Measuring the Financial Soundness of US Firms, 1926-2012

Discussion

Simon Gilchrist
Boston Univerity and NBER

Bank of Portugal
June 12th, 2015

Overview

- Use inverse of equity volatility as a proxy for default risk.
  - Useful approximation in a structural model.
  - Available over long time series.
- Main Findings:
  - DI systematically related to credit spreads and default rates.
  - Extreme events: 1933, 1938, 2008.
  - Great Recession:
    - Volatility not leverage.
    - Banks and non-financials look very similar.
- Broad conclusions:
  - Financial factors do not in general cause business cycles.
  - Idiosyncratic volatility not risk – “uncertainty” rather than ”endogenous volatility”.

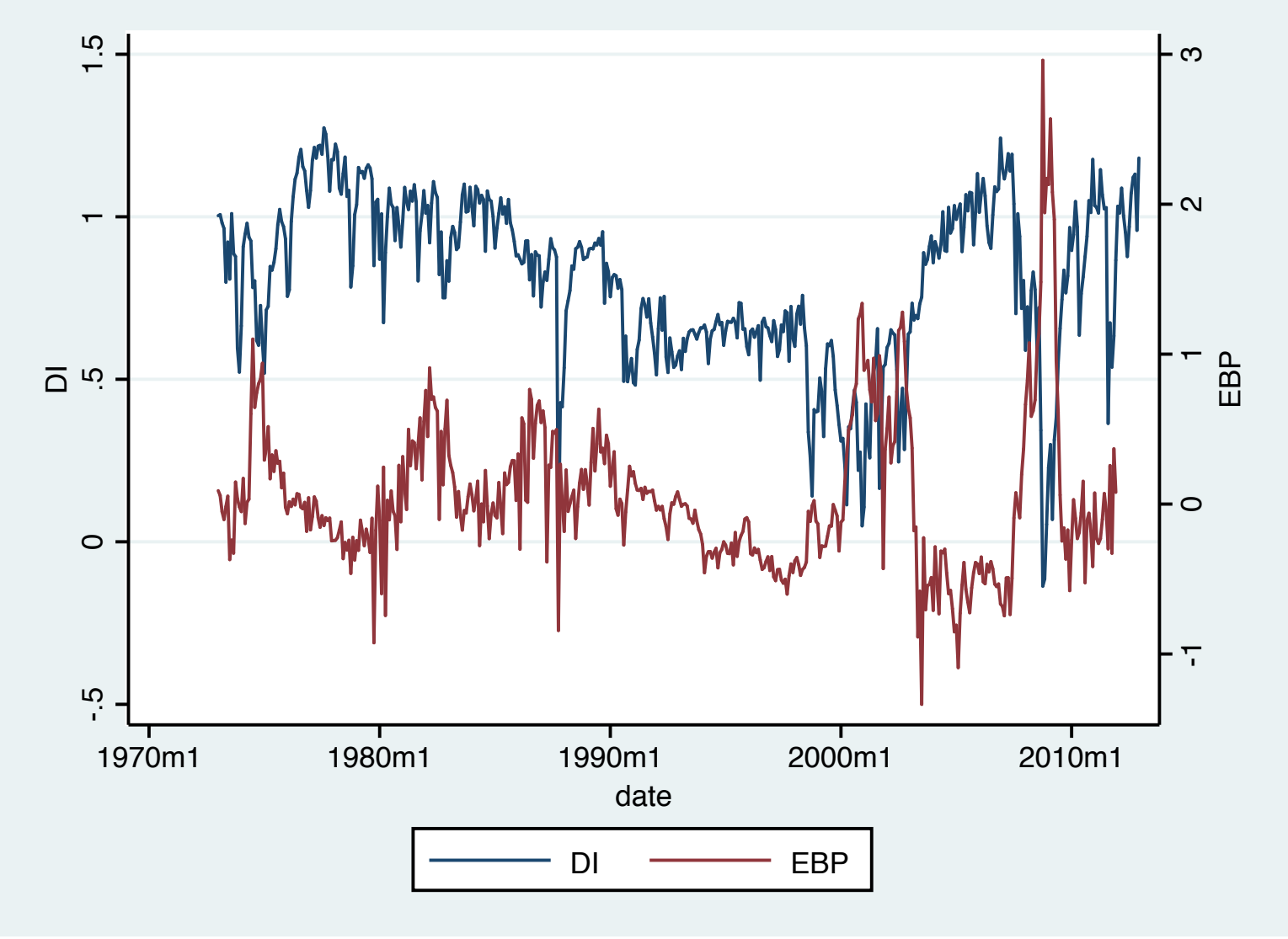
Discussion

- Distance to Insolvency vs Distance to Default:

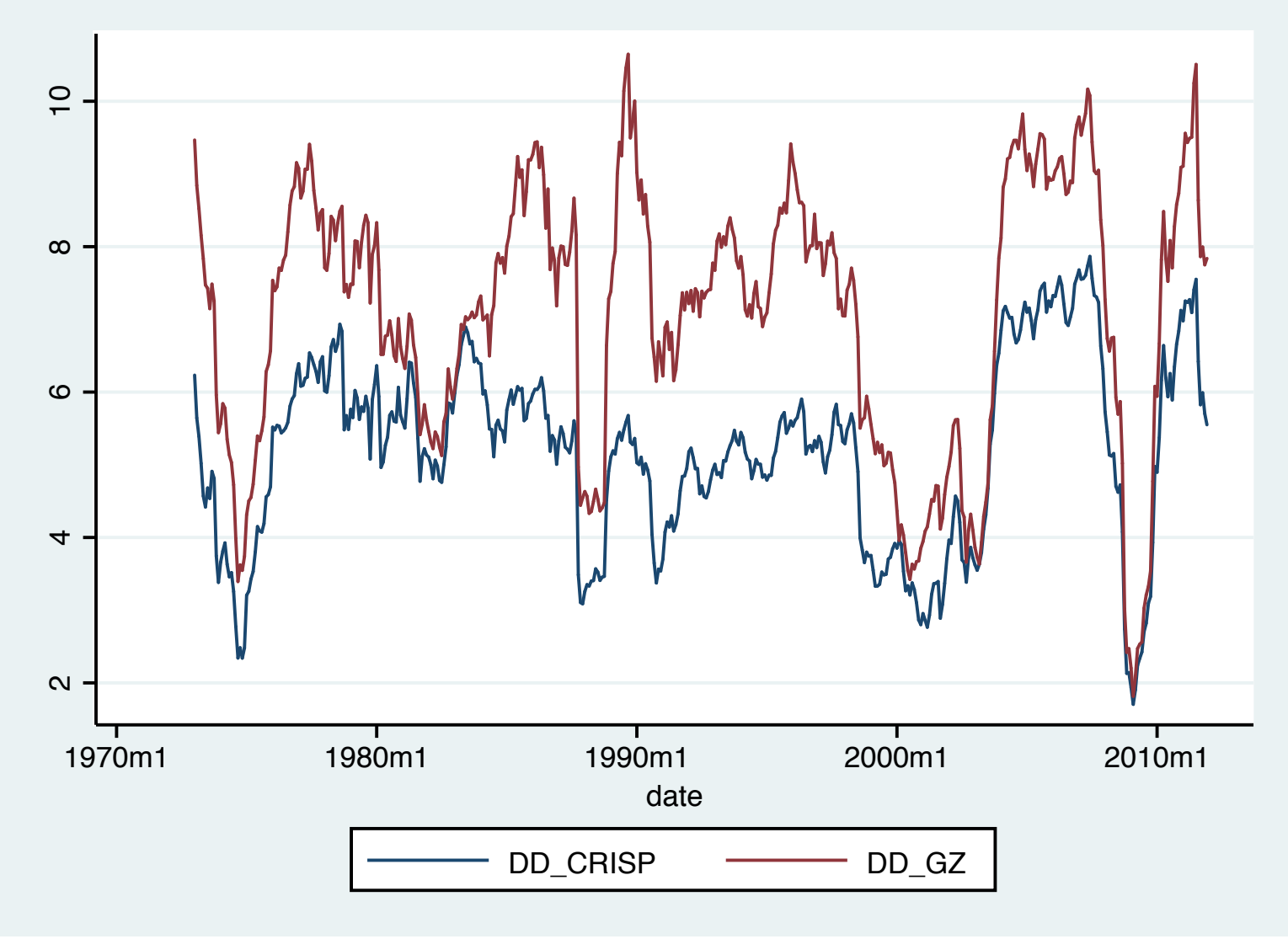
$$DD_t = \frac{\ln\left(V_t/D_t\right) - \mu_t + 0.5\sigma_t^2}{\sigma_t}$$

- Distance to Insolvency vs Excess Bond Premium
  - EBP – movements in credit spreads not due to default risk.
- Interpretation

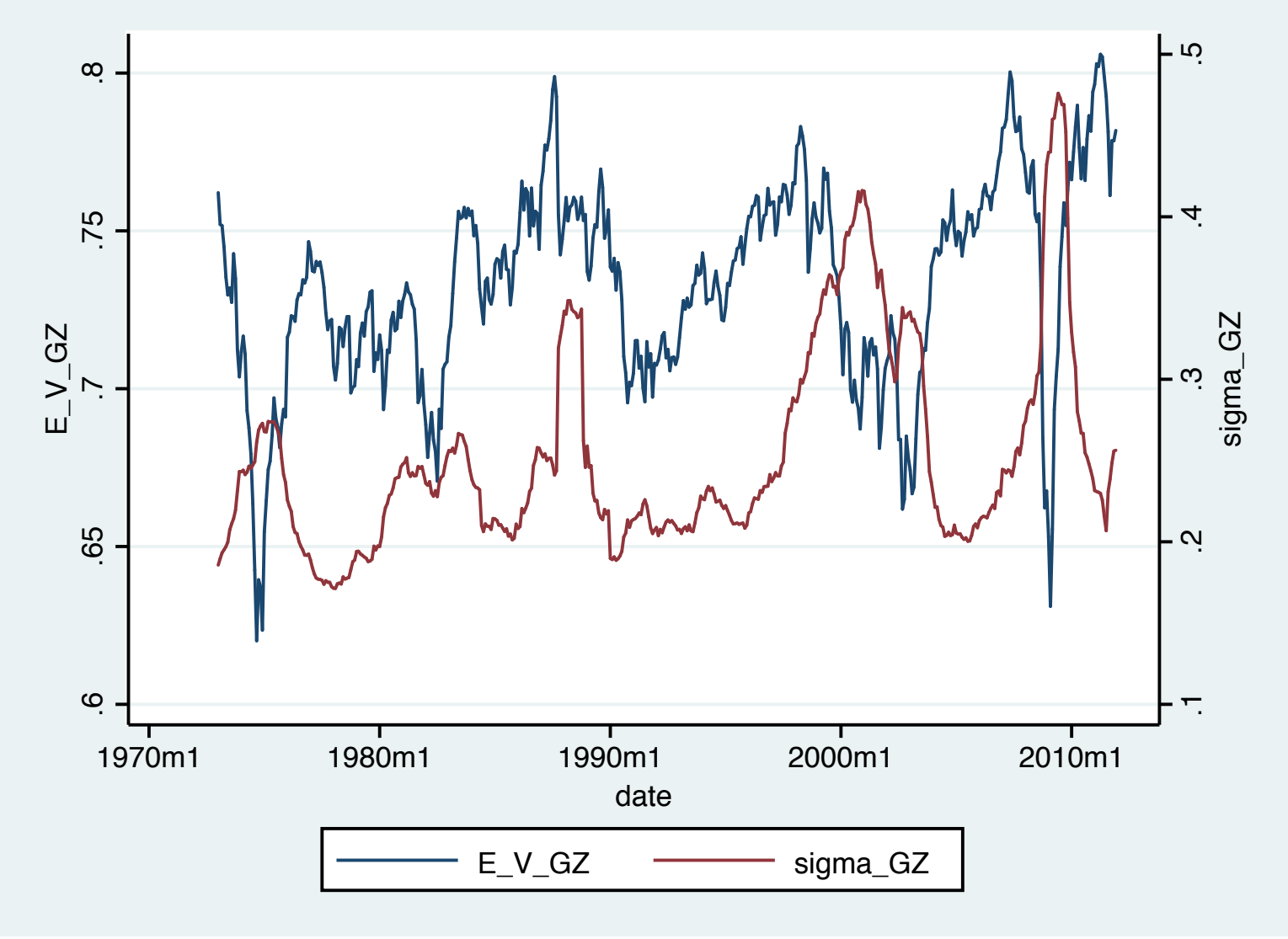
Distance to Insolvency (1973-2012)



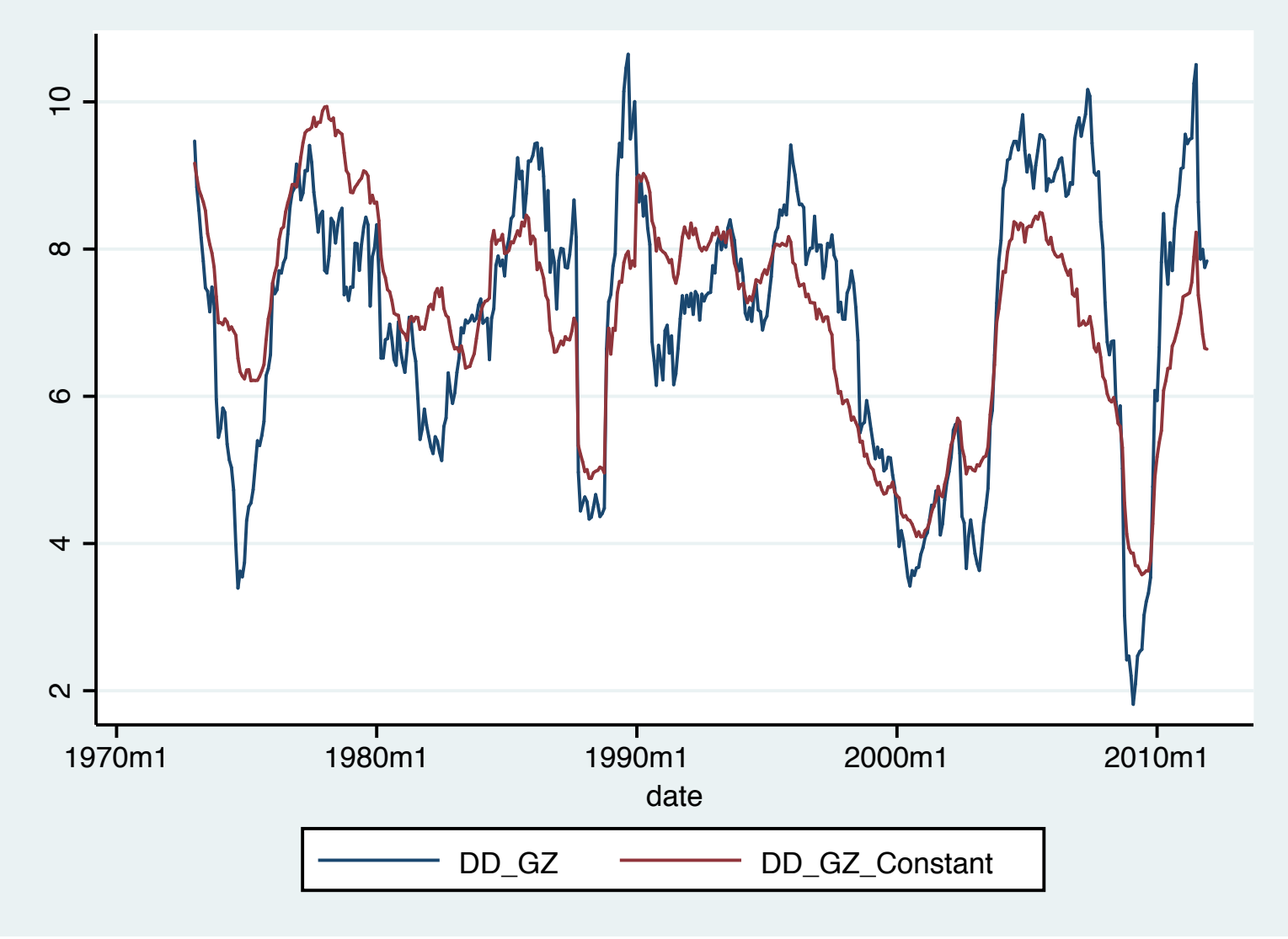
Distance to Default: (1973-2012)



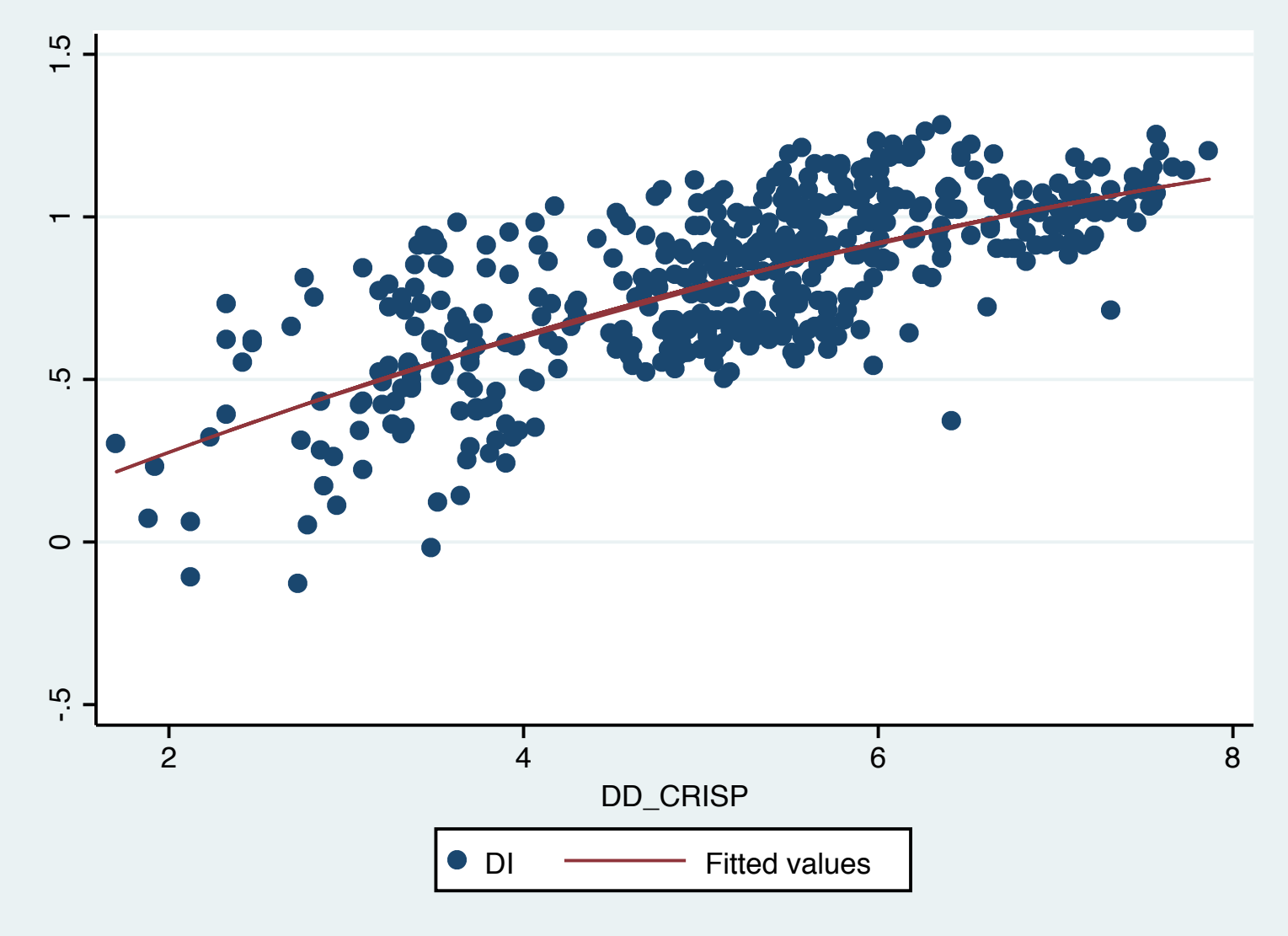
Leverage vs Volatility (1973-2012)



Constant Leverage (1973-2012)



Distance to Insolvency vs Distance to Default (1973-2012)

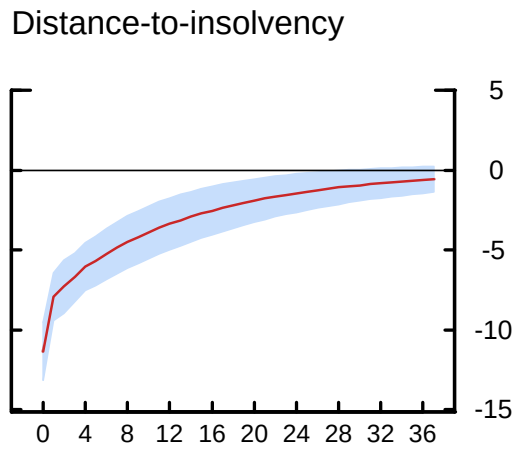


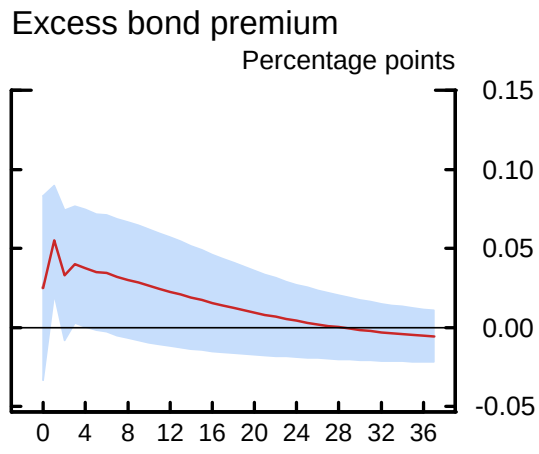
Information Content: Forecasting one year ahead

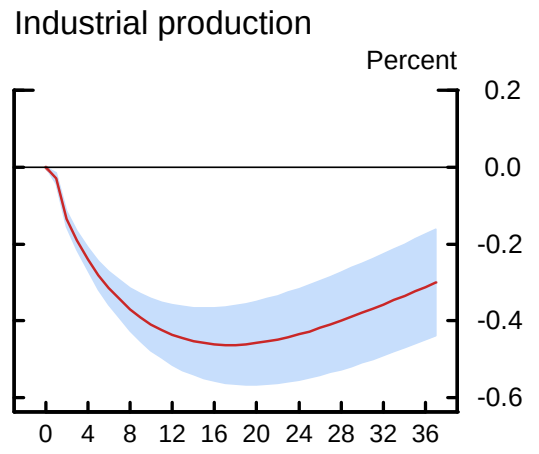
$$\log Y_{t+12} - \log Y_t = \alpha_o + \alpha_1 X_t + \sum_{j=0}^{6} b_j \log Y_{t-j} + \varepsilon_t$$

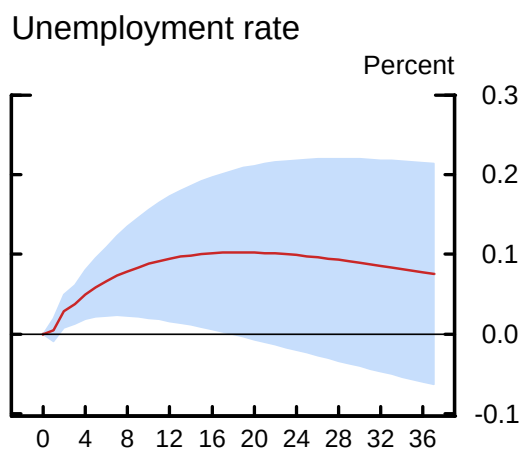
	$\log IP_{t+12} - \log IP_t$			$UE_{t+12} - UE_t$		
EBP_t	-3.85			0.83		
	(0.53)			(0.09)		
DD_t		0.74			-0.15	
		(0.20)			(0.04)	
DI_t			2.65			-0.25
			(1.02)			(0.21)
R^2	0.30	0.24	0.23	0.49	0.40	0.38

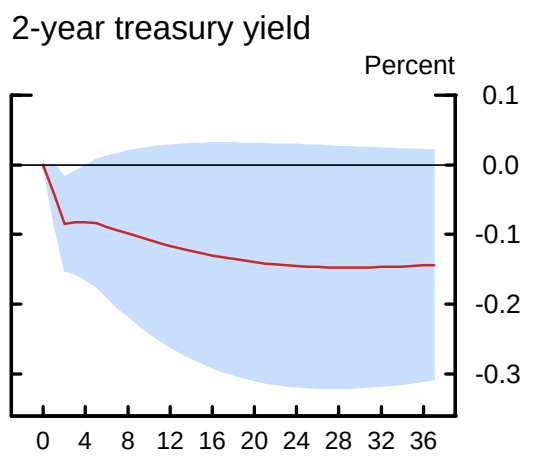
VAR Impulse: Distance to Insolvency

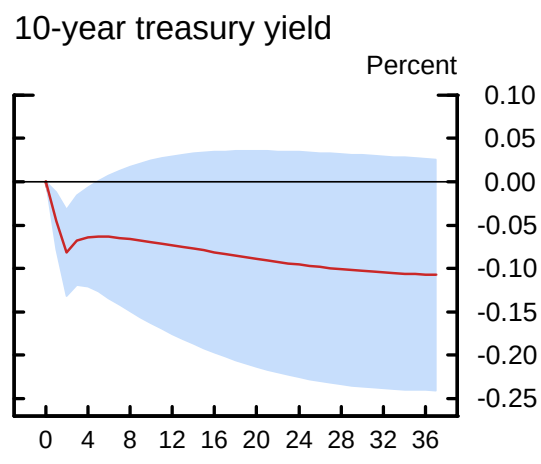






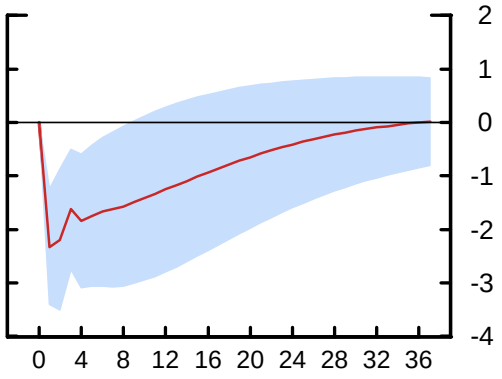






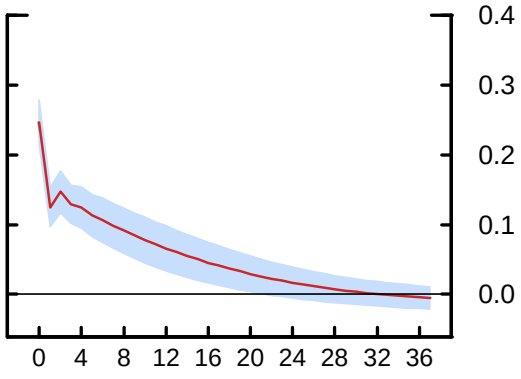
VAR Impulse: EBP

Distance-to-insolvency



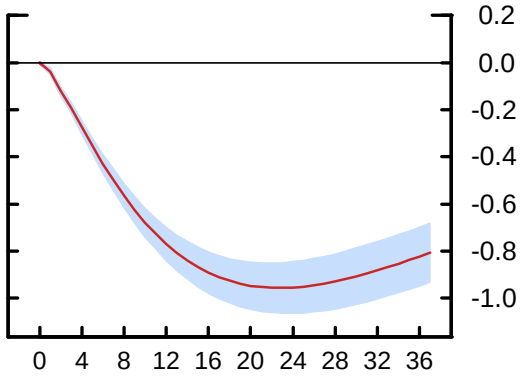
Excess bond premium

Percentage points



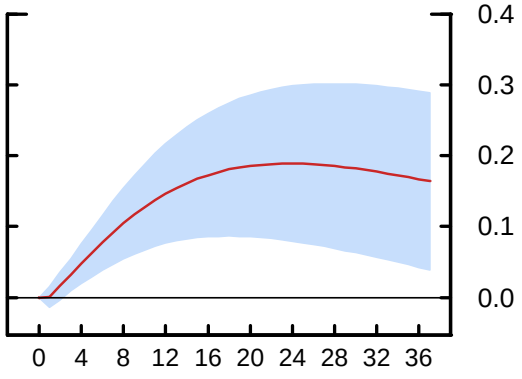
Industrial production

Percent



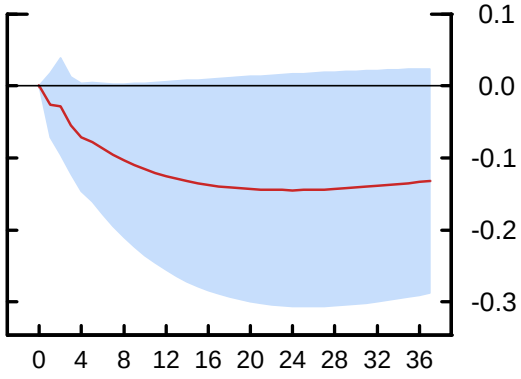
Unemployment rate

Percent



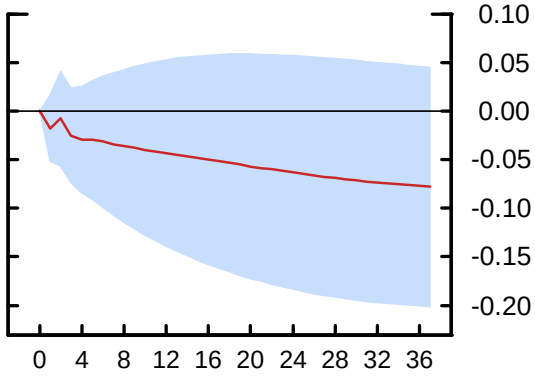
2-year treasury yield

Percent



10-year treasury yield

Percent



Interpretation of results

- Large bank/broker-dealers take losses.
- Intermediary asset pricing – liquidity dries up.
  - Some markets shut down (asset-backed CP)
  - Some markets become less liquid and more volatile
    - Bond markets
    - Equity markets
  - Bond markets provide better signals:
    - FI's are specialists in bond market.
    - Bonds reflect downside rather than upside risk.
- Liquidity premiums lead to greater financing costs – declines in investment and output.