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EUROPEAN COMMISSION  
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# **Management of fiscal risks: macroeconomic scenarios, contingent liabilities**

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# Mistaken assumptions on the external environment are in good part to blame


- The external environment explains a relatively important part of the forecast error (up to 60% of the error made in forecasting GDP or inflation at EU level);
- The forecast error explained by the external environment increases when the forecast horizon lengthens and less information is available;
- The international environment has a greater responsibility in mistakes in EU GDP and inflation than assumptions on interest rates, exchange rates and oil prices (Keereman, 2003).

Forecast errors for GDP:		
Test for unbiasedness		
	Bias (unbiasedness test)	
	$\alpha$ (ME)	Signif. $\alpha=0$
<b>Current-year forecast</b>		
EU	0.11	0.37
euro area	0.28	0.15
<b>Year-ahead forecast</b>		
EU	0.34	0.09
euro area	0.46	0.18



# Some issues for discussion

- I. **Macroeconomic scenarios:  
the key is the medium term;**
  
- II. **Contingent liabilities:  
unknown unknowns.**



# Making predictions is difficult, especially about the future

- Economic forecasts are key to budgetary projections. *Ex-post*, lower/higher-than-projected growth affects the fiscal stance.
- Commission's forecasts outperform naïve ones, but still forecast for GDP growth has, on average, proven to be 0.5 pp. too high/low even for the current year (Melander *et al.*, 2007).
- Overall, no marked improvements have been recorded in the quality of the forecasts over time.
- Forecast track record of IMF, OECD, Consensus and Commission is broadly comparable, with the timing of the forecast playing a substantial role.

Forecast errors for GDP								
	Sample	Mean Error		Mean Absolute Error		Root Mean Squared Error		
		current year	year ahead	current year	year ahead	current year	year ahead	
		<b>EU</b>	69/05	0.11	0.34	0.5	0.86	0.72
<b>euro area</b>	98/05	0.28	0.46	0.38	0.69	0.53	0.86	

# International forecasts at least not as biased as some official growth forecasts

**Table 1. Accuracy of official growth forecasts underpinning public finance projections: one-year-ahead forecasts of potential GDP growth and real GDP growth**

Country	Source of official forecast	Date of release	<i>M</i>	<i>MA</i>	<i>RMSE</i>	<i>No bias</i>	<i>No corr</i>	<i>THEIL</i>
<b>Part A. Potential GDP growth</b>					<b>1987–2003</b>			
Germany	<i>Finanzbericht</i>	End of August	–0.39	0.63	0.70	0.01	0.36	0.84
France	<i>Projet de loi de finances</i>	End of September/ beginning of October	–0.29	0.34	0.40	0.00	0.73	0.69
Italy	<i>Documento di programmazione economico-finanziaria (DPEF)</i>	End of June/beginning of July	–0.55	0.55	0.67	0.00	0.00	1.09
UK	<i>Financial Statement and Budget Report</i>	End of March	–0.05	0.26	0.40	0.62	0.03	0.51
<b>Part B. Real GDP growth</b>					<b>1987–2005</b>			
Germany	<i>Ministry of Finance press release</i>	October	–0.95	1.20	1.47	0.00	0.22	0.74
	<i>European Commission</i>	Autumn	–0.25	1.21	1.39	0.51	0.80	0.75
France	<i>Projet de loi de finances</i>	End of September/ beginning of October	–0.43	1.19	1.45	0.25	0.84	1.04
	<i>European Commission</i>	Autumn	–0.16	0.99	1.19	0.61	0.83	0.85
Italy	<i>Documento di programmazione economico-finanziaria (DPEF)</i>	End of June/beginning of July	–0.86	1.15	1.44	0.01	0.23	1.20
	<i>European Commission</i>	Autumn	–0.51	0.84	0.98	0.01	0.65	0.82
	<i>Financial Statement and Budget Report</i>	End of March	0.12	0.96	1.27	0.72	0.31	0.95
UK	<i>European Commission</i>	Autumn	0.19	0.90	1.18	0.56	0.01	0.88

*Notes:* Part A and B of the table display accuracy statistics referring to official one-year-ahead forecasts of potential GDP growth and real GDP growth respectively. *M*, *MA* and *RMSE* are the mean, mean absolute and root mean squared forecast errors, respectively. *No bias* reports the probability value for zero mean forecast errors. *No corr* reports the probability value of the Lagrange multiplier test for uncorrelated forecast errors up to lag two. *THEIL* reports the *RMSE* of a given forecast relative to the *RMSE* of an alternative forecast. The alternative forecast assumes that growth is unchanged compared to the previous year.

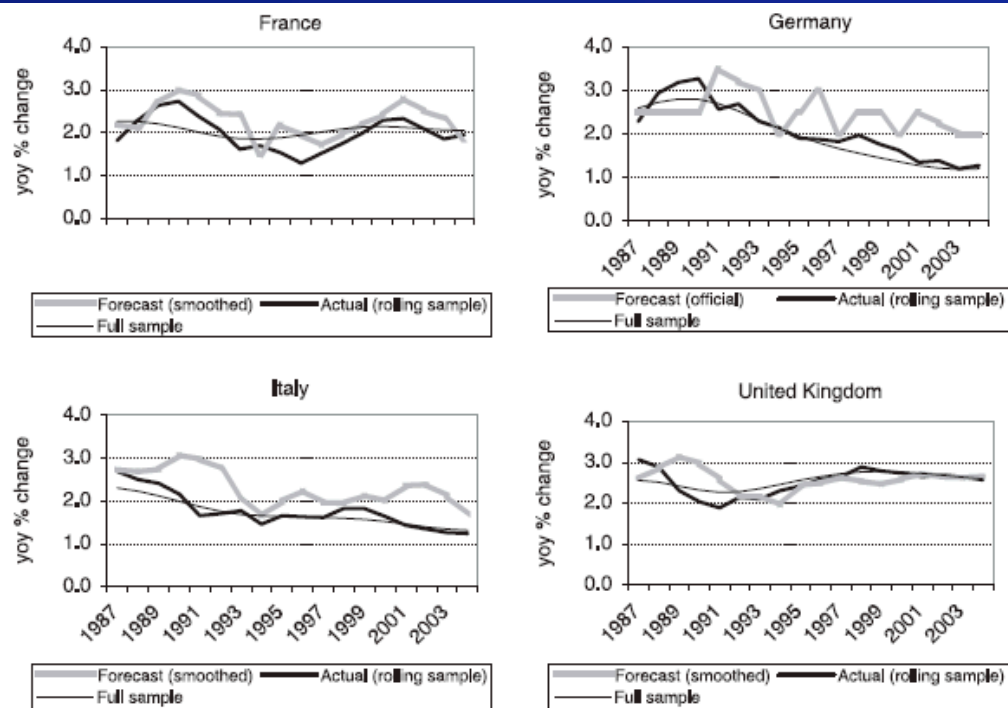
*M*, *No bias* and *No corr* obtained from ordinary least square (OLS) regressions of forecast error on a constant.

*Sample:* 1987–2003 for the forecasts of potential GDP growth, 1987–2005 for the forecasts of real GDP growth (1992–2005 for Germany).

*Source:* European Commission, Ministries of Finance of France, Germany, Italy and the United Kingdom.

# Biased forecasts of real GDP affect potential output estimates and hence the fiscal stance

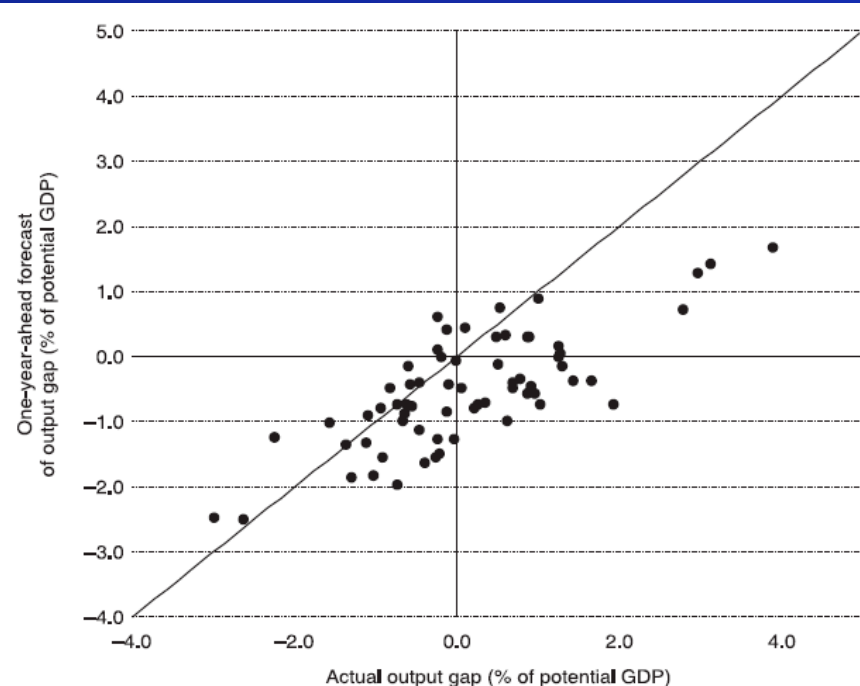
- Upward bias in real GDP growth translates in optimistic assessment of potential growth;
- If potential GDP is overestimated, a fiscal policy that appeared prudent *ex ante* might result as expansionary *ex post*.



**Figure 1. Potential GDP growth: one-year-ahead forecast, *ex-post* estimate, full sample smoothed**

*Note:* See Box 2 for the estimation procedure.

*Source:* European Commission, Ministry of Finance of France, Germany, Italy and the United Kingdom.



**Figure 2. Forecast versus actual output gap**

*Note:* The figure compares the expected one-year-ahead output gap estimate derived from official growth projections underpinning budget plans of France, Germany, Italy and the United Kingdom with the *ex-post* output gap outcomes estimated by the procedure described in Box 2.

*Sample:* 1987–2003.

*Source:* European Commission, Ministry of Finance of France, Germany, Italy and the United Kingdom.

# Independent forecasts as a way to improve accuracy

- Most EU Member States rely on ‘in-house’ macroeconomic forecasts for their budgetary plans. The few exceptions are Austria, Belgium and the Netherlands.

**Table 6. Accuracy of independent one-year-ahead forecasts of real GDP growth underpinning public finance projections**

Country	Independent forecaster	Date of release	Real GDP growth					
			1987–2005			1994–2005		
			<i>M</i>	<i>RMSE</i>	<i>No bias</i>	<i>M</i>	<i>RMSE</i>	<i>No bias</i>
Austria	<i>Wirtschaftsforschungsinstitut (WIFO)</i>	September	0.25	1.43	0.46			
Belgium	<i>Bureau fédéral du Plan (BFP)</i>	July/September				–0.11	1.35	0.80
The Netherlands	<i>Centraal Planbureau (CPB)</i>	September	0.23	1.34	0.57			

*Notes:* The table displays accuracy statistics of one-year-ahead forecasts of real GDP produced by independent institutions and used by the Ministries of Finance to build budgetary projections. *M* and *RMSE* are the mean and root mean squared forecast errors, respectively. *No bias* reports the probability value for zero mean forecast errors. *M* and *No bias* obtained from ordinary least square (OLS) regressions of the forecast error on a constant.

*Source:* European Commission, WIFO Austria, Bureau fédéral du Plan Belgium, CPB the Netherlands.

# Does long-term growth matter for sustainability?

- Impact on the sustainability indicator of changes in macroeconomic assumptions is surprisingly limited;
- What is more important is the starting point: budgetary consolidation on the medium term can very efficiently limit the public finance sustainability challenge over the long-term.

Impact on the S2 indicator (main scenario)											
	Higher life expectancy				Higher labour productivity	Higher employment of older worker	Higher employment		Higher interest rate		
	Total	Impact on					If due to an increase in labour supply	If due to an decrease in the NAIRU	Total impact	of which	
		Pensions	Health care	Long-term care						IBP	LTC
EU24	0.5	0.2	0.2	0.1	-0.3	-0.2	-0.1	-0.3	0.2	0.6	-0.5
EU11	0.5	0.2	0.2	0.1	-0.3	-0.2	-0.1	-0.3	0.1	0.6	-0.5
Standard deviation	0.2	0.1	0.1	0.1	0.3	0.3	0.1	0.2	0.6	0.3	0.4





## Government expenditure reacts to potential output dynamic in the medium term

- On average, long-run elasticity of government expenditure with respect to GDP in EU-15 is slightly below unit, meaning the expenditure is linked to potential output by roughly a one-to-one relationship;
- It is significantly higher than unity in catching-up countries, in fast-ageing countries, in low debt countries and in countries with weak numerical rules for the control of government spending;
- On average, government expenditure is adjusted to potential output in about 3 years;
- Anglo-Saxon and Nordic countries exhibiting general higher speed of adjustment than Southern European countries (Arpaia and Turrini, 2008).

# A taxonomy of government liabilities according to the degree of certainty

known knowns

	<b>Non-contingent liabilities</b> (the existence of government obligations does not depend upon particular events)	<b>Contingent liabilities</b> (the existence of obligations depends upon the realization of particular events)
<b>Explicit</b> (government obligations have legal basis)	<b>I</b> <ul style="list-style-type: none"> <li>• Government debt</li> <li>• Government expenditures as stated in budget law</li> <li>• Provisions (e.g., accrued-to-date pension rights from unfunded schemes)</li> </ul>	<b>II</b> <ul style="list-style-type: none"> <li>• Government individual guarantees on the debt issued by public and private entities</li> <li>• Government umbrella guarantees (e.g., on household mortgages,...)</li> <li>• Government insurance schemes (on bank deposits, on returns from private pension funds,...)</li> </ul>
<b>Implicit</b> (government obligations do not have legal basis and arise as a consequence of expectations created by past practice or pressures by interest groups)	<b>III</b> <ul style="list-style-type: none"> <li>• Future welfare payments (pension payments related with pension rights which have not matured yet, future health care payments,...)</li> <li>• Future government expenditures related to recurrent operations (e.g., capital stock refurbishment,...)</li> </ul>	<b>IV</b> <ul style="list-style-type: none"> <li>• Bail out of defaulting public sector or private entities (public corporations, banks or other private financial institutions, pension and social security funds,...)</li> <li>• Disaster relief</li> <li>• Environmental damage</li> <li>• Military financing</li> </ul>

unknown unknowns (known only ex post)



## Boundaries of governments affect what we know about fiscal risks

- In ESA, government-controlled units are classified in the corporate sector or in government depending whether sales cover more or less than 50% of costs. This criterion makes sense in compilation of GDP, when there is a need to decide whether output should be valued according to prices or according to costs, it makes less sense in fiscal surveillance.
- A public enterprise whose sales cover only 51% of its costs is not viable without continuous government support: ultimately these costs end up in the government deficit. More stringent rules on the sectoral classification of public enterprises would improve risk monitoring.

# Stock-flow adjustment captures 'hidden deficits' linked to wider public sector operations

Debt dynamics: Portugal										
(% of GDP)	average 2002-05	2006	2007		2008		2009		2010	2011
			COM	SP	COM	SP	COM	SP	SP	SP
<b>Gross debt ratio<sup>1</sup></b>	<b>58.6</b>	<b>64.7</b>	<b>63.6</b>	<b>64.4</b>	<b>64.1</b>	<b>64.1</b>	<b>64.3</b>	<b>62.5</b>	<b>59.7</b>	<b>56.7</b>
Change in the ratio	2.7	1.2	-1.2	-0.3	0.6	-0.3	0.2	-1.6	-2.8	-3.0
<i>Contributions<sup>2</sup>:</i>										
<b>Primary balance</b>	<b>1.1</b>	<b>1.1</b>	<b>-0.2</b>	<b>0.1</b>	<b>-0.6</b>	<b>-0.5</b>	<b>-0.1</b>	<b>-1.3</b>	<b>-2.2</b>	<b>-2.5</b>
<b>"Snow-ball" effect</b>	<b>0.8</b>	<b>0.3</b>	<b>-0.2</b>	<b>0.0</b>	<b>0.5</b>	<b>-0.1</b>	<b>0.3</b>	<b>-0.4</b>	<b>-0.7</b>	<b>-0.5</b>
<b>Stock-flow adjustment</b>	<b>0.8</b>	<b>-0.2</b>	<b>-0.8</b>	<b>-0.4</b>	<b>0.7</b>	<b>0.4</b>	<b>0.0</b>	<b>0.2</b>	<b>0.2</b>	<b>0.0</b>
<i>Of which:</i>										
Cash/accruals diff.	0.2	-0.1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Acc. financial assets	0.6	-0.2	n.a.	-0.1	n.a.	-0.3	n.a.	-0.2	-0.1	0.0
<i>Privatisation</i>	-0.3	-1.0	n.a.	0.5	n.a.	0.4	n.a.	0.3	0.2	0.1
Val. effect & residual	0.0	0.1	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Notes:

<sup>1</sup>End of period.

<sup>2</sup>The change in the gross debt ratio can be decomposed as follows:

$$\frac{D_t}{Y_t} - \frac{D_{t-1}}{Y_{t-1}} = \frac{PD_t}{Y_t} + \left( \frac{D_{t-1}}{Y_{t-1}} * \frac{i_t - y_t}{1 + y_t} \right) + \frac{SF_t}{Y_t}$$

where  $t$  is a time subscript;  $D$ ,  $PD$ ,  $Y$  and  $SF$  are the stock of government debt, the primary deficit, nominal GDP and the stock-flow adjustment respectively, and  $i$  and  $y$  represent the average cost of debt and nominal GDP growth (in the table, the latter is decomposed into the growth effect, capturing real GDP growth, and the inflation effect, measured by the GDP deflator). The term in parentheses represents the "snow-ball" effect. The stock-flow adjustment includes differences in cash and accrual accounting, accumulation of financial assets and valuation and other residual effects.

Source:

Stability programme (SP); Commission services' autumn 2007 economic forecasts (COM); Commission services' calculations

# Risks go beyond the public sector: fiscal cost of some past banking crises

Intervention/Resolution Policy Tools													
Country	Period	Fiscal Cost % of GDP	Guarantee		Liquidity support		Deposit Freezes	Forbearance			Repeated Recaps	Public AMC	Public Debt Relief Programme
			Explicit	> 75% state-owned	to DMB	to NBFIs		A	B	C			
Australia	1989-92	1.9	no	no	no	no	no	no	yes	no	no	no	no
Finland	1991-94	11.0	yes	no	yes	-	no	no	yes	no	no	yes	no
France	1994-95	0.7	no	no	no	no	no	no	yes	no	no	yes	no
Hungary	1991-95	10.0	no	yes	yes	-	yes	no	no	yes	yes	no	no
Japan	1992-	20.0	yes	no	yes	-	no	no	yes	yes	yes	no	no
New Zealand	1987-90	1.0	no	no	yes	-	no	no	no	no	no	no	no
Norway	1987-93	8.0	yes	no	yes	-	no	no	yes	no	no	no	no
Poland	1992-95	3.5	no	yes	yes	-	no	no	yes	yes	no	no	no
Slovenia	1992-94	14.6	yes	yes	no	no	yes	yes	no	yes	no	yes	no
Spain	1977-85	5.6	no	no	yes	-	no	no	yes	no	no	no	no
Sweden	1991-94	4.0	yes	no	no	no	yes	no	no	no	no	yes	no
Turkey	1982-85	2.5	no	no	no	no	yes	no	no	no	no	no	no
Turkey	1994	1.1	yes	-	no	no	yes	no	no	yes	no	no	no
United States	1981-91	3.2	no	no	no	no	yes	yes	yes	yes	no	no	no

Source: Honohan, Klingebiel, 2000

# A few rough numbers on the fiscal cost of the current financial crisis

% of GDP	Recapitalisation		Special veichles	Guar. liquidity facility at CB	Guarantee on short term borrowing by banks		Fees and dividends	Assets exchange/purchase and loans	State Guarantee on Deposits		Total net of fees
	Effective	Funds still to be used			Budgeted	Potential			Budgeted	Potential	
BE	3.5		no fig.		17.2	Unlimited	0.1	-	0.0		20.6
BG						-		-			
CZ											
DK	2.4		Possible	Unlimited		Unlimited					2.4
DE	0.6	3.1	0.3	1.0	0.8	15.9	no fig.			Unlimited	20.8
EE										Unlimited	
EL		3.3				6.1		2.0		Unlimited	11.5
ES						9.1		4.6			13.7
FR	0.6	1.5			0.2	16.3	0.0				18.4
IE		8.6				214.4				Unlimited	223.0
IT		no fig.					no fig.	2.5 CB + no fig. Gov		Unlimited	2.5
CY											
LV		no fig.									
LT											
LU	7.7				12.0						19.7
HU											
MT							-	-			
NL	4.6	1.7				34.0	0.1	6.0			46.1
AT		5.3			6.9	29.9			6.9	Unlimited	42.1
PL		no fig.				no fig.					
PT						12.0					12.0
RO											
SI										Unlimited	
SK										Unlimited	
FI		no fig.				no fig.					
SE		0.5				48.0					48.5
UK	4.0	0.9		13.7		17.1	0.6				35.2
EU-16	0.7	1.7	> 0.1	0.3	1.2	> 16.5	0.0	> 1.0	0.2		21.5
EU-27	1.2	1.4	> 0.1	2.2	0.9	> 16.0	0.1	> 0.8	0.2		22.4

# A complete surveillance should look at net worth: balance sheets

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
BE	-	-	-	-	-	-114.56	-114.68	-115.30	-110.95	-106.95	-102.37	-96.87	-94.42	-92.57	-89.88	-83.46	-81.77	-77.16	-73.80
BG	-	-	-	-	-	-	-	-	-	-	-	19.9	11.0	9.7	7.3	6.8	6.3	11.1	-
CZ	-	-	-	-	-	-	-	-	-	-	-	-	-	15.9	7.2	9.4	10.7	9.9	-
DK	-	-	-	-	-	-31.5	-36.0	-36.2	-33.8	-36.3	-30.6	-25.7	-21.9	-20.4	-17.7	-12.3	-9.3	-2.7	-
DE	-	-	-	-	-	-	-30.8	-33.8	-33.5	-37.1	-35.6	-34.9	-37.3	-41.3	-44.1	-47.8	-50.0	-48.7	-
EE	-	-	-	-	-	-	-	-	-	-	-	30.7	28.7	28.7	29.2	30.1	30.8	30.1	-
IE	-	-	-	-	-	-	-	-	-	-42.5	-27.5	-16.9	-13.2	-14.3	-11.7	-9.2	-7.0	-1.7	-0.3
EL	-	-	-	-	-	-	-83.2	-83.6	-78.8	-74.4	-72.0	-88.9	-93.2	-94.1	-87.8	-88.0	-83.8	-76.4	-68.6
ES	-	-31.5	-33.3	-35.2	-43.5	-46.4	-51.6	-55.5	-54.2	-53.7	-47.7	-44.2	-41.6	-40.2	-36.8	-34.5	-30.3	-24.4	-19.3
FR	-	-	-	-	-	-	-37.5	-41.8	-42.3	-40.6	-33.5	-35.2	-36.7	-41.8	-44.2	-45.2	-43.1	-37.5	-34.4
IT	-	-	-	-	-	-	-99.1	-104.5	-104.7	-106.9	-100.9	-95.6	-96.3	-95.7	-92.8	-92.4	-93.7	-90.6	-87.6
CY	-	-	-	-	-	-	-	-	-	-	-	-33.0	-31.7	-35.6	-39.8	-40.4	-39.9	-37.9	-
LV	-	-	-	-	-	-	-	-	-	30.5	-	-	4.7	7.9	5.7	-	-	-	-
LT	-	-	-	-	-	-	51.7	49.3	31.5	30.4	30.5	25.8	17.1	12.1	14.2	16.2	16.9	17.6	-
LU	-	-	-	-	-	-	37.7	41.0	41.6	46.8	47.8	50.7	58.2	55.5	57.0	52.3	49.0	-	-
HU	106.9	89.8	59.2	47.4	19.3	-3.3	-24.4	-25.3	-24.9	-31.8	-33.6	-31.9	-32.0	-36.7	-37.3	-41.7	-46.1	-51.8	-
MT	-	-	-	-	-	-	-	-	-	-	-	-	-	-41.3	-58.1	-53.1	-51.5	-50.7	-47.2
NL	-30.3	-33.4	-34.5	-40.3	-44.8	-44.6	-54.1	-52.8	-49.7	-48.2	-36.7	-34.9	-33.0	-34.9	-36.2	-37.6	-35.0	-31.6	-
AT	-	-	-	-	-	-	-45.7	-47.6	-43.4	-41.6	-42.1	-39.8	-40.7	-42.0	-40.9	-42.5	-41.9	-37.9	-
PL	-	-	-	-	-	-	15.0	5.7	-0.3	-6.3	-13.4	-15.5	-18.5	-22.1	-22.7	-20.8	-21.8	-20.4	-
PT	-	-	-	-	-	-	-25.1	-27.3	-32.1	-33.3	-30.8	-27.4	-29.5	-34.0	-36.3	-40.2	-43.9	-43.0	-43.2
RO	-	-	-	-	-	-	-	-	-	47.6	41.5	45.5	32.9	28.1	22.7	19.3	16.2	12.4	-
SI	-	-	-	-	-	-	-	-	-	-	-	-	15.2	13.6	8.9	9.0	7.7	9.1	16.3
FI	-	-	-	-	-	-	4.0	6.7	7.5	14.5	50.1	31.1	31.5	31.4	39.6	45.8	57.7	67.3	71.1
SE	-	-	-	-	-	-	-25.6	-26.6	-24.7	-22.1	-12.5	-5.5	-1.3	-6.5	-3.3	-0.7	4.1	16.1	20.9
UK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Source: Commission Services