Do Rural Banks Matter? Evidence from the Indian Social Banking Experiment*

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Abstract

The notion that banking could be used as a social service gained currency during the planning era in India. Between bank nationalization in 1969 and the onset of financial liberalization in 1990 the Indian central bank exploited its licensing powers to force commercial banks to open branches in over 30,000 unbanked rural locations. This is the largest rural bank branch expansion undertaken in any country and it led to a dramatic reduction and equalization in population served per bank branch across Indian states. We evaluate the impact of rural branch expansion on rural development by combining differences across states in initial financial development with changes in license regime. The estimates suggest that the banking of rural India transformed production and employment activities and led to reductions in poverty and increases in output.

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1 Introduction

Working out ways to lift people out of poverty is the key objective within development economics. Whilst there is a great deal of rhetoric on this subject we understand little about what concrete steps can be taken. One policy area that has attracted a lot of theoretical attention is credit, access to which has often been seen as critical in enabling people to transform their production and employment activities and to exit poverty (Banerjee and Newman 1993; Aghion and Bolton 1997). Financial backwardness is thus seen as a root cause of poverty as it constrains people from making full use of their abilities.

Cross-country data demonstrates a robust and positive correlation between the growth of banking and financial intermediation and economic growth (King and Levine, 1993; Levine and Zervos, 1998; Rajan and Zingales, 1998). Policy lessons, however, cannot be drawn from this literature as the direction of causality is unclear and the level of aggregation of the data precludes meaningful comparisons across countries. This literature is also largely silent on the poverty reduction issue. The challenge now is to move to the subnational level to try and identify specific banking and finance policies which can affect growth and poverty (see, for example, Jayaratne and Strahan, 1996).

Between bank nationalization in 1969 and liberalization in 1990 India witnessed the largest ever state-led bank branch expansion ever attempted in a developing country. Over the period bank branches were opened in over 30,000 unbanked rural locations. The purpose of this paper is to exploit this policy experiment in order to look at impacts on poverty and growth. In particular, we are interested in testing whether or not the arrival of banks in rural areas enabled people to transform their production and employment activities and to exit poverty.

This attempt to integrate banking into the planning architecture as a means of pursuing social objectives was by no means a specifically Indian phenomena. Propelled forward by a belief in the benevolence of the state one saw, in the decades following World War II, a large number of governments taking control of the banking sector as a means of reaching 'deserving' groups and sectors. Indeed this belief in the power of government intervention in the banking sector to act as a key engine of structural change and poverty reduction dominated policy-making in the post World War II period (see Besley 1995). This trend was not restricted to low income countries – in the United States, for example, the Community Reinvestment Act was passed in 1977. This Act requires banks to ensure that they meet the credit needs of its entire community, including low income neighborhoods (for a recent evaluation of this Act, see Zinman 2002).

From the early 1980s both the benevolence and effectiveness of state intervention in the banking sector began to be increasingly challenged. Whist the centrality of financial intermediation to poverty reduction was not disputed, proponents of this emerging view saw government intervention in credit markets as either ineffective or counterproductive (see Adams et al 1984). They argued that widespread loan default implied that such interventions ended up equivalent to subsidy schemes. Consequently, the rents inherent in such interventions led to capture by the rural elite.

Some go as far as to claim that elite capture, combined with the imposition of interest rate ceilings in the formal sector, led to financial dualism wherein formal concessional funds are concentrated in the hands of the powerful few and terms in the informal markets (on which the poor were forced to depend) worsened (see McKinnon, 1973; Adams et al 1984). In sum, not only was formal subsidized credit ineffective in reaching the poor, it may even have undermined rural development and increased rural poverty.

It is fair to say that by the 1990s the pendulum of policy activism had swung firmly towards this more pessimistic view, and led governments and international institutions to withdraw from credit markets to focus their energies (and money) on alternative providers of credit such as micro-finance institutions. However, the profitability of such institutions remains in doubt, as does their ability to reach poor rural communities (see Morduch, 1999). Also by virtue of their vintage social banking episodes, though numerous and large in scale, have largely escaped serious evaluation.[1] Thus though a large cross-country literature points to the strong and robust links between financial deepening and economic development we remain very much in the dark as regards identifying specific credit policies which are capable of tackling rural poverty. Whether and how government should intervene in the financial sector as a means of pursuing social objectives is particularly unclear.

This paper seeks to address this gap in the literature by providing a rigorous evaluation of the impact of the Indian branch expansion program on structural change and poverty. India is a particularly important place for look for such evidence, both because of the size and scope of the social banking experiment and also because India is home to more than a quarter of the world's poor, the bulk of whom are located in rural areas. The preamble to the Bank Company Acquisition Act of 1969 – the piece of legislation which empowered the state to nationalize commercial banks – makes the intentions of the Indian government plain.

> "The Banking system touches the lives of millions and has to be inspired by larger social purpose and has to subserve national priorities and objectives such as rapid growth of agriculture, small industries and exports, raising of employment levels, encouragement of new entrepreneurs and development of backward areas. For this purpose it is necessary for the government to take direct responsibility for the extension and diversification of banking services and for the working of a substantial part of the banking system".

Bank nationalization was supplemented in 1977 by a major shift in licensing policy whereby the Indian central bank (Reserve Bank of India) mandated that a bank could only open one branch in an already banked location only if it opened four in rural locations with no commercial banks. Moreover, banks had to regularly fulfill targets regarding the number of bank branches they opened in such unbanked locations. In deciding these targets the central bank explicitly sought to equalize and reduce the

[1] Though now widespread, evaluation of the distributional impact of policies using household and other data is a relatively recent phenomena (see Deaton, 1997 for a discussion).

population served per bank branch across Indian states. These placement restrictions were disbanded with the liberalization of the banking sector in 1990. As we document this meant that Indian states with fewer bank branches per capita before the onset of social banking attracted *more* rural branches from 1977 to 1990 when banks gave up on building rural branches.

In the paper we utilize the policy induced trend breaks in the relationship between initial financial development and subsequent rural branch expansion in 1977 and 1990 to study the impact of social banking on rural development in India. The paper forms part of a growing literature where the timing and incidence of government intervention is directly exploited to evaluate impacts on outcomes (see Almond, Chay and Greenstone, 2001). Our approach is similar to Duflo (2001) who evaluates the impact on education and wages of a government school construction program in Indonesia by combining differences across regions due to school construction being inversely related to initial enrollment and differences across cohorts due to the timing of the program. We focus on the rural sector in India as this was the main target of branch expansion and is where the bulk of the poor are located. Using a long panel of rural poverty measures constructed from household surveys allows us to gain insights into whether state-led credit expansion was capable of promoting social objectives. In addition, by exploiting panels on output, employment and wages, we are able to identify channels through rural diversification and growth which might account for the rural poverty effects we observe.

The paper is organized as follows. In Section 2 we describe the institutional and policy background and our data-set, Section 3 contains the empirical analysis, and Section 4 contains a discussion of the implications of our findings for policy.

2 Background and Data

The Report of the 1951 All-India Credit Survey represented a watershed in the history of banking in India.[2] The survey found that of the total amount borrowed by cultivators in 1951-52 about three percent each came from government and cooperatives, and less than one percent from commercial banks. Non-institutional credit agencies accounted for the bulk of lending to cultivators, with professional moneylenders contributing nearly half of the total and agriculturist moneylenders another quarter (see Table 1). Commercial bank operations were confined to urban areas, and geared towards the financing of trade and commerce activities.

The report concluded that financial backwardness was a root cause of rural poverty, and that commercial banks needed to be harnessed to both enable poor, rural households to adopt new technologies and production processes, and to displace 'evil' moneylenders who exploited their monopoly power to charge high rates

[2]Long standing concerns of the British Administration that rural indebtedness caused backwardness and poverty served as the motivation for this survey. This survey's recommendations foreshadowed initiatives by governments and international organizations across the developing world to expand access to formal credit in rural areas (see Besley 1995). The survey viewed informal finance as anti-developmental, exploitative, geared towards consumption as opposed to investment and incapable of providing an appropriate range and volume of credit.

of interest. These conclusions formed the basis for the Indian central bank policy via-a-vis commercial banks for the next four decades.[3] The launch of the State Bank of India – a government owned commercial bank in 1955 represented a first step. The finding in the 1961 census that more than half of Indian towns, and virtually all Indian villages remained without a source of credit led to political demand for the use of commercial banks as agents of change in rural areas. This culminated in the nationalization of the fourteen largest Indian commercial banks in 1969 (Balachandran 1998).[4]

The point of bank nationalization was to empower the state to target financial backwardness as a means of promoting social objectives. The core aim was to reduce and equalize the average population per bank branch across Indian states. To achieve this unbanked locations – that is, census locations with no prior presence to commercial banks – were targeted (Desai 1987).[5] The Indian central bank, in consultation with state authorities and commercial banks, drew up state-wise lists of these locations. One commercial bank was designated as the 'Lead Bank' in every Indian district, and was made responsible for fulfilling branch expansion targets and license rules passed down by the Indian central bank (see Table 2).[6]

As can be seen in Figure 1 rural banking in India only began in earnest at nationalization. At this point banks still had some latitude as regards placement due to continuing emphasis on the banking of towns and efforts to satisfy pent up urban demand. This came to an abrupt halt on January 1, 1977 with a drastic change in the license rule – for every branch opened in an already banked location a commercial bank must open branches in four unbanked locations. This licensing rule, combined with district-wise setting of targets, implied that financially backward states received more bank branches as a means of equalizing population per bank branch. This licensing rule remained in place until 1990 when the Indian central bank dismantled this program.

Table 3 gives means and standard deviations of the variables that we use averaged for the 1961-2000 period. We use the cumulative number of branches opened in rural unbanked locations as our social banking measure.[7] The total number of census locations with at least one bank (banked locations) in 1961 in a state is our measure of initial financial development. Focussing on the placement of bank branches allows

[3]In the 1950s and 1960s the Indian central bank experimented with expanding rural access to formal credit via the cooperative movement. However, by the late 1960s the central bank decided that increasing the quantum of financing of credit cooperatives by the Indian central bank could not address the central problem that the bulk of rural India remained without a source of formal credit

[4]In 1980, a further six banks were nationalized.

[5]There were two other components of social banking: first, the provision of cheap credit to the rural poor via the enforcement of interest rate ceilings and a requirement that rural branches maintain a credit-deposit ratio of 60%. Second, directed lending to specific sectors via the requirement that banks meet specific targets in terms of percentage lent to "priority sectors" which included agriculture, small businesses and entrepreneurs.

[6]Districts are the administrative unit below the state. There are roughly 500 districts in India.

[7]As each rural location that receives a branch transits from being classified as unbanked to banked this variable represents a cumulative count of the number of banked rural locations in a state in each year.

us to sidestep many of the endogeneity problems associated with the study of credit flows.[8]

As can be seen in Figure 2 social banking policies had a profound impact in terms of reducing and equalizing population per bank branch. Between 1961 and 2000 the average population per bank branch fell tenfold from 149,728 to 14,681. More importantly, the rate of decline was faster in states which were more financially backward in 1961. By 1990, all states were at or below the national target of 17,000 persons per bank branch. Interestingly as can be seen in Figure 2, after placement restrictions were removed in 1990 there is some evidence that population per bank branch began to increase and diverge across Indian states with more backward states seeing larger increases.

The decline in population per bank branch was driven by an expansion of bank branches into rural India. Figure 1 describes the pattern of branch expansion. After nationalization, branch expansion in both already banked and unbanked locations increased but was more rapid in the former. This was reversed in 1977 with the imposition of the 1:4 licensing rule and we see a sharp increase in branch expansion into rural unbanked locations. This expansion came to a standstill 1n 1990 when placement restrictions imposed by the Indian central bank were removed with future branch expansion being determined by the need, business potential and financial viability of locations (see Table 2).

Our focus in the paper is on branch openings in rural unbanked locations. Between 1961 and 2000 the number of branches opened in rural unbanked locations increased from 116 to 30,428. Rural branch expansion across Indian States was reflected in the increased importance of the rural sector in commercial bank portfolios. Rural credit as a share of total credit increased from 10 percent at the point of nationalization to 18 percent in 2000. Alongside, rural savings as a share of total bank savings rose from 5 percent to 20 percent.

In Table 1, using information from National Sample Surveys, we decompose the debt of rural households by source for the years 1951, 1961, 1971, 1981 and 1991. As can be seen rapid rural branch expansion which followed bank nationalization in 1969 transformed the rural household debt structure (Table 1). In 1971 lending by commercial banks contributed only 3 percent to rural household debt, by 1991 this figure had risen ten fold to 29 percent. Over the same time period the moneylender share of rural household debt halved from over 35 to 15.7 percent. Thus over this period, arguably due to explicit government policy, commercial banks transited from being the smallest to the largest lender in rural areas.

In this paper we use an annual panel data for the 16 major Indian states over the period 1961-2000 to look at how branch expansion into rural unbanked locations affected rural development outcomes. Table 3 provides descriptive statistics, and the Data Appendix information on variable definitions and data sources. This illustrates the significant variation across states in initial financial development, and banking and rural development outcomes over this period. It is interesting that the cross-

[8]In a similar vein Jayarathne and Strahan [1996] use indicator variable on when a U.S. state relaxed branching restrictions to look at how financial markets affect economic growth

state variation in the number of branches built in already banked locations is much greater than in those built in rural unbanked locations. This accords well with the idea that the extent of building in rural areas was policy determined. As we would expect financially backward states tend to be poorer.

A key outcome we examine is rural poverty as confronting backwardness and deprivation in rural areas was the key reason why the Indian state embarked upon a social banking experiment. India is unique amongst developing countries in having had household expenditure surveys carried out on a regular basis since the 1950s which allow us to construct a consistent and comparable series of rural and urban poverty measures across our period.[9]The poverty measure we use is the head count ratio which measures the proportion of the population below the poverty line. Over the sample period the fraction of population below the poverty line was 46 percent overall, and 48 and 40 percent in rural and urban areas respectively. Figure 3 graphs the annual average rural and urban head count ratios. Until 1973 there are sharp year-to-year fluctuations in both series without any long term trend. Between 1973 and 1990 both urban and rural head count ratios show a clear and similar downward trend. Immediately after 1990, as India entered a period of economic liberalization, the pattern becomes less clear with considerable debate over the net direction (Deaton 2001).[10] The most recent figures do suggest that the post 1990 trend is overall downward.

We also consider an alternative measure of the well-being of the rural poor – male real agricultural wages (Dreze and Mukherjee 1991). Between 1961 and 1998 this wage doubled in real terms from four to eight rupees per day worked. If the arrival of banks in rural areas helps to promote non-agricultural output and employment then we would expect this to exert upward pressure on agricultural wages. This represents an important indirect route through which rural poverty may be affected, and given the controversy surrounding the more recent poverty figures also serves as a useful robustness check.

The intended purpose of extending banking facilities was to encourage rural households to engage in new production and employment activities. It is therefore interesting to look at whether the arrival of banks in rural areas altered the composition and levels of output and employment. We are interested, in particular, if there is any evidence of rural branch expansion encouraging movement out of agriculture. In 1961 real state non-agricultural and agricultural output per capita were of similar magnitudes at Rs. 427 and Rs. 434 respectively. By 1997, non-agricultural output (Rs. 2814) was more than double agricultural output (Rs. 1266). Figure 4 illustrates this divergence. It is then interesting to ask whether rural branch expansion can explain some of the growth in non-agricultural output and of its constituent elements such

[9]We are grateful to Gaurav Datt and Martin Ravallion for providing us these state-level poverty figures (see Ozler, Datt and Ravallion (1996)). Gaurav Datt was kind enough to provide us with comparable updates which allowed us to extend the series from 1994-2000.

[10]Deaton, among others, has argued that the smaller household surveys conducted between 1994 and 1998 were unrepresentative and poverty measures based on these samples are potentially misleading.

as registered and unregistered manufacturing.[11] We also look at whether the ratio of non-agricultural to total rural laborers is affected. In this way we may gain insights into growth and diversification channels which may underpin our poverty results.

3 Empirical Analysis

Financial backwardness, which the social banking experiment targets, is likely to be correlated with other forms of backwardness such as poverty and limited importance of the non-agricultural sector. This makes ordinary least squares estimation of the relationship between poverty and extent of financial development problematic – when we run a regression of rural branches on rural poverty the coefficient will reflect the impact of social banking and the fact that more rural branches went to poorer areas. If social banking did reducde poverty then this will lead to a downward bias in the estimated poverty reduction impact of social banking.[12]

In our analysis we take a different tack on this question. We begin by documenting that both the imposition of the 1:4 licensing rule in 1977 and its disbandment in 1990 altered the relationship between initial financial development and subsequent rural branch expansion (Section 3.1). Whereas between 1961 and 1976 building of rural branches was positively associated with initial financial development, this trend was reversed in 1977 with relatively backward states receiving *more* rural branches up to 1990 when rural branch expansion was terminated. We exploit these policy-induced trend breaks in two distinct ways. First, we examine whether outcomes of interest exhibit corresponding trend breaks in their relationship to initial financial development in the state (Section 3.2). Second, we use the interaction between dummy variables which turn on in 1977 and 1990 respectively and initial financial development in a state as instruments for rural branch expansion (Section 3.3). This captures the idea that the exposure of an Indian state to the rural branch bank expansion program was jointly determined by its initial financial development and shifts in the license regime which took place in 1977 and 1990.

3.1 Identification

Our data period 1961-2000 covers all the key episodes of the social banking experiment. To check whether policy changes over this period altered the relationship between initial financial development in a state and subsequent rural branch expansion we estimate:

$$B^R_{it} = \alpha_i + \beta_t + \sum_{t=1961}^{2000} (B_{i61} \times \beta_t)\gamma_t + \sum_{t=1961}^{2000} (X_{i61} \times \beta_t)\delta_t + \epsilon_{it}.$$

[11] Under the Factories Act of 1948 registered manufacturing refers to firms which employ more than 10 workers with power, or 20 without. Unregistered manufacturing refers to firms below these cutoffs. The former are allocated mainly in urban areas while the latter have a substantial presence in rural areas.

[12] In a simple regression of rural branch expansion (B^R_{it}) on rural poverty (with state and year fixed effects included) we get a positive and significant coefficient. Naively interpreted this would suggest that social banking increased rural poverty.

B^R_{it}, the cumulative number of branches opened in rural unbanked locations, is our social banking measure. As each rural location that receives a branch transits from being classified as unbanked to banked this variable is a cumulative count of the number of banked rural locations in a state in a given year. B_{i61}, the total number of banked locations in state i in 1961, is our measure of initial financial development. Both variables are normalized by 1961 population. Year effects (β_t) are included to control for national policy changes, and macro-economic and political shocks which are common across states. State effects (α_i) help control for state-specific, time invariant factors such as initial conditions and institutions which may affect rural branch expansion. As initial conditions may have dynamic impacts on rural branch expansion we also include a vector of control variables measured in 1961 (X_{i61}) interacted with year dummies. This vector includes log real state income per capita, total state population and number of rural locations per capita

Figure 5 graphs the coefficients on the interaction between initial financial development and year dummies (γ_t). This is done both with, and without, the additional X_{i61} controls. In both plots three episodes are discernable. Between 1961 and 1976 states with more banked locations in 1961 saw faster growth in rural branch openings. This is consistent with demand for rural banks being greater in more financially developed states. This period is brought abruptly to a close with the imposition of the 1:4 license rule in 1977 and up to 1990 more financially backward states attract *more* rural branches. The rural branch expansion program ended in 1990 when the Indian central bank lifted branch placement restrictions. After 1990 the curve is flat – banks simply stop building branches in rural locations (see also Figure 1).

Figure 5 suggests that rural branch expansion in India can be described using a trend break model which takes the form:

$$\begin{aligned} B^R_{it} &= \alpha_i + \beta_t + (B_{i61} \times [t-61])\gamma_1 + (B_{i61} \times [t-77] \times P_{77})\gamma_2 + \\ &\quad (B_{i61} \times [t-90] \times P_{90})\gamma_3 + (B_{i61} \times P_{77})\gamma_4 + (B_{i61} \times P_{90})\gamma_5 + \epsilon_{it}. \end{aligned}$$

Here P_{77} and P_{90} are time dummies which turn on in 1977 and 1990 respectively. We estimate this, and all subsequent, regressions, with and without the set of additional controls X_{i61}. These controls enter the regression in the same way as B_{i61}. As the results are robust across these specifications we only report the regressions which include these controls.

The results are provided in column (1) of Table 4.[13] These results mirror the pattern observed in Figure 5.[14] The coefficient γ_1, given in the first row, shows that states with higher initial financial development witnessed higher growth in rural branch openings between 1961 and 1977. The point estimate suggests that a one point increase in financial development led to a 0.2 point higher growth in rural branch expansion. The second row, which reports γ_2, shows that this positive

[13] γ_4 and γ_5 are included to allow intercepts to change at each trend break. These coefficients are largely insignificant and are therefore not reported.

[14] The pattern for total bank branches seen in column (4) also mirrors that for rural branches. This makes sense as social banking policies implied that the bulk of branch openings took place in rural locations.

trend was reversed in 1977. Between 1977 and 1990 a one point increase in financial development led to 0.5 point lower growth in rural branch expansion (The addition of γ_1 and γ_2 gives us the average 1977-1990 trend).[15] Finally, the third row, which reports γ_3, identifies a second trend reversal in 1990 when the effect of initial financial development and rural branch expansion goes to zero (the addition of γ_1, γ_2 and γ_3 gives the post 1990 trend).[16]

We interpret the 1977 and 1990 trend reversals as the results of branch license regime shifts. The remainder of this section examines the robustness of this interpretation in two ways. First, we examine whether other facets of the banking system in India saw similar reversals in their relationship with initial financial development in 1977 and 1990. Second, we check whether other variables which have the potential to influence rural development share this trend break. This is to examine the possibility that key political and policy variables might exhibit trend reversals in their relationship with initial financial development at the same points as rural branch expansion, and may therefore be driving effects on rural development.

Rural unbanked locations were the target of the Indian branch expansion program – lists of unbanked locations to be filled were routinely passed down to banks (Desai 1987). Banks, however, could choose the already banked locations in which to open branches. Column (2) in Table 4, and Figure 6, show that states with higher initial financial development attracted more branches of this type throughout the period. License regime shifts in 1977 and 1990 did affect the slope of the relationship but it remains positive throughout. Clearly on the margin where they have a choice banks locate branches in more financially developed states, and this mirrors what was happening with rural branches prior to 1977. This underlines the fact that coercion was needed to force banks to open in backward areas – they do not do so on their own volition.

If rural branch expansion was not accompanied by a higher share of bank credit and savings being accounted for by rural banks then we would be on weaker grounds in claiming that an evaluation of branch expansion program tells us about the relationship between financial intermediation and rural development. In column (3) we find that whilst financially developed states had more credit disbursed through rural banks pre-1977 this trend reversed in 1977 and then became insignificant after 1990. As can be seen in Figure 7 the overall pattern of the relationship between rural credit share and initial financial development is hump-shaped as in the case of rural branches. This is clear evidence that branch license policy affected the allocation of credit across urban and rural sectors.[17] In column (4) we observe a similar pattern for the rural saving share. The second major provider of formal credit in rural India are credit cooperatives (see Table 1). If cooperative credit was being skewed towards rural areas in backward states then we may be concerned that cooperative, as opposed to bank, expansion underlies the results we see on rural development. In column (5) we see that this is not the case – we observe no trend breaks in 1977 and

[15] F-test 1 shows that $\gamma_1 + \gamma_2$ is significantly different from zero.
[16] F-test 2 shows that $\gamma_1 + \gamma_2 + \gamma_3$ does not differ significantly from zero.
[17] We only have credit data broken by bank location from 1969.

1990 between initial financial development and the share of rural cooperative credit in total formal credit.

In 1977 the Congress party which had been the dominant party in Indian politics suffered a major electoral shock.[18]. This led to a realignment of political interests between the center and states.[19] If these changes caused different policies to be adopted in backward states then political, as opposed to license, regime shifts might underpin the changes we observe in rural outcomes. In column (6) we consider the share of seats in state assemblies occupied by the Congress party and in column (7) center-state alignment measured by whether the same same party is in power in both places. Neither variable shows any evidence of a trend break in either 1977 or 1990. We also look directly at policies which might affect rural outcomes. In columns (8) and (9) we consider the shares of state spending on education and health respectively, and in column (10) at a measure that captures the cumulative number of land reforms passed in a state.[20] None of these policy measures exhibit trend breaks in either 1977 or 1990.

3.2 Reduced Form Evidence

Our interest in this paper centers on establishing whether changes in rural poverty over the 1961-2000 can be linked to the rural branch expansion program. Our identification strategy can be used to check whether poverty and other outcomes exhibit trend breaks in their relationship with initial financial development in 1977 and 1990. For outcome y_{it} we estimate a regression of the form:

$$\begin{aligned} y_{it} &= \alpha_i + \beta_t + (B_{i61} \times [t-61])\gamma_1 + (B_{i61} \times [t-77] \times P_{77})\gamma_2 + \\ &\quad (B_{i61} \times [t-90] \times P_{90})\gamma_3 + (B_{i61} \times P_{77})\gamma_4 + (B_{i61} \times P_{90})\gamma_5 + \epsilon_{it}. \end{aligned}$$

Columns (1)-(4) in Table 6 present the basic picture as regards poverty. In column (1) where rural poverty is the outcome variable we observe a pattern of effects similar to those observed for rural branch expansion in column (1) of Table 4. There is no good reason to think that rural branch expansion should affect urban poverty. This is confirmed in column (2) where we find no evidence of a reversal in the relationship between initial financial development and urban poverty in 1977. Column (3) uses the difference between rural and urban poverty as the left hand side variable. This helps to control for any omitted variables which have common effects in both places. The relationship between financial development and the rural-urban poverty difference was also reversed in 1977. Interestingly, this difference and initial financial development are unrelated after 1990. Column (4) tells us that aggregate poverty in India exhibits trend breaks in 1977 and 1990 which suggest that poverty changes in rural India are driving aggregate movements.

[18]The proportion of Congress seats in state assemblies fell from 0.56 in 1976 to 0.25 in 1978.

[19]Dasgupta, Dhillon and Dutta [2001] provide evidence that state governments who were aligned with the party in power at the center received greater transfers between 1968 and 1997.

[20]Besley and Burgess (2000) showed that this land reform measure had a negative impact on rural poverty between 1958 and 1992.

The pattern of changes in rural poverty thus match up well with those observed for rural bank branches whereas the changes in urban poverty do not. This may be taken as reduced form evidence of a link between rural branch expansion and rural poverty reduction. To see this more clearly we graph out the relationship between rural and urban poverty and initial financial development in Figure 8 without imposing any temporal structure. Up to 1978 we see that the rate of both rural and poverty reduction is greater in more developed states. After this the two series flatten out and from the early 1980s diverge with rural poverty reduction being greater in less developed states and changes in urban poverty being unrelated to initial financial development.[21] After 1990 both series then return to being negatively correlated with financial development as they were pre-1978. The plot for rural poverty in Figure 8 is thus the inverse of that for rural branch expansion in Figure 5.

The final rural welfare measure we consider are daily agricultural wages of male laborers expressed in real terms (column (5)). As such laborers are often landless with limited outside options wage levels constitute a key marker of rural welfare (Dreze and Mukherjee, 1991). Agricultural laborers constitute a significant fraction of the rural poor in India. Comparing column (5) to column (1) we see that the findings for agricultural wages mirror those for rural poverty. These results are important because they identify an indirect mechanism through which rural poverty can be affected and because they constitute an independent check on whether other dimensions of rural welfare besides poverty might be affected by rural branch expansion.

The architects of social banking in India believed that increasing access to banks in rural areas was a key means of tackling backwardness. Implicit in their argument was the idea that increased access would enable rural households to transform their production and employment activities. In columns (6)-(11) of Table 4 we examine the reduced form evidence on this question. In column (6) we look at real aggregate output per capita across Indian states. As with rural banks we observe trend reversals in 1977 and 1990. The fact that more backward states experience higher growth in the 1977-1990 period and that this trend is reversed at the point of liberalization is striking. Moreover, we observe that this pattern in total output is driven by trend reversals in non-agricultural growth (column (7)). We see no evidence of such a pattern for agricultural output in column (8). Small businesses which employ less than ten persons with power, or twenty without, (unregistered manufacturing in Indian accounts) are important contributors to rural output. In contrast, firms with employment levels above these thresholds (classified as registered manufacturing in Indian accounts) are mainly located in urban locations. It is therefore interesting to contrast the patterns of change seen by these two types of manufacturing units in relation to initial financial development. In column (9) we see that unregistered manufacturing exhibits a trend reversal in 1977 which is similar to that observed for non-agricultural output. No such reversal observed for registered manufacturing (column (10)). The coincidental nature of the trend reversals observed for non-agricultural elements of

[21] We might expect there to be a lag between the opening of rural branches and their exerting any effect on rural poverty. This may explain why trend breaks in poverty lead those in branch expansion.

output in India and rural branch expansion provides reduced form evidence of a link between branch expansion and structural change. In column (11) we focus down further on the rural sector by looking at the pattern of diversification in rural labor. We observe that after 1977 more backward states witnessed faster growth in the share of non-agricultural laborers in total rural labor.[22] This is interesting as it suggests that branch expansion in backward states that took place between 1977 and 1990 may have played a role in facilitating unskilled labor to exist agriculture. And it is precisely this type of low level diversification in output and employment activities that may have had the power to influence changes in rural poverty.

3.3 Instrumental Variables Evidence

The key question we want to resolve in this paper is whether government-led rural branch expansion impacted rural poverty in India. Consider the following estimation equation:

$$y_{it} = \alpha_i + \beta_t + \lambda B_{it}^R + \epsilon_{it}.$$

As the social banking program attempts to target financial backwardness which itself is likely to be correlated with rural poverty OLS estimation of this relationship is problematic. If, on average, banks locate branches in poorer states (as appears to be the case 1977-1990) then branch expansion is, in part, reflecting purposive placement decisions and would lead us to underestimate its poverty reduction impact.[23] For similar reasons, the impact of rural banks on output will tend to be downward biased.

The nature of the branch expansion program can be used to provide credible instruments for the number of branches opened in rural unbanked locations in a state. We have shown that intensity of branch building in rural unbanked locations is a function both of initial financial development in a state and of the timing of license regime shifts. We therefore use interactions between license regime shifts and initial financial development as instruments for rural branch expansion. That is, we estimate two stage least square regressions where the second stage regression is of the form:

$$y_{it} = \alpha_i + \beta_t + \lambda B_{it}^R + \eta_1([t-61] \times B_{i61}) + \eta_2(P_{77} \times B_{i61}) + \eta_3(P_{90} \times B_{i61}) + u_{it},$$

and use $P_{77} \times [t-77] \times B_{i61}$ and $P_{90} \times [t-90] \times B_{i61}$ as instruments for B_{it}^R. The first stage regression is given in column (1), Table 4.

The robustness checks in Section 3.1 has increased our confidence that changes in other political and policy variables which might affect rural development are orthogonal to our instruments. Our instrumentation strategy, however, still relies on the assumption that the instruments have no effect on rural development outcomes other than by affecting rural branch expansion. Formally, we assume that the error term in the OLS is of the form $\epsilon_{it} = \eta[t-1961] \times B_{i61} + u_{it}$. Though we control explicitly for the first term in the IV procedure we are assuming that there is no change in trend

[22] As our data series ends in 1987 we cannot check for a 1990 trend break in employment

[23] The OLS regression for rural poverty finds rural branch expansion to be positively correlated with it.

in y_{it} in the absence of license regime shifts. We use over-identification tests to test the validity of this assumption.

As expansion of branches into rural unbanked locations was most directly under the control of government we focus on this measure as our key explanatory variable. By exploiting the interaction between initial financial development and license regime shifts we are able to isolate a source of exogenous variation in branch expansion which we exploit to examine the impact of rural banking on rural development. Table 7 provides the key results. In column (1) we find that rural branch expansion reduced rural poverty. In column (2) we see no relationship between rural branch expansion and urban poverty. This is a useful robustness check which makes us more confident that we are identifying the poverty impact of banking rural locations; in particular, as both the rural and urban poverty series trend downwards. The finding in column (3) that rural bank expansion in India reduces the gap between rural and urban poverty helps to reduce concerns that state-specific trends or omitted variables which are common to rural and urban sectors are driving our results. Column (4) gives the results for aggregate poverty in India, and these tell us that the poverty reduction we observe is being driven by branch expansion in rural areas. In column (5) we observe that rural branch expansion has a positive and significant impact on male agricultural wages.

Columns (6)-(11) consider structural change variables. Rural branch expansion increases log state income per capita and this occurs through effects on the non-agricultural as opposed to agricultural component (columns (6)-(8)). The absence of an effect in the agricultural sector is striking as raising agricultural productivity was a central objective of the program, and often the focus of evaluations (see e.g. Binswanger et al, 1993). This suggests that the effects we are observing are mainly coming through rural branch expansion enabling rural households to expand non-agricultural production activities. In columns (9) and (10) we exploit the fact that registered manufacturing occurs mainly in urban sector whereas unregistered manufacturing has a significant presence in rural areas. In line with our expectations we observe that rural branch expansion exerts a significant and positive influence on the expansion of unregistered manufacturing but has no effect on registered manufacturing. We also observe in column (11) that rural branch expansion promotes non-agricultural employment in the rural sector.[24]

4 Discussion

The relationship between finance and development has long been a puzzle for economists. By exploiting a particular episode in Indian history we are able to credibly isolate the impact of state led bank expansion on various development outcomes. Significantly we find that growing access to banks in rural areas drove down rural poverty. What is more we able to identify rural branch expansion as having positive impacts on

[24]Instrumented rural branch expansion is also associated with increases in the shares of rural credit and savings in their respective totals. This increases our confidence that the poverty effects we are observing are coming through the banking sector.

non-agricultural output and employment and on agricultural wages. These results help us to understand how poverty reduction is being achieved in rural India.

The main contribution of this paper has been to provide evidence to counter the pessimistic view that government intervention in credit markets is either ineffective or counterproductive as regards attacking the high rates of rural poverty that plague developing countries. The widely held belief that large scale credit interventions by governments ends up solely benefiting elites does not appear to be valid in the case of India. This is an important finding in light of the goal agreed at the Millenium Summit of halving global poverty by 2015 (Besley and Burgess, 2002). Our paper suggests that interventions which expand access to credit in rural areas may play some role in achieving this target.

The form that such government intervention should take, however, is less than clear. Government led rural branch expansion came to an end in 1990 precisely because the scheme was not financially sustainable in part due to low repayment rates. And financial crisis has plagued government credit interventions in a large number of low income countries. As a result microfinance has often been proposed as an alternative. However, a growing literature has documented how the schemes entail significant subsidization and have difficulty in reaching the poorest who are often involved in marginal agriculture. Despite having been running for some years there is no evidence that microfinance schemes have reduced aggregate poverty in any country. One clear thing that we do learn from this paper is that coercion is need to expand formal credit into backward areas. And here government may have some advantages in terms of coordination, legal powers and resources.

The paper offers no magic bullet. And it is silent on whether government led branch expansion is the most cost effective to achieve poverty reduction in India. Its focus is entirely on looking at the welfare impact of branch expansion. Nonetheless the effects we find do suggest that it is worthwhile to reexamine finance-poverty nexus and to think carefully about which policies and actors are capable of expanding access to credit in backward areas of the globe. The piecing together of evidence from studies of particular interventions carried out at the sub-national level is likely to represent the best way forward in this respect. This represents an important challenge to be taken up in the coming years.

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5 Data Appendix

The data used in the paper come from a wide variety of sources.[25] The data cover the sixteen main Indian states, and span the period 1961-2000.[26] Haryana split from the state of Punjab in 1965. Punjab and Haryana enter our sample in 1965. Variables expressed in real terms are deflated using the **Consumer Price Index for Agricultural Laborers** (CPIAL) and **Consumer Price Index for Industrial Workers** (CPIIW). These are drawn from a number of Government of India publications which include Indian Labour Handbook, the Indian Labour Journal, the Indian Labour Gazette and the Reserve Bank of India Report on Currency and Finance. Ozler, Datt and Ravallion [1996] have further corrected CPIAL and CPIIW to take account of inter-state cost of living differentials and have also adjusted CPIAL to take account of rising firewood prices. The reference period for the deflator is October 1973- March 1974. Post-1994 we have updated this series using the Indian Labor Journal (CPIIW) and the Monthly Abstract of Statistics (CPIAL). Post-1995 we do not adjust for firewood prices. **Population** data used to express magnitudes in per capita terms comes from the decennial censuses from 1951 through 2001 [Census of India, Registrar General and Census Commissioner, Government of India] and has been interpolated between census years. Separate series are available for urban and rural areas.

Banking data refers to Scheduled commercial banks.[27] Bank variables are normalized by the 1961 population. The Bank branch data is from the Reserve Bank of India Basic Statistical Returns, as provided in the *'Directory of Commercial Bank Offices in India (Volume 1)'*, December 2000. A location is categorized as banked if it has at least one branch of any commercial or cooperative bank. The directory assigns every bank branch to a population group depending on the census population of the location. The population groups are defined as: (i) Rural group includes all locations with population less than 10,000, (ii) Non-rural group includes locations with population in excess of 10,000. The bank credit and saving variables are drawn from the Annual Reserve Bank of India publication *Statistical Tables relating to Banks in India* . Bank credit refers to the total advances outstanding and bank saving to total deposits for Scheduled commercial banks. The breakdown of bank credit and savings by population group of bank branches which disburse the funds gives the rural bank credit and saving measures.

Poverty figures are for rural and urban areas of India's 16 major states. The figures for 1961-1992 were put together by Ozler, Datt and Ravallion [1996], and the

[25]The data-set builds on Ozler, Datt and Ravallion [1996] which collects published data on poverty, output, wages, price indices and population to construct a consistent panel data set on Indian states [1958-1992]. We are grateful to Martin Ravallion for providing the data, and to Gaurav Datt for answering various queries. To these data, we have added information on bank location and credit outcomes, state income, rural employment, infrastructure and public finances of Indian states.

[26]The states in the sample are: Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal

[27]This category includes (1) State Bank of India and its associates, (2) Nationalized banks, (3) Regional rural banks, (4) Private sector banks and (5) Foreign banks.

1993-2000 update which uses the same methodology was provided by Gaurav Datt. These measures are based on 24 rounds of the National Sample Survey (NSS) which span this period. Not all 24 rounds of the survey can be covered for each of the 16 states.[28] The NSS rounds are also not evenly spaced: the average interval between the midpoints of the surveys ranges from 0.9 to 5.5 years. Surveys were carried out in the following years 1961, 1962, 1963, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1973, 1974, 1978, 1983, 1987, 1988, 1990, 1991, 1992, 1993, 1994, 1995, 1997, 1999. Because other data is typically available on a yearly basis weighted interpolation has been used to generate poverty measures for years where there was no NSS survey. The poverty lines used are those recommended by the Planning Commission [1993] and are as follows. The rural poverty line is given by a per capita monthly expenditure of Rs. 49 at October 1973-June 1974 all-India rural prices. The urban poverty line is given by a per capita monthly expenditure of Rs. 57 at October 1973-June 1974 all-India urban prices. See Datt [1995] for more details on the rural and urban cost of living indices and on the estimation of the poverty measures. The headcount index is estimated from the grouped distributions of per capita expenditure published by the NSS[29], using parameterized Lorenz curves using a methodology detailed in Datt and Ravallion [1992].

Wage data is from the Agricultural Wages in India (Ministry of Agriculture, Government of India). Nominal wage data from this series has been deflated using the Consumer Price Index for Agricultural Laborers to obtain real agricultural wages. No agricultural wage data is available for the state of Jammu and Kashmir and no separate wage data is available for the state of Haryana.

State output figures come from Estimates of State Domestic Product published by Department of Statistics, Ministry of Planning, Government of India. Output variables are deflated and normalized by 1961 population. They are expressed in log per capita terms. The breakdown of total output into agricultural, non-agricultural and manufacturing output is done under the National Industrial Classification System (NIC) which conforms with the International Standard Industrial Classification System (ISIC). Within manufacturing – unregistered manufacturing refers to firms below these cutoffs and the size of this sector is appraised by sample surveys carried out by the Department of Statistics. These data span the period 1961-1997.

Employment data come from the 1963-65, 1974-75, 1977-78, 1983, and 1987-88 issues of the Rural Labour Enquiry, National Sample Survey Office, Department of Statistics, Ministry of Planning, Government of India. The data refer to rural labour households, where rural labour is defined as manual paid activities as opposed to non-manual employment or self-employment.

Policy variables. The primary source for education and health expenditures is

[28] For 11 states (Andhra Pradesh, Assam, Bihar, Karnataka, Kerala, Madhya Pradesh, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh, and West Bengal) all 24 rounds have been covered. Because Haryana only appears as a separate state from Punjab in 1965 we have adopted the including separate series for these two states from this date onwards.

[29] Reports from the National Sample Survey Organisation, Department of Statistics, Ministry of Planning, Government of India and Sarvekshena, Journal of the National Sample Survey Organisation, Department of Statistics, Ministry of Planning, Government of India.

an annual publication Public Finance Statistics (Ministry of Finance, Government of India). The information is also collated in the Reserve Bank of India annual publication – Report on Cuurency and Finance. The land reform variable is the cumulative number of land reform acts undertaken by a state, and is taken from Besley and Burgess 2001.

Politics variables. Data on the number of seats won by the Congress party from 1961-1990 are for Butler, Lahiri and Roy, 1991. The 1992-2000 update is from the Election Commission of India state election reports. The center-state alignment variable is from Dasgupta, Dhillon and Dutta 2001. State political configurations are held constant between elections.

TABLE 1: SHARE OF RURAL HOUSEHOLD DEBT HELD BY DIFFERENT CREDITORS (percentage)

Year	Institutional sources			Non-institutional sources		Others
	Banks	Cooperatives	Government	Relative and Friends	Moneylenders	
1951						
Cultivators	0.9	3.1	3.3	14.2	69.7	8.8
All Households	1.1	4.6	3.1	14.4	68.6	8.2
1961						
Cultivators	0.3	11.4	6.7	5.2	61.9	14.5
All Households	0.3	10.4	6.6	5.8	60.9	16
1971						
Cultivators	2.6	22	7.1	13.1	36.1	19.1
All Households	2.4	20.1	6.7	13.8	36.9	20.1
1981						
Cultivators	29.5	29.8	3.9	8.7	16.1	12
All Households	28.6	28.6	4	9	16.9	12.9
1991						
Cultivators	31.6	21.2	5.2	5.8	15.7	20.5
All Households	29	18.6	5.7	6.7	15.7	24.3

Notes: (i) A `cultivator' household is a household with an operational land holding of area 0.005 acres or above. (ii) Only interest-free non-institutional loans are included under loans from relatives and friends (iii) The data source for 1951 is the "All India Rural Credit Survey", and for all subsequent years "All India Debt and Investment Surveys".

TABLE 2: BANK BRANCH EXPANSION IN INDIA: POLICY RULES

Year	Rules	Targets
Dec. 1969	Lead bank scheme initiated. **License rule:** Banks can open branches in already banked to unbanked locations in the ratio 1 :2 if the bank has 60% rural and semi-urban branches, else the ratio is 1:3	All towns with population over 10,000 to be banked by end 1970. **Branch Target**(1970)**:** 1,350 new branches of which 1,186 should be opened in unbanked locations
1971	Branch expansion in Calcutta exempt from license rule	
1972	**License rule:** To allow building in metropolitan and urban locations the target population per bank branch lowered from 10,000 to 5,000. Banks with more than 60% rural/ semi-urban branches can open 1 urban and 1 metro branch for every 2 branches opened in unbanked rural/semi-urban locations	**Branch Target** (1972-1974): overall target of 5,000 branches. For 1972 and 1973 target of 1,500 branches.
1975		**Branch Target**(1975-1977)**:** 5,000 branches
1977	**License rule:** Banks can open 1 branch in an already banked location for 4 branches opened in unbanked locations	**Branch Target (**1977-1979): All Community Development Blocks to have a branch by June 1979
1978	Limited licensing for year 1978 to allow consolidation	
1979	Focus on areas with population per branch > national average of 20,000. Priority to states with population per bank branch higher than national average	**Branch Target** (1979-81): 6,500 branches in unbanked locations.
1982	Emphasis on rural/semi-urban and less accessible areas of states	Target population per bank branch defined as 17,000 population per office, special considerations for hilly/tribal areas. **Branch Target (**1982-1985): 8.000 branches
1985	**Service Area approach: In r**ural areas there should be a branch every 10 kms, and in towns/ residential areas every 400m. Banks will be allocated, and will have to provide facilities for, rural service area of 200 sq. km. and 15-20 villages (CDB). Lead banks to identify areas where the 15-20 village rule is exceeded. Service Area Approach is additional to licensing rules.	Target population defined as 17,000 per branch in rural and semi-urban locations and 10,000 in hilly/tribal areas
1986	Limited licensing for one year (1986) to allow consolidation	
1987	Service Area approach reintroduced and licensing as before	
1990	**License rule:** Future expansion to depend on need, business potential and financial viability of location. Emphasis on consolidation Licenses extended to March 1991 and then to March 1992	**No targets**

Sources:Annual Reports, *Reserve Bank of India* ; Annual Report on Trend and Progress of Banking in India,*Reserve Bank of India*

TABLE 3 -- SUMMARY OF MAIN VARIABLES

STATE	BANK VARIABLES					POVERTY OUTCOMES				OUTPUT OUTCOMES				
	Initial financial development	No. branches, by location rural unbanke	already banked	Rural credit share	Rural saving share	Head count ratio	Rural head count ratio	Urban head count ratio	Agri. wages	Total	Non-agricultural	Agri-cultural	Manufacturing Registered	Unregistered
Bihar	0.0016	0.033	0.016	0.283	0.196	62.3	64.2	48.27	4.36	988.74	544.2	444.4	50.84	78.4
		(0.03)	(0.01)	(0.10)	(0.11)	(6.09)	(6.16)	(8.92)	(1.14)	(380.75)	(258.20)	(128.70)	(29.83)	(35.60)
W.Bengal	0.0017	0.0277	0.034	0.067	0.084	42.45	46.2	31.3	6.67	2082.98	1396.3	686.6	136.2	214.5
		(0.03)	(0.02)	(0.04)	(0.04)	(13.54)	(16.00)	(6.68)	(2.05)	(967.70)	(712.48)	(265.50)	(85.20)	(42.23)
Orrissa	0.0019	0.041	0.017	0.29	0.22	52.57	52.59	51.9	4.45	1436.08	799.4	636.6	58.32	82.04
		(0.03)	(0.01)	(0.09)	(0.10)	(11.09)	(11.51)	(8.73)	(1.10)	(642.01)	(527.80)	(140.30)	(32.57)	(52.71)
Assam	0.0019	0.032	0.02	0.224	0.191	46.8	49.58	23.2	5.46	1589.4	1010.2	725.4	36.17	124.2
		(0.03)	(0.01)	(0.13)	(0.05)	(7.94)	(8.19)	(10.34)	(1.09)	(732.01)	(511.40)	(215.30)	(6.80)	(63.72)
Uttar	0.0021	0.0325	0.025	0.217	0.2	45.97	45.3	49.5	5.36	1421.69	756.56	665.13	75.71	87.4
Pradesh		(0.03)	(0.02)	(0.07)	(0.07)	(7.53)	(7.44)	(10.19)	(1.71)	(598.50)	(418.09)	(184.07)	(39.13)	(62.52)
Madhya	0.0030	0.0355	0.029	0.2	0.158	53.8	54.93	49.57	4.26	1536.53	876.04	660.48	73.52	116.1
Pradesh		(0.03)	(0.02)	(0.06)	(0.06)	(8.13)	(8.38)	(8.15)	(1.36)	(802.28)	(563.67)	(244.08)	(46.29)	(91.93)
Jammu&	0.0031	0.07	0.05	0.175	0.25	4.26	34.5	24.9		1816.4	1041.9	738.3	71.38	37.33
Kashmir		(0.06)	(0.03)	(0.06)	(0.09)	(1.36)	(8.13)	(7.66)		(797.94)	(572.12)	(220.30)	(20.37)	(26.80)
Andhra	0.0035	0.031	0.034	0.194	0.14	44.33	45.28	40.65	5.01	1769.46	1063.4	706.04	84	130.23
Pradesh		(0.03)	(0.02)	(0.05)	(0.04)	(12.30)	(12.99)	(9.67)	(1.39)	(1017.68)	(775.10)	(248.69)	(50.57)	(110.82)
Maharashtra	0.0035	0.027	0.056	0.032	0.034	54.14	60.5	41.6	4.07	2474.04	1910.03	564	159.4	446.77
		(0.02)	(0.03)	(0.01)	(0.01)	(9.03)	(10.70)	(5.43)	(1.32)	(1500.62)	(1279.00)	(229.83)	(100.64)	(243.24)
Tamil Nadu	0.0039	0.027	0.048	0.095	0.097	49.28	52.16	42.89	4.38	1679.46	1243.7	435.7	138.87	247.13
		(0.02)	(0.02)	(0.03)	(0.03)	(11.21)	(12.53)	(8.88)	(1.23)	(891.77)	(795.99)	(109.20)	(58.58)	(164.40)
Rajasthan	0.0046	0.043	0.034	0.202	0.178	49.7	52.38	39.4	5.468	1480.28	776.41	703.87	68.06	77.71
		(0.04)	(0.02)	(0.06)	(0.04)	(8.53)	(8.32)	(9.85)	(1.11)	(768.90)	(502.46)	(275.82)	(20.30)	(61.11)
Haryana	0.0051	0.049	0.0539	0.215	0.202	29.3	29.85	28.42	8.866	3052.27	1599.38	1452.8	178.2	346.65
		(0.03)	(0.03)	(0.07)	(0.06)	(6.89)	(6.40)	(11.30)	(1.68)	(1662.99)	(1109.10)	(567.81)	(128.74)	(270.27)
Karnataka	0.0061	0.048	0.057	0.163	0.156	49.86	52.43	43.6	3.97	1824.85	1094.5	730.3	94.72	172.6
		(0.04)	(0.03)	(0.04)	(0.02)	(9.31)	(9.02)	(10.54)	(0.79)	(931.11)	(704.74)	(232.05)	(41.54)	(105.80)
Gujarat	0.0063	0.038	0.057	0.117	0.145	47.85	48.89	45.26	4.81	2267.71	1571.53	696.17	133.24	403.3
		(0.03)	(0.03)	(0.04)	(0.02)	(11.86)	(12.65)	(10.39)	(1.31)	(1301.61)	(1075.40)	(252.67)	(99.16)	(338.20)
Kerala	0.0064	0.011	0.065	0.1	0.11	49.53	49.99	47.75	6.42	1431.09	905.22	525.86	86.64	109.57
		(0.01)	(0.04)	(0.03)	(0.05)	(17.82)	(17.77)	(17.82)	(1.51)	(655.28)	(502.23)	(161.42)	(43.38)	(57.95)
Punjab	0.0065	0.058	0.073	0.21	0.244	22.6	22.7	22.67	8.582	3106.98	1621.4	1485.5	182.7	217.7
		(0.03)	(0.04)	(0.08)	(0.05)	(8.55)	(8.34)	(10.27)	(1.32)	(1483.66)	(910.35)	(579.72)	(110.61)	(150.68)
Total	0.0038	0.037	0.042	0.17	0.16	46.27	48.08	39.84	0.054	1855.84	1133.1	731.16	180.18	101.4
		(0.03)	(0.03)	(0.10)	(0.08)	(13.89)	(14.73)	(13.79)	(0.02)	(1133.66)	(827.50)	(394.24)	(188.84)	(79.01)
Number obs.	632	632	632	511	511	623	623	623	541	584	577	577	577	577

Standard deviations are in parentheses. See the Data Appendix for details on construction and source of variables. The data are for the sixteen major states, and the period 1961-2000. Haryana was created by the division of Punjab in 1965 and these two states enter our sample in 1965. We therefore have a total of 632 possible observations. The final row gives the total number of observations available for each variable over this period.

TABLE 4: BANKING, POLITICS AND POLICY AS A FUNCTION OFINITIAL FINANCIAL DEVELOPMENT

	Banking outcomes					Politics and Policy outcomes				
	Number bank branches in:		Rural banks share		Rural cooperative	Congress legi-	Center-state	Education	Health	Cumulative
	rural unbanked	already banked	of credit	of saving	credit share	slator share	alignment	expen.share	expen.share	land reform
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Number of banked locations	0.20**	0.40***	5.29***	-0.245	1.19*	-3.66**	-9.58***	-0.41*	0.15	-8.45
in 1961 per capita *1961-77	[0.09]	[0.04]	[1.60]	[0.61]	[0.66]	[1.44]	[3.59]	[0.22]	[0.11]	[12.28]
Trend										
Number of banked locations	-0.75***	-0.21***	-8.22***	-2.12***	0.33	-0.49	1.4	0.01	-0.2	-4.16
in 1961 per capita*Post-77	[0.13]	[0.05]	[1.63]	[0.66]	[1.00]	[3.15]	[5.37]	[0.31]	[0.15]	[19.03]
Trendbreak										
Number of banked locations	0.54***	0.28***	2.17***	0.67	1.14	-0.31	8.76	-0.65	0.07	12.61
in 1961 per capita*Post-90	[0.18]	[0.08]	[0.58]	[0.55]	[7.15]	[4.17]	[15.59]	[0.56]	[0.16]	[218.27]
Trendbreak										
State and year dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Other controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adjusted R-squared	0.94	0.99	0.85	0.87	0.73	0.46	0.48	0.74	0.75	0.73
F-test 1	37.36	40.08	83	89.6	4.12	2.18	4.23	3.24	0.27	0.75
	[0.00]	[0]	[0]	[0]	[0.04]	[0.14]	[0.04]	[0.07]	[0.6]	[0.38]
F-test 2	0	41.5	2.53	12	0.14	2.1	0	4.26	0.03	0
	[0.94]	[0]	[0.11]	[0.00]	[0.7]	[0.14]	[0.96]	[0.03]	[0.86]	[1]
Number observations	632	632	508	508	487	630	536	593	577	504

Notes: Robust standard errors in parentheses. The explanatory variables are (row-wise) the number of banked locations in 1961 interacted with (i) a time trend (t) (ii) an indicator variable which is equal to one if the year is 1977 or after interacted with a post 1977 time trend (t-1977) (iii)an indicator variable which is equal to one if the year is 1990 or after interacted with a post-1990 time trend (t-1990). F-test 1 measures whether the sum of the first two terms differs from zero, and F-test 2 whether the sum of all three terms differs from zero. All regressions also include interaction terms between the indicator variables for 1977 and 1990 and number banked locations in 1961. All banked location variables are deflated by population in 1961 respectively. The set of `other controls' include state population, log state income per capita and per capita number of rural locations; all measured in 1961. Each control variable enters the regression in exactly the same way as the number of banked locations in the state. The sample covers 16 states and 40 years (1961-2000). Punjab and Haryana enter the sample in 1965 giving a total of 632 observations. * indicates significance at 10%, ** significance at 5% and *** significance at 1%.

TABLE 5: BANK BRANCH EXPANSION AND POVERTY AND STRUCTURAL CHANGE: REDUCED FORM EVIIDENCE

	Poverty outcomes					Structural change outcomes					
	Head count ratio				Agri.	Total	Non-agri.	Agricult-	Manufacturing		Non-agri
	Rural	Urban	Rural-Urban	Aggregate	wages	output	cultural	ural	Unregi-	Regis-	labor
			diff				output	output	stered	tered	share
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Number of banked locations	-257.40***	-28.2	-229.20***	-227.08***	2.10*	2.82***	6.59***	-1.75	9.30***	2.822	26.65***
in 1961 per capita *1961-77	[63.24]	[50.16]	[68.85]	[54.89]	[1.22]	[0.72]	[0.91]	[1.17]	[2.47]	[2.269]	[3.30]
Trend											
Number of banked locations	392.65***	58.97	333.68***	352.95***	-6.98***	-6.21***	-11.64***	-1.04	-16.55***	-3.703	-29.32***
in 1961 per capita*Post-77	[71.60]	[68.16]	[86.89]	[61.83]	[1.68]	[1.07]	[1.38]	[1.71]	[4.27]	[3.432]	[5.86]
Trendbreak											
Number of banked locations	-385.40***	-245.60***	-139.79	-384.20***	15.49***	10.62***	12.66***	6.55*	9.98	18.71**	
in 1961 per capita*Post-90	[134.52]	[80.46]	[144.99]	[110.15]	[2.62]	[2.08]	[3.08]	[3.51]	[8.09]	[7.44]	
Trendbreak											
State and year dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Other controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Adjusted R-squared	0.83	0.92	0.61	0.87	0.91	0.98	0.98	0.93	0.87	0.93	0.89
F-test 1	16.29	0.45	3.91	19.61	17.84	18.3	23.96	4.93	4.52	0.11	0.32
	[0]	[0.5]	[0.04]	[0]	[0]	[0]	[0]	[0.02]	[0.03]	[0.73]	[0.57]
F-test 2	3.68	10.62	0.07	5.89	20.9	14.09	6.85	1.31	0.14	6.53	
	[0.05]	[0]	[0.79]	[0.01]	[0]	[0]	[0]	[0.25]	[0.7]	[0.01]	
Number observations	623	623	623	623	541	584	577	577	577	577	365

Notes: Robust standard errors in parentheses. The explanatory variables are (row-wise) the number of banked locations in 1961 interacted with (i) a time trend (t) (ii) an indicator variable which is equal to one if the year is 1977 or after interacted with a post 1977 time trend (t-1977) (iii)an indicator variable which is equal to one if the year is 1990 or after interacted with a post-1990 time trend (t-1990). F-test 1 measures whether the sum of the first two terms differs from zero, and F-test 2 whether the sum of all three terms differs from zero. All regressions also include interaction terms between the indicator variables for 1977 and 1990 and number banked locations in 1961. All banked location variables are deflated by population in 1961 respectively. The set of `other controls' include state population, log state income per capita and per capita number of rural locations; all measured in 1961. Each control variable enters the regression in exactly the same way as the number of banked locations in the state. The sample covers 16 states and 40 years (1961-2000). Punjab and Haryana enter the sample in 1965 giving a total of 632 observations. * indicates significance at 10%, ** significance at 5% and *** significan

TABLE 6: BANK BRANCH EXPANSION AND POVERTY AND STRUCTURAL CHANGE: INSTRUMENTAL VARIABLES EVIIDENCE

	Poverty outcomes					Output outcomes					
	Head count ratio				Agri.	Total	Non-agri.	Agricult-	Manufacturing		Non-agri
	Rural	Urban	Rural-Urban	Aggregate	wages	output	cultural	ural	Unregi-	Regis-	labor
			diff				output	output	stered	tered	share
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Number of bank branches opened in rural unbanked locations	-533.11***	-122.12	-410.99***	-487.67***	12.58***	8.49***	18.60***	2.54	25.13***	8.318	36.69***
	[139.29]	[92.59]	[130.94]	[122.88]	[3.30]	[1.81]	[3.57]	[2.67]	[7.47]	[5.43]	[7.80]
Number of banked locations 1961 per capita * Trend	-161.10***	-47.3	-113.80**	-147.27***	0.13	1.67**	5.23***	-1.31	6.55**	3.89**	23.62***
	[56.74]	[35.60]	[52.99]	[49.34]	[1.15]	[0.74]	[1.34]	[1.02]	[2.59]	[1.86]	[2.49]
State and year dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Other control variables	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Overidentification test p-value	0.99	0.91	0.99	0.99	0.99	0.94	0.99	0.97	0.99	0.93	
Number observations	623	623	623	623	541	584	577	577	577	577	365

Robust standard errors are reported in parentheses. See the Data Appendix for details on the construction and sources of the variables. The sample covers 16 states, and 40 years (1961-2000). Punjab and Haryana enter the sample in 1965, giving a total of 632 observations. The instruments for number of bank branches in rural unbanked locations are: (i) number of banked locations in 1961 percapita interacted with a Post-77 Trendbreak, and (ii) number of banked locations in 1961 percapita interacted with a Post-90 Trendbreak. The corresponding first stage regression is reported in Table 4, column (1). The overidentification test is due to Sargan [1958]. The number of observations times the R-2 from the regression of the stage two residualson the instruments is distributed chi-squared (T+1) where T is the number of instruments.

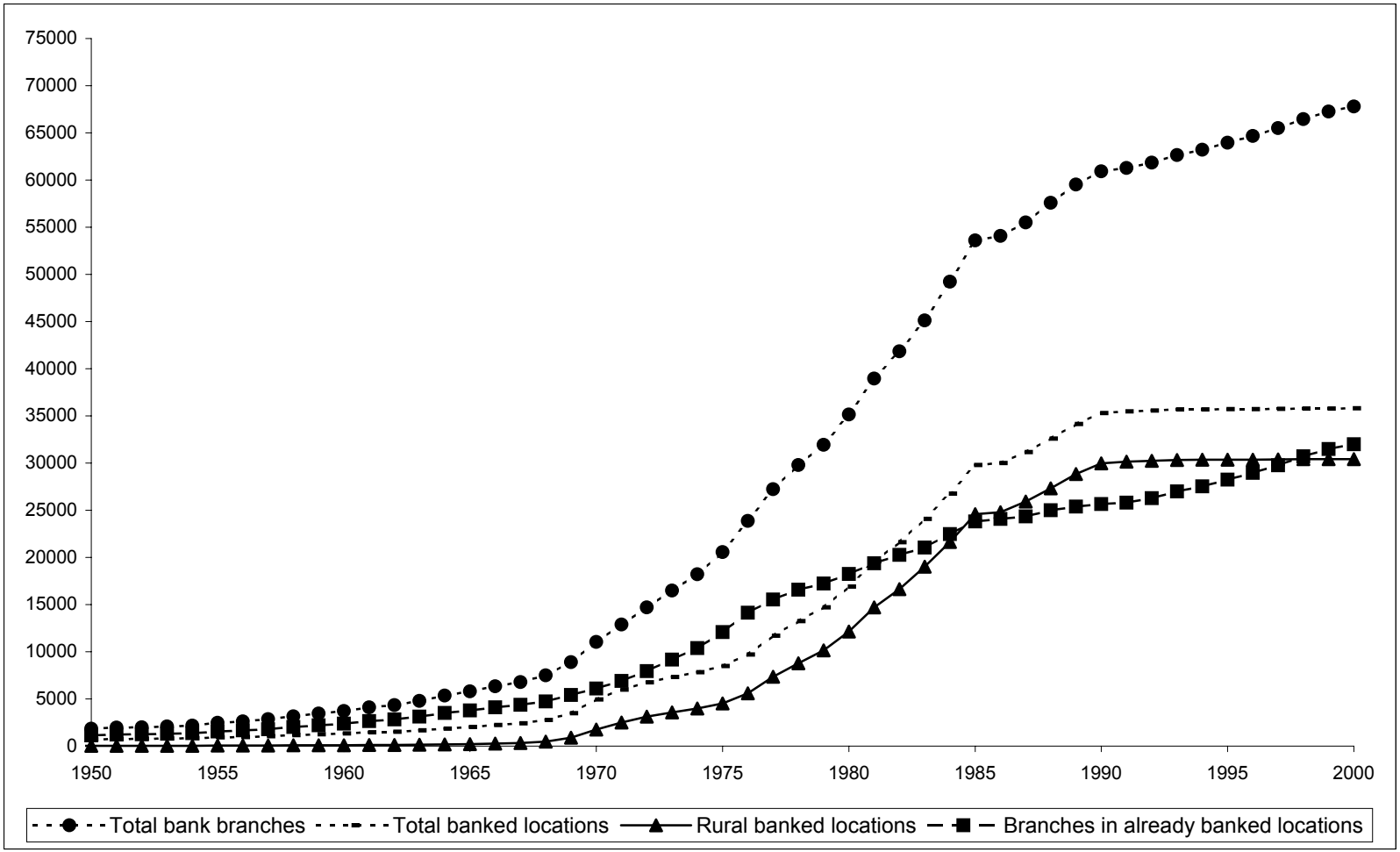

FIGURE 1: GROWTH OF BANK BRANCHES IN INDIA

Notes: All four variables are stock variables and refer to the cumulative number of branches (of that type) . These variables are constructed using information from the Reserve Bank of India Basic Statistical Returns, as provided in the `Directory of Commercial Bank Offices in India (Volume 1)', The Data Appendix provides a full description of these data.

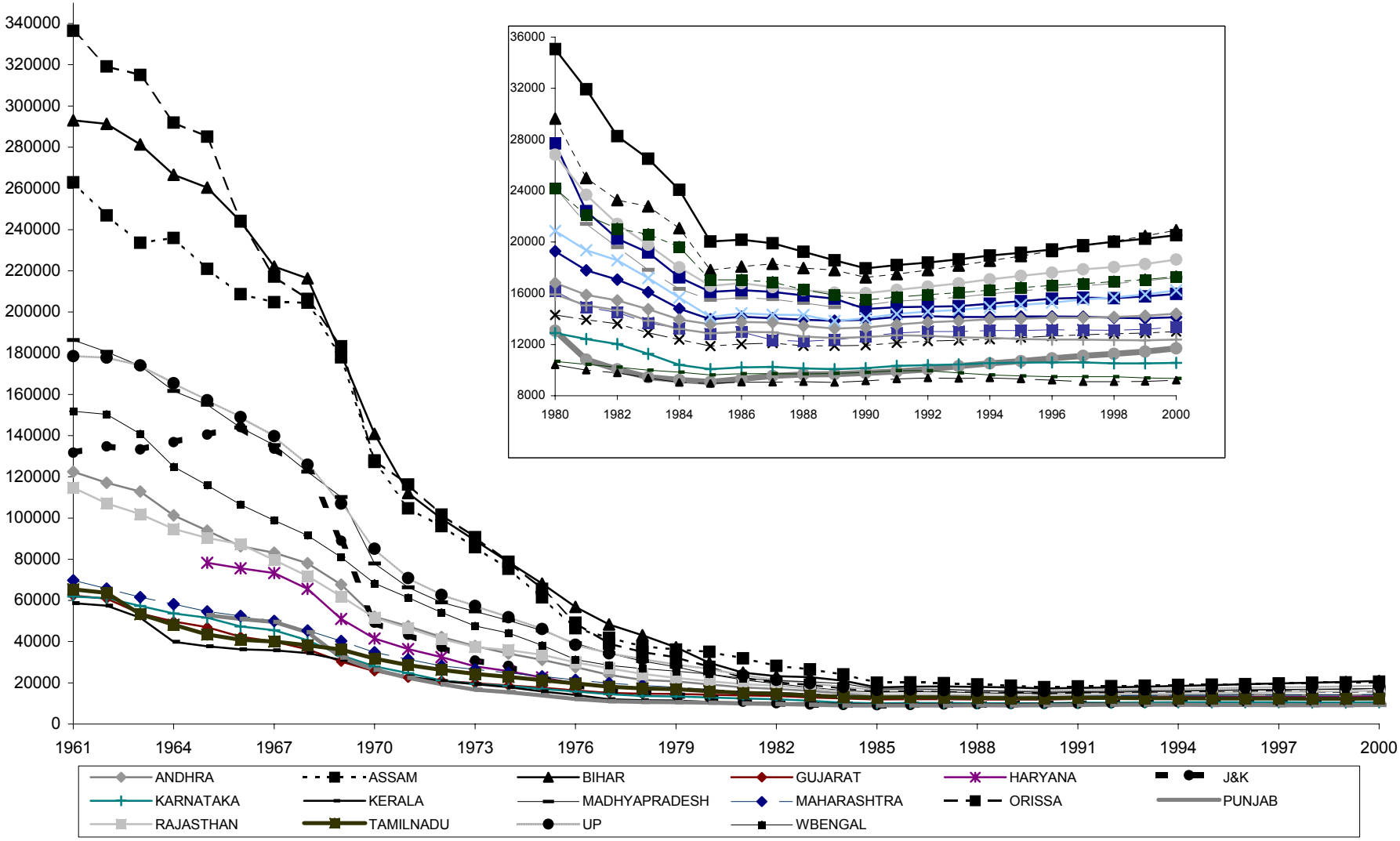

FIGURE 2: POPULATION PER BANK BRANCH ACROSS 16 INDIAN STATES

Notes: This variable is the ratio of the state's current population divided by the total number of bank branches in the state. The Data Appendix describes the data sources.

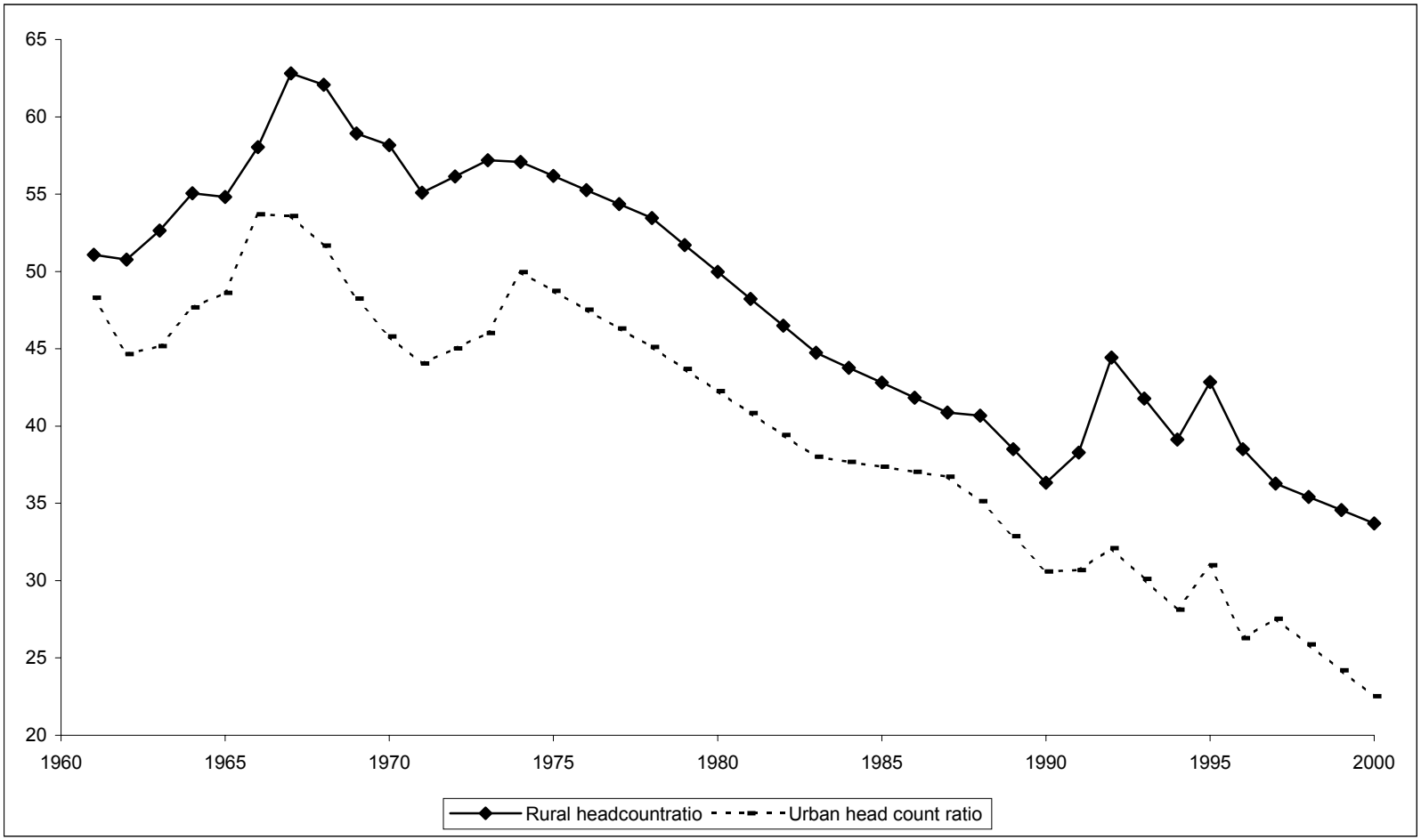

FIGURE 3: RURAL AND URBAN HEAD COUNT RATIO ACROSS INDIAN STATES

Notes: The rural and urban head count ratio variables are the annual averages for the 16 Indian states in our sample. The Head count ratios have been constructed from National Sample Survey information. The Data Appendix provides information on the construction of these variables.

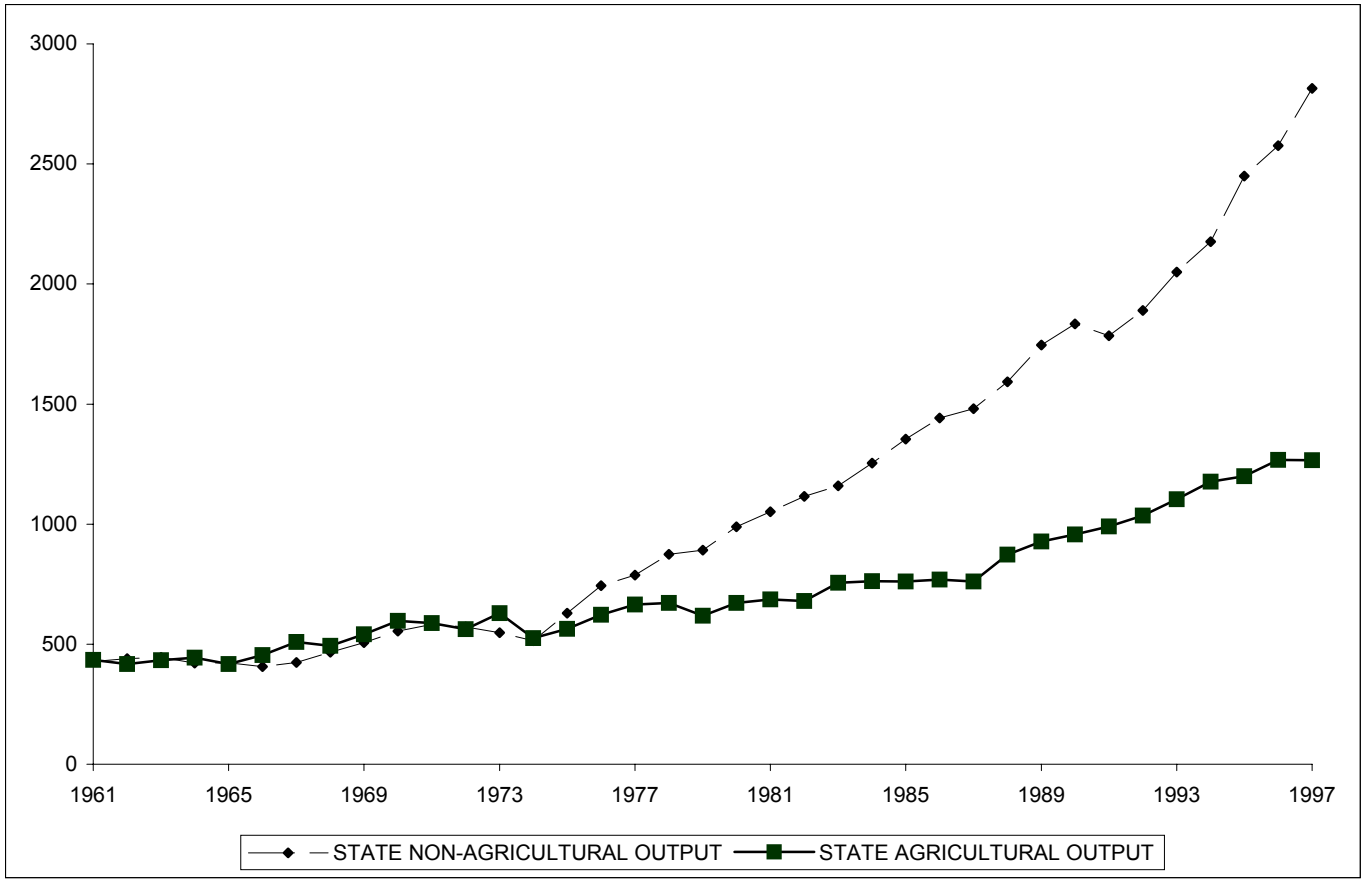

FIGURE 4: STATE AGRICULTURAL AND NON-AGRICULTURAL OUTPUT

Notes: The state agricultural and non-agricultural incomes are the annual averages of the real state agricultural and non-agricultural incomes for the 16 Indian states in our sample normalized by 1961 population. The Data Appendix provides information on the construction of these variables.

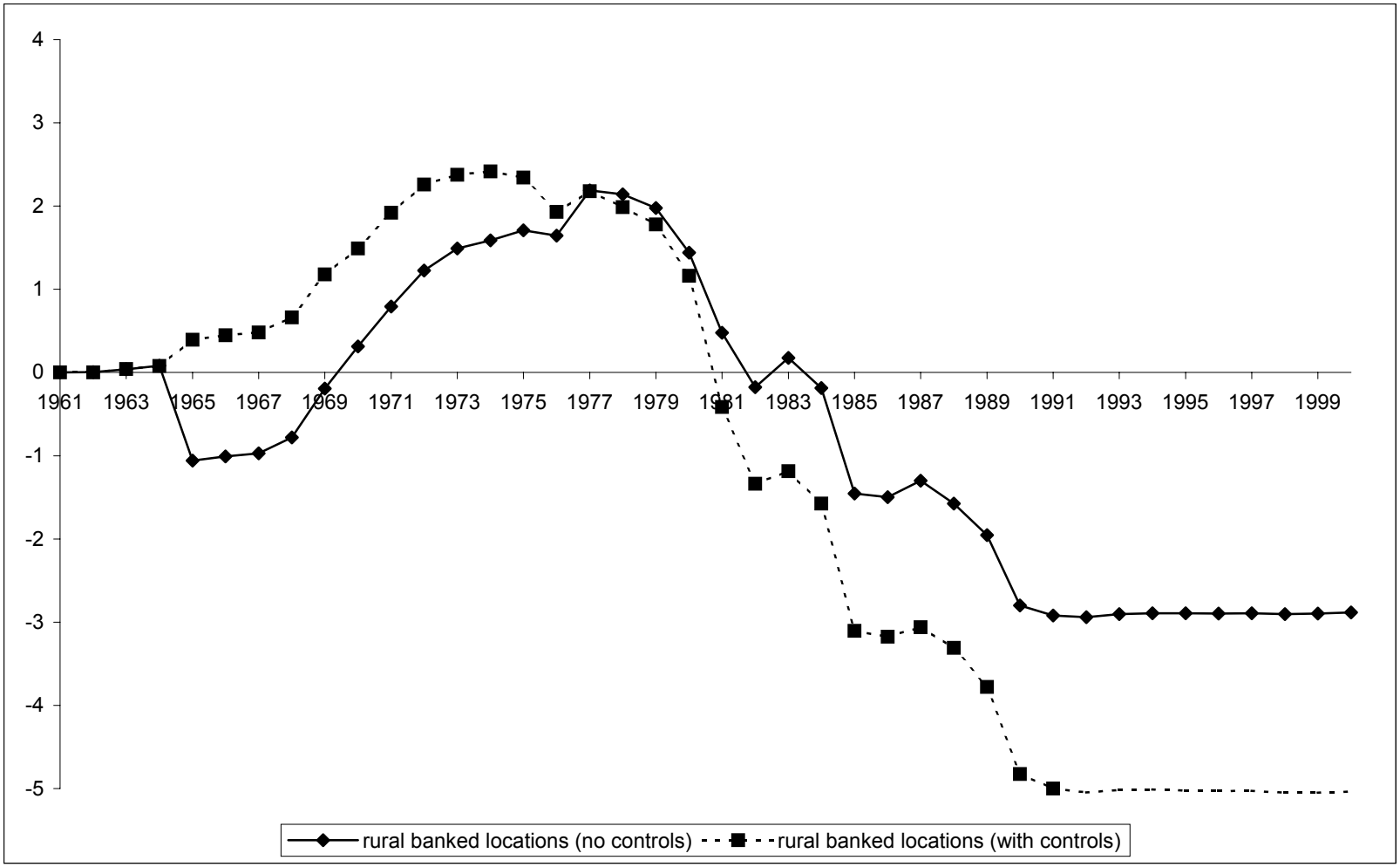

FIGURE 5: INITIAL FINANCIAL DEVELOPMENT AND BRANCH EXPANSION INTO RURAL UNBANKED LOCATIONS

Notes: This figure graphs the coefficients for two regressions. The series **"Rural banked locations (no controls) " graphs** the set of "number of banked locations in 1961" Xyear interaction terms from the regression given in Equation (1), and the series **"Rural banked locations (with controls)" graphs** the corresponding set of interaction terms from the regression in Equation (2) which includes population, income and location controls,

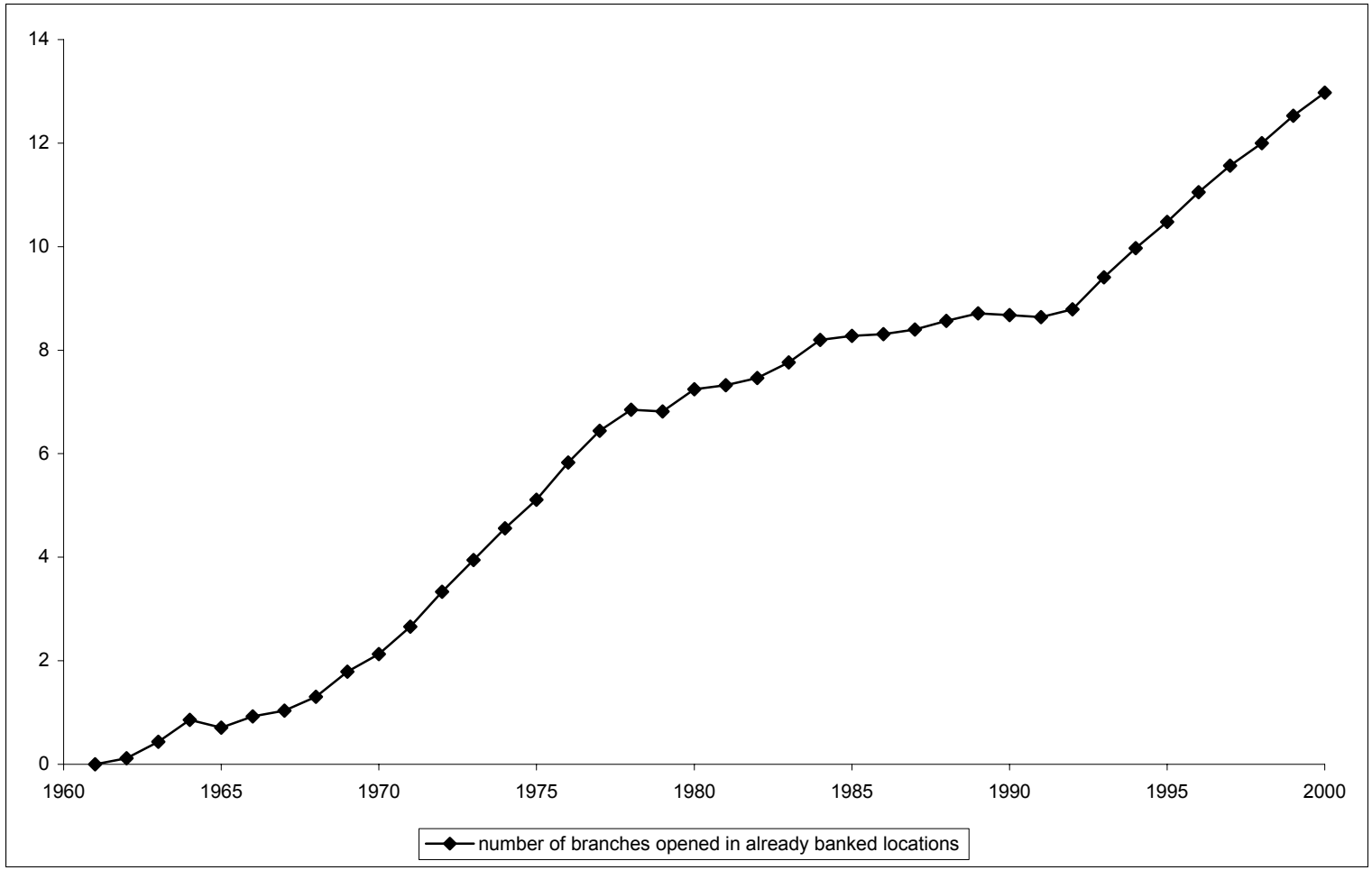

FIGURE 6: INITIAL FINANCIAL DEVELOPMENT AND BRANCH EXPANSION IN ALREADY BANKED LOCATIONS

Notes: This figure graphs the set of "number of banked locations in 1961" Xyear interaction terms from a regression in which the dependent variable is the number of branches opened in already banked locations. The regression includes population, income and location controls,

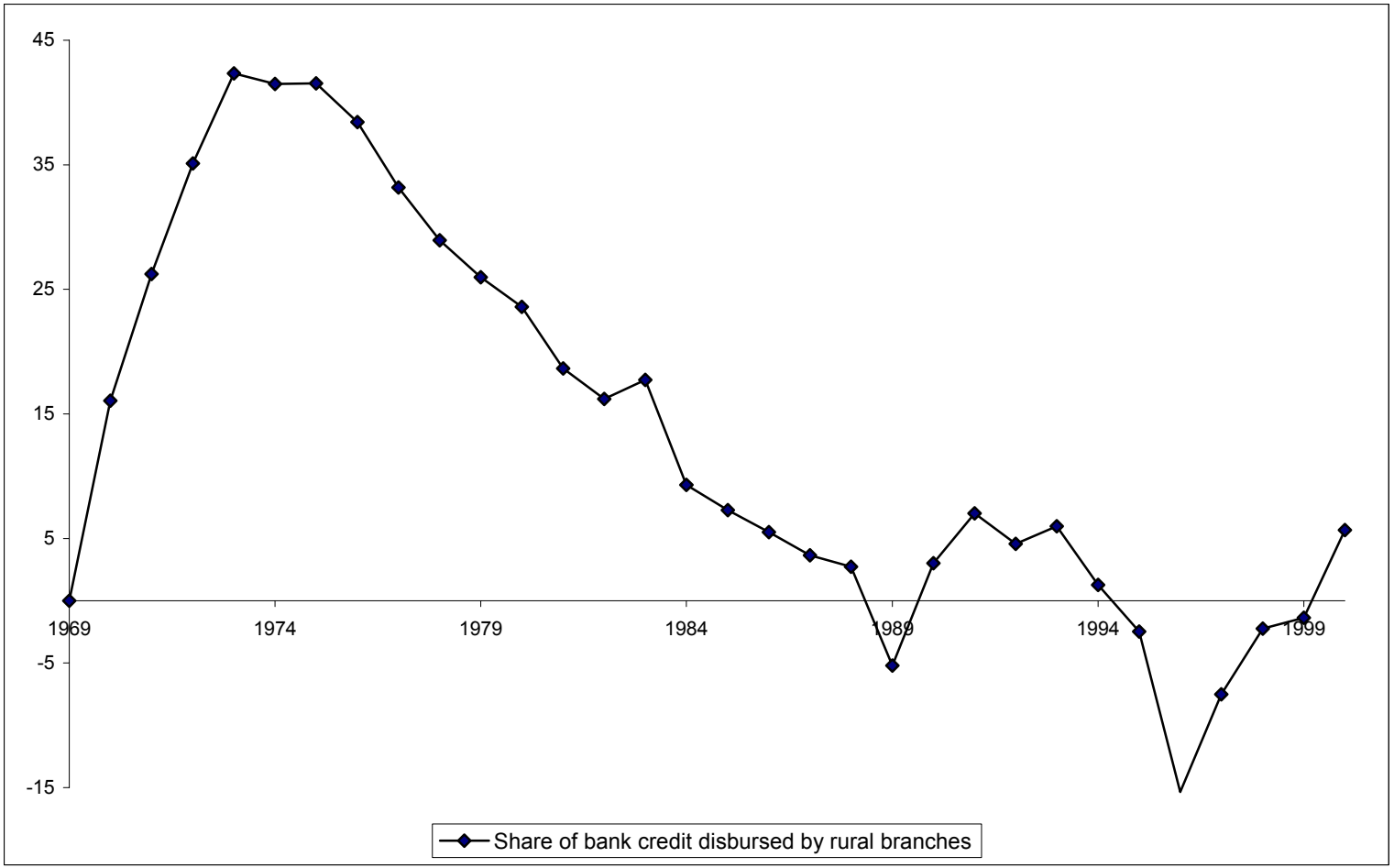

FIGURE 7: INITIAL FINANCIAL DEVELOPMENT AND RURAL CREDIT SHARE

Notes: This figure graphs the set of "number of banked locations in 1961" Xyear interaction terms from a regression in which the dependent variable is the share of total credit disbursed via rural branches. The regression includes population, income and location controls,

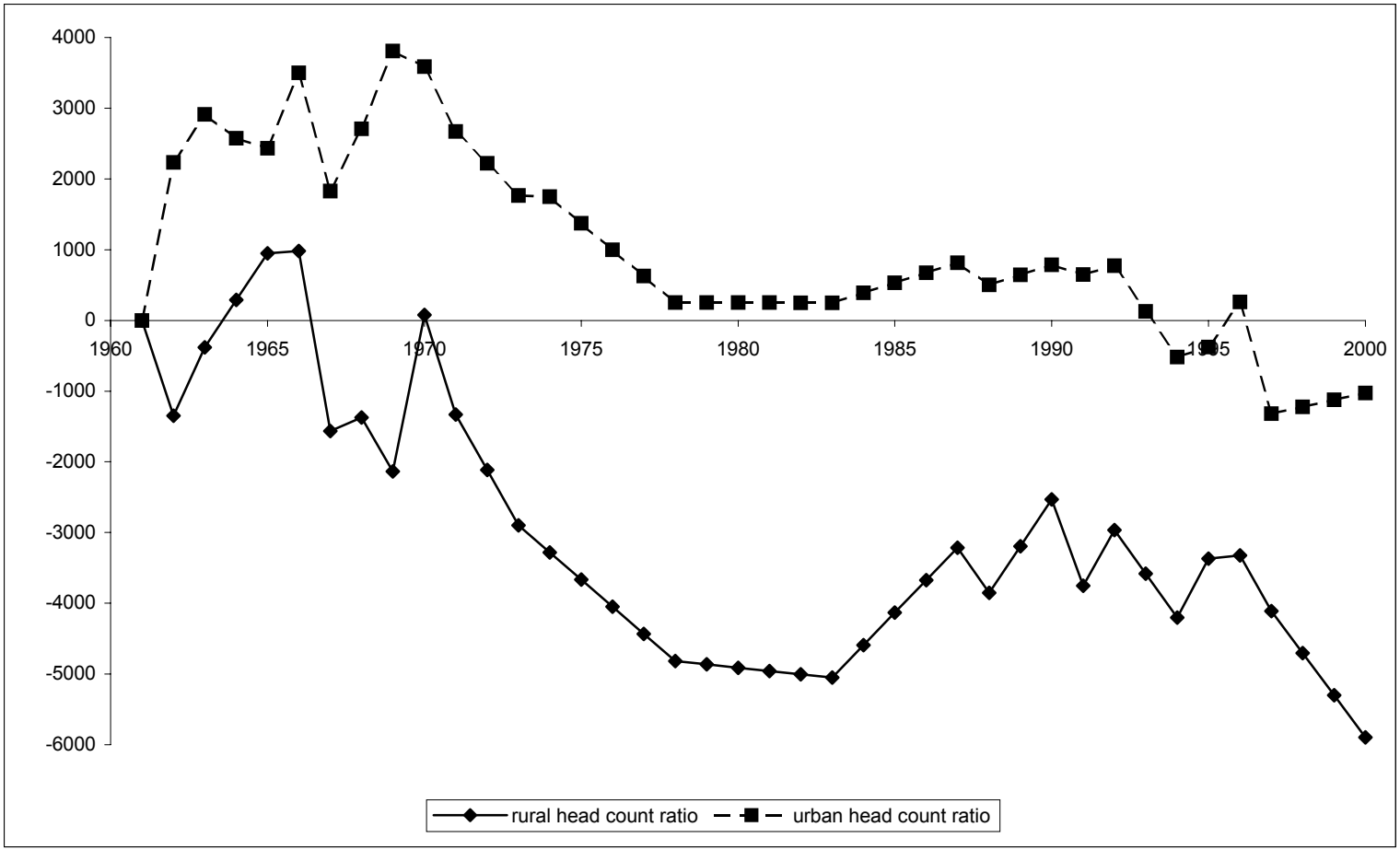

FIGURE 8: INITIAL FINANCIAL DEVELOPMENT AND POVERTY

Notes: This figure graphs the coefficients for two regressions. The series **"Rural head count ratio" graphs** the set of "number of banked locations in 1961" Xyear interaction terms from the regression in which the dependent variable is rural head count ratio, and series **"Urban head count ratio" graphs** the corresponding set of interaction terms from the regression in which the dependent variable is urban head count ratio. Both regressions include population, income and location controls,