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

Robin Burgess† and Rohini Pande ‡

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Abstract

Between bank nationalization in 1969 and the onset of financial liberalization in 1990 the Indian central bank took control of bank branch placement as a means of advancing social objectives. Commercial banks were forced to open branches in over 30,000 rural locations which had no prior presence of formal financial institutions. This remains the single largest rural bank branch expansion undertaken in any country. In this paper we exploit a policy-induced reversal in the relationship between the initial number of banked locations in an Indian state and its growth pre- and post- a major change in the Indian central bank's branch licensing policy in 1977 to evaluate the economic impact of rural banks. By examining this unique episode in Indian history the paper is able to shed light on long standing debates surrounding whether state-led credit expansion undermines or promotes rural development.

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†Department of Economics, London School of Economics

‡Department of Economics, Columbia University

1 Introduction

Working out ways to lift people out of poverty is a 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. (see Banerjee and Newman 1993; Aghion and Bolton 1997). Whether such theoretical ideas apply in practice is, however, very much an open question.

Nowhere is the debate on credit interventions more heated than as regards formal credit. One view, which dominated policy-making in the post World War II period, saw commercial banks as engines of structural change and poverty reduction in rural areas. In line with this, many governments enforced directed lending to the rural sectors, often accompanied by a state takeover of the formal credit sector (Besley 1995). This development was not restricted to low income countries – in the United States, for example, the Community Reinvestment Act of 1977 requires banks to meet the credit needs of its entire community, including low income neighborhoods. Such policy activism is endorsed by the recent theoretical work on credit markets which argues that expansion of access to credit is critical to getting people out of poverty traps (Banerjee and Newman 1993; Aghion and Bolton 1997).

A second view does not dispute the centrality of financial intermediation to poverty reduction but views government intervention in credit markets as either ineffective or counterproductive in this regard. Proponents of this view argue 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 to governments and international institutions to focus their energies (and money) on alternative providers of credit such as micro-finance institutions (see Morduch, 1998). Though the centrality of financial deepening to economic development is widely acknowledged and is the subject of a vast cross-country regression literature (e.g. King and Levine 1993) we remain very much in the dark as regards identifying specific 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 paticularly unclear. By providing a rigorous evaluation of the impact of the largest ever state led branch expansion ever

attempted in a developing country on poverty and structural change this paper fills an important gap in the literature. 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.

This paper exploits a major change in the Indian central bank's branch licensing policy in 1977 to provide evidence on the economic impact of rural banks. On January 1, 1977 the Indian central bank mandated that a bank can 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. As these targets were designed to equalize population per bank branch across Indian states the policy led to a reversal in the relationship between the number of banked locations in an Indian state in 1961 and the growth of banked rural locations in the state after 1977. We use this trend break in the relationship to identify the economic impact of rural banks.[1] Our main focus is on the role of rural banks in reducing poverty. We also examine the possible labor market and output channels through which these reductions, if any, were achieved.

This paper is organized as follows. In Section 2 we describe the policy experiment and data, section 3 contains the empirical analysis, and Section 5 concludes.

2 Background and Data

2.1 Background: Banking Sector in India

At Independence in 1949 commercial bank operations in India were confined to urban areas, and geared towards the financing of trade and commerce activities. The 1951 All-India Credit Survey found that of the total amount borrowed by cultivators in 1951-52 about 3 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 45 percent of the total and agriculturist moneylenders another quarter (see Table 1).

The 1951 All-India Credit Survey saw financial backwardness was seen as a root cause of rural poverty[2] and recommended that commercial banks be used as instruments for tackling high rural poverty. The need for government intervention in the banking sector was founded on two key premises. First, supply led inexpensive for-

[1]The empirical approach adopted in the paper is in the spirit of recents papers which use trend breaks to evaluate the impact of government programs (see e.g. Almond, Chay and Greenstone, 2001).

[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, unbanked locations.

mal credit was necessary to displace 'evil' moneylenders who exploited their monopoly power to charge high rates of interest and were therefore net contributors to rural poverty.[3] Second, state led expansions of cheap credit were necessary to allow poor, rural households to adopt new technologies and production processes, and thus to escape the cycle of poverty and indebtedness.

The Indian central bank (henceforth RBI) first sought to expand rural access to formal credit via the cooperative movement. However, the belief that increasing the quantum of financing of credit cooperatives by the RBI could not address the central problem that the bulk of rural India remained without a source of formal credit combined with political demand for the use of commercial banks as agents of change in rural areas, led to the 'social control of banking'. In July 1969 the 14 largest Indian commercial banks were nationalized via the Bank Company Acquisition Act.

In July 1969 the 14 largest commercial banks were nationalized via the Bank Company Acquisition Act.[4] In 1980, a further six banks were nationalized. The two decades after bank nationalization witnessed a dramatic branch expansion spree. Between June 1969 and March 1990 the number of bank branches increased from 8,262 to 59,752, and the population per bank branch fell from 64,000 to 14,000 (Figure O). Over this period rural deposits as a share of total deposits rose from 3 to 15 percent and the share of rural lending from 1.5 to 15.4 percent. With the onset of financial liberalization in 1990 rural bank branch expansion came to a standstill – all bank branch increases over the last decade reflect branch expansion in already banked locations.

The two decades after bank nationalization witnessed a transformation of the rural household debt structure (Table 1).[5] In 1971 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 provide econometric evidence on the links, if any, between a key component of social banking – branch expansion into unbanked rural locations, and rural outcomes.

The dramatic branch expansion post-bank nationalization can be directly related

[3]Overall, informal finance was viewed as anti-developmental, exploitative, geared towards consumption as opposed to investment and incapable of providing an appropriate range and volume of credit.

[4]The preamble to this act stated "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".

[5]The All India Rural Credit Survey carried in 1951 was renamed the All India Debt and Investment Survey in subsequent years though the surveys are comparable and based on the same survey design (see Table 1).

to the social banking experiment. After 1969, nationalized banks were used as a vehicle to launch a unique experiment in social banking. The centrepiece of this experiment was the use of state control of bank branch placement to reach populations with no prior access to formal financial institutions (hereafter 'unbanked locations'). A second component of social banking was directed bank lending. In order to provide the rural poor cheap credit interest rate ceilings were enforced and a credit-deposit ratio of 60% required of all rural branches. In addition, banks were required to meet specific targets in terms of percentage lent to priority sectors which included agriculture, small businesses and entrepreneurs. Between 1969 and 1990 lending to these sectors (as a share of bank lending) trebled to 40 percent of all lending, with agriculture and small scale industry each receiving 16 percent of bank credit.

Though placement restrictions for commercial banks were abandoned in 1990 (see Figure O) the hand of the state is still evident in the structure of the banking system today. In 2001, there were 67,929 bank branches in India reflecting an average population per bank branch of 15,000.[6] A total of 35,673 locations in India were banked, of which 30,313 were rural locations. Together, these bank branches disbursed the rupee equivalent of 123,652 million dollars as loans and had deposits of the rupee equivalent of 211,267 million dollars. Roughly 15 percent of these deposits and 10 percent of the bank credit was accounted for by rural bank branches.

2.2 Policy: The Banking of Rural Locations

At the point of bank nationalization in 1969 the RBI decreed that future banking development across Indian states will be judged in terms of the population served per bank branch. It committed to both reducing the average population per bank branch and increasing bank presence in states with a higher population per bank branch than the national average, and sought to achieve this by using a combination of licensing rules and targets.

By 1970, unbanked locations in India were predominantly rural.[7] The RBI designated one commercial bank per Indian district as the "Lead Bank". This bank had to identify, in conjunction with the relevant state government, the unbanked locations in the state which should receive a commercial bank branch. At specified intervals (roughly every three years) using these Lead Bank lists, and in consultation with the state governments, the RBI would circulate the list of unbanked locations to all banks.

The RBI used a combination of licensing rule and targets to force banks to open branches in these unbanked locations. The 1949 Indian Banking companies act requires a bank which wishes to open a new branch to get a license from the RBI.[8]

[6]The Indian banking sector consists of 27 public sector banks (of which 19 are nationalized banks), 196 regional rural banks, 42 foreign banks and 32 private banks

[7]The Indian census defines locations with less than 10,000 individuals as rural locations.

[8]The initial reason underlying this law was prevention of the (perceived) indiscriminate growth

Between 1970 and 1990 the RBI license rule stated the number of branches a bank must open in unbanked locations in order to be eligible to open one in an already banked location. In addition, overall targets and bank-specific targets were set on how many branches a bank must open, usually within a three year window. Table 2 lists the licensing criterion and targets which underlay this branch expansion program.

On January 1, 1977 the RBI announced a drastic change in its branch expansion policy – now on, for every branch opened in an already banked location a commercial bank must open branches in four unbanked locations. This implied a doubling in the number of branches which a bank must open in unbanked locations in order to be eligible to open one branch in an already banked location. This new branch licensing rule, combined with overall targets on branch expansion, had the effect of forcing banks to open relatively more branches in unbanked locations in underbanked Indian states. This licensing regime remained in place until 1990. In 1990 the RBI dismantled this program – no further targets were set, and banks were given freedom to open branches in their preferred locations.[9]

While any single commercial bank would still have an incentive to open branches in the most profitable unbanked location the targets were set, and were binding at the state-level. This implied that the growth of the number of banked rural locations in an Indian state post-1977 was driven by the choice of targets and the license rule. Moreover, the form of these two policy instruments implied that branch expansion took a specific form – namely, the growth of rural banked locations was relatively higher in Indian states which were, relative to the national average, underbanked.

2.3 Data

We use an annual panel data-set on the 16 major Indian states which account for roughly 95 percent of the Indian population over the period 1961-2000. Table 3 provides descriptive statistics, and the Data Appendix provides information on data sources.

Our measure of the access of the rural population to commercial banks is the number of rural locations in an Indian state i with at least one commercial bank branch per capita in year t, and is denoted as B^R_{it}. Over the sample period 88 percent of the increases in number of banked locations in India was due to the banking of rural locations. The average Indian state in our sample has 0.038 banked rural locations per 10,000 persons (see Table 3). The growth of the number of banked locations exhibits considerable cross-state and over-time variation. Prior to 1977 branch expansion in

of bank branches during the war period. The RBI initially follows cautious policy of licensing and used this law to bring about the closure of uneconomic branches and amalgamate and consolidate bank branches; this led to an overall decline of bank branches between 1949-1954.

[9]Between 1977 and 1990 the RBI also altered the definition of unbanked locations to progressively reach smaller and smaller locations. In 1981, the RBI required states to attain a uniform population of 17,000 per bank branch. In 1985, the RBI introduced the service area approach which required banks to ensure there were no large spatial gaps in the banking of locations.

banked and unbanked rural locations occurred at roughly the same rate. However, between 1977 and 1990 branch expansion in unbanked rural locations occurred at roughly three times the rate in banked locations. After 1990 branch expansion into rural unbanked locations came to a standstill, with all subsequent branch expansions reflecting branch building in already banked locations (Figure O).

Bank credit per capita grew throughout this period, with an average bank credit per capita of Rs. 521. In contrast, the shares of both rural credit and rural savings grew until 1990, but not thereafter.

The key stated goal of social banking was poverty reduction in rural India. We focus attention on state-level poverty outcomes, broken down by rural and urban sectors. India is one of the few countries in the world which has collected reliable poverty data over a long time period, making an poverty analysis feasible (see Ozler, Datt and Ravallion 1996). The most basic poverty measure is the head count ratio which measures the proportion of the population below the poverty line. Across the period roughly fifty percent of the Indian population was classified as being poor by this measure. We also have separate measures of rural and urban poverty. We also examine male real agricultural laborer wages which are good measure of the welfare of the landless. The reason we do this is that if providing household with access to credit increases non-agricultural output or employment this may exert upward pressure on agricultural wages.

In addition to the poverty and wage outcomes we also consider labor market and output outcomes. The theoretical credit literature suggests that a key implication of credit rationing of the poor is their inability to move out of agriculture. It is therefore relevant to ask whether increased access to rural banks affected the structure of output or employment in India. On the output front the variables of interest are real per capita state domestic output, both agricultural and non-agricultural, and within non-agricultural output from unregistered manufacturing which can be an important source of income in rural areas. The employment outcome we consider is the the number of non-agricultural rural laborers as a share of total rural laborers. By relating these series to the rural branch expansion series we can get an idea of whether rural banking is helping to promote diversification of the economy.

3 Empirical Analysis

3.1 Identification

3.1.1 Basic Strategy

In India financial backwardness was seen as a root cause of poverty. The government response was to force banks to open more branches in more backward states as a means of equalizing population per bank branch. Financial backwardness at the beginning of the period and subsequent branch expansion and are thus linked. Our

data period 1961-2000 covers all the key episodes of the social banking experiment from bank nationalization in 1969, to imposition of the 1:4 licensing rule in 1977 through to abandonment of placement restrictions in 1990. If policy was binding we would expect these policy changes to affect the relationship between initial financial backwardness and subsequent branch expansion in rural, unbanked locations. To check this we run regressions of the form.

$$B_{it}^{R} = \alpha_i + \beta_t + \sum_{t=1961}^{2000} (B_{i61} \times \beta_t)\gamma_t + \epsilon_{it}$$

B_{it}^{R},the cumulative number of branches opened in rural, unbanked locations (normalised by 1961 population), is our social banking measure.[10] B_{i61},the total number of banked locations in state i in 1961 (normalized by the 1961 population) is our measure of financial backwardness. We control for state fixed effects (α_i) and year fixed effects (β_t) in the regression by including a full set of state and year dummies. These control for state specific, time invariant and time specific, state invariant factors respectively.

Our interest centers on the γ_t coefficients on the interaction between financial backwardness (B_{i61}) and year dummies (β_t). These tell us whether this relationship changed over time in a way that is consistent with changes in banking policy (see Table 2). In Figure A we graph out these coefficients. We see that there are trend breaks in 1977 and 1990, corresponding exactly to the imposition of the 1:4 licence rule and the removal of placement restrictions respectively. This greatly increases our confidence that banking policies in India had bite and that the trend breaks we observe are policy induced. The form of the relationship is not affected by controlling for other initial conditions in the regression such as log real state income per capita, total state population and number of rural locations per capita.[11] This can be seen in Figure A where we graph out the γ_t coefficients with these controls included. This makes us more confident that we are picking up the time varying, policy mediated impact of financial backwardness in 1961 on rural branch expansion.

Three episodes are discernable in Figure A. Between 1961-1976 states with more banks in 1961 saw faster growth in rural branch openings.[12] This is consistent with

[10] As each rural location that recieves a branch is then classified as banked this is equivalent to a cumulative count of the number of banked rural locations in a state in each year.

[11] We introduce these variables in our regression by including the full set of interaction terms between each of these three variables measured in 1961 and year dummies. Our final regression is of the form:

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

where X_{i61} is the vector of control variables, each measured in 1961.

[12] Banks clearly still had some latitude as regards branch placement during this period and it was precisely this observation that led the Reserve Bank of India to impose the 1:4 licence rule in 1977.

demand for rural banks being greater in more financially developed states. This period is brought abruptly to a close with the impostion of the 1:4 license rule in 1977 which states that for each branch opened in a banked location banks had to open four branches in unbanked (predominately rural) locations. There is a clear trend reversal in this year and between 1978 and 1989 we see that more financially backward states attract *more* rural branches. This is precisely what the social banking experiment in India was trying to achieve. It is not what we would expect to observe had banking expansion been driven by market forces. This social banking period comes to an end in 1990 when the RBI remove restrictions on where banks can place branches. Between 1990 and 2000 the curve is flat – banks simply stop building branches in rural locations (see also Figure O). This suggests that rural building in the 1978-1989 period was policy induced and led to excess capacity. As a result when placement restrictions were removed banks reverted to building predominately in urban locations (see Figure O).

In this paper we want to identify whether government led rural branch expansion affected poverty and structural change. 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 problematic – when we run a regression of rural branches on rural poverty we cannot be sure whether the coefficient is picking up the impact of social banking or just the fact more rural branches went to poorer areas.[13] Figure A helps us to get around this problem in two distinct ways. First, we can see whether outcome variables of interest exhibit trend breaks in 1977 and 1990. That is we want to see whether outcomes such as rural poverty exhibit breaks which match up with the timing of key banking policy changes. Second, we can use these trend breaks to instrument for rural branch expansion. In this way we can isolate the impact of policy induced branch expansion on poverty and structural change measures. We will pursue both these strategies in the results sections below.

3.1.2 Robustness

Branch Expansion and Initial Conditions The form of the relationship displayed in Figure A forms the cornerstone of our identification strategy. Identification hinges on there being policy induced trend breaks in the relationship between initial financial backwardess and subsequent rural branch expansion. We can use a trend break regression model to check the size and significance of the trend breaks in 1977

Nationalization on its own was not sufficient to skew bank placement towards financially backward states.

[13]Empirical analysis, in fact, suggests that the latter effect dominates. In a simple regression of rural branch expansion (B_{it}^R) 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.

and 1990. This takes the form:

$$\begin{aligned} B_{it}^{R} &= \alpha_i + \beta_t + (B_{i61} \times [t - 1961])\gamma_1 + (B_{i61} \times [t - 1977] \times POST_{1977})\gamma_2 + \\ &\quad (B_{i61} \times [t - 1990] \times POST_{1990})\gamma_3 + (B_{i61} \times POST_{1977})\gamma_4 \\ &\quad + (B_{i61} \times POST_{1990})\gamma_5 + \epsilon_{it} \end{aligned}$$

Here α_i capture state fixed effects, β_t capture year fixed effects, γ_1 capture the average trend relationship between financial backwardness in 1961 and rural branch expansion between 1961 and 1977, γ_2 captures whether there is a signficant break from this trend post 1977, γ_3 whether there is a significant break post 1990[14], γ_4 and γ_5 are included to allow intercepts to change at each trend break. The addition of γ_1 and γ_2 gives us the average post 1977 trend whereas the addition of γ_1, γ_2 and γ_3 gives the post 1990 trend.

Our interest centers mainly on γ_2 and γ_3. Results are shown in columns (1) and (2) of Table 4. These results mirror the pattern we see in Figure A. Between 1961 and 1977 states with more banked locations in 1961 see faster growth of bank branch openings in rural, unbanked locations. This trend is reversed in 1977 and between 1978 and 1989 – states with less banked locations in 1961 now attract more rural branches.[15] The 1:4 license rule introduced in 1977 effectively appears to have been effective in forcing commercial banks in India to open more rural branches in states that had less banked locations per capita in 1961. In 1990 when placement restrictions are removed there is again a trend break. The relationship between financial development in 1961 and rural branch expansion moves from being negative between 1978 and 1989 to being insignificant post 1990.

We have now built up a body of evidence which suggests that state control over the banking sector in India was used to skew branch placement towards unbanked, rural locations. As a check on the robustness of our findings we can exploit the fact that we have data from the Reserve Bank of India on branch openings in rural/urban and unbanked/banked locations.[16] As is evidenced by the behavior of banks prior to nationalization – when state controls were not in place – banks prefer to open branches in urban, banked locations. We would therefore expect the relationship between financial backwardness in 1961 and subsequent branch expansion to be different according to the type of branch under considereation.

In column (3) and (4) of Table 4, where we look at all bank branches, we see that there are significant trend reversals in 1977 and 1990. States which had less banked locations per capita in 1961 receives more banks post 1977 but less banks

[14] $POST_{1977}$ and $POST_{1990}$ are time dummies which turn on in 1977 and 1990 respectively.

[15] As the F test shows γ_1 and γ_2 are signficantly different from one another and $\gamma_1 + \gamma_2 < 0$ indicating that post 1977 the relationship between financial development in 1961 and rural branch expansion is negative.

[16] These are census definitions. The rural versus urban distinction is determined by population per census location whereas a banked refers to a census location which already contains a bank and unbanked to a location that does not.

overall post 1990. In columns (5) and (6) we see that opening in opening in already banked locations is positively related to financial development in 1961 throughout the period. This is what one would expect given that banks have greater latitude in terms of choosing banked locations and will tend to choose more profitable locations. As targets were set at the district and state level, the 1:4 licensing rule introduced in 1977 did constrain banks to open more branches in banked locations in states with fewer banked locations in 1961 and we do see a negative and significant trend break in 1977. Similarly we see a positive and significant trend break in 1990 when these restrictions were removed. The overall relationship, however, is positive throughout the period as we can see when we graph out the coefficients between financial development in 1961 and expansion into banked locations in Figure E. In column (9) and (10) we see that there are no such trend reversals for urban, unbanked locations. The relationship between financial development in 1961 and branch expansion is positive throughout. This makes sense given that banks will chose to open in urban locations without the need for coercion by the RBI.

What is apparent from Table 4 is that the placement of banks in rural, unbanked locations has been most directly under the control of government policy. The trend reversals we observe in 1977 and 1990, which conincide with specific policy events, are not shared with other types of banks.

Credit Expansion and Initial Conditions Our focus is on whether rural branch expansion affected poverty and structural change. It is also informative to look at credit flows to check whether we observe a skewing towards rural locations at points when bank branches were being forced to expand into these areas. Table 5 looks for such trend breaks. In columns (1) and (2) of Table 5 we see that total per capita bank credit exhibits no trend reversals in 1977 and 1990. But total credit does expand more rapidly in states with more banks in 1961 when the 1:4 license rule is imposed in 1977. In strict contrast we see in column (3) and (4) whilst there is a positive relationship 1961-1977 between the share of credit going to rural areas and financial development in 1961 this trend is reversed post 1977. Between 1978 and 1990 states with less banks in 1961 had a higher share of total credit going to rural locations. This trend was again reversed post 1990 with the relationship between bankedness in 1961 and rural credit share again becoming positive. These trend breaks thus mirror those for rural banks confirming that state controls were used to allocate more rural banks and credit to states which contained less banks in 1961. To show this graphically Figure D graphs the coefficients on the interaction between financial development in 1961 and year dummies in a regression where the rural credit share is on the left hand side. Once again, we observe a hump-shape, with the trend break in rural credit share occurring at the same time as the trend break in the growth of banked locations. Social banking therefore does appear to be having significant effects on the allocation of resources within the banking system.

In columns (5) and (6) we see that total savings follows a similar pattern as that

for total credit – there is no trend break in 1961 however saving does increase more rapidly in states that were more banked in 1961 post 1990. In columns (8) for the specification with controls, however, we see that post 1977 states with fewer banks in 1961 saw faster growth in the share of savings going to rural locations. As a final robustness check we see in columns (9) and (10) that per capita cooperative credit – the other main source of formal credit in the rural sector (see Table 2) – has no trend breaks in post 1977 or post 1990. These findings increase our confidence that the trend breaks we observe in the expansion of banks into rural, unbanked areas reflect policy changes and can be exploited to identify the impact of this expansion on structural change and poverty.

Politics, Policy and Initial Conditions A final robustness check we carry out is to see whether political measures and policy measures which we think might affect outcomes like poverty exhibit trend breaks in 1977 and 1990. Otherwise we might worry that omitted political or policy variables might be driving the results we observe. If they do not exhibit such breaks then we on stronger grounds in attributing the trend breaks we observe to banking policy changes.

We look at two political measures. First, the share of seats in the state assemblies occupied by the Congress party. This makes sense as the Congress party suffered a major electoral shock following the emergency in 1977. Second, the degree of political competition in a state as measured by the gap in terms of assembly seats occupied between the incumbent and its main competitor. Neither of these variables show any evidence of exhibiting trend breaks.

As regards policy we want to look at measures which are capable of affecting rural poverty. Specifically we look at the shares of state spending devoted to health and education and at land reform. Besley and Burgess (2000) showed that the latter had a negative impact on rural poverty. None of these policy measures exhibit trend breaks in 1977 and 1990.

3.2 Reduced-Form Results

The relationship between rural bank branch expansion and the number of banked locations in an Indian state in 1961 exhibited trend breaks in 1977 and 1990. If rural banks were a vehicle for increased lending to the poor, and if such lending was successful in improving their economic outcomes then post-1977 and post-1990 trend breaks in the relationship between such outcomes and the number of banked locations in an Indian state in 1961 may be interpreted as providing reduced form evidence regarding the economic impact of rural banks.

Tables 7 and 8 provide such reduced form evidence. For outcome y_{it} we estimate a regression of the form:

$$\begin{aligned} y_{it} &= \alpha_i + \beta_t + (B_{i61} \times [t - 1961])\gamma_1 + (B_{i61} \times [t - 1977] \times POST_{1977})\gamma_2 \\ &\quad + (B_{i61} \times [t - 1990] \times POST_{1990})\gamma_3 + (B_{i61} \times POST_{1977})\gamma_4 + (B_{i61} \times POST_{1990})\gamma_5 + \epsilon_{it} \end{aligned}$$

Columns (1) and (2) of Table 7 presents results for the aggregate headcount index. Overall we see that aggregate poverty exhibits trend breaks in 1977 and 1990. In columns (3) and (4) we see this result is driven by branch expansion into rural areas driving down rural poverty. There is no good reason to think that rural branch expansion should affect urban poverty. This is confirmed in columns (5) and (6). In column (7) and (8) we use the difference between rural and urban poverty as the explanatory variable. As we observed from columns (5) and (6) urban poverty does not respond to branch expansion into rural areas. Using the rural urban poverty difference as the explanatory variable helps to control for any omitted variables that have a common effect on rural and urban poverty. Unlike sector-specific poverty levels this difference variable does not trend downwards overtime. This helps to allay concerns that our interaction terms are just picking up state-specific time trends. Columns (7) and (8) confirms that the rural-urban poverty difference exhibits trend breaks in 1977 and 1990. Finally, figure C graphs the coefficients on the year dummies interacted with B_{i61} for the corresponding unrestricted regressions for rural and urban poverty as measured by the respective headcount indexes. We see a distinct trend break in the relationship between initial bankedness and rural poverty outcomes, but no such break in the case of urban poverty outcomes. The trend break in poverty outcomes lags the break in branch expansion by four years, a finding consistent with the idea that poverty responses to improvements in the credit market are not immediate.

In columns (9) and (10) of Table 7 we consider the real male agricultural wage. As people employed in this sector are often landless with limited outside options wage levels are a key marker of rural welfare (Dreze and Mukherjee, 1991). Once again, we find that states with fewer banked locations in 1961 saw faster increases in the real agricultural wage post-1977. Strikingly, we also find evidence that this relationship was reversed after 1990. Post 1990 states with fewer banked locations in 1961 saw the real agricultural wage increase at a *relatively slower* rate. Taken together, these results identify an important indirect route via which rural branch expansion can reduce rural poverty.

In Table 8 we report reduced form results for output and employment outcomes. In columns (1) and (2) we find evidence that between 1977 and 1989 states with fewer banked locations in 1961 saw faster income growth. The opposite was true of the pre-1977 and post-1990 periods. Columns (3) through (8) we examine various components of total output. In columns (3) and (4) we see that agricultural output showed no trend breaks in 1977 and 1990. This is striking as rasing agricultural productivity was a central objective of the program, and often the focus of evaluations (see e.g. Binswanger et al, 1993). In contrast, in columns (5) and (6) we observe trend breaks in 1977 and 1990 in the relationship between non-agricultural output and financial development in an Indian state in 1961. If these trend breaks reflect the impact of increased access to rural banks then we might expect to observe similar trend breaks in performance measures of the small business sector. Columns (7) and (8) look at unregistered manufacturing sector output per capita (this sector covers firms

with less than ten employees with power, and less than twenty without). Again we find evidence of trend reversals for this variable in 1977 and 1990. A possible interpretation is that increased access to credit helped improve individuals' non-farm opportunities which enables more people to escape agricultural labor. Such a shift would also put upward pressure on rural agricultural wages. In columns (9) and (10) we look at a measure of low level employment diversification by looking at the share of non-agricultural rural laborers as a share of total rural laborers. The data does not extend beyond 1990 so we can only look at the 1977 trend break but here again we see a similar pattern to what we observed for output. State with fewer banked locations in 1961 witnessed a *faster* growth in the share of non-agricultural laborers to total laborers. This again is consistent with rural branch expansion helping people to move out of agriculture.

3.3 Instrumental Variables Evidence

The identifying assumption that the relationship between poverty and welfare outcomes in an Indian state and the number of locations banked in that state in 1961 would not have exhibited a trend break in the absence of the branch expansion program underlies our reduced form estimates of the impact of banking of rural locations on these outcomes. In this subsection we use the additional assumption that the trend breaks in 1977 and 1990 had no effect on outcomes other than by affecting the subsequent growth of banked locations to provide instrumental variables estimates of the economic impact of rural banks.

Consider the following equation which estimates the impact of increases in the number of banked locations in a state on outcome y_{it}:

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

We would expect the ordinary least square (OLS) estimates to be biased if B_{it}^R and ϵ_{it} are correlated. It is reasonable to assume that a state's initial income is correlated with subsequent increases in state income. In so far as income affects the outcome variables of interest B_{it}^R and ϵ_{it} will be correlated. Moreover, we can sign the bias – post 1977 we would expect a downward bias in the estimated effect of bank expansion on income and poverty outcomes.

The nature of the Indian branch expansion program can be used to provide a credible instrument for the number of banked rural locations in a state. Our instrument relies on the assumption that the error term takes the form – $\epsilon_{it} = \eta[t-1961] \times B_{i61} + u_{it}$. That is, the state specific trend in y_{it} is potentially correlated with the number of banked locations in a state in 1961, but there is no change in trend in the absence of the policy. This implies we can run two stage least square regressions where the second stage regression is of the form:

$$y_{it} = \alpha_i + \beta_t + \lambda B_{it}^R + \eta_1([t-1961] \times B_{i61}) + \eta_2(POST_{1977} \times B_{i61}) + \eta_3(POST_{1990} \times B_{i61}) + u_i$$

and we use $POST_{1977} \times [t - 1977] \times B_{i61}$ and $POST_{1990} \times [t - 1990] \times B_{i61}$ as instruments for B_{it}.

Table 9 reports IV and OLS results for poverty and structural change outcomes. We only report coefficients on the rural branch expansion variable. Looking first at the IV results for poverty in Panel A we see that rural branch expansion is associated with lower overall poverty. This result is driven by the impact of rural branch expansion on rural poverty. We see no impact on urban poverty. Instrumented rural branch expansion is associated with a fall in the difference between the rural and urban headcounts. We also find that agricultural wages are increased by rural branch expansion.

Turning to the structural change results in Panel B we again find results which are consistent with the reduced form results. Rural branch expansion increases log state income per capita and this occurs through effects on the non-agricultural as opposed to agricultural component. Diversification of employment is also promoted by rural branch expansion. The fact that rural branch expansion also increases output from unregisted manufacturing suggests that social banking has helped to promote diversification in the Indian economy. Panel B thus provides some detail on the mechanism which might underlie the poverty results we observe in Panel A.

In Panel C of Table 9 we show that instrumented rural branch expansion is 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. Conclusions

The relationship between finance and development has long been a puzzle for economists. By exploiting a particular social banking episode we are able to isolate the impact of state led bank branch expansion on various development outcomes. Significantly we find that growing access to banks in rural areas drove down rural poverty. What is more we are able to identify rural branch expansion as having positive impacts on non-agricultural output and employment and on agricultural wages. These mechanisms help to explain our poverty results.

The paper therefore challenges the conventional, widely held view that large scale credit interventions by governments end up solely benefiting elites. We are, however, silent on whether this is most cost-effective way to achieve rural poverty reduction in India.

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4 Data Appendix

4.1 State-level data

The data used in the paper come from a wide variety of sources.[17] They cover the sixteen main Indian states listed in Table I and span the period 1970-1992.[18] Haryana split from the state of Punjab in 1965. From this date on, we include separate observations for Punjab and Haryana. 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. **Population** data used to express magnitudes in per capita terms comes from the 1951, 1961, 1971, 1981 and 1991 censuses [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 Our banking variables have been collated from different Reserve Bank of India documents. All our data refers to scheduled commercial banks. This category of banks includes (1) State Bank of India and its associates (2) Nationalized banks (3) Regional Rural Banks (4) Private sector banks and (5) Foreign banks. We describe, in turn, each of the banking variables used:

(i) Bank branch data: This data comes from the Reserve Bank of India Basic Statistical Returns, as provided in the *'Directory of Commercial Bank Offices in India (Volume 1)'*, December 2000. In this data-set a location is banked if at least one office of any commercial or cooperative bank is functioning in that location. Each bank branch is assigned 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) Semi-urban group includes locations with population between 10,000 to 100,000, (iii) Urban group includes locations with population between 100,000 and a million, and (iv) Metropolitan group includes locations with population in excess of a million.

[17] Our data sets 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 for the period 1958 to 1992. We are grateful to Martin Ravallion for providing us with this data and to Guarav Datt for answering various queries. To these data, we have added information on state income, rural employment, infrastructure and public finances of Indian states.

[18] 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

(ii)Bank credit and saving variables: Bank credit is the total advances outstanding for Scheduled Commercial Banks, and bank saving is the total deposits in Scheduled Commercial Banks as reported in the Annual RBI publication *Statistical Tables relating to Banks in India*. The breakdown of bank credit and savings by population group of bank branches gives us the metropolitan, urban, semi-urban and rural bank credit and saving measures.

State income comes from Estimates of State Domestic Product published by Department of Statistics, Ministry of Planning, Government of India. Income variables are deflated and expressed in log per capita terms. The breakdown of total income into agricultural, non-agricultural and manufacturing income 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.

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. Agricultural rural labour households are those which earn *** The primary source for the **wage** data is 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.

The **poverty** and **inequality** figures we use for the rural and urban areas of India's 16 major states, spanning 1957-58 to 1991-92 were put together by Ozler, Datt and Ravallion [1996]. These measures are based on 22 rounds of the National Sample Survey (NSS) which span this period. Not all 22 rounds of the survey can be covered for each of the 16 states.[19] 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 1958, 1959, 1960, 1961, 1962, 1963, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1973, 1974, 1978, 1983, 1987, 1988, 1990, 1991, 1992**.** 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

[19]For 11 states (Andra Pradesh, Assam, Bihar, Karnataka, Kerala, Madhya Pradesh, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh, and West Bengal) all 22 rounds have been covered. Because Haryana only appears as a separate state from Punjab in 1965 we have adopted the including seperate series for these two states from this date onwards. For Gujarat and Maharashtra, 20 rounds are included, beginning with the 16th round in 1958-59 (before 1958-59, separate distributions are not available for these two states as they were merged under the state of Bombay). For Jammu and Kashmir, only 18 rounds can be included, beginning with the 16th round for 1960-61, due to a lack of data.

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 and poverty gap measures are estimated from the grouped distributions of per capita expenditure published by the NSS[20], using parameterized Lorenz curves using a methodology detailed in Datt and Ravallion [1992].

[20]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.

Table I: The share of rural household debt held by different creditors (percentage)

	Creditor					
	Institutional sources			Non-institutional sources		
Year	Banks	Cooperatives	Government	Relative and friends	Moneylenders	Others
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	16.0
1971						
Cultivators	2.6	22.0	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	12.0
All households	28.6	28.6	4.0	9.0	16.9	12.9
1991						
Cultivators	31.6	21.2	5.2	5.8	15.7	20.5
All households	29.0	18.6	5.7	6.7	15.7	24.3

Notes: (i) A 'cultivator' household is one 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)Source: for 1951 'All India Rural Credit Survey'; for all subsequent years the 'All India Debt and Investment Surveys'.

TABLE 2: BANK BRANCH EXPANSION AND PRIORITY SECTOR LENDING: POLICY RULES

Year	Bank Branch expansion policy		Priority sector policy
	Rules	Targets	
1970	Lead bank scheme initiated. **License rule:** Banks can open branches in 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. **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 rural/semi-urban locations	**Target** (1972-1974): 5,000 branches of which 1,500 branches to be opened in both 1972 & 1973	Description of priority sector formalised
1975		**Target**(1975-1977)**:** 5,000 branches	Target (to be achieved by March 1979): A third of total bank credit to priority sectors.
1977	**License rule:** Banks can open 1 branch in a banked location for 4 branches opened in unbanked locations	**Target (**1977-1979): All Community Development Blocks to have a branch by June 1979	
1978	Limited licensing 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	**Target** (1979-81): 6,500 branches in unbanked locations.	Target not achieved (priority sector lending 30.3% vs 33.3% target). Target to be achieved by March 1980
1980			Sub-targets set: 40% of priority sector to go to agriculture. 50% of agricultural credit to go to "weaker sections" . 12.5% of small industry credit to go to weaker sections
1982	Emphasis on rural/semi-urban and less accessible areas of states	17,000 population per office, special considerations for hilly/tribal areas. **Target (**1982-1985): 8,000 branches	
1985	**Service Area approach:** Rural branch to be within 10 km of each other. 400m between branches in towns/residential areas. Rural service area to cover 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 (**1985-1990): achieve population of 17,000 per branch in rural and semi-urban locations and 10,000 in hilly/tribal areas	

1986	Limited licensing to allow consolidation	
1987		Target for agricultural lending raised to 17% of total credit. To be fulfilled by March 1989
1989		Target for agricultural lending raised to 18%. Priority sector lending compulsory for foreign banks: 10% by March 1989, 12% by March 1990, 15% by March 1992
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	

Notes: The year of a policy circular is entered as in the same calender year if it was issued pre-November, and as the next year otherwise. Weaker sections are defined as small farmers holding less than 5 acres, landless labourers and tenants, borrowers in related activities with credit limits of less than 10,000 Rs.

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

TABLE 3: DESCRIPTIVE STATISTICS

	Variable	Overall mean
Panel A: Bank and Credit variables	Number of banked locations per capita	0.047
		(0.035)
	Number of banked rural locations per capita	0.037
		(0.03)
	Number of bank branches opened in already	0.041
	banked locations per capita	(0.029)
	Total bank credit per capita	4.501
		(4.972)
	Rural credit as a share of total bank credit	0.17
		(0.09)
	Total bank savings per capita	6.23
		(4.85)
	Rural savings as a share of total bank savings	0.17
		(0.08)
	Cooperative credit per capita	0.063
		(0.05)
Panel B: Poverty outcomes	Head count ratio	46.24
		(13.55)
	Rural head count ratio	48.05
		(14.43)
	Urban head count ratio	40
		(12.90)
Panel C: Labor and Output outcome	Real agricultural wages	5.48
		1.98
	Non agricultural rural labor as a proportion of	0.213
	total rural labor	(0.15)
	State output per capita	1845.23
		(1103.49)
	State non-agricultural output per capita	1127.61
		(807.2)
	State agricultural output per capita	725.05
		(379.04)
	Unregistered manufacturing output per capita	101.92
		(78.10)
Panel D:State policy activism	Total state expenditure per capita	323.64
		(280.2)
	Education expenditure share	0.213
		(0.04)
	Health expenditure share	0.08
		(0.02)
	Political competitiveness	-0.46
		(0.22)
	Proportion of state legislators belonging to Congres	0.475
		(0.248)

See the Data Appendix for detail on construction and source of variables. The data are for sixteen Indian major states, 1961-1992. All output and bank lending variables are expressed in real per capita terms (normalized by 1961 population). The banked location variables are normalized by 1961 population

TABLE 4: BANK BRANCH EXPANSION AS A FUNCTION OF INITIAL FINANCIAL DEVELOPMENT

	Number of rural banked locations		Number bank branches per capita		Number bank branches in banked locations		Number of banked locations		Number of urban banked locations	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Number banked locations in 1961 *1961-77 Trend	0.18** [0.09]	0.20** [0.08]	0.71*** [0.05]	0.74*** [0.08]	0.36*** [0.04]	0.40*** [0.04]	0.35*** [0.04]	0.33*** [0.06]	0.17*** [0.07]	0.13*** [0.04]
Number banked locations in 1961*Post-77 Trend break	-0.50*** [0.12]	-0.69*** [0.11]	-0.80*** [0.08]	-0.96*** [0.12]	-0.18*** [0.04]	-0.20*** [0.05]	-0.62*** [0.06]	-0.75*** [0.09]	-0.12 [0.08]	-0.06 [0.05]
Number banked locations in 1961*Post-90 Trend break	0.28* [0.16]	0.43** [0.17]	0.60*** [0.12]	0.65*** [0.16]	0.35*** [0.07]	0.27*** [0.08]	0.24*** [0.09]	0.38*** [0.13]	-0.04 [0.09]	-0.05 [0.07]
State dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control variables	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adjusted R-squared	0.91	0.94	0.97	0.98	0.97	0.99	0.95	0.96	0.81	0.9
Number observations	700	700	700	700	700	700	700	700	700	700

Notes: Robust standard errors in parentheses. The dependent variable is number of banked locations in a state.

The explanatory variables are: (I) number of banked locations in 1961 interacted with a time trend

(ii) number of banked locations in 1961 interacted with an indicator variable equal to one if the year is after 1977 interacted with a post-1977 time trend (t-1977).

All regressions include an interaction term between the indicator variable and number banked locations in 1961. All banked location variables are deflated by population 1961. Three control variables are used: Squared poverty gap in 1961, Population in 1961 and Log state income per capita in 1961.

Each control variable enters the regression in exactly the same way as the number of banked locations in 1961 in the regression

* indicates significance at 10%, ** significance at 5% and *** significance at 1%.

TABLE 5: CREDIT FLOWS AS A FUNCTION OF INITIAL FINANCIAL DEVELOPMENT

	Bank credit per capita		Share of rural credit		Bank savings per capita		Share of rural savings		Cooperative credit per capita	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Number banked locations	8.04	21.05**	3.12**	4.74***	59.26	24.33	-0.08	-0.18	0.79***	0.99***
in 1961 *1961-77 Trend	[8.03]	[8.66]	[1.36]	[1.49]	[63.39]	[58.47]	[1.08]	[0.59]	[0.19]	[0.20]
Number banked locations	37.99***	26.26**	-5.24***	-7.61***	0.47	33.65	-1.74	-2.10***	-0.05	-0.49
in 1961*Post-77 Trend break	[9.94]	[10.79]	[1.39]	[1.53]	[65.21]	[59.76]	[1.10]	[0.64]	[0.35]	[0.41]
Number banked locations	23.73	47.02	1.64***	2.10***	150.55***	149.17***	0.28	0.47	-0.01	0.58
in 1961*Post-90 Trend break	[30.89]	[30.62]	[0.59]	[0.56]	[39.15]	[39.03]	[0.42]	[0.50]	[3.75]	[4.35]
State dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control variables	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adjusted R-squared	0.82	0.88	0.81	0.86	0.91	0.96	0.85	0.87	0.82	0.83
Number observations	698.00	698.00	566.00	566.00	512.00	512.00	494.00	494.00	510.00	510.00

Notes: Robust standard errors in parentheses. The dependent variable is number of banked locations in a state.

The explanatory variables are: (I) number of banked locations in 1961 interacted with a time trend

(ii) number of banked locations in 1961 interacted with an indicator variable equal to one if the year is after 1977 interacted with a post-1977 time trend (t-1977).

All regressions include interaction terms between the indicator variables and number banked locations in 1961. All banked location variables are deflated by population 1961. Three control variables are used: Squared poverty gap in 1961, Population in 1961 and Log state income per capita in 1961.

Each control variable enters the regression in exactly the same way as the number of banked locations in 1961 in the regression

* indicates significance at 10%, ** significance at 5% and *** significance at 1%.

TABLE 6 POLITICS AND POLICIES AS A FUNCTION OF INITIAL FINANCIAL DEVELOPMENT

	Propn. Congress legislators		Political competitiveness		Total state expenditure per capita		Education expenditure share		Health expenditure share		Cumulative Land Reform	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Number banked locations	-0.11	-2.55*	-3.06*	-1.6	-61.27	351.43	-0.49***	-0.39*	0.07	0.13	-11.68	-18.87
in 1961 *1961-77 Trend	[0.99]	[1.32]	[1.57]	[1.90]	[381.39]	[384.34]	[0.19]	[0.21]	[0.10]	[0.11]	[14.41]	[12.46]
Number banked locations	-3.73	-1.18	2.91	1.79	1,368.88**	-316.01	-0.03	-0.05	-0.18	-0.15	-14.63	-4.22
in 1961*Post-77 Trend brea	[2.34]	[3.02]	[2.25]	[2.87]	[557.55]	[580.84]	[0.28]	[0.31]	[0.12]	[0.14]	[20.24]	[19.47]
Number banked locations	1.29	2.62	-7.11	-7.88	3,096.78	757.06	-0.31	-0.62	0.23	0.04	26.31	23.09
in 1961*Post-90 Trend brea	[2.93]	[3.60]	[8.26]	[10.16]	[2,336.79]	[3,061.36]	[0.49]	[0.56]	[0.14]	[0.16]	[233.06]	[232.07]
State dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control variables	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adjusted R-squared	0.42	0.49	0.27	0.31	0.87	0.92	0.71	0.74	0.75	0.76	0.71	0.74
Number observations	730	730	597	597	667	667	643	643	643	643	564	564

Notes: Robust standard errors in parentheses. The dependent variable is number of banked locations in a state.

The explanatory variables are: (I) number of banked locations in 1961 interacted with a time trend

(ii) number of banked locations in 1961 interacted with an indicator variable equal to one if the year is after 1977 interacted with a post-1977 time trend (t-1977).

All regressions include an interaction term between the indicator variable and number banked locations in 1961. All banked location variables are deflated by population 1961. Three control variables are used: Squared poverty gap in 1961, Population in 1961 and Log state income per capita in 1961.

Each control variable enters the regression in exactly the same way as the number of banked locations in 1961 in the regression

* indicates significance at 10%, ** significance at 5% and *** significance at 1%.

TABLE 7:BANK EXPANSION PROGRAM AND POVERTY: REDUCED FORM EVIDENCE

	Head count ratio		Rural head count ratio		Urban head count ratio		Rural-Urban head count diff		Log real agri. wage	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Number banked locations	-231.69***	-229.87***	-256.04***	-259.31***	-91.10**	-37.81	-164.94***	-221.50***	-0.99	1.46
in 1961 *1961-77 Trend	[43.44]	[51.28]	[51.42]	[59.29]	[36.19]	[47.32]	[54.00]	[65.28]	[1.26]	[1.15]
Number banked locations	346.27***	364.96***	409.92***	410.21***	70.11	57.33	339.81***	352.88***	-4.55***	-6.44***
in 1961*Post-77 Trend break	[52.63]	[58.47]	[63.80]	[68.24]	[48.69]	[65.54]	[72.54]	[84.91]	[1.52]	[1.55]
Number banked locations	-307.20***	-412.44***	-359.33***	-425.11***	-45.43	-234.13***	-313.91**	-190.98	10.87***	15.98***
in 1961*Post-90 Trend break	[105.18]	[107.40]	[126.75]	[131.91]	[81.02]	[79.42]	[129.24]	[144.43]	[2.42]	[2.49]
State dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control variables	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adjusted R-squared	0.85	0.87	0.8	0.83	0.91	0.92	0.59	0.64	0.89	0.91
Number observations	691	691	691	691	691	691	691	691	609	609

Notes: Robust standard errors in parentheses. The dependent variable is number of banked locations in a state.

The explanatory variables are: (I) number of banked locations in 1961 interacted with a time trend

(ii) number of banked locations in 1961 interacted with an indicator variable equal to one if the year is after 1977 interacted with a post-1977 time trend (t-1977).

All regressions include an interaction term between the indicator variable and number banked locations in 1961. All banked location variables are deflated by population 1961. Three control variables are used: Squared poverty gap in 1961, Population in 1961 and Log state income per capita in 1961.

Each control variable enters the regression in exactly the same way as the number of banked locations in 1961 in the regression

* indicates significance at 10%, ** significance at 5% and *** significance at 1%.

TABLE 8:BANK EXPANSION PROGRAM AND STRUCTURAL CHANGE: REDUCED FORM EVIDENCE

	log state output per capita		log state agri output per capita		log state non-agri ooutput per capita		log state unregd. manuf. output per capita		log ratio non agri rural to total rural labor	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Number banked locations	2.33***	2.72***	-1.64*	-2.19*	5.78***	6.76***	5.34***	8.87***	18.99***	27.45***
in 1961 *1961-77 Trend	[0.63]	[0.70]	[0.94]	[1.12]	[0.73]	[0.88]	[1.91]	[2.43]	[3.63]	[3.06]
Number banked locations	-4.67***	-6.03***	-1.1	-0.83	-8.46***	-11.44***	-11.27***	-17.43***	-20.03***	-30.02***
in 1961*Post-77 Trend break	[0.86]	[1.02]	[1.41]	[1.67]	[1.06]	[1.32]	[3.34]	[4.21]	[4.95]	[5.56]
Number banked locations	7.69***	10.07***	5.39*	6.32*	8.97***	11.80***	8.27	12.37		
in 1961*Post-90 Trend break	[1.94]	[2.04]	[2.80]	[3.44]	[2.61]	[3.07]	[5.90]	[7.88]		
State dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control variables	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Adjusted R-squared	0.98	0.98	0.92	0.93	0.98	0.98	0.87	0.88	0.83	0.89
Number observations	652	652	645	645	645	645	645	645	409	409

Notes: Robust standard errors in parentheses. The dependent variable is number of banked locations in a state.

The explanatory variables are: (I) number of banked locations in 1961 interacted with a time trend

(ii) number of banked locations in 1961 interacted with an indicator variable equal to one if the year is after 1977 interacted with a post-1977 time trend (t-1977).

All regressions include an interaction term between the indicator variable and number banked locations in 1961. All banked location variables are deflated by population 1961. Three control variables are used: Squared poverty gap in 1961, Population in 1961 and Log state income per capita in 1961.

Each control variable enters the regression in exactly the same way as the number of banked locations in 1961 in the regression

* indicates significance at 10%, ** significance at 5% and *** significance at 1%.

TABLE 9 BANK EXPANSION AND OUTCOMES: IV ESTIMATES

	Number rural banked locns. (no controls)		Number rural banked locns. (with controls)	
Panel A: Poverty				
Head count ratio				
IV	-700.2***	[231.2]	-548.2***	[133.5]
OLS	181.53***	[26.09]	159.17***	[29.3]
Rural head count ratio				
IV	-829.3***	[275.6]	-609.8***	[152.7]
OLS	233.61***	[29.81]	220.27***	[35.23]
Urban head count ratio				
IV	-140.83	[108.7]	-114.12	[97.54]
OLS	28.35	[23.77]	-8.52	[21.24]
Rural-Urban head count ratio difference				
IV	-688.55***	[243.22]	-495.69***	[147.2]
OLS	205.26***	[28.47]	228.79***	[35.54]
Log real agricultural wage				
IV	12.01***	[4.07]	12.95***	[3.34]
OLS	-3.939***	[0.763]	-2.365***	[0.78]
Panel B: Structural change				
Log state income				
IV	9.161***	[2.249]	8.737***	[1.86]
OLS	1.047***	[0.427]	0.225	[0.431]
Log state agri income				
IV	2.375	[2.742]	2.024	[2.741]
OLS	1.387***	[0.489]	0.367	[0.524]
Log state non-agri income				
IV	17.16***	[3.720]	19.24***	[3.602]
OLS	3.220***	[0.497]	2.968***	[0.513]
Log state unregistered manuf. income				
IV	22.74***	[7.919]	28.68***	[8.22]
OLS	-3.07***	[1.009]	-2.919**	[1.21]
Log non-agri rural labor as ratio rural labor				
IV	39.11***	[11.37]	36.70***	[7.406]
OLS	5.351***	[1.105]	14.75***	[1.405]

Notes: Robust standard errors in parentheses. OLS and 2SLS coefficients for the number of banked locations in a state are reported. A time trend interacted with the number banked locations in a state in 1961 and an interaction term between the indicator variable and number of banked locations in 1961 are included in the regressions. In regressions with control variables the control variable is entered as in previous regressions.

In the 2SLS regressions there are two instruments for number of banked locations: (I) Number banked locations in 1961 *Post-77 Trend break and (ii) Number banked locations in 1961 * Post 1990 Trend break

TABLE 9: BANK EXPANSION AND OUTCOMES: IV ESTIMATES (CONTD)

	Number banked locns. (no controls)		Number banked locns. (with controls)	
Panel C: Credit flows				
Share of rural credit				
IV	8.190***	[3.041]	8.378***	[3.146]
OLS	1.207***	[0.343]	0.873***	[0.258]
Share of rural saving				
IV	2.183**	[0.987]	1.669**	[0.827]
OLS	2.140***	[0.209]	2.185***	[0.136]

Notes: Robust standard errors in parentheses. OLS and 2SLS coefficients for the number of banked locations in a state are reported. A time trend interacted with the number banked locations in a state in 1961 and an interaction term between the indicator variable and number of banked locations in 1961 are included in the regressions. In regressions with control variables the control variable is entered as in previous regressions.

In the 2SLS regressions there are two instruments for number of banked locations: (I) Number banked locations in 1961 *Post-77 Trend break and (ii) Number banked locations in 1961 * Post 1990 Trend break

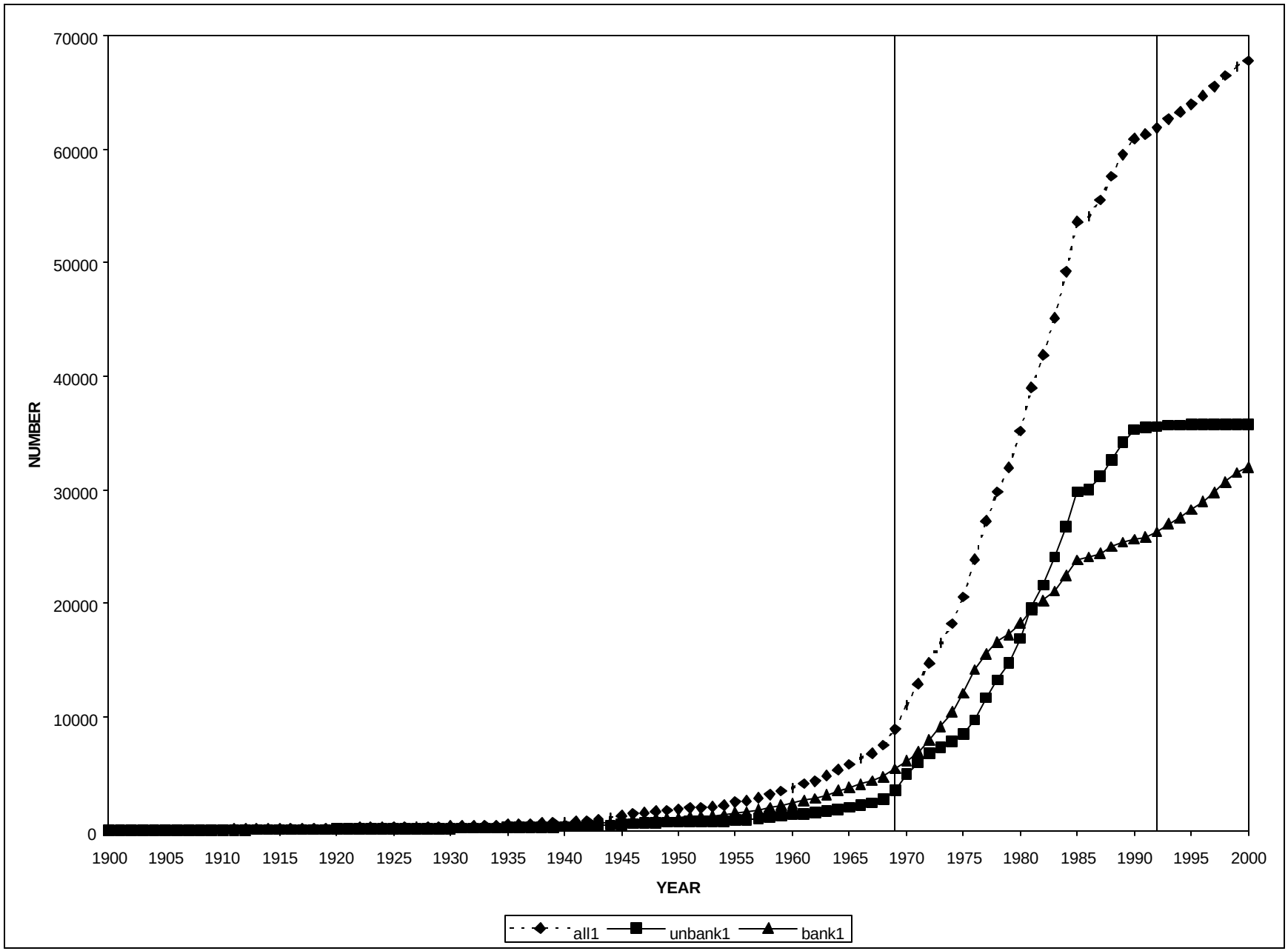

FIGURE O: NUMBER OF BANK BRANCHES IN INDIA (all1); BANKED LOCATIONS IN INDIA (unbank1)
and BANKS IN ALREADY BANKED LOCATIONSS (bank1)

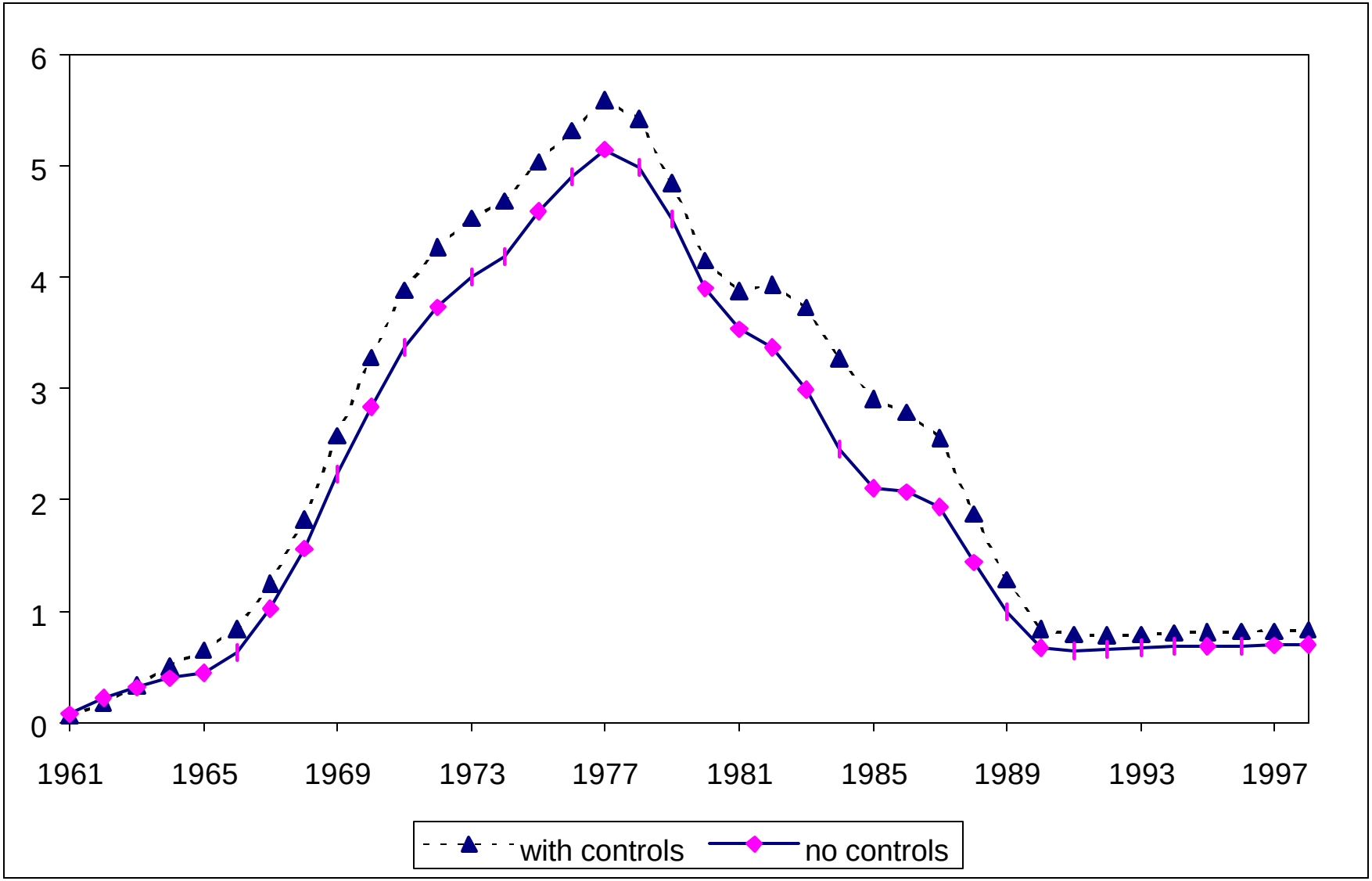

FIGURE A: Coefficients on the year*number of banked locations 1961 terms in the growth of banked locations regression (3 year moving average reported)

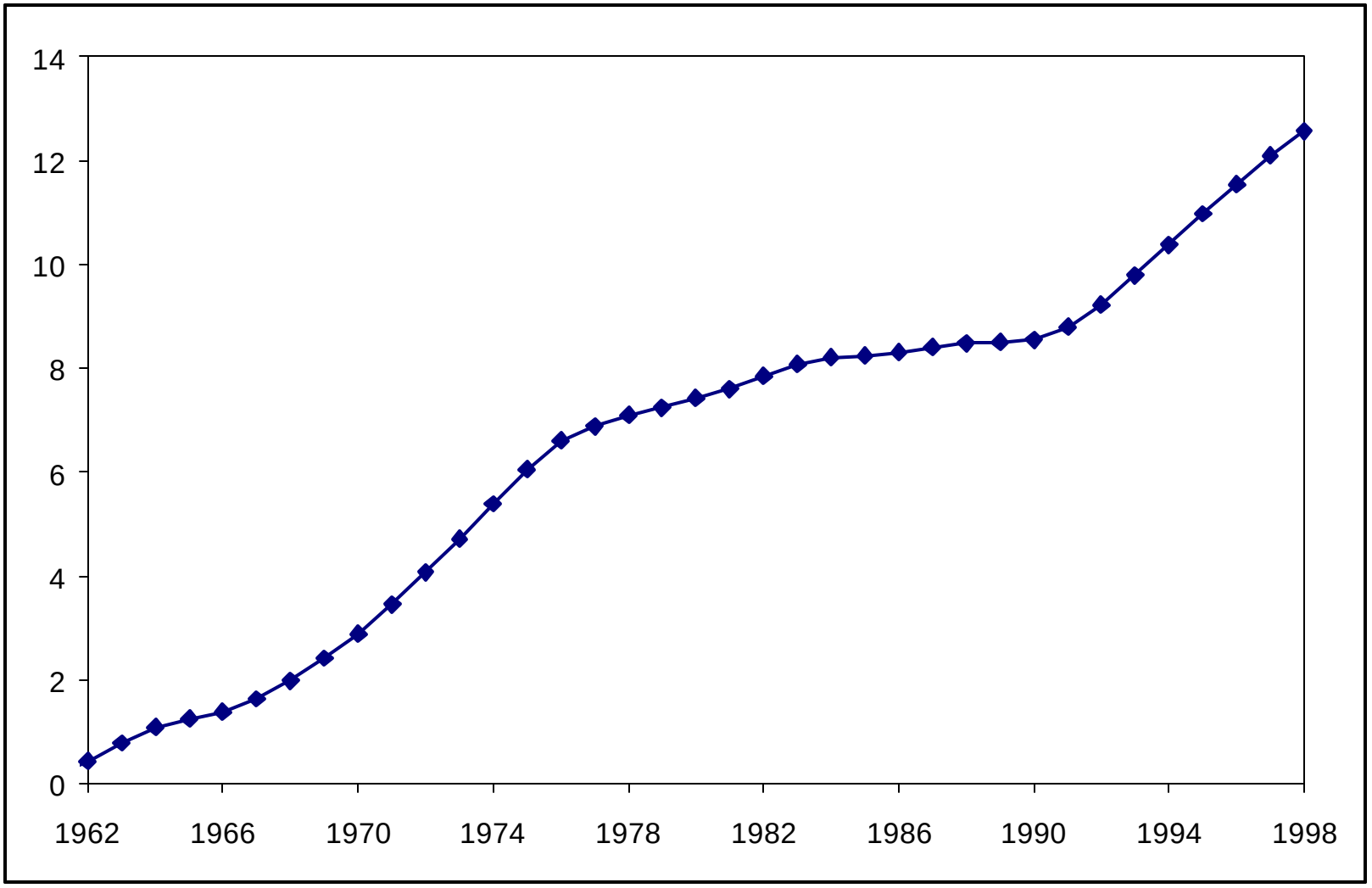

FIGURE E: Coefficients on the year*number of banked locations 1961 term in the banking in already banked locations regression (3yr. moving average reported)

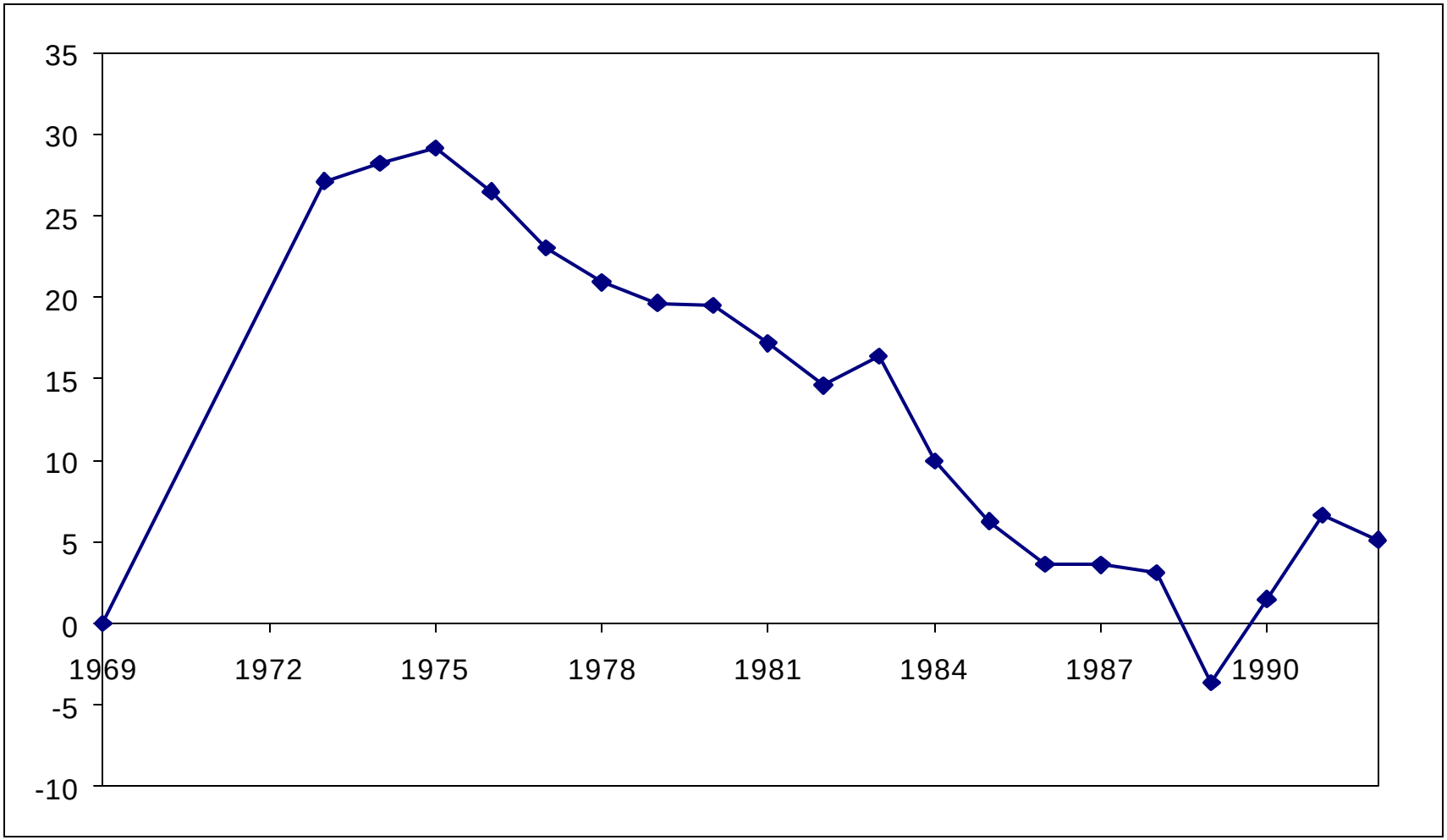

FIGURE D: Coefficients on the year*number of banked locations 1961 term in the rural credit share regression

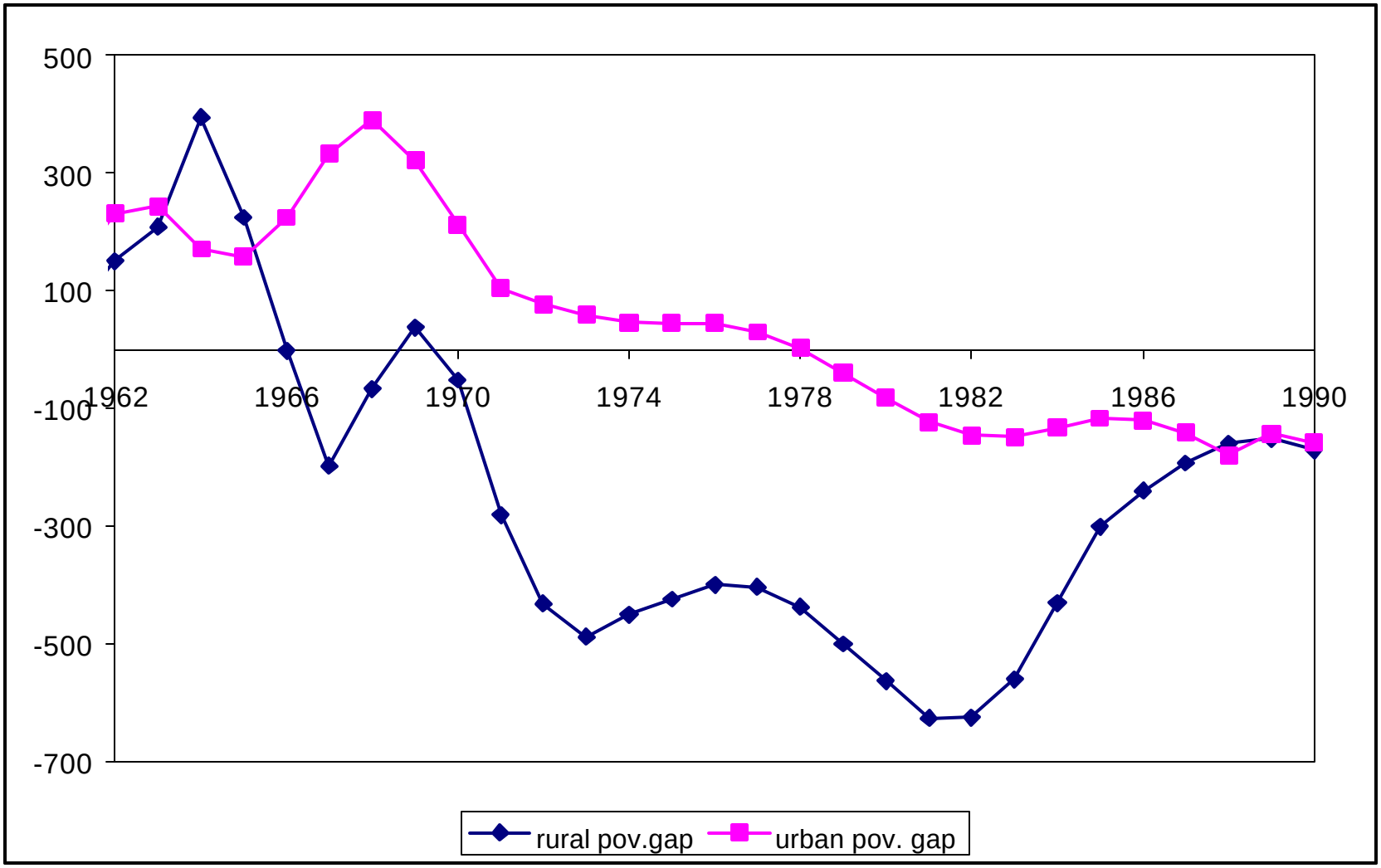

FIGURE C: Coefficients on the year*number of banked locations 1961 term in the rural and urban poverty regressions (3 yr. Moving average reported)