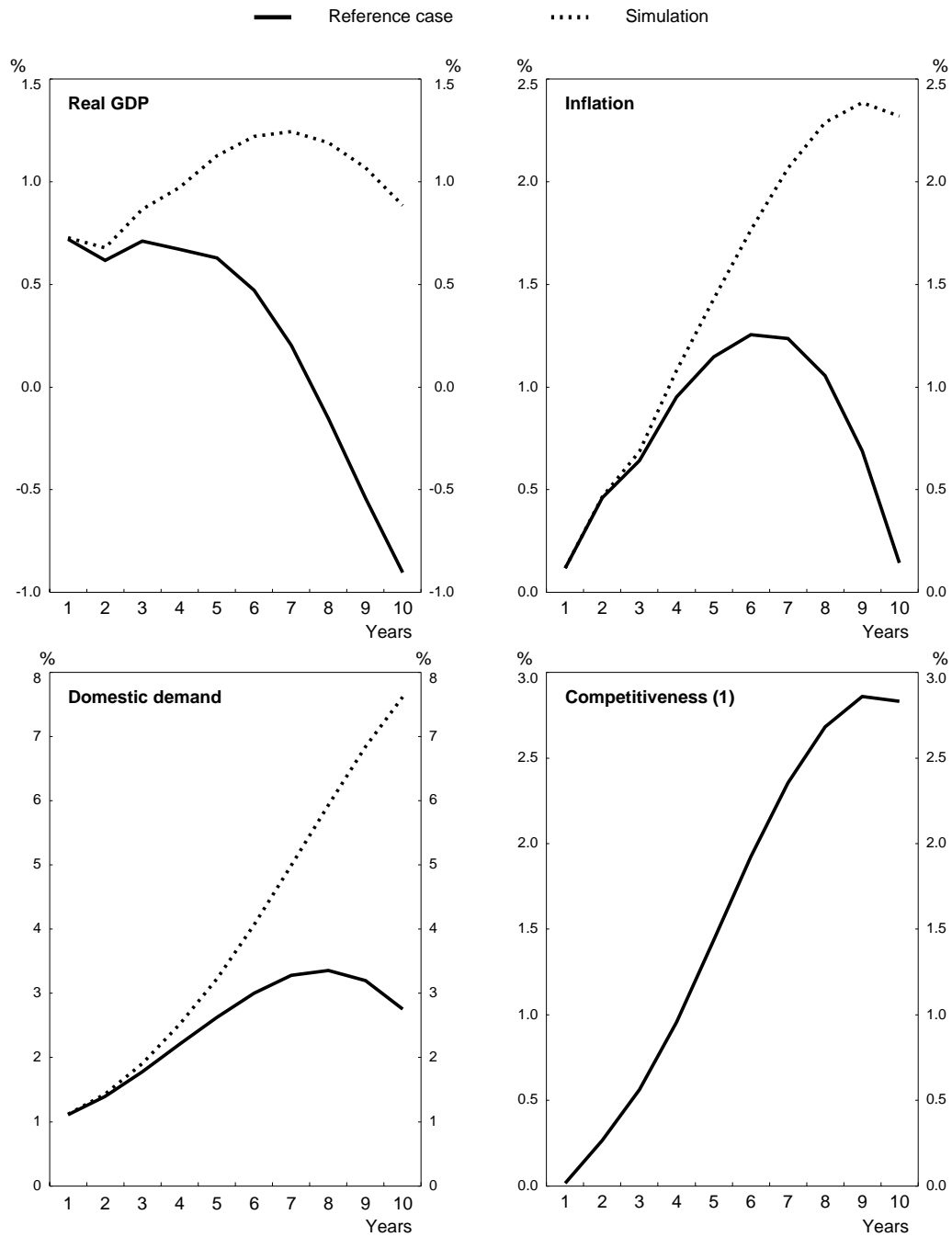
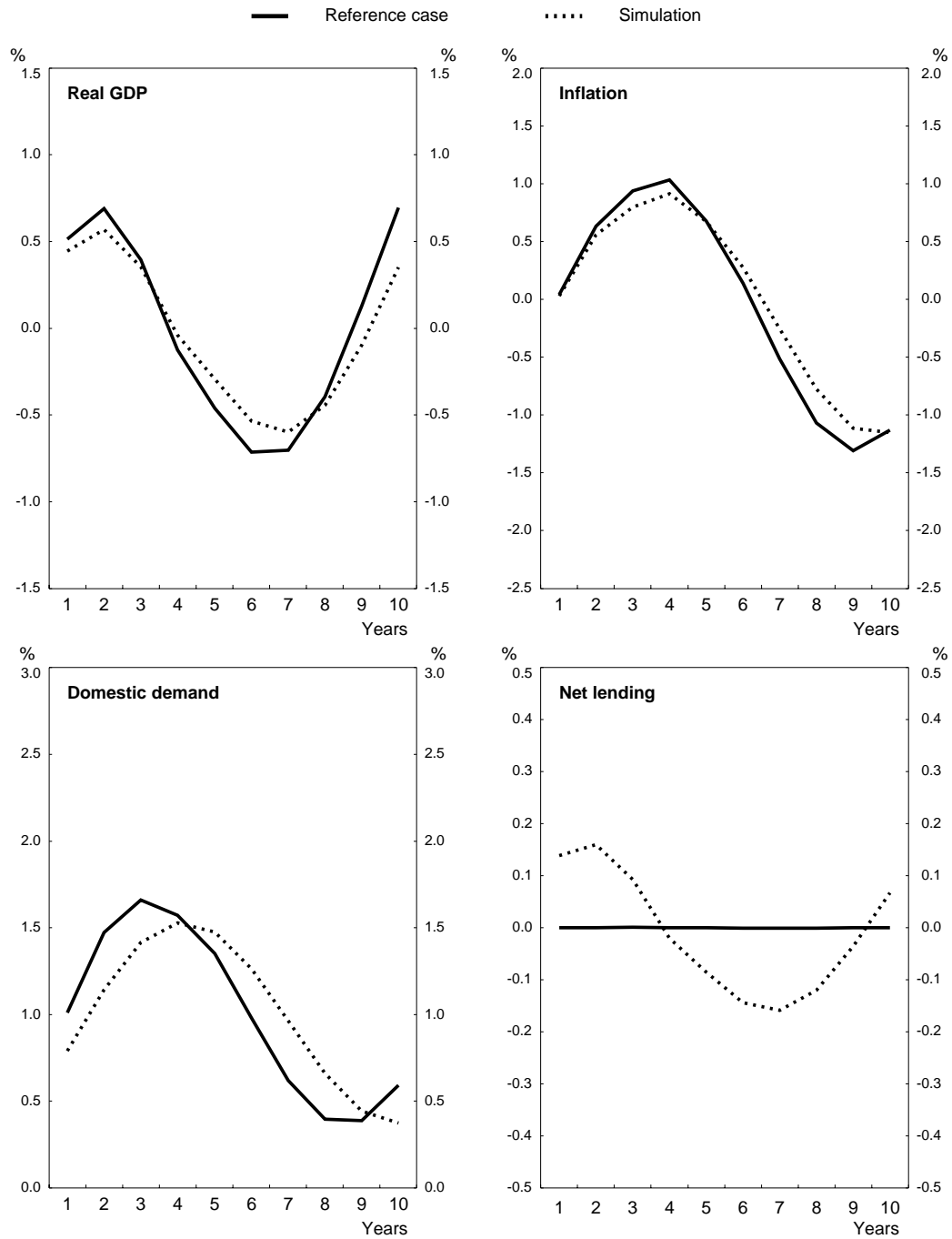—— Reference case   ····· Simulation

1. The competitiveness channel does not affect the simulation results.
Note: In the simulation, the price elasticity of exports and imports is set to zero.
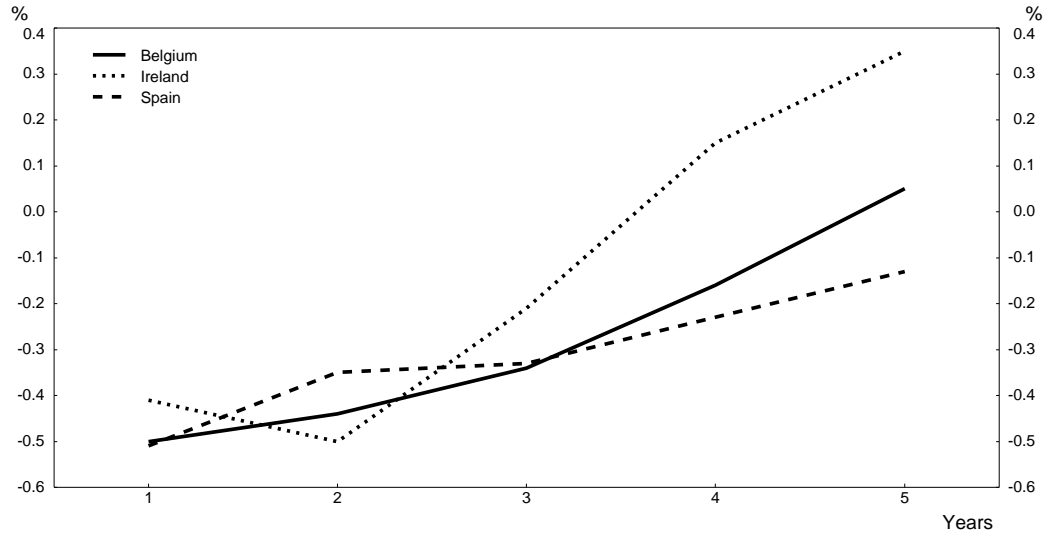Source: OECD.

Figure 18. Structural budget balances (1)
2001
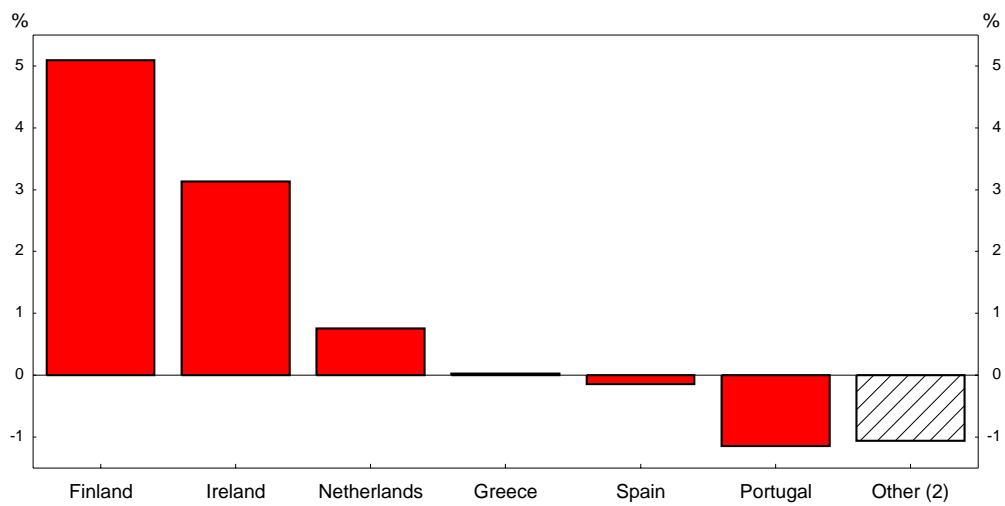
1. As a percentage of GDP.
2. GDP weighted average of the other euro area countries.
Source: OECD.

Figure 19. The role of automatic stabilisers

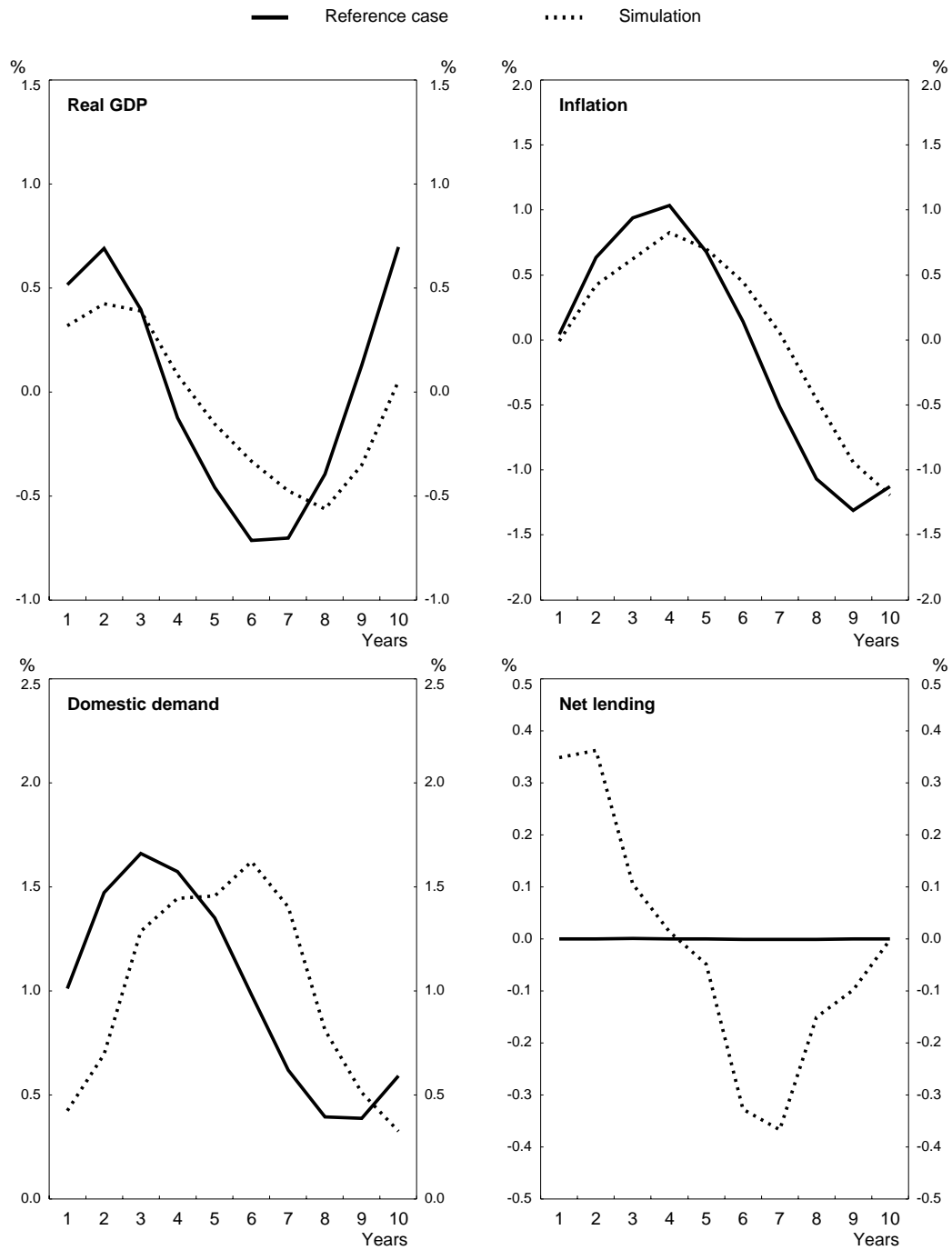———— Reference case   ⋯⋯⋯ Simulation

1. In the simulation, the automatic stabilisers are allowed to work.
Source: OECD.

Figure 20. Fiscal multipliers for Ireland, Belgium and Spain
(Difference from baseline)

Note: Impact of an ex-ante public spending cut of 1 per cent of GDP.
Source: OECD.

Figure 21. Pursuing a discretionary fiscal policy

—— Reference case   · · · · Simulation

Note: In the simulation, government spending was adjusted so as to approximately double the effect of the automatic stabilisers.
Source: OECD.

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