

THE TIMING OF RAISES AND OTHER PAYMENTS A COMMENT

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The author argues that the principal reason why loan payments are made regularly and at frequent intervals over the life of a home mortgage loan is that frequent payments provide valuable information to the lenders. In my comments I question whether this is indeed the case. My position is that the structuring of the repayment schedule is largely dictated by two other costs: the sizable intermediation costs and the time and bookkeeping costs incurred when making a payment. On the other hand, the spreads between borrowing and lending rates make arrangements that require borrowers to accumulate liquid assets to make future payments socially wasteful. If there were no fixed costs associated with making frequent payments, the equilibrium outcome under that class of arrangements would be to make very frequent payments that would minimize the costs of intermediation. There are, however, fixed costs associated with making a payment, and more frequent payments imply that these fixed costs are incurred more often. Given this trade-off, one has to determine what is the optimal payment schedule.

For discussion purposes, I focus on the mortgage contract and, by way of illustration, I draw on my personal experience as both a mortgage borrower and a mortgage lender. In both cases, the frequency of payment is monthly. As a lender I prefer earlier to later payment, and I would have been happiest if I had received the entire payment at the time of the sale of a Pittsburgh property in 1981. Had this been the case, I would not have had to borrow so much to finance the purchase of a house in Minneapolis and my total intermediation costs would have been reduced. Unfortunately, the buyer did not have the resources needed to make total payment at the time of the sale. Given that this was the case, we could have agreed to his making a single payment some time in the future. If we lived in an Arrow-Debreu competitive equilibrium world where agents honor their promises and

never go bankrupt, this would have been an acceptable option. Then again, in such worlds the timing of payments is not a matter of concern and financial intermediation is rendered unnecessary.

Alas, in the United States today this is clearly not the case. The fact is that financial intermediation and insurance represent almost eight percent of U.S. GNP and that they are costly activities in terms of resources. The differences between borrowing and lending rates are sizable and they average about three percent in the case of banking institutions. This spread is only slightly larger than the difference between the rate that I pay on my adjustable rate mortgage and the one I receive when lending short-term. With a mortgage equal to a borrower's annual salary, which is not a large amount for mortgages, the resources used up in intermediation are three per cent of the borrower's annual income. These costs add up and, in the aggregate, they make financial intermediation an important economic activity.

There are other factors which affect the equilibrium pattern of payments besides the informational aspects emphasized by Lazear and the two factors that I discuss here. An additional reason for regular payments is related to the rental price of capital. Under mortgage contracts, borrowers typically make payments slightly in excess of the implicit rental services received. This arrangement gives all the parties concerned a clear idea of whether or not the borrower is consuming in excess of his earnings. Indeed, under this type of arrangement, consumption in excess of income can only be financed by additional borrowing.

Still another reason for frequent payments is the limited enforceability of contracts. Even under public information, the borrower may not honor a contract that binds him to make a single large payment some time in the future. He may very well choose to finance additional consumption by not saving enough and file for bankruptcy when the payment comes due. This is not an informational problem. It is, rather, a consequence of the limited enforceability of contracts. If, instead, both parties agree to a scheduled sequence of payments that implies a consumption path that prevents the borrower from ever becoming a significant lender, then the chances of the borrower violating the implicit agreement are minimized. Indeed, in order to be able to afford any additional consumption, the borrower must either obtain additional financing or he must have previously consumed less than the amounts specified in the implicit plan.

The point that I am trying to make is that the informational element which Lazear emphasizes is not important in determining the optimal

frequency of mortgage payments. In fact, there are many loans that do not have a constant monthly payment schedule. Most bank loans are short term and they are mostly used to finance the operation of small businesses. Banks, as opposed to savings and loan institutions, come close to matching the maturities of their assets and of their liabilities. Given that most bank liabilities are demand deposits, the average duration of bank loans is short. If the printer of currency did not guarantee bank deposits, depositors or their agents would monitor their bank positions. My bank pays interest on my deposits daily. Given modern computing technologies, the amount of resources used in this operation is small. The purpose of this daily compounding, however, is not to monitor the bank. Banks make zero coupon loans to farmers to cover their operating expenses. The loans are due after the harvest. These observations are consistent with my proposal that, given income and expenditure streams, borrowing and lending payment schedules are arranged so as to minimize costly financial intermediation.

To summarize, the scheduling of payments involves trade-offs between the informational aspects, which Lazear emphasizes, the fixed costs incurred when making payments, and the quantity of resources used up in intermediation. My position in these comments is that, even abstracting from the moral hazard problem, people would choose to make monthly mortgage and rent payments. In the case of rent payments, a desirable feature of paying for the services as they are received rather than at the beginning or at the end of, say, a two-year lease is that the owner can legally evict any tenant who does not meet his payments. On the other hand, if the owner fails to provide the contracted services, the renter can legally refuse to make payments. The issue at hand is the costs of enforcing contracts. In terms of these costs, the cheapest transaction is when two parties exchange some object and currency under the caveat emptor. However, when services are consumed frequently or even continuously, some credit arrangement is preferable.

Lazear also argues that the economics of information and signal extraction, which is to say Bayesian sequential decision theory, has much in common with psychological theories of reinforcement. I strongly disagree with his interpretation. The economic paradigm with its rationality assumption and the behavioral approach with its reinforcement construct are fundamentally different abstractions. Neither of them is an accurate description of reality. They are different languages which have proven useful to address different sets of questions. Mixing them inevitably

results in both bad psychology and bad economics. For games against nature an implication of statistical decision theory is that the outcomes associated with games where information becomes available earlier are always as good as, and are generally better than, the outcomes of similar environments where the information becomes available later. When there is more than one agent, however, this case is no longer necessary. If, for example, prior to signing an insurance contract, new information that allows the prediction of who will suffer accidents becomes available, insurance opportunities are precluded. On the other hand, including the choice of whether or not to observe the new information in the strategy space results in a larger set of allocations which are an equilibrium for some given mechanism. A larger set of feasible allocations implies a larger utility possibility set, which is at least weakly preferable.

Another criticism of Lazear's paper is that he does not fully adopt the economic language that has been developed to discuss these issues in a consistent and unambiguous way. Lazear states that the reinforcement structure that is observed is the equilibrium of the interaction between people. Why call it a reinforcement structure? It is simply the equilibrium mechanism or the equilibrium arrangement if one uses the generally accepted language of economics. Introducing terms such as "reinforcement" has the perverse effect of muddying our thinking. Economists borrowed the term equilibrium from the natural sciences with the connotation of a system at rest. This, I think, slowed down the development of dynamic economics, which occurred only after the economic meaning of equilibrium was changed from a system at rest to a system consistent with maximizing behavior. I think that he should use the language of Bayesian sequential mechanism design to address the contracting issues. This language has permitted the application of the economic paradigm with its rationality requirement to issues of contract design.