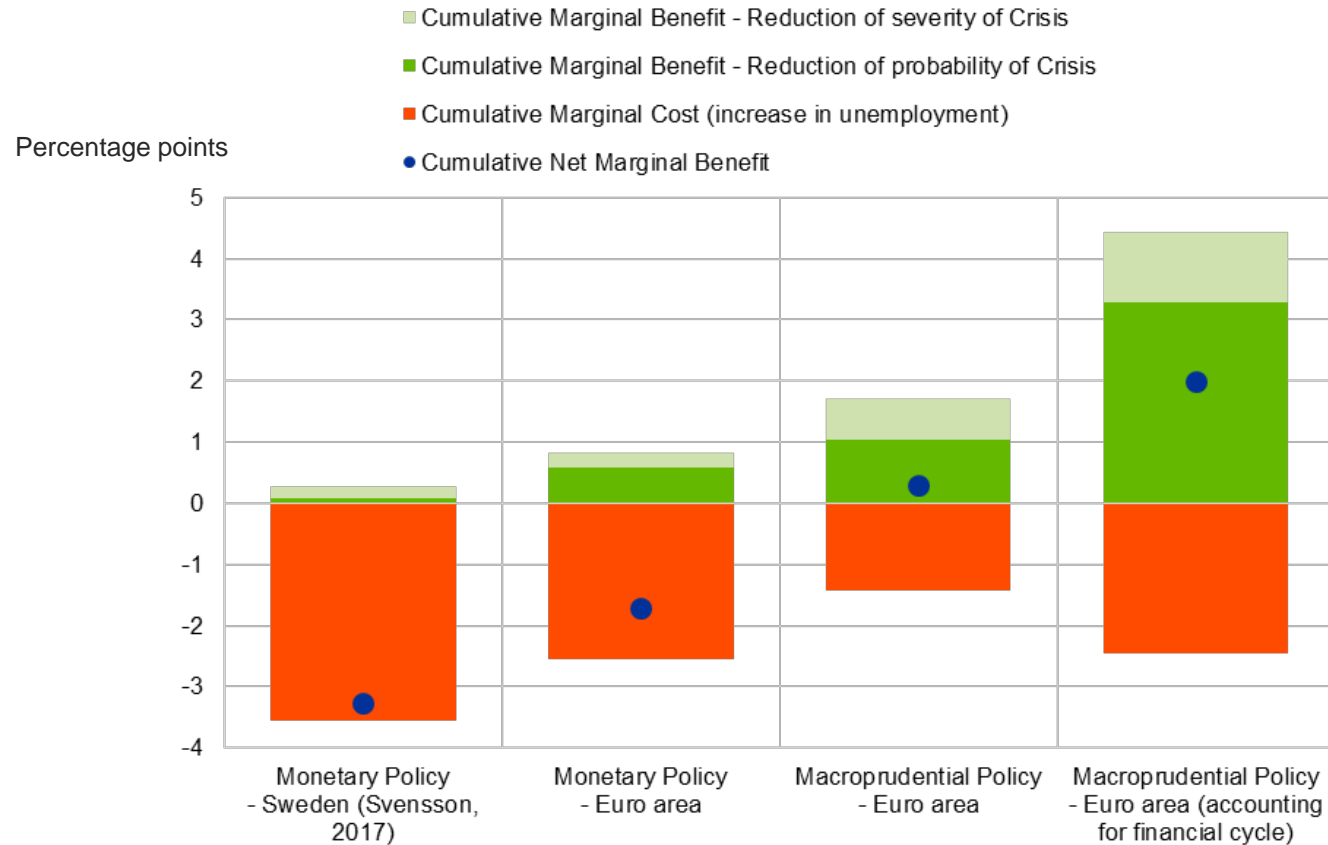


Costs and benefits of "leaning against the wind": an illustration

Net marginal costs of "leaning against the wind": Monetary policy vs. macroprudential policy

(Cumulative impact after 40 quarters; in percentage points of the loss function)



Sources: Svensson (2017), Darracq Pariès, Kok and Rodriguez Palenzuela (2011) and ECB calculations.

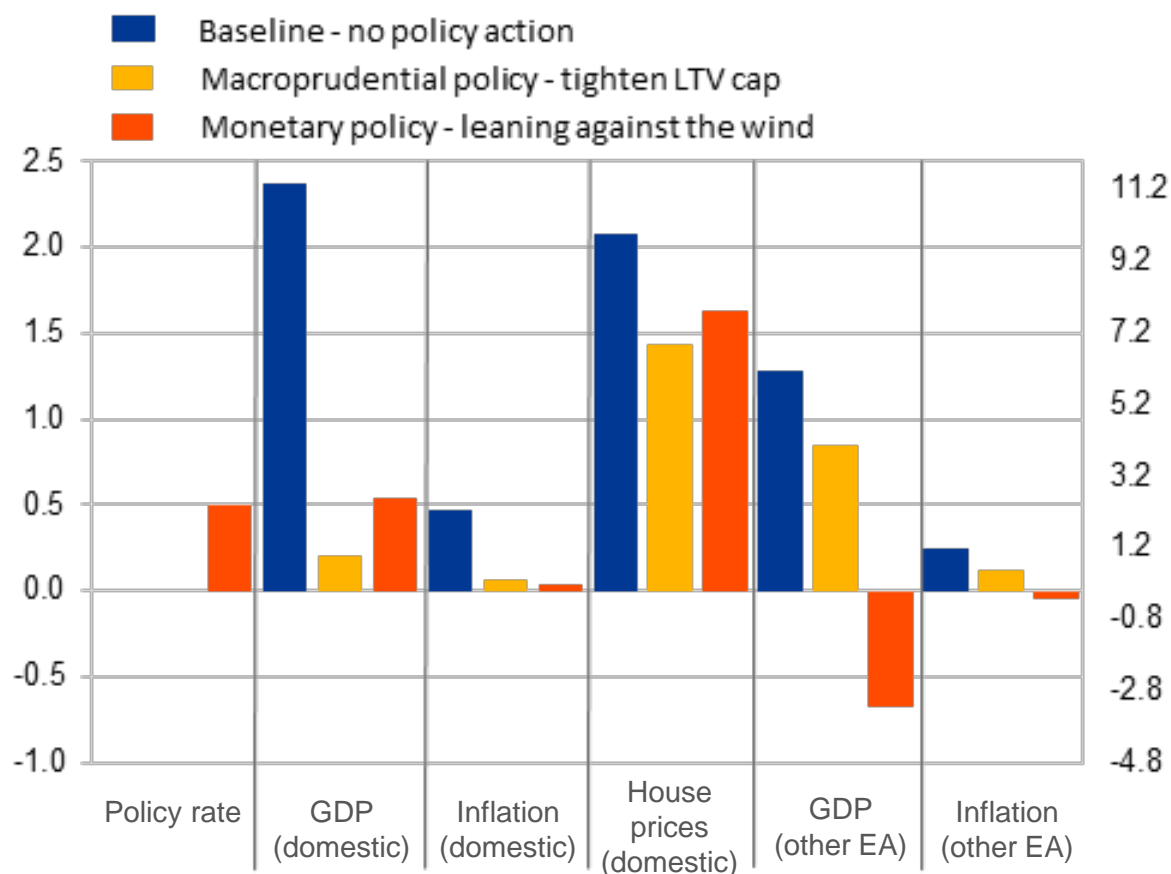
Note: The monetary policy measure is a 1 pp. increase of the policy rate over 4 quarters. The macroprudential measure considered here is a 1 pp. increase of the capital buffer requirement. The "financial cycle" variable is a composite measure of four indicators including total credit growth, house price growth, interest service burden and debt-to-income ratio.

Figure 1

Leaning against house price bubbles

Leaning against house price bubbles: national LTV measure vs. single monetary policy

(Cumulated responses after two years: real GDP (% deviation from baseline, left-hand scale); inflation and policy rate (pp. deviation from baseline, left-hand scale); house prices (percentage deviation from baseline, right-hand scale))



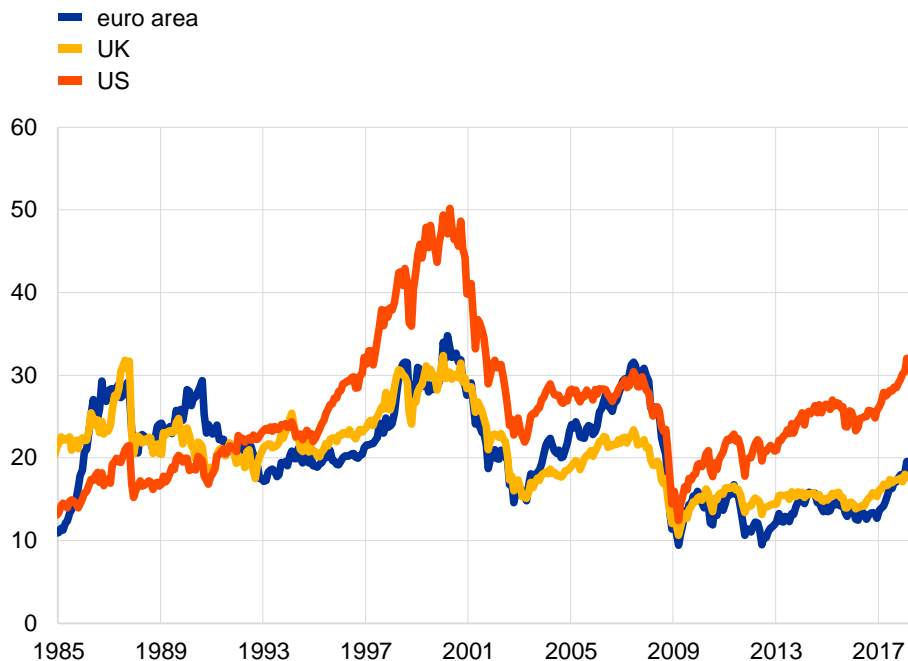
Sources: Darracq Pariès, Kok and Rancoita (2017) and ECB Financial Stability Review November 2015.

Note: "Baseline" refers to scenario with unchanged monetary and macroprudential policies over a two-year horizon assuming 10% growth in home country house prices. "Tighter LTV" refers to scenario where a cap to LTV ratios is introduced in the home country while monetary policy is assumed unchanged. "Tighten MP (LAW)" refers to a scenario of increasing monetary policy rates, while macroprudential policy is kept unchanged; i.e. leaning against the wind (LAW).

Figure 2

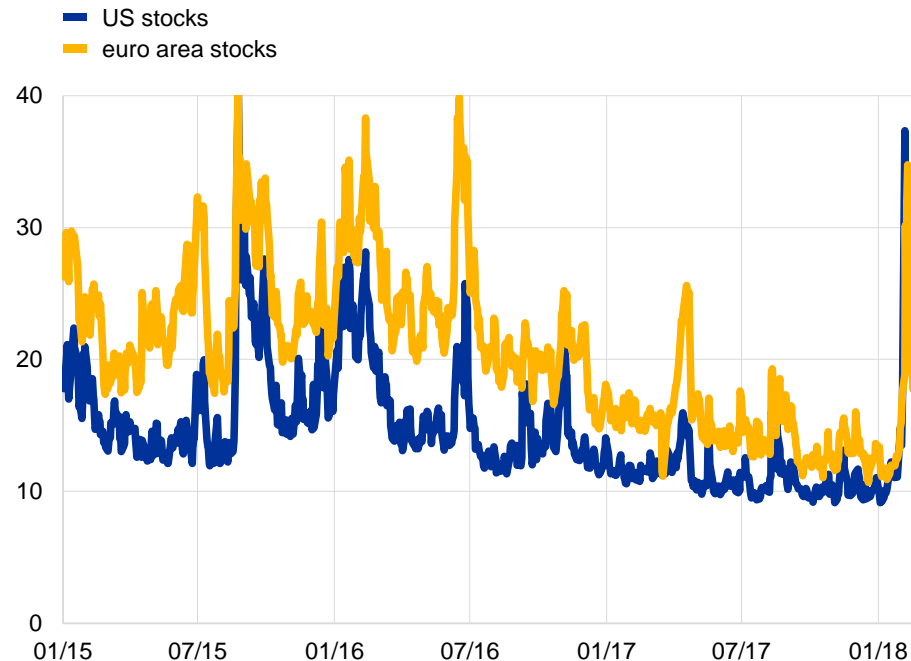
Asset prices: Stock markets

Cyclically adjusted price/earnings (CAPE) ratio (Jan. 1985 – Feb. 2018; monthly data; percentages)



Sources: Thomson Financial Datastream and ECB calculations. US CAPE ratio from Robert Shiller's homepage: (<http://www.econ.yale.edu/~shiller/>).

Implied volatility for US and euro area stock markets (Jan. 2015 – Feb. 2018; annualised volatility in percentage points)



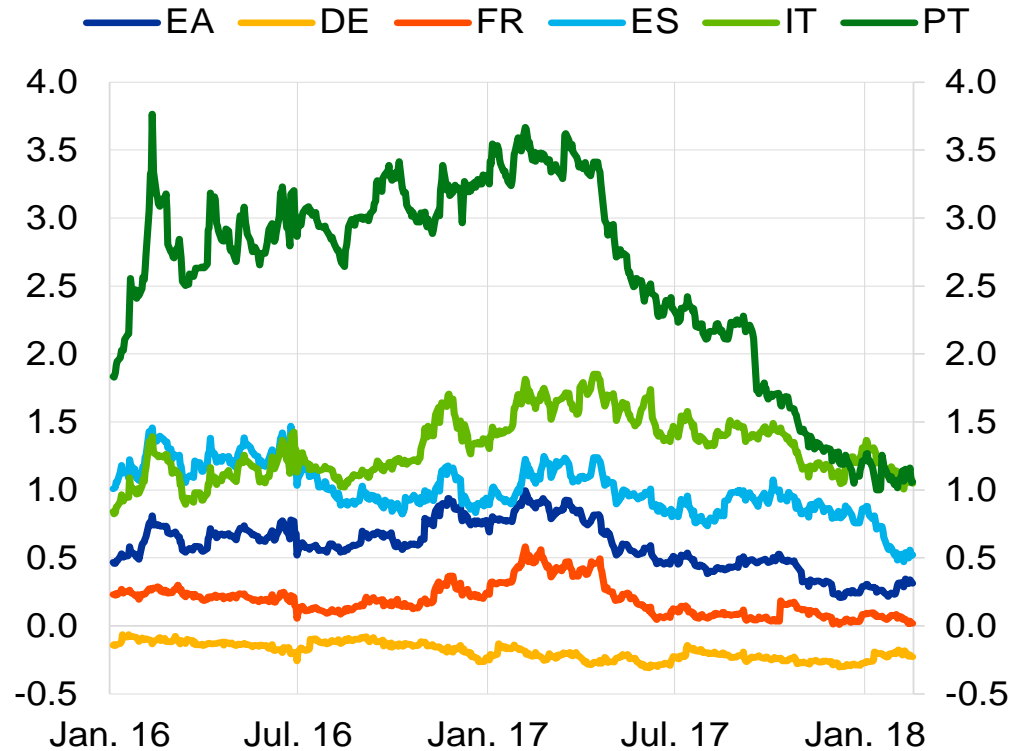
Sources: Bloomberg and ECB calculations.

Note: Implied volatility for the S&P 500 index, the EURO STOXX 50 index, and US and German ten-year bond futures.

Asset prices: Sovereign bond markets

Euro area 10y sovereign yield spreads vs overnight index swap

(Jan. 2016 – Feb. 2018; percentages per annum)



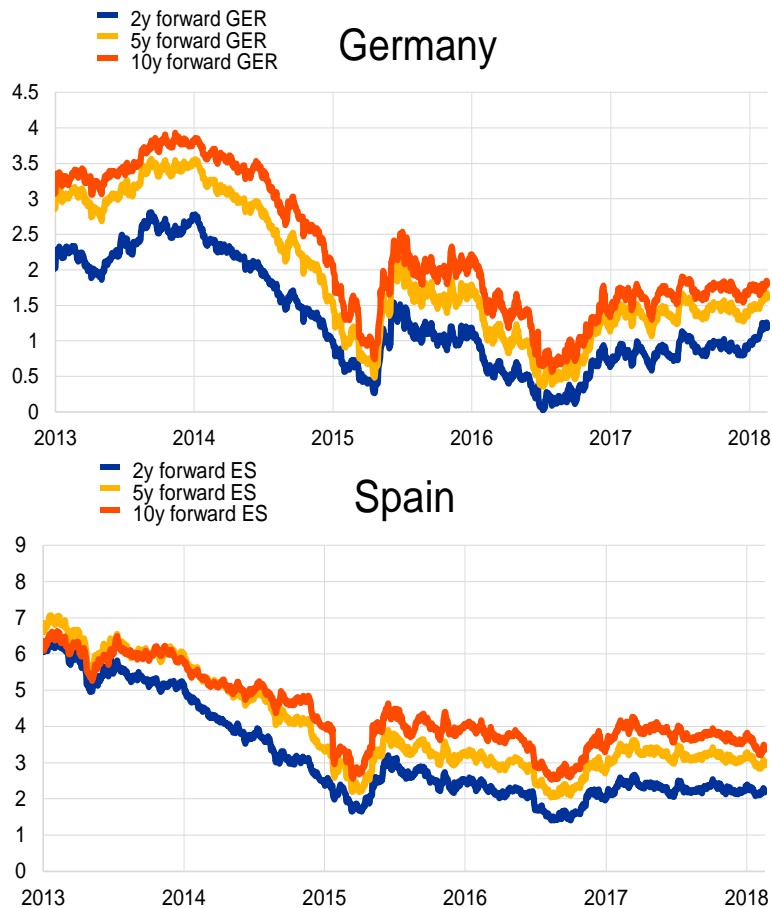
Sources: Bloomberg, Thomson Reuters, ECB and ECB calculations.

Notes: EA indicates the GDP weighted average of 10-year sovereign yields.

Asset prices: Bond markets

Market expectations of 10 year bond yields for Germany and Spain, 2, 5 and 10 years forward

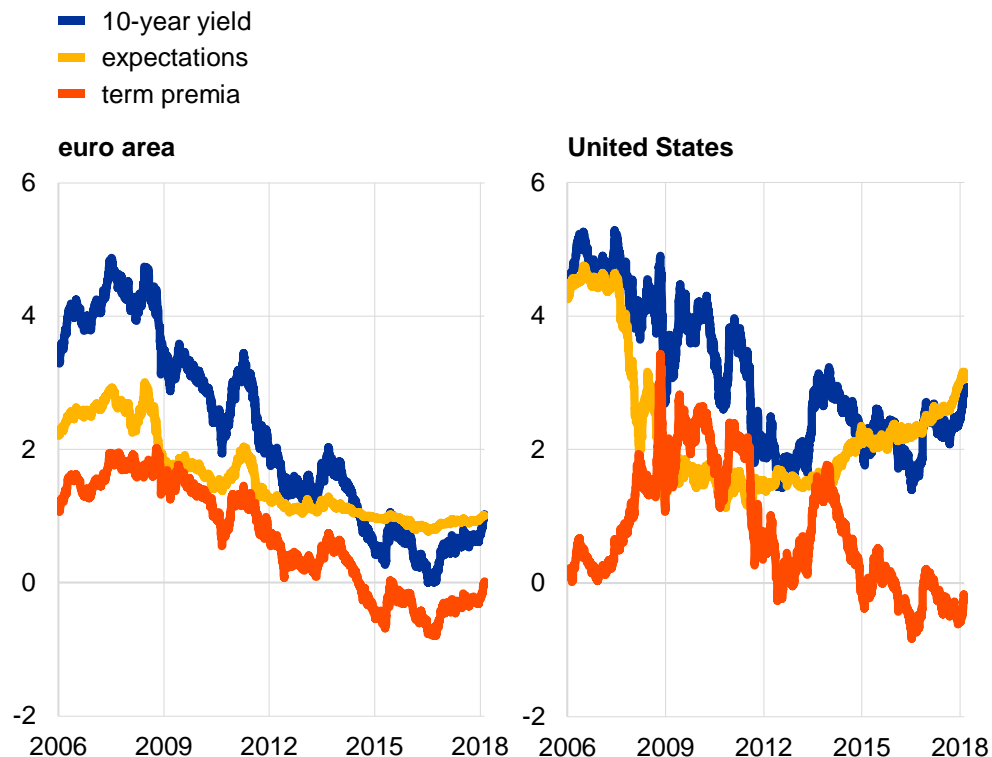
(Jan. 2013 – Feb. 2018; percentages per annum)



Sources: Bloomberg, Thomson Reuters, ECB and ECB calculations.

Decomposition of euro area and US ten-year interest rates

(Jan. 2006 – Feb. 2018; percentages per annum)



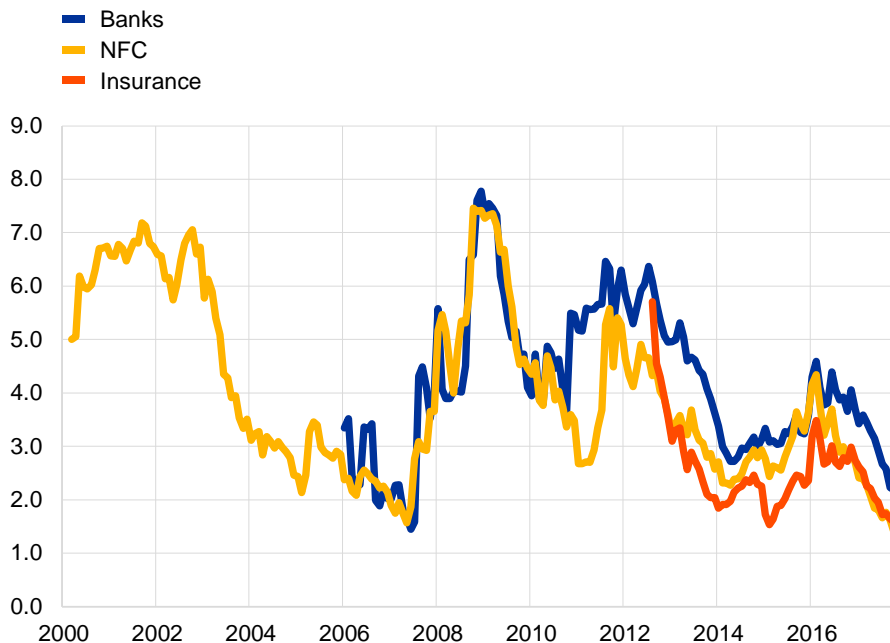
Sources: Thomson Reuters Datastream, Federal Reserve Bank of New York and ECB calculations.

Notes: The US decomposition is based on zero-coupon yield data. The euro area decomposition is based on ten-year overnight index swap (OIS) rates. For further details, see the note to Chart 2.10 in ECB's Financial Stability Review (November 2017).

Asset prices: Corporate bond markets

High-yield corporate bond spreads for euro area corporates

(Jan. 2007 – Jan. 2018; monthly data; percentages)

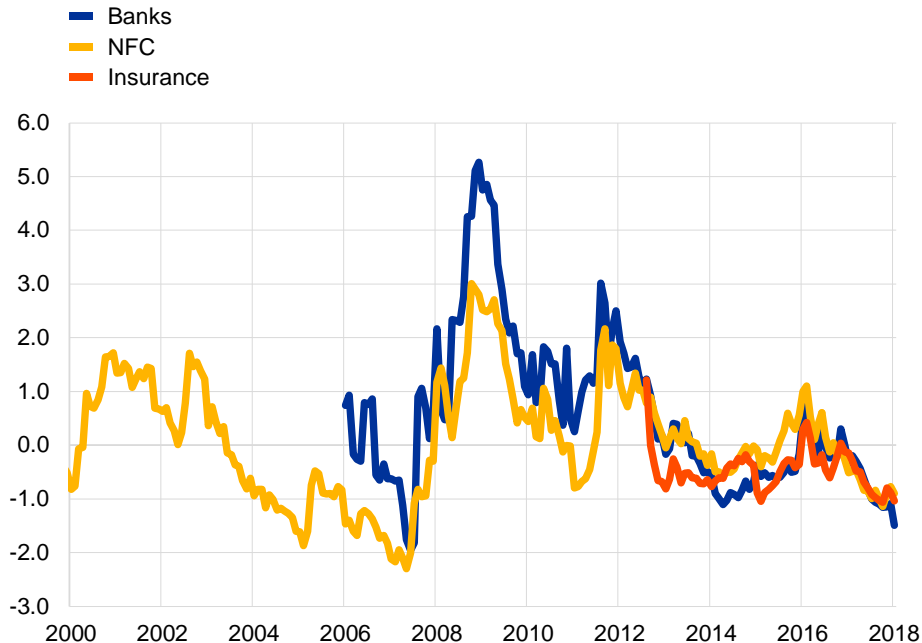


Sources: Merrill Lynch and ECB calculations.

Notes: The indices are computed as the mean of the individual senior unsecured bonds, Corporate bond spreads are measured by euro area asset swap spreads. Euro area is a composite of AT, DE, ES, FR, IT, NL, BE, FI and IE.

Estimated excess premia for euro area high-yield corporate bonds

(Jan. 2000 – Jan. 2018; monthly data; percentages)



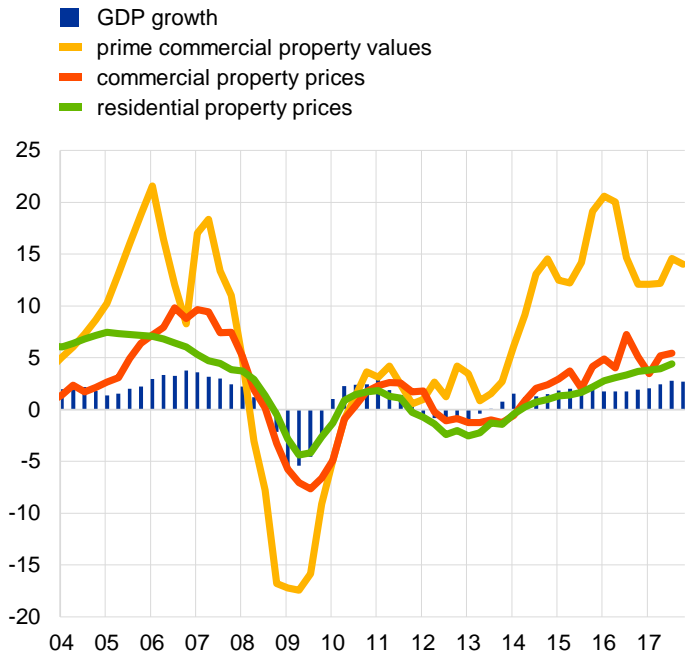
Source: Merrill Lynch, DataStream and ECB calculations).

Note: The excess bond premium is the deviation of the high-yield corporate credit spreads relative to the measured default risk of the issuer and the duration risk of the bond. For further details on the computation see Roberto De Santis, "Credit spreads, economic activity and fragmentation", ECB Working Paper No. 1930, July 2016.

Asset prices: Residential and commercial real estate

Residential and commercial property valuations at the euro area aggregate level

(Q1 2004 – Q3 2017; percentage changes per annum)

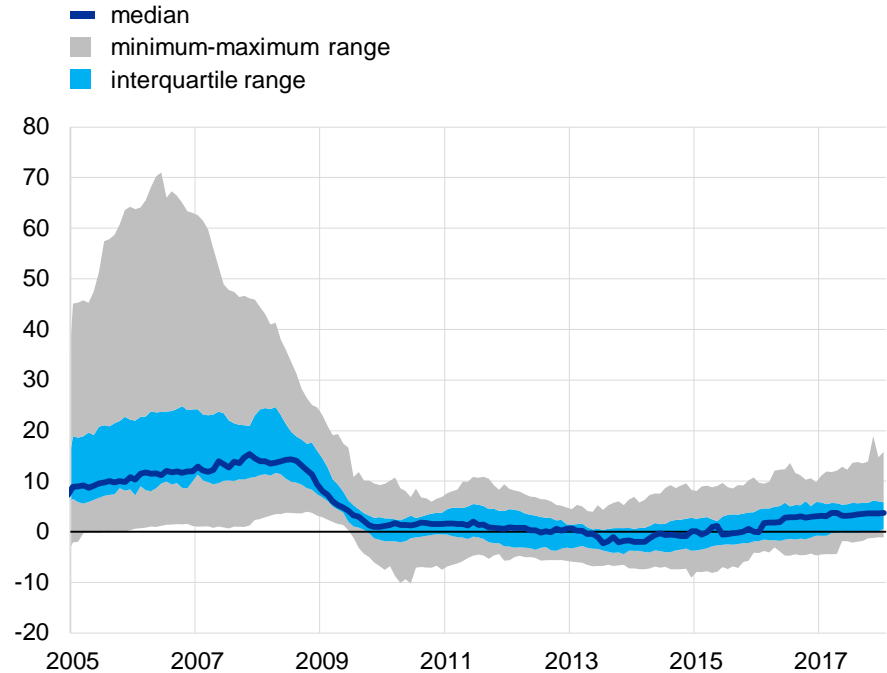


Sources: ECB estimates based on IPD, Jones Lang LaSalle and national data.

Notes: Data on prime commercial property values until Q4 2017. For prime commercial property, the euro area aggregate consists of prices in BE, DE, EL, ES, FI, FR, IE, IT, LU, NL, AT and PT.

Bank loans to the non-financial private sector

(Jan 2004 – Jan 2018; percentage changes per annum)



Source: ECB.

Note: Ranges refer to the cross-section of euro area countries.

Figure 7

Overview of macroprudential policy measures

Borrower-based instruments

LTV and DSTI/LTI activated or adjusted jointly, sometimes with maturity cap

	LTV limits (reduces LGD)	Income-based limits (reduces PD)	Max. maturity restriction (reduces long-term interest rate sensitivity)	Risk weights
Belgium				5 p.p. add-on on RRE (recommended)
Cyprus	70%, 80%	DSTI: 80% (65% in case of FX loans)		
Estonia	85%, 90%	DSTI: 50%	30 years	
Finland	90%, 95%			15%
Ireland	70%, 80%, 90%	New loans with LTI >3.5 cannot exceed 20% for FTBs and 10% for SSBs		100% on CRE
Latvia	90%, 95%	Internal DSTI limits		
Lithuania	85%	DSTI: 40%-60% w/ interest rate sensitivity test at origination	30 years	
Luxembourg				15% floor RRE for IRB (Recommendation) 75% for part of loan exceeding LTV>80% for STA
Netherlands	100%	DSTI: 10 - 30%	30 years	
Slovakia	80%, 90%, 100%	DSTI: 80% (subject to 2 p.p. interest rate increase p.a. if interest rate is not fixed)	30 years (8 years for unsecured loans)	
Slovenia	80%	DSTI: 50 - 67%		

Sources: National authorities in SSM countries

Overview of macroprudential policy measures

Capital-based measures as of 2 January 2018

Country	CCoB	CCyB	The higher of			Combined buffer requirement	
			G-SII buffer	O-SII buffer	SRB		
Austria	1.875%	0%		6 banks: 0.5%-1%	13 banks: 0.25%-1%	1.875%-2.875%	
Belgium	1.875%	0%		8 banks: 0.75%-1.5%		1.875%-3.375%	
Cyprus	1.875%	0%		6 banks: n/a		1.88%	
Estonia	2.5%	0%		3 banks: 0.5%-2%	All banks: 1%	3.5%-5.5%	
Finland	2.5%	0%		2 banks: 0.5%-2%		2.5%-4.5%	
France	1.875%	0%	3 banks: 0.75%-1.5%	6 banks: 0.1875%-1.125%		1.875%-3.375%	
Germany	1.875%	0%	1 bank: 1.5%	13 banks: 0.32%-1.32%		1.875%-3.375%	
Greece	1.875%	0%		4 banks: n/a		1.875%	
Ireland	1.875%	0%		6 banks: n/a		1.875%	
Italy	1.875%	0%	1 bank: 0.75%	4 banks: 0%-0.25%		1.875%-2.625%	
Latvia	2.5%	0%		6 banks: 0.75%-1%		2.5%-3.5%	
Lithuania	2.5%	0%		4 banks: 0.5%-2%		2.5%-4.5%	
Luxembourg	2.5%	0%		8 banks: 0.375%-0.75%		2.5%-3.25%	
Malta	1.875%	0%		3 banks: 0.375%-1.5%		1.875%-3.375%	
Netherlands	1.875%	0%	1 bank: 0.75%	5 banks: 0.75%-1.5%		3 banks: 2.25%	1.875%-4.125%
Portugal	1.875%	0%		6 banks: 0.063%-0.25%		1.875%-2.125%	
Slovakia	2.5%	0.5%		5 banks: 0.5%-1%		3 banks: 1%	3%-5%
Slovenia	1.875%	0%		7 banks: n/a		1.875%	
Spain	1.875%	0%	1 bank: 0.75%	5 banks: 0.1875%-0.75%		1.875%-2.625%	

Source: [Macroprudential measures in countries subject to ECB Banking Supervision and notified to the ECB](#)