Extended Appendix to "Global Liquidity, House Prices, and the Macroeconomy: Evidence from Advanced and Emerging Market Economies" by A. Cesa-Bianchi, L.F. Cespedes, and A. Rebucci

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Section 1 explains how we prepare the raw data for our empirical analysis, namely the seasonal adjustment procedure and the extension of the time coverage of existing series with historical data.

Section 2 reports the country-specific summary statistics (Tables from 2 to 9) used to compute the average figures reported in Table 1 in the paper.

Section 3 reports a correlation matrix of the instruments we use for the identification of global liquidity shocks.

Section 4 shows that the impulse responses presented in Figures 5 and 6 of the paper are robust in several respects. Like in the paper, we report the impulse responses to a global liquidity shock (identified with both Cholesky and external instruments) for the following specifications: PVAR estimated in first differences (Figures 1 and 2); PVAR specified with bilateral real exchange vis-a-vis the US dollar instead of real effective exchange rate (Figures 3 and 4); PVAR estimated with country-specific bank-to-bank cross-border credit instead of its sum across countries (Figures 5 and 6); and PVAR specified with country-specific total cross-border bank credit (i.e., all instruments) instead of bank-to-bank (loans and deposit only) credit (Figures 7 and 8).

Section 5 reports the counterfactual exercises presented in Figure 7 and 8 of the paper, identified with the Cholesky decomposition of the variance-covariance matrix of the reduced form residuals. Like in the paper, we report the impulse responses to a global liquidity shock shutting down the housing channel (Figure 9) and the exchange rate channel (Figure 10).

Section 6 shows that the individual city components of some national house price indices (i.e., for the United States, Canada, Australia, and the United Kingdom) display significant comovement and that price indices for "prime" properties within a given city (i.e., London, Moscow, Geneva, Paris, Hong Kong, Singapore, Beijing, Shanghai, Sydney, and Tokyo) display high correlation with the corresponding aggregate indices.

Finally, Section 7 plots the level of all real house prices series used in the paper.

1 Data treatment

1.1 Seasonal adjustment

To asses the joint significance of the seasonal components of a given variable (x) we used the following procedure. Let S_1, S_2, S_3, and S_4 be seasonal dummies, such that S_i, $i = 1, 2, 3, 4$, takes the value of 1 in the i^{th} quarter and zero in the other three quarters. Then construct $S_{14} = S_1 - S_4$, $S_{24} = S_2 - S_4$, and $S_{34} = S_3 - S_4$. Now run a regression of Δx (where Δ is the difference operator) on an intercept and S_{14}, S_{24}, and S_{34}; denote the OLS estimates of S_{14}, S_{24}, and S_{34} by a_1, a_2, and a_3, respectively.

We then asses the joint significance of the seasonal components by testing the hypothesis that $a_1 = a_2 = a_3 = 0$ using the F-statistic. For cases where we can reject the null hypothesis at the 10% level, seasonal adjustment was performed on the Δx with the X12 procedure (with additive option). We then use the first observation of the raw series x and changes in the seasonally adjusted series Δx_{SA} to obtain the seasonally adjusted level series (x_{SA}).

1.2 Backward extrapolation

When possible, the coverage of existing house price indices is extended by extrapolating backward newer series with historical data (described in Cesa-Bianchi et al., 2014).[1] For countries for which there exists a quarterly house price index, we extrapolate backward with the growth rate of the historical series. For countries for which a quarterly house price index does not exist, we use interpolation of annual (or semi-annual) data into quarterly data. To interpolate annual or semi-annual data, we simply assume that the series we want to interpolate grows at a constant rate within the year. For example, if g_x^y is the *annual* gross rate of change of x we simply assume that the quarterly gross rate of change is given by $g_x^q = (g_x^y)^{\frac{1}{4}}$.

[1] Cesa-Bianchi, A., L. Cespedes, and A. Rebucci (2014). "Emerging market house price indices: a historical data base," Unpublished manuscript.

2 Country-specific summary statistics

Table 1 Country Codes

Code	Country	Code	Country
ARG	Argentina	LTU	Lithuania
AUS	Australia	LUX	Luxembourg
AUT	Austria	MYS	Malaysia
BEL	Belgium	MLT	Malta
BRA	Brazil	MEX	Mexico
BGR	Bulgaria	MAR	Morocco
CAN	Canada	NLD	Netherlands
CHL	Chile	NZL	New Zealand
CHN	China	NOR	Norway
COL	Colombia	PER	Peru
HRV	Croatia	PHL	Philippines
CZE	Czech Republic	POL	Poland
DNK	Denmark	PRT	Portugal
EST	Estonia	RUS	Russia
FIN	Finland	SRB	Serbia
FRA	France	SGP	Singapore
DEU	Germany	SVK	Slovakia
GRC	Greece	SVN	Slovenia
HKG	Hong Kong	ZAF	South Africa
HUN	Hungary	ESP	Spain
ISL	Iceland	SWE	Sweden
IND	India	CHE	Switzerland
IDN	Indonesia	TWN	Taiwan
IRL	Ireland	THA	Thailand
ISR	Israel	UKR	Ukraine
ITA	Italy	GBR	United Kingdom
JPN	Japan	USA	United States
KOR	Korea	URY	Uruguay
LVA	Latvia		

Table 2 Advanced Economies - House Prices 1990-2012

	Mean	Median	St. Dev.	Auto Corr.	Pair. Corr.
AUS	0.7%	0.5%	1.9%	0.7	0.2
AUT	0.3%	0.4%	2.7%	0.0	-0.1
BEL	0.8%	0.8%	1.3%	0.0	0.2
CAN	0.5%	0.8%	1.8%	0.3	0.1
DNK	0.5%	0.6%	2.3%	0.8	0.3
FIN	0.1%	0.3%	2.4%	0.8	0.2
FRA	0.6%	0.8%	1.6%	0.8	0.3
DEU	-0.2%	-0.3%	0.7%	0.7	-0.2
GRC	0.2%	0.5%	2.0%	0.7	0.2
ISL	0.4%	1.0%	3.5%	0.7	0.2
IRL	0.6%	1.3%	3.0%	0.7	0.3
ITA	0.2%	0.2%	1.5%	0.9	0.2
JPN	-0.7%	-0.7%	0.8%	0.7	-0.1
LUX	0.8%	0.8%	1.4%	0.5	0.2
MLT	0.9%	0.9%	2.9%	0.0	0.1
NLD	0.8%	0.8%	1.8%	0.6	0.1
NZL	0.8%	1.0%	2.0%	0.8	0.2
NOR	1.0%	1.5%	2.2%	0.6	0.2
PRT	0.0%	-0.2%	1.1%	0.6	0.0
ESP	0.3%	0.2%	2.3%	0.7	0.3
SWE	0.6%	1.1%	2.1%	0.7	0.3
CHE	-0.2%	0.0%	1.4%	0.5	0.0
GBR	0.6%	0.6%	2.3%	0.8	0.3
USA	0.1%	0.3%	1.3%	0.8	0.3

Note. Country-specific statistics of real house price inflation. Sample period is longest series available for house prices since 1990:Q1.

Table 3 Emerging Economies - House Prices 1990-2012

	Mean	Median	St. Dev.	Auto Corr.	Pair. Corr.
ARG	1.5%	0.7%	6.9%	0.4	0.0
BRA	1.7%	2.2%	2.2%	0.9	-0.1
BGR	-0.5%	-0.1%	8.8%	0.1	0.1
CHL	1.2%	0.2%	9.3%	-0.3	0.0
CHN	0.6%	0.8%	1.2%	0.3	0.1
COL	0.2%	0.1%	3.5%	-0.2	0.0
HRV	0.3%	0.1%	5.4%	0.2	0.1
CZE	1.2%	0.4%	2.9%	0.8	0.1
EST	0.3%	-0.9%	11.6%	0.1	0.1
HKG	1.1%	1.2%	5.7%	0.6	0.1
HUN	0.6%	0.7%	4.3%	0.4	-0.1
IND	1.9%	2.4%	3.9%	0.0	0.0
IDN	-1.3%	-0.7%	3.3%	0.7	0.0
ISR	0.3%	0.4%	1.8%	0.5	-0.1
KOR	-0.5%	-0.4%	2.2%	0.7	0.1
LVA	2.0%	2.4%	10.2%	0.4	0.1
LTU	1.2%	2.1%	7.6%	0.3	0.1
MYS	0.8%	0.7%	1.7%	0.7	0.0
MEX	0.3%	0.2%	1.1%	0.0	0.1
MAR	-0.3%	-0.4%	1.0%	-0.2	0.1
PER	0.7%	1.5%	7.4%	-0.2	0.0
PHL	-0.4%	-0.7%	3.8%	0.6	0.1
POL	0.7%	-0.5%	5.1%	0.7	0.2
RUS	1.8%	2.1%	6.2%	0.3	0.1
SRB	0.0%	-0.1%	5.9%	0.4	0.0
SGP	1.0%	0.9%	4.8%	0.7	0.1
SVK	1.2%	1.1%	3.5%	0.8	0.2
SVN	0.2%	-0.1%	3.4%	0.0	0.2
ZAF	0.8%	0.6%	2.6%	0.8	0.1
TWN	0.0%	0.3%	3.7%	0.0	0.1
THA	-0.2%	0.1%	3.4%	0.0	0.0
UKR	3.5%	4.0%	6.2%	0.7	0.1
URY	0.1%	0.0%	8.2%	0.0	0.0

Note. Country-specific statistics of real house price inflation. Sample period is longest series available for house prices since 1990:Q1.

Table 4 Advanced Economies - Equity Prices 1990-2012

	Mean	Median	St. Dev.	Auto Corr.	Pair. Corr.
AUS	0.3%	1.6%	6.5%	0.3	0.7
AUT	0.1%	1.5%	11.6%	0.3	0.7
BEL	0.1%	1.5%	8.6%	0.5	0.7
CAN	0.6%	1.9%	7.6%	0.3	0.7
DNK	0.8%	3.6%	8.7%	0.5	0.8
FIN	0.7%	3.0%	13.9%	0.4	0.6
FRA	0.2%	1.3%	8.1%	0.4	0.8
DEU	0.3%	0.7%	9.6%	0.3	0.7
GRC	-1.5%	-1.6%	17.9%	0.3	0.6
ISL	-0.4%	3.8%	19.5%	0.6	0.6
IRL	-0.2%	1.3%	10.7%	0.6	0.7
ITA	-0.7%	-0.9%	9.5%	0.4	0.7
JPN	-1.6%	-1.4%	8.7%	0.4	0.6
LUX	-0.8%	1.6%	13.5%	0.4	0.8
MLT	1.0%	-0.4%	11.3%	0.4	0.5
NLD	0.2%	1.2%	9.5%	0.4	0.8
NZL	-0.4%	0.4%	6.6%	0.3	0.5
NOR	1.2%	2.7%	12.2%	0.3	0.7
PRT	-0.2%	1.2%	9.9%	0.5	0.7
ESP	0.0%	0.9%	8.6%	0.4	0.7
SWE	1.0%	2.1%	9.8%	0.5	0.7
CHE	1.0%	2.2%	7.6%	0.4	0.7
GBR	0.3%	0.7%	6.0%	0.3	0.7
USA	0.7%	1.3%	6.9%	0.4	0.7

Note. Country-specific statistics of real equity price returns. Sample period is longest series available for house prices since 1990:Q1.

Table 5 Emerging Economies - Equity Prices 1990-2012

	Mean	Median	St. Dev.	Auto Corr.	Pair. Corr.
ARG	0.7%	0.7%	19.3%	0.2	0.5
BRA	2.5%	2.9%	13.7%	0.2	0.5
BGR	-1.3%	3.6%	29.1%	0.4	0.6
CHL	2.1%	1.1%	8.7%	0.3	0.4
CHN	-0.2%	-0.1%	14.0%	0.6	0.4
COL	2.6%	2.3%	13.6%	0.3	0.4
HRV	-0.8%	0.8%	15.0%	0.4	0.6
CZE	-1.5%	0.9%	12.6%	0.4	0.6
EST	0.2%	1.9%	17.4%	0.4	0.6
HKG	1.2%	2.6%	11.4%	0.2	0.6
HUN	0.3%	1.5%	14.1%	0.3	0.5
IND	1.6%	2.0%	12.6%	0.3	0.5
IDN	0.0%	2.3%	16.8%	0.2	0.6
ISR	1.7%	2.0%	9.8%	0.4	0.5
KOR	-0.4%	1.4%	12.7%	0.3	0.4
LVA	0.5%	1.2%	16.5%	0.7	0.4
LTU	1.2%	2.6%	17.7%	0.4	0.6
MYS	0.5%	1.3%	10.5%	0.3	0.5
MEX	2.4%	2.4%	11.1%	0.2	0.6
MAR	1.0%	1.1%	8.5%	0.3	0.2
PER	3.7%	5.3%	23.8%	0.1	0.4
PHL	0.1%	1.4%	17.0%	0.2	0.4
POL	2.4%	3.8%	18.6%	0.4	0.5
RUS	0.6%	2.8%	19.7%	0.4	0.6
SRB	-4.3%	-4.4%	21.0%	0.5	0.7
SGP	0.4%	1.2%	11.4%	0.3	0.5
SVK	-0.7%	-2.0%	14.4%	0.3	0.2
SVN	-1.0%	0.1%	12.3%	0.4	0.4
ZAF	-0.2%	1.7%	12.0%	0.1	0.3
TWN	-0.9%	-0.5%	16.6%	0.1	0.3
THA	0.3%	0.4%	14.4%	0.2	0.4
UKR	NaN	NaN	NaN	NaN	0.0
URY	NaN	NaN	NaN	NaN	0.0

Note. Country-specific statistics of real equity price returns. Sample period is longest series available for house prices since 1990:Q1.

Table 6 Advanced Economies - Consumption 1990-2012

	Mean	Median	St. Dev.	Auto Corr.	Pair. Corr.
AUS	0.8%	0.8%	0.6%	0.2	0.2
AUT	0.4%	0.4%	0.2%	0.9	0.2
BEL	0.4%	0.4%	0.4%	0.4	0.2
CAN	0.7%	0.7%	0.6%	0.1	0.2
DNK	0.4%	0.3%	1.3%	-0.1	0.2
FIN	0.4%	0.6%	1.2%	0.1	0.2
FRA	0.4%	0.4%	0.5%	0.0	0.3
DEU	0.3%	0.3%	0.9%	-0.3	0.0
GRC	0.5%	0.6%	2.3%	0.1	0.1
ISL	0.6%	1.1%	2.8%	0.4	0.3
IRL	0.9%	0.7%	1.5%	0.0	0.3
ITA	0.2%	0.3%	0.7%	0.4	0.3
JPN	0.3%	0.3%	0.9%	-0.2	0.1
LUX	0.6%	0.7%	1.3%	0.1	0.1
MLT	1.1%	0.5%	4.1%	-0.3	0.1
NLD	0.4%	0.4%	0.8%	0.2	0.2
NZL	0.7%	0.7%	0.8%	0.2	0.2
NOR	0.8%	1.0%	1.1%	-0.2	0.2
PRT	0.4%	0.5%	1.0%	0.3	0.3
ESP	0.5%	0.6%	0.9%	0.5	0.3
SWE	0.4%	0.5%	0.9%	0.2	0.2
CHE	0.4%	0.4%	0.4%	0.0	0.1
GBR	0.6%	0.8%	0.8%	0.5	0.2
USA	0.7%	0.7%	0.5%	0.5	0.3

Note. Country-specific statistics of real consumption quarter-on-quarter growth rates. Sample period is longest series available for house prices since 1990:Q1.

Table 7 Emerging Economies - Consumption 1990-2012

	Mean	Median	St. Dev.	Auto Corr.	Pair. Corr.
ARG	1.2%	1.5%	3.4%	0.4	0.1
BRA	0.9%	0.9%	1.3%	0.2	0.1
BGR	0.2%	0.2%	6.0%	0.1	0.0
CHL	1.4%	1.6%	1.3%	0.6	0.1
CHN	2.2%	2.2%	0.8%	0.4	0.0
COL	0.9%	0.7%	2.5%	0.1	0.1
HRV	1.3%	1.0%	4.4%	0.3	0.1
CZE	0.6%	0.6%	0.9%	0.5	0.1
EST	1.2%	1.1%	2.3%	0.5	0.1
HKG	0.8%	0.9%	1.9%	0.2	0.1
HUN	0.4%	0.5%	1.4%	0.3	0.0
IND	1.5%	1.5%	2.4%	-0.4	0.1
IDN	1.7%	1.5%	4.1%	-0.2	0.0
ISR	1.0%	0.8%	1.2%	-0.1	0.1
KOR	1.0%	1.2%	2.1%	0.3	0.1
LVA	1.5%	1.7%	5.4%	-0.7	0.1
LTU	1.0%	0.8%	6.8%	-0.3	0.1
MYS	1.6%	1.6%	2.7%	0.2	0.1
MEX	0.8%	1.1%	1.6%	0.3	0.1
MAR	0.8%	0.8%	1.3%	0.4	0.0
PER	0.5%	1.2%	4.3%	0.0	0.1
PHL	1.0%	1.0%	0.9%	0.0	0.1
POL	1.1%	1.0%	1.2%	0.1	0.1
RUS	1.4%	1.7%	2.3%	0.3	0.2
SRB	1.8%	2.4%	3.4%	0.0	0.0
SGP	1.2%	1.3%	1.9%	0.1	0.1
SVK	0.9%	1.0%	1.8%	-0.2	0.1
SVN	0.5%	0.5%	1.3%	-0.1	0.1
ZAF	1.0%	1.1%	1.1%	0.6	0.1
TWN	1.1%	1.0%	1.3%	0.0	0.0
THA	1.1%	1.4%	1.8%	0.4	0.1
UKR	2.5%	2.2%	3.6%	-0.2	0.1
URY	1.6%	2.0%	1.4%	0.6	0.2

Note. Country-specific statistics of real consumption quarter-on-quarter growth rates. Sample period is longest series available for house prices since 1990:Q1.

Table 8 Advanced Economies - GDP 1990-2012

	Mean	Median	St. Dev.	Auto Corr.	Pair. Corr.
AUS	0.8%	0.7%	0.6%	0.1	0.2
AUT	0.5%	0.6%	0.6%	0.7	0.4
BEL	0.4%	0.4%	0.7%	0.3	0.4
CAN	0.6%	0.6%	0.7%	0.6	0.4
DNK	0.4%	0.3%	1.2%	-0.1	0.3
FIN	0.4%	0.7%	1.3%	0.5	0.4
FRA	0.4%	0.5%	0.5%	0.5	0.5
DEU	0.4%	0.4%	0.9%	0.4	0.3
GRC	0.4%	0.5%	1.8%	-0.1	0.1
ISL	0.6%	0.7%	2.8%	-0.3	0.1
IRL	1.1%	1.0%	1.8%	0.0	0.3
ITA	0.2%	0.3%	0.7%	0.5	0.4
JPN	0.2%	0.3%	1.1%	0.2	0.2
LUX	0.9%	1.0%	1.6%	-0.1	0.2
MLT	0.6%	0.6%	2.3%	-0.2	0.2
NLD	0.5%	0.6%	0.7%	0.4	0.4
NZL	0.6%	0.6%	1.0%	0.1	0.2
NOR	0.6%	0.6%	1.2%	-0.2	0.2
PRT	0.3%	0.4%	1.0%	0.2	0.4
ESP	0.5%	0.7%	0.8%	0.2	0.4
SWE	0.5%	0.6%	1.0%	0.4	0.4
CHE	0.4%	0.4%	0.6%	0.6	0.4
GBR	0.5%	0.6%	0.7%	0.7	0.5
USA	0.6%	0.6%	0.6%	0.6	0.4

Note. Country-specific statistics of real GDP quarter-on-quarter growth rates. Sample period is longest series available for house prices since 1990:Q1.

Table 9 Emerging Economies - GDP 1990-2012

	Mean	Median	St. Dev.	Auto Corr.	Pair. Corr.
ARG	1.1%	1.7%	2.8%	0.3	0.2
BRA	0.7%	1.0%	1.2%	0.1	0.3
BGR	-0.1%	0.6%	2.2%	0.8	0.1
CHL	1.0%	1.2%	1.3%	0.2	0.2
CHN	2.5%	2.5%	1.2%	0.1	0.2
COL	1.3%	1.1%	1.7%	0.6	0.1
HRV	0.1%	0.4%	2.6%	0.4	0.2
CZE	0.6%	0.6%	1.0%	0.5	0.3
EST	1.2%	1.3%	2.1%	0.5	0.3
HKG	1.0%	1.2%	1.5%	0.3	0.3
HUN	0.5%	0.9%	0.9%	0.7	0.3
IND	1.6%	1.5%	1.2%	0.0	0.2
IDN	1.2%	1.6%	1.7%	0.5	0.1
ISR	1.0%	1.0%	1.0%	0.3	0.2
KOR	1.3%	1.3%	1.5%	0.4	0.2
LVA	0.2%	0.9%	5.0%	0.2	0.2
LTU	0.3%	1.0%	4.1%	0.1	0.2
MYS	1.4%	1.6%	1.7%	0.3	0.3
MEX	0.7%	0.8%	1.2%	0.5	0.2
MAR	0.9%	1.2%	3.7%	-0.5	0.0
PER	1.0%	1.5%	2.6%	0.2	0.1
PHL	1.0%	1.1%	1.0%	0.3	0.3
POL	1.0%	1.2%	1.0%	0.0	0.1
RUS	0.9%	1.2%	1.9%	0.5	0.3
SRB	1.2%	0.8%	7.4%	-0.2	0.0
SGP	1.5%	1.6%	2.0%	0.1	0.2
SVK	1.1%	1.3%	1.7%	-0.1	0.2
SVN	0.6%	0.8%	1.3%	0.5	0.3
ZAF	0.6%	0.8%	0.7%	0.7	0.3
TWN	1.2%	1.3%	1.6%	0.2	0.2
THA	1.1%	1.5%	2.6%	0.0	0.1
UKR	0.9%	1.3%	2.8%	0.5	0.5
URY	0.7%	0.9%	1.8%	0.4	0.1

Note. Country-specific statistics of real GDP quarter-on-quarter growth rates. Sample period is longest series available for house prices since 1990:Q1.

3 Correlation of instruments

Table 10 Correlation Matrix of the Instruments Used to Identify Global Liquidity Shocks

	US Short Rate	US Short Rate (FD)	US M2 (LD)	US Leverage (L)	US Leverage (LD)	Yield Curve Slope	VIX	TED	VIX (LD)
US Short Rate	1								
US Short Rate (FD)	0.17	1							
US M2 (LD)	-0.02	0.27	1						
US Leverage (L)	0.47	-0.08	-0.11	1					
US Leverage (LD)	0.17	-0.13	-0.33	0.16	1				
Yield Curve Slope	-0.84	-0.07	0.05	-0.47	-0.19	1			
VIX	-0.21	-0.10	0.38	-0.25	-0.36	0.35	1		
TED	0.32	-0.11	0.07	0.32	-0.27	-0.42	-0.03	1	
VIX (LD)	0.12	0.09	0.28	0.07	-0.20	-0.11	0.49	0.13	1

Note. L is log-levels, LD is log-differences, and FD is simple first differences. Sample period is 1995:Q1 to 2012:Q4.

4 VAR robustness

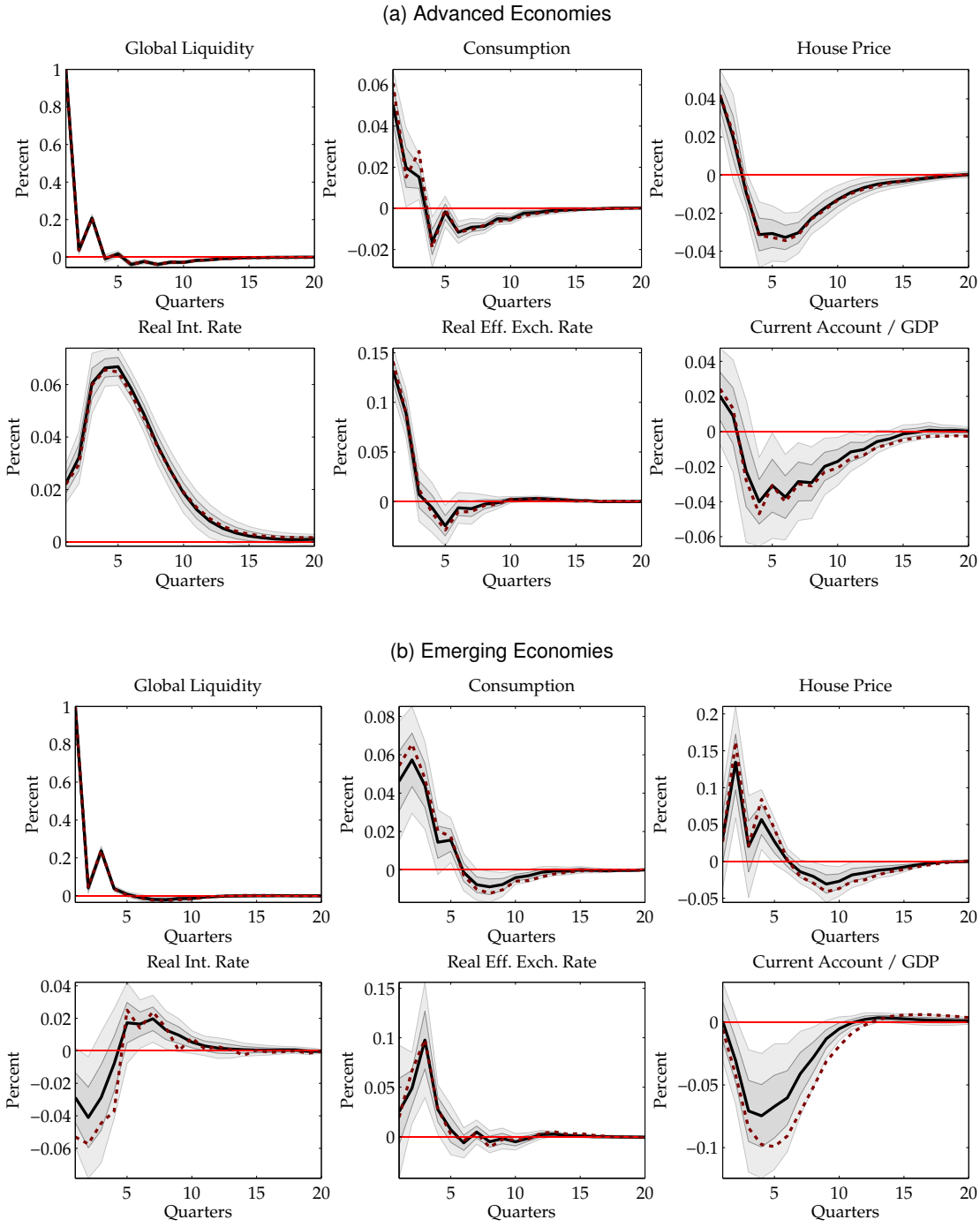


Figure 1 Global Liquidity Shock – First Differences Specification – Cholesky Identification. Censored impulse responses to a one percent shock to global liquidity in advanced and emerging economies, panel (a) and panel (b) respectively. The dark and light shaded areas are the one and two standard deviation confidence intervals. The dashed line reports the uncensored impulse responses.

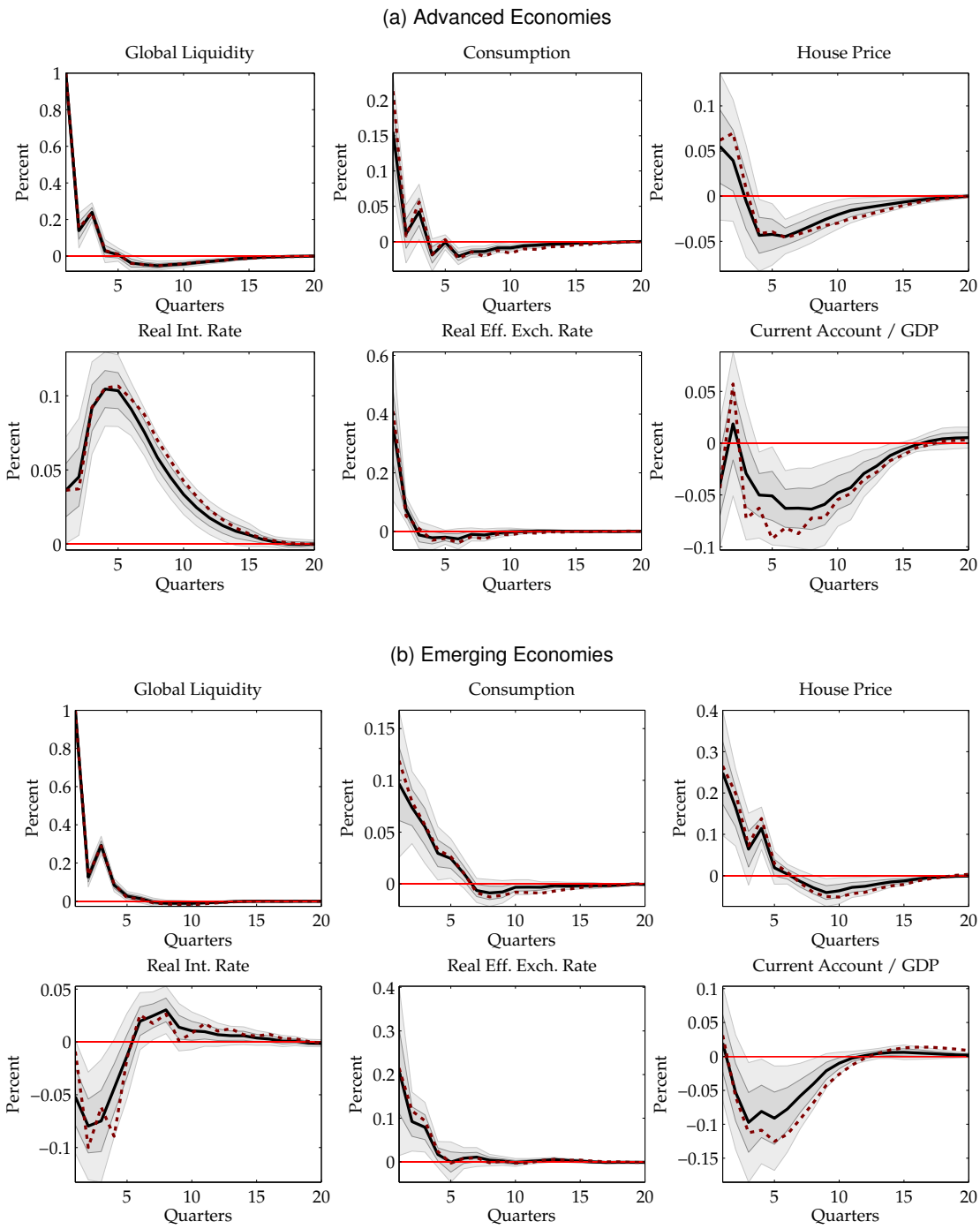


Figure 2 Global Liquidity Shock – First Differences Specification – IV Identification. Censored impulse responses to a one percent shock to global liquidity in advanced and emerging economies, panel (a) and panel (b) respectively. The dark and light shaded areas are the one and two standard deviation confidence intervals. The dashed line reports the uncensored impulse responses.

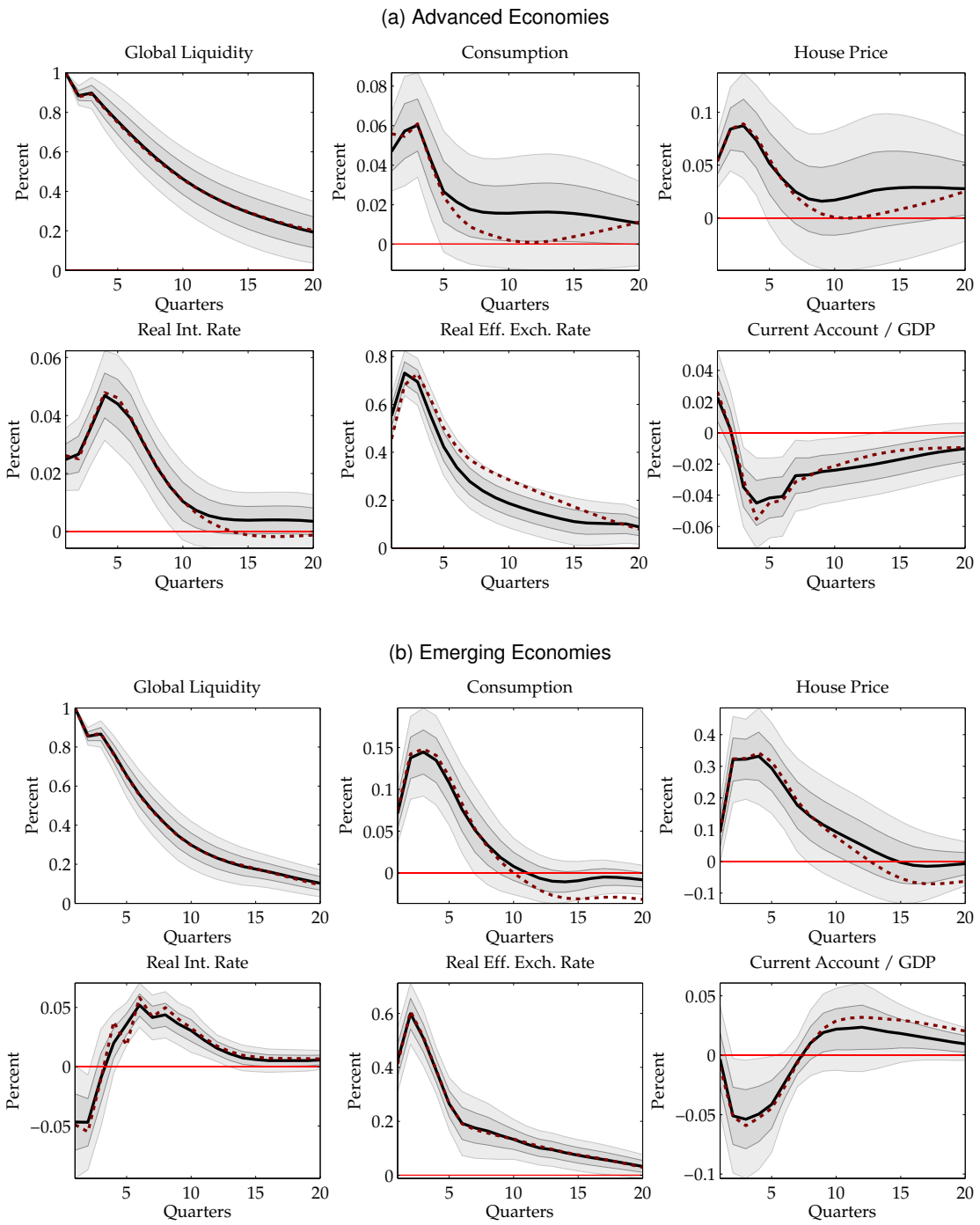


Figure 3 Global Liquidity Shock – Bilateral real exchange vis-a-vis the US dollar – Cholesky Identification. Censored impulse responses to a one percent shock to global liquidity in advanced and emerging economies, panel (a) and panel (b) respectively. The dark and light shaded areas are the one and two standard deviation confidence intervals. The dashed line reports the uncensored impulse responses.

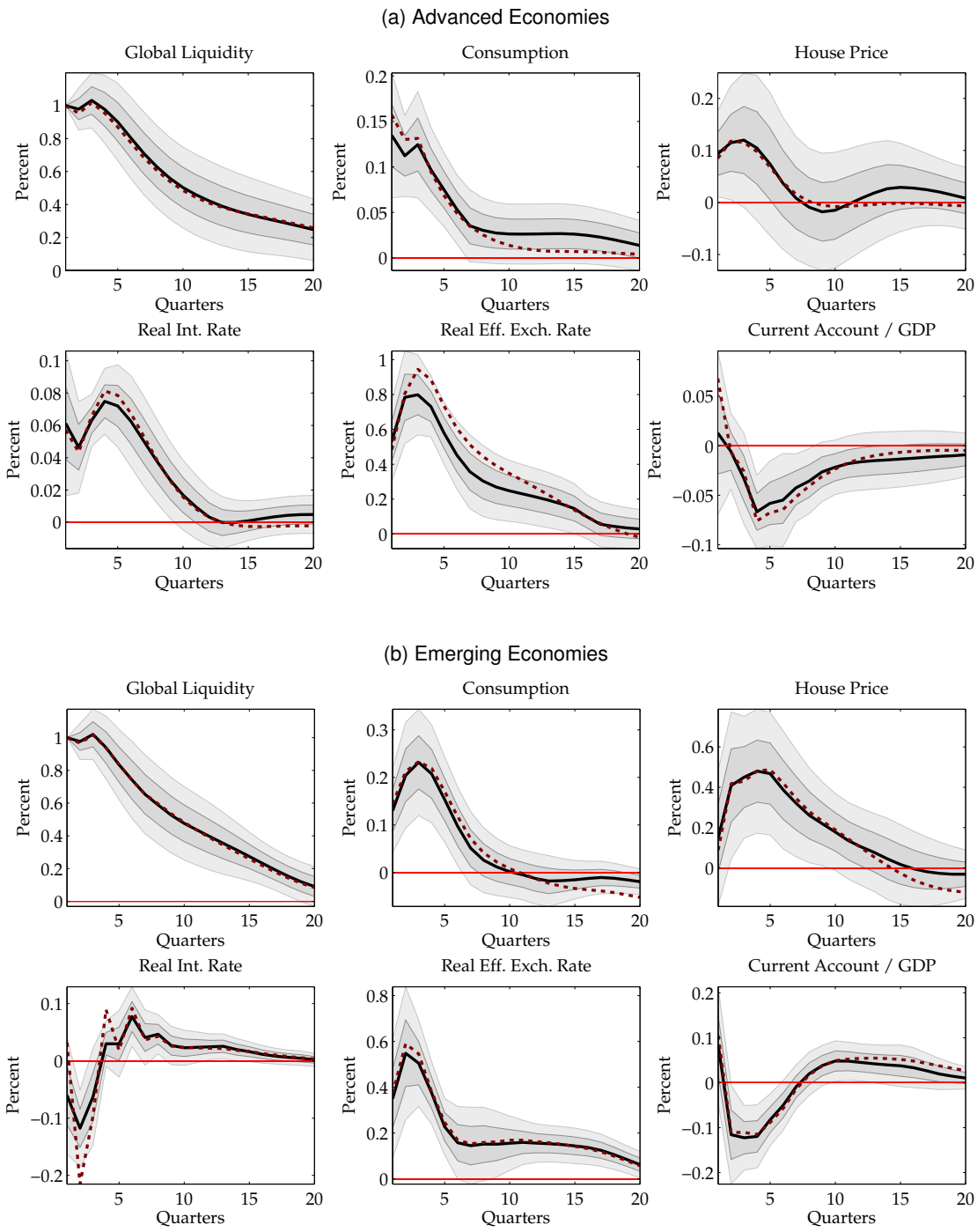


Figure 4 Global Liquidity Shock – Bilateral real exchange vis-a-vis the US dollar – IV Identification. Censored impulse responses to a one percent shock to global liquidity in advanced and emerging economies, panel (a) and panel (b) respectively. The dark and light shaded areas are the one and two standard deviation confidence intervals. The dashed line reports the uncensored impulse responses.

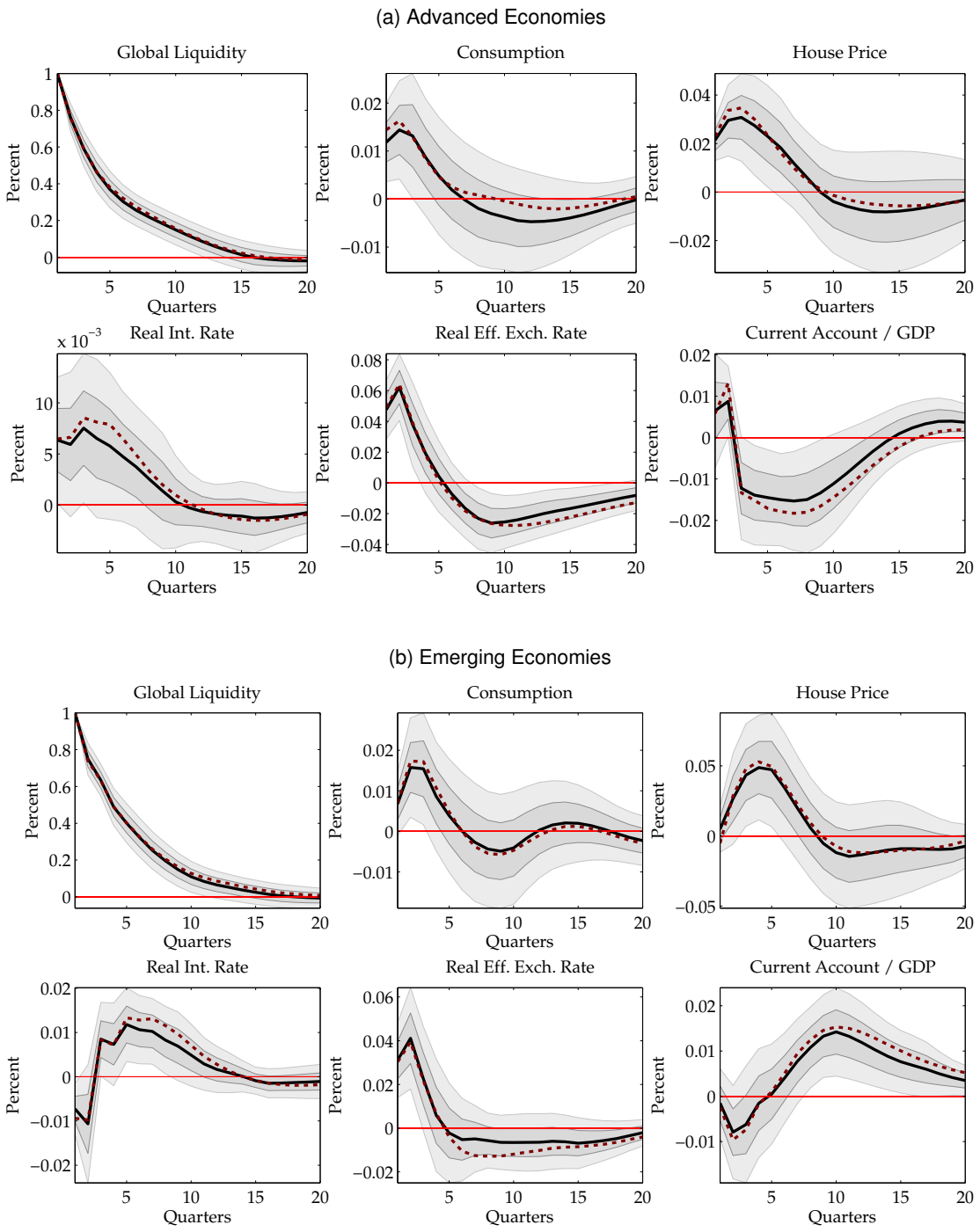


Figure 5 Global Liquidity Shock – Country-specific Bank-to-bank Cross-border Credit – Cholesky Identification. Censored impulse responses to a one percent shock to global liquidity in advanced and emerging economies, panel (a) and panel (b) respectively. The dark and light shaded areas are the one and two standard deviation confidence intervals. The dashed line reports the uncensored impulse responses.

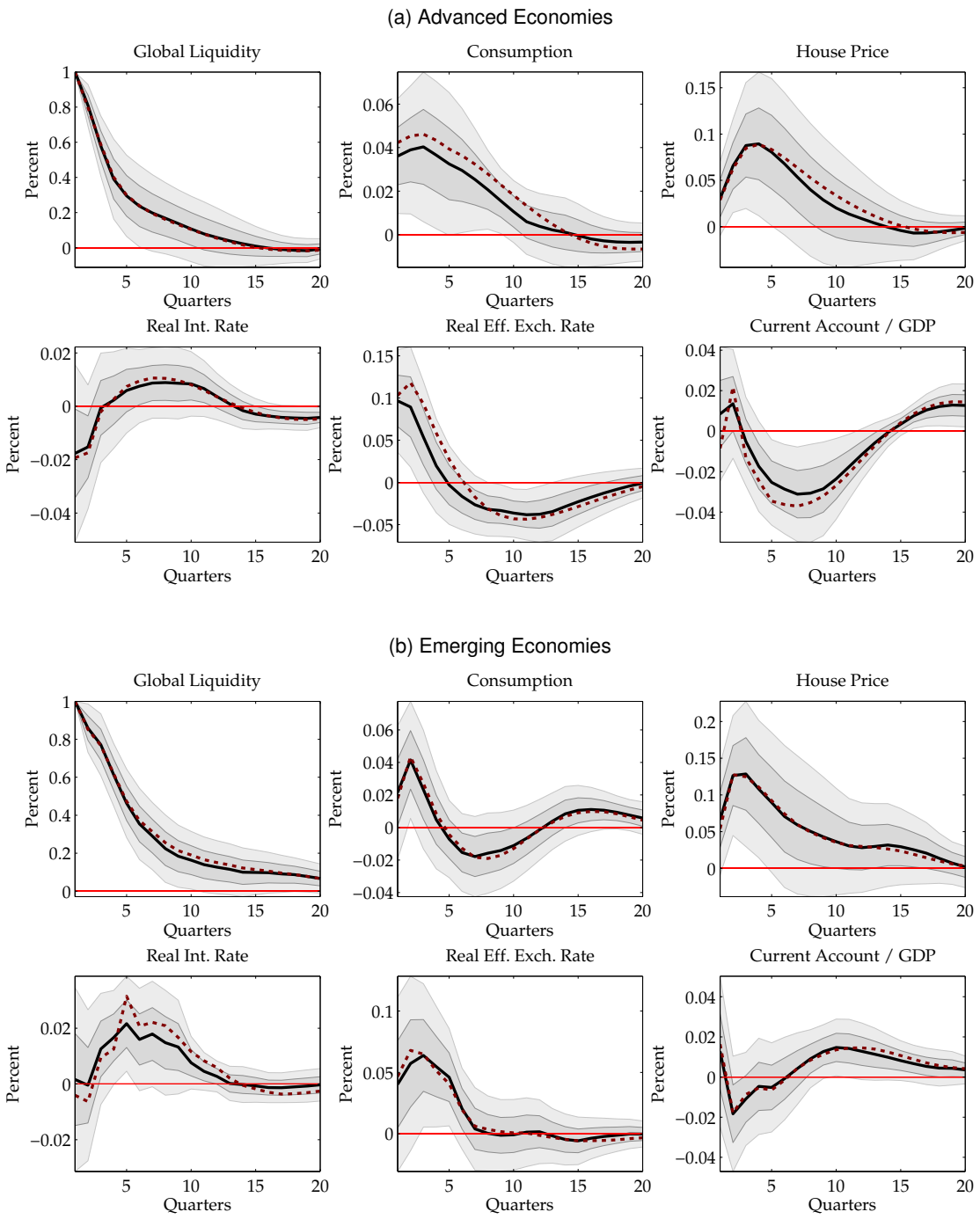


Figure 6 Global Liquidity Shock – Country-specific Bank-to-bank Cross-border Credit – IV Identification. Censored impulse responses to a one percent shock to global liquidity in advanced and emerging economies, panel (a) and panel (b) respectively. The dark and light shaded areas are the one and two standard deviation confidence intervals. The dashed line reports the uncensored impulse responses.

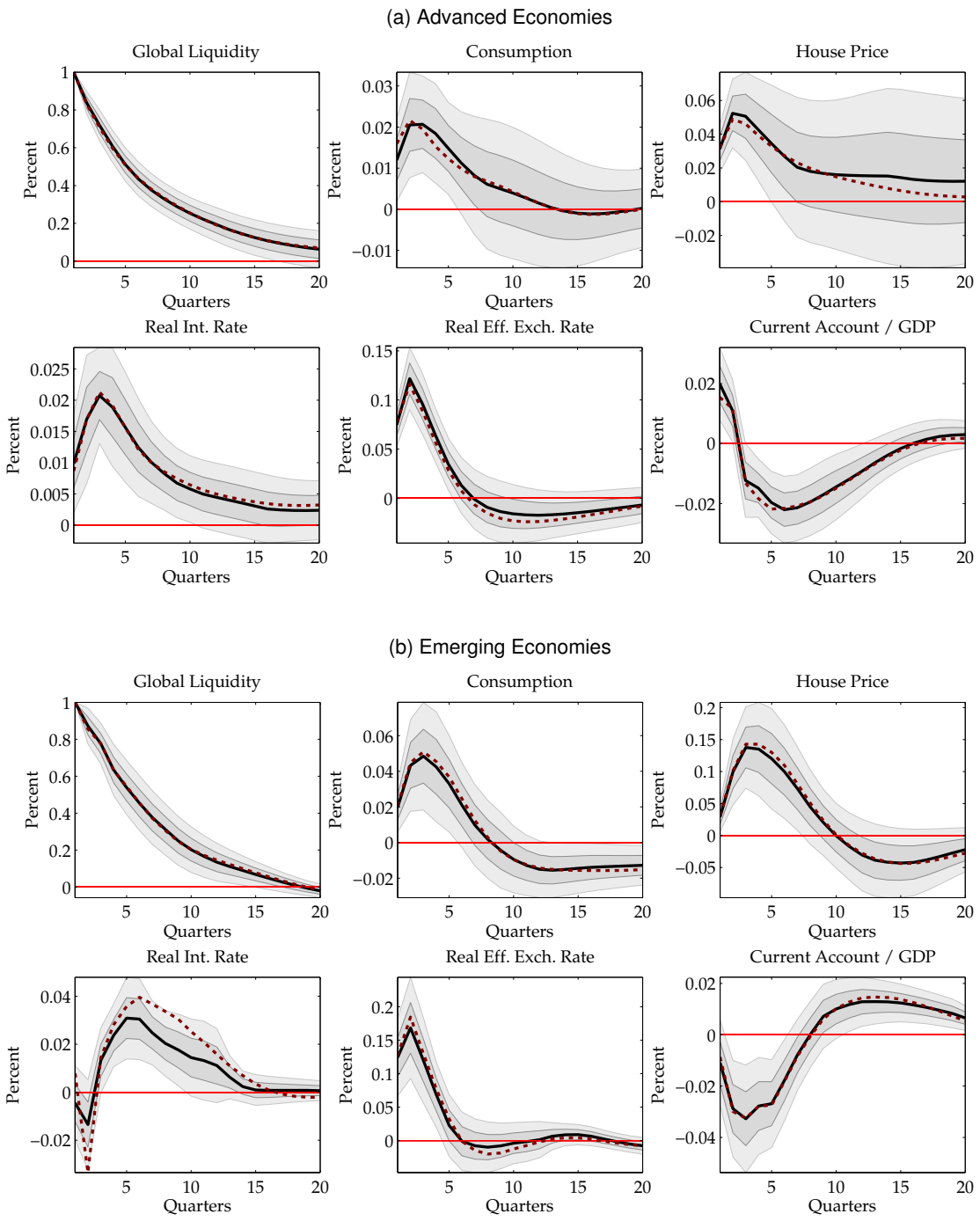


Figure 7 Global Liquidity Shock – Country-specific Total Cross-border Bank Credit – Cholesky Identification. Censored impulse responses to a one percent shock to global liquidity in advanced and emerging economies, panel (a) and panel (b) respectively. The dark and light shaded areas are the one and two standard deviation confidence intervals. The dashed line reports the uncensored impulse responses.

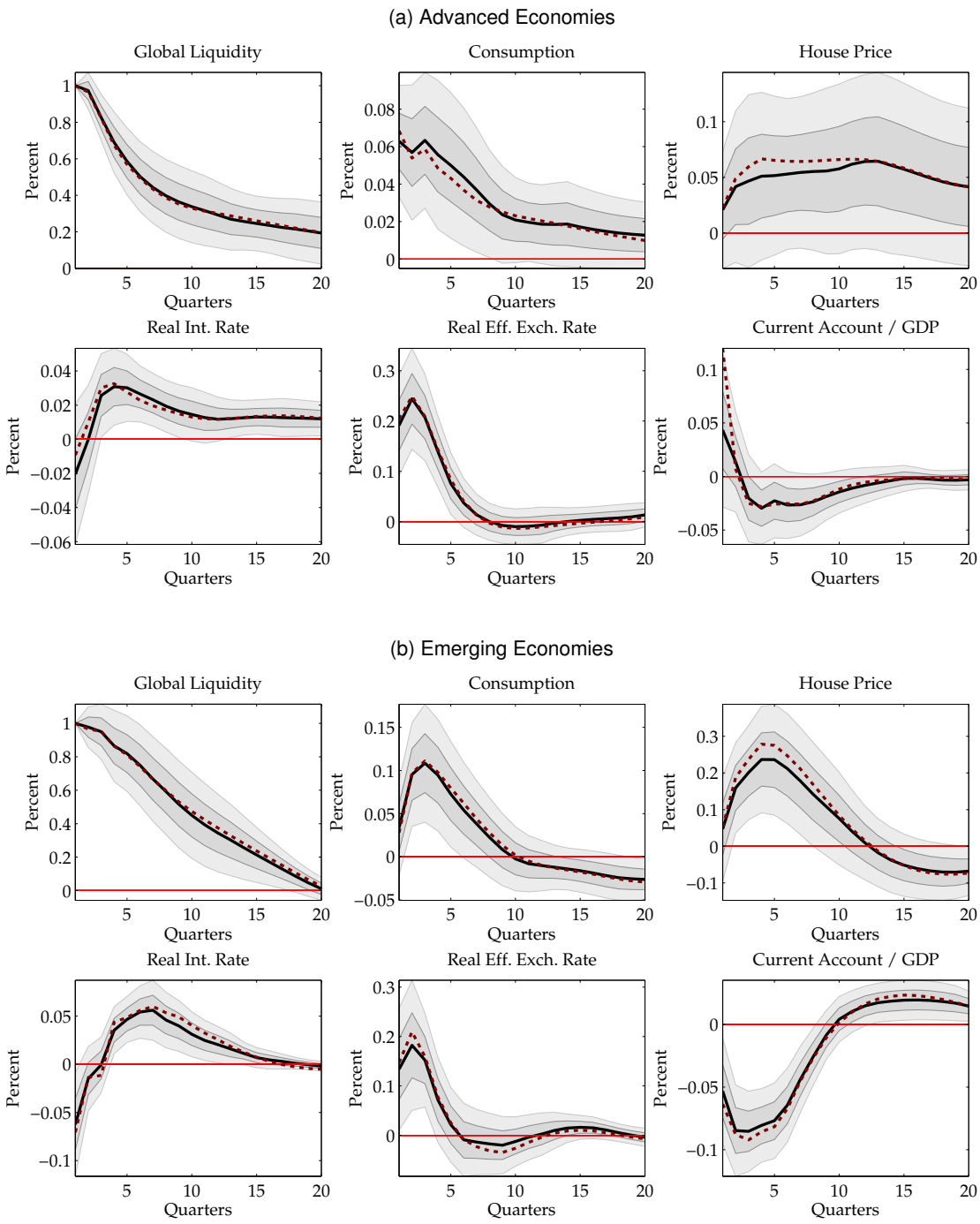


Figure 8 Global Liquidity Shock – Country-specific Total Cross-border Bank Credit – IV Identification. Censored impulse responses to a one percent shock to global liquidity in advanced and emerging economies, panel (a) and panel (b) respectively. The dark and light shaded areas are the one and two standard deviation confidence intervals. The dashed line reports the uncensored impulse responses.

5 Counterfactual exercise robustness

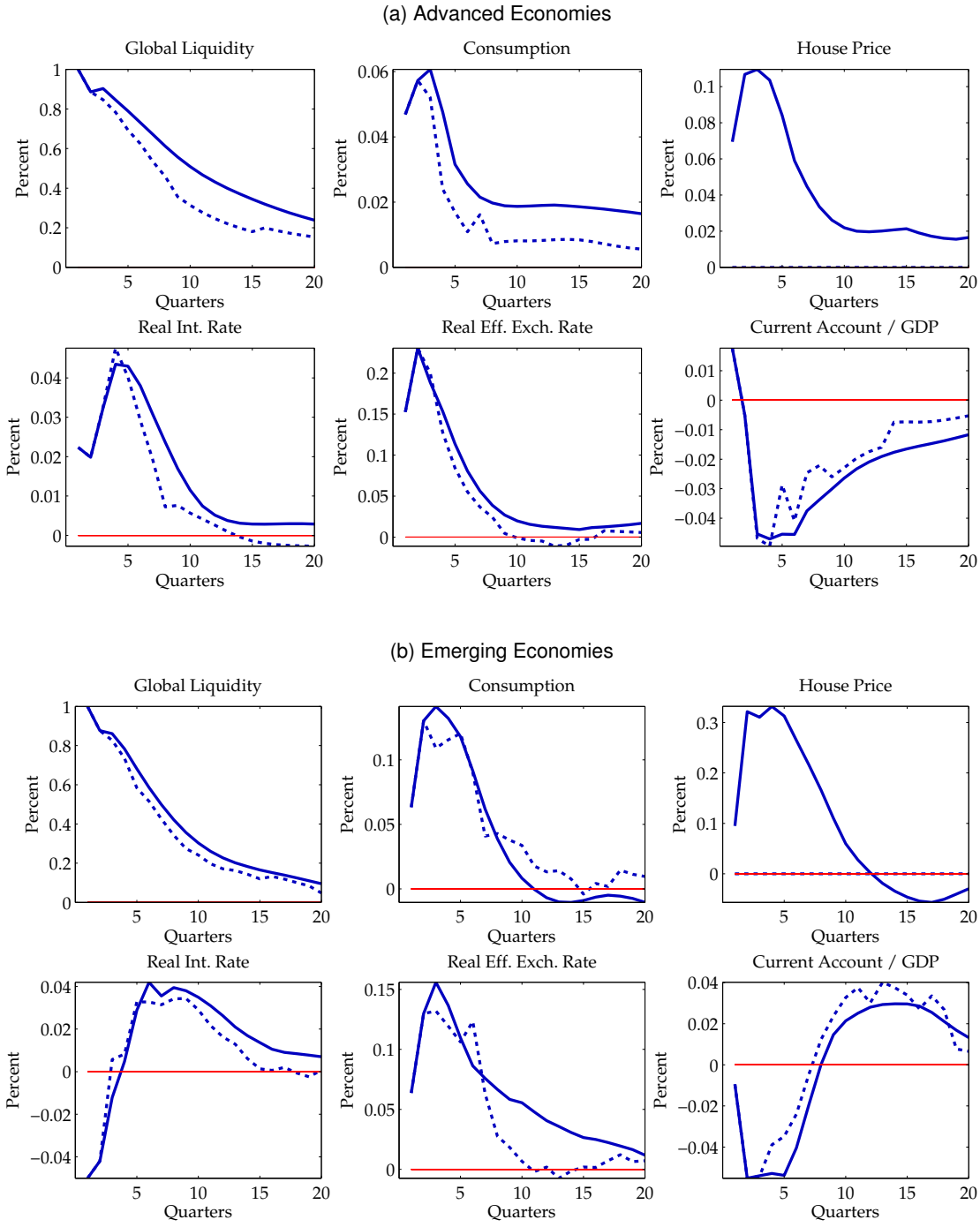


Figure 9 Global Liquidity Shock: Housing Channel – Cholesky Identification. Censored impulse responses to a one percent shock to global liquidity in advanced and emerging economies, panel (a) and panel (b) respectively. Solid line is baseline; dashed line is obtained by keeping the house price at its unconditional mean value.

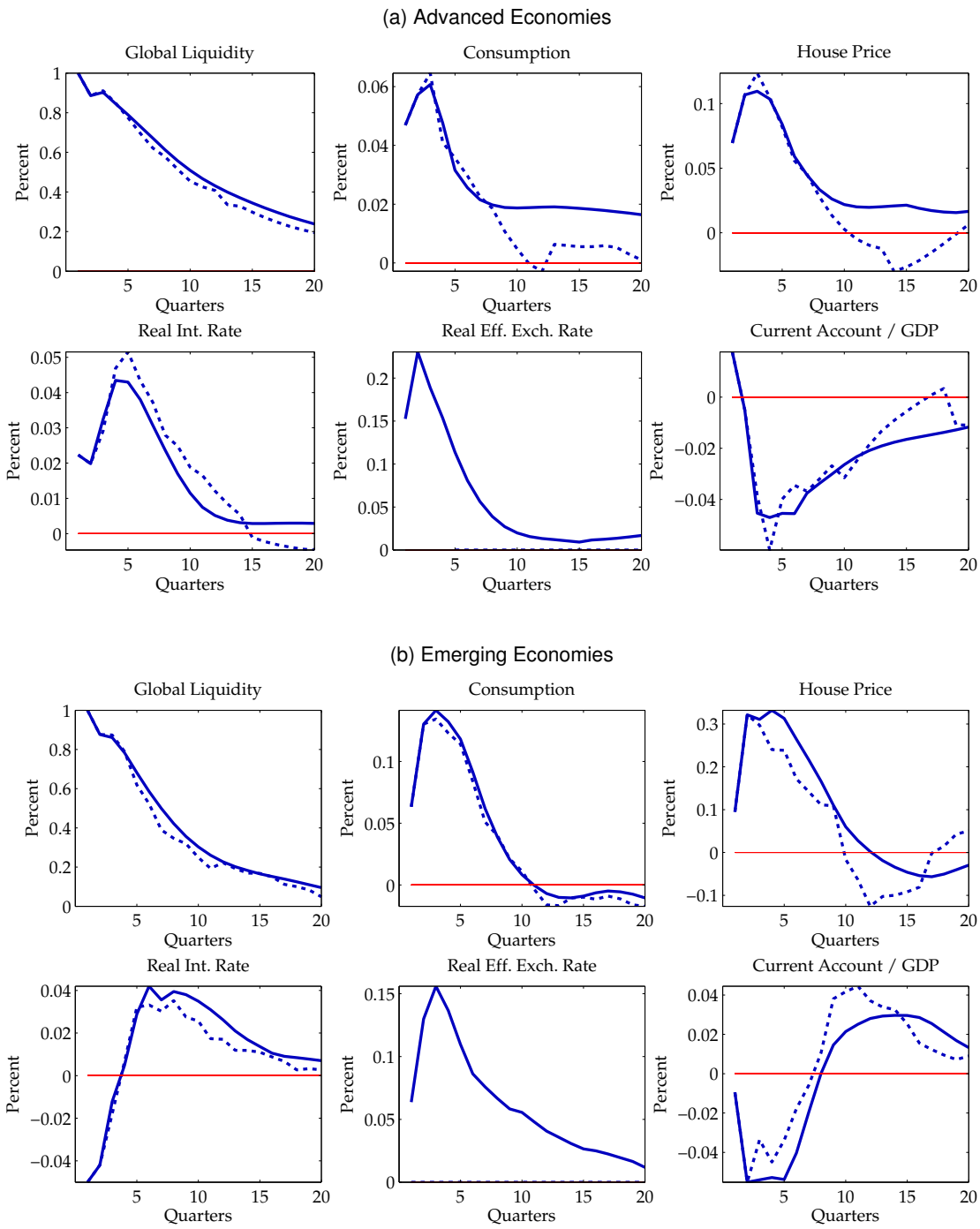


Figure 10 Global Liquidity Shock: Exchange Rate Channel – Cholesky Identification. Censored impulse responses to a one percent shock to global liquidity in advanced and emerging economies, panel (a) and panel (b) respectively. Solid line is baseline; dashed line is obtained by keeping the exchange rate at its unconditional mean value.

6 Regional, city, and sectorial house price indices

Table 11 Pair-wise Correlation of Regional or City-specific House Prices Indices Within a Country

Canada		United States	
City	*PC*	*City*	*PC*
St.John's	0.25	Chicago	0.71
Charlottetown	0.03	SanDiego	0.67
Halifax	0.25	Miami	0.72
S.John, Moncton and Fred.	0.32	Denver	0.52
Qubec	0.34	Boston	0.59
Montral	0.42	WashingtonDC	0.67
Ottawa-Gatineau	0.22	NewYork	0.63
Toronto and Oshawa	0.34	LasVegas	0.65
Hamilton	0.36	LosAngeles	0.67
St.Catharines-Niagara	0.35	SanFrancisco	0.68
London	0.38	Atlanta	0.63
Kitch.-Cambr.-Waterloo	0.34	Charlotte	0.57
Windsor	0.29	Cleveland	0.58
G.Sudbury/G.Sudbury	0.29	Dallas	0.63
Winnipeg	0.35	Detroit	0.68
Regina(Sask.)	0.26	Minneapolis	0.73
Saskatoon	0.22	Phoenix	0.70
Calgary	0.25	Portland	0.56
Edmonton	0.30	Tampa	0.71
Vancouver	0.36	**Mean**	**0.65**
Victoria	0.27		
Mean	**0.30**		

United Kingdom		Canada	
Region	*PC*	*City*	*PC*
NorthEast	0.76	Sydney	0.35
NorthWest	0.82	Melbourne	0.53
YorksHumber	0.83	Brisbane	0.55
EastMidlands	0.85	Adelaide	0.49
WestMidlands	0.85	Perth	0.34
East	0.84	Hobart	0.47
London	0.67	Darwin	0.34
SouthEast	0.82	**Mean**	**0.44**
SouthWest	0.85		
Mean	**0.81**		

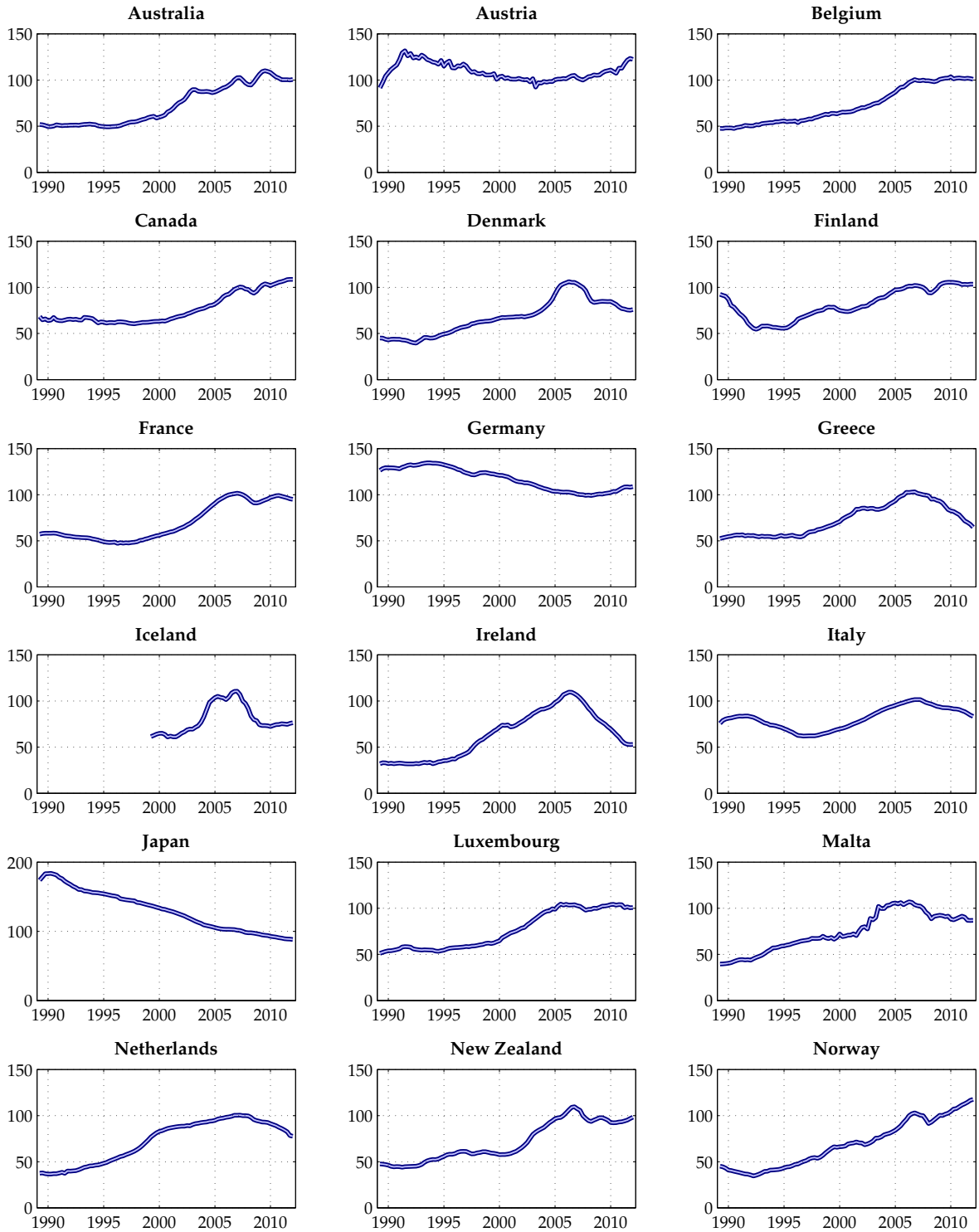
Note. PC is the pairwise correlation coeffcient computed on the log-differenced real house price series. Sources are as follows. Canada: Statistics Canada (table 327-0046), new housing price indexes, from 1981:Q1 to latest available. US: S&P Case-Shiller 20-City Home Price Index, from 1987:Q1 to latest available. UK: ONS, mix-adjusted house price index by region, from 2002:Q2 to latest available. Australia: Australian Bureau of Statistics , residential property price indexes, eight capital cities, from 2003:Q3 to latest available.

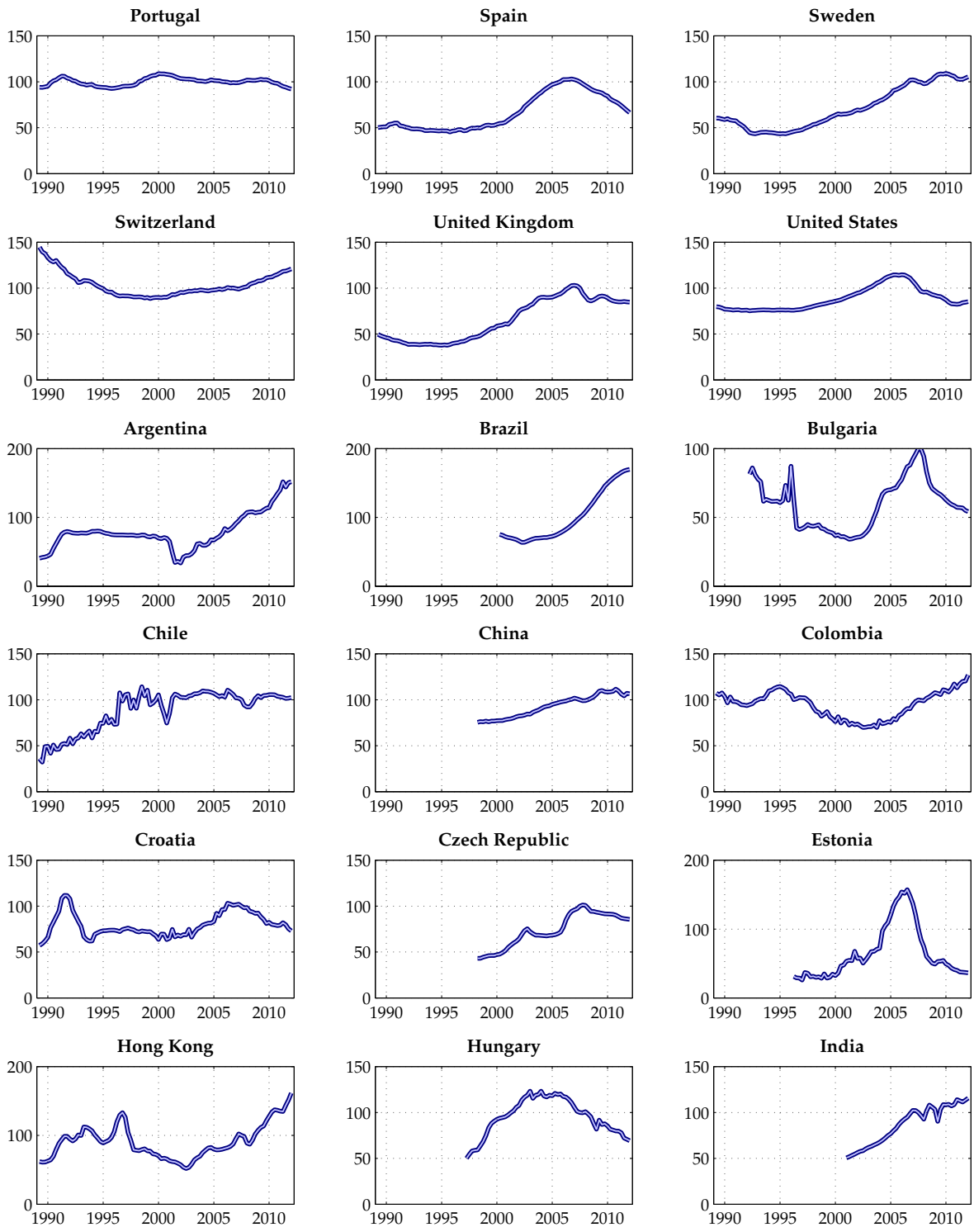
Table 12 Correlation Between House Price Indices of "Prime" Global Cities and Corresponding National Aggregates

	Correlation
London	0.90
Moscow	0.59
Geneva	0.23
Paris	0.72
HongKong	0.82
Singapore	0.15
Beijing	0.51
Shanghai	0.52
Sydney	0.46
Tokyo	0.22

Note. The source for prime house price series is Knight Frank Residential Research, Ken Corporation. Correlations are computed on the log-differenced real house prices series, from 2006:Q1 to latest available.

7 Real House Prices – Index (2008:Q2=100)

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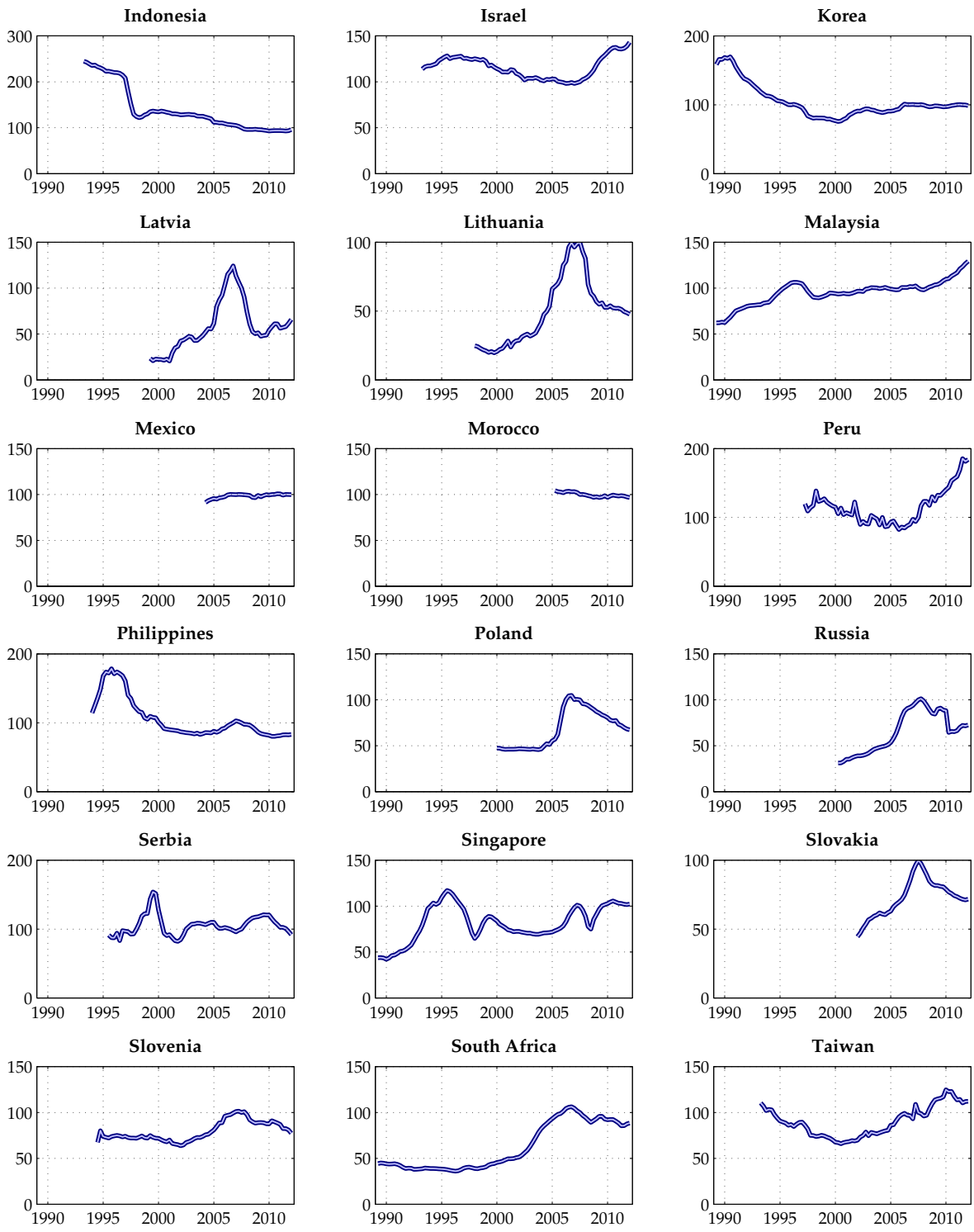
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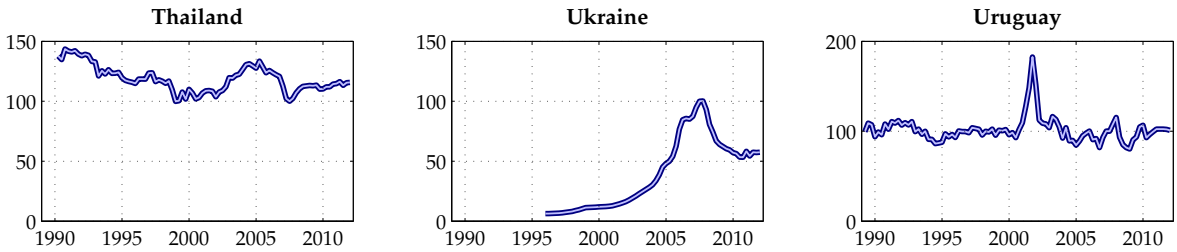
South Africa
Taiwan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