Transition of Credit Organizations: Caste Bankers in Colonial India

Anirban Mukherjee

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1   Motivation

Nattukottai Chettiars, a major banking caste from South India, switched from caste based banking to joint stock banking in the first quarter of the twentieth century. This paper seeks to find factors that prompted this transition. The current paper is closely related to Greif's seminal paper on the Maghribi traders (Greif, 1993) where Greif showed how culture plays an important role in determining economic outcomes. His paper is a part of a very rich tradtion in the literature which looks at the interaction between culture and economic well being (Weber, 1930; Clark, 2007; Mccloskey, 2006; Tabellini, 2006). In Greif's paper culture is treated as an exogenous parameter which selects the equilibrium. The current paper, on the other hand, shows how culture interacts with technology and institutions, and evolves. It attempts to identify conditions under which some of the Nattukottai Chettiars (in short Chettiars) switched from *collectivist* caste banking to *individualist* joint stock banking. The words collectivist and individualist are used in the sense they are defined in Greif (1993). This paper is also related to the body of work which looks at the persistence and evolution of the caste system in India. Freitas (2006), for example, models the caste system as

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an effective mechanism of contract enforcement, and test the predictions of the model using historical data. In another paper, Munshi and Rosenzweig (2006) showed how the interaction between the traditional caste system and the forces of globalization affects the schooling decision for the children in India. This paper is also related to Munshi and Rosenzweig (2009) which shows how the caste system restricts the mobility of labor in rural India.

A Caste is a hierarchical subdivision under Hinduism, the religion of the majority people in India. The caste system characterizes a hierarchical structure of the society where one's occupation is typically determined by his caste. There are several caste based banking groups in colonial India. Nattukottai Chettiar (in short, Chettiar) caste from South India which specialized in banking business. They emerged as the most succcessful banking community as they managed to ensure a remarkably high repayment rate on the loans they extended. British officials attributed this to the higher community ties of the Chettiars (Ray, 1995).

Despite their success with caste banking, some of the Chettiar bankers decided to switch to joint stock banking during the first half of the twentieth century. This decision showcased a transition from communal form of business organization to individualistic form organizations. The transition was pioneered by the establishment of Indian Bank in 1906. The second major Chetti bank came in 1929 when Raja Annamalai Chettiar established the bank of Chettinad. Besides modern banking, the Chettiars also ventured in industries such as sugar, cement and textile (Sridevi, 2005, pg 267, 261). There were at least five banks and six insurance companies that were established with Chettiar capital during the first part of the twentieth century (Menon, 1985).

The relationship between a banker and his agent was important for banking business in colonial India. The caste network of the Chettiar bankers could

effectively solve the principal agent problem inherent in the banker-agent relationship. The caste bankers had comparative advantage in processing information about the agents using the caste network. This was crucial for ensuring honesty of the agents. The caste banking lost its comparative advantage when modern communication technology got improved and social ties within the caste weakened during the first quarter of the twentieth century. This paper concludes that in response to these changes, the caste bankers started switching to joint stock banking, and analyzes the process of transition using a theoretical model.

Section 2 provides an overview of the history of banking in India. Section 3 illustrates the banker-agent relation and the role of Chettiar temples in information dissemination. Section 4 presents the model. Section 5 discusses about the improvements in communication in early twentieth century India and section 6 discusses the weakening of community network. Section 7 tests an implication of the model by comparing the wages paid by the caste bankers and that paid by the joint stock bankers. Section 8 concludes.

2   History of Banking in India

The history of banking groups in India can be traced back to the 13th century. In the sixteenth century, a big portion of Indian subcontinent became administratively integrated under the Mughal rule which facilitated both maritime and inland trade. Extensive trading network required a supporting network of money exchange which was successfully carried out by the indigenous banking groups who extended their businesses on the basis of kinship networks. Throughout the seventeenth and the eighteenth century, the Indian banking groups expanded their business outside India, and emerged as one of the most important ethnic banking groups along with the Chinese and the Arab Jews Ray (1995).

From the eighteenth century, the British started gaining economic and political control over India. The indigenous banking groups played a major role in the military expansion of East India Company in India by facilitating the transfer of funds from the British headquarter to different military locations. The first fifty years of the colonial period saw a structural change within the indigenous banking sector in India. Under the colonial rule the socio-economic parameters of India changed as a strong state with different cultural values emerged. Moreover, geographical mobility increased during this period which adversely affected the communities' ability to punish the dissenting members. Under this condition, only the groups with greater social ties could survive (Ray, 1995).

The spread of joint stock banking started with a boom in the first decade of the 19th century which was eventually crushed by the economic collapse of 1830s. The first joint stock bank of India was established in 1809. The joint stock banking started to flourish from the mid nineteenth century. By 1843, Bengal (Eastern India), Bombay (Western India) and Madras (Southern India), all three presidencies had government backed presidency banks. During that time, the Bank of Bengal had 17 branches spanning all over north and middle part of India (Bagchi, 1989, pg 189). The Bank of Bombay, after recovering from an initial set back, also started to expand during this time. The Bank of Madras had 14 branches by 1914 (Bagchi, 1989, pg 203). The spread of joint stock banking in the early twentieth century is summerized below:(Goldsmith, 1983)

The third column of table 1 gives statistics on Nidhis and Chit funds which were cooperative credit societies. They operated like semi formal organizations where enforcement worked through social sanction.

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Year	Joint Stock Banks	Nidhis and Chit Funds
1920	351	213
1925	463	282
1933	1236	152
1939	1369	113

Table 1: Growth of Banking in India

3 The agency problem

A banker in colonial India, depended heavily on his agents for running his business. The agents in colonial India would work like a branch manager – deciding on which loan to approve. Banks would often suffer from dishonest agents. For example, in 1892, the Mercantile Bank of India, was the victim of a massive fraud which led to the loss in the region of £75,000, not to mention the loss of reputation (Green and Kinsey, 1999, p 12).

The relationship between a bank and its agent is a classic case of 'principal-agent' problem. The agents have incentive to cheat, and principals look to design mechanisms to prevent cheating. To resolve the issue of agent monitoring, Nattukottai Chettiers used an apprenticeship based system. The use of the apprentice system to solve the principal agent problem is well discussed in the literature (Chwe, 1990; Carlos and Nicholas, 1993). A Chettiar banker would choose an apprentice from his family or from other Chettier families who would then be sent to an overseas branch office in Sri Lanka (Cylon) or Myanmar (Burma). After working there for three years, he would hand over responsibilities to a new apprentice agent, and would return to his master in Tamilnadu, India (Rudner, 1994, pg 116-118).

This three year apprentice system resulted into an efficient information transmission system. The overseas locations of Chettiar operations, viz. Burma and Ceylon, had a few thousand Chettiar bankers operating there.

Taking India based and Burma based business together, there were around 2882 Chettiar bankers in 1930 in Burma (Rudner, 1994, pg 74). This apprenticeship system resulted in a constant circulation of apprentices between the Chettiar headquarters in India, and their overseas locations. This system allowed a Chettiar banker to get information about his overseas offices from other bankers even if his own agent would only come back after three years.

The Nattukottai *panchayats* and temples played effective roles in the process of information dissemination. A *panchayat* is a traditional Indian civic body for dispute resolution. The Nattukottai *Panchayats* played active roles in resolving disputes by hosting general community meetings which can be imagined as effective means of disseminating information (Rudner, 1994, pg 127,118,124). It is important to note that from the beginning of the twentieth century, *panchayats* started losing their importance (Mahadevan, 1978) which lends support to the theory provided below.

A few other Chettiar institutions played important role in the process of informaltion dissemination. The temples, for example were at the center of the Chettiar society, complementing the *panchayats'* role of information dissemination. The *panchayat* meetings and other social meetings were often called at the temples (Rudner, 1994, p 127). The *Nakaravitutis* (*vitutis* belonging to Nakarattars,) was another institution important for this purpose. *Nakaravituti* was the name of communal housing for the Chettiars at the business locations. Business meetings were held in this place, and the buildings had temples and guest rooms as well. The *Nakaravitutis* were entirely financed by elite members of the Chettiars and less-prominent Chettiars who had greater interest at local business (Rudner, 1994, pg 125).

The preceding paragraphs illustrate the point that the *temple-panchayat* complex played an active role in hosting social and business meetings which were instrumental for information dissemination. On the other hand, a joint

stock banker could not rely on his fellow banker for sharing information as the joint stock banking business in the twentieth century was characterized by fierce competition.

Hence, a caste banker would receive such information mostly through the caste network while joint stock banks could only access information by using communication facilities such as telegraph and railways. The caste bankers, however, could also use modern communication facilities for this purpose. In the early stages of railways and telegraph, such communication facilities were not very effective in transmitting information to and from remote places. Moreover, telegrams could only be sent in English, and to interpret the message a Chettiar banker might have to hire an outsider interpreter. This could amount to compromising the confidentiality of sensitive business information.

There are certain costs associated with using either of these two channels – modern communication and caste network. Usage cost of modern communication, consisting of the price of railway ticket and telegram charge, is easy to understand. Information from the caste network was a public good, and hence, the cost of using the network was not based on the principle of *quid pro quo*. Nevertheless, the caste members had to pay to maintain the information network. The role of temples for disseminating such information has already been discussed. A Chettiar banker could access the information flowing through the community network, only if he would regularly participate in temple ceremonies. Hence, temple contribution can be seen as an indirect fee for the access to information.

The principle for temple contribution closely followed the 'ability to pay' approach - rich merchants contributing more. There was a annual head tax per family (*pulli vari*). The richest members also had to pay a tax called *asti vari* (Rudner, 1994, pg 198). A sample account from an Ilayathakudi

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temple in 1939 shows that the annual budget of one such temple was huge – amounting to Rs.115,487 (Rudner, 1994, pg 196). How big was this amount? The wage of a Chettiar agent could be a useful reference point. The annual salary, a Chettiar agent could get in 1930s varied between Rs.933 and Rs. 3500 (Rudner, 1994, pg 116). Hence, by this standard, annual budget of just one temple was indeed a big number.

Given the public good nature of information within the caste network, the problem of free riding might arise. How did the Chettiars solve this problem? Social sanction of free riders can be thought as a possible mechanism. Besides that, each banker had stakes at the other banker's business, and that limited the extent of free riding. Inter-linkages between the Chettiar families worked through different channels. Besides marriage ties, one Chettiar firm would invest money in other firms (Rudner, 1994, pg 100), and one family's sons would work in other firms as apprentices (Rudner, 1994, pg 115).

4   Model

The last section elaborates on the importance of the agency problem in the banking sector in colonial India, and how Chettiars resolved the problem by processing information through the caste network. That section also detailed the structure of information network within the caste network. This section models the relationship between a banker and his agent, and how a bank would solve the principal agent problem. The assumptions of the model are supported by specific historical evidence.

Suppose, there are n bankers. Bankers may vary in terms of their wealth, and business abilities. The bankers recruit agents who mediate between a banker and a borrower. A borrower can be of two types – good or bad. The borrower takes the money and invests in a project. The outcome of

the project is uncertain. If it fails the borrower does not return the money. If it succeeds then only the good borrower returns the money, but the bad borrower does not. This means that the bad borrower always defaults on loan, whereas the good borrower defaults only when the project fails due to some natural reason. Suppose, the probability of failure for natural cause is $1 - p$. The good borrower returns the money with probability 1 if there is no natural disaster. The bad borrower returns the money with probability 0. Hence, probability of repayment by borrower type $k, (k = g, b)$ is given by

$$q_g = p \tag{1}$$

and,

$$q_b = 0 \tag{2}$$

If a borrower defaults, the banker can not decide whether the borrower was bad, or whether there was a natural shock. The probability of a natural shock is exogenously given. Hence, the only thing that a bank can do is to monitor his agent's effort for selecting a borrower. An agent can put high or low effort. High effort is costly for the agent, but the probability that a good borrower is selected is high if the agent puts high effort. Hence, bankers want the agents to put high effort while the agents find it costly to put effort. Hence, the banker deploys a monitoring mechanism. If the agent is caught putting low effort, he will be punished. The probability of getting caught depends on the quality of the monitoring technology which in turn depends on the transmission of information about the agent's behavior. Bankers compare payoffs between two organizations: caste based and joint stock, and then choose the form of organizations which yields the highest payoff.

If the agent exerts high effort then, then he gets wage w, but also bears a utility cost x. If he chooses low effort, then there is a probability η of

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detection that he is shirking. If detected, he pays a penalty of κ. If not detected, he enjoys the wage w. The cost of punishment is assumed to be constant. The implication of this assumption is discussed later. Hence, high effort is chosen if,

$$w - x \geq \eta(-\kappa) + (1 - \eta)w \tag{3}$$

Hence in equilibrium the high effort inducing wage is given by,

$$w = \frac{x}{\eta} - \kappa \tag{4}$$

Equation (4) shows that an improvement in monitoring technology leads to fall in the honesty inducing wage. The bankers then choose agents. The quality of monitoring is not the same at all locations. Monitoring quality depends on the flow of information between the branch and the headquarter. The flow of information depends on various things such as communication technology, social network etc. If communication technology improves, then both the caste bankers and joint stock bankers can benefit from that. However, any changes in the social network only affects the information flow for the caste bankers. Hence, I define,

$$\eta = f(\delta, \tau, \nu) \tag{5}$$

where δ represents geographical distance, τ is the coefficient for communication technology, and ν is the indicator of social network. Because, η represents the probability of detection, it must be the case that $0 < f(.) < 1$. Moreover, $f_\delta < 0$, f_τ, $f_\nu > 0$. There are two modes of monitoring possible: caste and joint stock. A caste banker can monitor using caste network and modern communication, while a joint stock banker can only use modern communication. It is further assumed that if a banker can monitor one agent better under one mode of monitoring (caste or joint stock) than the other, then this is true for all other agents as well. Equation (4) shows that the wage

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rises as η falls, and equation (5) shows that η is a function of geographical distance, communication technology, and social network. Suppose, communication technology and social network are held constant in a given period. Then η becomes a function of geographical distance only. Each agent i is identified by his distance from the headquarter, δ_i. By hiring a new agent, the bank earns a return r which is assumed to be constant, and pays a wage w_i which is a falling function of $\eta(\delta_i)$. Assumption of constant r for any distance is not very realistic. But even if r varies with distance (e.g. distant places are less serviced by other banks, and hence higher return from there) the qualitative result does not change.

The banker will continue to employ agents until the marginal return from the agent equals the opportunity cost of not appointing him. Suppose the opportunity cost of the banker's time for managing one more branch is 0. Then, a banker would recruit agents till the distance D^* such that

$$w(\delta_i = D^*) = r \tag{6}$$

and, the total profit for a banker is given by

$$v_B = \int_0^{D^*} (r - w_i) di \tag{7}$$

Equation (6) can be rewritten as,

$$R = r - w(\eta(D^*, \tau, \nu)) = 0 \tag{8}$$

Equation (8) yields,

$$\frac{\partial D^*}{\partial \tau} = -\frac{R_\tau}{R_{D^*}} = -\frac{-w_\eta \eta_\tau}{-w_\eta \eta_{D^*}} \tag{9}$$

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After simplification, this yields,

$$\frac{\partial D^*}{\partial \tau} = -\frac{\eta_\tau}{\eta_{D^*}} > 0 \tag{10}$$

The sign of the expression is negative because improvement in communication technology increases the quality of monitoring ($\eta_\tau > 0$) and increase in geographical distance reduces the quality of monitoring $\eta_{D^*} < 0$. Following similar steps one can show that,

$$\frac{\partial D^*}{\partial \nu} = -\frac{\eta_\nu}{\eta_{D^*}} > 0 \tag{11}$$

From these results, the next proposition follows,

Proposition 1 *Improvements in communication technology, or increase in the coverage of social network will allow the banks to establish branches farther from their headquarters. Therefore, profit increases as monitoring technology improves. Hence, communication technology and social network operate like substitutes in the decision process of the bankers for expanding business.*

In the preceeding part,the decision to expand business has been analyzed. This part focuses on a caste member's decision about the organization of his business: joint stock or caste banking. A joint stock company in the colonial period was a limited liability company which was registered under the British company act. It has been argued here that opting for caste banking was not just a cultural legacy. It was rather a rational decision to mitigate the information problem. Bankers chose caste banking so that they can rely on community network for monitoring the agents. In an environment where receiving information from distant places was costly, this proved be a cost effective mechanism.

The comparative advantage of caste banking eroded when the improvements in communication technology in colonial India reduced the cost of processing information for joint stock banking. The improvements in the communication technology got reflected in the increased availability of modern communication facilities. India, in the late nineteenth century, saw a massive expansion of modern communication facilities such as telegraph and railways. This adversely affected the comparative advantage of the caste networks.

When a banker chooses one form of organization over the other, he compares the pay-offs under those two forms. The main difference lies in the quality of monitoring. The monitoring technology is assumed to be such that if a banker can monitor one agent better under joint stock banking (than under the caste banking), then this is true for all agents. Then, a member from the banking caste opts for joint stock banking if,

$$w_{JS} < w_C \tag{12}$$

Two things can be different between a caste banker and joint stock banks– monitoring technology(η) and punishment for a shirking agent (κ). Hence, the above mentioned condition can be rewritten as,

$$\frac{x}{\eta_{JS}} - \kappa_J < \frac{x}{\eta_C} - \kappa_C \tag{13}$$

This condition can be further simplified to,

$$\frac{1}{\eta_J} - \frac{1}{\eta_C} < \frac{\kappa_J - \kappa_C}{x} \tag{14}$$

In the model, the cost of punishment for a cheater agent is assumed to be exogenous for the banker. This is not an unrealistic assumption given that the level of punishment for a cheater was determined by the community

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norms, and hence was beyond the control of an individual banker. Does it matter if the caste banker can determine the magnitude of such cost? It should not as long as there exists a finite upper bound of such cost. Because, in that case caste bankers will always choose the maximum cost. In that case, κ_C can be interpreted as the maximum level of punishment that can be inflicted by the caste banker. the maximum cost a cheater could expect was the cost from social sanction. This cost must not be too large specially because people who would execute such punishment would be related to the cheater through kinship ties.

The improvement in communication technology would affect the decision to adopt joint stock banking by affecting more than one parameters of equation (14). It affects the values of both η_J and η_C, as the quality of monitoring technology would improve for both the types. Moreover, improvements in the transportation facilities allow an agent to find employment outside his community, and that makes the community sanctions less effective. Hence, κ_C decreases with the improvement in transportation facilities, and the adoption of joint stock banking becomes more likely.

Now, consider the banker's decision to spend resources on communication technology. This is important, because if the information transmission was free then there would be no reason to switch between the modes of business organization. I assume that each banker has a fixed amount of resources available for spending on monitoring which is increasing in his wealth/size of business. Hence, big bankers spend more money on monitoring each of the agents. Also suppose κ_C does not change with improvements in communication technology.

The fundamental difference between a joint stock banker, and a caste banker is that the joint stock banker cannot use social network for monitoring. Hence, he spends all his available money for communication technol-

ogy. However, using community network for monitoring was not free. It has already been illustrated that the temple contribution can be interpreted as the cost of accessing caste network. The taxation policy followed within the caste was close to the *ability to pay* principle - rich members paying more. Suppose, the bankers are indexed by their wealth. A banker l is wealthier than the banker $l - 1$. The temple contribution is fixed by the caste *panchayat*. Suppose, for the banker l, the amount of endowment for spending on monitoring is γ_l and the amount of temple contribution is fixed at c_l. He can spend the rest of the money $(\gamma_l - c_l)$ on monitoring using conventional communication technology such as railway and telegraph.

A specific functional form for the monitoring technology is assumed to further elaborate on the decision process. It is already been specified that η is increasing in τ and ν, and decreasing in δ. Define,

$$\eta_m = \frac{\tau y_m + I_m \nu}{\Delta + \delta} \tag{15}$$

where the subscript $m = C, J$ denotes whether its a joint stock or caste based organization. I_m is an indicator function such that $I_C = 1$ and $I_J = 0$. This indicator makes sure that monitoring under caste based banking uses both modern technology and caste network, while that under the joint stock banking only get to use modern communication. The variable y_m represents the amount of money spent on modern communication by organization type m. Δ is just a big number that makes sure that η never gets bigger than 1, even if δ is close to 0. Given this functional form, equation (14) can be rewritten as

$$\frac{\Delta + \delta}{\tau y_J} - \frac{\Delta + \delta}{\tau y_C + \nu} < \Gamma \tag{16}$$

where $\Gamma = \frac{\kappa_J - \kappa_C}{x}$. For a banker l, this condition can be rewritten as,

$$\frac{1}{\tau y_J^l} - \frac{1}{\tau y_C^l + \nu} < \frac{\Gamma}{\Delta + \delta} \tag{17}$$

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This can be further simplified to,

$$\frac{\nu - \tau(y_J^l - \tau y_C^l)}{\tau y_J^l(\tau y_C^l + \nu)} < \frac{\Gamma}{\Delta + \delta} \qquad (18)$$

It has already been specified that $y_J^l = \gamma_l$, and $y_C^l = \gamma_l - c_l$. Hence, equation (18) can be rewritten as,

$$\frac{\nu - \tau c_l}{\tau y_J^l(\tau y_C^l + \nu)} < \frac{\Gamma}{\Delta + \delta} \qquad (19)$$

This condition implies that a caste member opts for joint stock banking if τc_l is sufficiently larger than ν. This condition is true when spending c_l on communication technology yields much higher information content than that from the caste network. This can be true under these conditions: if τ is high, c_l is high, and/or ν is less effective. In other words, caste members are more likely to opt for joint stock banking if communication technology improves and/or social network gets weakened. If transportation facility reduces the effective cost of social sanction (κ_C), then this condition is more likely to be met. This analysis leads to the following proposition:

Proposition 2 *The likelihood of adopting joint stock banking is positively related to both improvements in communication technology and weakening of community network .*

The next section provides historical evidence to check whether these conditions were satisfied in the early twentieth century India. First, the history of the improvements in communication technology is described. Then, I discuss weakening community ties of Chettiar bankers during the first half of the twentieth century. Both factors increased the likelihood of joint stock banking.

5   Improvements in Communication

The Indian economy in the late nineteenth century was characterized by a massive expansion of communication facilities via construction of railroads and telegraph lines. There was an extensive expansion of railway network during the period 1880-1914. Railway track increased from 15764 k.m. in 1880 to 59,585 k.m. in 1915-1916. Number of passengers also increased from 22 million in 1871-74 to 392.2 million in 1910-14 (Headrick, 1988, p 74). However, this is an aggregate statistics covering all of India. For this study, it is more important to look at the places which were more important for Chettiar business, viz. southern India, Burma and Ceylon.

The data used here is from "Digital South Asia Library".[1]. The data is mostly retrieved from Statistical abstract relating to British India, Her Majesty's Stationary Office. South Mahratta railways did not start its operation before 1883. Hence, for the time period 1868-1883, only Madras railways data is used, whereas for the period 1883-1912 data from both Madras railways and Southern Mahratta are used together.

The graph (figure 1) shows that passenger traffic was almost continuously increasing throughout the period. There was a decline for a short period in the 1890s followed by a steep rise from 1901.

Given the concentration of Chettiar banking operation in Burma, looking at the railway network in Burma is important for this paper. With river transport being traditionally more important in Burma, railway expansion was at a rudimentary stage in 1870s. The first railway in Burma, *Irrawady Valley State Railway*, started its operation in 1877 covering only 163 miles. In the subsequesnt years, more divisions were opened. Then in 1896, all the lines amulgamated to form Burma State Railways (Nisbet, 2005). The data
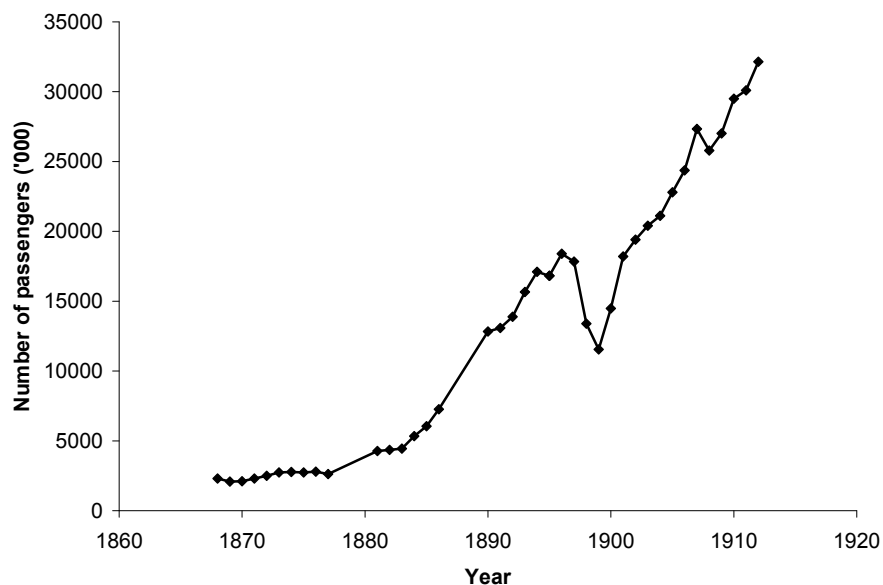
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[1]http://dsal.uchicago.edu/statistics/

Figure 1: Number of passengers in South Indian railways

on passenger traffic in the railway lines from Burma shows a steady rise in passenger traffic during the period. The curve gets steeper around 1900.

During this time, telegraph network was expanding at a rapid pace as well. In 1883, the department of telegraph merged with the postal department (Headrick, 1988, pg 121). This allowed numerous small post offices to handle telegrams which were forwarded to them by mail from the nearest telegraph office. Hence, for years after 1883, the number of post offices are added to the number of signal offices to get a complete picture of the telegraphic network in India.
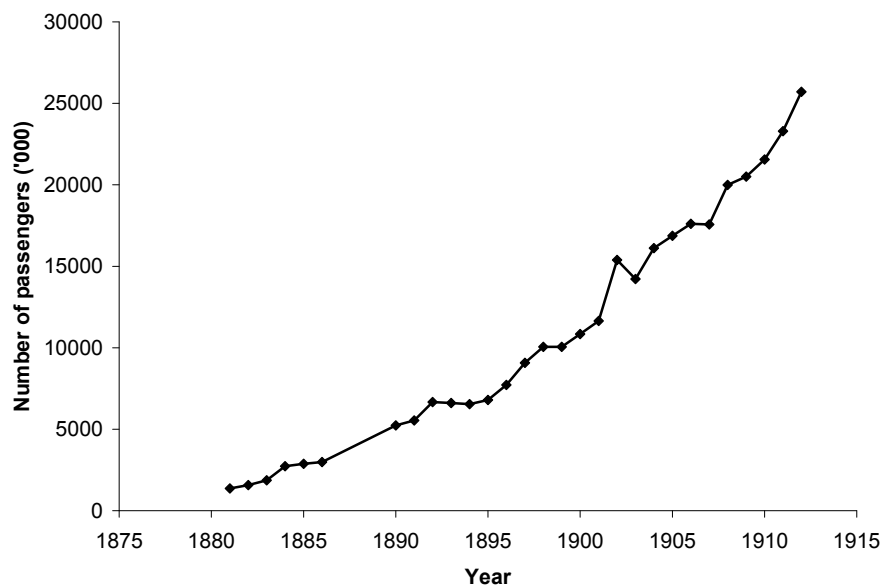
Figure 2: Number of passengers in the Burma railways

6 Weakening of Community Network

The model predicts that the bankers are likely to choose joint stock form of organization if the community network gets weakened. This section provides some evidence on the weakening community ties of the Chettiars during the first half of the twentieth century.

In early twentieth century, Chettiar leaders expressed their concern about the decaying social capital within the Chettiar community. One such document comes from the first All Burma Chettiar conference that was held in Rangoon in 1924. In the presidential address, T S Nagappa Chettiar,
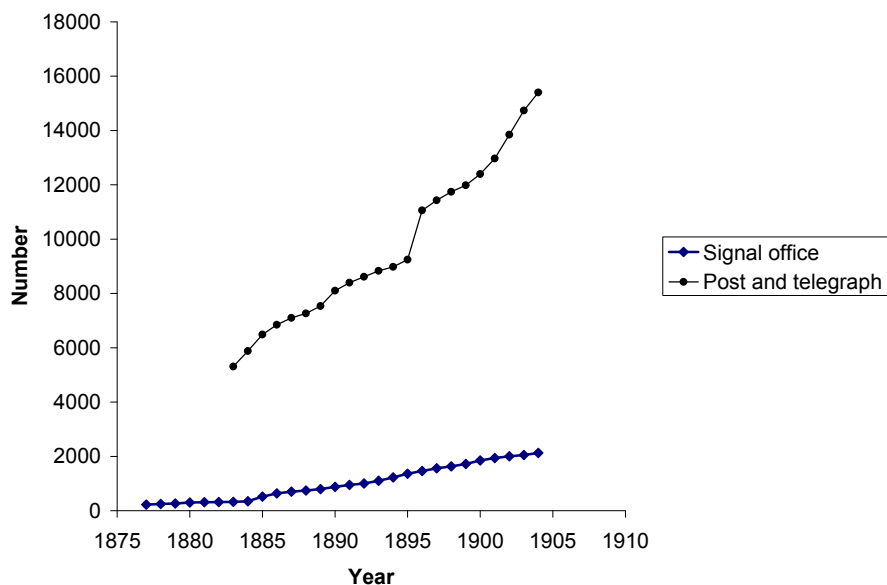
Figure 3: Expansion of Post and Telegraph System

expressed his worries over declining cooperation among the Chettiars Mahadevan (1978). The resolutions passed in that meeting are important for understanding the issue of weakening social ties. A few of the relevant resolutions are presented here from Mahadevan (1978):

1. It was decided that a modern joint stock Chettiar Bank should be established. The director and shareholders of the said bank must be Chettiars.

2. Chettiar bankers were urged not to charge excessive interest rates from their fellow Chettiars.

3. The commercial banks in Burma were urged to lower their interest rates

on their loans to Chettiars, since the same was much higher than the rates prevailing in the banks in Calcutta and Madras.

4. It was resolved that the tenure of the agents of the Chettiar firms in Burma would be reduced from three to two years.

5. Consideration on the resolution as to whether disputes amongst the Chettiars be settled within the community, viz., through the medium of the Chettiar Panchayats, or outside the community, was postponed to the next conference.

These resolutions reveal some important aspects of the Chettiar business organizations and community ties. The first one directly expressed the aspiration of the Chettiars to go for the joint stock business model. The reason was clearly not the need for capital from outside the caste. Then they would not have wanted shareholders from within the Chettiar caste only. The motivation behind such a move probably stemmed from the organizational advantage of joint stock banking. The second resolution indicates that the rates being charged for intra Chettiar transaction were clearly higher than that allowed by the community norms. What does it imply? Rate of interest reflects risk associated with a particular borrower. A caste banker had greater information about, and control on the behavior of another caste member. Therefore, the intra caste rate of interest should be lower than the market rate. An increase in the intra caste interest rate was a possible reflection of weakening social ties leading to less information about fellow caste members.

The third resolution tells us that the rate of interest charged by the British banks from Chettiars, was higher in Burma than in Madras and Calcutta. This shows that the Burma based Chettiars could not access funds from banks located in India through their kin networks in India. The difference in transaction costs can be a probable reason behind the interest rate differential. But this seems unlikely as all these locations were British colonies,

and hence trans border monetary transaction cost did not apply in this case. Therefore, the lack of arbitrage can be attributed to the weakening of caste networks.

The demand for reducing the years of tenure for agents shows that bankers started depending more on information sent by their own agents' rather than on the system of information circulation through the community. A three year system would work fine if there was a constant turnover of agents from different bankers, and an efficient information sharing within the community. However, if the network did not function smoothly, then each banker would need that his own agent would return sooner which may have promted the adioption of this resolution.

The last item postponed the discussion on the issue of adjudicating the intra caste disputes in *panchayat*, i.e. the community court. This implies that there was no unanimity over this issue, meaning that a sizable section of the caste wanted the intra caste disputes to be resolved in formal courts. The trend of taking intra caste disputes to formal court was evident from Ceylon as well The period between 1901-1935 saw a rise in Chettiar litigation in Ceylon. Weerasooria (1973) analyzed a sample of 59 cases which were brought to the formal courts in Ceylon by the Chettiars. Of those, 10 cases were brought against another Chettiar.

The resolutions presented above reveals a general pattern of weakening social ties. But, why did the Chettiar network get weakened during the early twentieth century? One possible reason behind the weakening class solidarity could be intra caste income disparity. A time series on such disparity would be ideal for illustrating this point. In the absence of such data, I look at a snapshot view of Chettiar land holding distribution circa 1940 in Burma. This sheds some light on this issue. Data is taken from Mahadevan (1978). The graph presented below shows a skewed land distribution hinting at a

hierarchical structure within the Chettiar caste, and a possible intra caste conflict of interest,
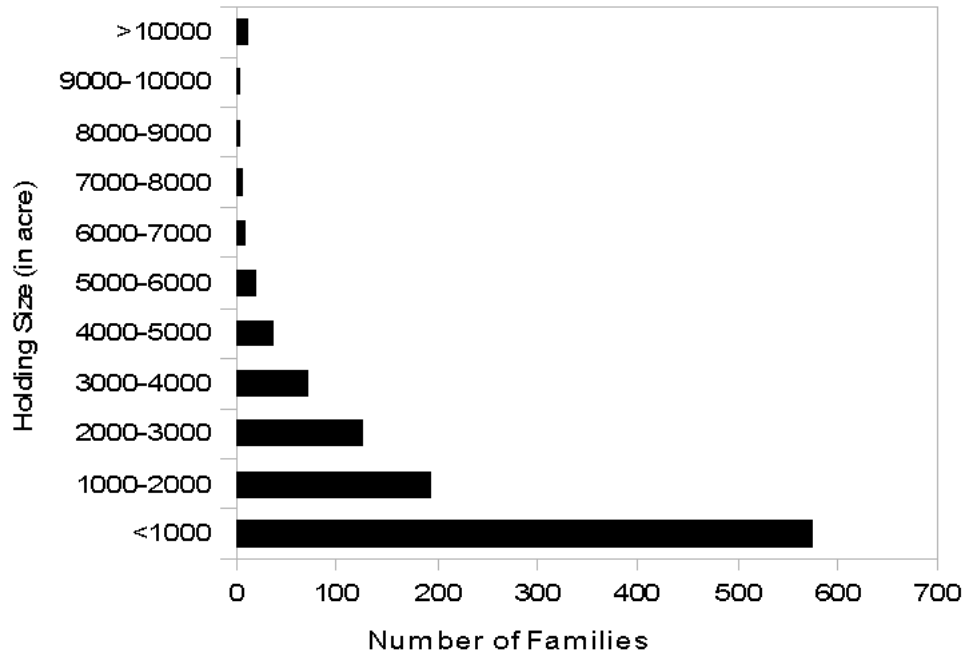

Figure 4: Land Distribution among Chettiars in Burma, circa 1940

Chettiars' involvement in speculative trading can be interpreted as another reason. The fundamentals of speculative trading is not compatible with cooperative, information sharing model of business adopted for caste banking. The Chettiars got involved in such trading activities since the late nineteenth century. Opening up of Suez canal in 1869 ushered in a new era of trade between Europe and Asia. South Asia started to cater Europe's demand for rice, and Burma emerged as one of the major exporters of rice. Rice export from Burma showed a steady growth during this time (Hwa, 1968, pg 201). Acreage of paddy cultivation was continuously increasing for the period 1870-1930 (Rudner, 1994, p 85). Price of paddy was also increasing until 1926. Expansion of cultivation required credit, and Chettiars assumed a central role in this newly expanding credit market.

In the last decade of the nineteenth century, Chettiars from Calcutta entered Burma, and started exporting rice to India and Ceylon. They also established rice mills in Arakkan (Mahadevan, 1978). Chettiar rice traders did not work merely as middlemen between farmers and European traders. They emerged as the competitors of the European rice traders (Furnival, 1948). Rice trading involved forward trading making speculation an integral part of the business practice. Speculation is not consistent with information sharing. Hence, one can imagine that the rise of speculative business would make the caste members more competitive, and consequently, caste network would share less information. This would lead to a less effective caste network.

The reason behind Cheettiar's active participation in rice trade can be found in the pattern of lender borrower relationship that existed in colonial south Asia. The major overseas operations of Nattukottai Chettiars were in agriculture. They extended loans for rice cultivation in Burma, and rubber and tea plantation in Ceylon. What does explain the concentration of the Chettiar lending operation in agricultural activities? One explanation can be the use of land as collateral.

Land as a collateral was not acceptable to joint stock banks because the property right of land was not well defined in the sense that most of the land was traditionally held without any legally executable document. This created two folds problems. First it was very difficult to obtain land through legal process when the debtor defaulted on loan, and second it would difficult to sell the acquired land in the absence of well defined property right. Hence, for a banker, without an extra legal means to acquire land on non repayment of debt, land would not be a lucrative collateral. Nattukottai Chettiars could use social sanction to obtain land from the defaulters. One can imagine that if the creditor did not transfer the land, he could not get any loan from any Chettiar banker, and as a result, could not afford cultivation. This method,

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clearly was not available to joint stock bankers.

However, the transfer of land to Chettiars who were foreigners created huge political problem in Burma leading to a poitical resitance against the Chettiars. However, Chettiars would not prefer to own land in lieu of unpaid debt. Because, in the absence of an effective land resale market, this would mean decline in their liquidity, which was detrimental for their money lending business. Raja Annamalai Chettiar voiced the same concern (Sridevi, 2005, pg 96).

Nevertheless, in 1930, in the 13 rice growing districts of Burma they owned 570,000 acres of land. This was 6% of total land in that area, and 19% of total land in that area occupied by non agriculturists (Mahadevan, 1978). This can be seen as a major reason why the Chettiar actively participated in rice trade. If land could not be sold, then the second best option was to engage in rice trading to maintain liquidity which might have weakened the cooperative structure of their business organizations.

7   Wage Comparison

The next important thing is to test the prediction of the model by comparing between wages of these two forms of organizations. It is difficult to track wage data before and after the transition of the same bank. The closest comparison that can be done between the wage of a caste bank , and that of a joint stock bank run by Chettiars. Hence, I compare the salary structure of Indian Bank with that of the Chettiar caste banks. Before going into the wage data, it is important to look at the employee structure of these two forms of organization. An agent of a Chettiar banker would be appointed for three years. The salary would be negotiated between an agent and the proprietor. In 1930s, an agent's salary ranged from 800 to 3000 *varakans* for

a three year period (one *varakan* = Rs. 3.5)(Rudner, 1994, p 116). Besides the chief agent, the bulk of work in a Chettiar agency was carried out by a staff (*kattu kanakkupillai*) consisting of a first assistant (*mudalal*), a subordinate staff (*aduthal*), a cook (*camaiyalkaran*), and an errand boy (*pettiyadi paiyan*). Large firms would also appoint a court clerk (*kirani*) and a cashier (Rudner, 1994, pg 118). The errand boy was more of an apprentice who would be provided food and housing, but no salary. His biggest pay-off was the opportunity to learn the tricks of the business. No evidence could be found on the salaries of other categories.

For the joint stock banks run by the Chettiars, I have data on the salary structure of Indian Bank in 1912. The employee structures are quite different between these two forms of organizations. Hence, exact mapping between two position names may not be possible. But this sheds some light on the salary the employees used to draw (see next page). The data is taken from Seshadri (1982).

The type of employees were far greater in the joint stock bank than in a Chettiar agency. Hence, salary comparison can not be done in a true sense. However, I compare the salaries of the position called 'agent' in the Indian Bank with that in a caste based bank. As I have already mentioned, a Chettiar agent would get 800-3000 *varakans* for three years. This amounts to Rs.933-Rs.3500 per year. An agent in Indian Bank would get Rs.1200 per year. In Chettiar banks, agent's salary would vary with banker's wealth. The founders of the Indian Bank were major businessmen in Chettiar community. A Chettiar of that stature would pay greater salaries th their agents. Hence, the upper limit of the caste banker's agents' income would be appropriate for comparison. However, I do the wage comparison for the entire range. Next, wage data is deflated by price. I do not have a good price index. Hence, rice prices has been used for deflating the nominal figures. The price data is from the Rangoon market in 1912 and 1930. Price from Rangoon is a good

Employee Category	Monthly Salary(Rs)
Secretary	750
Senior Officer	220
General Assistant	150
Agents	100
Officers	75
Head Clerk	50
Senior Clerk	50
Accountant	50
Loan Clerk	40
Clerk in charge of fixed deposit	35
Clerk-accountant	30
Ledger Clerk	25
Shorthand typist	25
Savings Bank Clerk	25
Ordinary clerk	25
Clerk in charge of day book	20
Bill collectors	9
Peons	9
Waterman	8.5
Watchman	8
Sweeper	8
Scavenger	4

Table 2: Monthly salary structure of Indian Bank, 1912

proxy even if the agents were located in India. Because, India was the major importer of Burmese rice. The price of rice was Rs.160 per 100 baskets in 1912, and Rs.75 in 1931. The amount of rice contained in 100 baskets was 46 pounds (Mahadevan, 1978). Price started to drop in 1930s. In 1930, the price of rice was 130. Given the data unavailability for subsequent years, an average of 1930 and 1931 prices is taken to deflate nominal data. This is to make sure that a low price year has not been chosen.

The calculation shows that Indian Bank's agent's annual salary was 750 baskets of rice, while an agent of the caste banker would get 878 to 2926 baskets of rice. This result is consistent with the prediction of the model.

8   Conclusion

This paper provides an explanation for organizational evolution for the caste bankers. The business organization of Nattukottai Chettiars, one prominent banking caste from southern India, started to change from the early twentieth century. They shifted from caste based banking to joint stock banking. The explanation for the change partly lies in the improvement of communication technology. The caste banking heavily depended on the caste network for their operation. Caste network was an effective channel for information dissemination, which was essential for ensuring the agents' honesty. As communication network improved, and social ties of the caste network got weakened for several reasons, joint stock banking proved to be a more profitable form of business for many of the Chettiar bankers.

The fundamental motivation for this paper is to provide some understanding of how societies develop formal institutions. The paper aims to contribute to the existing literature on inetitutional economics of by shedding lights on the transition of credit institutions in a less developed country. The rigor

of the caste system allowed the caste based organization to prevail. This paper identifies the improvement in communication technology, and the rise of speculative trading as the major factors behind the transition of credit institutions in India. This study relates to the question of the persistence of informal institutions in the less developed countries, and therefore has some important policy consequences. Understanding the reason for persistence should help governments design more effective policies that can deal with inefficiency associated with the community based system.

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