

FAQ to Explain Modeling Assumptions & Findings from A Missing Piece of the Administrative Reform Puzzle: How the GSEs Generate Cross-Subsidies

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Q1. What is the overall goal of this paper?

Quantify GSE over- and under-charges (i.e. cross-subsidies) by product type and purpose to help inform the policy debate about whether and how the Federal Housing Finance Agency (FHFA) can implement its stated policy to reduce Fannie Mae and Freddie Mac's dominance without impairing market liquidity or compromising their affordable lending mission.

Q2. What's your bottom line?

We estimate that total combined overcharges for four loan types – high balance single-family loans, second-home loans, cash-out refinance loans, and investor loans – exceed their risk-based costs by about \$13.5 billion in present value terms, or by about \$2.7 billion a year across the GSEs' combined book of single-family business. Nearly 90 percent of these overcharges come from cash-out refinance and investor loans. Our bottom line is that FHFA should resist the temptation to take the easy way out by lopping off cash-out refinance and investor loans from the GSEs' menu of products, lest they risk drastically undermining their middle class mission and their ability to fulfill their affordable housing obligations.

Q3. Chart 2 shows modeled credit losses of GSE loans under severely stressed economic conditions across risk buckets. Credit losses are denominated in "basis points." The chart generally shows how modeled credit losses rise significantly as LTV increases and credit scores fall (e.g. stress losses for <60% LTV/740+ credit score average 31 basis points, while stress losses average 997 basis points for a 95% or greater LTV and a credit score between 621-640). Are these two (and others in the Chart) stressed losses annualized, or are they discounted values?

As reported by FHFA, values in Chart 2 are basis point discounted present values; typically discounted at risk-free interest rates.

Q4. You define a cross-subsidy as the "difference between price and expected costs for loans with various risk profiles." What are the components of price and expected costs?

Modeled expected costs (using Andy Davidson & Company's [AD&Co] proprietary capital charge model, which we use in our analysis) are the result of economic simulations that span the range of potential market outcomes, and include assumptions for stress losses and costs of capital. At a confidence level of 99.5 percent, AD&Co's forecasted stress losses are very highly correlated to stress losses FHFA derives from running each GSE's book of business through the Federal Reserve's Severely Adverse Scenario (see Chart 5). This is the case not only for average stress losses, but also for stress losses across the full range of FICO/LTV categories.

Q5. Are you saying that, for reasons explained in your answer to Q4, credit costs estimated in your paper align with FHFA’s data with a very high degree of statistical accuracy?

Yes, but it is important to note that the credit costs we estimate, which are aligned with those of FHFA, refer to stress losses excluding G&A, because general operating and administrative costs and expected losses are included in GSE baseline guarantee fees, which do not vary with either a borrower’s credit score, relative down payment, or loan purpose. As a result, both FHFA and AD&Co loan-level stress losses and product risk multipliers focus only on credit and capital costs, with neither including G&A, the payroll tax cut surcharge, etc.

Q6. How are Loan Level Price Adjustments (LLPAs) factored into the cross-subsidy picture?

LLPAs are the incremental prices the GSEs charge for credit risk above baseline guarantee fees. They account for the present value of incremental credit losses and shadow cost of implied capital (because in conservatorship, Treasury backing absorbs losses, not privately raised capital). Shadow costs of capital are a function of modeled stress losses and GSE return on capital requirements determined by FHFA. LLPAs can be estimated either as one-time payments or as guarantee fee equivalents by dividing by a present value multiplier.

In our paper, we performed sensitivity analysis to determine the confidence level and cost of capital that roughly balance the net over- and under-charges of LLPAs for the entire GSE single-family portfolio. The result is a 99 percent confidence level and 12 percent pre-tax cost of capital (or ROE). This does not reflect our judgment of what ROE should be given the risk profile of the GSEs’ combined book of single-family business, or the impact of the cost of credit risk transfer (CRT) debt financing; it just balances net charges which may include costs for minimum capital and capital buffers. By calculating a net zero cross-subsidy at a degree of statistical confidence, we can highlight the over- and under-charges for individual loan products.

Q7. The upper right hand corner of Charts 7-10 contain total modeled overcharges (in red) and undercharges (in black) for various loan products across all risk buckets. How can the reader convert these discounted cross-subsidies into an annual cross-subsidy estimate?

Using high balance loans as an example, Chart 8 shows the discounted present value of undercharges to be \$1.4 billion, and the discounted present value of overcharges to be \$300 million. Divide by 5 to convert these cross-subsidies to annual figures, which results in an annual average discounted undercharge of about \$289 million, and an average discounted overcharge to other borrowers of \$60 million. Contrast this with Chart 10, which shows an annual overcharge for cash out refi loans of \$1.2 billion a year ($\$6,095/5$), and \$1.14 billion in average overcharges per year for investor loans ($\$5,708/5$).

Q8. How do you convert LLPAs, which are one-time, risk-based fees into part of the GSEs’ annual guarantee fees? Is this where the “present value multiplier” comes in?

Yes. PV01 (present value of 1 basis point) is the standard metric used to convert mortgage-related present values into annualized values. Mortgage-Backed Securities (MBS) inter-coupon spreads reflect the market’s view of this multiplier at broad levels. A multiple of five is a representative average over time. Values for individual loans will vary based on their

characteristics. Since cross-subsidies are calculated as present values at the FICO/LTV/Product level, dividing them by the same PV01 has no impact on relative values.

Q9. You use a 12 percent pre-tax cost of capital (ROE). Where does the 12 percent come from, and is your ROE assumption the same for different loan products?

We do not make an assumption about return on equity; we derive it mathematically. We find the enterprise-level internal rate of return (discount rate) that makes the net cross-subsidy roughly zero across all LLPAs weighted by the GSE portfolio mix from recent years. At 12 percent, the life of loan or net present value subsidy on the GSEs' combined \$4.8 trillion single-family portfolio is less than \$2 billion, or 4 basis points. A rigorous approach to return thresholds would not use different yield benchmarks for different products, but rather different levels of capital and credit-option adjusted spreads that vary by risk. Corporate level costs for debt and equity would not vary.

Q10. In Chart 10, you show total estimated over-charges to be more than \$11 billion. Is this an annual estimate of over-charges? If not, how can I go from your \$11 billion to an annual g-fee overcharge?

The Appendix shows the \$11.4 billion life of loan over-charge for investor and cash-out refi loans, about 17 bps in guarantee fee on those loans, totals about \$2.3 billion a year. For perspective, annual combined GSE revenue net of overhead expenses is about \$22 billion (= \$4.8 trillion x [55 – 8] bps).