Trilemma, not Dilemma: Financial Globalisation and Monetary Policy Effectiveness

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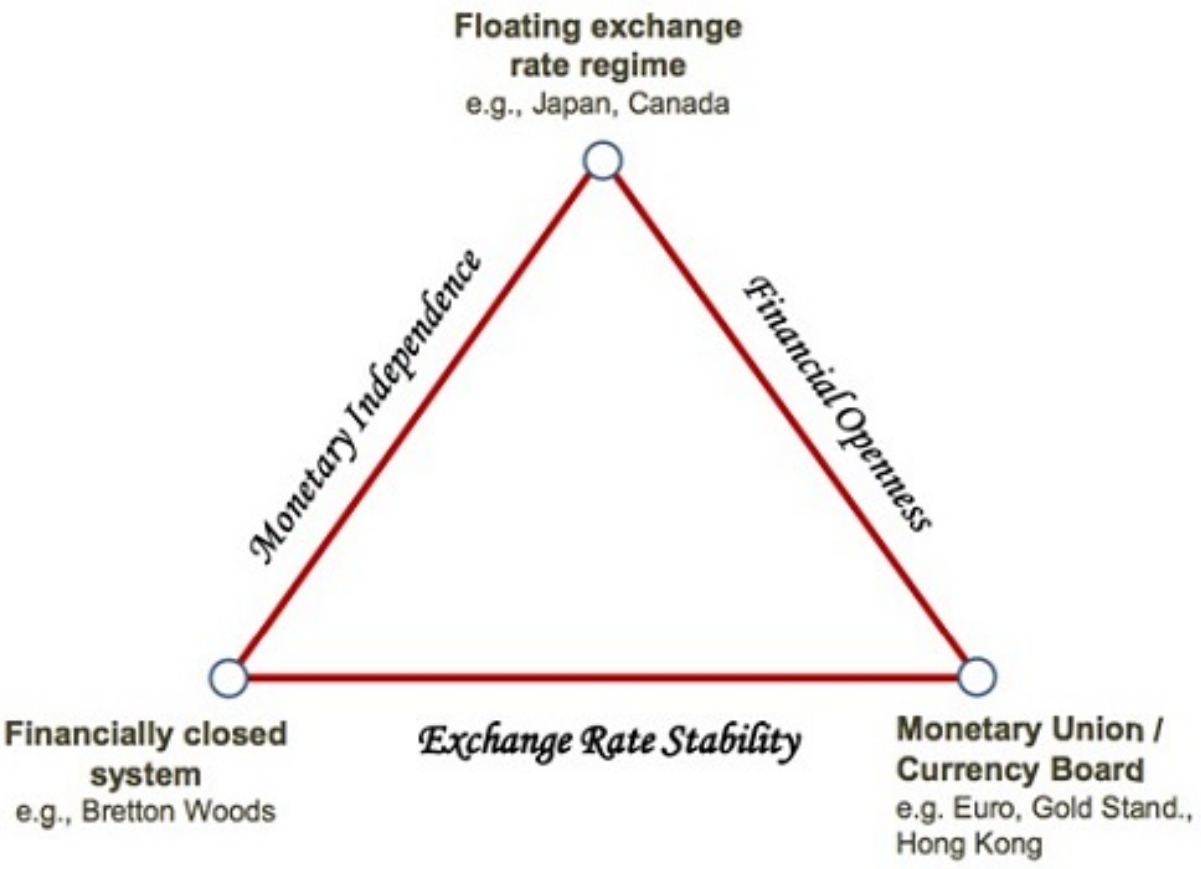
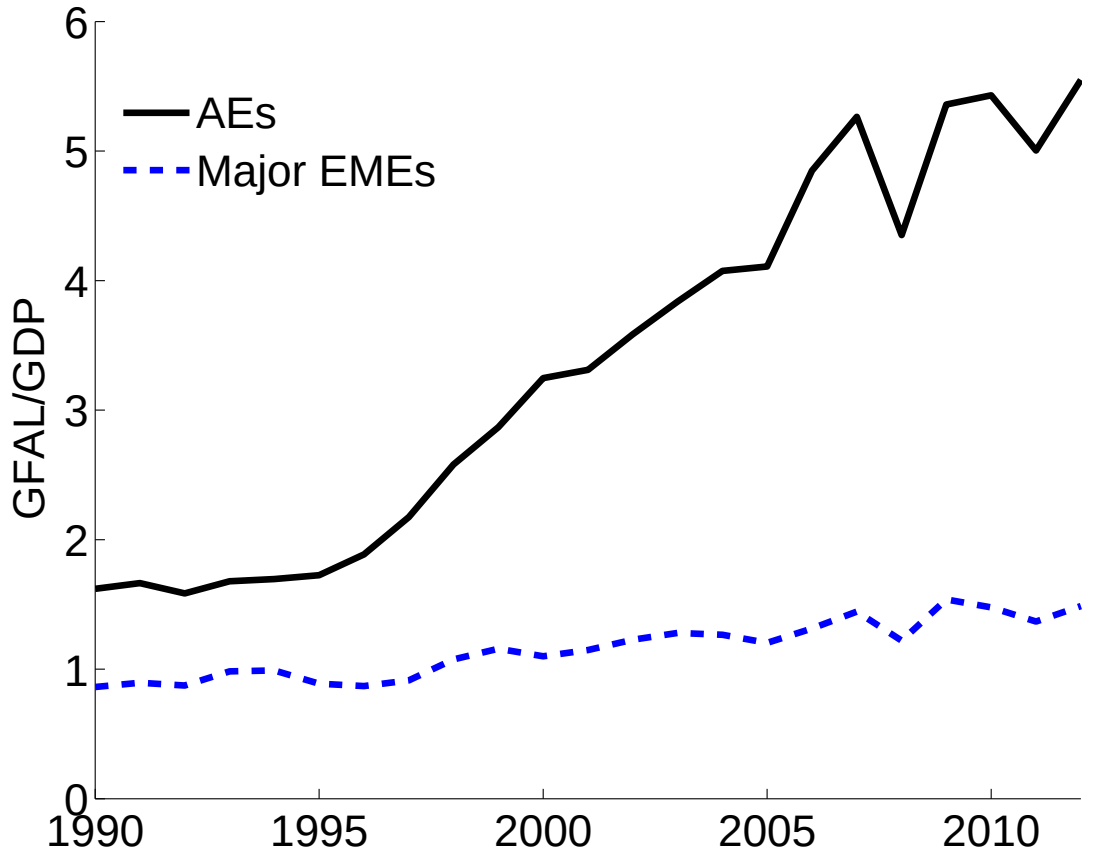

Floating exchange rate regime
e.g., Japan, Canada
Monetary Independence
Financial Openness
Financially closed system
e.g., Bretton Woods
Exchange Rate Stability
Monetary Union / Currency Board
e.g. Euro, Gold Stand., Hong Kong

Motivation: Global financial cycle effects

- Trilemma good description of policy trade-offs historically
  Obstfeld et al. (2005)
- FinGlob since 1990: Has trilemma weakened?
  Kamin (2010)
- “Consensus”: No
  Yellen (2006); Bernanke (2007); Woodford (2007); Weber (2008)
- Has been questioned after financial crisis
  Shin (2012); Rey (2013); Bruno and Shin (2013); Agrippino and Rey (2014)
  - Global financial cycles reduce control of domestic interest rates
  - "Dilemma" hypothesis: MP autonomy only with capital controls

Motivation: Global financial cycle effects

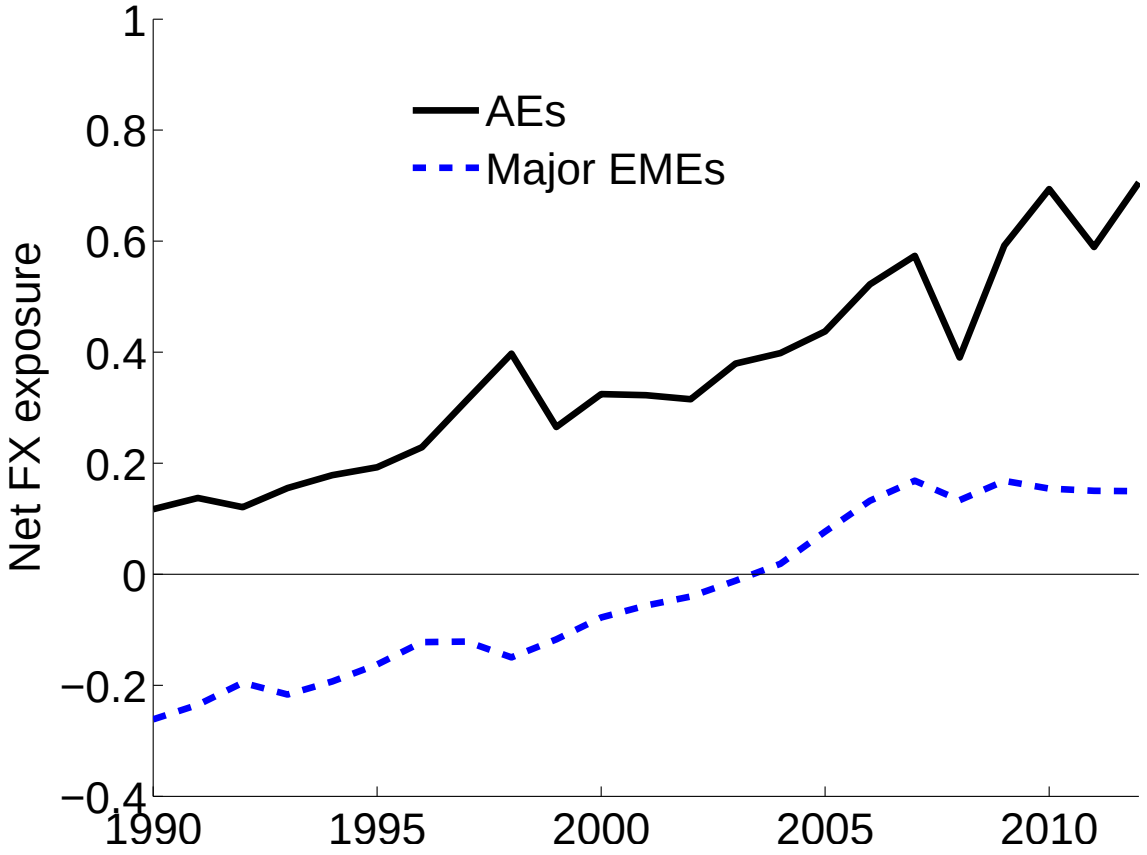


Note: The figure displays the cross-country average of economies' gross foreign asset and liability positions relative to GDP. The data are taken from Lane and Milesi-Ferretti (2007) and Benetrix et al. (forthcoming).

Motivation: Net FX exposure effects

- FinGlob has also been associated with economies increasingly being net long in foreign currency
  - holding foreign assets in *foreign* currency
  - ...and issuing foreign liabilities in *domestic* currency
  - Net FX (NFX) exposures have been rising across AEs and EMEs
    Burger et al. (2010); Hausmann and Panizza (2011); Benetrix et al. (forthcoming); Burger et al. (2014); Hale et al. (2014)
- NFX exposures strengthen MP effects due to valuation effects
  Devereux and Sutherland (2008); Engel and Matsumoto (2009); Meier (2013); Auer (2014)
  - MP tightening appreciates domestic currency
  - Home-currency value of foreign assets falls
  - Home-currency value of foreign liabilities is unchanged
  - Negative wealth effect on external balance sheet

Motivation: Net FX exposure effects



Note: The figure displays the cross-country average of economies' NFX exposure. The data are taken from Benetrix et al. (forthcoming).

Aggregate FX exposures

This paper

- Is there evidence in the data for MP effectiveness being
  - reduced by *"global financial cycle effects"*?
  - strengthened by *"NFX exposure effects"*?
- Which of the two effects has dominated since the 1990s?
- Has FinGlob affected MP effectiveness differently in AEs/EMEs?

Results

- Evidence both for global financial cycle and NFX exposure effects
  - Impact of FinGlob on MP effectiveness a priori ambiguous
  - Depends on relative size of the two effects
- Since 1990s FinGlob has
  - not materially changed MP effectiveness in EA
  - strengthened noticeably MP effectiveness in AEs and EMEs
- Trilemma remains valid under FinGlob
  - MP effective due to NFX exposure effects
  - ...but only if FX flexible

Outline

1. Empirical approach
2. Domestic effects of MP shock
3. Role of FinGlob in differences in MP effectiveness
4. Historical change in MP effectiveness due to FinGlob since 1990s
5. Robustness checks
6. Summary and policy implications

1 Empirical approach

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Empirical approach

1. Estimate real effects of MP for many economies
2. Regress output responses to MP shock on
   - standard determinants of MP effectiveness
   - gross foreign assets/liabilities (*gfal*) $\leftrightarrow$ global financial cycle effects
   - NFX exposure (*nfx*) $\leftrightarrow$ NFX exposure effects
3. Obtain change in MP effectiveness due to FinGlob since 1990s
   - coefficient estimates for *gfal* and *nfx*
   - actual evolution of *gfal* and *nfx* in the data

1 Empirical approach

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Estimate domestic real effects of monetary policy

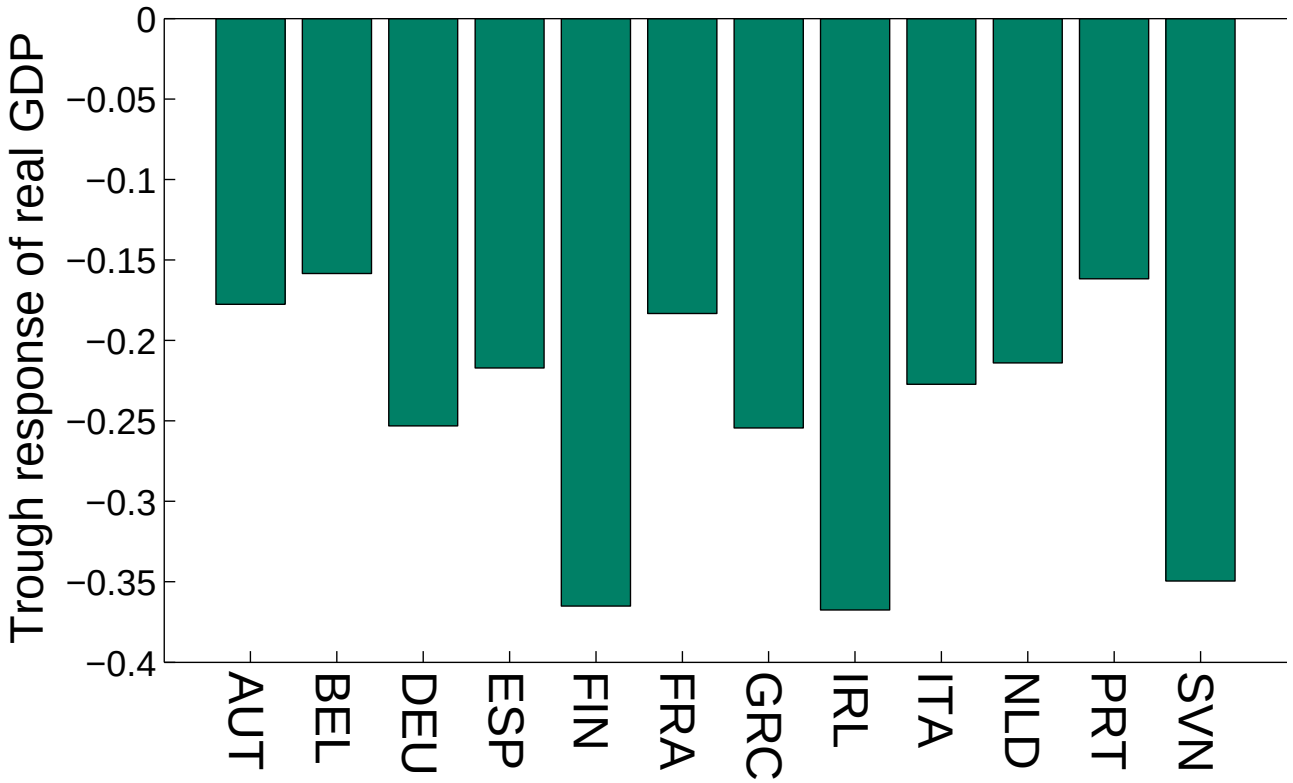
- Focus on EA in baseline
  - less heterogeneity in determinants of MP effectiveness
  - need to control for fewer potential determinants of asymmetries
    - bank vs. market-based financial system
    - high vs. low inflation volatility
    - ...
- Estimate mixed cross-section GVAR of Georgiadis (2015)

Data and country coverage

Sample runs from 1999Q1 to 2009Q4, 61 individual economies (12 are treated as EA economies in estimation):

Region	*Countries*
Indiv. countries/units	ALB, AUS, AUT, BAL, BEL, BGR, BOL, BRA, CAN, CHE, CHL, CHN, COL, CRI, CZE, DEU, DNK, ECB, EGY, ESP, FIN, FRA, GBR, GRC, HKG, HRV, HUN, IDN, IND, IRL, ISR, ITA, JOR, JPN, KOR, LUX, MAR, MEX, MYS, NLD, NOR, NZL, OIL, OPC, PER, PHL, POL, PRT, PRY, ROU, RUS, SGP, SVK, SVN, SWE, THA, TUR, USA, ZAF
Baltics (BAL)	EST, LVA, LTU
Oil exporting countries (OPC)	VEN, ECU, SAU

EA MP shock: Trough responses of real GDP



Note: The figure displays the trough responses of real GDP to a 100 basis points monetary policy shock in the EA identified by sign restrictions. The vertical axis depicts deviations from baseline in percent.

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Cross-section regression

Consider

$$s_i = \alpha + \gamma \cdot \boldsymbol{w}_i + \beta^{gfal} \cdot gfal_i + \beta^{nfx} \cdot nfx_i + u_i, \tag{1}$$

where

- s_i: trough response of real GDP to MP shock
- $\boldsymbol{w}_i$: standard determinants of MP effectiveness
  - labor market rigidities
  - industry structure
- $gfal_i$: gross foreign assets and liabilities relative to GDP
- nfx_i: NFX exposure

Cross-section regression

In

$$s_i = \alpha + \boldsymbol{\gamma} \cdot \boldsymbol{w}_i + \beta^{gfal} \cdot gfal_i + \beta^{nfx} \cdot nfx_i + u_i, \tag{2}$$

MP effectiveness is

- weakened through global financial cycle effects if

$$\beta^{gfal} > 0 \tag{3}$$

- amplified through NFX effects if

$$\beta^{nfx} < 0 \tag{4}$$

GFAL/GDP and NFX exposure

- Gross foreign assets and liabilities
  - from EWN of Lane and Milesi-Ferretti (2007)
  - Take $log(1 + gfal)$ to mitigate the impact of outliers
- NFX exposure
  - from Lane and Shambaugh (2010)
  - Defined as

$$nfx_{it} \equiv \frac{\partial^N nfa_{it}}{\partial E_{i1t} \cdots \partial E_{1Nt}} = (s_{it}^A \cdot \omega_{it}^A - s_{it}^L \cdot \omega_{it}^L) \cdot gfal_{it} \tag{5}$$

  - Higher nfx_{it} implies valuation loss on external balance sheet in response to appreciation of domestic currency

Descriptive statistics

Regression results

Dependent variable: Trough response of real GDP

	(1)	(2)	(3)	(4)
Labor market rigidities	-0.01	-0.01	-0.01	-0.01**
	(0.20)	(0.23)	(0.35)	(0.03)
Industry mix	-0.01*	-0.01+	-0.01+	-0.01*
	(0.09)	(0.10)	(0.15)	(0.06)
Net FX exposure			-0.05+	-0.22***
			(0.19)	(0.00)
GFA/GDP (log)		0.00		0.15***
		(0.88)		(0.00)
Adj. R-squared	0.45	0.39	0.48	0.83
Observations	12	12	12	12

p-values in parentheses

Robust standard errors.

$^{+}$ $p < 0.2$, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

▸ Economic significance

Regression results

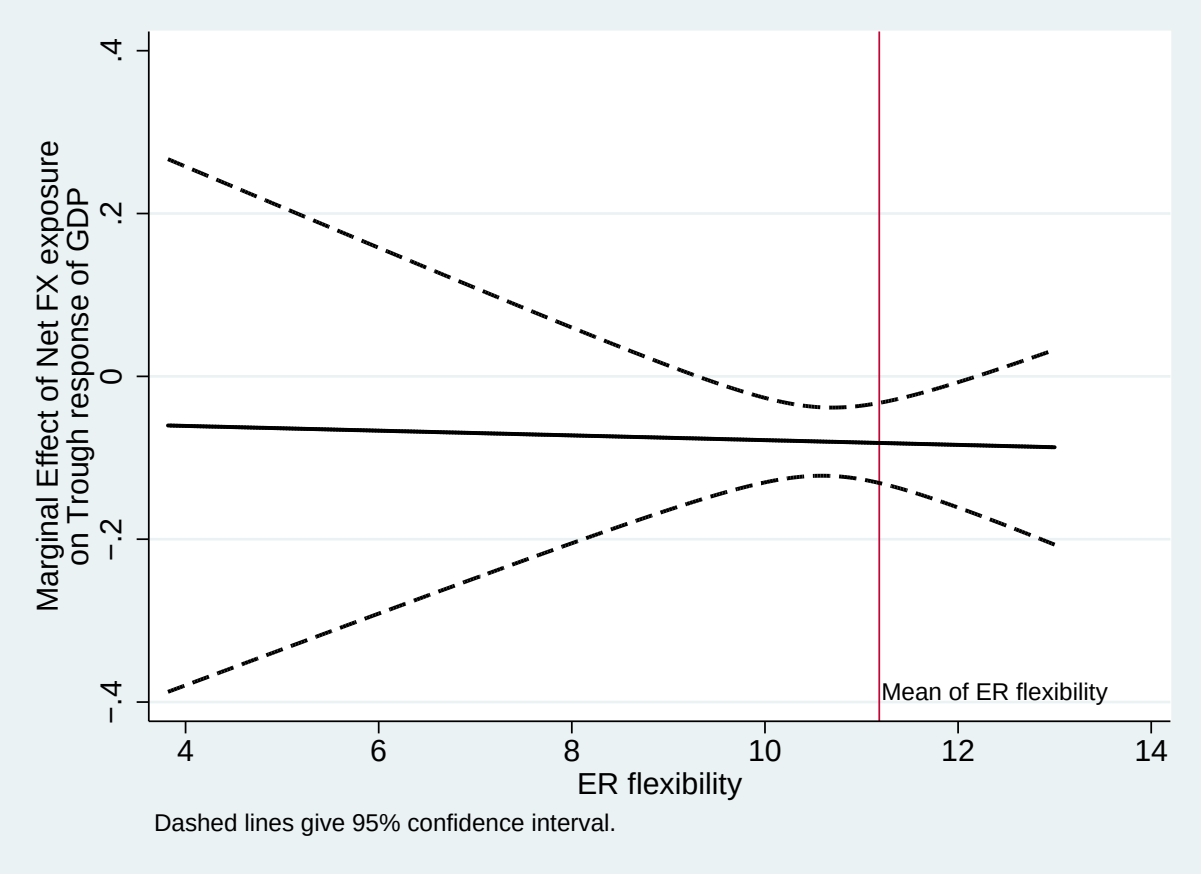
Dependent variable: Trough response of real GDP

	(1)	(2)	(3)	(4)
Labor market rigidities	-0.02**	-0.01	-0.01***	-0.01***
	(0.03)	(0.22)	(0.00)	(0.00)
Industry mix	-0.01*	-0.01**	-0.01**	-0.01*
	(0.07)	(0.04)	(0.04)	(0.08)
Net FX exposure	-0.22***	0.06**	-0.08***	-0.05
	(0.00)	(0.01)	(0.00)	(0.84)
GFA/GDP (log)	0.16***	-0.09***	0.05*	0.06+
	(0.00)	(0.00)	(0.06)	(0.12)
EA country dummy			-0.17***	-0.16***
			(0.00)	(0.00)
EA contiguity dummy			0.12***	0.13***
			(0.00)	(0.00)
Domestic credit/GDP (log)			0.11*	0.12**
			(0.08)	(0.03)
Trade/GDP (log)			-0.10**	-0.15**
			(0.04)	(0.04)
Net FX exposure x ER flexibility				-0.00
				(0.90)
ER flexibility				-0.01
				(0.59)
Observations	12	36	36	36
Adjusted R^2	0.84	0.16	0.72	0.72

p-values in parentheses

Robust standard errors.

Regression results



Note: The figure displays the marginal effect of net foreign currency exposure on the trough response of output to a contractionary domestic monetary policy shock across different degrees of exchange rate flexibility based on the cross-section regression for the expanded country sample with an interaction between the net foreign currency exposure and the exchange rate regime added. A higher value of the exchange rate flexibility variable reflects a more flexible exchange rate regime.

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Historical change in MP effectiveness due to FinGlob

Based on

$$s_i = \alpha + \gamma \cdot \boldsymbol{w}_i + \beta^{gfal} \cdot gfal_i + \beta^{nfx} \cdot nfx_i + u_i, \tag{6}$$

define the cumulative change of MP effectiveness stemming from

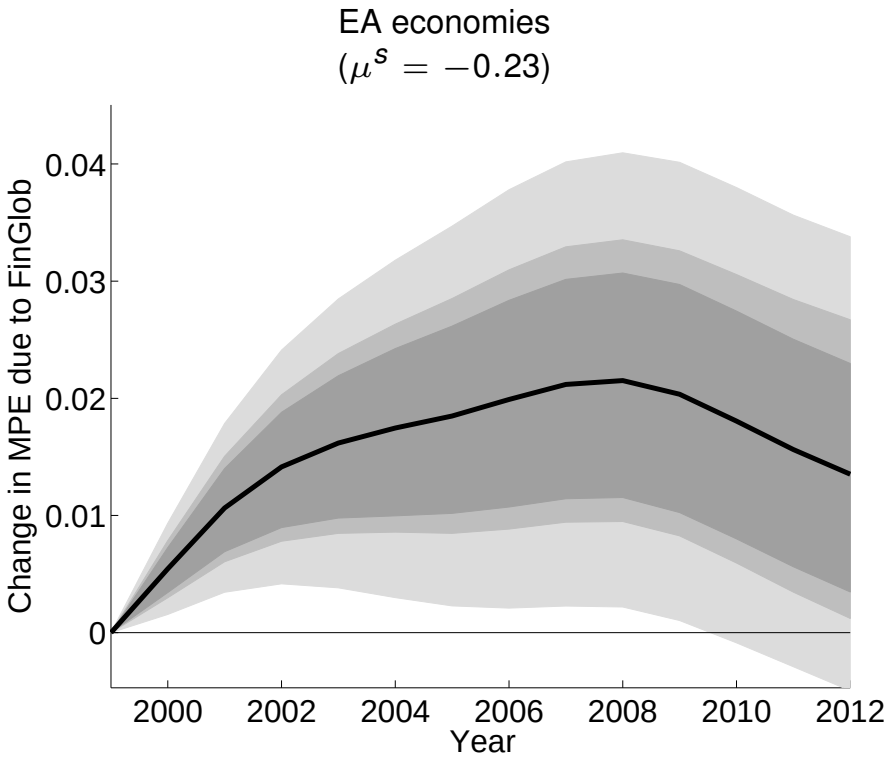
- global financial cycle effects

$$\Delta^{gfal} s_{it} \equiv \sum_{j=1}^{t} \widehat{\beta}^{gfal} \cdot \Delta gfal_{ij} \tag{7}$$

- NFX exposure effects

$$\Delta^{nfx} s_{it} \equiv \sum_{j=1}^{t} \widehat{\beta}^{nfx} \cdot \Delta nfx_{ij} \tag{8}$$

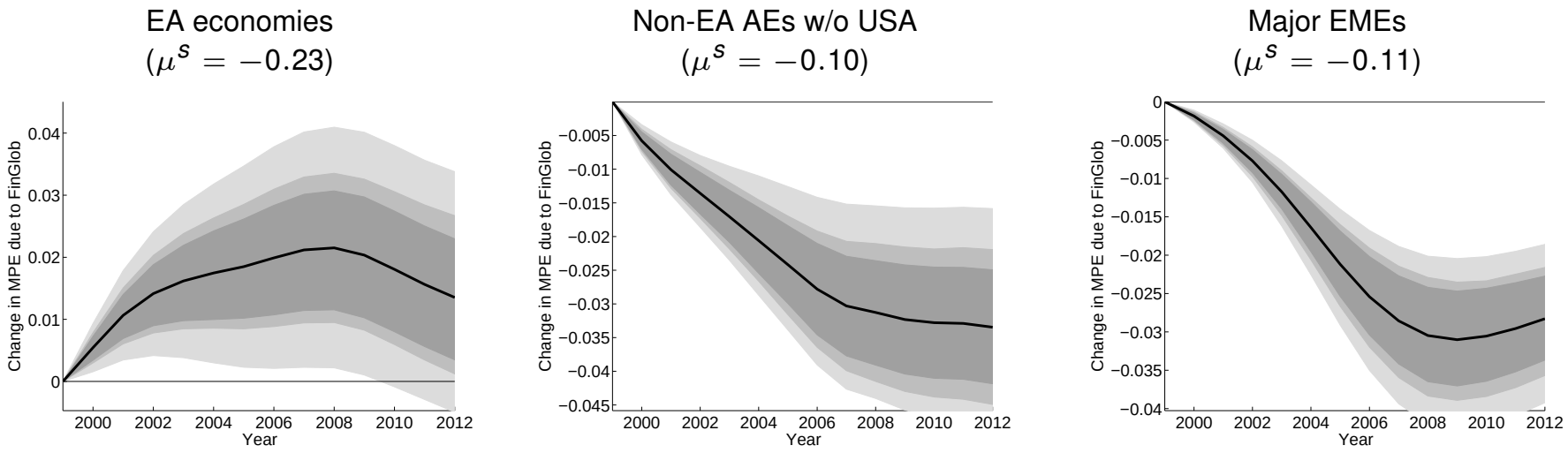
Historical change in MP effectiveness due to FinGlob



Note: The figure displays the cumulated net effect of financial globalisation on monetary policy effectiveness: A positive value reflects an overall weakening of monetary policy effectiveness due to financial globalisation. The shaded areas represent 90%, 95% and 99% confidence bands obtained from Monte Carlo simulations.

Heterogeneities
Benchmark 1990

Historical change in MP effectiveness due to FinGlob



Note: The panels display the cumulated net effect of financial globalisation on monetary policy effectiveness: A positive value reflects an overall weakening of monetary policy effectiveness due to financial globalisation. The shaded areas represent 90%, 95% and 99% confidence bands obtained from Monte Carlo simulations.

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Robustness checks

We consider the sensitivity of our results to

- Alternative measures for economies' susceptibility to global financial cycle and NFX exposure effects
- Modifications of expanded country sample
- Sample size and outliers in EA sample
- Additional controls in EA sample
- *De jure* measures of capital account openness
- Alternative specifications of the MCGSVAR model

Alternative measures for economies' susceptibility to global financial cycle and NFX exposure effects

- FX response-weighted NFX measure
- Netting out intra-EA GFAL positions (IMF CPIS data)
- BIS data on cross-border banking claims
- GFAL relative to domestic credit
- Discrete GFAL buckets
- Price-based measure of FinGlob (equity return correlation)
- Share of US/UK-owned banks in domestic economy
- Share of domestic credit extended by US/UK banks

Alternative measures for economies' susceptibility to global financial cycle and NFX exposure effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Labor market rigidities	-0.01**	-0.01*	-0.01+	-0.01	-0.02**	-0.01+	-0.01	-0.01+	-0.01+
	(0.03)	(0.05)	(0.11)	(0.34)	(0.02)	(0.16)	(0.53)	(0.18)	(0.17)
Industry mix	-0.01*	-0.01+	-0.01+	-0.01+	-0.01+	-0.01*	-0.01	-0.01*	-0.01+
	(0.06)	(0.19)	(0.15)	(0.16)	(0.14)	(0.06)	(0.21)	(0.10)	(0.18)
Net FX exposure	-0.22***		-0.24***	-0.12*	-0.13*	-0.12***	-0.07+	-0.21*	-0.07
	(0.00)		(0.01)	(0.09)	(0.10)	(0.00)	(0.10)	(0.06)	(0.27)
GFA/GDP (log)	0.15***	0.11**							
	(0.00)	(0.02)							
Net FX exp. with FX response weights		-0.17***							
		(0.00)							
GFA/GDP (CPIS, log)			0.15**						
			(0.01)						
BIS banking assets and liab./GDP (log)				0.16+					
				(0.16)					
GFA to dom. credit (log)					0.10+				
					(0.18)				
GFA/GDP (log) bucket						0.04***			
						(0.00)			
Equity return correlation with US							0.17		
							(0.26)		
Share of US/UK owned banks								0.01*	
								(0.08)	
Share of credit provided by US/UK banks (WDI)									0.00
									(0.61)
Adj. R-squared	0.83	0.75	0.64	0.55	0.53	0.77	0.49	0.60	0.42
Observations	12	11	12	12	12	12	12	12	12

p-values in parentheses

Robust standard errors.

$^{+}$ $p < 0.2$, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Alternative measures for economies' susceptibility to global financial cycle and NFX exposure effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Labor market rigidities	-0.02**	-0.01***	-0.01**	-0.01***	-0.00	-0.01***	-0.01***	-0.01**	-0.01**	-0.01**
	(0.03)	(0.01)	(0.02)	(0.01)	(0.50)	(0.01)	(0.01)	(0.03)	(0.02)	(0.03)
Industry mix	-0.01*	-0.01*	-0.01+	-0.01*	-0.01*	-0.01**	-0.01+	-0.01**	-0.01*	-0.01*
	(0.07)	(0.05)	(0.13)	(0.10)	(0.06)	(0.04)	(0.14)	(0.03)	(0.06)	(0.06)
Net FX exposure	-0.22***	-0.15***		-0.14***	-0.10**	-0.15***	-0.11***	-0.09***	-0.08***	-0.08***
	(0.00)	(0.00)		(0.00)	(0.04)	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)
Net FX exp. with FX response weights			-0.00+							
			(0.10)							
GFA/GDP (log)	0.16***	0.09***	0.01							
	(0.00)	(0.01)	(0.85)							
GFA/GDP (CPIS, log)				0.07*						
				(0.10)						
BIS banking assets and liab./GDP (log)					0.01					
					(0.85)					
GFA to dom. credit (log)						0.09**				
						(0.03)				
GFA/GDP (log) bucket							0.03**			
							(0.03)			
Equity return correlation with US								0.11+		
								(0.10)		
Share of US/UK owned banks									0.00	
									(0.36)	
Share of credit provided by US/UK banks (WDI)										0.00
										(0.21)
EA country dummy		-0.17***	-0.13***	-0.12***	-0.10***	-0.17***	-0.16***	-0.14***	-0.11***	-0.13***
		(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
EA contiguity dummy		0.14***	0.09**	0.14***	0.14***	0.13***	0.12***	0.11***	0.15***	0.14***
		(0.00)	(0.03)	(0.00)	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)

Modifications of expanded country sample

- Only flexible exchange rate regimes
- Advanced economies
- EA aggregate
- No EA economies

Modifications of expanded country sample

	(1) Baseline EA	(2) All	(3) ERF>11	(4) AEs	(5) EA aggr.	(6) No EA
Labor market rigidities	-0.02**	-0.01***	-0.01***	-0.01	-0.02+	-0.02+
	(0.03)	(0.00)	(0.01)	(0.22)	(0.13)	(0.12)
Industry mix	-0.01*	-0.01**	-0.01*	-0.01***	-0.01	-0.01
	(0.07)	(0.04)	(0.05)	(0.00)	(0.39)	(0.38)
Net FX exposure	-0.22***	-0.08***	-0.15***	-0.08**	-0.14**	-0.14**
	(0.00)	(0.00)	(0.00)	(0.03)	(0.03)	(0.03)
GFA/GDP (log)	0.16***	0.05*	0.09***	0.05+	0.10+	0.10+
	(0.00)	(0.06)	(0.01)	(0.10)	(0.14)	(0.13)
EA contiguity dummy		0.12***	0.14***	0.15**	0.15**	0.15**
		(0.00)	(0.00)	(0.02)	(0.01)	(0.01)
EA country dummy		-0.17***	-0.17***	-0.12***	-0.16***	
		(0.00)	(0.00)	(0.00)	(0.00)	
Domestic credit/GDP (log)		0.11*	0.19***	0.14**	0.21*	0.21*
		(0.08)	(0.00)	(0.01)	(0.08)	(0.08)
Trade/GDP (log)		-0.10**	-0.06	-0.09+	-0.10	-0.10
		(0.04)	(0.30)	(0.15)	(0.51)	(0.49)
Observations	12	36	28	22	15	14
Adjusted R^2	0.84	0.72	0.79	0.86	0.30	0.08

p-values in parentheses

$^{+}$ $p < 0.2$, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Sample size and outliers

- Robust and median regressions
- Outliers and additional EA economies
- Principal component of traditional determinants
- Considering only $gfal_i$ and nfx_i

Sample size and outliers for euro area sample

	(1) Baseline	(2) rreg	(3) qreg	(4) W/o IRL	(5) W/o BEL,IRL	(6) W/o NLD,IRL	(7) W/o SVN	(8) +SVK	(9) +SVK,DNK	(10) PC	(11) PC+SVK,DNK
Labor market rigidities	-0.01**	-0.01**	-0.01*	-0.01**	-0.01*	-0.01**	-0.01**	-0.01**	-0.01		
	(0.03)	(0.04)	(0.10)	(0.04)	(0.06)	(0.04)	(0.05)	(0.02)	(0.24)		
Industry mix	-0.01*	-0.01*	-0.01+	-0.01*	-0.01*	-0.01*	-0.01+	-0.01**	-0.02***		
	(0.06)	(0.09)	(0.12)	(0.07)	(0.10)	(0.09)	(0.14)	(0.03)	(0.01)		
Net FX exposure	-0.22***	-0.27***	-0.24***	-0.27***	-0.27***	-0.33***	-0.21***	-0.20***	-0.17***	-0.21***	-0.16**
	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.02)
GFA/GDP (log)	0.15***	0.15***	0.17***	0.14***	0.14***	0.14***	0.14***	0.15***	0.12***	0.14***	0.12**
	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)
PC of traditional determinants										-0.04***	-0.04***
										(0.00)	(0.00)
Adj. R-squared	0.83	0.78		0.81	0.77	0.81	0.78	0.77	0.72	0.85	0.67
Observations	12	11	12	11	10	10	11	13	14	12	14

p-values in parentheses

Robust standard errors.

$^{+}$ $p < 0.2$, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Additional controls

- Trade integration
- Domestic financial market development
- Financial sector size
- Share of variable-rate housing loans
- Property price growth
- Stressed economy dummy
- Small economy dummy

Additional controls

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Labor market rigidities	-0.01**	-0.01*	-0.00	-0.01*	-0.01*	-0.02**	-0.02***	-0.01*	-0.01**
	(0.03)	(0.07)	(0.40)	(0.05)	(0.05)	(0.01)	(0.01)	(0.06)	(0.04)
Industry mix	-0.01*	-0.01*	-0.01**	-0.01+	-0.01*	-0.00	-0.00*	-0.01*	-0.01**
	(0.06)	(0.07)	(0.04)	(0.13)	(0.07)	(0.36)	(0.10)	(0.09)	(0.04)
Net FX exposure	-0.22***	-0.21***	-0.20***	-0.24***	-0.22***	-0.26***	-0.27***	-0.24***	-0.22***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
GFA/GDP (log)	0.15***	0.16***	0.10**	0.13***	0.15***	0.18***	0.17***	0.16***	0.15***
	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Trade/GDP (log)		-0.12+							
		(0.18)							
Domestic credit/GDP (log)			0.19*						
			(0.07)						
Financial sector value added share				1.65					
				(0.24)					
Variable-rate share in housing loans					0.01				
					(0.73)				
Average property price increase						0.01*			
						(0.06)			
Maximum property price increase							0.08***		
							(0.00)		
Stressed dummy								0.03+	
								(0.16)	
Small country dummy									-0.02
									(0.24)
Adj. R-squared	0.83	0.83	0.89	0.85	0.81	0.87	0.90	0.86	0.84
Observations	12	12	12	12	12	12	12	12	12

p-values in parentheses

Robust standard errors.

$^{+}$ $p < 0.2$, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

De jure measures of capital account openness

- Use *kaopen* of Chinn and Ito (2003)
- Results very similar when using Quinn and Toyoda (2008) or Fernández et al. (2015)

De jure measures of capital account openness

	(1) Baseline EA	(2) Baseline Exp.	(3) kaopen	(4) EA aggr.	(5) kaopen	(6) No EA	(7) kaopen
Labor market rigidities	-0.02**	-0.01***	-0.01**	-0.02+	-0.02	-0.02+	-0.02
	(0.03)	(0.01)	(0.02)	(0.13)	(0.28)	(0.12)	(0.26)
Industry mix	-0.01*	-0.01*	-0.01**	-0.01	-0.01	-0.01	-0.01
	(0.07)	(0.05)	(0.04)	(0.39)	(0.32)	(0.38)	(0.31)
Net FX exposure	-0.22***	-0.15***	-0.08***	-0.14**	-0.08*	-0.14**	-0.08**
	(0.00)	(0.00)	(0.01)	(0.03)	(0.05)	(0.03)	(0.05)
GFA/GDP (log)	0.16***	0.09***		0.10+		0.10+	
	(0.00)	(0.01)		(0.14)		(0.13)	
Chinn and Ito (2003): kaopen index			0.01		0.01		0.01
			(0.38)		(0.57)		(0.56)
EA contiguity dummy		0.14***	0.12***	0.15**	0.13**	0.15**	0.13**
		(0.00)	(0.00)	(0.01)	(0.03)	(0.01)	(0.03)
Domestic credit/GDP (log)		0.19***	0.17**	0.21*	0.18	0.21*	0.18
		(0.00)	(0.02)	(0.08)	(0.23)	(0.08)	(0.22)
Trade/GDP (log)		-0.06	0.00	-0.10	-0.03	-0.10	-0.03
		(0.30)	(0.97)	(0.51)	(0.90)	(0.49)	(0.89)
EA dummy		-0.17***	-0.14***	-0.16***	-0.14***		
		(0.00)	(0.00)	(0.00)	(0.00)		
Observations	12	28	28	15	15	14	14
Adjusted R^2	0.84	0.79	0.73	0.30	0.20	0.08	-0.05

p-values in parentheses

$^{+}$ $p < 0.2$, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Alternative specifications of the MCGSVAR model

- Long-term interest rates
- VIX
- Financial sector size
- Higher lag orders

Alternative specifications of the MCGSVAR model

	(1) Baseline	(2) LT rates	(3) VIX	(4) Lag 2
Labor market rigidities	-0.01**	-0.01***	-0.01***	-0.01*
	(0.03)	(0.00)	(0.01)	(0.06)
Industry mix	-0.01*	-0.01**	-0.01**	-0.01*
	(0.06)	(0.04)	(0.02)	(0.05)
Net FX exposure	-0.22***	-0.21***	-0.19***	-0.20***
	(0.00)	(0.00)	(0.00)	(0.00)
GFA/GDP (log)	0.15***	0.13***	0.13***	0.08*
	(0.00)	(0.00)	(0.00)	(0.07)
Adj. R-squared	0.83	0.91	0.87	0.85
Observations	12	12	12	12

p-values in parentheses

Robust standard errors.

$^{+}$ $p < 0.2$, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

1 Empirical approach

2 Domestic effects of MP shock

3 Role of FinGlob in differences in MP effectiveness

4 Historical change in MP effectiveness due to FinGlob since 1990s

5 Robustness checks

6 Summary and policy implications

Summary

- A priori FinGlob has an ambiguous impact on MP effectiveness
  - global financial cycle effects
  - NFX exposure effects
- FinGlob has strengthened MP effectiveness in AEs and EMEs
- Trilemma remains valid under FinGlob
  - MP effective due to NFX exposure effects
  - if FX flexible
- FinGlob changes MP transmission, even if effectiveness is preserved
  - Interest rate channel loses significance
  - Exchange rate channel getting more important

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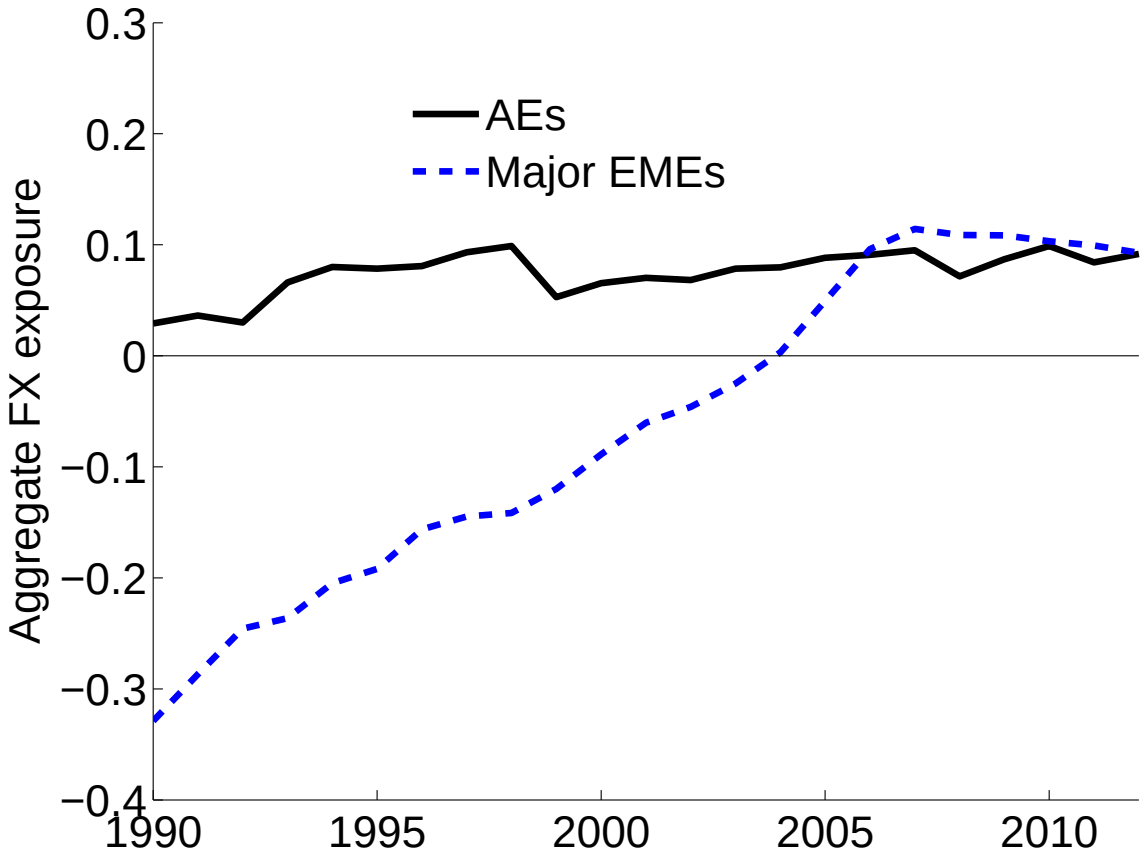
Aggregate FX exposure effects



Note: The figure displays the cross-country average of economies' aggregate foreign currency exposure. The data are taken from Benetrix et al. (forthcoming).

Return

The GVAR

- The GVAR builds on country-specific VARX models

$$\boldsymbol{x}_{it} = \boldsymbol{a}_i + \sum_{j=1}^{p_i} \boldsymbol{\Phi}_{ij} \cdot \boldsymbol{x}_{i,t-j} + \sum_{j=0}^{p_i^*} \boldsymbol{\Gamma}_{ij} \cdot \boldsymbol{x}^*_{i,t-j} + \boldsymbol{u}_{it}, \quad i = 1, 2, \ldots, N, \quad (9)$$

- In MCSGVAR
  - different types of cross-sectional units i (central bank, economy)
  - foreign variables $\boldsymbol{x}^*$ are based on different types of weights

Domestic and foreign variables

- Weights: trade weights, GDP PPP weights, unit weight
- Non-EA economies

  $\boldsymbol{x}_{it}$: real GDP, CPI, short-term interest rates, nom. bil. euro FX
  $\boldsymbol{x}^*_{it}$: real GDP, CPI, short-term interest rates, oil prices
- EA economies

  $\boldsymbol{x}_{it}$: real GDP, CPI
  $\boldsymbol{x}^*_{it}$: real GDP, CPI, "ECB" short-term interest rates, (non-EA) short-term interest rates, nom. bil. euro FX, oil prices
- "ECB"

  $\boldsymbol{x}_{it}$: short-term interest rates
  $\boldsymbol{x}^*_{it}$: real GDP, CPI, short-term interest rates, oil prices, nom. bil. euro FX
- Oil block

  $\boldsymbol{x}_{it}$: Oil prices
  $\boldsymbol{x}^*_{it}$: real GDP, CPI, short-term interest rates

Empirical model specification

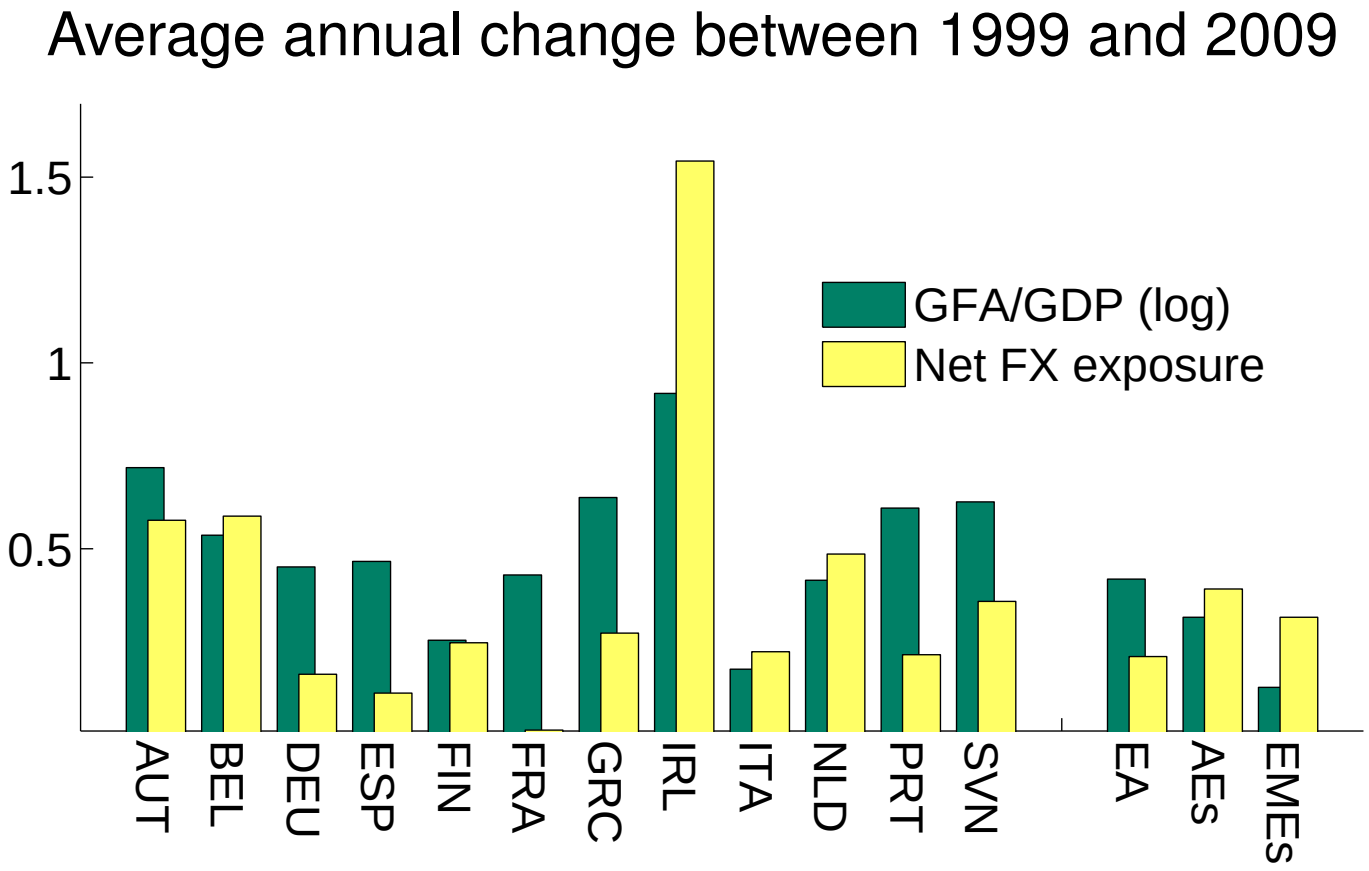
- US economy treated as a dominant unit
  Chudik and Pesaran (2011)
- Model estimated in first differences
  - Facilitates to ensure stability
  - No "pragmatic" determination of co-integrating rank
  - No assumption of weak exogeneity needed
- MP shock identified by sign restrictions on EA aggregate
  Uhlig (2005); Chudik and Fidora (2011); Eickmeier and Ng (2011); Cashin et al. (2012)
  - EA short-term interest rate rises on impact
  - EA inflation negative in fourth quarter after shock
  - Nominal euro effective exchange rate appreciates on impact

Descriptive statistics for 1999 to 2009

	mean	min	max	sd
Trough response of GDP	-0.24	-0.37	-0.16	0.08
Industry mix	-0.31	-3.87	3.42	2.72
Labor market rigidities	-0.55	-5.04	3.25	2.55
Net FX exposure	0.28	-0.12	1.51	0.43
GFA/GDP (log)	1.64	0.94	3.01	0.57

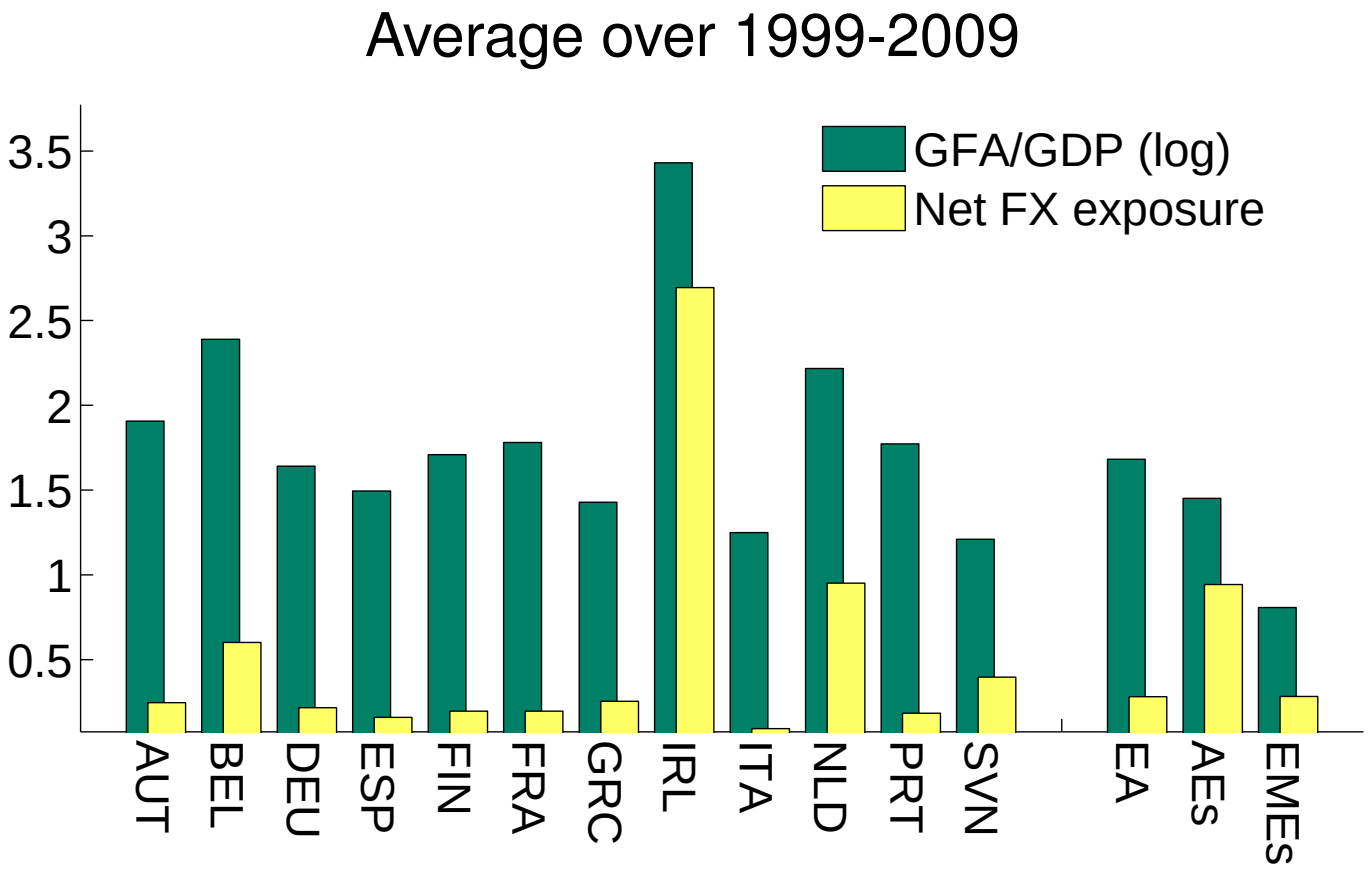
Return to data description

GFA/GDP and NFX exposure



Note: The figure shows the average annual change in the gross foreign asset and liability position relative to GDP as well as the NFX exposure. Advanced economies exclude the EA and the US; emerging economies exclude China.

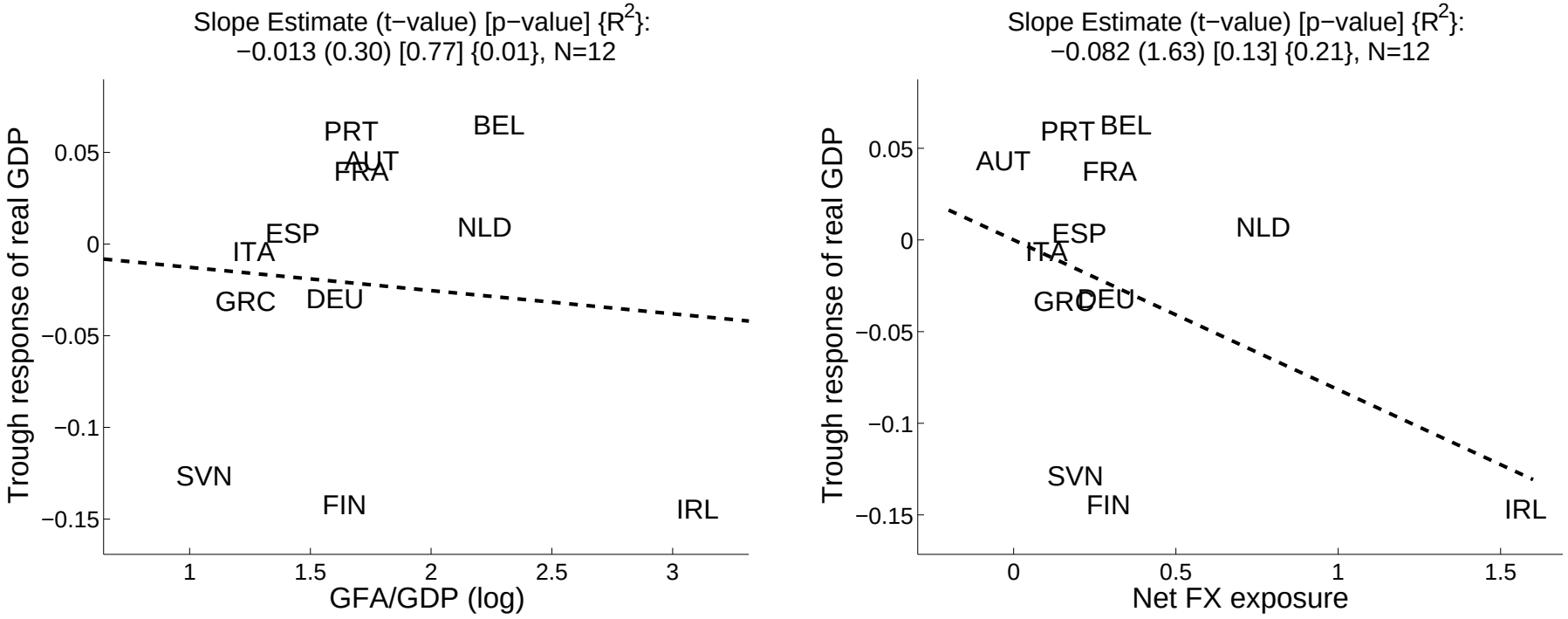
GFA/GDP and NFX exposure



Note: The figure shows the average gross foreign asset and liability position relative to GDP as well as the NFX exposure over the sample period. Advanced economies exclude the EA and the US; emerging economies exclude China.

Changes

Trough responses of real GDP to MP shock, GFA/GDP and NFX exposures



Note: The figure displays unconditional correlations between $gfal_i$, nfx_i and the trough responses of real GDP to a contractionary monetary policy shock.

GFA/GDP and NFX exposure

	Change 1999-2009		2009 level	
	GFA/GDP (log)	Net FX exp.	GFA/GDP (log)	Net FX exp.
AUT	0.72	0.58	1.91	0.25
BEL	0.54	0.59	2.39	0.60
DEU	0.45	0.16	1.64	0.22
ESP	0.47	0.11	1.49	0.16
FIN	0.25	0.25	1.71	0.20
FRA	0.43	0.01	1.78	0.20
GRC	0.64	0.27	1.43	0.25
IRL	0.92	1.54	3.43	2.69
ITA	0.18	0.22	1.25	0.09
NLD	0.42	0.49	2.22	0.95
PRT	0.61	0.21	1.77	0.18
SVN	0.63	0.36	1.21	0.40
EA	0.42	0.21	1.68	0.28
AEs	0.31	0.39	1.44	0.93
EMEs	0.10	0.29	0.82	0.19

Return

Economic significance

Economically significant impact of

- global financial cycle effects

$$\begin{aligned} \Delta^{gfal} s_i &= \widehat{\beta}^{gfal} \cdot \sigma^{gfal} \\ &= 0.14 \cdot 0.57 \\ &= 0.08 \quad (\approx 0.3\mu^s, \ \approx \sigma^s) \end{aligned} \tag{10}$$

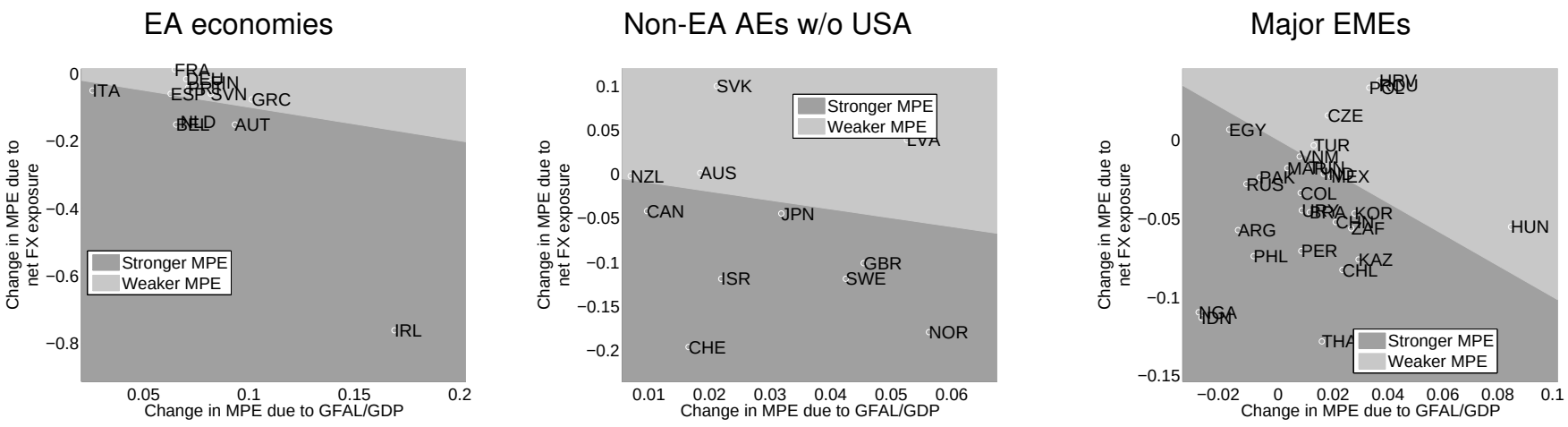
- NFX exposure effects

$$\begin{aligned} \Delta^{nfx} s_i &= \widehat{\beta}^{nfx} \cdot \sigma^{nfx} \\ &= -0.21 \cdot 0.43 \\ &= -0.08 \quad (\approx 0.3\mu^s, \ \approx \sigma^s) \end{aligned} \tag{11}$$

on MP effectiveness.

Return

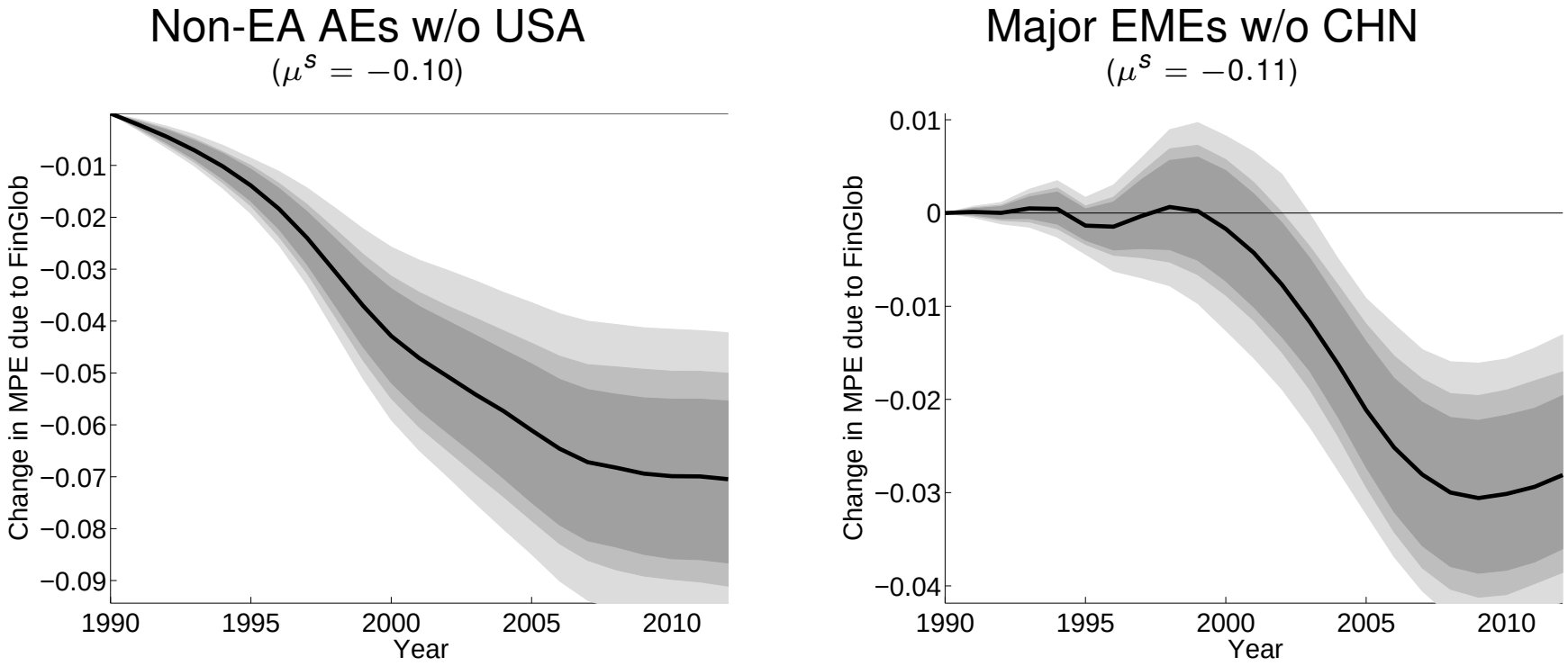
Heterogeneities



Note: The figure displays the changes in the impact of monetary policy on output that is due to the global financial cycle and net foreign currency exposure effects; the shaded areas indicate whether the former effect outweighs the latter and vice versa.

Return

Benchmark period 1990



Note: The figure displays the changes in the impact of monetary policy on output that is due to the global financial cycle and NFX exposure effects; the shaded areas indicate whether the former effect outweighs the latter and vice versa.

Return