Mandated Risk Retention in Mortgage Securitization: An Economist's View

By Paul Willen*

> Economics is a highly sophisticated field of thought that is superb at explaining to policymakers precisely why the choices they made in the past were wrong. About the future, not so much. However, careful economic analysis does have one important benefit, which is that it can help kill ideas that are completely logically inconsistent or wildly at variance with the data. This insight covers at least 90 percent of proposed economic policies.
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> – Ben Bernanke, 6/2/2013[1]

The most popular theory of the causes of the financial crisis has incentives at its heart. According to the theory, bad incentives led intermediaries to make bad loans and when borrowers defaulted on those loans, a crisis ensued. As a result, many policy remedies designed to prevent a future crisis have focused on changing incentives. If bad incentives led to bad lending and crisis, then good incentives will lead to good lending and no crisis.

The leading example of bad incentives is securitization. According to its critics, by allowing them to sell loans to others, securitization insulated lenders from the consequences of their underwriting decisions and weakened the incentive to expend effort underwriting loans. To fix this problem, the Dodd-Frank Act introduced good incentives and mandated that issuers retain at least a five percent interest in the loans they sold. Risk retention, according to its proponents, serves "to better align [intermediaries'] interests with those of investors," and help prevent a future crisis.[2]

Barney Frank, one of the authors of Dodd-Frank, said that mandatory risk retention was "the single most important part of the bill."[3] Journalists[4] and academics[5] have also enthusiastically supported mandatory risk retention. In this paper, I ask whether it is good economics. My conclusion is that mandatory risk retention is, to quote Bernanke, "completely logically inconsistent [and] wildly at variance with the data." First, the data shows that the financial crisis occurred because intermediaries had *too much* mortgage risk in their portfolios, not too little. Second, mandatory risk retention limits investor choice by blocking any investment in assets in which the intermediary retains no risk meaning that if the law is binding, lenders will invest too much effort in screening: in other words, the law will misalign incentives. Third, more broadly, proponents of risk retention are essentially arguing that securitization led to *too much* risk sharing, a proposition that is at odds with standard theoretical models of asymmetric information and incomplete markets. Welfare losses in those models result from *too little* risk sharing.

I. Wildly at variance with the data

Table 1 illustrates the basic empirical problem with risk retention. While securitization may have given them the oppor-

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[1] "The Ten Suggestions", Speech at the Baccalaureate Ceremony at Princeton University, June 2, 2013.

[2] Keys et al. (2012).

[3] "Mortgages Without Risk, at Least for the Banks," *New York Times*, November 28, 2013.

[4] See, for example, "The invidious 'down payment requirement' meme.", by Felix Salmon, Reuters.com, April 25, 2013.

[5] See Keys et al. (2012).

tunity to avoid mortgage risk, intermediaries took on enormous amounts of it in the years leading up to the crisis. Indeed, the crisis resulted precisely from the fact that the losses associated with the collapse in the housing market were so concentrated in the portfolios of the intermediaries. To put the numbers in Table 1 in perspective, consider that the total losses on subprime lending from 2005 to 2007 were approximately $275 billion meaning that risk retention would have imposed a $14 billion loss on the entire industry. Eight firms individually lost more than that and one, Citigroup, lost more than three times that.

II. Logically Inconsistent

Even if it would not have made a difference in 2006, is risk retention still, in principle, a good idea, perhaps if Congress raised the threshold to 50% from 5%? My answer is still no. To illustrate this, I will use the device of a quiz.

A. Question 1

Suppose a consumer is choosing between two cars: a 2014 Honda Accord Hybrid which gets 45 miles per gallon; and a 1995 Oldsmobile Cutlass Ciera which gets 25 miles per gallon. Which car should he buy?

1) 2014 Honda Accord
2) 1995 Oldsmobile Cutlass Ciera
3) Not enough information

The answer is, of course, 3. To opt for 1 or 2, one would need to know, at the very least, the prices of the two cars, the buyer's preferences and the cost of gas. While many would view the Honda as a better car, millions of people choose used cars: there is a thriving market for 1990s vintage General Motors A-bodies like the 1995 Cutlass Ciera.

B. Question 2

Now consider an investor who is choosing between two loans. Loan 1 is to a borrower with a 780 credit score, meaning he has little debt and has almost never missed a payment, has a loan-to-value (LTV) ratio of 80% and on which the borrower provides incomplete documentation of his income. Loan 2 is to a borrower with a credit score of 550, meaning he is heavily indebted and has a history of serious credit problems, has an LTV of 100% but does provide full documentation of income. Historical data shows that loans like Loan 2 are an order of magnitude more likely to default than loans like Loan 1. Which loan should our investor buy?

1) Loan 1 (FICO=780, LTV=80, Reduced Documentation)
2) Loan 2 (FICO=550, LTV=100, Full Documentation)
3) Not enough information

The answer is still 3. Without knowing the interest rate on the loans and the price (mortgage typically sell for more than the outstanding balance), one cannot decide. The fact that the credit quality of Loan 1 is dramatically higher is not sufficient. Credit Losses on credit cards dwarf losses on mortgages yet banks choose to loan hundreds of billions of dollars on them. Default rates on subprime loans were more than five times higher than on prime loans even prior to the crisis, yet investors eagerly sought them out.

C. Question 3

We now consider two versions of Loan 2. The seller of Loan 2a has committed to retain 5% of the credit risk and the seller of Loan 2b has not. Which loan should our investor buy?

1) Loan 2a (FICO=550, LTV=100, Full Documentation, Lender retains risk)
2) Loan 2b (FICO=550, LTV=100, Full Documentation, Lender retains no risk)
3) Not enough information

The answer is *still* 3. But suppose we had good data that showed that because of the

absence of risk retention and the resulting low effort on the part of the lender, Loan 2b suffers from lax screening. Would that change anything? No. While journalists talk about "misaligned incentives," contract theorists focus on the difference between "high powered incentives" and "low powered incentives." Comparing Loans 2a and 2b, one would say that the lender has higher powered incentives for Loan 2a. Higher powered incentives lead to more effort but they are costly: the lender puts in more effort and must be compensated, and since they impose some risk, the investor must compensate the lender for that as well. As a result, a rational manager may eschew high powered incentives even when they elicit more effort. To illustrate the point, consider retailers. It is well understood that high-powered incentives lead to higher sales and some highly successful retailers like Nordstroms make heavy use of them[6] but other equally successful retailers like Apple avoid them entirely.[7]

One way to think about risk retention is that is just another feature of the loan, like the FICO score and the LTV. Just as we cannot say whether a particular investor will prefer a high risk loan or a low risk loan without knowing the price and the preferences of the investor, we simply cannot say whether an investor would prefer a loan with risk retention to one without.

D. Question 4

Now suppose there are three loans. Loan 1 from above (780 FICO, LTV 80, Reduced Documentation and no risk retention) and loans 2a and 2b (FICO 550, LTV 100 and risk retention, with and without risk retention respectively). Dodd-Frank restricts investors to only invest in Loan 2a. Consider an investor who satisfies the standard assumption of financial economics, Dodd-Frank will:

1) Raise her utility
2) May raise her utility
3) Cannot increase her utility
4) May lower her utility

The answer is that *both* 1 and 2 are wrong and *both* 3 and 4 are right. In other words, Dodd-Frank is welfare reducing for investors. The reason is simple: Dodd-Frank reduces choice. Risk retention is an attribute of a good just like any other: if investors believe the benefits of risk retention exceed the costs, they are free to choose to limit themselves to loans with risk retention. But in Questions 2 and 3 we showed that a perfectly rational investor does not necessarily prefer lower default rates to higher default rates nor does she necessarily prefer an incentive scheme that leads to higher effort. Limiting investors to loans with risk retention, from the standpoint of economics, makes no more sense than limiting car buyers to late model Honda Accords.

One popular argument is that the assumption that investors understood the differences between Loans 1, 2a and 2b is flawed. Perhaps investors thought they were buying carefully underwritten loans when they were not. The evidence, however, refutes this theory. Gerardi et al. (2009) carefully review reports by investment analysts from 2005 and show that investor forecasts of loan performance were very accurate, conditional on the evolution of house prices. In other words, investors understood the credit quality of the loans they were buying. Losses resulted from investors' belief that house prices would continue to rise rapidly.

Question 4 illustrates why risk retention is logically inconsistent. The goal of the policy is to "align incentives" of intermediaries with investors, yet, as I've shown, under the standard assumptions of financial economics, risk retention makes investors worse off. Hard as this is to believe, if the risk retention constraint is binding then, as far as investors are concerned, the lender is expending *too much effort* meaning that risk retention has actually made the misalignment problem worse not better. Pro-

[6] See "Nordstrom salesman's million-dollar secret is in his treasured client list," *Seattle Post-Intelligencer*, March 26, 2004.

[7] See "Apple's Retail Army, Long on Loyalty but Short on Pay," *New York Times*, June 23, 2012.

ponents of risk retention assume that investors always prefer more effort by the lender and fewer defaults but if investors did, investors would pay more for securities with risk retention giving intermediaries an incentive to retain risk without any government intervention.

E. Question 5

Restricting choice obviously never directly increases the welfare but, according to classical welfare economics, social welfare may still go up. For example, forcing a monopolist to charge the competitive price reduces producer surplus for the monopolist but since the increase in consumer surplus exceeds the loss to producers, social welfare goes up. Does that logic apply here?

Our last question is a True/False question. Suppose our investor again faces the problem of choosing between Loans 1, 2a and 2b from above.

> True/False/Uncertain: Under the standard assumptions of financial economics, restricting investors to Loan 2a can increase social welfare.

The answer, surprisingly, is that the statement is false an not uncertain. Prescott and Townsend (1984) show that under the financial economics assumption of a single consumption good, equilibrium with moral hazard is constrained Pareto optimal, meaning that a planner who doesn't have superior information to the market cannot improve on the market allocation.

With more general assumptions, government intervention can increase welfare. If defaults generate negative externalities, one could, of course, justify any policy that limits default but risk retention would be a peculiar way to deal with externalities: despite the absence of risk retention, Loan 1 has a dramatically lower risk of default than Loan 2a.[8]

A more relevant set of results appears in the general equilibrium literature. Geanakoplos and Polemarchakis (1986) show that with multiple consumption goods, equilibrium in incomplete markets economics is constrained inefficient meaning that, in principle, something like risk retention could work. Greenwald and Stiglitz (1986) and Bisin and Gottardi (2006) show similar results for, respectively, an economy with multiple goods and asymmetric information and for an economy with a single consumption good and adverse selection.

Do these papers imply that risk retention is good policy? First, it should be emphasized that the welfare gains here come from changing relative prices and not from "aligning incentives". As I explained above, if the risk retention mandate is binding then, in equilibrium, investors will still think that intermediaries are doing *too much* screening and would prefer more defaults so they would view the law as generating misalignment.

But there is a deeper problem here. The welfare losses associated with incomplete markets and asymmetric information generally result from the inability of market participants to *share* risk not from excessive risk sharing. Policy solutions often involve doing exactly the opposite of mandatory risk retention and *forcing* market participants to share risk. The most controversial provision of the Affordable Care Act (ACA) mandates that individuals buy insurance. Put differently, the ACA bans retention of health risk.

III. Government Policy and Risk Sharing the Mortgage Market

In assessing risk retention, it is instructive to consider the Federal Housing Administration (FHA) and Veterans Administration (VA) loan programs, the main instruments of housing policy for much of the post-war era. FHA and VA resulted from a belief among policy makers that because private lenders were unwilling to absorb much default risk and couldn't share it, the market outcome would involve a suboptimally low level of mortgage lending. FHA and VA worked by insuring lenders

[8] And one would have to balance off any positive externalities of expanded homeownership allowed by more credit availability.

against default risk: private lenders made the loans and FHA and VA guaranteed principal and interest in the even that the borrower defaulted. In the context of our discussion of welfare economics, the policy solution was, essentially, to force taxpayers to share risk with lenders, and Figure 1 shows FHA and VA loans had much higher default rates than uninsured "conventional" loans throughout the postwar era, largely as a result of the fact that lenders were spared the consequences of bad loans. In other words, the logic behind FHA and VA is *exactly the opposite* of the logic behind mandatory risk retention: to increase social welfare, policy makers induced lenders to *share risk* not retain it. Whether they work in practice or not, the logic of FHA and VA is, unlike the logic behind mandatory risk retention, consistent with economic theory.

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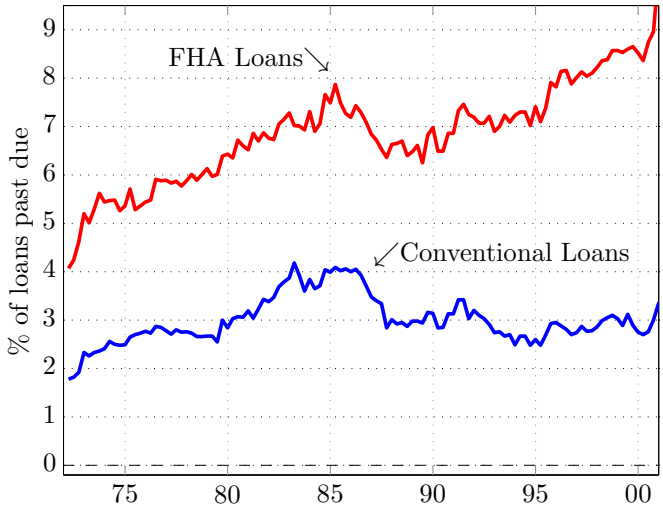

Figure 1. Past Due Rates for FHA and Conventional (loans without explicit Federal government insurance) mortgages.

Source: Mortgage Bankers' Association National Delinquency Survey.

Table 1—Mortgage-Related Losses to Financial Institutions from the Subprime Crisis, as of June 18, 2008.

	Institution	Loss ($ billions)		Institution	Loss ($ billions)
1	Citigroup	42.9	11	Washington Mutual	9.1
2	UBS	38.2	12	Credit Agricole	8.3
3	Merrill Lynch	37.1	13	Lehman Brothers	8.2
4	HSBC	19.5	14	Deutsche Bank	7.6
5	IKB Deutsche	15.9	15	Wachovia	7.0
6	Royal Bank of Scotland	15.2	16	HBOS	7.0
7	Bank of America	15.1	17	Bayerische Landesbank	6.7
8	Morgan Stanley	14.1	18	Fortis	6.6
9	JPMorgan Chase	9.8	19	Canadian Imperial (CIBC)	6.5
10	Credit Suisse	9.6	20	Barclays	6.3

Source: Bloomberg. (`http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a5GaivCMZu_M`.)