EIOPA/ESRB adverse financial market scenarios for insurance stress test

Introduction

According to its mandate, the EIOPA shall, in cooperation with the ESRB, initiate and coordinate Union-wide stress tests to assess the resilience of financial institutions to adverse market developments. As part of this co-operation, two adverse financial market scenarios for the 2014 EIOPA stress test have been designed in cooperation with the ESRB. This note sets out the risks and vulnerabilities addressed by the scenarios, the underlying economic narrative, the proposed shocks, calibrated for the EIOPA/ESRB adverse financial market scenarios and the outcome of the ATC discussion.

Systemic risks and vulnerabilities addressed by the scenarios

The two adverse market scenarios reflect the ESRB assessment of prevailing systemic risks to the financial system: The gradually improving but still sluggish recovery constitutes a key source of systemic risk for the EU financial system, against the backdrop of heavily indebted private and public balance sheets and weak financial sector profits. Risks related to a possible sharp and disorderly reversal of global risk premia have continued to build. A possible aggravation of the sovereign debt crisis remains an important high-impact risk.

A key vulnerability of the European insurance sector is the so-called ‘double hit’. Insurers are large investors in government and corporate bonds, equity and real estate. Insurers are therefore particularly vulnerable to the risk of an abrupt fall in global asset prices, as a result of a reassessment of risk premia, and an aggravation of sovereign debt crisis. In addition insurers are vulnerable to prolonged low risk free interest rate levels. Low risk free yields increase the value of their long term liabilities and compress margins between guaranteed returns in life policies and matching long term low risk investments. Hence insurers face risks at both their assets and their liabilities side of the balance sheet. These risks are fully captured by the two proposed financial market scenarios.

Narrative of the scenarios

The narrative of the adverse scenarios takes as its starting point a sudden rise in global risk aversion. This triggers a worldwide shock to asset prices such as government and corporate bond prices, equity prices and real estate prices. Initially the shock is assumed to affect mostly the non-financial corporate bond markets and the equity markets, where risk premia have been particularly compressed.

These shocks are assumed to propagate quickly to other financial markets: The sovereign debt crisis in the euro-area aggravates, with the spread of all euro-area government bonds widening relative to the swap rates, albeit with differences across countries. Sovereign yield spreads outside the euro-area also widen. Credit spreads on bank debt increase more than those on corporate debt, because of an assumed lagging of bank balance sheet repair. Tightening credit conditions, in combination with rising unemployment and weakened domestic demand result in a steep fall in real estate prices. In this environment of financial turmoil and weakened macroeconomic conditions, financial market expectations of accommodative monetary policy are assumed to push swap rates/risk free interest rates, below current low levels. German sovereign bonds yields do not fall along with swap rates, reflecting an assumed loss of safe haven status.[1]

Notes on the methodology

A nonparametric, conditional expected shortfall technique has been used to derive the shocks in the two scenarios. The shock originating market is either the non-financial corporate (CORP) or the equity markets (STOX):

CORP (marked in green):

- Shock originator: corporate bonds in the European Union
- Observation period: 2007-2013
- Annual probability of occurrence of consistent scenario: 1%

[1] Technically, the German sovereign yields are fixed, which causes the spread between German sovereign yields and swap yields to become less negative after the shock.

STOX (marked in orange)

- Shock originator: equity markets in the European Union
- Observation period: 2009-2013
- Annual probability of occurrence of consistent scenario: 1%

The shocks to swap rates are for euro interest rate swaps and are to be added to the euro risk free interest rate curve as provided by EIOPA in accordance with the Solvency II technical specifications. The shocks for non-euro swaps are still to be calibrated by scaling them proportionately to the euro swap shocks. This will be done by EIOPA. Like for the euro swap rates the shocks will result in swap rates below, at least not far above current levels.

The shocks to government and corporate bond spreads apply to all maturities and are to be translated in falls of bond prices.

For ease of comparison the year end 2013 spreads (against German government bonds) are also presented.

Government bonds

Resulting shocks expressed as spreads of government bond over swap rates for all maturities

Country	AT	BE	BG	CY	CZ	DK	ES	FI	FR	GR	HR	HU	IE	IT	LT	LU	LV	MT	NL	PL	PT	RO	SE	SI	SK	UK	EU mean	EU std	IC	NO	CH	US	JP	TR	RU	DE
CORP	88	98	146	185	189	108	107	77	81	293	148	321	192	132	178	132	151	69	79	181	129	53	99	185	156	104	**142**	**64**	133	154	103	104	167	405	70	42
STOX	97	152	143	255	132	65	204	73	100	650	140	342	272	251	103	165	137	88	72	188	337	104	68	255	101	92	**176**	**127**	130	89	99	101	135	236	128	56
end-2013 sprea	1	3	82	707	-11	4	121	-4	7	806	312	382	67	100	94	-	-72	-	-1	281	264	351	87	368	44	35	168	227	386	121	-17	17	-9	989	94	-

Corporate bonds

Resulting shocks expressed as spreads to swap rates for all maturities

	Non-financial							Financial							Fin cov.							Mean	STD
	AAA	AA	A	BBB	BB	B<	unrated	AAA	AA	A	BBB	BB	B<	unrated	AAA	AA	A	BBB	BB	B<	unrated		
CORP	136	169	176	212	233	261	274	128	193	249	305	334	358	370	74	105	110	128	140	147	152	**203**	**88**
STOX	60	63	69	104	124	152	163	79	91	157	372	420	475	511	63	94	104	124	140	148	154	**175**	**140**
end-2013 sprea	85	162	166	215	-	-	-	105	136	173	280	-	-	-	141	124	212	-	-	-	-	**167**	**52**

Equity

	EU	
	simple	weighted
CORP	-21%	-23%
STOX	-41%	-55%

Swap rates (euro)

	Maturity									
	1Y	2Y	3Y	5Y	7Y	10Y	20Y	30Y	Mean	STD
CORP	-35	-42	-30	-9	0	8	16	15	**-10**	**24**
STOX	-26	-56	-67	-78	-85	-91	-97	-103	**-75**	**25**
end-2013 rate	0.4%	0.5%	0.8%	1.3%	1.7%	2.2%	2.7%	2.7%	**1.5%**	**0.9**

Property prices

	Comm	Resid
CORP	-18%	-15.7%
STOX	-49%	-17.1%