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Economic policies, financial stability and economic performance

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Outline

- FESSUD Work Package 9: Financial stability and macro policies
  1. "Comparative work about EU countries, Eurozone and the US regarding price and financial stability"
  2. "Paper on empirical relationship btw micro-economic financial stability and economic performance"
  3. "Paper on the theoretical and empirical links btw financialisation, policies and financial stability"

Foreword about financialisation (or financial depth) and financial stability

Financial depth indicators			
Private credit to GDP	Annual	Financial resources provided to the private sector by domestic money banks as a share of GDP. Domestic money banks comprise commercial banks and other financial institutions that accept transferable deposits, such as demand deposits.	World Bank
Turnover ratio	Annual	Stock market turnover ratio: Total value of shares traded during the period divided by the average market capitalization for the period.	World Bank
Financial stability indicators			
National banking stability (Z score)	Annual	The Z-score combines in one single indicator the banks' profitability (l), capital ratio (k) and return volatility (r). Obviously, the Z-score will increase with the banks' profitability and capital ratio, and decrease with increasing return volatility. Thus, from an economic viewpoint the Z-score initially measures the probability of a bank to become insolvent when the value of assets becomes lower than the value of debt. Hence, a higher (lower) Z-score implies a lower (higher) probability of insolvency risk.	World Bank
Non-performing loans	Annual	Ratio of defaulting loans (payments of interest and principal past due by 90 days or more) to total gross loans (total value of loan portfolio). The loan amount recorded as nonperforming includes the gross value of the loan as on the balance sheet, not just the amount that is overdue.	World Bank
FSI-PCA	Annual	Financial stability indicator estimated through a principal component analysis based on banking aggregate prudential ratios	Own calculations
Composite indicator of systemic stress	Weekly extrapolated annually	It comprises the five arguably most important segments of an economy's financial system: the sector of bank and non-bank financial intermediaries, money markets, securities (equities and bonds) markets as well as foreign exchange markets.	ECB
Volatility of stock price index	Annual	Volatility of stock price index is the 360-day standard deviation of the return on the national stock market index.	(Bloomberg) World Bank

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1. The link btw price & financial stability

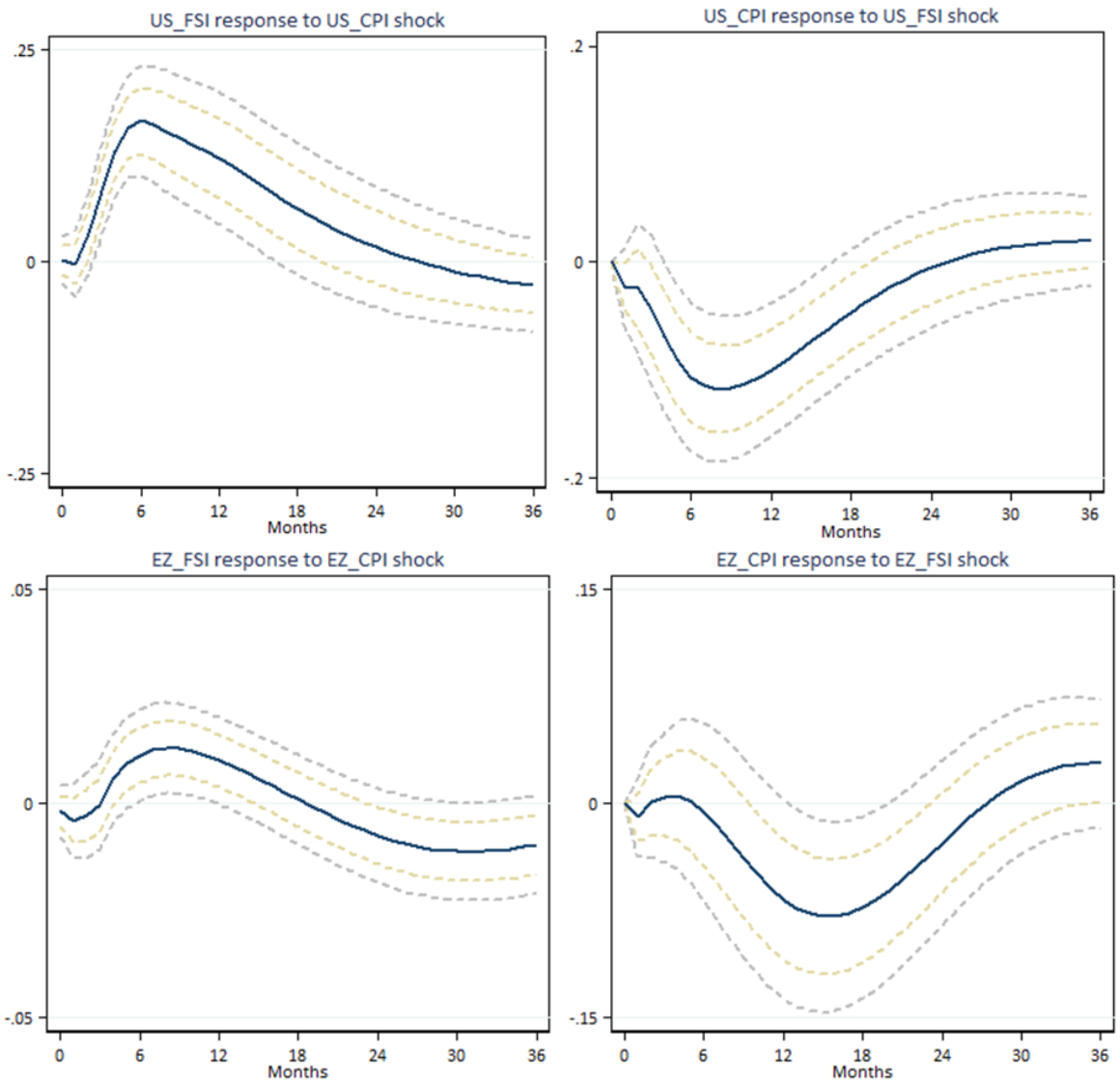
- Paper published in *Journal of Financial Stability* (16, 2015, 71-88) by C. Blot, J. Creel, P. Hubert, F. Labondance & F. Saraceno
- Motivation 1: appraisal of a "Conventional wisdom"
  - Until recently, financial stability was not an objective for / was not targeted by central bankers. Why has it been at the core of monetary policy strategy since the mid-1980s?
    - "Conventional wisdom" : the belief that price stability produces financial stability or, following Anna Schwartz' statement, that "price level stability is essential for financial stability".
    - Surprisingly, only sparse empirical evidence: Bordo & Wheelock (1998) & Bordo et al. (2001)
- Motivation 2: Can we infer from the link btw price and financial stability anything about monetary policy?
  - The debate on *leaning against the wind policy*

Dealing with motivation 1: methods & results

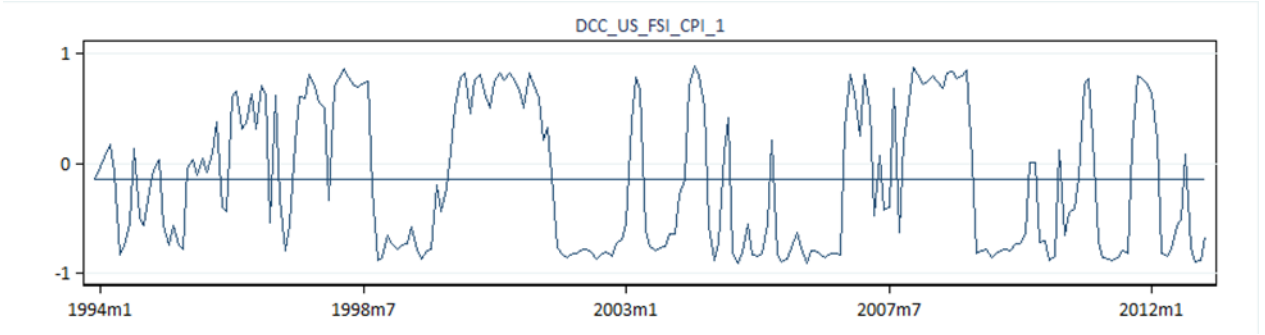
- Different methods:
  - Simple correlation
  - Multivariate method: IRF from VAR specification with vector: [HOUS, INDPRO, CPI, LOAN, M, CBRATE, STOCK, FSI] and a Choleski decomposition
  - Multivariate method with time-varying dimension: Dynamic Conditional Correlation model à la Engle (2002)

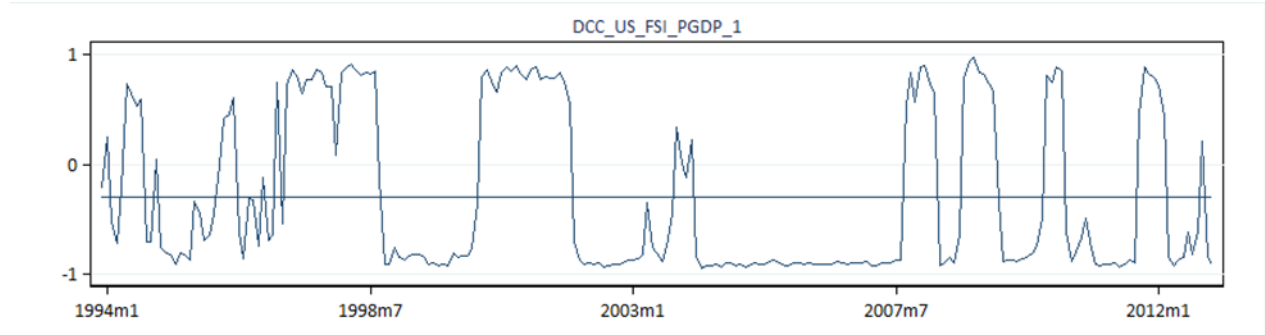
- We do not find robust and stable relation between price and financial stability in the US and in the EZ over the recent period (1993-2012 & 1999-2012)

VAR IRF


US_FSI response to US_CPI shock
.25
0
-.25
0
6
12
18
24
30
36
Months
US_CPI response to US_FSI shock
.2
0
-.2
0
6
12
18
24
30
36
Months
EZ_FSI response to EZ_CPI shock
.05
0
-.05
0
6
12
18
24
30
36
Months
EZ_CPI response to EZ_FSI shock
.15
0
-.15
0
6
12
18
24
30
36
Months

DCC (1/2) - USA


DCC_US_FSI_CPI_1
1
0
-1
1994m1
1998m7
2003m1
2007m7
2012m1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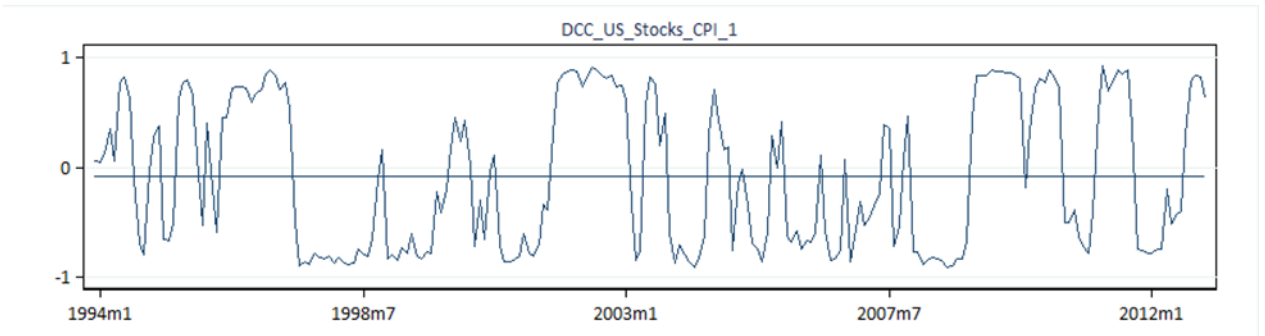
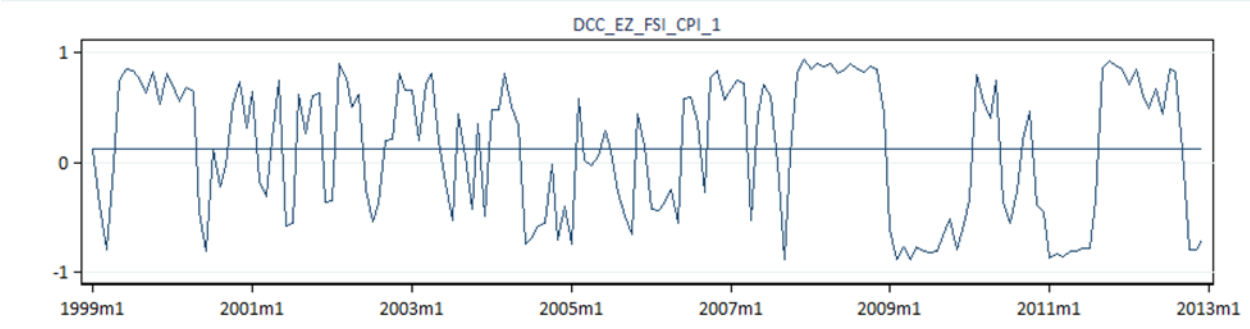
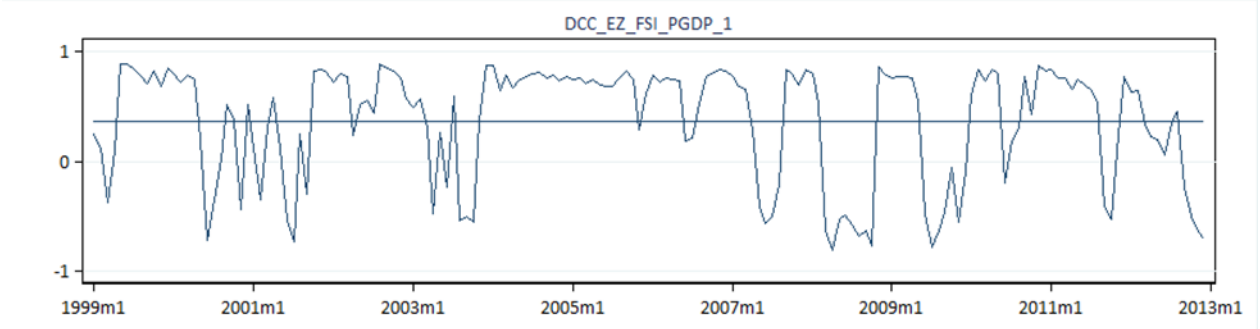
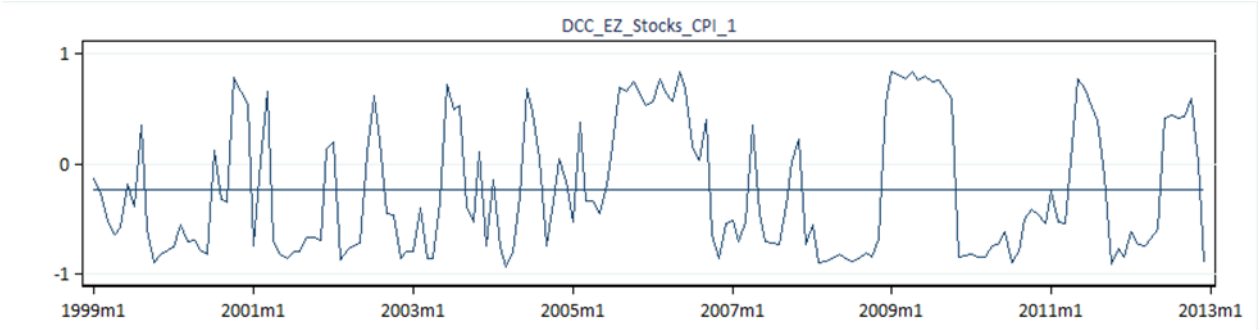
0
-1
1994m1
1998m7
2003m1
2007m7
2012m1


DCC_US_Stocks_CPI_1
1
0
-1
1994m1
1998m7
2003m1
2007m7
2012m1

DCC (2/2) – Euro area







Dealing with motivation 2: method & results

- Estimation of the determinants of the dynamic correlations:
  - Business cycle variables (industrial production growth rate and a financial crisis dummy)
  - Monetary policy variables (the central bank interest rate and the money aggregate growth rate)
- OLS and IV-2SLS estimations (to remove possible endogeneity), using the DCC estimates from the four models as the dependent variable (applying a Huber-White test to mitigate the issue of underestimation of standard errors for a variable which is previously estimated)

Determinants of DCC

	dcc_us_fsi_cpi_1			dcc_us_fsi_cpi_2			dcc_us_fsi_cpi_3			dcc_us_fsi_cpi_4		
	OLS	OLS	2SLS	OLS	OLS	2SLS	OLS	OLS	2SLS	OLS	OLS	2SLS
us_fsi	**0.19*****		**0.22*****	**0.09***		0.10	**0.10***		**0.11****	**0.19*****		**0.21*****
	[0.05]		[0.07]	[0.05]		[0.06]	[0.05]		[0.06]	[0.04]		[0.08]
us_cpi	0.17***		0.16	0.18***		0.16*	0.16***		0.16*	0.13***		0.12*
	[0.04]		[0.10]	[0.04]		[0.10]	[0.02]		[0.09]	[0.02]		[0.06]
us_cbrate	0.10***	0.11***	0.11**	0.04	0.05	0.05	0.02	0.03	0.03	0.01	0.02	0.01
	[0.03]	[0.03]	[0.05]	[0.03]	[0.03]	[0.05]	[0.03]	[0.03]	[0.05]	[0.02]	[0.02]	[0.05]
us_m	**0.02**	**0.02**	0.02	**0.03**	**0.03**	**0.03**	**0.06**	**0.06**	**0.06**	**0.03**	**0.04**	**0.04**
	[0.01]	[0.01]	[0.02]	[0.01]	[0.01]	[0.02]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]
us_indpro	0.03**	0.01	0.03	0.03**	**0.02****	**0.03***	**0.04*****	**0.03*****	**0.04****	**0.04*****	**0.02****	**0.04*****
	[0.01]	[0.01]	[0.02]	[0.01]	[0.01]	[0.02]	[0.01]	[0.01]	[0.02]	[0.01]	[0.01]	[0.02]
crisis	0.2	0.19	0.21	0.35**	0.25*	0.35	0.05	−0.03	0.07	−0.16	−0.13	−0.15
	[0.16]	[0.15]	[0.24]	[0.16]	[0.14]	[0.23]	[0.16]	[0.15]	[0.25]	[0.13]	[0.12]	[0.22]
_cons	−1.09***	−0.66***	−1.09***	−1.07***	−0.58***	−1.06***	−0.89***	−0.46***	−0.93**	−0.66***	−0.34***	−0.68**
	[0.19]	[0.15]	[0.37]	[0.18]	[0.13]	[0.34]	[0.18]	[0.14]	[0.37]	[0.14]	[0.11]	[0.28]
N	229	229	227	229	229	227	229	229	227	229	229	227
R^2	0.22	0.11	0.22	0.15	0.05	0.15	0.26	0.18	0.26	0.25	0.13	0.25

	dcc_ez_fsi_cpi_1			dcc_ez_fsi_cpi_2			dcc_ez_fsi_cpi_3			dcc_ez_fsi_cpi_4		
	OLS	OLS	2SLS	OLS	OLS	2SLS	OLS	OLS	2SLS	OLS	OLS	2SLS
ez_fsi	1.46***		1.52	1.48***		1.23	1.32***		1.20	0.97**		1.21
	[0.45]		[1.04]	[0.49]		[1.15]	[0.50]		[0.77]	[0.46]		[0.75]
ez_cpi	0.12*		0.17	−0.17**		−0.22	0.29***		0.36**	0.02		−0.03
	[0.07]		[0.12]	[0.08]		[0.16]	[0.08]		[0.18]	[0.07]		[0.12]
ez_cbrate	0.03	0.11**	0.05	−0.06	0.00	−0.07	−0.14**	−0.05	−0.14	−0.05	0.00	−0.08
	[0.06]	[0.05]	[0.10]	[0.07]	[0.06]	[0.09]	[0.07]	[0.06]	[0.09]	[0.06]	[0.05]	[0.07]
ez_m	0.00	0.05**	−0.02	0.04	0.04	0.06	−0.02	0.05**	−0.03	0.03	0.06***	0.05
	[0.02]	[0.02]	[0.03]	[0.03]	[0.02]	[0.04]	[0.03]	[0.03]	[0.04]	[0.02]	[0.02]	[0.03]
ez_indpro	**0.03****	**0.03*****	**0.02***	**0.05*****	**0.02***	**0.05*****	**0.02**	**0.03*****	**0.01**	**0.04*****	**0.04*****	**0.05*****
	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.02]	[0.01]	[0.01]	[0.02]	[0.01]	[0.01]	[0.02]
crisis	−0.44*	0.29*	−0.56	−0.49*	−0.05	−0.28	−0.69**	0.14	−0.73	−0.29	0.13	−0.29
	[0.24]	[0.17]	[0.53]	[0.26]	[0.18]	[0.52]	[0.30]	[0.21]	[0.49]	[0.24]	[0.14]	[0.34]
_cons	−0.44**	−0.57***	−0.41	0.22	−0.09	0.15	−0.20	−0.20	−0.23	−0.29	−0.41***	−0.26
	[0.20]	[0.18]	[0.37]	[0.24]	[0.21]	[0.39]	[0.26]	[0.24]	[0.54]	[0.19]	[0.15]	[0.24]
N	168	168	166	168	168	166	167	167	166	167	167	166
R^2	0.22	0.16	0.22	0.15	0.09	0.14	0.17	0.06	0.17	0.21	0.19	0.21

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2. Financial stability & economic performance

- Paper published in *Economic Modelling* (48, 2015, 25-40) by J. Creel, P. Hubert & F. Labondance
- Scope: EU countries
- Motivation 1: appraisal of (another) "conventional wisdom"
  - Before the global financial crisis, financialisation was seen as good for economic performance (e.g. Beck & Levine, 2004)
- Motivation 2: What about the relationship btw financial stability and economic performance, after controlling for financialisation?

Dealing with motivation 1: method & results

- We compute the two-step GMM estimator following Arellano-Bond (1991) with regressors expressed in first-difference
- We do not use average values over a 5-year horizon but annual data instead

Table 1
Benchmark dynamic panel estimations.

	GDP/cap. growth rate			Consumption/cap. growth rate			Disp. income/cap. growth rate			Investment growth rate		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Private credit	−0.066*	−0.046	0.052	−0.044	−0.057*	0.160	−0.057	−0.104**	0.092	−0.196***	−0.203***	−0.399***
	[0.04]	[0.00]	[0.15]	[0.04]	[0.03]	[0.16]	[0.06]	[0.05]	[0.16]	[0.04]	[0.08]	[0.23]
Turnover ratio	−0.001	−0.003	0.000	−0.013	−0.016	−0.015	0.001	0.009	0.004	0.019	0.000	0.000
	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.02]	[0.00]	[0.00]
School	0.094	0.113	0.05	0.035	0.092	0.035	0.021	0.138	−0.003	0.552*	0.793**	0.551*
	[0.10]	[0.22]	[0.07]	[0.07]	[0.08]	[0.08]	[0.15]	[0.11]	[0.10]	[0.32]	[0.31]	[0.33]
Gov. consump.	−0.384***	−0.377	−0.419***	−0.139	−0.169	−0.158	−0.321***	−0.394***	−0.281***	−0.791***	−0.729***	−0.692**
	[0.12]	[0.44]	[0.11]	[0.15]	[0.15]	[0.13]	[0.12]	[0.10]	[0.10]	[0.17]	[0.15]	[0.29]
Inflation rate	0.001	0.001	0.004	0.006	0.009	0.008	0.009**	0.010**	0.006	0.009	0.006	0.005
	[0.01]	[0.01]	[0.00]	[0.01]	[0.01]	[0.01]	[0.00]	[0.00]	[0.01]	[0.01]	[0.01]	[0.01]
Trade openness	0.279*	0.295	0.205	0.301***	0.243**	0.250**	0.224*	0.117	0.270*	0.213	0.356**	0.283
	[0.14]	[0.20]	[0.14]	[0.12]	[0.12]	[0.13]	[0.13]	[0.17]	[0.16]	[0.16]	[0.23]	[0.22]
Initial econ. perf.	−0.101*	0.288	−0.08	−0.122**	−0.341**	−0.191***	−0.082	−0.583	−0.162**	−0.000***	−0.000**	−0.000***
	[0.05]	[1.85]	[0.08]	[0.05]	[0.14]	[0.06]	[0.07]	[0.69]	[0.07]	[0.00]	[0.00]	[0.00]
Squared GDP/cap.		−0.023			0.013			0.03			−0.008*	
		[0.10]			[0.01]			[0.04]			[0.00]	
Squared priv. credit			−0.032			−0.054			−0.049			0.061
			[0.04]			[0.05]			[0.05]			[0.06]
Constant	0.995*	−0.754	1.306*	0.419	1.411*	1.181*	0.964	3.39	1.416*	0.611	0.048	0.166
	[0.53]	[10.06]	[0.79]	[0.54]	[0.85]	[0.63]	[0.70]	[3.23]	[0.80]	[0.82]	[0.87]	[1.59]
Sargan test *p*-val.	0.99	0.99	1.00	0.99	0.99	0.99	0.99	0.99	1.00	0.99	0.99	0.989
AR1	0.02	0.05	0.08	0.04	0.06	0.05	0.02	0.08	0.11	0.09	0.11	0.0466
AR2	0.23	0.24	0.24	0.45	0.4	0.46	0.01	0.01	0.00	0.1	0.01	0.1441
Countries	27	27	27	27	27	27	26	26	26	27	27	27
Obs	246	246	246	243	243	243	223	223	223	240	240	240

This table reports the results of a set of dynamic panel estimations aimed at estimating the effect of financial depth on four economic performances. All regressions are estimated with annual data from 1998 to 2011 using the first-differenced GMM estimator. The bottom of the table reports the *p*-values of standard specification tests. Robust (Windmeijer) standard errors are in brackets. Malta is the missing country in regressions 7, 8 and 9. Data source: World Bank, United Nations, ECB & Eurostat.

* $p < 0.1$.
** $p < 0.05$.
*** $p < 0.01$.

Dealing with motivation 2: results

Table 2
Dynamic panel estimations – GDP per capita growth rate and financial stability.

GDP	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Private Credit	−0.021	−0.031	−0.054	−0.038	−0.029	0.012	−0.036	−0.037	−0.005
	[0.05]	[0.05]	[0.04]	[0.05]	[0.06]	[0.05]	[0.05]	[0.05]	[0.06]
Turnover Ratio	−0.006	−0.017	−0.003	−0.008	−0.005	−0.020*	−0.005	−0.007	−0.012
	[0.01]	[0.01]	[0.02]	[0.02]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]
School	0.039	0.162	0.059	0.121	0.155	0.166	0.07	0.099	0.124
	[0.10]	[0.16]	[0.10]	[0.11]	[0.13]	[0.17]	[0.11]	[0.13]	[0.13]
Gov. Consump.	−0.349**	−0.399**	−0.388***	−0.399***	−0.452***	−0.447***	−0.368***	−0.371***	−0.424***
	[0.14]	[0.17]	[0.15]	[0.14]	[0.11]	[0.10]	[0.11]	[0.11]	[0.12]
Inflation rate	0.002	0.003	0.001	0.005	0.004	0.007	0.003	0.004	0.003
	[0.01]	[0.01]	[0.01]	[0.01]	[0.00]	[0.01]	[0.00]	[0.01]	[0.00]
Trade Openness	0.316***	0.21	0.322**	0.239**	0.205	0.159	0.282***	0.268*	0.296**
	[0.11]	[0.17]	[0.16]	[0.11]	[0.18]	[0.19]	[0.10]	[0.16]	[0.13]
Initial Econ. Perf.	−0.112***	−0.139***	−0.123**	−0.099*	−0.114*	−0.126**	−0.114***	−0.089*	−0.135***
	[0.04]	[0.05]	[0.05]	[0.04]	[0.07]	[0.06]	[0.04]	[0.05]	[0.04]
CISS	−0.054**					−0.043**	−0.040	−0.044	−0.034
	[0.03]					[0.02]	[0.03]	[0.03]	[0.03]
Non Perf. Loans		−0.011***				−0.010**			
		[0.00]				[0.00]			
Z-score			0.001				0.000		
			[0.00]				[0.00]		
Volatility				0.000				0.000	
				[0.00]				[0.00]	
FSI-PCA					0.003*				0.003*
					[0.00]				[0.00]
Constant	0.926	1.502**	1.107*	1.054*	1.406**	1.669***	1.064*	0.829	1.214*
	[0.70]	[0.73]	[0.62]	[0.61]	[0.58]	[0.48]	[0.55]	[0.62]	[0.68]
Sargan test *p-val.*	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
AR1	0.02	0.04	0.03	0.02	0.01	0.03	0.04	0.02	0.02
AR2	0.08	0.19	0.24	0.00	0.29	0.16	0.10	0.01	0.07
Countries	27	27	27	26	27	27	27	26	27
Obs	246	219	245	206	214	219	245	206	214

This table reports the results of a set of dynamic panel estimations aimed at estimating the effect of financial depth and financial instability on GDP per capita growth. All regressions are estimated with annual data from 1998 to 2011 using the first-differenced GMM estimator. The bottom of the table reports the p-values of standard specification tests. Robust (Windmeijer) standard errors are in brackets. We also introduced interaction terms between private credit and financial stability variables. The present results are robust and the interaction terms are not significant. Austria is the missing country in regressions 4 and 8. Data source: World Bank, United Nations, ECB & Eurostat.

* $p < 0.1$.
** $p < 0.05$.
*** $p < 0.01$.

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3. Financialisation and financial stability

- *Working Paper* by J. Creel, P. Hubert & F. Labondance
- Scope: EU countries
- Motivation: quantifying the link between bank credit and bank instability while controlling for the financial and macroeconomic environment
- We introduce two hypotheses:
  - Hypothesis 1: there is a positive effect of financialisation on financial instability labelled a "vulnerability effect". Vulnerabilities would stem from the increasing fragility and risks of marginal loans
  - Hypothesis 2: there is a negative effect of financial instability on financialisation that we label "trauma effect", and which would result from the potential deleveraging and reduced risk-taking of banks following a period of financial instability

Methods

- The main identification assumption is to represent bank credit and bank instability as a system of simultaneous joint data generating processes whose error terms are correlated
- We use Seemingly Unrelated Regressions and 3SLS on a panel of EU countries from 1998 to 2012

Model

$$\begin{cases} F_{i,t} = \alpha_F + \beta_F F_{i,t-1} + \beta_{FS} S_{i,t} + \beta_{FX} X_{i,t} + \beta_{FZ} Z_{i,t} + \varepsilon_{F,t} \\ S_{i,t} = \alpha_S + \beta_S S_{i,t-1} + \beta_{SF} F_{i,t} + \beta_{SX} X_{i,t} + \beta_{SZ} Z_{i,t} + \varepsilon_{S,t} \end{cases} \quad (1)$$

- $F_{i,t}$ is the financialisation variable for a country i: bank credit/GDP
- $S_{i,t}$ is the financial stability variable: non-performing loans
- $X_{i,t}$ is the vector encompassing financial controls:
  - long-term real interest rates, stock market capitalization, business taxes, a financial regulation variable
- $Z_{i,t}$ is the vector capturing the macroeconomic environment:
  - real GDP, inflation, trade openness, and country/time fixed effects
  - Robustness Gov debt

Results

- Bank credit positively affects bank instability –the vulnerability effect– and bank instability negatively affects bank credit –the trauma effect–.
- We find evidence of some non-linearities btw the two variables:
  - NPL have a non-linear effect on credit to GDP depending on the level of credit to GDP,
  - The effect of credit to GDP on NPL –the vulnerability effect– depends on the level of credit to GDP and is time contingent: this effect kicks in during crisis times.

	(1) All	(2) EZ	(3) Core	(4) Periphery	(5) All	(6) EZ	(7) Core	(8) Periphery
	Non-Perf L.	Non-Perf L.	Non-Perf L.	Non-Perf L.	Non-Perf L.	Non-Perf L.	Non-Perf L.	Non-Perf L.
Lag Dep. Var.	0.03	0.03	-0.34**	0.46**	-0.02	-0.09	-0.33***	0.14
	[0.11]	[0.15]	[0.13]	[0.20]	[0.10]	[0.15]	[0.12]	[0.21]
Credit/GDP	0.20*	0.30*	0.57***	-0.37	0.21**	0.37**	0.54***	-0.17
	[0.11]	[0.16]	[0.14]	[0.23]	[0.10]	[0.16]	[0.13]	[0.21]
Credit/GDP$_{t-1}$	0.68***	0.66***	0.57***	0.77***	0.65***	0.67***	0.55***	0.71***
	[0.05]	[0.06]	[0.07]	[0.07]	[0.05]	[0.06]	[0.07]	[0.07]
ΣCredit/GDP$_{t-4,t-1}$	0.24***	0.33***	0.23***	0.09	0.19***	0.28***	0.21***	-0.03
	[0.07]	[0.08]	[0.08]	[0.13]	[0.06]	[0.08]	[0.07]	[0.12]
Gov. Debt	0.08	0.13*	0.07	-0.09	-0.22***	-0.17	-0.20*	-0.48***
	[0.06]	[0.07]	[0.07]	[0.10]	[0.08]	[0.14]	[0.10]	[0.13]
Gov. Debt * Crisis					0.47***	0.38**	0.44***	0.63***
					[0.10]	[0.15]	[0.13]	[0.15]
Crisis					0.36***	0.33	0.37*	0.43**
					[0.14]	[0.20]	[0.21]	[0.19]
LT Real IR	0.17***	0.18**	-0.01	0.32***	0.21***	0.18**	0.03	0.31***
	[0.07]	[0.08]	[0.17]	[0.09]	[0.06]	[0.08]	[0.18]	[0.08]
Market Cap.	0.03	0.03	0.08	-0.01	0.03	0	0.04	0.00
	[0.05]	[0.06]	[0.07]	[0.06]	[0.04]	[0.06]	[0.07]	[0.05]
Tax. Business	-0.09**	-0.04	-0.20***	-0.11*	-0.09**	-0.02	-0.22***	-0.08
	[0.04]	[0.05]	[0.07]	[0.06]	[0.04]	[0.05]	[0.07]	[0.05]
Fin. Reform	-0.07	0.68	0.4	0.06	0.1	0.65	0.24	0.4
	[0.50]	[0.55]	[0.74]	[0.73]	[0.47]	[0.54]	[0.69]	[0.67]
GDP growth	-0.29***	-0.27***	-0.41***	-0.25***	-0.26***	-0.27***	-0.37***	-0.20***
	[0.05]	[0.07]	[0.07]	[0.08]	[0.05]	[0.07]	[0.07]	[0.08]
Inflation	0.14**	0.1	0.1	0.18***	0.14**	0.08	0.12	0.12*
	[0.06]	[0.06]	[0.11]	[0.07]	[0.06]	[0.06]	[0.12]	[0.07]
Trade Open.	-0.03	-0.01	0.04	-0.02	-0.03	-0.01	0.08	0
	[0.05]	[0.06]	[0.10]	[0.07]	[0.05]	[0.06]	[0.10]	[0.06]
	Credit/GDP	Credit/GDP	Credit/GDP	Credit/GDP	Credit/GDP	Credit/GDP	Credit/GDP	Credit/GDP
Lag Dep. Var.	0.84***	0.91***	0.92***	0.92***	0.83***	0.90***	0.92***	0.87***
	[0.05]	[0.05]	[0.06]	[0.06]	[0.05]	[0.05]	[0.06]	[0.06]
Non-Perf L.	0.02	0.01	-0.20**	0.12**	-0.01	-0.03	-0.23***	0.04
	[0.05]	[0.05]	[0.08]	[0.05]	[0.05]	[0.05]	[0.08]	[0.05]
Non-Perf L.$_{t-1}$	-0.13***	-0.09**	0.02	-0.19***	-0.10**	-0.06	0.03	-0.12**
	[0.05]	[0.05]	[0.07]	[0.05]	[0.05]	[0.05]	[0.07]	[0.05]
ΣNon-Perf L.$_{t-4,t-1}$	-0.11***	-0.09**	-0.19***	-0.07*	-0.11***	-0.09**	-0.19***	-0.09**
	[0.04]	[0.04]	[0.06]	[0.04]	[0.04]	[0.04]	[0.06]	[0.04]
Gov. Debt	-0.09**	-0.10**	-0.13**	0.06	-0.12**	-0.22***	-0.19**	0
	[0.04]	[0.04]	[0.05]	[0.05]	[0.06]	[0.08]	[0.08]	[0.07]
Gov. Debt * Crisis					0.03	0.15*	0.08	0.06
					[0.07]	[0.09]	[0.11]	[0.08]
Crisis					0.19*	0.22*	0.18	0.36***
					[0.10]	[0.12]	[0.18]	[0.09]
LT Real IR	0.03	0.05	-0.06	-0.07	0.02	0.04	-0.09	-0.04
	[0.05]	[0.05]	[0.13]	[0.05]	[0.05]	[0.05]	[0.15]	[0.04]
Market Cap.	0.02	0.04	0	0.05	0.02	0.02	-0.01	0.04
	[0.03]	[0.03]	[0.05]	[0.03]	[0.03]	[0.04]	[0.06]	[0.03]
Tax. Business	0.01	0.04	-0.04	0.07**	0.01	0.04	-0.04	0.05*
	[0.03]	[0.03]	[0.06]	[0.03]	[0.03]	[0.03]	[0.06]	[0.03]
Fin. Reform	-0.44	-0.16	-0.1	-0.14	-0.38	-0.13	-0.11	-0.04
	[0.34]	[0.32]	[0.57]	[0.37]	[0.34]	[0.32]	[0.57]	[0.34]
GDP growth	-0.13***	-0.19***	-0.27***	0.03	-0.12***	-0.18***	-0.27***	0.05
	[0.04]	[0.04]	[0.06]	[0.04]	[0.04]	[0.04]	[0.06]	[0.04]
Inflation	-0.01	-0.01	-0.03	-0.01	-0.01	-0.01	-0.05	0
	[0.04]	[0.04]	[0.09]	[0.04]	[0.04]	[0.04]	[0.10]	[0.03]
Trade Open.	0.02	0.06	-0.01	0	0.01	0.04	-0.01	-0.03
	[0.04]	[0.04]	[0.08]	[0.03]	[0.04]	[0.04]	[0.08]	[0.03]
Country /Time/Cst	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	182	126	92	90	182	126	92	90
R^2_1	0.75	0.78	0.75	0.82	0.78	0.79	0.78	0.85
R^2_2	0.89	0.93	0.87	0.95	0.89	0.93	0.87	0.96

Standard errors in brackets. * p < 0.1, ** p < 0.05, *** p < 0.01 Estimated from equation (1). All variables are standardized to a normal distribution by country.

Vulnerability effect

Trauma effect

Table C: Subsamples composition

Eurozone (EZ)	Core	Core 2	Newcomers	Periphery
Austria	Austria	Austria	Bulgaria	Bulgaria
Belgium	Belgium	Belgium	Cyprus	Cyprus
Germany	Germany	Germany	Czech	czech republic
Spain	Denmark	Denmark	Estonia	Estonia
Finland	Finland	Finland	Hungary	Spain
France	France	France	Lithuania	Greece
Greece	Luxembourg	Luxembourg	Latvia	Hungary
Ireland	Netherlands	Netherlands	Malta	Ireland
Italy	Sweden	Sweden	Poland	Italy
Netherlands	United Kingdom	United Kingdom	Romania	Lithuania
Portugal		Italy	Slovenia	Latvia
		Spain	Slovakia	Malta
				Poland
				Portugal
				Romania
				Slovenia
				Slovakia

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Conclusions

- In the US and in the EU:
  - No stable empirical link btw price & financial stability
  - "Leaning against the wind policy" probably inappropriate
- In the EU:
  - No (or negative) impact of financialisation on economic performance
  - Negative impact of financial instability on economic performance
  - Vulnerability effect
  - Trauma effect

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Recommendations

- The first contribution advocates for a better consideration of financial stability by CB, in complement to the price stability objective
- An interpretation of the second contribution can be that regulating the size and growth of the banking and financial sector may not be harmful to EU economic growth
- Vulnerability and trauma effects confirm the requirement to control and supervise the supply of bank credits in the Eurozone and core countries of the EU
  - Monitoring bank credits, via policies which remain to be discussed – e.g. a change in capital adequacy ratios-, would alleviate the risks of bank instability.
  - In the EU periphery, supervising bank credits should be complemented with macroeconomic policies aimed at actually achieving low and stable inflation and long-term interest rate because the variations in long-term interest rates and inflation play a strong role in the rise of bank instability.

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Possible paths for future research

- Possible extensions/modifications of panel
  - Longer time span
  - Other countries: OECD, emerging countries, developing countries
- Empirical country studies
  - Thus requiring long time span
- Updating (on a regular basis) own calculations of PCA-FSI
- Theoretical insights on vulnerability and trauma effects
- Developing a financialisation/financial stability system which takes into account both intermediate and direct finance
- Extending financialisation/financial stability system to monetary policy (as dependent variable)