

Prepayment Penalties on Subprime Mortgages

by O. Emre Ergungor

Subprime mortgages are real estate loans made to individuals with less than perfect credit. On a credit-score scale of 300 to 850, those loan applicants with a score less than 620 are usually considered subprime. (People with higher scores may also be put into this category if, for example, they are carrying too much debt.) The subprime mortgage market emerged in the 1980s and has grown rapidly in the last 10 years. Over this period, more than 5.7 million subprime loans were originated for home purchases, according to the Center for Responsible Lending, making up 38 percent of total purchase originations, and 1.5 million families became first-time homeowners.

Given that subprime borrowers are more likely to default on their loans than borrowers in the prime mortgage market, it is no surprise that subprime loans come with terms that reflect their higher risk. For instance, compared with prime loans, subprime loans typically have higher interest rates and fees. Moreover, subprime loans often include prepayment penalties that extend farther into the future than those on prime loans. As subprime delinquencies and foreclosures started to grow recently, the debate on lending practices in the subprime market has increasingly focused on whether the differences in the terms on prime and subprime mortgage loans are justified by the differences in default risk and whether the loan terms themselves contribute to subprime loans' higher default rate compared to prime mortgages.

Prepayment penalties—paid by borrowers who refinance their mortgages within a few years after origination—

are under close scrutiny. Prepayment penalties were a contract feature of a significant percentage of the loan defaults in the subprime mortgage market. This *Economic Commentary* explains the economic reasons why these contract terms exist and why they may be associated with higher delinquency rates. In this simple “thought exercise” I examine one channel by which prepayment penalties can help remove some of the barriers to credit in the higher-risk segment of the mortgage market. To keep the exercise simple, I assume that borrowers are rational and able to easily distinguish among mortgage terms, which, as we know, is not always the case. Prepayment penalties can be used in a multitude of ways in the marketplace and some of those uses are potentially abusive. My objective is not to justify every possible use but to shed light on some potential economic benefits.

■ Prepayments as a Tool for Managing Liquidity

How can people on a limited budget lower their monthly mortgage payments? A larger downpayment would be an obvious choice, but if they have saved little or if their savings are earmarked for some other purpose—the kids' education, a new business venture—that option is out of the picture. A prepayment penalty offers an alternative.

A typical mortgage amortizes over 30 years, but it is difficult to find a homeowner these days who will stay with the same mortgage until it is fully paid off. People refinance to get a better deal or pay off a loan when they move to a different location. While the ability to prepay is a great convenience for the borrower, it is also a great incon-

As a result of the subprime mortgage mess, prepayment penalties are under close scrutiny. While these, like other kinds of contract terms, can be abused, there are good reasons for why they exist. In principle, they serve to extend credit to a greater number of borrowers.

venience for the many people involved on the lending side of the deal. Most mortgages are sold into a mortgage pool and eventually to investors as soon as they are originated. The originator often keeps the right to service (collect the payments on) the mortgage on behalf of the investors. The lender's income is the fee it collects for servicing the mortgage. Large financial institutions, such as pension funds and insurance companies, like to invest in mortgage-related assets because mortgages tend to have a long life that matches the life of the institutions' long-term liabilities, which is part of their risk-management strategy.

Paying a loan off early throws a stick in the wheels of this arrangement. The originator loses its servicing fee, and the investors receive their money back early, which they then have to invest again—after paying additional transaction costs and at a yield that is uncertain at the time they purchased the original mortgage. The technical term lenders use to capture this costly inconvenience is *prepayment risk*. In the end, it is the borrower who compensates the lenders and investors for the prepayment risk in the form of higher interest rates.

But what if the borrower could credibly commit to not prepaying the loan? By giving up the right to prepay, the borrower would reduce the lender's and investors' prepayment risk and would be rewarded through changes in other loan terms, such as a lower interest rate.

A prepayment penalty accomplishes just that. It makes it expensive, albeit not impossible, for the borrower to refinance his loan, and even if he does refinance, he pays a penalty that would presumably compensate the lenders and investors for their trouble. In return for the prepayment penalty, the interest rate is set at a lower level than it would be without the penalty. So prepayment penalties can be a valuable tool for borrowers who wish to pay lower monthly payments.

Yet liquidity management is not necessarily the whole story. While losing the ability to tweak cash flows to one's particular needs may inconvenience many borrowers and push some borrowers at the margin out of the market, economic theory suggests that prepayment penalties may be playing a more fundamental role in the functioning of subprime mortgage markets.

■ Information and Prices

In elementary economics we learn that the price of a good—be that an apple or a loan—will adjust until the quantity of the good supplied equals the quantity demanded for it. Economists say that at this point the market *will clear*. Price is the mechanism through which resources are allocated efficiently. In the case of loans, the price is an interest rate, and the market will clear when there is an interest rate at which any borrower willing to pay that price will get credit. But in the real world, the conditions necessary for markets to allocate goods are not always present. Lenders' uncertainty about the creditworthiness of loan applicants may lead to credit rationing. Borrowers cannot find a loan even if they are willing to pay a high price; the interest rate alone cannot clear the credit market.

To see how the problem arises, imagine that the lender receives two loan applications, one from a high-default-risk borrower and the other from a lower-risk one. Both borrowers had

similar credit problems in the past, so their credit scores are low and the same. The difference is that the credit troubles of the lower-risk borrower were caused by a one-time event, such as divorce, which are unlikely to repeat—in time, this borrower can repair the damage. The high-risk applicant may be more prone to bad luck or may be suffering more from irresponsibility and overall carelessness than any specific event. So he is less likely to repair the damage on his credit file; in fact, he may lose his job and fall behind in his payments again. To make our discussion simpler, let's assume that high-risk borrowers will always be high-risk and low-risk borrowers will always remain low-risk. In other words, credit risk is static.

If the lender had perfect information about each lender's circumstances, the high-risk applicant would get a high interest rate and the lower-risk one would get a lower rate, concomitant with his risk. But without such information, what is a lender to do? If the lender announces that it will charge the high rate to everybody, the lower-risk applicant may not even apply. If it charges the low rate to everyone, the lender will lose money on loans made to high-risk borrowers. At any rate in between, the loan may still be too expensive for low-risk borrowers. In other words, it is conceivable that the lower-risk applicants will not find an affordable loan in this market because they cannot distinguish themselves from the high-risk applicants; this problem is called *adverse selection* in economics.

In an earlier *Economic Commentary*, Joseph Haubrich and I discussed how a lender can offer a variety of loan contracts, each with terms attractive to only one type of borrower; lower-risk borrowers prefer one mortgage, the high-risk ones prefer another. To see how such a mechanism might be designed, suppose every mortgage contract has identical terms except for the price. Instead of specifying a single price (the interest rate), the mortgage contract stipulates a two-part price; that is, two separate prices that will be paid under two different circumstances: an interest rate that will be paid as long as there is an outstanding balance and a prepayment penalty that

will be paid if the mortgage is prepaid. A high-risk borrower recognizes that his fortunes are not likely to improve in the long run and with some luck, he will pay his mortgage to maturity. So, in return for a lower interest rate that will stay with him over the next 30 years, he should be willing to accept a high prepayment penalty, which he is unlikely to pay. The lower-risk borrower, on the other hand, realizes that while his past misfortunes prevent him from getting a prime loan at this time, he can make timely payments for a few years and then qualify for a new mortgage with a lower interest rate. Since the first mortgage is most probably temporary, the lower-risk borrower should be willing to accept a high interest rate as long as he keeps the option to prepay the mortgage at a low cost—that is, a low prepayment penalty.

The key point in getting this two-part pricing to work (and why a single price won't) is making sure that each loan applicant likes his mortgage deal better than the other's. Even though the high-risk applicant can reduce his prepayment penalty by switching to the other mortgage deal (lower penalty, higher interest rate), he will end up paying the higher interest rate. As he is more likely to keep this mortgage for a long time, the money he might save from a lower prepayment penalty (should a prepayment occur) is small compared with the higher interest payment. So he sticks with his original contract. Likewise, the lower-risk applicant wouldn't want the high prepayment penalty in return for a lower interest rate.

Thinking about this mechanism in this highly stylized form offers a new way of looking at the relationship between prepayment penalties and mortgage defaults. Roberto Quercia and his colleagues find that loans with prepayment penalties are associated with a lower chance of prepayment in the future and that the probability of prepayment is inversely related to the dollar amount of the penalty and the length of time the penalty is in place. These authors also find that a mortgage with a prepayment penalty that lasts more than three years is 20 percent more likely to end up in foreclosure than a mortgage without a prepayment penalty. Penalties that last less than

three years increase the foreclosure probability by 16 percent compared to no-penalty mortgages. Should we then conclude that prepayment penalties actually prevent refinancings and *cause* foreclosures? Not necessarily. Recall that individuals who consider themselves to be higher-risk are willing to accept a prepayment penalty in return for lower interest rates. If that is the case, it is not surprising that these individuals actually don't prepay and get foreclosed upon more frequently. What appears to be a loan term that some would classify as predatory may simply be a mechanism for allowing higher-risk borrowers to get credit.

According to the Center for Responsible Lending, up to 80 percent of subprime loans have prepayment penalties, but only about 2 percent of prime loans carry a prepayment penalty of any length. This is the kind of picture one would expect to see if credit scores are effective in identifying prime borrowers but are less effective in separating good risks from bad in the subprime market. This could be the case if credit scores are an accurate measure of prime borrowers' ability to repay (because such borrowers have more transparent risk characteristics than subprime borrowers), or even if credit scores are an imperfect measure of everybody's risks; because borrowers in the prime market are less risky, the imperfection of credit scores would cause fewer problems than in the subprime market. In either case, prepayment penalties may enable mortgage markets to function properly for individuals who cannot qualify for prime credit based on their credit scores.

■ **Felix Qui Potuit Rerum Cognoscere Causas***

Do prepayment penalties cause foreclosures or do borrowers who are most likely to be foreclosed upon choose mortgages that have prepayment penalties? What are the potential economic costs of severely restricting or banning prepayment penalties? The current debate centers around the presumption that prepayment penalties do cause foreclosures. But we have seen that

prepayment penalties may play two beneficial roles in the mortgage market—as a liquidity management tool for borrowers and as a risk management tool for lenders—and this is by no means an exhaustive list.

While I do not rule out the existence of potentially abusive uses of prepayment penalties that have been documented in the press, there is a multitude of issues that should be considered before the fate of prepayment penalties can be sealed.

At this point, more research and debate are needed to unearth the evidence that will determine where the line must be drawn.

■ **Recommended Reading**

O. Emre Ergungor, and Joseph G. Haubrich. 2003. "Information and Prices," Federal Reserve Bank of Cleveland, *Economic Commentary*, (May 1).

Roberto G. Quercia, Michael Stegman, and Walter R. Davis. 2005. "The Impact of Predatory Loan Terms on Subprime Foreclosures: The Special Case of Prepayment Penalties and Balloon Payments," The Frank Hawkins Kenan Institute of Private Enterprise, University of North Carolina at Chapel Hill, (January 25).

Joseph E. Stiglitz, and Andrew Weiss. 1981. "Credit Rationing in Markets with Imperfect Information," *American Economic Review*, vol. 71, pp. 393–410.

For more information on how loans are packaged and sold to investors, see:

O. Emre Ergungor, 2003. "Securitization," Federal Reserve Bank of Cleveland, *Economic Commentary* (August 15).

*Happy he, who could understand the causes of things (Virgil, *Georgics*, Book 2, line 490).

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