

II.2. How has the financial crisis affected cyclical differences within the euro area?

Business cycle convergence between Member States is critical for a smooth functioning of EMU. It facilitates the coordination of economic policies and, in particular, the conduct of a single monetary policy. The divergence of business cycles makes policy coordination more challenging but also more important, and renders necessary a more differentiated policy approach in policies other than the monetary policy.

Earlier studies, based on data until 2005, concluded that Member States' business cycles were relatively closely synchronised and that the dispersion in output gaps within the euro area had narrowed since the mid-1990s.⁽²⁶⁾ This section provides an up-to-date analysis and discusses how cyclical differences have been affected by the crisis. It then looks ahead at the prospects of business cycle developments in the medium-term. The analysis focuses on Ireland, Greece, Spain and Finland, as these countries account for much of the recent changes in cyclical differences within the euro area.

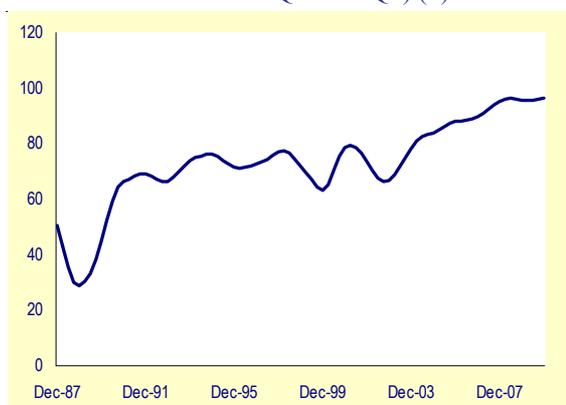
The empirical literature proposes a wide range of statistical instruments to measure differences in business cycles. Much of the analysis presented in this section relies on one of the most straightforward tools to measure cyclical differences: the dispersion of output gaps.

An increase in this measure can, however, reflect two broad types of business cycle misalignments: a de-synchronisation (countries' cycles move less in tandem and differences in the timing of their cyclical peaks and troughs increase) or rising differences in cyclical amplitudes (cyclical peaks and troughs become more pronounced in some countries than in others). To better understand the underlying sources of (mis-)alignment, additional indicators which mostly capture (de)-synchronisation are also used here. These include the correlation of output gaps and comparisons of the timing of cyclical peaks and troughs.

Cyclical synchronisation has remained high within the euro area ...

Updated indicators of cyclical correlation point to continuously high or increasing business cycle synchronisation within the euro area also after 2005.⁽²⁷⁾ Graphs II.2.1 and II.2.2 display the mean of the correlations of euro-area Member States' business cycles with the overall euro-area business cycle. The correlations are calculated for 4- and 8-year rolling windows, respectively –i.e. the number at a given point in time is the correlation for the 4 or 8 years to that point.

Graph II.2.1: Mean output gap correlation, euro-area countries (8-year rolling window – in % -1983Q1-2009Q4) (1)



(1) BE, DE, ES, FR, IT, NL and FI. The mean correlation is calculated as the non-weighted average of the correlations between the national and the euro-area output gaps.

Source: Commission services.

Based on the 8-year window, the correlation of business cycles across Member States indicates a clear upward trend in the last few years. The correlation based on the 4-year rolling window shows, however, a less clear picture, with a moderate decrease in cyclical synchronisation around the years 2005-2006, followed by renewed convergence. This shorter window should, however, be considered with caution as it tends to be sensitive to small deviations in Member States' business cycles. In any event, both windows point to a very high degree of cyclical synchronisation in the euro area.⁽²⁸⁾

⁽²⁶⁾ The issue has been analysed on three occasions in the Quarterly Report on the Euro Area: - Focus on 'Cyclical synchronisation within the euro area: what do recent data tell us?', Vol. 5, No. 2 (2006), - Focus on 'Growth differences in the euro area', Quarterly Report on the Euro Area, Vol. 4, No. 2 (2005), - Focus on 'Cyclical convergence in the euro area', Vol. 3, No. 2 (2004).

⁽²⁷⁾ Throughout this section, the business cycle is measured by the output gap, i.e. the deviation from trend GDP in %. The trend is extracted using an HP filter. Due to data availability issues, the sample is restricted to seven euro-area Member States when using quarterly data: Belgium, Germany, Spain, Finland, France, Italy and the Netherlands.

⁽²⁸⁾ Some caution is however needed as some Member States with notably different business cycles could not be included in the calculations (e.g. EL and PT) due to lack of data.

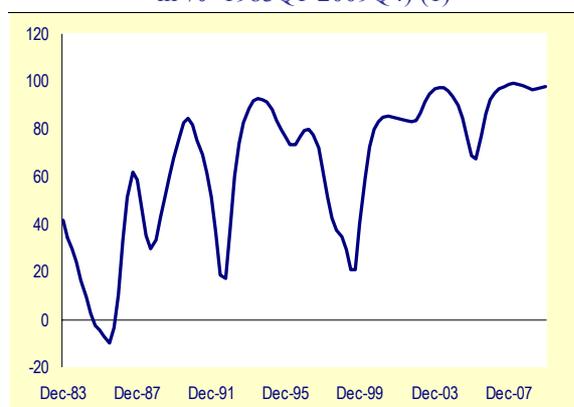
Table II.2.1: Member State differences in the timing of cyclical peaks and troughs during past recessions, euro area (based on the Economic sentiment indicator (ESI)) (1)

Recession 1989-1993		Recession 2000-2001			Recession 2007-2009		
Peak	Trough	Peak	Trough		Peak	Trough	
DE(-4)	IE(-2)	AT(-2)	DE(-5)	EL(-6) PT(-6)	MT(-3)	CY(-3)	
FR(+2) FI(+3) IT(+3) PT(+9)	LU(+4) EL(+7) FI(+7)	IE(+2) LU(+10) NL(+10) PT(+10) FI(+10)				IE(+3) IT(+3)	

(1) Numbers in brackets refer to quarterly distances from the euro-area peak and trough. A minus (plus) sign means that the country reached its peak (trough) after (before) the euro area peak (trough). One quarter distances are not included.

Source: Commission services.

Graph II.2.2: Mean output gap correlation, euro area countries (4-year rolling window – in % -1983Q1-2009Q4) (1)



(1) BE, DE, ES, FR, IT, NL and FI. The mean correlation is calculated as the non-weighted average of the correlations between the national and the euro-area output gaps.

Source: Commission services.

Survey indicators, such as the Economic Sentiment Indicator (ESI), confirm this picture, showing that cyclical synchronisation, as measured by Member States' similarity in the timing of cyclical peaks and troughs, has been on the increase in the euro area in recent years (Table II.2.1). Synchronisation was particularly high during the latest recession and the early stages of the ongoing recovery.

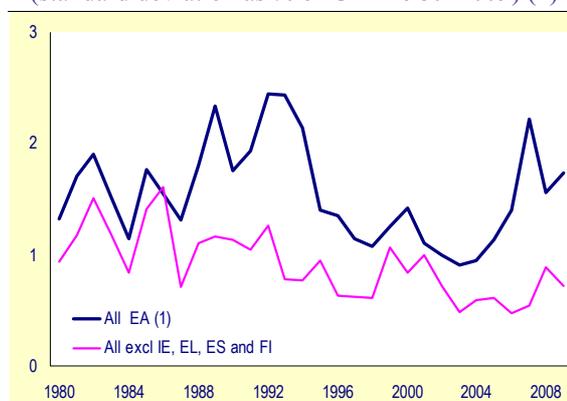
...but there have been some signs of cyclical divergence in 2006-2008

In contrast, measures of cyclical dispersion point to some divergence in Member States' business cycles within the euro area in 2006-2008 (Graph II.2.3). The dispersion of output gaps, measured by their standard deviation, was remarkably low until 2006, when it picked up and increased steadily until 2008, reaching a level last seen in the early 1990s.

This phase of divergence was followed by renewed convergence as from the second half of

2008 but to date cyclical differences remain significantly higher than over 1999-2005.

Graph II.2.3: Output gap dispersion, euro area (standard deviation as % of GDP 1980–2009) (1)



(1) Euro-area countries excluding newly acceded Member States (CY, MT, SK and SI).

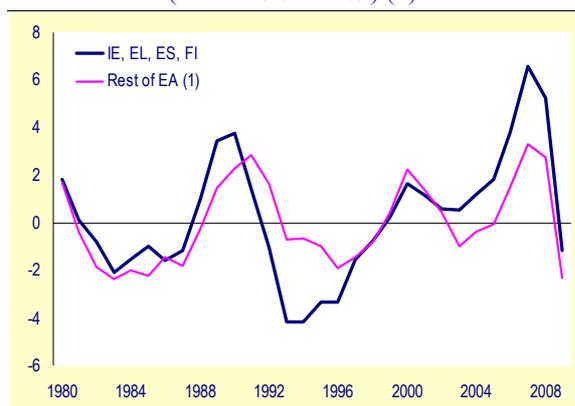
Source: Commission services.

Given that business cycle synchronisation (as measured by correlation) has, in the meantime, remained high or on an upward trend (depending on the windows considered), the business cycle divergence over 2006-2008 can only be explained by rising Member State differences in the amplitude of business cycles.

Looking more closely at individual Member States, much of the divergence can be ascribed to four countries: Greece, Spain, Ireland and Finland (Graph II.2.3). These countries entered the global economic crisis with a significantly higher positive output gap than the rest of the euro area (Graph II.2.4).

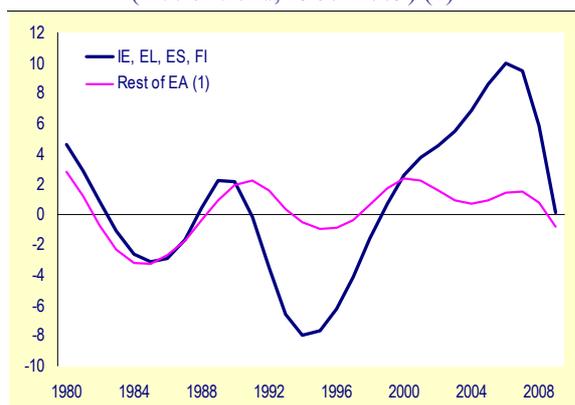
In the four above-mentioned countries, the large positive output gaps in the years preceding the crisis are mainly explained by very strong cycles of demand (see Graph II.2.5). In Finland, however, high exports on the back of booming world trade have also played a role.

Graph II.2.4: Average output gap (in % - 1980–2009) (1)



(1) Euro-area countries excluding newly acceded Member States (CY, MT, SK and SI).
Source: Commission services.

Graph II.2.5: Average cyclical component of domestic demand, euro area (in % of trend, 1980–2009) (1)

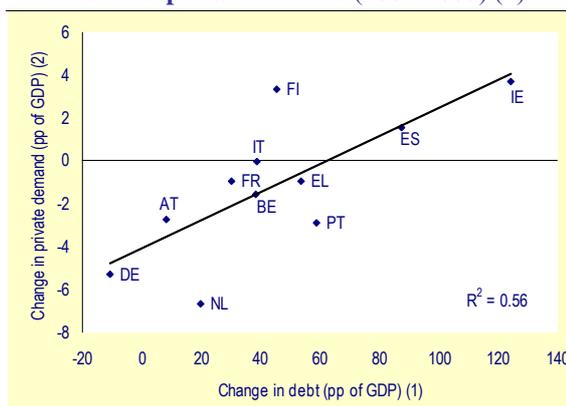


(1) Euro-area countries excluding LU and newly acceded Member States (CY, MT, SK and SI).
Source: Commission services.

The phase of cyclical divergence in 2006–08 can, to a large degree, be traced back to credit markets. In all four countries (though somewhat less so in Finland and Greece), strong private sector demand was supported by strong credit dynamics and associated with a sharp increase in private sector debt. As shown in Graph II.2.6, the relationship between the change in accumulated debt and the change in private sector demand is very strong in euro-area Member States between 2001 and 2007.

The cyclical divergence therefore has much of its roots in very strong private-sector credit cycles in a few Member States. The effects of these credit cycles were magnified by overly loose fiscal policy in Greece or high exposure to world trade in Finland.

Graph II.2.6: Relationship between private sector debt and private demand (2001–2007) (1)



(1) Securities other than shares and loans, non-consolidated data.
 (2) Final consumption expenditure and gross capital formation.
Source: Commission services.

Business cycle dispersion diminished during the crisis...

With a set of powerful symmetric shocks hitting the euro area in 2008, Member States entered the downturn almost at the same time (Table II.2.1). This meant that synchronisation was particularly high during the latest recession and the early stages of the ongoing recovery. Only Malta, Italy and Ireland had their latest cyclical peak at a slightly different time than the euro area as whole. In all Member States, except Cyprus, the recovery started in 2009Q2.

However, the fall in output gaps was differentiated across euro-area members. It was much higher in those Member States, which entered the recession with higher output gaps than in the rest of the euro area (IE, EL, ES and FI). As a result, business cycle differences narrowed significantly on account of reduced differences in cyclical amplitudes.

In Ireland, Greece and Spain, the main factor underlying the stronger decline in output gap was the larger fall in the cyclical component of domestic demand. In Finland, the sharp fall in output gap reflected a combination of weak domestic demand and the country's high exposure to world trade.

...but could widen again in the medium-term

In the short term, the financial crisis generated a differentiated fall in output gaps, which entailed a correction in the pre-crisis divergence. Business cycle convergence is expected to continue during the recovery period. Output gap dispersion, as

measured by standard deviation, is forecast to decrease further in 2010 and 2011 and come back to levels seen before 2006. ⁽²⁹⁾

In the medium term, however, cyclical differences could re-emerge. The driving forces behind output gap corrections have only started to unfold in Ireland, Greece and Spain. Output gaps could continue to fall and remain in negative territory longer than in the rest of the euro area. The possible renewed divergence in business cycles in the medium term would be the result of protracted structural adjustment processes of private demand in indebted countries as debt accumulated by households and non-financial corporations is progressively reduced.

Table II.2.2: Deviation of consolidated debt (1) from the euro-area aggregate in 2008
(in percentage points)

	Households; non-profit institutions serving households	Non-financial corporations	Total
Ireland	48	70	118 (2)
Portugal	50	34	85
Spain	39	22	61
Netherlands	5	58	64
Belgium	-14	-12	-26
Italy	-4	-22	-26
Finland	-11	-7	-17
France	0	-11	-11
Austria	0	-9	-9
Germany	-15	0	-15
Greece	-18	-11	-29

(1) Securities other than shares and loans, expressed in percent of GDP.

(2) For Ireland, non-consolidated liabilities are reported due to lack of data.

Source: Commission services.

No one can determine precisely the speed and magnitude of adjustment to debt overshooting. Deviations from euro-area aggregate debt levels may however give a rough indication of the size of the effort needed. For instance, Ireland and Portugal show a level of private sector debt that is, respectively, 118 and 61 pp higher than the euro-area average (Table II.2.2). In order to reduce the debt-to-GDP ratio by about 30 to 40 pp (about third or half of these differences), the adjustment processes in Ireland and Portugal would be long-lasting. Ireland would need 3 to 4 years, assuming an adjustment speed of 11.4% of GDP per year (which corresponds to the surplus of its private sector balance in 2009) and Spain

would need 5-7 years with a surplus of 6.1% of GDP (its private sector surplus in 2009).

An additional factor expected to slow adjustment and contribute to a protracted period of large negative output gaps in indebted countries is the significant reallocation of supply needed as a response to persistent weakness in domestic demand. The emergence of substantial excess capacity, particularly in the non-tradable sector, will most likely take some time to be reallocated to other productive uses. Changes in domestic relative prices of non-tradables *vis-à-vis* tradables as well as rechanneling of capital and labour resources from the non-tradable to the tradable sector will need to occur. Price and wage flexibility will thus influence the speed of the adjustment processes. ⁽³⁰⁾

Conclusion

Business cycle synchronisation is high in the euro area, probably reflecting the fact that shocks have so far been rather symmetrical across euro-area Member States. The increase in cyclical differences in the period 2006-2008 can mainly be attributed to differences in business cycles amplitude between Ireland, Greece, Spain and Finland, on the one hand, and the rest of the euro area, on the other hand. These were in turn driven mainly by excessive private demand fostered by unprecedented credit growth. The financial crisis brought business cycles closer in line due to a strong correction in the credit and private demand dynamics in Ireland, Greece and Spain. In Finland, the fall in output gap came from a downward adjustment of domestic demand coupled with a drop in net exports.

Looking ahead, business cycle differences could widen again in the medium-term as indebted countries could suffer from a prolonged period of sluggish growth. Adjustment to excessive private sector debt could indeed turn into protracted processes in these countries, involving both long periods of weak domestic demand and important restructuring on the supply side. Besides contributing to domestic growth, structural reforms aimed at increasing price and wage flexibility as well as at supporting resource reallocation would contribute to maintain business cycles more aligned.

⁽²⁹⁾ Commission Spring economic forecast 2010.

⁽³⁰⁾ European Economy 1 (2010), 'Surveillance of Intra-Euro-Area, Competitiveness and Imbalances'