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The Impact of Connectivity on Market Interlinkages: Evidence from Rural Punjab

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Summary. — Up to the 1980s it was generally accepted that many key issues in agrarian development could not be studied without an understanding of market interlinkages. Recently, however, this theory has lost its importance in development literature. Based on a household-level survey from rural Pakistan, this paper seeks to re-introduce the importance of interlinkages by illustrating their exploitative potential, particularly in unequal isolated villages where landlords are essentially monopolist/monopsonist. The solution proposed is to break isolation. Making use of an exogenous shock found in the construction of a motorway, the study finds that while connectivity does not break interlinkages completely, it does significantly reduce their exploitative nature.

Key words — interlinked markets, connectivity, bargaining power, South Asia, Pakistan

1. INTRODUCTION

In an article reviewing the literature on interlinked markets, Bardhan (1980) starts by stating "It is being increasingly appreciated in the literature on agrarian development that many of the key issues cannot be analyzed without an understanding of the nature of interlinkage of factor markets (particularly those of land, labor and credit) in the specific institutional context of a poor agrarian economy" (p. 82). This statement was made in reference to a number of studies conducted in the late 1960s and 1970s that emphasized the shortcomings of standard economic theory, based on the assumption of markets being independent, for analyzing equilibria in agrarian societies. They illustrated, both empirically and theoretically, that transactions in rural economies were not made at arm's length, but rather markets were interlinked, with the outcome in a single market being jointly determined with those of other markets. This helped explain outcomes which were previously considered paradoxical, such as wages, rent, and interest rates varying within rural communities without arbitrage arising. When outcomes are viewed jointly, markets are seen to clear, as equilibrium in a single market is not determined independently. The use of this theory for studying agrarian societies continued to grow over the 1980s and the early 1990s with a plethora of studies analyzing their effect on rural development (see for example Bardhan, 1984; Basu, 1983, 1986; Bell, 1988; Bharadwaj, 1974; Swaminathan, 1991). There was an increasing appreciation of the fact that, besides distorting equilibria, this type of market structure had the potential for being highly exploitative of the rural poor, particularly, as shown by Basu (1983, 1986), when villagers found themselves confined to the village economy with only the landlord to rely on for fulfilling their survival needs.

However, in recent years, interest in interlinked markets seems to have lessened so that in the last decade there are few references made to this theory when explaining outcomes in rural economies.[1] Based on a household-level survey conducted in rural Punjab, Pakistan, this paper shows that rural markets[2] continue to be interlinked, highlighting the importance of this literature in explaining economic, social, and political outcomes in agrarian societies. The paper also illustrates the exploitative potential this market structure has toward the poor, particularly when villages are isolated from the external economy, leaving them no option but to approach the landlord. A possible solution suggested for reducing the exploitative nature of this relationship is to provide the poor with alternative options so as to break the hold of the landlord. This could be achieved by improving the link between rural villages and the external markets, thereby making the wider national economy more accessible. Making use of data from rural Pakistan, this paper tests the feasibility of this solution by analyzing the effect a motorway, constructed in 1998, has had on market interlinkages in rural economies.

The remainder of the paper is organized as follows. Section 2 explores the various explanations extended in the literature for the emergence of market interlinkages. Section 3 makes use of game theory to illustrate the exploitative power an all-controlling landlord can have over poor households' welfare, and the change that occurs in the power dynamics when the poor are exposed to outside options. Section 4 makes use of empirical data, collected from Hafizabad district, Pakistan, to highlight the continued existence of interlinked markets in rural economies and the impact connectivity, through road networks, has had on the level and nature of interlinkages in villages in its proximity. The data reveal that, while the road has welfare enhancing effects on rural society at large, the group benefitting the most from market exposure is the historically neglected class—the Muslim Sheikhs. Section 5 concludes the paper.

2. WHY DO INTERLINKAGES ARISE?

There are two main arguments extended in the literature for the emergence of market interlinkages; inequality and the resultant limitation of alternative options, and the desire to increase efficiency in the presence of missing and/or incomplete markets. Asset inequality has meant that a considerable

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majority of the population in developing countries has very little, other than their labor services, to rely on for satisfying their basic needs. While this creates problems for the resource poor population at large, its adverse effects are particularly pronounced in the rural economy where the population mostly depends on agriculture to employ their labor services (World Bank, 2008). Moreover, inequality means that, aside from employment, poor households also tend to rely on the landowner for services such as credit, insurance, and housing (Bardhan, 1980). Furthermore, the social authority land extends toward landlords in developing countries enables them to play a dominant role in the socio-political market, by performing functions such as dispute resolution, provision of social security, and access to local politicians and public resources (Powell, 1970; Scott, 1972). As a result landlords are not only able to interlink economic markets but are also able to tie in nonmonetized social and political services into the transaction bundle (Bharadwaj, 1974). Such linked deals work to firmly establish the landlords' authority and can thus enable them to enjoy considerable control over the actions of the poor (Bell, 1988).

The resource poor arguably have limited leverage in this relationship as not only are their services available in abundance and easily dispensable (Scott & Kerkvliet, 1977), landlessness also tends to lower their social status and thus limit their bargaining position (Bharadwaj, 1974). Hence while, on the one hand, interlinkages enable the poor to gain access to resources necessary for their subsistence (such as credit and housing), on the other hand, the overall benefit of this relationship for them has been questioned as not only is the implicit cost often very high (Aleem, 1990), but also, once established, poor households may find themselves tied into an interlinked relationship indefinitely (Bhaduri, 1973). According to Bhaduri, interlinkages result in households facing high costs for switching suppliers, thus creating monopolistic conditions which landlords can exploit to their advantage.

Basu (1983) argues against this and instead stipulates that the monopoly power enjoyed by landlords comes not from market interlinkages, but through the existence of high "transfer costs or exogenous barriers to entry" (p. 272), which thereby limit the number of suppliers in the market. These barriers arise due to the relatively isolated nature of many villages, as poverty and poor infrastructure make the outside economy largely inaccessible to the rural poor. Interestingly, as argued by Sarap (1991) and Bharadwaj (1974) even in such a monopolistic market structure, landlords have an incentive to interlink markets as it enables them to overcome social customs which may limit their extractive practices in any single market.

However, the benefits enjoyed by landlords from interlinked deals need not always come at the expense of the resource poor, but can also arise due to a reduction in the costs associated with interaction in the rural economy. These costs range from adverse selection to moral hazard problems to transaction costs arising due to uncertainty. Basu (1983) argues that the inherent risk faced by lenders in the rural economy, due to market imperfections, induces them to only offer credit as part of an interlinked deal so as to minimize their 'potential risk'. Despite the analytical appeal of Basu's argument, Bell (1988) nonetheless questions its applicability given the closed-knit nature of village societies, where the household's 'type' is well known and the social and economic costs of defaulting are very high (Sarap, 1991). Bell (1988), instead argues that landlords may choose to interlink markets in an effort to curtail the moral hazard problem inherent in agriculture. Transactions are bundled with the intention of increasing the worker's cost of shirking, as his ability to repay the loan would depend on the total output he is able to harvest.

Moreover, Bell (1988) stipulates that interlinkages may arise even when there are no market failures. The advantage he foresees is a reduction in transaction costs when the demand for labor in the spot market is very high. The benefits to the landlord from such deals are the search costs he saves and the lowered uncertainty from not having to frequent the spot market during peak seasons (Bell, 1988). The savings to the landlord by both curtailing laborers' incentive to shirk and saving on transaction costs means that the transaction need not be conducted below market rates for him to profit. The benefits of these deals to the poor villagers, on the other hand, are questionable, particularly with regard to the extent of protection it affords them in times of crop failure. While Atchi Reddy (1996) has argued that, in the event of a bad harvest, the landlord forgoes some of the contractual claims on the poor, others claim that such an event may place them deeper into the debt-trap and may even result in the poor losing any collateral they may have put up (Bhaduri, 1973). Therefore, it is conjectured that the protection interlinkages offer poor households would vary depending on the context of the relationship—with the expectation being that households who face a monopolistic landlord have lower levels of protection when compared to households who have access to multiple service providers.

While, for analytical purposes, the various justifications for interlinkages can and are discussed in isolation, in reality it is most likely a variety of reasons that lead to the interlinkage of markets (Bell, 1988). Moreover, while the literature is in agreement that landlords' interlink markets in order to increase their own surplus, this section has highlighted that these benefits can arise either though surplus extraction or through a reduction in interaction costs. Which option landlords choose, depends not only on their preferences but also on the environment in which the relationship is cultivated. Interestingly, the empirical section of this paper will demonstrate that the two types of interlinkages are not mutually exclusive. Within the same village it is possible to find both households that are tied into an exploitative interlinked relationship and households whose markets are interlinked in an effort to reduce transaction costs. Upon further investigation it was revealed that which relationship villagers find themselves in depends largely on their social status within rural society.

3. THE GAME

Interlinked markets have been modeled either as a dyadic relationship (Basu, 1983; Bell, 1988) or as a triadic one (Akerlof, 1976; Basu, 1986; Hatlebakk, 2002; Naqvi and Wemhoner's, 1995). A dyad consists of two individuals interacting in one or more transactions, while a triad involves interaction between three individuals in multiple transactions. The difference between the two types of relationships lies largely in the extent of power the resource holder has, his ability to extract surplus from the relationship and the effect it has on a third uninvolved party.

In a dyadic model, surplus extraction is limited to a player's threshold value (Basu, 1983), as anything below this yields a negative payoff, thus disincentivizing the agent from playing the game. Given that the interaction is limited to the two individuals, the disadvantaged player has the option of walking away without incurring additional costs. The only way to get an unwilling player to participate in an exploitative exchange is to change the nature of the game—for instance by