### ANNEX I TO THE RISK DASHBOARD INDICATORS METHODOLOGY

	INDICATOR	DATE RANGE AND FREQUENCY	SOURCE	
1. In	terlinkages and imbalances	•	•	
	Composite indicator of systemic stress (CISS)	Since January 1999; weekly data		The CISS comprises 15 raw, m intermediaries sector, money ma replacing each individual observa indices of financial stress are con based on portfolio theoretical prin relatively more weight on situation interval (0, 1). For further details Working Paper Series, No 1426, I An estimate of the probability of
1.2	Probability of a simultaneous default by two or more large and complex banking groups	Since January 2007; daily data	Thomson Reuters and ECB calculations	year, as measured by the syste Financial Stability Review, ECB,
1.3	EU banking sector: distribution of individual institutions' contributions to overall systemic risk, using CoVaR	Since January 1999; daily data	Bloomberg	These indicators are based on the Reserve Bank of New York Staff Insurance companies listed in the
1.4	EU insurance sector: distribution of individual institutions' contributions to overall systemic risk, using CoVaR	Since January 1999; daily data	Bloomberg	
1.5	Cross-border claims of banks (international banking statistics)	Quarterly and semi-annual	BIS international banking statistics (quarterly) and ECB consolidated banking statistics (semi-annual)	The size of the bubbles corresponse sector. The thickness of the arro country B) in the total equity of the the BIS (marked as lenders and be claims refer to claims on an imme http://www.bis.org.
2. M	acro risk			· · · · ·
2.1	Current and forecast real GDP growth	Since 1995 for all EU countries; quarterly data	European Commission	Latest actual year-on-year growth is the simple average of year-on- data.
2.2	Domestic credit-to-GDP gap	Since 1997 for some countries, and since 2004 for all EU countries; quarterly data	European Commission, ECB and ECB calculations	Calculated as the credit-to-GDP from its recursive Hodrick-Presco a role for global liquidity", Europe (MFI) loans to domestic non-MF (excluding general government). outstanding amounts of domestic relating to transactions).
2.3	Current account balance-to-GDP ratio	Since 1999; quarterly data	European Commission and ECB	Quarterly data represent the sum annualised ratio of the last 12 qua
2.4	Unemployment rate	Since 1999 for all EU countries; monthly data	European Commission	The eight-year median of the une
2.5	General government debt-to-GDP ratio	Since 1999; annual data	European Commission and ECB	The official debt (latest observati general government debt. Intra-g the government debt-to-GDP ratio
2.6	General government deficit-to-GDP ratio	Since 1999; annual data	European Commission and ECB	Latest observations plus forecast
2.7	Credit default swap premia on sovereign debt in selected EU countries	Since 2008 for countries with available data; daily data	Thomson Reuters Datastream and	
2.8	Sovereign debt redemptions	Redemptions for the forthcoming 12 months; monthly and quarterly data	ECB and ECB calculations	Redemption schedules refer to tra future debt redemptions for non-o Member States are calculated u national currency.
2.9	Households' debt-to-gross disposable income ratio	From 1999; annual data	ECB and European Commission	Gross disposable income adjuste
2.10	Non-financial corporations' debt-to-GDP ratio	Since 1999 for some countries and since 2004 for all EU countries; quarterly data	ECB and European Commission	Stock of non-financial corporation





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mainly market-based raw financial stress measures that are split equally into five categories, namely the financial markets, equity markets, bond markets and foreign exchange markets. The raw stress indicators are homogenised by rvation with its function value from the indicators' empirical cumulative distribution function. The five segment-specific subcomputed as averages of their three constituent transformed stress measures. The CISS aggregates the five sub-indices principles, i.e. by taking into account the time-varying cross-correlations between the sub-indices. The CISS thus places to lie within the ils see Hollo, D., Kremer, M. and Lo Duca, M., "CISS - A composite indicator of systemic stress in the financial system", 6, ECB, March 2012.

of a systemic event, i.e. a simultaneous default by two or more large and complex banking groups within a period of one stemic risk measure (SRM). The SRM covers a sample of 15 banks. For further details on the indicator, see Box 8 in 3, June 2012.

the methodology proposed by Adrian and Brunnermeier (see Adrian, T. and Brunnermeier, M.K., "CoVaR", Federal ff Reports, No 348, September 2011). The sample includes the (log) stock prices of 52 European banks and 34 European he STOXX Europe 600. The average "systemic risk contribution" (loss) tends to be higher during stress periods.

sponds to the share of total foreign claims (BIS data) in the total equity (ECB data) of a country's consolidated banking rrows depends on the share of bilateral foreign claims (i.e. claims of banks in country A on banks and other borrowers in the banking sector extending the loans. Arrows extend only from EU countries reporting consolidated banking statistics to d borrowers, EU only) and only where the share of bilateral foreign claims in total equity is more than 75%. Data for foreign mediate borrower basis; for more details, see "Guidelines to the international consolidated banking statistics", available at

vth, three-year historical average and Commission forecast for all 27 countries of the EU. The three-year historical average on-year growth rates over the last 12 quarters. Real GDP growth is calculated using seasonally and working-day adjusted

P deviation ("gap"), which is calculated as the deviation of the ratio of notional stocks of domestic credit to nominal GDP cott trend (see Alessi, L. and Detken, C., "Quasi real time early warning indicators for costly asset price boom/bust cycles: opean Journal of Political Economy, Vol. 27, No 3, June 2011). Domestic credit comprises monetary financial institution MFIs (excluding general government) and MFI holdings of securities other than shares issued by domestic non-MFIs (). GDP is the four-quarter cumulated flow. Moreover, as from the December 2012 edition of the Risk Dashboard, data on stic credit have been replaced with notional stocks of domestic credit (i.e. outstanding amounts corrected for effects not

im of the four quarters up to an including the quarter of reference. The three-year average is compiled on the basis of the uarters.

nemployment rate is used as a proxy for the structural unemployment rate.

ations plus forecasts) reported in the context of the excessive deficit procedure (EDP) was used as a source of data on -general government transactions are consolidated (netted out). The dashed black line represents the threshold of 60% for tio.

sts for one year ahead. 3% is the threshold for budget deficit under the Stability and Growth Pact.

eign credit default swaps (CDSs), basis points, five-year maturity.

tradable debt securities only (loans are excluded), including debt issued in a currency other than the domestic one. Data on n-euro area Member States are converted into euro at the cut-off date's exchange rate. Ratios to GDP for non-euro area using nominal debt redemptions and GDP (the latter as forecast by the European Commission), both denominated in

ted for the change in net equity of households in pension fund reserves. Data for Malta are not available.

ons' debt in each EU Member State.

#### Last update: January 2014

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3. C	redit risk			1
3.1	Residential property prices: a) estimates of the over/undervaluation of residential property prices in selected EU countries; and b) change in nominal residential property prices		ECB and ECB calculations	The methodology applied for estin ratio, price-to-income ratio and two refer to total dwellings, whole coun
3.2	Foreign currency loans in the EU: a) share in total lending and annual growth rates; and b) foreign currency loans, broken down by domestic counterpart sector	Varies across countries depending on the year of accession to the EU (between January 1999 and January 2007); monthly data	ЕСВ	Loans extended by monetary fina general government); share of for domestic non-MFIs (x-axis).
3.3	Lending margins of MFIs – loans to households for house purchase	Varies across countries depending on the year of accession to the EU (earlieast available data: January 2003); monthly data	ЕСВ	Lending margins are measured as financial corporations excluding re- agreed maturity from households a
3.4	Lending margins of MFIs – loans to non-financial corporations	Varies across countries depending on the year of accession to the EU (earlieast available data: January 2003); monthly data	ЕСВ	For non-euro area countries, rates between the average lending rates currency as weights.
3.5	Changes in credit standards for residential mortgage loans	Since 2003 for euro area; quarterly data	ECB and Bank of England	Weighted net percentage of banks
3.6	Changes in credit standards for loans to large enterprises	Since 2003 for euro area; quarterly data	ECB and Bank of England	
3.7	Option adjusted spreads on euro area corporate bonds, broken down by rating class	Since 2000; daily data	Bank of America Merrill Lynch	Bank of America Merrill Lynch Bon
<b>4.</b> F	unding and liquidity			
4.1	Interbank interest rate spreads	Since January 2000; daily data	Thomson Reuters	Difference between the overnight Kingdom.
4.2	Financial market liquidity indicator for the euro area	Since January 1999; daily data	ECB, Bank of England, Bloomberg, JPMorgan Chase & Co., Moody's KMV, and ECB calculations	This composite indicator is calculated bonds and foreign currency liquidition period 1999-2006 for non-money networks of the second sec
4.3	EUR/USD cross-currency basis swap spreads	Since January 2008; daily data	Bloomberg	The indicators show the cost of s swap euro into US dollars.
4.4	Share of central bank funding in credit institutions' liabilities	Varies across countries depending on the year of accession to the EU (between January 1999 and January 2007); monthly data	IMF, ECB and ECB calculations	Liabilities of credit institutions (i.e funds) vis-à-vis the Eurosystem (f (excluding capital and reserves an shares issued by other MFIs.
4.5	Money markets and the Eurosystem's standing facilities	Since January 2007; weekly data	ECB and Bloomberg	The chart shows the evolution of lending/deposits), and the volume
4.6	Maturity profile of outstanding debt securities issued by EU banks	Since 2005; monthly data	Dealogic and ECB calculations	The maturity profile refers to the re- corporate bonds, medium-term no Banks' short-term debt includes co on amounts outstanding at the end
4.7	Loan-to-deposit ratio	Varies across countries depending on data availability (earliest available data: Q1 1997); quarterly data	ЕСВ	Data refers to the ratio between to (excluding general government) fro
5. M	arket risk		•	•
5.1	Global risk aversion indicator	Since January 1999; daily data	Bloomberg, Bank of America Merrill Lynch, UBS, Commerzbank, and ECB calculations	The indicator is constructed as the Perception, UBS FX Risk Index, W
5.2	Price/earnings ratios of equity indices, by sector	Since January 1999; daily data	Thomson Reuters Datastream	The indices used are: EU non-fina EU insurance sector; Price-Earning
5.3	Equity indices: a) equity indices by sector; and b) equity implied volatility indices: EURO STOXX 50	Since January 1999; daily data	Bloomberg and Thomson Reuters	The equity indices displayed are E EU Diversified Industrials Datastre methodology jointly developed by Index options traded on Eurex. It n
5.4	Short-term interest rates – implied volatility: 3 months - 1 year	Since January 1999; daily data	Bloomberg	The indicators reflect the volatility
5.5	Long-term interest rates – implied volatility: 3 months - 10 years	Since January 1999; daily data	Bloomberg	The indicators reflect the volatility
5.6	Exchange rate volatility	Since January 1999; daily data	Bloomberg	The indicators reflect the volatilit currencies, based on a three-mont





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timating the over/undervaluation of residential property prices is based on four different valuation methods: price-to-rent two model-based valuation methods (see Box 3 in Financial Stability Review, ECB, June 2011, p. 53). Price indices data untry; national differences may however exist.

nancial institutions (MFIs), excluding the European System of Central Banks (ESCB), to domestic non-MFIs (excluding foreign currency loans in total loans to domestic non-MFIs (y-axis) and annual growth rate of foreign currency loans to

as the difference between MFIs' interest rates for new loans to households for house purchase (new business loans to nonrevolving loans and overdrafts, convenience and extended credit) and a weighted average rate of new deposits with s and non-financial corporations.

es for loans and deposits in both euro and the national currency are used; the spread is calculated as the difference es and the average deposit rate, where average rates are calculated using the business volumes in both euro and national

ks contributing to the tightening of standards over the past three months.

ond Index for the euro area non-financial corporate sector, broken down by rating class (AAA and BBB) and high yields.

ht interbank rates and the overnight indexed swap (OIS) rates, for the euro area, the United States, and the United

ulated by the ECB as an overall measure of liquidity, based on two components: money market liquidity risk and equity, idity risk. The composite indicator comprises unweighted averages of individual liquidity measures, normalised over the market components. The data shown have been exponentially smoothed.

swapping euro into US dollars with a one-year or three-month tenor. The lower the spread, the more expensive it is to

i.e. monetary financial institutions (MFIs) excluding the European System of Central Banks (ESCB) and money market (for euro area countries) or the national central bank (for other EU countries) as a share of the sector's total liabilities and remaining liabilities). ESCB funding comprises loans to other MFIs and excludes holdings of securities other than

of the Eurosystem current account (including minimum reserves) and the marginal lending/deposit facility (for overnight ie of euro-denominated transactions in the interbank overnight market (EONIA volume).

e residual maturity of long-term and short-term debt securities issued by European banks. Banks' long-term debt includes notes, covered bonds, asset-backed securities and mortgage-backed securities with a maturity of more than 12 months. commercial papers, certificates of deposits and short-term notes with a maximum maturity of 12 months. Data are based and of the corresponding year or month.

total loans and total deposits vis-à-vis the domestic and euro area non-financial private sector and vis-à-vis non-banks from other jurisdictions.

he first principal component of five currently available risk aversion indicators, namely Commerzbank Global Risk Westpac's Risk Appetite Index, BoA ML Risk Aversion Indicator and Credit Suisse Risk Appetite Index.

nancial corporations; Price-Earnings Ratio, EU main index; Price-Earnings Ratio, EU banking sector; Price-Earnings Ratio, ings Ratio.

EU Banks Datastream Index, EU Insurance Datastream Index, EU Building Materials and Fixtures Datastream Index and tream Index. Volatility is implied by at-the-money options observed in the market. The VSTOXX Index is based on a new by Deutsche Börse and Goldman Sachs to measure volatility in the euro area. VSTOXX is based on the EURO STOXX 50 t measures implied volatility on options across all maturities.

y of short-term interest rates implied by at-the-money swaptions prices observed in the market.

y of long-term interest rates implied by at-the-money swaptions prices observed in the market.

ility of foreign currency interest rates implied by at-the-money options prices observed in the market for the major onth maturity.

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	INDICATOR	DATE RANGE AND FREQUENCY	SOURCE	
6. P	rofitability and solvency	•		·
Sam	ple of large EU banking groups			
6.1.a	Return on equity	Since the first quarter of 2011; quarterly data	EBA	Data refer to group consolidated of the sample over time. The indicate equity from FINREP 1.3. Quarterly
6.1.b	Cost-to-income ratio	Since the first quarter of 2011; quarterly data	EBA	Data refer to group consolidated of the sample over time. The indical operating income as defined in F demand; Dividend income; Fee a measured at fair value through pr and liabilities designated at fair va derecognition of assets other than corresponding year.
6.1.c	Net interest income to total operating income	Since the first quarter of 2011; quarterly data	EBA	Data refer to group consolidated of the sample over time. Net incom Quarterly data refer to cumulative
6.2.a	Tier 1 capital to total assets excluding intangible assets	Since the first quarter of 2011; quarterly data	EBA	Data refer to group consolidated of the sample over time. Tier 1 capit FINREP 1.1.
6.2.b	Impaired loans and past due (>90 days) loans to total loans	Since the first quarter of 2011; quarterly data	EBA	Data refer to group consolidated of the sample over time. Impaired lo the impaired assets; row: Loan assessed financial assets, column Loans and advances AFS, Loans specific allowances for collective balance).
Sam	ple of large EU insurance groups			
6.3.a	Return on equity	Since the second half of 2009; semi-annual data	EIOPA	The indicator is based on the data sample over time. The return on a average available solvency capital
6.3.b	Combined ratio – non-life insurance business	Since the second half of 2009; semi-annual data	EIOPA	The indicator is based on the dat sample over time. The combined refer to cumulative flows over the
6.3.c	Gross premiums written – life insurance business	Since the second half of 2009; semi-annual data	EIOPA	The indicator is based on the data sample over time. The chart refer cumulative flows over the correspo
6.3.d	Gross premiums written – non-life insurance business	Since the second half of 2009; semi-annual data	EIOPA	The indicator is based on the data sample over time. The chart refers to cumulative flows over the correst
6.4.a	Solvency ratio – life insurance business	Since the second half of 2009; semi-annual data	EIOPA	The indicator is based on the data sample over time. The solvency ra
6.4.b	Solvency ratio – non-life insurance business	Since the second half of 2009; semi-annual data	EIOPA	The indicator is based on the data sample over time. The solvency ra
6.5	Retention ratio	Since the second half of 2009; semi-annual data	EIOPA	The indicator is based on the data sample over time. The retention r over the corresponding year.





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l data. The indicator is based on a sample of 56 large EU banks and the data are subject to changes in the composition of ator is based on the net income from FINREP 2 (total profit or loss after tax and discontinued operations) and on the total rly flows are annualised.

d data. The indicator is based on a sample of 56 large EU banks and the data are subject to changes in the composition of cator is based on the costs as defined in FINREP 2 (template rows: Administration costs; Depreciation) and in the total FINREP 2 (Total operating income: rows: Interest income; Interest expenses; Expenses on share capital repayable on and commission income; Fee and commission expenses; Realised gains (losses) on financial assets and liabilities not profit or loss, net; Gains (losses) on financial assets and liabilities held for trading, net; Gains (losses) on financial assets value through profit or loss, net; Gains (losses) from hedge accounting, net; Exchange differences, net; Gains (losses) on an held for sale, net; Other operating income; Other operating expenses). Quarterly data refer to cumulative flows over the

d data. The indicator is based on a sample of 56 large EU banks and the data are subject to changes in the composition of ome as defined in FINREP 2 (template rows: Interest income; Interest expenses) and total operation income as above. re flows over the corresponding year.

data. The indicator is based on a sample of 56 large EU banks and the data are subject to changes in the composition of bital is as defined in COREP template Capital Adequacy 1.1, and total assets excluding intangible assets as derived from

d data. The indicator is based on a sample of 56 large EU banks and the data are subject to changes in the composition of loans as derived from FINREP 7 and FINREP 30B (template row: Loans and advances, column: Net carrying amount of n and advances, specific allowances for individually assessed financial assets and specific allowances for collectively mn: Closing balance) and total loans as defined in FINREP 1.1. and FINREP 30B (Total loans advances (template rows: ns and receivables, HTM), rows: loans and advances, specific allowances for individually assessed financial assets and vely assessed financial assets, allowances for incurred but not reported losses on financial assets, column: Closing

ata available for a sample of 27 EU-headquartered insurance groups and is subject to changes in the composition of the n equity is defined as the cumulated profit (loss) after tax and before dividends over the last four quarters, divided by the tal over the last four quarters.

lata available for a sample of 25 EU-headquartered insurance groups and is subject to changes in the composition of the ed ratio is defined as net claims incurred and net operating expenses divided by net premiums earned. Semi-annual data ne corresponding year.

ata available for a sample of 25 EU-headquartered insurance groups and is subject to changes in the composition of the fers to the annual percentage change in the gross premiums written for life insurance business. Semi-annual data refer to sponding year.

ata available for a sample of 25 EU-headquartered insurance groups and is subject to changes in the composition of the ers to the annual percentage change in the gross premiums written for non-life insurance business. Semi-annual data refer responding year.

ata available for a sample of 25 EU-headquartered insurance groups and is subject to changes in the composition of the ratio is defined as the available solvency capital divided by the required solvency capital for life insurance business.

ata available for a sample of 25 EU-headquartered insurance groups and is subject to changes in the composition of the ratio is defined as the available solvency capital divided by the required solvency capital for non-life insurance business.

ata available for a sample of 27 EU-headquartered insurance groups and is subject to changes in the composition of the ratio is defined as net premiums written divided by gross premiums written. Semi-annual data refer to cumulative flows