EUROPEAN CENTRAL BANK

EUROSYSTEM

Discussion: Assessing the risks of asset overvaluation: Models and challenges by S. Cecchetti and M. Taboga

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Unconventional monetary policy: Effectiveness and risks

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The views expressed here are those of the authors and do not necessarily reflect those of the European Central Bank

Key Question

I | Assessing the risks of asset overvaluation in stock and corporate bond markets

Results

I Currently, no over-valuation for the stocks and corporate bond markets of the major economies

Contribution

I   Assess the degree of mis-valuation of asset prices by producing confidence bands for the fundamental value of assets

Literature

The fundamental value of an asset is the expectation of the present discounted value of its future cash flow.

The observed price can differ from the fundamental value, because it can include:
- a bubble component (i.e. euphoria or panic, before and after Lehman?)
- a short-term speculative component (i.e. negative long-term sovereign yields?)

The key issue is to disentangle the fundamental value from the bubble and the speculative components.

Key Issue of the paper

I In real time, assess the repricing of credit risk, which typically results from shocks

The fundamentals of the stock market:
Average of past and current earnings

The fundamentals of the corporate bond market:
Realised default losses, which are a function of yield to maturity, total return and duration of the bond.
Regress realised default losses on corporate spreads and stock market volatility.

Authors' solution: the authors represent the uncertainty about the fair risk premium, by assigning a discrete uniform uninformative prior to its set. The estimation of the fair risk premium requires a richer model

Literature on stock prices

An important recent contribution to be quoted and studied is the work by Forni, Gambetti, Lippi and Sala on "Noise bubbles" (Economic Journal)

The resulting equilibrium stock price includes a transitory component – the "noise bubble" – which can be responsible for boom and bust episodes unrelated to economic fundamentals. They found that
- the dot-com bubble is entirely explained by noise;
- the stock price boom peaking in 2007 is not a bubble;
- the stock market crisis in 2009 is largely due to negative noise shocks.
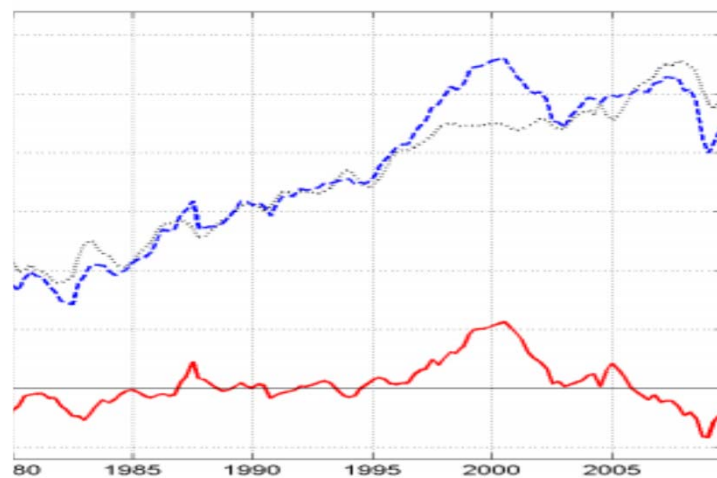
Assumptions:
- Price depend on agents' expectations about future dividends (i.e. VAR with dividends, stock prices, the 3-month Treasury Bill and the AAA corporate bond yield)
- The difference between the log of prices and the log of dividends is stationary

Cecchetti and Taboga (2016)

US
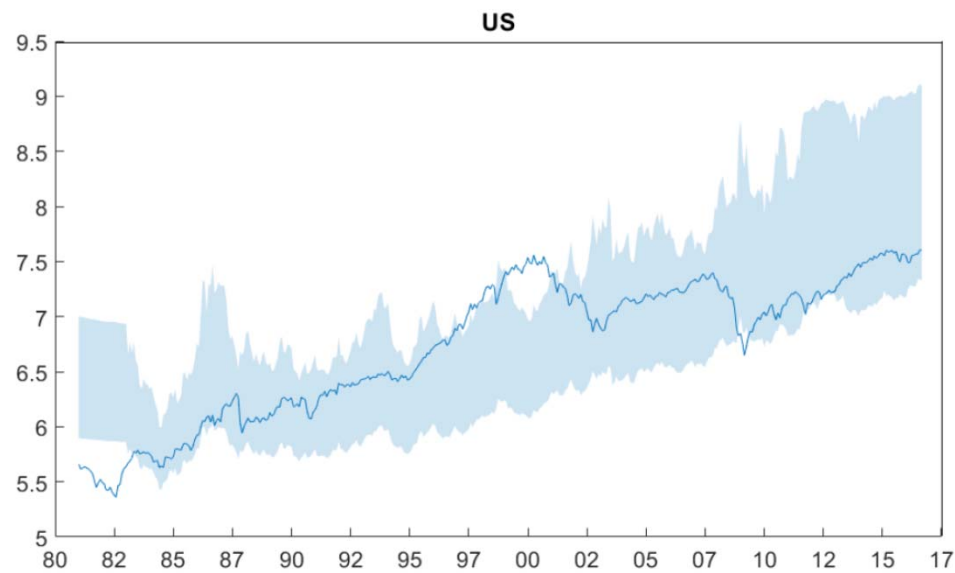
Forni, Gambetti, Lippi and Sala on "Noise bubbles" (EJ)

Literature on corporate spreads

Gilchrist and Zakrajsek (AER 2012) introduce the Excess Bond Premium:

Credit spreads(i) = function of fundamentals(i) + noise(i)

EBP = sum(i,noise(i))

Studies with European data:

Darracq-Paries and De Santis, (JIMF, 2015); Bleaney, Mizen and Veleanu, 2016 (EJ, 2016); Gilchrist and Mojon, 2016 (EJ, 2016); De Santis (ECBWP, 2016).

Literature on corporate spreads

Credit risk and other term premia

"Pricing error"

$$\ln\left(y_{i,c,t}\right) = x'_{i,c,t}\beta + z'_{c,t}\gamma + \upsilon_{i,c,t}$$

Observable country risk

$y_{i,c,t}$ = NFC corporate spreads of bond i in country c at time t

$x_{i,c,t}$ = Time-varying bond characteristics

$z_{c,t}$ = Country-specific macro factors including survey expectations

The policymaker is interest in unobserved market-wide shocks, because they may contain information about future economic activity

$$\upsilon_{i,c,t} = \eta_t + \lambda_{c,t} + \xi_{i,c,t}$$
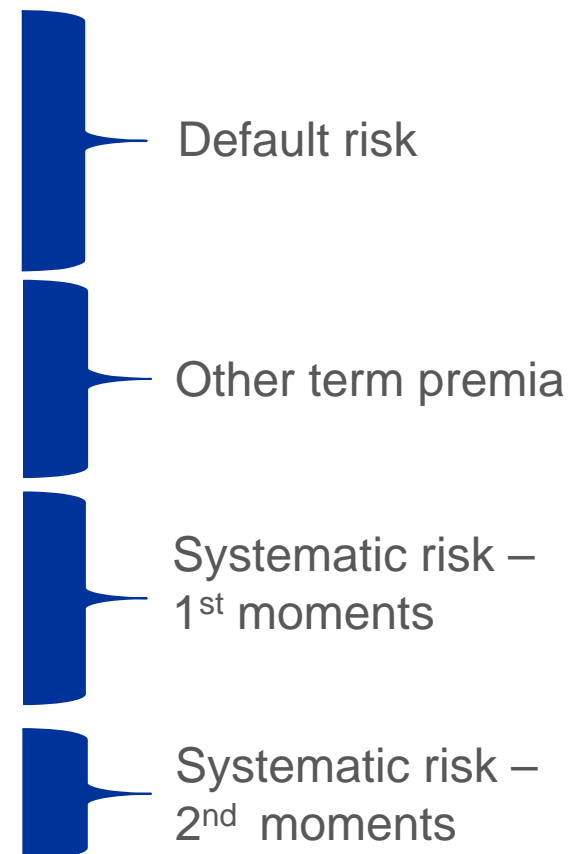
"Pricing error"

Market-wide shocks   Idiosyncratic shocks (i.e. liquidity premia, M&A news, report publications, etc.)

Credit spread independent from unobserved market-wide shocks and therefore a proxy for fair value

$$\ln\left(y^{F}_{i,c,t}\right) = x'_{i,c,t}\beta + z'_{c,t}\gamma + \xi_{i,c,t}$$

Determinants of credit spreads

1) Ratings (i,j,c,t)

2) EDF median (j,c,t)

3) Industry fixed effects (j)

4) Realised stock market vol. (j,c,t)

5) Outstanding amount (i,j,c,t)

6) Effective duration (i,j,c,t)

7) Coupon (i,j,c,t)

8) Expected real GDP growth 1-year ahead (c,t)

9) Expected inflation 1-year ahead (c,t)

10) Short term 3-month OIS rate (t)

11) Standard deviation of GDP growth forecast (c,t)

12) Standard deviation of INF forecast (c,t)

Default risk

Other term premia

Systematic risk – 1st moments

Systematic risk – 2nd moments
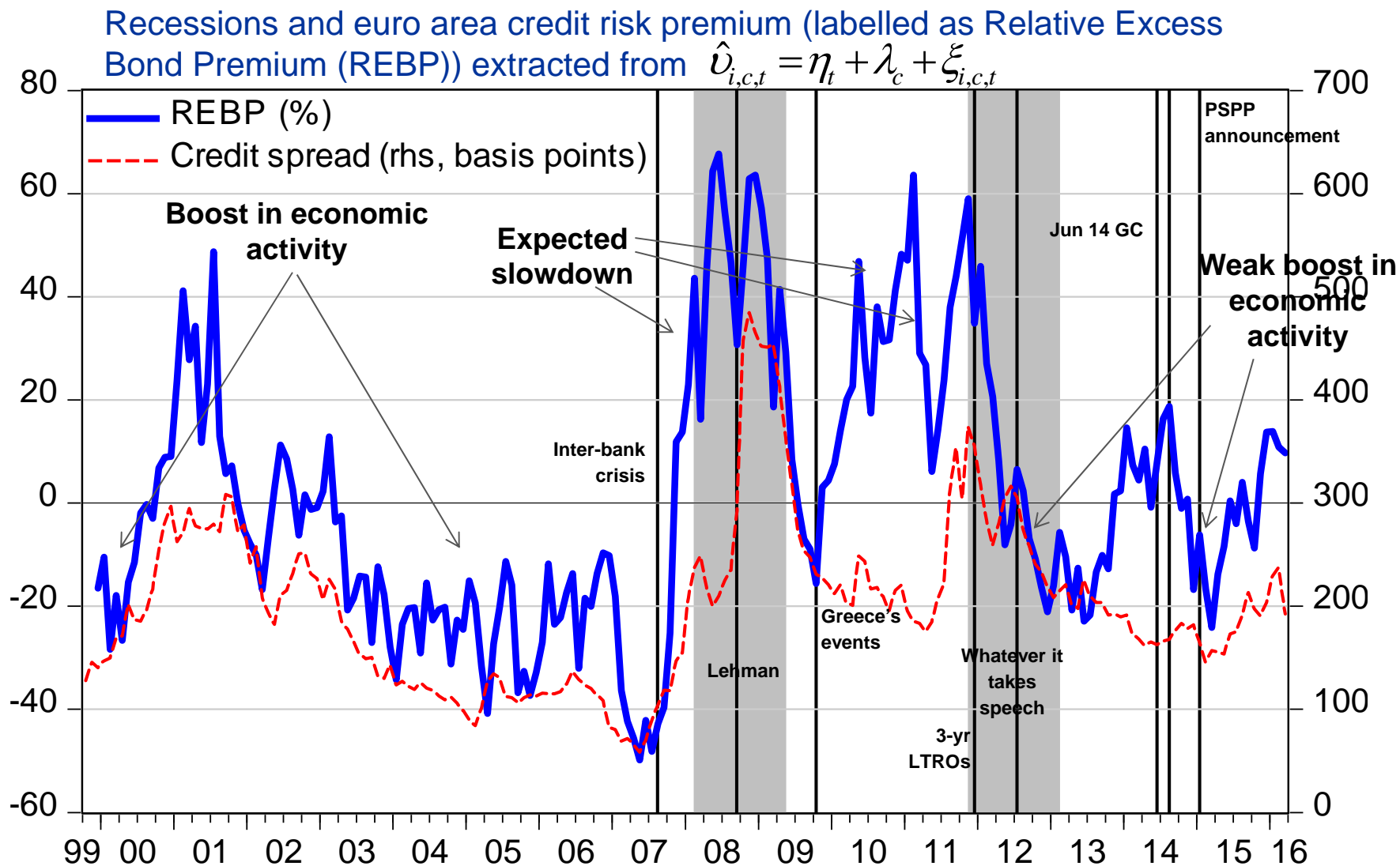
i = 2529 euro area bonds, j = 40 sectors, c = 9 countries, t = 198 monthly observations, total observations: 104297.

Sample period: October 1999 – March 2016. Frequency: Monthly.
Country: AT, BE, DE, ES, FI, FR, IE, IT, NL.

2nd Result: Predictive power of EA credit risk premium

Recessions and euro area credit risk premium (labelled as Relative Excess Bond Premium (REBP)) extracted from $\hat{\upsilon}_{i,c,t} = \eta_t + \lambda_c + \xi_{i,c,t}$

Legend:
- REBP (%)
- Credit spread (rhs, basis points)

Chart labels:
- Boost in economic activity
- Expected slowdown
- Inter-bank crisis
- Lehman
- Greece's events
- 3-yr LTROs
- Whatever it takes speech
- Jun 14 GC
- PSPP announcement
- Weak boost in economic activity

X-axis: 99 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16

Left Y-axis: -60 to 80 (REBP %)
Right Y-axis: 0 to 700 (Credit spread basis points)

Notes: This figure shows the estimates of the excess bond premium as a percentage of justified credit spreads. All denotes all bonds. The vertical bars denote: 15 Aug. 07 - Money market crisis; 15 Sep. 08 - Lehman; 16 Oct. 09 - Greece; 8 Dec. 11 - 3-yr LTROs; 26 Jul. 12 - Draghi's "whatever it takes" speech in London; 5 Jun 14 GC announcement of a combination of measures; 22 Aug. 2014 – Draghi's speech at Jackson Hole; 22 Jan. 2015 – GC announcement of PSPP. Months of recession are indicated in grey, and months of expansion in white using the CEPR based recession indicator. It shows a recession from month following the peak through the month of the trough (i.e. the peak is not included in the recession shading, but the trough is). Sample period: October 1999 – March 2016.

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Corporate bond prices: Comparison

Cecchetti and Taboga (2016): corporate bond price segment

EMU
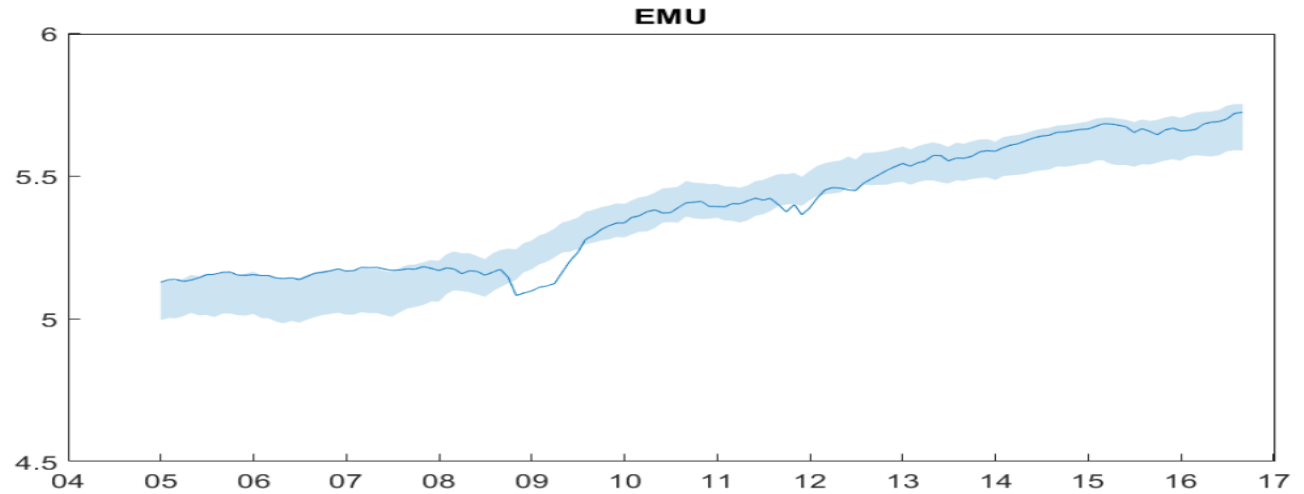
De Santis (ECBWP, 2016): corporate spread segment