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ESRB
European Systemic Risk Board
European System of Financial Supervision

Adverse scenario for the European Securities and Markets Authority's 2023 central counterparty stress test

Introduction

In accordance with its mandate, the European Securities and Markets Authority (ESMA), in cooperation with the European Systemic Risk Board (ESRB), initiates and coordinates stress tests to assess the resilience of central counterparties (CCPs) to adverse market developments. The adverse financial scenario for the 2023 ESMA CCP stress test exercise (the "adverse scenario") was designed by the ESRB's Task Force on Stress Testing in close collaboration with the European Central Bank (ECB) and ESMA.

The stress test is a scenario-based analysis measuring how CCPs would fare under hypothetical adverse economic developments. The scenario has been designed to be severe in order to meet CCP-specific regulatory requirements.[1] Accordingly, the scenario should not be considered a forecast of the most likely negative shocks to the financial system.

The shock profiles of the adverse scenario are one-off, instantaneous and temporary shifts in asset prices relative to their end-2022 levels. They last for at least two to five consecutive business days depending on the asset class. In this adverse scenario, no monetary or fiscal policy actions are assumed beyond what is implicitly captured in historical asset price movements over time.

The adverse scenario was approved by the ESRB General Board on 28 April 2023 and transmitted to ESMA on 3 May 2023.

Systemic risks and vulnerabilities addressed by the scenario

The adverse scenario considers the ESRB's assessment of prevailing sources of systemic risk to the EU financial system, which are:

1. weakened economic prospects leading to tighter financial conditions;

[1] See Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories (OJ L 201, 27.7.2012, p. 1).

2. a prolonged period of low growth and elevated inflation leading to a renewed increase in private sector debt levels and an increase in bankruptcies of non-financial corporations;
3. sharp and broad-based asset price corrections due to elevated market volatility and low liquidity;
4. a re-emergence of sovereign financing and debt sustainability concerns coupled with rising interest rates and deteriorating growth prospects.

The adverse scenario reflects the triggering of one or more of the sources of systemic risk to the EU financial system identified by the ESRB. These risks could materialise simultaneously and reinforce each other. The results are derived using a methodology that takes into account the joint empirical distribution of the risk factors deemed relevant to the CCPs in scope of the ESMA exercise. A methodological note presents the tool developed by ECB staff that is used for calibrating the financial shocks.[2]

Narrative of the scenario

The aggravation of the ongoing geopolitical tensions and polarisation due to Russia's invasion of Ukraine is assumed to result in continued disruptions of the global supply chain. This in turn impedes the ability to meet global demand for raw materials, energy, gas and food, resulting in an abrupt repricing of commodities. This effect is intensified by the resurgence of COVID-19 cases, which further affects supply across sectors.

Higher production costs resulting from supply constraints are partly passed on to consumers, inducing broad-based rises in inflation. This increase in current and expected inflation triggers expectations of further policy responses, which are manifested in higher market interest rates. The shift in market interest rates, combined with elevated public sector debt levels as a result of increased public spending during the coronavirus (COVID-19) pandemic, heightens sovereign debt sustainability concerns. Along with higher costs of commodities and a weaker economic outlook, this also increases expectations of defaults in the private sector. The public and private debt sustainability concerns in turn give rise to a sharp increase in credit risk premia and a widening of credit spreads worldwide,[3] including for financial institutions.

The generalised tightening of financing conditions leads to a further deterioration in the macro-financial environment and generates a spike in volatility across asset markets. This, along with

[2] See the methodological note describing the Financial Shock Simulator.

[3] The calibration takes into account the fact that the availability of the Transmission Protection Instrument (TPI) is expected to reduce the volatility of euro area sovereign bond spreads, regardless of whether it is activated or not. The announcement of the TPI per se reduces the probability of self-fulfilling crisis episodes in sovereign debt markets.

reduced market liquidity, causes disorderly and abrupt asset price corrections. Such conditions are also reflected, and amplified, in less regulated markets (e.g. for crypto-assets).

Assumptions

The adverse scenario results are obtained by computing the response of each variable conditional on a specific stress applied to selected trigger variables over a two-day or five-day horizon (depending on the asset class). The sample used for the calibration covers January 2008 to December 2022.[4]

[4] The model uses daily data, and most of the time series have sufficient data as of 2008.

Calibration of the scenario

Table 1: Shock scenarios – Interest rate swaps (Horizon = 5 business days)

Shocks to interest rate swaps, absolute changes (basis points)									
Geographic area	**Country**	**Description**	**1M**	**3M**	**1Y**	**2Y**	**5Y**	**10Y**	**30Y**
EU	**Euro area**	Interest rate SWAP on the EUR (euro)	39	39	44	63	67	57	47
EU	**Czech Republic**	Interest rate SWAP on the CZK (Czech koruna)	52	52	59	60	60	57	48
EU	**Denmark**	Interest rate SWAP on the DKK (Danish krone)	39	39	45	58	57	49	40
EU	**Hungary**	Interest rate SWAP on the HUF (Hungarian forint)	126	126	144	119	105	102	83
EU	**Poland**	Interest rate SWAP on the PLN (Polish zloty)	62	62	70	77	89	91	74
EU	**Sweden**	Interest rate SWAP on the SEK (Swedish krona)	35	35	40	49	50	48	39
Rest of Europe	**United Kingdom**	Interest rate SWAP on the GBP (British pound)	88	88	101	104	89	74	70
Rest of Europe	**Norway**	Interest rate SWAP on the NOK (Norwegian krone)	32	32	36	45	44	39	40
Rest of Europe	**Switzerland**	Interest rate SWAP on the CHF (Swiss franc)	36	36	41	46	50	46	43
North America	**Canada**	Interest rate SWAP on the CAD (Canadian dollar)	39	39	44	43	43	42	34
North America	**United States**	Interest rate SWAP on the USD (US dollar)	53	53	61	65	55	48	33
Australia and Pacific	**Australia**	Interest rate SWAP on the AUD (Australian dollar)	44	44	50	63	57	56	52
Australia and Pacific	**New Zealand**	Interest rate SWAP on the NZD (New Zealand dollar)	57	57	66	66	60	60	57
South and Central America	**Chile**	Interest rate SWAP on the CLP (Chilean peso)	87	87	100	98	73	56	54
South and Central America	**Mexico**	Interest rate SWAP on the MXN (Mexican peso)	70	70	80	66	66	57	57
Asia	**China**	Interest rate SWAP on the CNY (Chinese yuan renminbi)	17	17	19	21	24	30	30
Asia	**Hong Kong**	Interest rate SWAP on the HKD (Hong Kong dollar)	96	96	110	99	78	59	59
Asia	**India**	Interest rate SWAP on the INR (Indian rupee)	61	61	69	69	56	58	48
Asia	**Japan**	Interest rate SWAP on the JPY (Japanese yen)	11	11	13	18	19	23	25
Asia	**South Korea**	Interest rate SWAP on the KRW (South Korean won)	45	45	52	63	55	46	46
Asia	**Thailand**	Interest rate SWAP on the THB (Thai baht)	42	42	47	63	73	55	55
Asia	**Taiwan**	Interest rate SWAP on the TWD (New Taiwan dollar)	33	33	38	50	39	35	35
Asia	**Israel**	Interest rate SWAP on the ILS (Israeli shekel)	57	57	65	68	61	51	51
Asia	**Singapore**	Interest rate SWAP on the SGD (Singapore dollar)	47	47	54	59	43	35	35
Africa	**South Africa**	Interest rate SWAP on the ZAR (South African rand)	50	50	57	75	88	85	73

Table 2: Shock scenarios – Government bond yields (Horizon = 2 business days)

Government bond yield shocks, absolute changes (basis points)							
Geographic area	Country code	Country	1Y	2Y	5Y	10Y	30Y
EU	AT	**Austria**	57	61	58	51	39
EU	BE	**Belgium**	58	65	58	52	45
EU	BG	**Bulgaria**	87	97	89	79	52
EU	HR	**Croatia**	73	82	75	67	44
EU	CY	**Cyprus**	83	93	85	75	49
EU	CZ	**Czech Republic**	78	88	80	71	47
EU	DK	**Denmark**	49	53	50	44	34
EU	FI	**Finland**	58	61	58	51	39
EU	FR	**France**	54	57	54	48	36
EU	DE	**Germany**	42	45	43	38	29
EU	GR	**Greece**	89	99	91	81	53
EU	HU	**Hungary**	102	114	105	93	61
EU	IE	**Ireland**	47	50	47	42	32
EU	IT	**Italy**	78	87	80	71	46
EU	LV	**Latvia**	62	69	63	56	48
EU	LT	**Lithuania**	71	79	71	63	54
EU	LU	**Luxembourg**	53	57	54	47	36
EU	MT	**Malta**	67	74	67	60	51
EU	NL	**Netherlands**	45	48	45	40	31
EU	PL	**Poland**	89	99	91	80	53
EU	PT	**Portugal**	72	80	74	65	42
EU	RO	**Romania**	98	110	101	89	59
EU	SK	**Slovakia**	61	65	61	54	41
EU	SI	**Slovenia**	65	72	65	58	50
EU	ES	**Spain**	72	80	74	65	43
EU	SE	**Sweden**	48	51	49	43	33
EU	**EA**	**Euro area (weighted averages)**	57	62	58	51	37
EU	**EU**	**EU (weighted averages)**	59	65	60	53	38
Other advanced economies	UK	**United Kingdom**	65	73	66	59	50
Other advanced economies	CH	**Switzerland**	41	44	42	36	27
Other advanced economies	NO	**Norway**	46	49	46	40	29
Other advanced economies	US	**United States**	54	58	55	48	35
Other advanced economies	JP	**Japan**	22	24	23	20	14
Other advanced economies	AU	**Australia**	56	60	56	49	36
Other advanced economies	CA	**Canada**	45	48	45	39	29

Table 3: Shock scenarios – Exchange rate (Horizon = 2 business days)

Foreign exchange shocks, relative changes (%)		
Geographic area	**Description**	**Shock**
EU	EURCZK represents 1 EUR per x CZK (Czech koruna)	5.9
EU	EURHUF represents 1 EUR per x HUF (Hungarian forint)	5.7
EU	EURPLN represents 1 EUR per x PLN (Polish zloty)	4.3
EU	EURRON represents 1 EUR per x RON (Romanian leu)	1.8
EU	EURSEK represents 1 EUR per x SEK (Swedish krona)	3.9
Rest of Europe	EURNOK represents 1 EUR per x NOK (Norwegian krone)	6.7
Rest of Europe	EURGBP represents 1 EUR per x GBP (British pound)	4.0
Rest of Europe	EURCHF represents 1 EUR per x CHF (Swiss franc)	3.7
Rest of Europe	EURRUB represents 1 EUR per x RUB (Russian ruble)	11.9
Rest of Europe	EURUAH represents 1 EUR per x UAH (Ukrainian hryvnia)	38.8
North America	EURCAD represents 1 EUR per x CAD (Canadian dollar)	4.3
North America	EURUSD represents 1 EUR per x USD (US dollar)	4.5
Australia and Pacific	EURAUD represents 1 EUR per x AUD (Australian dollar)	5.6
Australia and Pacific	EURNZD represents 1 EUR per x NZD (New Zealand dollar)	5.9
South and Central America	EURARS represents 1 EUR per x ARS (Argentine peso)	13.7
South and Central America	EURBRL represents 1 EUR per x BRL (Brazilian real)	7.4
South and Central America	EURCLP represents 1 EUR per x CLP (Chilean peso)	5.4
South and Central America	EURCOP represents 1 EUR per x COP (Colombian peso)	7.6
South and Central America	EURMXN represents 1 EUR per x MXN (Mexican peso)	7.9
South and Central America	EURPEN represents 1 EUR per x PEN (Peruvian sol)	5.3
Asia	EURCNY represents 1 EUR per x CNY (Chinese yuan renminbi)	4.7
Asia	EURHKD represents 1 EUR per x HKD (Hong Kong dollar)	4.5
Asia	EURIDR represents 1 EUR per x IDR (Indonesian rupiah)	6.5
Asia	EURILS represents 1 EUR per x ILS (Israeli shekel)	5.2
Asia	EURINR represents 1 EUR per x INR (Indian rupee)	4.6
Asia	EURJPY represents 1 EUR per x JPY (Japanese yen)	8.1
Asia	EURKRW represents 1 EUR per x KRW (South Korean won)	7.1
Asia	EURMYR represents 1 EUR per x MYR (Malaysian ringgit)	3.6
Asia	EURPHP represents 1 EUR per x PHP (Philippine peso)	5.8
Asia	EURSGD represents 1 EUR per x SGD (Singapore dollar)	3.7
Asia	EURTHB represents 1 EUR per x THB (Thai baht)	4.7
Asia	EURTWD represents 1 EUR per x TWD (New Taiwan dollar)	3.5
Africa	EURDZD represents 1 EUR per x DZD (Algerian dinar)	8.2
Africa	EUREGP represents 1 EUR per x EGP (Egyptian pound)	30.5
Africa	EURMAD represents 1 EUR per x MAD (Moroccan dirham)	3.7
Africa	EURZAR represents 1 EUR per x ZAR (South African rand)	6.5

Shocks to foreign exchange implied volatilities, absolute changes (volatility points x 100)		
Geographic area	**Description**	**Shock**
EU	EUR per x CZK (Czech koruna): EURCZKV1M currency	6
EU	EUR per x HUF (Hungarian forint): EURHUFV1M currency	9
EU	EUR per x PLN (Polish zloty): EURPLNV1M currency	5
EU	EUR per x SEK (Swedish krona): EURSEKV1M currency	4
Rest of Europe	EUR per x GBP (British pound): EURGBPV1M currency	5
North America	EUR per x USD (US dollar): EURUSDV1M currency	6
Asia	EUR per x JPY (Japanese yen): EURJPYV1M currency	10
Asia	EUR per x CNY (Chinese yuan renminbi): USDCNYV1M currency	4

Table 4: Shock scenarios – Crypto-assets (Horizon = 2 business days)

Crypto shocks, relative changes (%)		
Type	**Description**	**Shock copula**
Crypto	XBTUSD Spot Exchange Rate - Price of 1 XBT in USD	-88
Crypto	XETUSD Spot Exchange Rate - Price of 1 XET in USD	-83

Table 5: Shock scenarios – Domestic stock indices (Horizon = 2 business days)

Shocks to equity prices, percentage changes (%)				
Geographic area	**Country code**	**Country**	**Index name**	**Shock**
EU	AT	**Austria**	Austrian Traded Index	-17
EU	BE	**Belgium**	Belgium BEL 20 Index	-16
EU	BG	**Bulgaria**	Bulgaria Stock Exchange SOFIX Index	-15
EU	CY	**Cyprus**	Cyprus Stock Exchange General Index	-16
EU	HR	**Croatia**	Zagreb Stock Exchange CROBEX Index	-15
EU	CZ	**Czech Republic**	Prague Stock Exchange Index	-16
EU	DK	**Denmark**	OMX Copenhagen	-10
EU	EE	**Estonia**	Nordic Exchange OMX Tallinn (OMXT) Index	-11
EU	FI	**Finland**	Nordic Exchange OMX Helsinki Price Index	-13
EU	FR	**France**	France CAC 40 Index	-14
EU	DE	**Germany**	DAX 40 Performance Index	-14
EU	GR	**Greece**	Athens Stock Exchange Main General Index	-19
EU	HU	**Hungary**	Budapest Stock Exchange BUX Index	-15
EU	IE	**Ireland**	Irish Stock Exchange ISEQ Overall Index	-13
EU	IT	**Italy**	FTSE Milan Stock Exchange MIB	-19
EU	LV	**Latvia**	Nordic Exchange OMX Riga (OMXR) Index	-18
EU	LT	**Lithuania**	Nordic Exchange OMX Vilnius General Index	-8
EU	LU	**Luxembourg**	Luxembourg Stock Exchange LuxX Index	-13
EU	MT	**Malta**	Malta Stock Exchange Index	-6
EU	NL	**Netherlands**	Amsterdam Exchange (AEX) Index	-15
EU	PL	**Poland**	Warsaw Stock Exchange General Index	-15
EU	PT	**Portugal**	Portugal PSI-20 Index	-12
EU	RO	**Romania**	Romania BET 10 Index	-14
EU	SK	**Slovakia**	Bratislava Stock Exchange SAX Index	-9
EU	SI	**Slovenia**	Slovenian Blue Chip Index (SBI TOP)	-10
EU	ES	**Spain**	Spain IBEX 35 Index	-15
EU	SE	**Sweden**	Nordic Exchange OMX Stockholm Options Marknad Value Index	-13
EU	**EA**	**Euro area (weighted averages)**	**From domestic shocks**	**-15**
EU	**EU**	**EU (weighted averages)**	**From domestic shocks**	**-15**
Europe	EUX50BB	**Europe (EURO STOXX)**	EURO STOXX 50 Index	-16
Advanced economies	UK	**United Kingdom**	Financial Times Stock Exchange (FTSE) 100 Index	-14
Advanced economies	NO	**Norway**	Oslo Exchange All Share Index	-16
Advanced economies	CH	**Switzerland**	Swiss Market Index	-13
North America	US_DJ	**United States**	Dow Jones Composite Index	-14
North America	US_S&P500	**United States**	Standard and Poor's 500 Index	-14
North America	US_NASDAQ	**United States**	NASDAQ Composite Index	-14
Other advanced economies	**OA**	**Other advanced economies**	**MSCI World Index Future**	**-8**
South America	BR	**Brazil**	MSCI Brazil Index Future	-10
Asia	IN	**India**	BSE SENSEX	-10
Asia	ASIAMSCIAC	**Asia ex Japan**	MSCI AC Asia ex Japan Index Future	-7
Asia	ASIAMSCIPACA	**Asia Pacific ex Japan**	MSCI Pacific ex Japan Index Future	-8
Emerging markets	**EME**	**Emerging markets**	**MSCI Emerging Markets Index Future**	**-7**

Shocks to implied volatility, absolute changes (volatility points x 100)				
Geographic area	**Country code**	**Country**	**Index name**	**Shock**
Europe	EUX50BB	**Europe (EURO STOXX)**	EURO STOXX 50 Index	23
EU	FR	**France**	France CAC 40 Index	20
EU	DE	**Germany**	DAX 30 Performance Index	29
EU	UK	**United Kingdom**	Financial Times Stock Exchange (FTSE) 100 Index	21

Definitions

HISTPUT RK075 - Historical Put Implied Volatility (HIST_PUT_IMP_VOL)
At the money put implied volatility of the 1st listed expiry that is at least 20 business days out from today, based on the Listed Implied Volatility Engine (LIVE) calculator.

Table 6: Shock scenarios – Sector stock indices (Horizon = 2 business days)

Shocks to STOXX index components, percentage changes (%)		
Index name	**Sector**	**Shock**
EURO STOXX 50	**Headline index**	-16
STOXX Europe 600 Basic Materials Industry	**Basic**	-16
STOXX Europe 600 Utilities Industry	**Utilities**	-17
STOXX Europe 600 Industrials Industry	**Industrials**	-16
STOXX Europe 600 Health Care Industry	**Health**	-12
STOXX Europe 600 Banks Supersector	**Banks**	-19
STOXX Europe 600 Insurance Supersector	**Insurance**	-20
STOXX Europe 600 Financial Services Supersector	**Financial**	-17
STOXX Europe 600 Real Estate Supersector	**Real Estate**	-15
STOXX Europe 600 Oil & Gas Supersector	**Oil**	-21
STOXX Europe 600 Telecommunications Supersector	**Telecommunications**	-14
STOXX Europe 600 Technology Supersector	**Technology**	-15
STOXX Europe 600 Consumer Products and Services	**Consumer Products and Services**	-13

Shocks to historical volatilities of STOXX index components, absolute changes (volatility points x 100)		
Index name	**Sector**	**Shock**
EURO STOXX 50	**Headline index**	23
STOXX Europe 600 Industrial Goods and Svs	**Industrial Goods and Sevices**	40
STOXX Europe 600 Utilities Industry	**Utilities**	19
STOXX Europe 600 Cons and Material	**Construction and materials**	29
STOXX Europe 600 Health Care Industry	**Health**	38
STOXX Europe 600 Banks Supersector	**Banks**	22
STOXX Europe 600 Insurance Supersector	**Insurance**	28
STOXX Europe 600 Financial Services Supersector	**Financial**	20
STOXX Europe 600 Real Estate Supersector	**Real Estate**	28
STOXX Europe 600 Oil & Gas Supersector	**Oil**	30
STOXX Europe 600 Telecommunications Supersector	**Telecommunications**	27
STOXX Europe 600 Technology Supersector	**Technology**	24

Table 7: Shock scenarios – Commodities (Horizon = 2 business days)

		Future 1m (%)	Future 6m (%)	Future 9m (%)	Future 12m (%)	Implied volatility, Future 1m (volatility x 100 points)
Metals	Silver	18	18	18		42
	Gold	11	11	11		17
Industrial	Coal	38	47	48	45	35
	EU emission allowance	24	25	25	23	84
	EU aviation emission allowance	29				
	Iron ore	19				
Food	Cocoa	13	10	10		40
	Coffee Robusta	12	10			
	Corn	11	8	12	8	39
	Soy	12				56
	Sugar	14	9			37
	Wheat	23	12	13	9	56
	Salmon	13	10		6	

	Spot (%)	3m rolling forward (%)	15m rolling forward (%)	27m rolling forward (%)	63m rolling forward (%)
Aluminium	11	10	9	9	8
Copper	15	15	15	14	14
Nickel	18	18	18	17	17
Lead	16	16	15	12	13

		Future 1m (%)	Future 2m (%)	Future 3m (%)	Future 4m (%)	Future 5m (%)	
Crude oil	Brent	34	27	27	22	20	
	WTI	38	31	31	25	23	
		Future 6m (%)	Future 9m (%)	Future 12m (%)	Future 24m (%)	Future 36m (%)	Implied volatility, Future 1m (volatility points x 100)
	Brent	18	15	14	14	11	63
	WTI	21	17	16	14	12	58

	Index (%)
Baltic Exchange - Dry	13
Baltic Exchange - Clean tanker	17
Baltic Exchange - Dirty tanker	12

		1st Future (%)	2nd Future (%)	3rd Future (%)	4th Future (%)	5th Future (%)	6th Future (%)	Implied volatility, Future 1m (volatility points x 100)
Power Bulgaria	Monthly							
	Quarterly	41						
	Yearly	38						
Power Switzerland	Monthly	49	38	38				
	Quarterly		37	37	37			
	Yearly		24	21				
Power Germany	Monthly	41	41	40				39
	Quarterly		43	34	32			
	Yearly							
Power Spain	Monthly	41	38	33				
	Quarterly		32	32	32			
	Yearly		19	11	11	11		
Power France	Monthly							
	Quarterly							
	Yearly	30	21	19	19			
Power Greece	Monthly	38	38	38				
	Quarterly		29					
	Yearly							
Power Italy	Monthly	43	40	38				
	Quarterly		35	32	29			
	Yearly		22	22	22	22		
Power Nordic countries	Monthly	56	37	30				
	Quarterly		31	28	28			
	Yearly		18	14				
Power Romania	Monthly	45						
	Quarterly	41						
	Yearly	38						
Power Serbia	Monthly	42	41					
	Quarterly	41						
	Yearly	37						
Power Slovenia	Monthly	44	41					
	Quarterly	41						
	Yearly	37						
Power United Kingdom	Monthly	52	36	36				
	Quarterly		32	25	24			
Power United States	Monthly	54	50	37	36	36	36	

		1st Future (%)	2nd Future (%)	3rd Future (%)	4th Future (%)	5th Future (%)	6th Future (%)	9th Future (%)	12th Future (%)	24th Future (%)	36th Future (%)
Gasoil	Monthly	25	22	20	19	19	18	16	15	13	13
LNG (Liquified natural gas)	Monthly	41	41	41	41	41	40	25	25		

		1st Future (%)	2nd Future (%)	3rd Future (%)	4th Future (%)	5th Future (%)	6th Future (%)
Gas Czech Republic	Monthly		42	42			
	Quarterly	43	42	41			
	Yearly		22				
Gas Germany	Monthly	46	31				
	Quarterly						
	Yearly						
Gas Denmark	Monthly	43	43	43			
	Quarterly						
	Yearly						
Gas Spain	Monthly						
	Quarterly	33	33	25			
	Yearly		21				
Gas Italy	Monthly	33					
	Quarterly						
	Yearly						
Gas Netherlands	Monthly	42	41	41			
	Quarterly		42	41	40		
	Yearly		22	22	22	12	
Gas United Kingdom	Monthly	42	41	41			
	Quarterly		42	41	39		
	Yearly						
Gas United States	Monthly	27	27	26			
	Quarterly		14	14	11		
	Yearly						

Table 8: Shock scenarios – Inflation swaps (Horizon = 5 business days)

Shocks to inflation swaps, absolute changes (basis points)									
Geographic area	Country	Description	1M	3M	1Y	2Y	5Y	10Y	30Y
EU	**Euro area**	Inflation SWAP Zero Coupon on the EUR			146	77	23	17	13
UK	**United Kingdom**	Inflation SWAP RPI Zero Coupon on the GBP			149	79	46	36	31
US	**United States**	Inflation SWAP CPI Zero Coupon on the USD			79	66	35	30	24

Table 9: Shock scenarios – Credit spread (Horizon = 5 business days)

General:

Shocks to credit default spreads, absolute change (basis points)		
Geographic area	**Index**	**Shock**
EU	**Itraxx Main 3y**	42
	Itraxx Main 5y	40
	Itraxx Main 7y	38
	Itraxx Main 10y	37
	Itraxx Crossover 5y	144
	Itraxx Senior fin 5y	58
	Itraxx SubFinancial 5y	126
United States	**Investment yield CDSI**	46
	High yield CDSI	149

Individual:

Shocks to credit default spreads, absolute change (basis points)			
		Credit bucket	
Geographic area	**Sector**	**Investment grade**	**Speculative grade**
EU	**Financial**	56	105
	Basic Materials	48	75
	Consumer, Cyclical	29	57
	Energy	32	67
	Consumer, Non-cyclical	18	64
	Industrial	35	92
	Communications	18	46
	Technology	24	57
	Utilities	12	57

Table 10: Shock scenarios – Corporate debt (Horizon = 2 business days)

Shocks to iBoxx covered bond yields, absolute changes (basis points)		
Geographic area	Maturity	Shock
EA	1 - 3Y	40
	3 - 5Y	41
	5 - 7Y	37
	7 - 10Y	35
	> 10Y	34

Shocks to (Merrill Lynch) BBB bond yields, absolute changes (basis points)		
Geographic area	Maturity	Shock
EA	1 - 3Y	113
	3 - 5Y	115
	5 - 7Y	105
	7 - 10Y	98