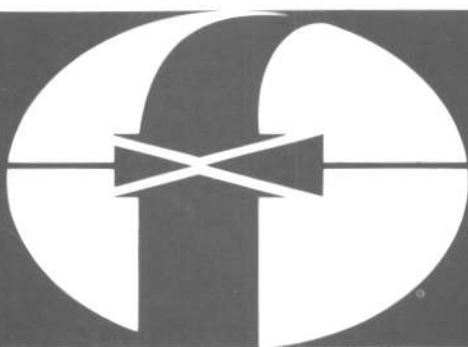


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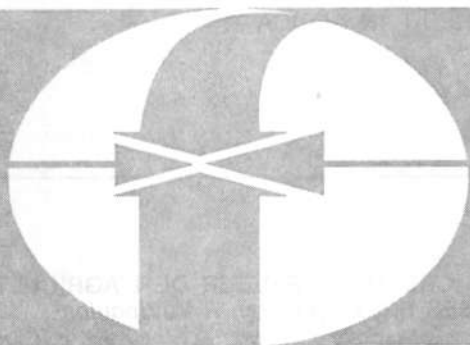


CASSA DI RISPARMIO DELLE PROVINCIE LOMBARDE

4 - 1976 - III



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AGRICULTURAL LOAN EFFECTIVENESS AND CREDIT REPAYMENT (*)

1. Of the substantial borrowing associated with farm households, a good deal does not meet the eye. Such is the borrowing from informal sources, like the village money-lender, the esusu, the local loan shark, the grocery store, relatives or friends. This invisible borrowing usually does not present serious repayment problems. It is either done on substantial collateral, or else, when it is a personal loan, the special relationship between borrower and lender — including the coercion the lender can bring to bear upon the borrower — guarantees against default.

Conversely, the short-term loans from formal sources, including the government agencies and banks, are commonly plagued by high default ratios—as high as 30% in many less developed countries, if one also considers the «roll-overs» as defaulting loans. The special nature of these loans explains why they are highly «defaultable». First, they are highly attractive loans, usually given at a low or even negative interest rate and with minimal or no collateral. As a result they have an element of adverse risk selection in them, which makes the demand commonly greater than the supply, since they are superior substitutes of informal credit. Second, and for the same reasons, their repayment is treated as the residual after the more expensive and more readily collectible informal loans have been repaid.

An important question that arises is to what extent formal and informal agricultural credits are competitive, rather than complementary? The experience under the Brazilian Rural Credit Law of 1965, studied by Dale W. Adams and Joseph L. Tommy indicates that a 30 percent increase in the number of borrowers from institutions in the period between 1965 and 1969 was offset by an almost equal decrease in the number of borrowers serviced by informal lenders. This perfect substitutability between formal and informal credit, if it is universally true, suggests an important corollary: by expanding formal agricultural credit,

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the government not only helps make the informal credit supplier honest, it might even lead to its demise. More important, this additional credit may not increase substantially the loan repayment problems of the formal sector, since the village moneylender has already trained his customers to repay their loans—and promptly!

2. The nature of the small farmer as borrower also affects the credit repayment record. Small farms represent family-firm complexes, in which the consumption and production activities of the household are commingled. As a result, the lender is never assured that the credit extended will be truly directed to production purposes rather than to consumption expenditure. Even when credit is given in kind, e.g. fertilizers or other modern inputs, it may well represent substitutional rather than additional production expense, with the released resources being directed to consumption purposes.

3. It is not only production and consumption activities that get commingled in farm households and may thus divert the use of credit. In the family-firm complexes different production activities can also be commingled and credit can be diverted to different production uses with higher pay-offs. The Brazilian study of Adams and Tommy found that a large number of farmers are involved in substantial non-farm activities, such as trade, business or the professions. In fragmented capital markets the pay-offs to different investments, such as trade, education, or agriculture, differ sharply. The rate of return to non-farm business investment is usually the highest, with the range commonly starting from over 30 percent for the former and declining to below 10 percent for the last. If such opportunities exist, the family-firm complex that is also involved in other production activities may divert farm credit for financing more profitable investments, such as health, the education of children, or business ventures.

Depending on when the return from these other investments is realized, and what part of it is monetary, the agricultural loan may or may not be repaid. The fact still remains that a good deal of farm loans are diverted to non-agricultural uses.

4. Agricultural credit diverted to consumption expenditure has zero pay-off and high probability to lead to default. Credit diverted to non-agricultural production purposes may also lead to default, despite the fact that its pay-off is probably higher than it would have been in agriculture—otherwise it would

have been placed there. Finally, another category of defaultable loans should be mentioned: they appear when the borrower knows that he can get away with it, whether the pay-off to credit is low or high. It is clear that in all these cases the protection of the integrity of the financial system requires that every attempt is made to collect on these loans—if for no other reason, to avoid the « demonstration effect » that would lead to imitative behavior.

It is the inescapable nature of agricultural production that some loans will go bad because of acts of God or the vagaries of the weather. Still other loans may not be repaid because they were almost forced upon the farmer to make him participate in an experiment that turned sour—be it to plant ginger for which it turned out there were no markets (the case of Ghana), or to use a new variety of seeds that was ill-adapted for his environment.

It is not only the acts of God, but the acts of Government also that may lead to default. In these two cases the grounds for pressing with the collection of the bad loans are very weak. Indeed one can make a case for the Government to assume these loans: in the case of catastrophe due to natural causes forgiveness of the loan is equivalent to crop insurance, while in the case of the introduction of new technology it is equivalent to insurance of yields—both offered at public expense.

5. Since low (or zero) pay-off is the most important reason for low repayment records of farm credit, it merits some further examination. Credit is only one of a number of complementary inputs that make agriculture profitable: the others are fertile land, motivated labor, water that can be controlled, fixed and operating capital, plus the inputs that credit buys, mostly modern inputs such as fertilizer, pesticides, insecticides, etc. The low level of the other complementary inputs can make the pay-off to credit small.

From the empirical point of view one needs to estimate cross elasticities of the various complementary inputs, and of output, with respect to credit in order to answer questions relating to the pay-off of credit. Unhappily this cannot be done within the context of the one-equation approach of the traditional production function analysis, since that approach rules out the question by assuming independence of the factors of production. A multiple equation linear programming technique or a system of equations deriving from the specification of a profit function are the appropriate tools for this purpose. Since these tools have not been extensively used to study credit questions at

present, this explains why our notions on cross elasticities and the pay-off to credit use are at present minimal.

6. Estimating the physical pay-off to agricultural credit that was suggested above—its ability to be combined with inputs and produce satisfactory marginal return of agricultural output—is only part of the monetary pay-off of credit that eventually will determine the loan repayment records. Price is the other factor that enters the discussion and there the distinction between small and large farms becomes especially important.

Substantial evidence has now been accumulated to suggest conclusively that the productivity of land, in terms of physical output, is generally higher on small farms than on large. One reason for the higher yields per hectare of land in small size agriculture than in large is that the former operates with scarce land and abundant labor, which it combines to maximize the yield per hectare, while the other has the converse relative endowments and therefore concentrates on increasing output per unit of labor. Still, after the relative prices of the factors that differ in the two size farms are considered, it appears that the higher productivity of small farms is real, associated with the superior quality of its labor force. The supervisory role of the owner-manager and the superior effort contributed by diligent and motivated family members may be instrumental in explaining the productivity advantage of the smaller farms. It may well be the case that when it comes to eliciting maximum output from a piece of land, the family farm is hard to beat. Two corollaries arise from this observation. First, in a real world of the Walrasian type, there exist diseconomies of scale in agricultural production that favor small size. Second, in a real world, and aside from any issues of divisibility of mechanical technology, the modern inputs of chemical-biological agriculture which credit provides are neutral to scale.

It is nevertheless definitely possible that the real Walrasian world may become distorted when money prices are superimposed. This may well happen especially in agriculture. In a money economy there exist financial economies of scale that work against the small farms. In addition, the modern inputs that display technical neutrality to scale, within a market context may become subject to economic bias against the small farms. This happens because most market prices are biased at the micro-level, and in a systematic way, against small farms. The small farmer suffers from being able to purchase only small quanti-

ties of inputs and sell small quantities of output at a time. Market institutions are strained to the breaking point when it comes to collecting from and distributing to small farms: the cost of collecting milk from one cow each is prohibitive and government distribution shops and road networks are necessary to deliver fertilizer to the small farmer. That he has little security to offer makes it difficult to obtain long-term loans on reasonable terms. Small farmers are thus undercapitalized in storage capacity and have to sell their produce at harvest time when prices are low. These are conventional costs of market operation that are reflected in market prices and which the small farmer must bear.

The combination of diseconomies of scale in production with financial economies of scale may make the small farm operation rather unprofitable in money terms. While small farmers may be unexcelled in eliciting the maximum quantity of output from a unit of land, they are certainly handicapped if they are to deliver to the market-place output at a minimum cost per unit. The purpose of farm credit is precisely to monetize small farms and to make them better able to cater to the market economy. If this attempt is not combined with correcting also other market prices that are distorted against the small farmer, the money pay-off of farm credit may be very low. This is then another reason for high rates of default and poor credit repayment records for small farmers. The study of cross elasticities of different inputs in production that was mentioned under (4) above can be done within a system of equation. The problems of production and financial economies or diseconomies of scale can be studied by combining the system of equations with firm-specific prices that account for the bias that the market mechanism may be displaying against the small farms. The tool of the profit function we mentioned above can handle this problem very well, since prices enter as exogenous variables that vary from farm to farm. One of these prices must, of course, be the price of credit.

7. Combining small farm credit with the successful operation of cooperatives may improve the repayment record for two reasons. First, the important feature of cooperative organization is that it presents opportunities to combine the small farm efficiency in production with the price advantages that are available normally only to large farms. The fact the cooperative as a supplier and as a marketing agent has attained a critical mass, makes it possible to take advantage of the lower prices that are usually associated with bulk operations. On

the other hand, since all the members of the cooperative are effectively cosigners for the loan, channeling credit through the cooperative reduces the adverse selection of risk—that we noted under (1) above.

Pan A. Yotopoulos

EFFICACITE DU CREDIT EN FAVEUR DE L'AGRICULTURE ET REMBOURSEMENT DES PRETS

RESUME

Le bas taux de remboursement qui normalement caractérise les prêts offerts par les établissements de crédit aux agriculteurs dans les pays en voie de développement s'oppose au bas taux des non-paiements vis-à-vis des sources de crédit non officielles.

Ce qui est dû en partie aux bas taux d'intérêt demandés par le crédit officiel qui déterminent une sélection négative des risques et encore qui amènent l'emprunteur à préférer avant tout le remboursement des formes plus coûteuses de crédit.

Un élément qui caractérise encore le bas taux de remboursement est lié à la nature même des exploitations agricoles, au sein desquelles l'économie familiale, l'entreprise agricole et parfois même d'autres activités de production ne peuvent pas être séparées, ce qui en général détermine très souvent le transfert des fonds octroyés à l'agriculteur vers la consommation ou vers des initiatives économiques différentes.

La capacité fondamentale de remboursement de l'agriculteur provient d'ailleurs de l'apport du crédit au résultat économique de la gestion de l'exploitation agricole. Ce résultat est subordonné soit à des événements naturels non prévisibles, soit à des interventions gouvernementales ayant parfois un effet négatif : dans tous ces cas, le non-remboursement n'est pas dû à l'emprunteur. Si par conséquent le principe même du remboursement doit être sauvegardé, c'est le gouvernement qui doit le faire en le prenant à sa charge.

Le rendement de l'investissement dans l'agriculture financé par le crédit provient d'ailleurs d'une série d'« inputs » liés entre eux par des relations de complémentarité dans la fonction de la production: le crédit à lui seul ne garantit pas un revenu assurant la possibilité de remboursement.

En termes physiques, l'on observe en outre des diséconomies d'échelle dans la production et une neutralité technique par rapport à la dimension dans l'emploi de « inputs » modernes, tandis qu'il existe des diséconomies d'échelle d'un point de vue financier et en relation aux processus de commercialisation du bien et de l'acquisition des facteurs. La combinaison de ces phénomènes amène en général à un faible rendement du crédit pour l'agriculteur, ce qui explique d'ailleurs la difficulté de remboursement.

Les structures coopératives peuvent présenter pour l'activité agricole une solution utile pour éviter les diséconomies d'échelle dans la production et pour récupérer au contraire les économies d'échelle dans les processus financiers et pour s'approvisionner et trouver des débouchés sur les marchés.