

their situation—result in unequal starting points being reinforced over time. These barriers not only distort market incentives and discourage the hard work and investment that lead to economic growth but are also likely to result in negative externalities such as crime and reduced social cohesion, making public policy decisions more difficult.

One public policy implication is relatively clear, however, based on the authors' finding that the typical poor family is less likely to move up and out of poverty within several years than it was 30 years ago: policy remedies for those at the bottom should aim beyond short-term help, as the poor at any point in time are likely to have low long-term incomes. Beyond the short term, the choice of policy presumably hinges, at least in part, on the reasons for the decline in mobility—for example, whether it reflects rising barriers to opportunity or rising returns to high-stakes labor market promotion practices. Further research is needed to assess the balance among these potential sources of the decline in mobility.

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Real Estate Brokers and Commission: Theory and Calibrations

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complete text: <http://www.bos.frb.org/economic/wp/wp2009/wp0908.htm>

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Motivation for the Research

This paper has two goals: (1) to model an inherent conflict of interest between a seller of a house and the real estate broker hired by the seller and (2) to calibrate the broker's commission rates that would maximize the seller's expected gain. The inherent conflict of interest between the seller and the broker results from the fact that the broker's commission constitutes only a small fraction of the transaction value. Thus, brokers often have an incentive to convince sellers that waiting for a higher-paying buyer would be risky. A lower price increases the probability of a sale and hence a faster sale. Faster sales often reduce brokers' costs by more than the extra commission they might receive from trying to sell at higher prices. The calibrated rates may provide a rough estimate of whether the widely used 6 percent commission rate reflects collusion among real estate agencies (in which case, the calibrated values should be much lower than the observed value of 6 percent) or whether this rate is competitively determined (in which case the calibrated values should be around the observed value of 6 percent). This investigation is important in view of the long-term investigations by the Federal Trade Commission (FTC) and the Department of Justice (DOJ) concerning the possibility that the widespread use of the 6 percent commission rate may reflect collusive behavior in the real estate brokerage industry.

Most homesellers in the United States pay a 6 percent commission to real estate brokers. However, under some circumstances, the individual agent who exerts most of the effort may receive only around 1.5 percent of the sale price because the seller's and the buyer's agents (if they are not the same) tend to split the 6 percent commission and each agency may take half of the remaining 3 percent. Outside the United States, sellers' commission rates are generally much lower, often ranging from 1.5 percent to 2 percent. This may be a consequence of the fact that buyers also pay some commission to brokers. Clearly, it is a puzzle why discount real estate brokers—who offer (perhaps) more limited services for a lower commission—are not observed more frequently in the United States, while discount brokers are now widely prevalent in U.S. financial markets.

This paper differs from the literature in that it does not attempt to explain the role played by middlemen. Instead, its scope is much narrower: to measure the magnitude of the conflict of interest between house sellers and real estate brokers by examining the difference between house prices set by sellers and those set by brokers.

Research Approach

The paper develops a dynamic model in which a house seller hires a real estate broker to handle the sale. Both the seller and the broker bear costs of delay each time the broker fails to sell the house and the sales effort continues in a subsequent period. The paper demonstrates the inherent conflict between a seller and a real estate broker, initially using a simple example with two types of buyers who differ in their willingness to pay for a house, with the brokerage commission exogenously determined by, say, an association of real estate brokers. The paper then extends the model to a continuum of buyer types and constructs a model in which the broker's commission is determined by a seller who maximizes the expected net-of-commission gain from selling a house. To address the second goal, the author computes the commission rate that maximizes the seller's expected gain, assuming that the house price is determined by the broker and not by the seller. This assumption generates an incentive on the part of sellers to pay a commission sufficient to motivate the brokers to avoid setting a low price just to accelerate the sale. This model then calibrates the sellers' most profitable commission rate, using data on housing prices and costs of delay taken from the website of the National Association of Realtors.

Key Findings

- A real estate broker will recommend a lower price than the price that maximizes the seller's expected gain as long as the broker's commission rate is below 50 percent, which is always the case. In other words, sellers prefer setting a higher price, which generally prolongs the sale of the house, compared with the price that would be set by a commission-paid real estate broker. This finding stems from the fact that a real estate agent has less to gain from selling at a high price than does the seller.
- The results imply that the standard 6 percent commission rate, if paid to a single broker, far exceeds the commission rate that would be preferred by a seller, despite the fact that a higher commission rate would motivate the broker to ask for a higher price. This, however, need not be the case if the commission is split among several brokers and agencies.
- If several brokers split the commission (for example, the buyer's and seller's brokers and the agencies that employ these brokers), then a 6 percent commission may be needed to motivate the broker to sell at a high price.

Implications

The conflict of interest between a house seller and the real estate agent hired by the seller harms the seller and benefits the buyer. In this model, real estate agents improve social welfare because they reduce the cost of delaying a sale. That is, the pressure agents put on sellers to reduce their prices shortens the amount of time it takes to sell a house. Since social welfare is not affected by the allocation of rents between sellers and buyers, and between sellers and real estate brokers, social welfare is enhanced when sales decisions are delegated to realtors.

The model developed in this paper and the calibration itself can be easily modified to capture situations in which several brokers or agencies split the commission paid by a house seller. The important empirical question to ask in this context is what fraction of real estate transactions involve one, two, three, or four real estate brokers.

Another related empirical question is how commission rates affect the speed of home sales. This investigation might be accomplished by comparing the number of house visits by potential buyers divided by the number of brokers involved in the sale. One could also investigate whether houses sold in countries with lower commission rates sell faster than in the United States. Clearly, in such investigations it may be impossible to control for the institutional differences of housing markets in different countries.

The model could be further extended by introducing two additional features. First, the model could be extended by incorporating benefits for the seller in hiring a real estate broker. To accomplish this, the seller's utility function should be modified slightly to include the seller's additional possible gains from employing a broker compared with "sale by owner." Second, the model could be extended to enable analysis of how the commission rate influences the efforts exerted by brokers and how these efforts are translated into the speed of sale.

The conflict of interest identified in this paper prevails not only in the market for residential real estate but also in some other markets. For example, in legal cases for which attorneys receive a fraction of the final settlement instead of fixed fees, attorneys may recommend to their clients that they should settle on lower compensation levels than the level that would maximize the client's expected benefit. Similar conflicts may exist between stock brokers and their clients because brokers' compensation is contingent on their clients' actual purchase and sale of stocks and mutual funds, and even in agricultural contracts involving cropsharing.

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Efficient Organization of Production: Nested versus Horizontal Outsourcing

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Motivation for the Research

Manufacturing firms rely on intermediate components when assembling final (finished) goods. A strategic part of a firm's production process, termed the "make-or-buy" decision, is determining whether to produce intermediate components in-house or to outsource some to subcontractors. Firms choose different patterns of outsourcing production of components, and two principal types of outsourcing are generally observed. The first involves outsourcing components to several component-producing firms. Under this outsourcing structure (which the authors call horizontal outsourcing), outsourced firms must produce the components themselves and cannot subcontract any production to other firms. In the second approach, the final good producer outsources the production of some components to another firm, which then outsources the production of some components to a third firm, and so on. The authors term this pattern nested (vertical) outsourcing because a subcontractor may hire additional subcontractors to perform some of the work. For industries that have high component-specific monitoring costs, how outsourcing is structured may have significant effects on the firm's overall production costs. For this reason, it is important to investigate two questions: (1) Why do firms in different industries adopt different patterns of outsourcing? (2) What is the optimal pattern of outsourcing in a given industry?

Research Approach

This paper adds to the literature by comparing nested and horizontal outsourcing to find which approach is the more efficient outsourcing method. Determining how to conduct outsourcing is important for a firm that relies on component-specific monitoring in its manufacturing process. The authors construct a model in which component-specific monitoring costs are incurred for managing the in-house production of intermediate parts and managing the outsourced production of intermediate parts. Monitoring costs also increase with the number of subcontractors being employed. By having constant marginal costs for production together with increasing marginal costs for monitoring production lines, the model focuses on the effects of these monitoring costs on the efficiency of the outsourcing choice.

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