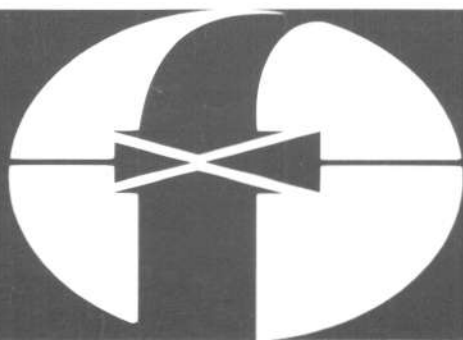


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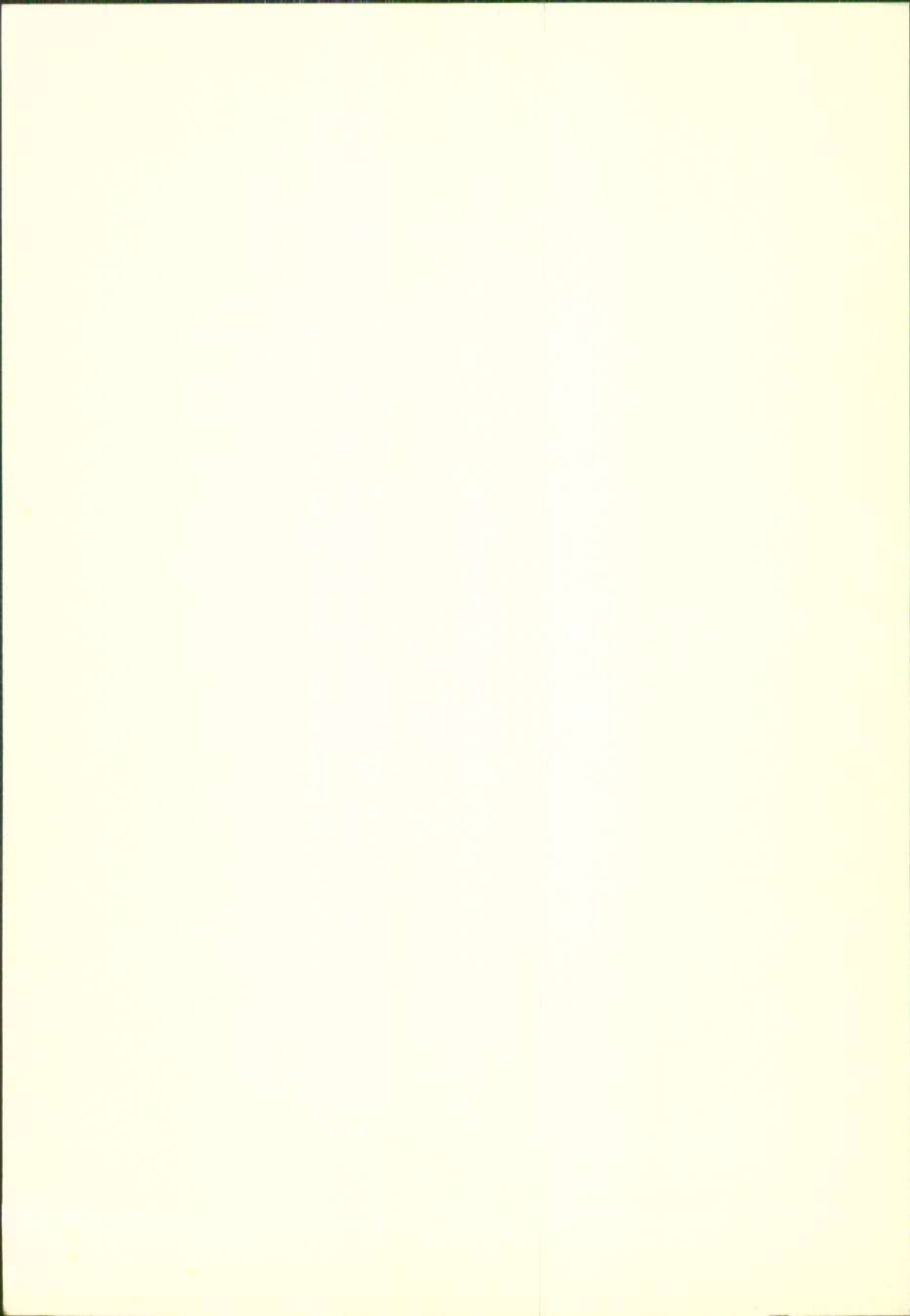
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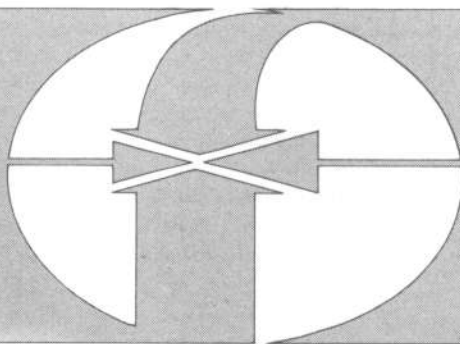
Quarterly Review - No. 1 - 1980 - IV



Savings and Development

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INTEREST RATE RESTRICTIONS AND THE SOCIALLY OPTIMUM ALLOCATION OF CREDIT

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1. Objective

In *Money and Capital in economic Development*, Ronald I. McKinnon correctly characterized the capital markets of less developed countries as fragmented, that is, as markets where economic units are so isolated « that they face different effective prices for land, labor, capital and produced commodities and do not have access to the same technologies »¹. This fragmentation leads to a great dispersion in the social and private marginal real rates of return earned on portfolios of physical and financial assets. Therefore, financial policy can play a crucial role in economic development if it leads to a reduction of this fragmentation and of this dispersion in rates of return, i.e., if it leads to a greater integration of capital markets.

Until recently, financial policy in most of the Latin American countries has been characterized by interest rate controls and the administrative allocation to different borrower classes of shares in credit portfolios, which have further fragmented capital markets. However, inspired by the above and similar considerations, several Latin American governments have recently initiated financial reforms directed, among other things, toward a reduction of the dispersion in the structure of real interest rates prevailing in these countries.

The objective of this paper is to define a socially optimum allocation of credit among borrower classes and to develop a microeconomic model to evaluate the impact on resource allocation and on income distribution of changes in the structure of interest rates, induced by alternative financial policies. In particular, the paper attempts to define the socially optimum size of loans granted to different classes of borrowers and the socially optimum rate of interest to be charged by the financial intermediaries to each borrower class. The macroeconomic implications, such as on price stability or the level of employment, are not discussed in this opportunity.

A socially optimum allocation of credit is defined as that allocation which maximizes the aggregate net income of all the various participants in the economic activity, including those participating merely as producers as well as those participating as financial intermediaries. Although the paper explores some of the

¹ Ronald I. McKinnon, *Money and Capital in Economic Development*, Washington, D. C., The Brookings Institution, 1973.

implications of interest rate controls on income distribution, a particular distribution of income is not an element of this definition of the social optimum.

2. Self-Finance

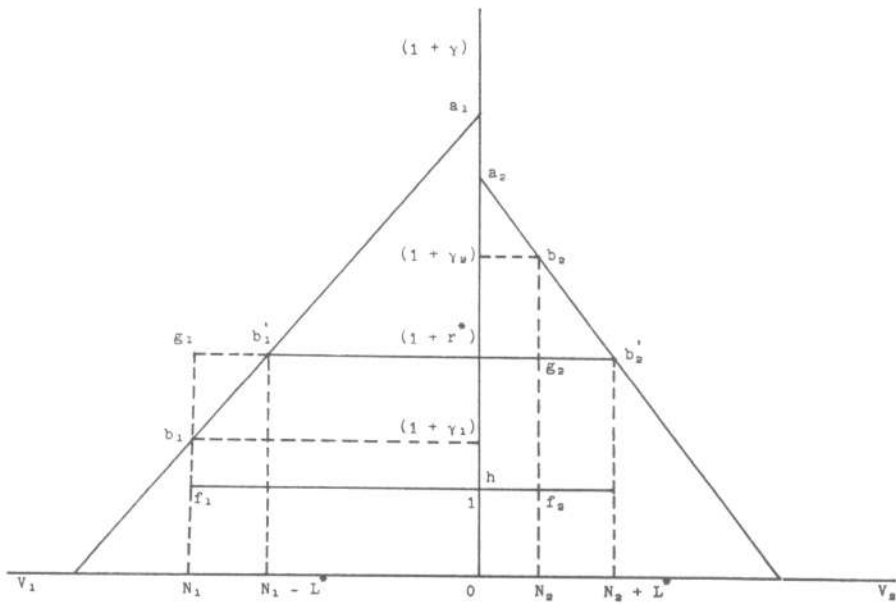
The impact on the social optimum of alternative financial structures and policies will be examined with the aid of a very simple model, which can be further expanded in order to consider additional situations. In its simplest version, the model assumes the existence of only two producers, Large and Small. Their income levels are a function of their productive opportunities as well as of their command over the resources — variable inputs — needed to take advantage of these opportunities. Each productive opportunity is a reflection both of the technology known by the particular producer and of the factors of production: land, fixed physical capital, human capital and entrepreneurial ability accumulated by the producer. On the other hand, command over variable inputs is acquired through own savings or through access to credit.

If product and input prices are given for the individual producers, their productive opportunities can be represented by the corresponding curves of the value of the marginal product of the variable inputs employed. In Figure 1, the productive opportunity of Large is represented in the left-hand quadrant and the productive opportunity of Small is represented in the right-hand quadrant.

Given their own productive opportunities, under conditions of self-finance each producer's gross income is a function of the amount of own resources saved, represented in Figure 1 by N_1 and N_2 , respectively. Gross income is represented by the area under the curve, namely by the areas $a_1b_1N_1O$ and $a_2b_2N_2O$. In turn, each producer's net income is the difference between his gross income and the value of the variable inputs employed, represented by the areas $a_1b_1f_1h$ and $a_2b_2f_2h$, respectively.

The assumption that the superiority of Large over Small is proportionately greater in terms of their initial endowments of own resources saved than in terms of their productive opportunities is an attempt to reflect the actual situation of many Latin American producers. Its main consequence is that the value of the marginal product of the variable inputs owned by Large, $(1 + \gamma_1)$, is lower than the value of the marginal product of the variable inputs owned by Small, $(1 + \gamma_2)$.

Figure I.



Under a regime of self-finance, therefore, a socially optimum allocation of resources is not achieved, since in order for the aggregate net income of the two producers to be a maximum, the value of the marginal product of the inputs employed by them must be equated.

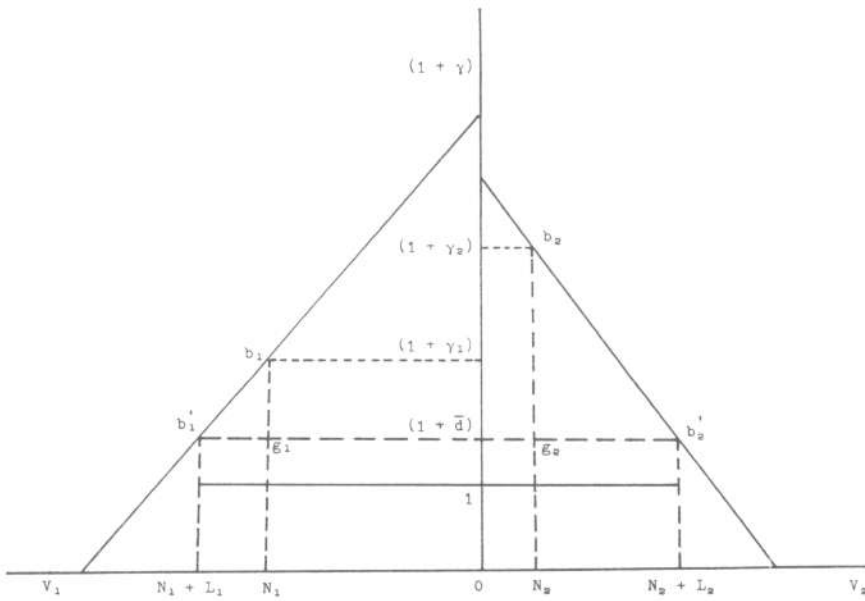
3. Direct Finance

The impact of a financial process can now be explored. In the previous model, a social optimum can be reached with the introduction of a simple financial mechanism, namely the transfer of resources via a loan from Large to Small. The socially optimum size of this loan, represented by L^* in Figure II, leads to the equation of the value of the marginal product of the inputs employed by each one of the two producers, at the $(1 + r^*)$ level. This transfer of resources increases the net income of each producer as well as aggregate net income. The latter increases by the sum of areas $b_2b_2'g_2$ and $b_1'g_1b_1$. The first area is Small's net gain, after he repays the principal and interest on the loan. The second area is Large's net gain, once he recuperates the resources loaned and the interest earned.

The distribution of the net social gain between the two producers is a function of the relative speed to which diminishing marginal returns appear with respect to each productive opportunity. The more rapidly the value of the marginal product diminishes, as a function of the amount of variable inputs employed, the larger the gain. If diminishing returns are more pronounced in the case of Small, as compared to Large, given the former's more limited entrepreneurial ability and access to technology and other fixed factors of production, then the net gain will be greater for Small than for Large, both in absolute and in relative terms. The socially optimum rate of interest r^* will be closer to γ_1 than to γ_2 , reflecting Small's greater gain.

The introduction of a financial process, therefore, eliminates the fragmentation of the capital market, leading to the equation of the marginal rates of return of both producers. This not only improves the allocation of resources and increases the net incomes of both producers, but it also improves the distribution of income between them.

Figure II.



4. Indirect Finance

In this section a new actor is included in the model: a financial intermediary, the Bank, which supplies loans to Large and to Small, at a given interest rate d , which covers the opportunity cost of the savings mobilized by the intermediary. The socially optimum size of each loan equates $(1 + d)$ with the value of the marginal product of the variable inputs employed by each producer. The optimum size of each loan is a function of the productive opportunity and initial endowment of own resources of each producer.

The increment in the net income of each producer as a result of the loan is a function of loan size and of the speed to which diminishing marginal returns appear with respect to the corresponding productive opportunity. Figure II shows how loans equal to L_1 and L_2 , respectively, increase Large's net income by the area $b_1b_1'g_1$ and increase Small's net income by the area $b_2b_2'g_2$. Given the behavior of diminishing returns in each case and the larger initial endowment, when compared to his productive opportunity, of Large, his net gain is smaller than the net gain of Small. Indirect finance, too, improves both resource allocation and income distribution.

In this case the role of credit has been to allow each producer the generation of a net income commensurate with his productive opportunity, independently of the availability of initially owned resources. Therefore, income distribution improves to the extent to which the original income differences among producers were due to differences in their initial endowments of own resources.

This distributive implication of a financial process can be better appreciated when the two producers have access to identical productive opportunities. Under a regime of self-finance, their incomes would be equal only if their initial endowments are equal, too. Otherwise, the producer with the larger endowment will earn a higher income. If both producers have access to credit, however, their incomes will be equal, independently of their initial endowments. Therefore, to the extent to which differences in incomes are due to differences in initial endowments, income differences are reduced by access to credit and one important source of an unequal distribution of income is eliminated. Moreover, access to credit also improves income distribution to the extent to which it permits all producers to improve their opportunities, either through its impact on the adoption of technological change or on the accumulation of physical and human capital by different producers.

5. Costs of Intermediation

Financial intermediation is not costless. It uses scarce material and human resources which could have been otherwise devoted to the production of goods and services². These costs of lending include: (i) the opportunity cost of the funds loaned; (ii) the costs of administration, which include the costs of merely handling the loan, like recording and disbursing, as well as the risk-reducing costs, directed at reducing the probability of default through the acquisition and use of information and through other supervision and collection efforts; and (iii) the expected losses due to default. This paper assumes away potential divergences between private and social costs of lending.

The costs of intermediation are represented in Figure III by the marginal cost curves for the Bank of lending to each one of the two borrower classes. Elsewhere it has been demonstrated that marginal cost is a direct function of the size of loan approved for a given borrower³.

The marginal cost of lending to Large is lower and increases more slowly than the marginal costs of lending to Small. This is a recognition of the fact that credit has several dimensions, which can be seen as separate products. The Bank, in turn, can be seen as a multi-product firm, producing several credit products, each one with its own peculiar cost function⁴.

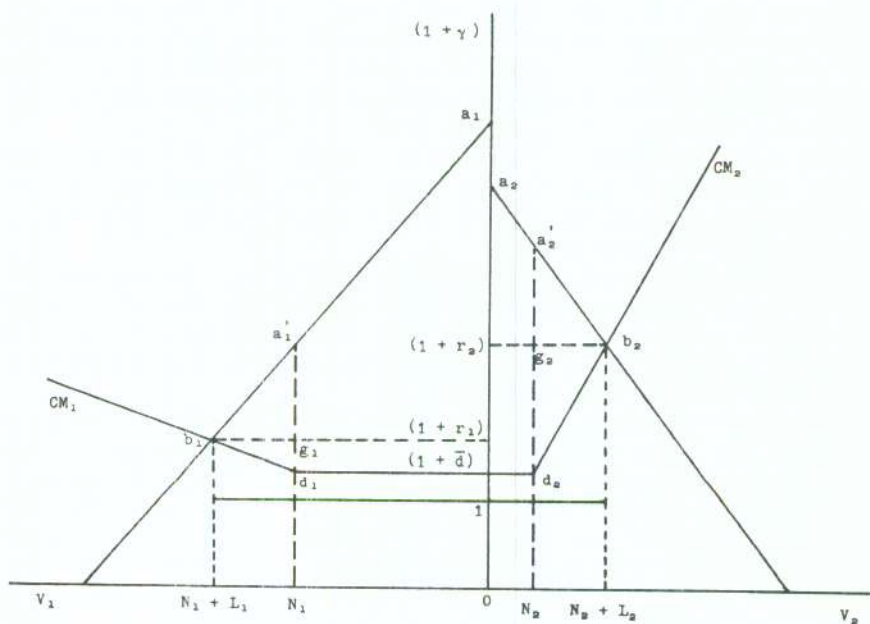
Once these costs of intermediation are taken into account, the social optimum — the maximization of the aggregate net incomes of the two producers and the Bank — requires that each producer be granted a loan which equates the marginal cost for the Bank of lending to him with the value of the marginal product of the variable inputs purchased with the loan. The resulting maximum aggregate net income is represented in Figure III by the area $a_1b_1d_1N_1ON_2d_2b_2a_2$. Compared to a regime of self-finance, this situation implies a gain of net income equal to

2 Edward S. Shaw, *Financial Deepening in Economic Development*, New York, Oxford University Press, 1973.

3 Claudio Gonzalez-Vega, *On the Iron Law of Interest Rate Restrictions. Agricultural Credit Policies in Costa Rica and in Other Less Developed Countries*, Ph. D. Dissertation, Stanford University, 1976.

4 Bernard Shull, *Commercial Banks as Multi-Product, Price-Discriminating Firms*, in D. Carson ed., « Banking and Monetary Studies », Homewood, Ill., R.D. Irwin, 1963.

Figure III.



the area $a_1'b_1g_1$, in the case of Large, a gain of net income equal to the area $a_2'b_2g_2$, in the case of Small, and a gain in net income for the Bank equal to the sum of the areas $b_1g_1d_1$ and $b_2g_2d_2$.

A social optimum implies, once the costs of intermediation are taken into account, different interest rates — and different values of the marginal product of the variable inputs employed for different borrower classes. In effect, Figure III shows that the optimum rate of interest to be charged to Large, r_1 , is lower than the optimum rate of interest to be charged to Small, r_2 . These differences in the socially optimum interest rates reflect both differences in the demands for credit by the two producers and differences in the cost functions of lending to them by the Bank.

These interest rate differentials reflect the fact that for the Bank, as well as for society, loans to different classes of borrowers are different products and need not, therefore, be equally priced. Rather, for each borrower class, the socially optimum interest rate must reflect the prevailing differences in social costs and benefits of lending to them, in order to allow scarce resources to be allocated where they can increase aggregate net incomes the most. If a producer is charged an interest rate higher than what is socially optimum in his case and, therefore, if he is granted a loan smaller than the socially optimum size in his case, each additional dollar of credit granted to him would increase aggregate gross income more than social costs, increasing aggregate net income, as well as the net incomes of the producer and of the Bank. On the other hand, if a producer is charged an interest rate lower than what is socially optimum in his case and, therefore, if he is granted a loan larger than what is socially optimum in his case, society will be spending more resources in the administration of this loan than the resources generated by the additional production due to the larger loan.

6. Artificially Uniform Interest Rates

One of the theoretically most popular kinds of interest rate restrictions is the requirement that financial intermediaries charge a uniform interest rate to all borrower classes, even when different rates would be charged in a competitive situation due, not to monopolistic discrimination, but to different costs of lending. Although there are few who deny that the costs of lending differ for different borrower classes, many argue that a uniform interest rate could be used to

subsidize Small at the expense of Large. That is, the uniform rate, even when the Bank chooses it freely, would be set at a level higher than the socially optimum one for Large and lower than the socially optimum one for Small. In these circumstances, Large would be paying a portion of the costs of lending to Small.

Under the assumption that, despite the restriction, the Bank will still continue to completely satisfy the demand for credit of each producer, at the uniform interest rate charged, an assumption which will be questioned below, the size of the loan granted to Large, represented by L_1' in Figure IV, will be smaller than what is socially optimum in his case, namely L_1 , and the size of the loan granted to Small, represented by L_2' , will be larger than what is socially optimum in his case, namely L_2 . It is assumed, moreover, that the total amount lent by the Bank does not change, i.e., that $L_1 + L_2 = L_1' + L_2'$ ⁵.

The requirement that a uniform interest rate be charged prevents the achievement of a socially optimum allocation of credit. The resulting social losses are represented in Figure IV by the areas $b_1b_1'e_1$ and $b_2'b_2e_2$. The first area represents the sacrifice of aggregate net income when Large is granted a loan smaller than what is socially optimum in his case. The second area represents the excess of social cost over aggregate gross income, when Small is granted a loan larger than what is socially optimum in his case.

The private loss for Large, represented by the area $b_1b_1'r_1\bar{r}$, includes an implicit tax equal to the area $b_1g_1r_1\bar{r}$. In turn, due to the loan received, Small increases his private net income by the area $r_2b_2b_2'\bar{r}$. A portion of this private gain, represented by the area $r_2b_2g_2\bar{r}$, is the subsidy received. Finally, the Bank suffers a reduction in net income equal to the sum of the areas $b_1'g_1e_1$ plus $e_2b_2g_2b_2'$. The gain in net income by Small is smaller than the sum of the losses in net income by Large and the Bank. The difference are the social dead-weight losses of the policy.

In summary, a policy of uniform interest rates makes possible a higher net income for Small in exchange for, not only a reduction of the net incomes of Large and of the Bank, but also of a net loss for society, due to the reduction in the net incomes of Large and of the Bank which do not benefit anyone.

5 Figure IV represents only the portion corresponding to the variable inputs purchased with the loan, while the portion corresponding to the initial endowments has been eliminated. That is, in comparison with Figure III, the central portion N_1ON_2 has been omitted. This is why the curve of the demand for credit by Large looks lower than the curve of the demand for credit by Small. The analysis is not affected by this graphical simplification.

The requirement that a uniform interest rate be charged leads, again, to a reduction in aggregate net income. This reduction is represented in Figure IV by the sum of the areas $b_1b_1'e_1$ and $b_2''b_2g_2'$. The reduction reflects the smaller size of both loans and the losses of efficiency. If, instead, the desired redistribution is achieved via a direct lump-sum transfer, the socially optimum interest rates charged will be different and there will be no rationing. The desired impact on income distribution will in fact be achieved and each loan will have its socially optimum size.

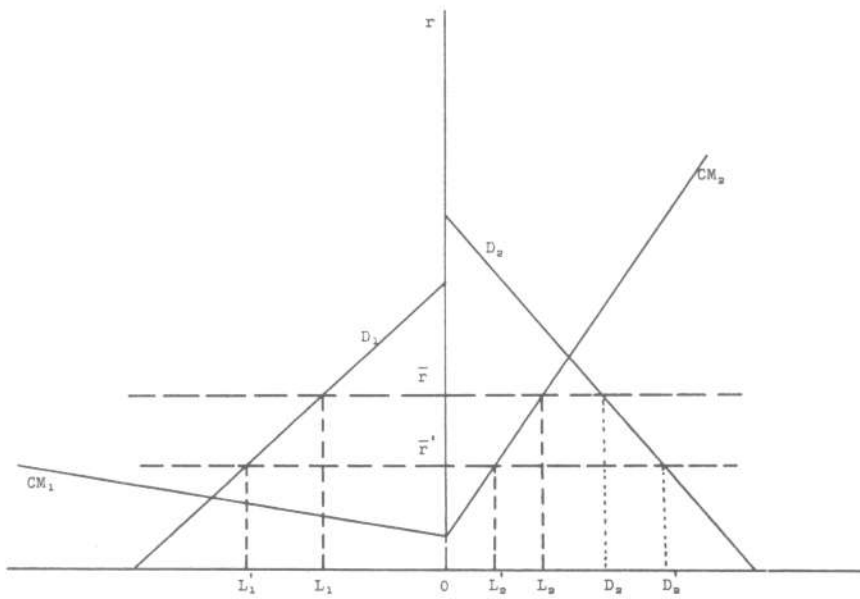
When financial intermediaries are required to charge a uniform interest rate to all borrower classes, even when they are allowed to freely set its level in order to maximize profits, it can be shown that there will always be at least one class of non-rationed borrowers in their credit portfolios⁷. The possibility that a borrower will be rationed depends on the relationship between his curve of the value of the marginal product of the variable inputs employed and the curve of the marginal cost of lending to him for the Bank. The slower the decline in the value of the marginal product of the inputs as a function of loan size, *ceteris paribus*, the less likely is rationing. The lower the curve and the slower the increase in the Bank's marginal cost of lending, as a function of loan size, the less likely is rationing, too. Given the relative magnitudes of the demands for credit by Large and Small, reflecting the corresponding value of the marginal product of the inputs used, and the relative magnitudes of the marginal costs of lending to these producers, Small will always be rationed before Large. If there are only these two classes of borrowers, Small may be rationed or not, but Large will never be rationed.

8. Interest Rate Ceilings

A more restrictive form of control is the establishment of interest rate ceilings. The ceiling could be effective, i.e., lower than the equilibrium rate for the Bank, for all or only some classes of borrowers. Similarly, when the ceiling is effective,

⁷ See D.M. Jaffe, *op. cit.*

Figure V.



the Bank could practice rationing with respect to all or only some classes of borrowers. A borrower will be rationed when the marginal cost of granting the size of loan demanded by him is higher than the interest rate ceiling. Given the level of the ceiling, it is possible that none, only Small or both producers be rationed. In any case, Small will always be rationed before Large, since rationing takes place when the ceiling becomes lower than the socially optimum interest rate for the particular borrower.

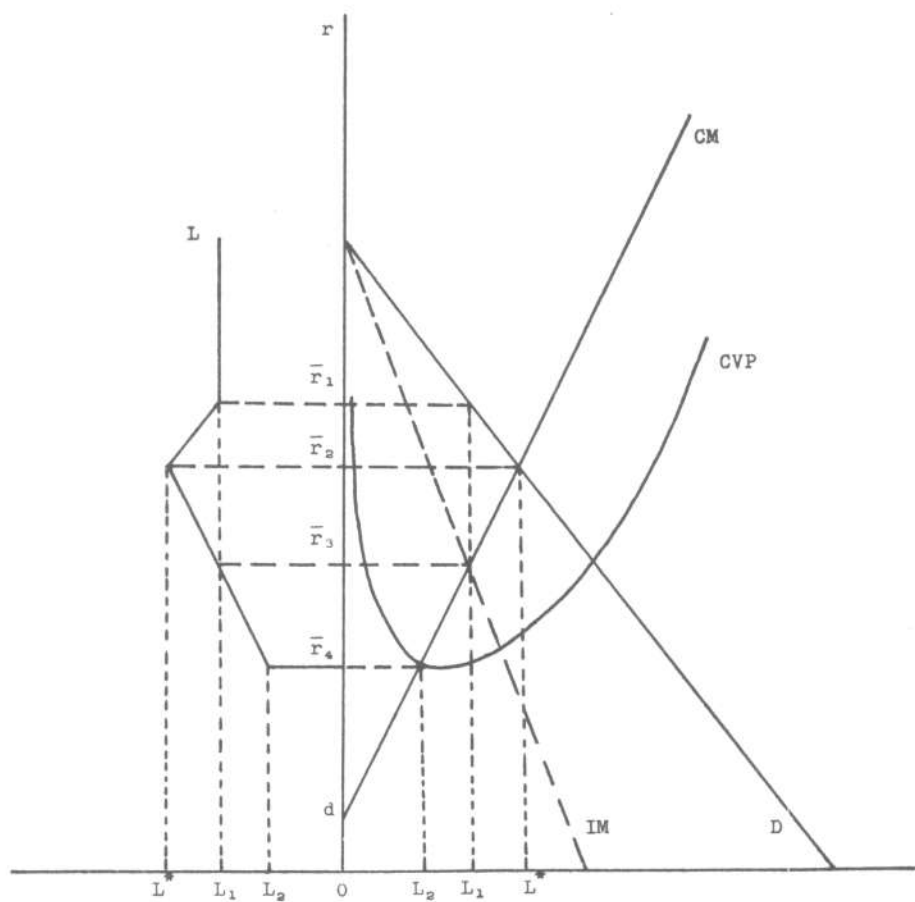
9. The Iron Law of Interest Rate Restrictions

In the Latin American countries, the typical portfolio of the financial intermediaries frequently includes a wide range of rationed borrowers, represented by Small, and a few privileged non-rationed borrowers, represented by Large. This situation is represented in Figure V, for a ceiling at the level \bar{r} . Given this ceiling, Large receives all the credit demanded, namely a loan equal to L_1 . Small, instead, receives a loan equal to L_2 , which is smaller than that demanded, namely D_2 .

When, for some reason such as the establishment of preferential interest rates for some activities, the grant of a credit subsidy or merely the impact of inflation, the ceiling, measured in real instead of nominal terms, becomes more restrictive, there is a redistribution of the credit portfolio of the financial intermediary. Given the more restrictive ceiling, represented by \bar{r}' in Figure V, the size of the loan granted to Large, the non-rationed borrower, increases, while the size of the loan granted to Small, the rationed borrower, declines. This is the case because, given the size of the new loan demanded by Large, the ceiling continues to be higher than the marginal cost for the Bank of granting this loan. Large, therefore, moves along his demand for credit curve, i.e. moves along his curve of the value of the marginal product of the inputs employed, demanding and receiving a larger loan at the new, lower, interest rate. On the other hand, Small moves along the curve of the marginal cost for the Bank, since the ceiling is not sufficiently high to cover the marginal cost associated with the size of loan demanded. Although the size of the loan demanded by Small increases when the interest rate declines, too, he only receives a loan smaller than before.

This is what I have called the *Iron Law of Interest Rate Restrictions*. According to this proposition, when interest rate ceilings become more restrictive, the size

Figure VI.



of the loans granted to non-rationed borrowers increases and the size of the loans granted to rationed borrowers declines. This, in turn, implies a redistribution of the credit portfolios of financial intermediaries in favor of non-rationed borrowers — Large — and against rationed borrowers — Small. Since usually rationed borrowers are the smaller, the newer, the less known and influential, those with the riskier or more innovative projects, those without collateral, those living in more distant places, etc., interest rate ceilings have a negative impact on income distribution, growth and resource allocation.

When the ceiling becomes so low that it does not even cover the average variable costs for the Bank of lending to certain borrower classes, the latter are excluded from the portfolio of the financial intermediary. That is, the Bank declines to lend to them. The left-hand quadrant of Figure VI shows the behavior of the size of loan granted to any producer as the level of the ceiling declines. A monopolistic behavior on the part of the Bank is assumed; the Bank equates marginal cost and marginal revenue. The ceiling becomes effective at the \bar{r}_1 level. At this point, the ceiling is the Bank's marginal revenue. For ceilings between \bar{r}_1 and \bar{r}_2 the borrower is not rationed yet and the size of loan increases as the ceiling declines. This implies the elimination of the Bank's monopolistic power. The socially optimum size of loan, L^* , is reached at the competitive interest rate \bar{r}_2 . If the ceiling becomes lower than \bar{r}_2 , the borrower will be rationed, each time more drastically. As the ceiling declines, the size of the loan granted also declines until the ceiling reaches the level \bar{r}_4 , when the borrower is completely excluded from the Bank's portfolio. For rationed borrowers, changes in their net incomes are subject to two conflicting influences: a positive effect, due to the subsidy, and a negative effect, due to the smaller size of the loan received. The positive effect dominates for ceilings above \bar{r}_3 and the negative effect dominates for ceilings below \bar{r}_3 .

10. Concluding Comments

The paper arrives to some important conclusions with respect to a desirable financial policy for the Latin American countries:

- (i) The paper highlights, from an additional perspective, the importance of financial processes in economic development, in view of their favorable impact, not only on resource allocation, but also on income distribution.
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- (ii) The paper recognizes that financial intermediation is a particularly costly activity and argues that these costs must be taken into account for the determination of the socially optimum allocation of resources.
 - (iii) The paper shows that a socially optimum allocation of credit implies different interest rates for different borrower classes. That is, socially optimum interest rates must recognize both the different costs and the different productivities associated with different classes of loans.
 - (iv) The paper shows that artificially uniform interest rates for all borrower classes impose net social costs which imply, either a situation where the best marginal productive opportunities are not being taken advantage of, or a situation where the additional resources spent in the administration of the financial system are more than those generated by its extra activity.
 - (v) The paper also shows that the net social costs of requiring a uniform interest rate are higher when the financial intermediaries practice some form of rationing than when they do not. When there is rationing, not only there are higher social costs, but it is even possible that the goal of granting loans of a larger size to certain borrowers will not be achieved at all. In this case, the good intentions to redistribute income will have a perverse effect.
 - (vi) The paper suggests that the optimum mechanism for income redistribution is a direct lump-sum transfer. In this case there will be neither a net social cost nor rationing.
 - (vii) The differences among socially optimum interest rates for different borrower classes are not in contradiction with McKinnon's recommendation that, in order to develop the financial sector, the great dispersion of interest rates which characterizes fragmented capital markets must be reduced.

On the one hand, in McKinnon fragmentation is defined as the existence of different prices for the same product, while this paper argues that different loan classes are not the same product.

On the other hand, one must distinguish between those differences in interest rates which are induced by the financial policies themselves — when preferential interest rates favor specific borrower classes — and those differences in interest rates which reflect true differences in social costs and returns.

The differences induced by financial policies can and must be eliminated by decree; i.e., the legal, artificial differentiation and the accompanying frag-

mentation must be eliminated. It is also desirable to reduce the differences in interest rates due to true differences in the social costs of intermediation, but these differences cannot be corrected by decree.

In each situation, the constellation of production functions for goods and production functions for loans as well as the relative scarcity of various kinds of resources such as skilled personnel, accumulated information and means of communication, determines the socially optimum structure of interest rates for that situation. In order to reduce the costs of intermediation as well as the differences among the costs of lending to different borrower classes, both of which in a less developed economy are high, one must promote technological innovations and the accumulation of information in the financial sector.

It is important, therefore, not to repress the development of the financial sector with financial policies which prevent productivity increases and reductions in the costs of intermediation. In particular, interest rates must not be arbitrarily fixed at such low levels that financial intermediation is repressed and credit institutions are prevented from covering the costs of lending to particular classes of borrowers. The paper also shows that an artificially uniform rate of interest for all borrower classes, which disregards the differences implicit in a socially optimum structure of rates, must not be required.

Several Latin American governments have recently adopted strategies of financial liberalization which lead to uniform interest rates. That is, they have eliminated the structures of preferential rates and have adopted a uniform rate. Since the preferential rates were usually charged to special borrowers such as small farmers or artisans, for housing or export promotion, which imply socially optimum rates higher than for other borrower classes, the new strategy is a movement in the correct direction, but it is not sufficient. It is, therefore, a second-best strategy, rather acceptable in a political environment which makes extremely difficult to charge higher interest rates to these « marginal » clientele.

- (viii) Most of the Latin American countries have established interest rate ceilings. These ceilings have been sufficiently low in most countries to lead to rationing of numerous classes of borrowers as well as to the exclusion of numerous producers from the credit portfolios of the financial intermediaries.
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In particular, the size of the loans granted by the Latin American financial intermediaries to most of their clients has been smaller than the size of the loans that these clients have demanded, at the interest rates charged, while many other producers have not had any access to the institutional credit system. The rational borrowers have had an unsatisfied excess demand for credit and have been forced to complement their institutional loans with loans from informal lenders, at very high rates of interest. In turn, small and privileged classes of very large borrowers have received all the credit that they have demanded, at the subsidized interest rate charged, without being subject to any rationing.

All of these phenomena reflect, of course, the influence of political and economic power on credit allocation mechanisms. This paper shows, however, that even if these influences did not exist, merely economic considerations, related to the financial viability of credit institutions, would explain the results.

LES RESTRICTIONS SUR LES TAUX D'INTERET ET L'ALLOCATION DE CREDIT OPTIMALE D'UN POINT DE VUE SOCIAL

RESUME

Les marchés de crédit des pays moins développés sont fragmentés: les unités économiques sont tellement isolées qu'elles doivent s'affronter à des prix des facteurs de production et des produits très divers et n'ont pas accès aux mêmes technologies. Cette segmentation engendre une grande dispersion des taux réels marginaux de rendement, individuels aussi bien que sociaux, des portefeuilles d'actifs physiques et financiers. La politique financière joue donc un rôle essentiel dans le développement économique dans la mesure où elle détermine une réduction de cette segmentation et de cette dispersion des taux de rendement, c'est-à-dire dans la mesure où elle engendre une intégration des marchés des capitaux. Le but de ce travail est de définir un optimum social pour l'allocation de crédit parmi les différentes classes d'emprunteurs

et d'élaborer un modèle microéconomique pour l'évaluation des effets que des changements dans la structure des taux d'intérêt dû à des politiques financières alternatives détermineraient sur l'allocation des ressources et la distribution des revenus. En particulier, l'Auteur essaie de définir le volume optimal, d'un point de vue social, des prêts octroyés aux différentes classes d'emprunteurs et l'optimum social du taux d'intérêt que doivent appliquer les intermédiaires financiers à chaque classe d'emprunteurs. On ne discute pas ici des implications macroéconomiques telles que l'impact sur la stabilité des prix ou bien le niveau de l'emploi.

L'Auteur arrive à des conclusions importantes à propos d'une politique financière souhaitable pour les pays de l'Amérique Latine:

- (1) Il souligne, encore une fois, l'importance des processus financiers dans l'ensemble du développement économique en considération de leur effet favorable non seulement sur l'allocation des ressources, mais aussi sur la distribution des revenus.*
 - (2) L'intermédiation financière est une activité particulièrement coûteuse et on doit donc en tenir compte si l'on veut déterminer une allocation des ressources optimale d'un point de vue social.*
 - (3) Une allocation de crédit optimale d'un point de vue sociale implique des taux d'intérêt différents pour les diverses classes d'emprunteurs. C'est-à-dire que des taux d'intérêt optimaux d'un point de vue social doivent refléter les différents coûts aussi bien que les différentes productivités des différentes classes de prêts.*
 - (4) L'uniformité artificielle des taux d'intérêt pour toutes les classes d'emprunteurs impose des coûts sociaux nets entraînant une situation où on ne profite pas des meilleures occasions productives marginales ou bien une situation où les ressources additionnelles absorbées par la gestion du système financier sont supérieures aux ressources engendrées par son activité supplémentaire.*
 - (5) Le coût social net qu'entraîne l'uniformité des taux d'intérêt est plus élevé lorsque les intermédiaires financiers pratiquent quelque sorte de rationnement. Le rationnement non seulement implique des coûts sociaux plus élevés, mais il se peut aussi que parfois il n'atteigne pas du tout le but d'octroyer des prêts plus importants à certains emprunteurs.*
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Dans ce cas, la bonne intention de redistribuer les revenus aurait un effet défavorable.

- (6) *Le mécanisme optimal pour la redistribution des revenus est un transfert direct d'une somme globale. Dans ce cas, on n'engendrerait ni des coûts sociaux, ni du rationnement.*
- (7) *Les différences entre les taux d'intérêt optimum d'un point de vue social pour les différentes classe d'emprunteurs ne sont pas en contradiction avec ce que recommande McKinnon, c'est-à-dire que si l'on veut développer le secteur financier il faut réduire la dispersion des taux d'intérêt qui caractérise les marchés des capitaux fragmentés.*

McKinnon définit la segmentation des marchés comme l'existence de prix différents pour le même produit alors que l'Auteur indique ici que les différentes classes de prêts représentent des produits différents. D'autre part, il faut faire une distinction entre les différences de taux qu'engendrent les politiques financières elles mêmes — lorsque des taux d'intérêt préférentiels favorisent des classes spécifiques d'emprunteurs — et celles qui découlent d'une différence réelle de coûts et rendements sociaux.

Les différences qu'engendrent les politiques financières peuvent et doivent être éliminées par décret, c'est-à-dire qu'il faut éliminer la différenciation légale, artificielle et la segmentation relative. Il est aussi souhaitable de réduire les différences de taux d'intérêt qui découlent des différences réelles des coûts sociaux de l'intermédiation, même si on ne peut pas le faire par décret. Dans chaque situation c'est la constellation des fonctions de production des biens et des prêts aussi bien que la rareté de nombreuses ressources, telles que le personnel qualifié, les informations et les moyens de communication, qui déterminent la structure des taux d'intérêt optima d'un point de vue social pour cette situation. Si l'on veut réduire le coût d'intermédiation et les différences entre les coût du crédit pour les différentes classe d'emprunteurs, qui sont toujours élevés dans les pays en voie de développement, il faut introduire des innovations technologiques et promouvoir l'accumulation d'informations dans le secteur financier.

Il est donc important de ne pas décourager le développement de ce secteur par des politique financières qui entravent l'augmentation de productivité et la réduction des coûts d'intermédiation. En particulier, il ne faut

pas fixer arbitrairement les taux d'intérêt à des niveaux si bas qui déprimeraient l'intermédiation financière et ne permettraient pas aux instituts de crédit de couvrir les coûts du crédit alloué à des classes d'emprunteurs particulières.

- (8) La majorité des pays en voie de développement ont établi des plafonds pour les taux d'intérêt. Ces plafonds ont été si bas qu'ils ont engendré le rationnement du crédit pour plusieurs classes d'emprunteurs aussi bien que l'exclusion de nombreux producteurs des portefeuilles de crédit des intermédiaires financiers.*