

Online Appendices: China's Evolving Monetary Policy Framework in International Context

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These appendices provide additional information to accompany Research Discussion Paper No 2019-11

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Appendix A: Variable List

Table A1: Variables

| Mnemonic | Variable | Unit of measurement | Seasonally adjusted | Source |
|-------------|---|-----------------------|---------------------|--|
| crb | International commodity prices | Index (month average) | No | Bloomberg |
| ind_prod | Industrial production | Index | Yes | CEIC; RBA |
| cpi | Consumer price inflation index | Index | Yes | CEIC; RBA |
| credit | Bank credit | CNYbillion | Yes | RBA; WIND Information |
| m2 | Money supply | CNYbillion | Yes | CEIC |
| r007 | 7-day repo rate (interbank bond collateral; weighted average) | Per cent | No | CEIC |
| nomtwi | Nominal TWI | Index | No | BIS |
| gov1 | Government bond yield (1-year) | Per cent | No | RBA; WIND Information |
| gov5 | Government bond yield (5-year) | Per cent | No | RBA; WIND Information |
| gov10 | Government bond yield (10-year) | Per cent | No | RBA; WIND Information |
| hp | New residential price index | Index | Yes | CEIC; RBA |
| bench | Nominal lending rate (including 1-year) | Per cent | No | CEIC |
| fedfunds | Federal funds rate | Per cent | No | Federal Reserve Bank of St. Louis, FRED® |
| cpi_nofood | CPI non-food | Index | Yes | CEIC; RBA |
| tsf | Total social financing | CNYbillion | Yes | CEIC; RBA |
| fiscal | Fiscal expenditure | CNYbillion | Yes | CEIC; RBA |
| gdpdeflator | GDP deflator | Index | Yes | CEIC; RBA |
| mb | Monetary base | CNYbillion | Yes | CEIC; RBA |

Appendix B: Model Set-up

The contemporaneous relationships imposed on each of the SVAR models are summarised in the equations below.

Baseline model

$$BX_t \equiv \begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ b_{21} & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ b_{31} & b_{32} & 1 & 0 & b_{35} & 0 & 0 & 0 \\ b_{41} & b_{42} & b_{43} & 1 & b_{45} & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & b_{56} & b_{57} & 0 \\ b_{61} & b_{62} & b_{63} & b_{64} & b_{65} & 1 & 0 & 0 \\ b_{71} & b_{72} & b_{73} & b_{74} & b_{75} & b_{76} & 1 & 0 \end{bmatrix} \begin{bmatrix} IND_t \\ CPI_t \\ CRED_t \\ M2_t \\ R007_t \\ COMM_t \\ TWI_t \end{bmatrix} \quad (1)$$

Extended model: inclusion of government bond yields

$$BX_t \equiv \begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ b_{21} & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ b_{31} & b_{32} & 1 & 0 & b_{35} & 0 & 0 & 0 & 0 \\ b_{41} & b_{42} & b_{43} & 1 & b_{45} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & b_{57} & b_{58} & 0 \\ b_{61} & b_{62} & b_{63} & b_{64} & b_{65} & 1 & 0 & 0 & 0 \\ b_{71} & b_{72} & b_{73} & b_{74} & b_{75} & b_{76} & 1 & 0 & 0 \\ b_{81} & b_{82} & b_{83} & b_{84} & b_{85} & b_{86} & b_{87} & 1 & 0 \end{bmatrix} \begin{bmatrix} IND_t \\ CPI_t \\ CRED_t \\ M2_t \\ R007_t \\ GOV_t \\ COMM_t \\ TWI_t \end{bmatrix} \quad (2)$$

Extended model: inclusion of house prices

$$BX_t \equiv \begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ b_{21} & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ b_{31} & b_{32} & 1 & 0 & b_{35} & 0 & 0 & 0 & 0 \\ b_{41} & b_{42} & b_{43} & 1 & b_{45} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & b_{57} & b_{58} & 0 \\ b_{61} & b_{62} & b_{63} & b_{64} & b_{65} & 1 & 0 & 0 & 0 \\ b_{71} & b_{72} & b_{73} & b_{74} & b_{75} & b_{76} & 1 & 0 & 0 \\ b_{81} & b_{82} & b_{83} & b_{84} & b_{85} & b_{86} & b_{87} & 1 & 0 \end{bmatrix} \begin{bmatrix} IND_t \\ CPI_t \\ CRED_t \\ M2_t \\ R007_t \\ HP_t \\ COMM_t \\ TWI_t \end{bmatrix} \quad (3)$$

Extended model: inclusion of monetary base and benchmark lending rates

$$BX_t \equiv \begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ b_{21} & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ b_{31} & b_{32} & 1 & 0 & 0 & b_{36} & b_{37} & 0 & 0 \\ b_{41} & b_{42} & b_{43} & 1 & 0 & b_{46} & b_{47} & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & b_{57} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & b_{75} & b_{76} & 1 & b_{78} & 0 \\ b_{81} & b_{82} & b_{83} & b_{84} & b_{85} & b_{86} & b_{87} & 1 & 0 \\ b_{91} & b_{92} & b_{93} & b_{94} & b_{95} & b_{96} & b_{97} & b_{98} & 1 \end{bmatrix} \begin{bmatrix} IND_t \\ CPI_t \\ CRED_t \\ M2_t \\ MB_t \\ Bench_t \\ R007_t \\ COMM_t \\ TWI_t \end{bmatrix} \quad (4)$$

Extended model: inclusion of the US federal funds rate

$$BX_t \equiv \begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ b_{21} & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ b_{31} & b_{32} & 1 & 0 & 0 & 0 & 0 & 0 \\ b_{41} & b_{42} & b_{43} & 1 & 0 & b_{46} & 0 & 0 \\ b_{51} & b_{52} & b_{53} & b_{54} & 1 & b_{56} & 0 & 0 \\ b_{61} & 0 & 0 & 0 & 0 & 1 & b_{67} & b_{68} \\ b_{71} & b_{72} & b_{73} & b_{74} & b_{75} & b_{76} & 1 & 0 \\ b_{81} & b_{82} & b_{83} & b_{84} & b_{85} & b_{86} & b_{87} & 1 \end{bmatrix} \begin{bmatrix} Fed_t \\ IND_t \\ CPI_t \\ CRED_t \\ M2_t \\ R007_t \\ COMM_t \\ TWI_t \end{bmatrix} \quad (5)$$

Extended model: inclusion of fiscal expenditure

$$BX_t \equiv \begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ b_{21} & 1 & 0 & 0 & 0 & 0 & 0 & 0 \\ b_{31} & b_{32} & 1 & 0 & 0 & 0 & 0 & 0 \\ b_{41} & b_{42} & b_{43} & 1 & 0 & b_{46} & 0 & 0 \\ b_{51} & b_{52} & b_{53} & b_{54} & 1 & b_{56} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & b_{67} & b_{68} \\ b_{71} & b_{72} & b_{73} & b_{74} & b_{75} & b_{76} & 1 & 0 \\ b_{81} & b_{82} & b_{83} & b_{84} & b_{85} & b_{86} & b_{87} & 1 \end{bmatrix} \begin{bmatrix} IND_t \\ CPI_t \\ FISCAL_t \\ CRED_t \\ M2_t \\ R007_t \\ COMM_t \\ TWI_t \end{bmatrix} \quad (6)$$

Appendix C: Estimated Accumulative Impulse Responses

Figure C1: Baseline Model



Figure C2: Baseline Model 1998–2008



Figure C3: Baseline Model 2009–18



Figure C5: Robustness – Additional Lag

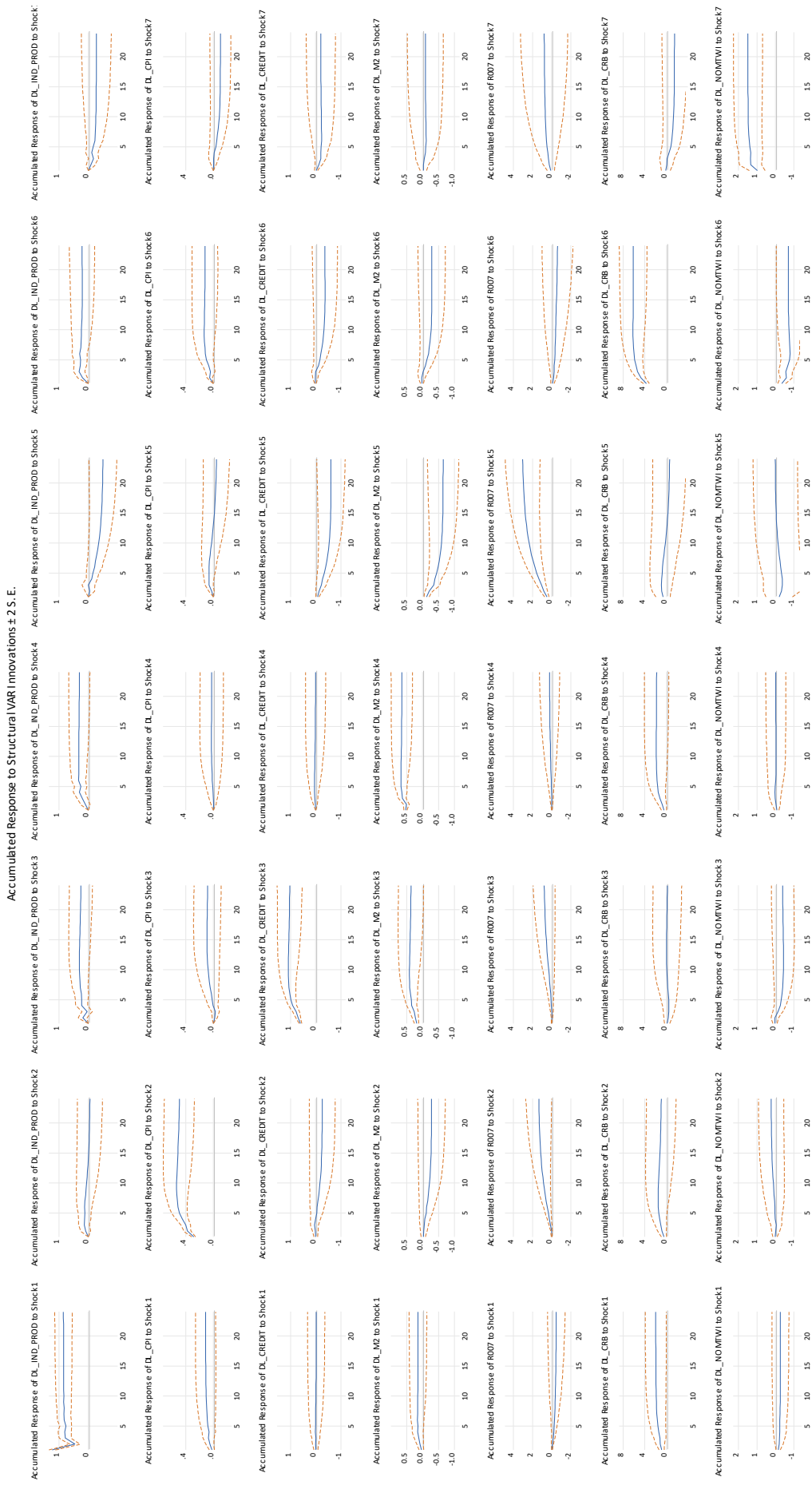


Figure C6: Robustness – Financial Crisis Dummy



Figure C7: Augmented – Use of Total Social Financing instead of Bank Credit

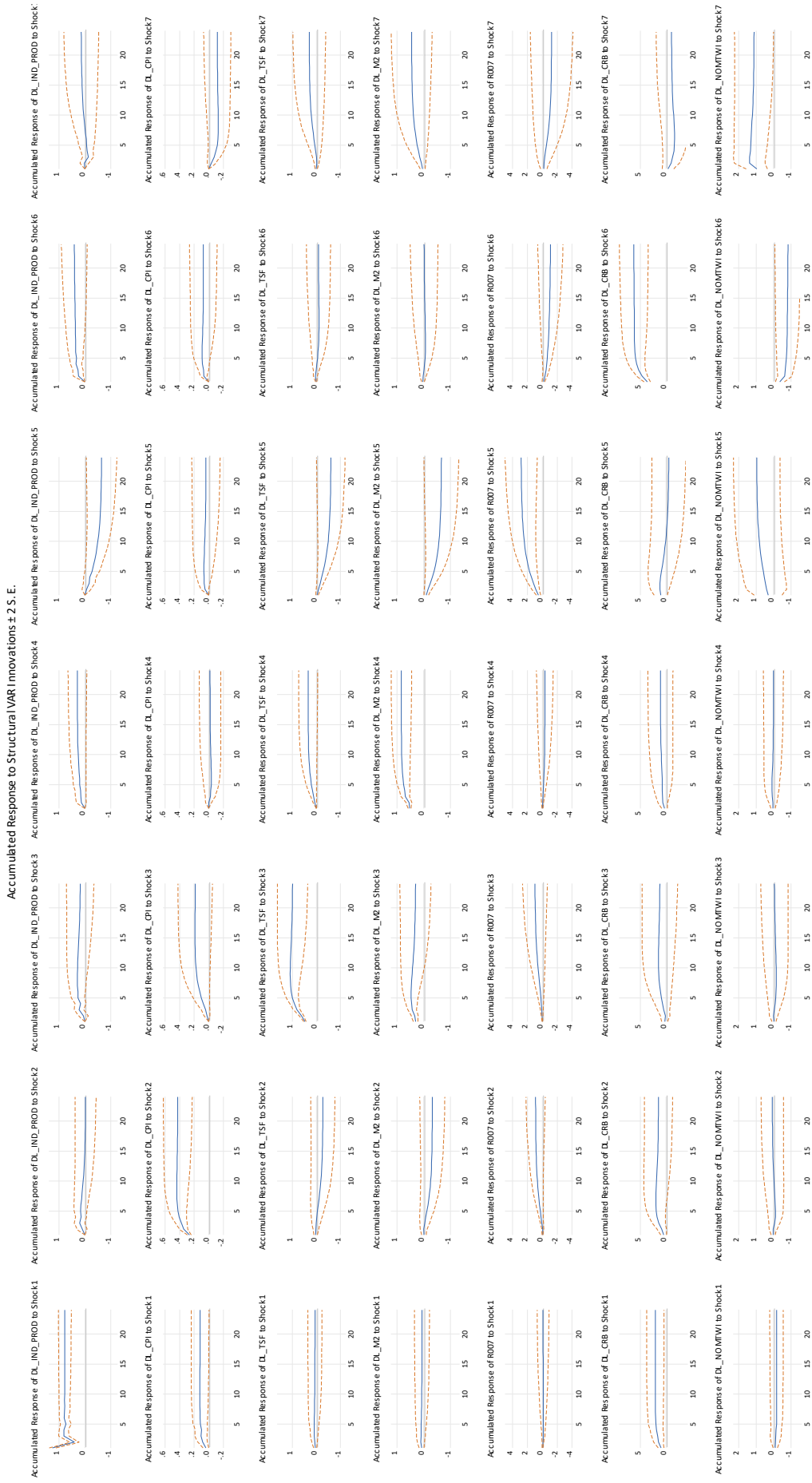


Figure C8: Augmented – Use of GDP Deflator instead of CPI

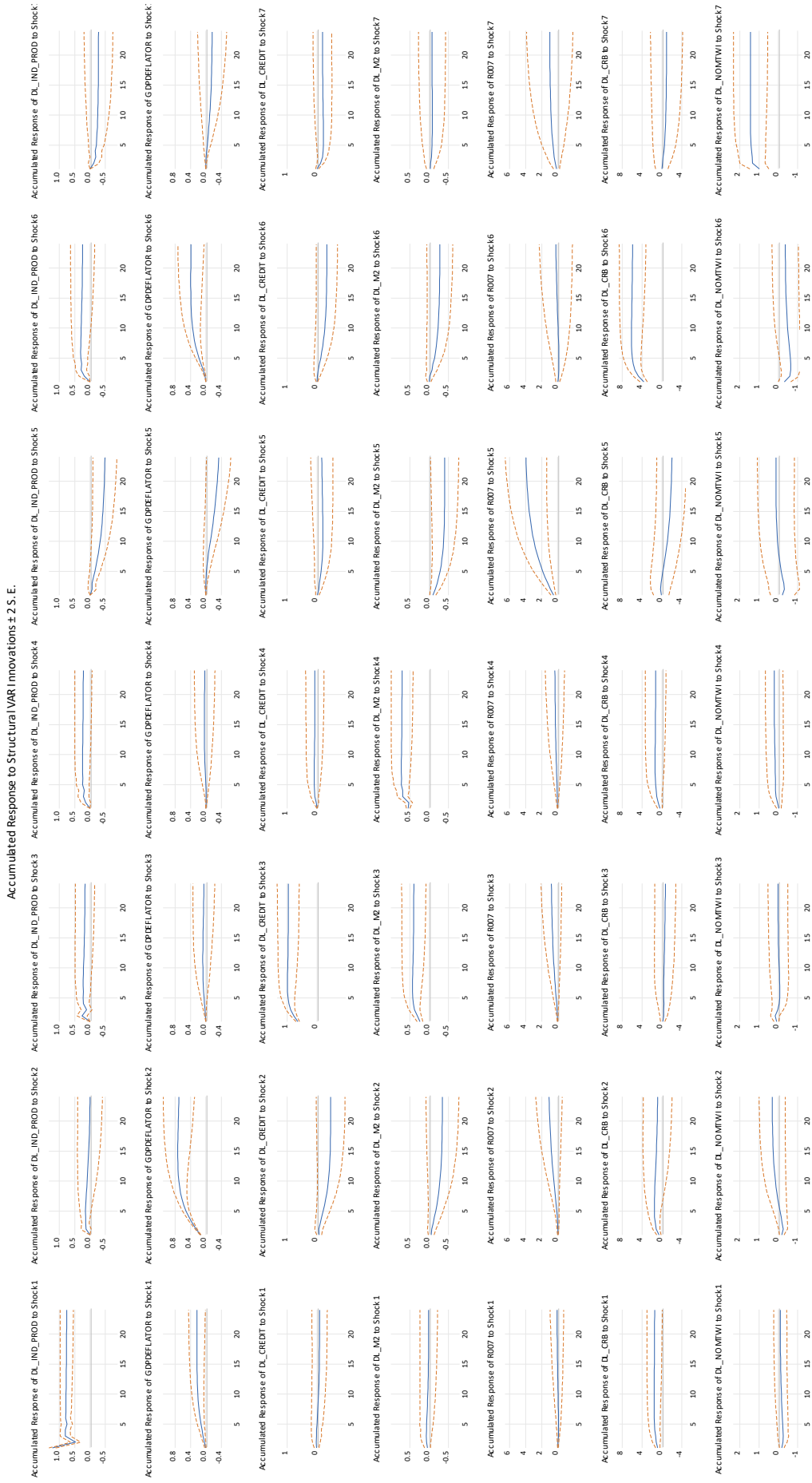


Figure C9: Extension – Monetary Base and Benchmark Lending Rates

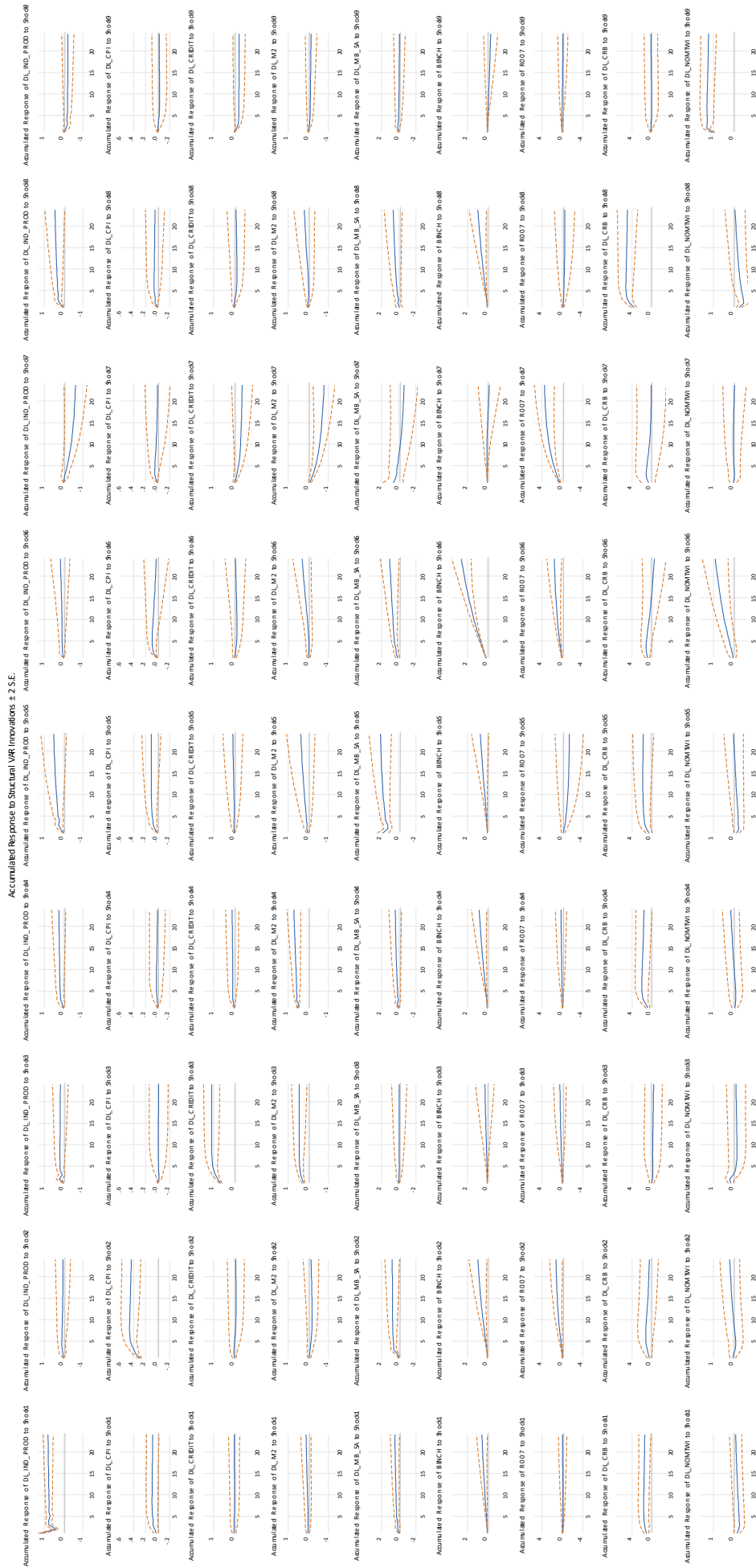


Figure C10: Extension – Fiscal Expenditure

