**NK\_PP17: De Paoli and Paustian (2017)**

De Paoli and Paustian (2017) study optimal monetary and macrorprudential policies in a small-scale calibrated New Keynesian DSGE model with a moral hazard problem between banks and depositors in the spirit of Gertler and Karadi (2011). The possibility of banks diverting funds from depositors implies that banks are constrained in the amount they can lend to firms. This financial friction motivates the use of macroprudential instruments.

* Aggregate demand: Households maximize their lifetime utility, where the per-period utility function is separable in consumption and two types of labour. They can hold deposits at financial intermediaries.
* Aggregate Supply: Intermediate firms combine both types of labour into the intermediate good using a Cobb-Douglas production function. The entrepreneurs operating the intermediate firms must pay the wage bill associated with one of the inputs before production. Monopolistically competitive final goods firms purchase intermediate goods from entrepreneurs and create final goods using a linear production function. Final goods pricing is subject to Rotemberg quadratic adjustment costs. The final goods are aggregated to an output bundle according to a CES function.
* Financial intermediaries: Banks lend to intermediate goods producers and collect deposit. They also receive a direct subsidy from the macroprudential authority. Bankers maximize terminal net wealth and have the possibility to divert a certain fraction of assets. This is yields an endogenous leverage constraint such that the incentive compatibility constraint is satisfied. Together with the borrowing-in-advance constraint, this introduces a credit friction.
* Shocks: A productivity shock, a mark-up shock, a net worth shock, a moral hazard shock and a monetary policy shock.
* Calibration/Estimation: The model is calibrated using standard values in the literature, in particular following Woodford (2003). The steady-state credit spread is set to 2%, and steady-state bank leverage to 9.
* Replication: We simulated the impulse response functions to a monetary policy shock and a technology shock under a simple Taylor rule. There are no IRFs in the paper, but the produced IRFs are in line with earlier working paper version and the similar model NK\_CFP10.