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IMPERFECTIONS IN THE CAPITAL MARKET

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THE adult economist, once the subject is called to his attention, will recall the frequency and variety of contexts in which he has encountered "imperfections-in-the-capital-market."

The area of industrial organization teems with instances. A predatory price cutter drives his small rival to the (poorly attended!) auction block—a technique which is not profitable if the small rival can borrow and ride out the competitive storm (Jones, 1921, pp. 77 ff.). In fact, all systems of disciplining rivals by imposing losses require that the rival have inferior access to capital (Jones, 1921, p. 83; also Machlup, 1949, pp. 160 ff; Loescher, 1959, pp. 125 ff.). The cigarette companies earned large rates of return because potential rivals could not "afford" to advertise lavishly for years and so to develop acceptance of new brands (Nicholls, 1951, pp. 201, 412). The integration of a firm forward or backward has been explained as a device to increase (to presumably unattainable levels) the *capital* requirements of potential new firms (Stigler, 1950, p. 33; Blake and Jones, 1965, p. 392).

The labor markets provide an equally generous supply of examples. All of us have said that rates of return on investment in education of men were higher than rates on (other?) investment goods because of "imperfections-in-the-capital-market" (see Friedman and Kuznets, 1945, pp. 89–92, 391–92; Stigler, 1966, pp. 266–67). The monopsonistic power of an employer arises because the laborer (lacking capital) cannot hold back his services in a bilateral monopoly setting (Marshall, 1920, p. 568).

Perhaps these samples are sufficient to remind the reader of the variety and frequency of appearance of imperfections-in-the-capital-market. If not, we may add the considerable literature on capital rationing, with special reference to agriculture (see Schultz, 1940). The opulent literature of economic development would not fail to supply instances (Lewis, 1955, pp. 127 ff.). The problem of usury is at least by half a problem in capital market imperfections (Ryan, 1924). And, arbitrarily to close this listing, there are numerous examples of imperfections-in-the-capital-market in corporation finance (Buchanan, 1940, p. 315) and the literature of the economics of exhaustible resources (Pigou, 1932, pp. 27–29).

Not only is imperfections-in-the-capital-market a popular concept, but what is more important, it is a terminal concept. Once this phrase has been written or spoken, the economist has finished with *that* strand of analysis. In the list of closing phrases of economics, which includes "that is an index number problem," and "of course the second-best considerations still remain," surely imperfections-in-the-capital-market deserves pride of place. This Gabriel-horn phrase has accordingly received only negligible and negligent attention. The present essay seeks to make preliminary amends for this neglect.

I. THE BASIC IMPERFECTION: INABILITY TO BORROW—CHEAPLY?

The most pervasive imperfection-in-the-capital-market is the inability to borrow funds. We may illustrate the allegation with the popular example of capital investment in human beings. The young man is denied a college education because he cannot borrow sufficient funds to pay his expenses of education and living.

It is not enough that a young man who wishes to enter the professions have sufficient

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ability; he must also be able to command funds to pay the expenses of training and to support himself during the training period. Because of the peculiar character of the capital investment in training, these funds cannot be obtained in the open market as a purely "business loan," and hence are not freely available to all. . . . If, relatively to the demand for professional services, there are few young men interested in entering the professional services who can get the necessary funds, one would expect underinvestment; in the contrary case, overinvestment [Friedman and Kuznets, 1945, pp. 89–90].

Becker points out that the same difficulty in borrowing is encountered by the young man who wishes to establish a new enterprise rather than go to college (Becker, 1964, p. 57).

The demonstration of this imperfection invariably consists in the high rates of interest earned or paid by the investor. Yet, this is surely not sufficient evidence to allow us to conclude that capital is being allocated inefficiently—any more than the fact that some people walk is proof of an imperfection in the automobile market. Let the would-be college student expect 12 per cent on his investment in a college education when "the" interest rate is 6 per cent. Surely we have to know what lenders are realizing on loans to college students; if it is 6 per cent, the marginal return on capital is equal in various investment, and the allocation of capital is efficient.

The main, unspoken reply to this comment would probably be: surely the difference of 6 per cent between what the borrower pays and the lender receives is too large to be accounted for by the cost of loans; and remember that the 12 per cent rate was actually realized, so risks have already been compensated. I try to state this reply convincingly, but it is not a convincing reply: an empirical question cannot be settled by non-empirical arguments. If there is evidence that one can lend to students at a realized rate of more than 6 per cent, although costs of lending (including raising funds) are 6 per cent, the capital market is indeed imperfect. But the whole argument now turns upon the cost of transactions which no one has measured.[1]

There is a second defense of the allegation of imperfections-in-the-capital-market which is more or less explicit in this literature. The laborer is not allowed to pledge his future labor services as security for a loan, so the legal prohibition of "involuntary" servitude (of course the contract could be voluntary) makes him an unattractive borrower. This in indeed true, and of course the prohibition of enforceable labor contracts reduces the laborer's disposable property rights. But if lenders were to disregard this legal fact, they would be acting with gross stupidity, and their realized rates of return would probably be negative. The limitations placed upon borrowers by law are hardly to be labeled imperfections-in-the-capital-market. With any reasonable use of language, this legal limitation on laborers' bargaining rights should be called an "imperfection-of-the-labor-market."[2]

A misallocation of capital is created, not eliminated, if interest rates are reduced to borrowers without a commensurate reduction in the costs of transactions. The situation is exactly comparable to the elimination of geographical differences in the price of a commodity: if prices at two points differ by less than transportation costs, the movement of goods is uneconomic.[3]

Most allegations of imperfections-in-the-capital-market, we believe, are based upon

[1] It is not even a very plausible kind of arithmetic. The rate of default on loans is strongly dependent upon the method by which borrowers are selected. An across-the-board offer of loans to all students would greatly increase the default rate.

[2] Whether it is a wisely legislated imperfection is no present concern. The prohibition of enforceable contracts for labor services is presumably desirable if laborers would often make bad contracts because of ignorance, lack of foresight, monopoly, and so on, and undesirable if such bad contracts were infrequent. The issue has nothing to do with the phenomenon that gave rise to the laws, namely, hereditary slavery.

[3] Nevertheless, Lance Davis (1963) measures the approach to a national capital market by the decline of differences among regions in interest rates. No one would dream of using this criterion for wheat or automobiles.

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the failure of capital to flow into fields in which higher rates would be returned than are obtainable elsewhere. Consider the example of cutthroat competition: a firm (Mr. J. D. Rockefeller's, in the folklore) sells at unremunerative prices in a particular area and "drives a rival to the wall." Thereafter it buys the defunct rival at a trivial price and pursues a remunerative monopoly price policy.

If the capital market were efficient, this lesser rival could go to a lender and say:

> There is a threat of a three-month price war, during which I will lose $10,000, which unfortunately I do not possess. If you lend me the $10,000, I can survive the price war—and once I show your certified check to Rockefeller the price war will probably never be embarked upon. Even if the price war should occur, we will earn more by co-operation afterward than the $10,000 loss, or Rockefeller would never embark upon the strategy.

This argument seems wholly convincing to me.[4]

Often the charge of imperfection reads differently but, nevertheless, rests ultimately upon the inability of borrowers to get cheap funds. Consider the following charge:

> Everything we know about business finance stresses the imperfections of the capital market. A commodity market is at least theoretically capable of "pure competition": the common fund of knowledge we have to attribute to dealers in assuming pure competition is all knowledge about the present. But the knowledge dealers must share to admit of pure competition in the capital market is knowledge about the future. Thus it is inherently uncertain, and the uncertainty extends to the proceeds of transactions currently engaged in. This uncertainty unavoidably makes competition in the capital market "imperfect" [Hart, 1949, p. 171].

As a matter of terminology, Hart is entitled to call imperfect foresight a market imperfection, just as I am entitled to say that it is an imperfection in a wheat seed that it does not grow into nicely baked bread. Nevertheless, the language does not seem useful. What is germane here is that Hart cites the difference between borrowing and lending rates of a firm as a consequence of this imperfect foresight (Hart, 1949, p. 172), so an important manifestation of his type of imperfection is that a firm cannot borrow freely at "the" market rate. Again there is no showing of evidence that lenders to business receive a higher (or lower) realized rate of return than business lenders receive on loans to non-business.

II. MONOPOLY AS AN IMPERFECTION

There is ample historical precedent for identifying a perfect market with a competitive market (see Stigler, 1957). I personally oppose the identification, on the ground that the essence of a market is the exchange of titles, whereas the essence of competition is the diffusion of economic power. No market can be perfectly competitive, it is quite true, if the traders are very ignorant of offers and bids because many cases of bilateral monopoly or oligopoly may survive. But a market may be remarkably efficient as a place in which to make transactions, even though one party is a monopolist.

Often the charge of imperfections-in-the-capital-market has been a charge of monopoly. Thus, W. Arthur Lewis writes,

> Small farmers have a very high propensity to get into burdensome debt. This is mainly due to the risks to which they are subject. . . . It is also partly due to their own improvidence, but it is often just as much due to the deliberate policy of the moneylender. If the farmer owes more than he can pay, he is ripe for exploitation: the moneylender may compel him to sell all his marketable produce through the moneylender's agents, or to buy all his requirements in the moneylender's shop, in either case at unfavorable prices. Or the moneylender may drive the farmers bankrupt, buy their land cheaply, and take extortionate rents [1955, p. 127].[5]

The lenders are presumably able to get extortionate returns from the natives because they are not limited by competitors.

[4] And to Rockefeller, who bought out his rivals on favorable terms. See J. McGee (1958).

[5] I note in passing that Lewis uses "theory" in a remarkable sense.

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Whether we label monopoly a market imperfection or not, the monopoly power could lead to serious inefficiencies in the allocation of capital. It is not probable, however, that the inefficiencies will be large: capital (or general credit) is the most fungible, the most divisible, the most mobile of all productive services. It stems from innumerable individual and corporate savers, and no one saver ever possesses even 1 per cent of the annual savings. It flows to innumerable borrowers, public and private; and, except in socialized economies and in private enterprise economies during major wars (when the national government no doubt acts monopsonistically), there is seldom a borrower who takes even 2 per cent of the annual savings.

The general market for capital is of course composed of many parts: there are regional markets and markets for types of credit (agricultural, commercial trade, installment, auto), but all deal in the same basic good, and each presumably has a highly elastic supply of funds.

The financial markets through which these various markets mobilize savings and deal with borrowers are of course highly varied in industrial structure. In a large city there are a hundred retailers to provide retail credit for the purchaser of shoes or apparel, but in a small town there is only one commercial bank to make short-term business loans. This bank has to compete with trade credit or with borrowing against real estate or pledged securities, but it may well possess some monopoly power.[6] At the other extreme, there has been monopoly in the syndicates which float large state-bond issues (West, 1965). Yet it is surely correct to say that monopoly is not the typical organization among financial markets and that where monopoly occurs its quantitative strength is usually smaller than in most other markets.

[6] In fact, a recent study by Sam Peltzman (1965) shows that FDIC licensing policies restricted entry into commercial banking after 1935 to less than half the rate that would otherwise have occurred, and as a result bank stock prices are higher than they would otherwise be.

Of course these sweeping remarks do not constitute any proof of the negligible importance of monopoly in capital markets. All that is intended is the assertion that there is no commonsense presumption that monopoly is a customary and important element of capital markets.

III. MARKET PERFECTION AND IMPERFECTION

The function of a market is to permit the exchange of goods, so an efficient market (clearly a normative concept) permits all exchange which the traders prefer to nonexchange. If we assume away all costs of trading, the efficient market will achieve every desired exchange for homogeneous goods when there is only one price. This condition is clearly necessary: with two (or more) prices, one seller is receiving less than some other buyer is paying, and both would prefer to trade with one another than with whomever they are trading. This condition is also sufficient if everyone is permitted to make all trades that he wishes to make. A uniform price with queues, however, obviously violates our condition for efficiency.

The careless and overpopular use of imperfections-in-the-capital-market stems from the application of this simple theory to inappropriate conditions.

One cost of trading has always been recognized by the literature, probably because this cost is explicit and substantial: the cost of moving goods when buyer and seller are at different points. Indeed the Cournot definition of a market is that it is the *area* within which price tends to uniformity, allowance being made for transportation costs (Cournot, 1927, p. 51, n.). The proviso is obviously necessary: if the price at A is $1.00 and at B is $1.25, no buyer at B wishes to buy at A if transportation costs exceed $0.25.

Under these conditions, if the flow of goods in one direction is invariable and literally mathematically continuous, there will still be only one price in the market after deducting transportation costs. But these are conditions of extreme rigor, and it will not be true that at all moments the

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price of wheat on the country depot will be equal to the prices at the milling center minus transportation costs.[7] If, for example, there are inventories at an "import" point, then (since inventories cannot be carried without cost) price will fluctuate when inventories fluctuate.

Transportation costs are the prototype of all trading costs: costs of acquiring knowledge of products and other traders, inspecting quality, collecting funds, etc. There is no "imperfection" in a market possessing incomplete knowledge if it would not be remunerative to acquire (produce) complete knowledge: information costs are the costs of transportation from ignorance to omniscience, and seldom can a trader afford to take the entire trip.

Thus, complete knowledge of prices would require the canvass of all traders. Optimum information would require the canvass of traders only up to the point where the expected marginal return from search equals its marginal costs (see Stigler, 1961). The acquisition of complete information would in general be as wasteful as the transportation of a house valued at $30,000 in New York to California where it would be valued at $30,200. Comparable things can be said about all other costs of transactions,[8] so the criterion of an efficient market becomes one with an appropriate frequency distribution of prices. A good deal of work is required on this problem, but none is required to reject the criterion of a single price for an efficient market.

The application of this argument to specific instances of alleged imperfections-in-the-capital-market may be illustrated by a famous example, the difference between borrower's and lender's risk discussed by Keynes (1936, p. 144).

> Two types of risk affect the volume of investment. . . . The first is the entrepreneur's or borrower's risk and arises out of doubts in his own mind as to the probability of his actually earning the prospective yield for which he hopes. If a man is venturing his own money, this is the only kind of risk which is relevant.
>
> But where a system of borrowing and lending exists, by which I mean the granting of loans with a margin of real or personal security, a second type of risk is relevant which we may call lender's risk. This may be due either to moral hazard . . . or the possible insufficiency of the margin of security. . . .
>
> Now the first type of risk is, in a sense, a real social cost, though susceptible to diminution by averaging as well as by an increased accuracy of foresight. The second, however, is a pure addition to the cost of investment which would not exist if the borrower and lender were the same person.

Keynes's last sentence is not devoid of ambiguity: How does a borrower *know* he will be honest? Did the young bank teller know when he entered employment that he was going to abscond to Brazil in seven years? But let such things be known. Then the difference in risks is clearly due to information costs. The lender cannot afford to acquire the information to subclassify a given borrower into a more homogeneous risk class, and so this borrower is grouped with a higher-risk man. The lender may not be distinguishing sufficiently among borrowers—meaning that additional investment in collecting information would be profitable—but such mistakes aside, the difference between the lender's and the borrower's estimates of risk is strictly analogous to differences in price due to transportation costs.

IV. CONCLUSION

The efficiency of markets should be of great interest to the economist: Economic theory is concerned with markets much more than with factories or kitchens. It is, therefore, a source of embarrassment that so little attention has been paid to the theory of markets and that little chiefly to speculation. Our condemnation of the easy use of imperfections-in-the-capital-market is a plea for the study of markets, not a claim that capital markets are "perfect."

[7] I ignore the fact that seldom will transportation costs be a single number independent of season, quantity, and velocity.

[8] See the forthcoming article by H. Demsetz for a comprehensive analysis of the subject.

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We cannot possibly afford perfect markets, but we regulate real markets in many ways, and it would be desirable to know what these regulations are achieving.

The attribution of imperfections to markets has been an easy game because markets seldom have defenders. In fact, it is worse than that: the only markets with well-endowed defenders are those which are monopolistically organized and can afford the expense of a defender. I do not propose that economists appoint themselves defenders of markets, however; it is enough if they resign from the prosecution.

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