A Peep into the Jungle of Literature on Informal Credit Arrangement : With Focus on Market Interlinkages

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Abstract

The mainstream economic theory completely ignored the analysis of microeconomic arrangement in the traditional societies of low income countries. There has been a change in attitude of economists beginning from the 1970s. One of the aspect that has generated the interest of academic economist in the last three decades or so is the informal credit arrangement. This essay reviews the theoretical dimension of debate in informal credit that surface during the 1970s and 1980s. This short essay captures the major tenets of the debate.

The paper begins with a brief introduction of the subject matter. The whole controversy is then divided into the main stream and the alternative approaches. Both of these approaches are analysed in terms of: (i) credit-land, (ii) credit-labour, and (iii) credit output interlinkages. The paper ends with a very short description of the treatment of interlinked credit in Nepal.

Introduction

Market interlinkage is an extension of economic theory to analyse the production and exchange process of predominantly agrarian and rural-based economies of third world countries. Although interlinkage is a common mode of transaction in less developed agrarian economies, as an analytical tool it surfaced in economic theory since the early seventies. More specifically Bhaduri (1973) is credited with initiating the debate in this (see Braverman and Guasch, 1986) direction. Interlinkages of markets have been defined

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in various ways. If at least two interdependent exchanges are simultaneously determined, an interlinked deal is said to have occured. Or, a transaction will be addressed as interlinked when two parties trade in at least two markets on the condition that the terms of all trades between them are jointly agreed upon.

There have been so many contributions to the literature on interlinkage in the last two decades that a reviewer faces a problem in organising them in a single essay. The organisation of review can follow one or some of the following sequencing:

- chronological,
- in terms of nature of interlinkages,
- in terms of theoretical/empirical content,
- in terms of specialisation of activity of the contracting parties,
- in terms of rationale of interlinkage.

Following the tradition of two earlier researches (Floro 1987, Geron 1989), this review adopts the last approach in combination with the second.

Like other outstanding issues in economic theory (in development economics, in particular) the concept of interlinkage too could not remain immune from conflicting/contrasting opinion of economists. At one end there are authors who contribute to the notion that interlinkage is the internalisation of externalities which is so rampant in poor economies. According to them, the absence of contingent markets such as insurance and financial intermediation results in asymmetric information which manifests in moral hazard and adverse selection obstructing the outcomes that would otherwise obtain from the operations of natural market forces. Interlinked deals, in this view, are therefore efficient/rational responses to problems of market isolation, default risk, transaction costs, moral hazards, incentives and screening.

At the other extremes there are economists who view market interlinkages as semi-feudal transactions which strengthen the power of the lender to strangulate the borrower. This approach is based on the premises that market exchanges are not impersonal and credit exchange relations are inextricably linked to production relations. Furthermore, interlinkage empowers lender to restrain yield raising innovation so that he can maintain his socially dominant status-quo position (see Floro 1987, 71-74).

I would term the former approach as 'mainstream' and the latter as 'alternative'. The review proceeds with the former.

1. Market Interlinkages: The Mainstream Approach

Most of the contributions analyse interlinkages in terms of credit-land (tenancy) labour, and product markets. This review will be paraphrased accordingly.

1.1 Credit-land (Tenancy Market)

The pioneering contributions in this sphere come from Braverman and Stiglitz (1982), and Mitra (1983) which were subsequently improved upon by Braverman and Guasch (1984), Gangopadhyay and Sengupta (1986), Stiglitz (1988), Bell (1988), and Otsuka, Chuma and Hayami (1989). Srinivasan (1979) and Bell and Srinivasan (1989) will also be briefly reviewed.

All the contributors (except the last two) frame the output-sharing contract between the landlord and his tenants as a principal-agency problem. In a two period model where the tenant receives income in the second period, borrowing in the first period (basically for consumption) becomes imperative. The landlord-lender's control variables are output-sharing rate (α), some fixed payments (β), and size of the plot to be allotted to each tenant. Output is supposed to be a function of tenant's efforts (e), and stochastic element (the state of the nature, O), which normally are not known a priori. Interlinkage of credit provides some leverage to the landlord-lender to induce tenant's effort such that output is maximised. This way, landlord will be assured of a higher level of output and tenant can meet his consumption requirement in the first period. This pareto-improvement, in general, is the result of interlinkage of credit with land market. B-S (1982) and Mitra (1983) assume that maximum collateral value is independent of the tiller's future income and tillers are constrained to refrain from outside creditors. If so, then Bell (1988) and OCH (1989) argue that tiller or agent's consumption is perfectly enforceable by the landlord which, in reality, is not true.

Moreover, both the earlier models indicate that borrowers will consume all the borrowing which is too restrictive. Also, B-S do not assume complete crop failure and Mitra assumes away the prospect of strategic default, both of which seem to be unrealistic. Mitra assumes perfectly competitive credit market where interlinked loan rate equals unlinked loan rate which Bell and OCH consider to be implausible. B-S assume pure share cropping which is more realistic. Mitra deals with the problem of complete crop failure by introducing a linear sharing rule, in which tenant may also receive a fixed side payment in period 2. This sharing rule is somewhat akin to Encarnacion (1989).

The B-S and Mitra models can not explain the prevalence of low interest rate in interlinked transactions which occur in Gangopadhyay and Sengupta (1986), Bell (1988), and OCH (1989). Braverman and Guasch (1984) are of the view that landlord can devise a schedule of contracts, from which tenants can choose appropriate contract based on their individual ability. In monopolistic competition, the only possible equilibrium is a sorting one.

Srinivasan (1979) refutes Bhaduri's (1973, 1977) hypothesis that landlord will impede innovation by saying that if landlord is a monopolist as presumed by Bhaduri, then he can reap the gain from innovation. So does Mitra. He also demonstrates that borrowing is not an inferior good which falls with an increase in income. Bell and Srinivasan (1989) also refute 'semi-feudalism' hypothesis through an empirical observation of three Indian States, where the incidence of interlinked contracts were higher in more developed rather than in less developed states.

1.2 Credit-Labour Interlinkage

Most of the contributions in this aspect of market interlinkage have come from Indian economists. The prominent contributors are Bardhan and Rudra (1978, 1980, 1981), Bardhan (1980, 1983, 1984), and Bell and Srinivasan (1989). Another feature of these contributions is that most of them are empirical.

In a series of jointly-authored papers, Bardhan and Rudra (1978, 1980, 1981) attempt to investigate the extent and rationale of credit-labour inerlinkage in eastern India. They cover a period of 1975-1979. They found that landlord is the major source of credit supply. He derives predominant share of income from cultivation which is only partly supplemented by trading and lending. Production loan was more prevalent in relatively developed regions whereas consumption loan was more common in less developed villages. Also, consumption loan was more popular among attached labour as compared to casual labourers. A larger proportion of landless borrowers were found to be rendering labour services to the landlord which was lesser among land-owning labourers. They observe a declining incidence of debt peonage. These studies conspicuously miss the wage differentials between linked and unlinked labour services.

Bardhan (1980, 1983, 1984) builds on the notion just described. He compares attached labour to tenured and salaried employees. The system of labour attachment is a market solution to the employee's need for job certainty and employer's need for readily available labour supply. Advanced labour hiring is a response to uncertainty of later stage of production that emanates from uncertainty of weather, and this reduces the risk of both parties. It is more so, when labour supply is the only collateral of the borrower which can not be traded to other creditors. We quote from Bardhan (1980) to summarise the argument.

> "... in a world of costly information, credit system based on personal trust and interlocking obligations in different transactions between the same parties is a way to ensure against either party ending up with too many of Akerloff's (1970) lemons and to economise on some of the excessive costs of acquiring information in imperfect markets."

1.3 Credit-Output Interlinkage

This is an interlocked mechanism in which the trader lender advances credit to farmer-lenders ahead of harvest with the latter obliged to market his produce with the former following harvest. We have three studies dealing with this type of marketing arrangement. They are Geron (1989), Esguerra and Fabella (1990), and Ghate and Associates (1990). In fact analysing interlinked arrangements based on lender's specialisation of activities follows Floro (1987) which will be taken up in Section 2.2.

Geron (1989) considers the case of a trader-lender who faces farmer-borrowers borrowing for consumption and production purposes. The one borrowing for consumption, maximises utility and responds through effort. Those who borrow for production maximise income and respond through inputs demand. Lender incorporates these reactions of the borrower into his maximisation problem. The lender who wants to maximise profit intends to procure more of the harvested crops of the borrowers through advancing early loans. His control variables are procurement price, p and interest rate, i. Lender through a combination of p and i influences borrower's output and thereby his profit. This arrangement suggests a flexible lending. If there are more lenders or if loan demand becomes more elastic the trader-lender will be constrained to close the gap between p and i. Like OCH, and Gangopadhyay and Sengupta i may even approach zero. In her survey Geron finds that lenders are not as extortionist as postulated by Bhaduri and Floro. Unlike Floro, she also finds lender favouring landowners with around three hectare's holding rather than the richer farmers.

Regarding interest rate she finds that after adjusting for higher proportion of zero interest loans in underdeveloped areas, where trade credit is less important than in developed areas, average interest rates are higher. But for non-price competition among lenders in developed areas which result in better services, effective interest rates in developed area would even be higher.

Esguerra and Fabella (1990) generally support Geron's findings with one exception. That is, the likelihood of obtaining a loan from a trader-lender is positively influenced by borrower's land holding size.

Ghate and Associates (1990) is more a probing into the extent and ramifications of informal finance in Asia, rather than an independent enquiry into market interlinkages. In a small chapter they consider interlinkage of credit with rural product market and opine that this is inversely related with the degree of commercialisation of agriculture. Like others in the mainstream tradition, to them also interlinkage is a response to incomplete markets.

2. Market Interlinkages: The Alternative Approach

This approach views market interlinkages as an aggregative and integrated system. Therefore it is difficult to categorise the analyses belonging to this approach as was done in the section on mainstream literature. However, for symmetry, similar division is followed. This division, however, ignores many overlaps.

Bhaduri (1973, 1977, 1979, 1986) is the pioneer and the most controversial advocate of this approach. The major premises of this approach are:

(i) rural transactions are very personal and transacting parties know each other very well,

(ii) the rural lender exercises monopoly power and he is the one who dictates all the terms and conditions of transactions, the tenant-labourers being the passive acceptors,

(iii) because of rigidity of formal lending institutions in terms of accepting collateral and absence of market for alternative collaterals, the borrowing party does not enjoy access to the formal source of credit,

(iv) the rural demand for loan is almost interest-inelastic in nature because a large part of loan demand is for subsistence consumption requirements,

(v) there prevails higher and usurious interest rate.

2.1 Credit-land Interlinkage

Bhaduri's specially (1973, 1977), papers model a landlord-lender who derives income from self-cultivation, output-share from tenancy (property income) and usury income. Bhaduri considers a bundled deal where a landlord grants a tenancy only if the tenant also borrows from him. Because of asymmetry of bargaining power, the lender extracts all the surplus from the tenant. Also, because of collateral which is usually undervalued, the default risk is entirely transferred to the borrower.

The major controversy surrounds to Bhaduri's assertion of usurious interest rate and landlord's reluctance in innovation as it would result in a lower income to him. This will be so because following yield-raising innovation borrower's demand for consumption loan and consequently lender's usury and thereby overall income would fall.

Regarding interest rate, it is commented that since default risk is high, to cover risk-premium, interest rate would have to be higher too. Bhaduri however ignores cost of lending approach to interest rate determination. The provision of collateral entirely banishes the lender's default risk. It is argued that, the lender may on the other hand induce default through appropriate selection of interest rate and undervaluation of collateral.

Regarding innovation it is pointed out by his critiques that, if the landlord-lender enjoys monopoly power then there is nothing to prevent him from extracting the entire surplus and push the tenant to the reservation frontier. However, according to Bell (1988):

"If one introduces uncertainty and costly monitoring which subjects the tenant's effort to moral hazard, the landlord will find control over both interest rate and output-share profitable, so that a binding restriction on either could render certain innovation unprofitable even if they promised higher expected output for each level of effort."

Bhaduri's model has been modified by Borooah (1980). In his work, the size of the loan is an additional control variable available to the lender in conjunction with the rate of interest charged on the loan. The lender reduces interest rate and induces default by encouraging borrowers to take larger size of loans.

2.2 Credit-Labour Market Interlinkage

Basu (1983, 1984) models credit-labour market interlinkage as a principal-agency problem. To him interlinkage is a response to isolation of markets. A lender faces potential default risk in credit transaction when he lends to a party over which he has no control. In this situation the borrower cannot go to other lenders even if his familiar landlord charges a higher interest rate. This is because if he does so, he will lose access to future borrowing. This anomaly is avoided by interlinkage. When transactions are interlinked, prices whether of produce or labour or capital lose their unique market equilibrating identity. In credit-labour market interlinkage the wage-interest vector thus jointly reflects the price of labour and loans.

Basu shows that geographical wage diversity exists with frictionless geographical mobility of labour as a result of capital market imperfections. Lenders confine their lendings to labourers under long term contract to them. Spatial wage diversity is then explained to reflect differential in interest cost to money lenders across the geographical areas.

The general mechanism through which private credit assumes its critical role in interlocking other transactions is based on the treatment of collateral. The collaterals that the borrowers possess are not easily marketable elsewhere which gives lender power to undervalue it (see Basu, 1984).

Hart (1986) also deals with the problem of labour contracts in agrarian economies and opines that unlike Bhaduri and the like interlinking can persist even in emerging capitalistic economies. To her what is important is 'social control'. Labour arrangement is an outcome of interactions between labour management and social control. Those who control means of production must not only devise ways of mobilising the labour of others and ensuring work discipline, in addition they confront the problem of exercising social control.

Datta, Nugent, Tishler and Lin-wang (1988) is somewhat an esoteric paper. They do not limit their analysis to the confine of a single market structure. Similarly they do not focus only on interlinked transactions. Considering both linked and unlinked transactions in various market forms they conclude that when land-owner enjoys monopsony power in the market for interlinked labour, he manages to lower the wage rate by reducing the demand for labour.

They explain existence of interlinkage without either assuming as much heterogeneity and observational difficulty. In a context in which consumption requirements are continuous but production and employment subject to seasonality, the explanation of seasonality hinges on differences in access in various markets between poor working households and better educated land-owner with or without monitoring costs in the use of hired labour. Greater seasonality and differential access can reduce demand for interlinked labour.

Srivastava (1988), in an empirical survey of three villages in Uttar Pradesh state of India, observes three broad kinds of interlinkages, namely, (a) lease transactions, (b) credit transactions and (c) farm servan He refutes the hypothesis that interlinkage involves only consumption credit. Lease transaction basically involved production credit. In credit transactions repayment is made either through produce or through labour services. Labour service also included rearing of livestock on share basis. Repayment involved underpricing of both the produce and the labour services. In case of farm servant, the employer also claimed for the priority use of labour services of family members. The implicit contract also entailed explicit obligations on wives and household members of the farm servants.

In another empirical observation of six villages in Orissa State of India, Sarap (1990) observes following kinds of credit-labour interlinkages.

(i) Casual labours. The loan extended is basically for consumption purposes. The intensity of forward purchase of casual labour increased with popularisation of high yielding varieties, which has shorter duration of growing. In this kind of transaction wage is determined at the time of contract, which is lower than the market rate.

(ii) Sarap also encounters the case of group of casual labourers. The lender transacts through the group leader. Payment is done at the prevailing market rate.

(iii) Attached labourers. The labourer receives certain amount of grain every month. Annual payment was made at the end of contract period.

2.3 Credit-Output Market Interlinkage

Floro (1987) is a very comprehensive study of interlinkage of credit with other markets in an agrarian economy. She basically extends the approach of Bhaduri. Where she differs is, the predecessors analysed market interlinkage on the basis of nature of transaction whereas Floro studies market interlinkage based on the specialisation of lender. To Lim (1990)

"In neoclassical theory, the theory of 'interlinked' markets, especially in South Asian literature (and by the U.S. economist Stiglitz) concentrates on the interlinking of markets for credit, land and labour. It was Floro (1987) who pioneered the study of the interlinking of credit, input and output markets."

Floro distinguishes between a landlord (farmer) lender and a trader lender. ɪn semi-feudal agriculture where land still commands a premium over other assets, the farmer-lender's objective of lending is 'primitive accumulation'. Since land market is not developed and hence hard to obtain through normal transaction the lender tries to acquire it by deliberately inducing default through granting bigger amount of loan at lower rate of interest, rolling-over the loan, and undervaluing the land pledged as collateral. For this purpose the lender wants to attract poor risk borrowers.

After the emergence of trade-capital whose primary objective is to accumulate profit from compressing the period of circulation of trade capital, the lender advances credit before the harvest on the condition that borrower sell his produce after harvest only to the lender. Since unlike farmer-lender he is not interested in usurping land, he prefers rich farmer-borrower with low propensity of default. Thus a trader advances loans when his capital remains idle and be assured of supplies for trade. By thus circulating capital and entering into an interlinked deal the trader lender is able to maximize profit.

For further details on these feature please also see Georgescu-Roegen (1960), Binswanger and Rosenzweig (1986), Rosenzweig (1988), Otsuka, Chuma and Hayami (1990) and Quisumbing (1990).

3. Market Interlinkages: The Case of Nepal

There is scarcity of literature dealing with informal sector in rural Nepal. In a study of Jhapa district in eastern plain of Nepal, Sharma and Katwal (1983) deal with the case of long term labour contracts. Permanent labour is the one when mobility of labour across employers is completely prohibited during the contract period. Attached labour on the other hand faces very constrained mobility. Attached labour contract is accompanied with land and credit contracts. Under land contracts the employer provides small plot of land for cultivation, output from which is either shared or wholly allotted to the labour. Moreover, employee is also assured of access to credit for consumption, social and emergency purposes. They conclude a la Bardhan that this type of land, labour and credit interlinkage ensures of assured labour supply with less shirking to the landlord. At the same time labour is also assured of regular employment.

Dhakal (1991) conducted a survey in mid-western hill district of Gorkha in 1990 to investigate the salient features of informal rural credit markets. He found the prevalence of credit and labour contract, credit and share tenancy contract and some overlapping of the two kinds of contractual arrangements. The survey revealed a predominance of credit-labour market interconnectedness. Dhakal's findings that interlinkage is a means to reduce supervision costs, to deal with incentives problems or as a response to incomplete markets or as collateral substitutes are in consistence with Bardhan (1980), Braverman and Stiglitz (1982), and Mitra (1983). He finds a higher interest rate for kind transactions vis-a-vis cash transactions in the accessible area and just the reverse in inaccessible areas. What is most surprising is the fact Dhakal also observes higher interest rate in interlinked deals as compared to unlinked transactions because of underpricing of labour output.

For further glimpses of informal credit arrangements in Nepal, please also see James and Quibria (1988), NRB (1980), and Mudbhary and Gill (1990).

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