1. Mortgage finance regimes and money

We are developing a comparison of otherwise-identical economies in which mortgages are either retained by banks or sold to non-bank investors. The initial objective is to establish precisely how the financing arrangement changes monetary claims, holding the mortgage transaction fixed. We will then introduce portfolio choice and market clearing to examine whether the arrangements imply different lending quantities, interest rates, house prices, or investment.

These notes carry forward the analysis of *Securitisation_destroys_money_draft_130926_revised_v3_sent to Ian_.docx*, dated 13 September 2026. They provide a starting point for rebuilding the paper, rather than a completed model or a set of established empirical results. The historical estimates discussed below are those reported in that manuscript; they have not been independently reproduced here.

1.1 Research question and contribution

The question is how the organization of mortgage finance affects the composition of financial claims and, under specified economic mechanisms, real allocations. Three objects must be kept separate: the monetary effect of a transaction, the distribution of outstanding mortgage claims across institutions, and the equilibrium consequences of changing the financing regime.

The familiar accounting result is conditional. A bank originates a mortgage by creating a deposit. If it subsequently sells that mortgage at par to a non-bank investor paying with an existing deposit, the sale offsets the deposit created at origination. Mortgage credit rises while aggregate deposits return to their initial level. This is an application of standard asset-sale accounting, not a new mechanism of money creation or destruction. The Bank of England's account of money creation provides a useful reference.

The original critique raised four concerns that motivate the reconstruction:

1. The abstract should state the conditional accounting result plainly and distinguish it from the proposed contribution.
2. The paper should identify what it measures. Mortgage holdings are not a direct measure of money destroyed or of the money stock in an alternative regime. US evidence can document a historical allocation, but does not by itself identify the effect of a regime change.
3. A complete model should include households choosing among deposits, mortgage securities, and bank equity, together with budget constraints and market clearing.
4. Claims about investment and house prices require additional economics. A clean comparison of otherwise-identical regimes should precede those claims.

A plausible descriptive contribution is to reconstruct the allocation of US mortgage claims between depositories, the Federal Reserve, and other investors. The theoretical contribution would explain when that allocation maps into different monetary aggregates and when a change in financing arrangements affects economic outcomes. Neither contribution should be presumed established at this stage.

1.2 A fixed-quantity accounting benchmark

Begin with borrowers, house sellers, savers, and banks. Hold initial portfolios, initial bank equity, the mortgage contract, the house transaction, and policy arrangements fixed. Savers may hold deposits, mortgage securities, and bank equity or bonds. The initial comparison holds bank equity and non-deposit bank debt unchanged and assumes sufficient capital for both arrangements.

Let the mortgage principal be L. Assume origination and sale at par, no defaults, no fees, no additional bank lending to the securities investor, and no offsetting repayment of other bank loans. The saver initially has at least

L in deposits. All deposits in this benchmark belong to the chosen money aggregate. Begin without central-bank mortgage purchases or changes in currency holdings.

1.2.1 Bank retention

The bank originates the mortgage and credits the borrower with a deposit of L. The borrower pays the house seller. Payment may redistribute reserves between banks, but does not change aggregate deposits. The banking system ends with an additional mortgage asset and an additional deposit liability of L.

1.2.2 Sale to a saver

Origination and payment to the seller proceed in the same way. The bank then sells the mortgage, or a pass-through claim on it, to the saver for L. The saver pays with an existing deposit. At the consolidated banking-system level, mortgage assets and deposit liabilities both fall by L relative to the position immediately before the sale.

The seller has received the same payment and the borrower has the same debt in both regimes. The difference is in the saver's portfolio and the banking system's balance sheet.

Object after the completed sequence	Bank retention	Sale to saver
Borrower's mortgage debt	Increases by L	Increases by L
Seller's deposit receipt	L	L
Saver's portfolio	Keeps deposit	Exchanges deposit for mortgage claim
Banking-system mortgage assets	Increase by L	No net change
Aggregate deposits	Increase by L	No net change

The accounting comparison establishes a difference in financial claims for the same specified transaction. It does not establish that households would willingly hold both resulting portfolios at the same prices, or that either allocation is an equilibrium. It also establishes no necessary difference in house prices, consumption, or investment.

We can call the second arrangement *money-neutral mortgage lending* within this benchmark. The term should not be used as an unconditional description of mortgages held by non-banks.

1.3 Why the holder alone is insufficient

Let D^B and D^C denote mortgage claims held by banks and the central bank. Let M denote the monetary liabilities included in the model, K the consolidated monetary sector's equity and specified non-monetary liabilities, and X its remaining net assets, excluding items already assigned to K. Consolidation eliminates reserves and central-bank lending to banks. With consistent definitions and valuations,

$$M + K = D^B + D^C + X,$$

and therefore

$$\Delta M = \Delta D^B + \Delta D^C + \Delta X - \Delta K.$$

This identity is useful, but holding X and K fixed is a substantive restriction. The following examples illustrate its importance. Each begins with a new $100 mortgage, assumes transactions at par, and abstracts from other changes.

Completed sequence	Final mortgage holder	Net deposit creation
Bank originates and retains mortgage	Bank	$100
Bank originates and sells to an investor using existing deposits	Non-bank	$0
Bank retains mortgage and issues $100 of bank bonds purchased with deposits	Bank	$0
Bank sells mortgage to a non-bank financed by a new $100 bank loan	Non-bank	$100

The third case operates through K and the fourth through X. Both are consistent with the identity. Neither is consistent with an unconditional claim that the mortgage holder determines how much money survives. A house seller's repayment of another bank loan provides another possible offset to deposit creation.

Deposits are fungible. An outstanding mortgage does not identify an outstanding deposit descended from its origination. Mortgage ownership must be considered alongside the financing chain and other balance-sheet adjustments.

A further distinction concerns transactions and changes in stocks. Write-offs, valuation changes, and reclassifications can change recorded mortgage holdings without creating or destroying deposits. For example, a write-off can reduce mortgage assets and equity together. The Financial Accounts series documentation explicitly distinguishes transactions, revaluations, and other changes in volume.

1.4 From accounting to equilibrium

The next stage should retain the same preferences, endowments, technology, borrower risk, mortgage cash flows, and policy rule across economies, while changing the permitted arrangement for holding mortgages. Equilibrium portfolios, rates, and quantities should then be allowed to adjust. Holding these endogenous outcomes fixed would return us to the accounting exercise.

The framework should include the following elements:

- **Households and portfolios.** Distinguish borrowers, sellers, and savers. Give each a budget constraint. Savers choose deposits, mortgage securities, and bank equity or bonds. Specify the liquidity services provided by deposits and the risk and return of alternative claims.
- **Mortgage demand.** Specify how borrowing depends on rates, income, collateral, and any borrowing constraints. Avoid assuming the same mortgage quantity once the model is used to evaluate equilibrium effects.
- **Banks.** Specify profits, liability costs, capital requirements, and the choice of origination and retention. Household purchases of bank equity must be part of the accounting if equity is endogenous.
- **Securities investors.** Determine demand for mortgage claims and the price at which originators can sell them. A take-out market cannot be treated as having unlimited capacity at an exogenous price without stating that assumption.
- **Timing.** Include a positive interval between origination and sale when studying origination capacity or stress. A bank that ultimately sells every mortgage still carries a pipeline.
- **Policy and market clearing.** Use a common monetary-policy rule and explicit clearing conditions for deposits, securities, bank equity, and mortgage credit.

The earlier analysis using Benigno (2025), Chapter 4, is reproduced in Mortgage finance and money in a Benigno framework. That chapter derives the liquidity premium and the conditional equivalence of mortgage-finance regimes under liquidity satiation. The remaining task is to complete the borrower, housing, and policy blocks and examine departures from that benchmark.

Initially, keep guarantees and the distribution of mortgage payoffs identical across arrangements. Comparing an unguaranteed whole loan with a government-guaranteed agency security changes risk and public support alongside the financing regime. Such differences can be introduced later as separate mechanisms.

The first equilibrium question is whether the change in financing arrangements can be absorbed by portfolio and price adjustments with the same real allocation. If not, the model should identify the friction responsible. Candidate mechanisms include liquidity services, capital constraints, risk-bearing capacity, and origination costs. The signs of effects on lending and housing should follow from these mechanisms rather than from the deposit entries alone.

1.5 Capital capacity and lender risk

The draft's capital constraint provides a useful starting point, but a relaxation of a constraint does not itself prove that lending increases. That requires borrower demand, investor demand, profitable lending opportunities, and a constraint that actually binds.

Selling a mortgage can release regulatory capital capacity without creating equity. The result that origination capacity becomes unbounded as retention approaches zero reflects omitted constraints, including the cost and capital required to carry loans before sale. A model with a positive holding interval should account for that inventory explicitly.

Banks create deposits at origination, but still face the cost and availability of maintaining a viable liability structure after payments leave the bank. Aggregate accommodation of reserve demand is not an unconditional guarantee of liquidity to each bank. Federal Reserve lending depends on eligibility and collateral; see lending to depository institutions.

The useful distinction between banks and non-bank originators concerns access to deposit funding, public liquidity support, and the structure of liabilities. It does not divide lenders into banks bearing only credit risk and non-banks bearing only liquidity risk. Banks may be unable to retain an unexpectedly large unsold pipeline; non-banks also bear credit, valuation, and operational risks.

Stress analysis must trace both sides of balance sheets. A warehouse draw can create a bank claim on an originator in X without raising measured mortgage holdings in D^B. A bank's absorption of assets together with their existing liabilities need not create deposits. A securities seller may use purchase proceeds to repay bank borrowing. These cases qualify any interpretation of asset migration as automatic re-monetisation.

1.6 Empirical measurement

The draft's monetary retention series should initially be treated as a mortgage-holdings measure. Its interpretation as a monetary measure requires a separate reconciliation.

The estimated monetary-sector mortgage holdings are

$$\hat{D}^m = W + (Z^B + Z^C)\frac{P}{Z},$$

where W is whole mortgages held by depositories, P is home mortgage credit in agency pools and on GSE balance sheets, Z is total agency and GSE-backed securities, and Z^B and Z^C are holdings of those securities by depositories and the Federal Reserve. The allocation applies the same mortgage proportion to each holder's agency securities.

The principal measurement issues are:

1. **The monetary boundary.** Currency and deposits held by the model's non-bank sector do not coincide automatically with US M2. M2 includes retail money-market-fund shares and excludes some bank liabilities and holders' balances. A purchase through a retail money fund requires tracing fund shares as well as deposits. Use the H.6 definitions appropriate to the chosen data vintage.
2. **Instrument composition.** Agency debt is not the same as a pass-through mortgage claim. Holder portfolios may differ substantially. Use direct MBS holdings where available and distinguish them from general agency debt.
3. **Stock and transaction reconciliation.** Separate transactions from write-offs, valuation changes, and reclassifications, especially around crises and accounting changes.

4. **Missing holdings and claimed bounds.** Omitting private-label securities held by banks understates the measured holdings level, but does not necessarily understate its change. An error at both endpoints has no predetermined effect on the difference. Multiple errors with opposite signs do not establish a general upper or lower bound.
5. **Counterparties and financing.** Foreign-official balances, bank-financed securities purchases, and liability adjustments affect the monetary interpretation. Holdings alone cannot establish the transaction path.
6. **Incremental ratios.** A ratio above 100 percent can reflect purchases of existing claims relative to a small net increase in total mortgage debt. It is not a share of newly originated mortgages retained. Show dollar changes alongside ratios.

The reported $1.87 trillion and $5.93 trillion additions to 2007 M2 are accounting sensitivity calculations, not alternative histories. They change assumed retention while holding mortgage quantity and other counterparts fixed. For retention regime R and sale regime S, the general comparison is

$$M_R - M_S = (D_R^m - D_S^m) + (X_R - X_S) - (K_R - K_S).$$

The draft suppresses the last two differences in its counterfactual. An equilibrium comparison must determine them along with mortgage quantity and prices.

US data can support a descriptive account of changes in mortgage ownership. Comparing long windows of mortgage growth and M2 relative to GDP does not identify the causal effect of securitisation. Cross-country evidence could provide additional variation, but would require addressing differences in regulation, guarantees, monetary policy, and housing supply.

1.7 Housing prices and investment

A zero net change in deposits does not imply that no house purchase occurred. It also does not imply a particular effect on house prices. The same house purchase could be financed by a retained bank mortgage, a mortgage sold to a saver, or direct lending from an investor's existing deposits.

The relevant question is whether the regime changes borrowing costs, access to credit, leverage, risk allocation, or desired portfolios. Gross mortgage originations are not themselves a measure of bids for existing houses: they include refinancing and other uses, while house purchases also involve down payments and cash buyers.

Purchases of existing houses transfer assets; they do not themselves constitute new residential investment. To study investment, add a construction sector or another explicit investment margin. To study house prices with a fixed housing stock, specify household housing demand and market clearing.

CPI excludes the purchase of the housing asset but measures housing services through rents and owners' equivalent rent. Mortgage-market developments can affect those services and other consumption prices indirectly. See the BLS explanation of rent and rental equivalence.

The analogy between mortgage securities and government bonds should remain a possible extension. Their substitutability depends on risk, liquidity, guarantees, and investor preferences; it does not follow from similar deposit entries. Likewise, the creation of dollar deposits does not negate foreign saving or international capital flows, which describe a different aspect of the transactions.

1.8 Next steps

1. Write complete sectoral balance sheets and transaction accounts for the fixed-quantity benchmark, including households' holdings of bank equity.
2. Choose a minimal monetary and portfolio model and define both regime equilibria with the same fundamentals and policy rule.
3. Derive the conditions for identical real allocations and identify the friction needed for any departure from that benchmark.
4. Add capital constraints and origination-to-sale timing; introduce housing supply only when turning to investment.
5. Reconstruct the mortgage-holdings series with documented instruments, sectors, units, and data vintages. Reconcile stock changes with transactions before interpreting monetary effects.

6. Rewrite the abstract and empirical claims around the results actually established. Keep accounting identities, descriptive measures, causal evidence, and equilibrium predictions distinct.