Box 7

A "BAROMETER" FOR FINANCIAL MARKET TURMOIL

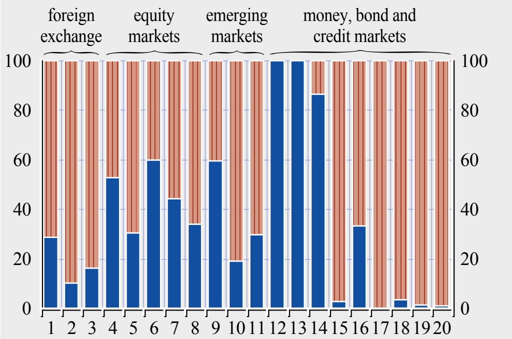
The recent turmoil in financial markets is a good example of how tensions can develop in one market and gradually spread to other market segments. This box presents a simple cross-market "barometer" which can help in the monitoring of this contagion effect. The barometer consists of 20 relevant market indicators covering different market segments (foreign exchange, equities, bonds, money markets, credit derivatives, and emerging markets).[1] The barometer compares the level of each indicator on a certain day with its pre-turmoil level (calibrated as zero on the scale) and with its level at the "peak" of the turmoil (calibrated as 100). While the pre-turmoil level is taken on the same day for all indicators, the day corresponding to the turmoil "peak" level is different for each indicator. Charts A to C show this barometer at three different stages in the recent market turmoil.

The market turmoil started in July in credit markets and it also affected bond markets, resulting in a dramatic decrease in liquidity and a strong investor preference for the best-quality

1 These indicators include equity indices and prices of other risky assets, currency pairs influenced by carry trades (for instance, the Australian dollar against the Japanese yen), spreads showing tensions in money markets or "flight to quality" in bond markets, as well as various market-based indicators of risk (credit default swap premiums, implied volatilities, etc.).

Chart A Turmoil barometer on 30 July 2007

(pre-turmoil level taken on 16 July 2007)

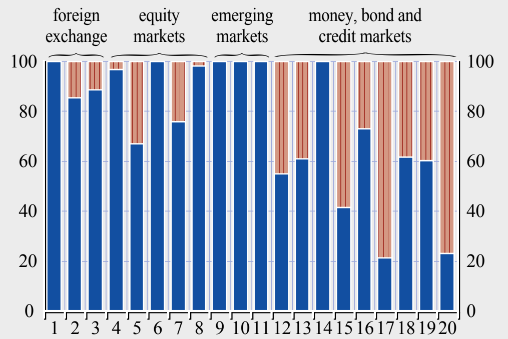


1 AUD/JPY
2 3-m EUR/USD implied vol.
3 3-m EUR/JPY implied vol.
4 S&P 500
5 Nikkei 225
6 Dow Jones EUROSTOXX
7 Dow Jones EUROSTOXX Banks
8 VIX
9 EMBI+
10 USD/TRY
11 Bovespa
12 10-yr Germany/Italy govt. spread
13 5-yr iTraxx Crossover
14 5-yr iTraxx Financials
15 3-m US AA ABCP/LIBOR
16 2-yr EUR swap spread
17 2-yr USD swap spread
18 3-m USD Libor/T-Bill spread
19 3-m EURIBOR/EONIA spread
20 dispersion of EONIA contributions

Sources: Bloomberg, EBF and ECB calculations.

Chart B Turmoil barometer on 16 August 2007

(pre-turmoil level taken on 16 July 2007)



1 AUD/JPY
2 3-m EUR/USD implied vol.
3 3-m EUR/JPY implied vol.
4 S&P 500
5 Nikkei 225
6 Dow Jones EUROSTOXX
7 Dow Jones EUROSTOXX Banks
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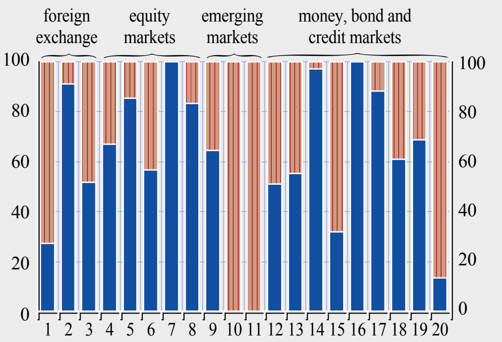
14 5-yr iTraxx Financials
15 3-m US AA ABCP/LIBOR
16 2-yr EUR swap spread
17 2-yr USD swap spread
18 3-m USD Libor/T-Bill spread
19 3-m EURIBOR/EONIA spread
20 dispersion of EONIA contributions

Sources: Bloomberg, EBF and ECB calculations.

Chart C Turmoil barometer on 9 November 2007

(pre-turmoil level taken on 16 July 2007)

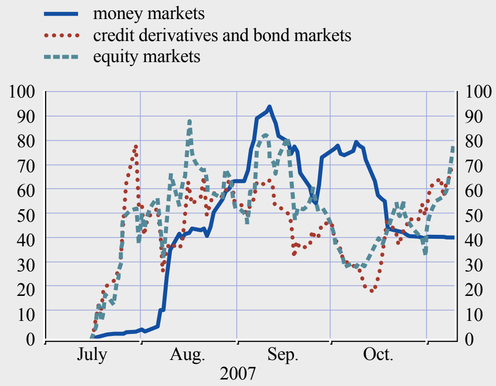


1	AUD/JPY	11	Bovespa
2	3-m EUR/USD implied vol.	12	10-yr Germany/Italy govt. spread
3	3-m EUR/JPY implied vol.	13	5-yr iTraxx Crossover
4	S&P 500	14	5-yr iTraxx Financials
5	Nikkei 225	15	3-m US AA ABCP/LIBOR
6	Dow Jones EUROSTOXX	16	2-yr EUR swap spread
7	Dow Jones EUROSTOXX Banks	17	2-yr USD swap spread
8	VIX	18	3-m USD Libor/T-Bill spread
9	EMBI+	19	3-m EURIBOR/EONIA spread
10	USD/TRY	20	dispersion of EONIA contributions

Sources: Bloomberg, EBF and ECB calculations.

Chart D Turmoil barometer: European credit, equity and money markets

(pre-turmoil level taken on 16 July 2007)



Sources: Bloomberg and ECB calculations.
Note: The money market composite includes the spread between three-month EURIBOR and EONIA swap rates and a measure of the volatility of the euro overnight rate. The credit derivatives and bond markets composite includes the spread between yields on German and Italian ten-year government bond yields, the five-year iTraxx crossover index and the two-year euro swap spread. The equity markets composite includes the Dow Jones EUROSTOXX and the Dow Jones EUROSTOXX Banks indices.

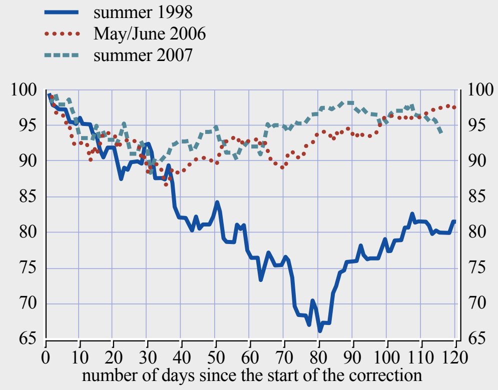
government bonds (see Chart A). In August the credit turmoil developed into a liquidity squeeze, which triggered a general rise in risk aversion, affecting equity, foreign exchange and emerging markets (see Chart B). By September, most market segments had stabilised, and some of them (for instance emerging markets) had completely recovered from their earlier losses. However, money markets remained tense. Moreover, later on after mid-October renewed concerns over the risks in banks' balance sheets caused new market fears, fuelling risk aversion again and pushing equity markets lower (see Chart C).

An aggregate view of the way in which tensions spilled-over from one market to the next through the recent turmoil can be obtained by simply calculating aggregate indices (based on several sub-sets of the barometer indicators) for the different market segments. Chart D shows that the first "peak" of the turmoil occurred on 30 July in credit derivatives and bond markets. This was followed by a second one on 16 August with a contagion to equity markets, and a third one at the start of September when tensions in the money markets increased. After mid-October, while money market conditions improved slightly, equity, bond, and credit derivative markets faced renewed tensions.

While this "barometer" may be useful for monitoring the development of tensions across markets, it is not sufficient to estimate the relative significance of the turmoil in each individual market. For this, the information contained in the barometer should be combined with other indicators. For instance, it is useful to compare the impact of the recent turmoil across different markets with past episodes of market volatility, such as the May/June 2006 correction and with the turmoil in the summer of 1998 (following the LTCM crisis and the Russian debt crisis).

Chart E Impact on the Dow Jones EUROSTOXX of three periods of turmoil

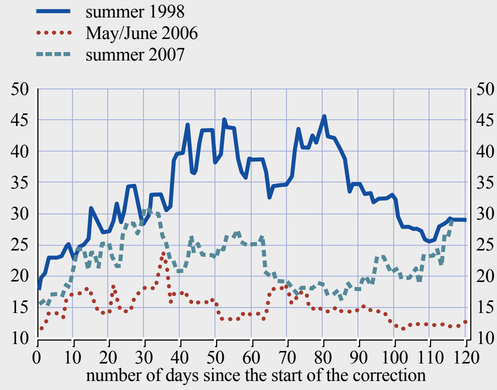
(index: 100 on the day before the first day of the period of turmoil, i.e. 20 July 1998, 9 May 2006 and 16 July 2007)



Sources: Bloomberg and ECB calculations.

Chart F Impact on the S&P500 implied volatility (VIX index) of three periods of turmoil

(starting dates: 20 July 1998, 9 May 2006, 16 July 2007)



Sources: Bloomberg and ECB calculations.

While the negative impact of the recent turmoil on European equity markets was comparable to the May/June 2006 correction, the increase in equity implied volatility was more pronounced. However, by both measures the recent turmoil had a smaller impact than the financial market crisis in 1998 (see Charts E and F). The recent episode is nevertheless remarkable by its duration and by the way tensions moved from market to market, helped by a succession of negative news related first to the US sub-prime mortgage market, and then to the more general risks faced by the global financial system.

Box 8