Schumpeter School
of Business and Economics

SCHUMPETER DISCUSSION PAPERS

Entrepreneurship in India:
The Question of Occupational Transition

Erik Monsen
Prashanth Mahagaonkar
Christian Dienes

The Schumpeter Discussion Papers are a publication of the Schumpeter School of Business and Economics, University of Wuppertal, Germany
For editorial correspondence please contact SSBEEditor@wiwi.uni-wuppertal.de

SDP 2010-007
ISSN 1867-5352

Impressum
Bergische Universiät Wuppertal
Gaußstraße 20
42119 Wuppertal
www.uni-wuppertal.de

BERGISCHE
UNIVERSITÄT
WUPPERTAL

ENTREPRENEURSHIP IN INDIA:

THE QUESTION OF OCCUPATIONAL TRANSITION

Erik Monsen[1]
Max Planck Institute of Economics, Germany
monsen@econ.mpg.de

Prashanth Mahagaonkar
University of Wuppertal, Germany
mahagaonkar@econ.mpg.de

Christian Dienes
University of Wuppertal, Germany
dienes@wiwi.uni-wuppertal.de

ABSTRACT

Occupational transition from salaried to self-employment is an important issue in developed economies, but is even more critical in emerging economies, as individuals' occupational choices can drive economic development. Using data on 3637 individuals from India, we examine the effect of regional factors on actual and intended transition. We find that self-employment and unemployment rates decrease actual and intended transition, and the effects are at least four times greater than that of individual-level factors. In addition, we find that urban versus rural location moderates the effects of income ratios and state GDP, with the effects being greater in rural locations.

JEL Codes:
J24, J62, L26, O12, O18, O53

Keywords:
Occupational Transition, Self-Employment, Emerging Economies

[1] Corresponding author

1. INTRODUCTION

To promote economic development in post-liberalization-reform India, national and state governments are pursuing growth and development policies that encourage entrepreneurship and self-employment (Ahluwalia 2002, 2005). To improve the effectiveness of these policies, it is important to understand how regional factors impact an individual's decision to transition from employment to self-employment. The relevance of this issue is not confined simply to policymakers in India. Given the extreme socioeconomic diversity between India's 28 major states and 7 union territories, and that these regions all operate under a common national institutional framework, India is an excellent natural laboratory for better understanding how regional socioeconomic differences impact occupational transition decisions in emerging economies around the globe.

Occupational transition from salaried employment to self-employment is an important issue in developed economies (Evans and Jovanovic 1989; Evans and Leighton 1989; Fairlie, 1999; Dunn and Holtz-Eakin 2000), but is even more critical in emerging economies, as individuals' occupational choices can drive economic growth and development (Banerjee and Newman 1993). To make a real economic difference, however, a substantial number of individuals must make the transition from employment to self-employment. One interesting feature of India's situation in this regard is its transition from a planned and state-controlled market system to a more liberalized system, a transition that is sure to have some impact, perhaps a dramatic one, on self-employment decisions. Our goal in this paper, therefore, is to empirically examine how regional socioeconomic differences increase or decrease the chances that individuals will transition from employment to self-employment in India. Given that recent cross-country comparisons demonstrate how the framework conditions for entrepreneurship

function differently between developed and emerging countries (Wennekers et al. 2005; Valliere and Peterson 2009; Frederick and Monsen, Forthcoming), we expect our results to be significantly different from those found in work on this issue in developed country contexts as to the factors that promote or discourage occupational transition to entrepreneurship.

Our work extends that of other researchers who have empirically examined regional factors that affect entrepreneurship and self-employment in developed (Reynolds, Storey, and Westhead 1994) and emerging (Blau 1985; Earle and Sakova 2000) countries. Literature in the field of new economic geography makes it clear that regions matter; and that there are interdependencies between the geography of economic activity and the economic development of regions (Armington and Acs 2002; Acs and Armington 2004; Boschma and Fritsch 2009). We therefore control for individual and family factors and only explicitly test the regional factors that impact an individual's decision to transition from employment to self-employment. In addition, we examine how geographic (urban/rural) factors amplify or diminish the impact of regional contextual factors.

Our sample of 3,374 salaried workers is taken from an Indian national household survey conducted in 2005. Between 2000 and 2005, 3,207 of these workers remained employed in the same organization and 167 transitioned from employment to self-employment. In addition to estimating the impact of regional factors on past transition behavior, we also investigate the impact of these factors on the potential for transition in the future. We use reported saving for business purposes as a proxy for the intention to transition to self-employment in the future. To test the robustness of our results, we estimate three sets of regional-model specifications.

This approach is consistent with a growing body of entrepreneurship literature that examines not only actual entrepreneurs, but also nascent entrepreneurs. *Nascent entrepreneurs*

are those individuals who have demonstrated their entrepreneurial intent by taking initial, concrete steps toward establishing a new business (Shaver et al. 2001; Davidsson and Honig 2003; Gartner et al. 2004; Wennekers et al. 2005). Comparing the statistical results for actual transition to self-employment and future intentions to do so can help us better understand the extent to which transitioning to self-employment is a planned, intentional act as opposed to an unplanned, spontaneous reaction. Further, understanding the differential impacts of regional factors could lead to better short-term and long-term self-employment policy making.

Our article contributes to the as yet still small body of work on self-employment in emerging economies. It also contributes to the self-employment transition literature by extending the conversation from the developed to the emerging economy context. Specifically, our results demonstrate that in India, regional-level factors (self-employment rates and unemployment rates) have a substantially greater marginal effect on transition from employment to self-employment than do individual-level factors. In addition, we find that local geographic factors, such as urban/rural location, play a moderating role, particularly for differential income ratios between self-employment and employment. We also find relatively consistent results for both actual transition and intended transitioning, which bolsters the strength of our findings.

The article is organized as follows. Section 2 reviews prior research on transition to self-employment in developed and emerging economies, focusing on regional-level factors. In Section 3, we review regional-level, as well as related individual-level and family-level factors that are of particular relevance in the Indian context. Our theoretical and analytical framework, including formal models of the direct and interaction effects regional factors, is presented in Section 4. Section 5 presents the data and the descriptive analysis; Section 6 contains the

econometric analyses. Section 7 summarizes and discusses the implications of our study for India and other emerging economies around the globe.

2. RESEARCH ON OCCUPATIONAL TRANSITION TO SELF-EMPLOYMENT

2.1 Developed Economies

Research and policy studies dealing with occupational transition often limit themselves to the transition from unemployment to self-employment (e.g., Shutt and Sutherland 2003), but as Ashcroft, Holden, and Low (2009, 1078) write, "The movement from unemployment to self-employment is in principle conceptually different compared with the movement from paid employment to self employment." However, there are very few studies on the transition from employment to self-employment, due, for at least in part, to the unavailability of both transition data and longitudinal datasets. Katz (1990) uses the U.S. Panel Study of Income Dynamics (PSID) in an investigation of whether the aspiration to transition leads to actual realization, concluding that studying only individuals with intention to transition omits a significant population that is self-employed but had no prior intention to be so. Other studies, such as Henley (2007) and Ashcroft (2009), extend the work on understanding the relation between aspiration and transition, but the question of what factors determine "actual" transition behavior are more or less ignored.

Personal or familial wealth is another factor that is found to be determining self-employment choice. Building on the work of Evans and Jovanovic (1989), Evans and Leighton (1989), and Dunn and Holtz-Eakin (2000) use the U.S.-based National Longitudinal Surveys of Labor Market Experience (NLS) find that transition behavior is significantly and positively related to familial wealth. This result is also confirmed by Fairlie's (1999) analysis of the U.S.-

based Panel Study of Income Dynamics (PSID). However, further analysis of the PSID data by Hurst and Lusardi (2004) demonstrate that this relationship is non-linear and significant only for people in the top 20% of the wealth distribution (Hurst and Lusardi 2004). Therefore, one could expect that personal wealth is plays a greater role in developed economies than in emerging economies.

Prior family and personal experience can also play a role in the transition to self-employment. Dunn and Holtz-Eakin find that transition behavior is linked to a history of self-employment by other family members. More importantly, they also find that successfully self-employed parents transfer their entrepreneurial skills to their children. Not only an entrepreneurial family, but also an entrepreneurial work environment can influence self-employment. For example, Elfenbein, Hamilton, and Zenger (forthcoming) demonstrate that transitions to self-employment are increasingly more frequent, the smaller the size of the firm. Therefore, even if the individual was not personally an entrepreneur, experience gained in an entrepreneurial family and work environment can increase the likelihood that an individual will transition from employment to self-employment in the future. Moreover, this prior family and personal experience can increase the likelihood of longer-term business success (Fairlie and Robb 2007).

2.2 Emerging Economies

In emerging economies, where market and institutional frameworks are changing dramatically and rapidly, and where the industrial base and formal labor markets are less well established than they are in developed economies, understanding the factors affecting transition from employment to self-employment could be even more critical for developing an effective public policy than would be the case in developed economies. However, to our knowledge, there

is no research that specifically investigates these factors. Therefore, as a starting point, we review what is known about factors that more generally influence regional self-employment rates in emerging economies.

Early work on occupational transition in emerging economies was conducted by Blau (1985), who examines the drivers of self-employment in Malaysia. Blau identifies significant differences in the production functions for farm and non-farm sectors. Blau also finds significant differences in self-employment rates between ethnic Malays, Chinese, and Indians. Blau further concludes that entrepreneurs earn more than employees in urban areas but less in rural areas. Blau's work raises the question of whether self-employment in developing countries is driven more by necessity or more by choice and opportunity.

Acs, Audretsch, and Evans (1994) argue that unemployment plays an important role in increasing self-employment. In a broader study of self-employment rates in OECD economies, they find considerable variation in self-employment rates in lesser developed countries. They conclude that structural shifts are more likely to be responsible for most growth in self-employment rates, rather than a sudden surge of the "entrepreneurial spirit." Their results hint at a necessity-driven "recession-push" hypothesis and, in fact, recent empirical evidence demonstrates that necessity entrepreneurship is more prevalent in emerging economies, whereas opportunity entrepreneurship is more prevalent in developed economies (Wennekers et al. 2005; Valliere and Peterson 2009).

Interestingly, Yamada (1996, 308) finds that choosing informal self-employment in developing countries is rather voluntary and that the earnings from self-employment are competitive with those of other occupations. Yamada concludes that developing countries will experience similar trends and that policymakers should thus make sure that resource constraints

are eased. Such initiatives, along with entrepreneurial abilities, Yamada suggests, "would boost capitalistic development across Third World cities" (Yamada 1996, 309). Therefore, in the emerging country context, it is critical to consider not only those national and regional framework conditions that enable and ease pursuit of entrepreneurial opportunities, but also those limiting choices that drive individuals into self-employment only to meet life's basic needs. Our study of a variety a regional-level factors, including unemployment rates, self-employment rates, GDP per capita, and relative income ratios, is designed to shed some light on this necessity vs. opportunity debate.

Our study of self-employment in India takes its inspiration from not only the literature on developing economies, but also from the literature on post-communist transition economies. For example, Earle and Sakova (2000) examine self-employment in six economies in Eastern Europe that converted from communism to capitalism. Earle and Sakova identify a number of individual (gender, marital status, schooling, personal income, entrepreneurial experience, attitudes to self-reliance and risk), family (parents' education and entrepreneurial experience), and local market factors (government capital city status, local unemployment rate, and earning differentials between employed and self-employed) that explain differences between employed and self-employed individuals. Djankov and colleagues (2005, 2006a, 2006b) conduct similar studies of individual, family, and cultural factors in the formerly communist economies of China and Russia.

3. DETERMINANTS OF SELF-EMPLOYMENT IN INDIA

Recent new job creation India has been primarily driven by self-employment, which accounts for half the total Indian workforce (Ghosh and Chandrashekhar 2007). This may not be an opportunity-driven phenomenon, since nearly half of self-employed persons report that their

work does not provide them with sufficient income (Ghosh and Chandrashekhar 2007). In fact, Ghosh and Chandrashekhar find that self-employment in India is need-based and is primarily driven by distress. Previous work (Bhalotra 2002; Ghosh and Chandrashekhar 2007; Kijima and Lanjouw 2005; Nafzinger and Terrell 1996; Majumder 2007) shows that this situation is rooted in historical trends in regional unemployment, educational differences and differences in returns to education, economic exclusion based on the caste system, and marked differences in rural versus urban regions.

3.1 Unemployment, Self-Employment, and the Push-Pull Hypotheses

In the self-employment literature, the *push-pull* hypothesis (a term also used, but differently, in migration studies) has to do with how the economic environment affects entry into or exit from self-employment. The factors are generally referred as "recession-push" and "prosperity-pull" factors. Theoretically, high unemployment makes entry into paid employment difficult, *pushing* people into self-employment; thus, "recession-push." At the same time, if high unemployment results in a lack of demand for services and products provided by the self-employed, increasing their risk of bankruptcy, individuals are theoretically *pulled* out of self-employment; thus, the "prosperity-pull" (Parker 2004). Previous single-point-in-time cross-sectional studies—primarily of developed economies—support the prosperity-pull hypothesis (e.g., Cowling and Taylor 2001; Evans and Leighton 1989); longitudinal panel and time-series studies show significant positive effects in support of the "recession-push" hypothesis (e.g., Robson 1998; Schuetze 2000).

The factor which is more dominant in India (i.e., push or pull) has been rarely, if ever, studied. Therefore, we must draw on more general studies of unemployment and self-employment policy in India. The Indian government has regarded self-employment as a way of

reducing poverty (Ahluwalia 2005, p. 27), a view that has manifested itself in various government support programs such as *Sampoorna Grameen Rozgar Yojana* (SGRY), *Prime Minister's Rozgar Yojana* (PMRY), and the Integrated Rural Development Programme (IRDP), all of which are designed to motivate the unemployed to become self-employed. To this end, the programs feature capital subsidies, credit guarantees, and special support through banks. Thus, in India, there seems to be a tendency and history of viewing self-employment as an alleviator of unemployment and poverty (e. g., Ahluwalia 2005, 27). This trend is not unique to India. Government programs in the U.S are mostly aimed at supporting disadvantaged or minority groups (Fairlie 1999).

In 1991, India began a process of economic liberalization, including new economic policies with a specific focus on fiscal, structural, and industrial reform. Among the structural reforms was the abolition of archaic industrial licensing policies and a quota system, both of which had inhibited market entry. The removal of these barriers was chiefly intended to increase private investment and expand entrepreneurial opportunities (Ahluwalia 2005).

Consistent with past policies, these structural reforms also included increased support for self-employment initiatives, with the primary goal of decreasing unemployment. However, convergence of unemployment rates was not found before and after the reform period. Added to that, a long-term sustenance of unemployment rates was prevalent throughout India (Bhalotra 2002). Bhalotra (2002) reports that regions within India differ in unemployment rates and that, surprisingly, states with the highest incidence of poverty appear to have the lowest unemployment rates and vice versa, making it more than a little puzzling that self-employment policies for the unemployed are still viewed as a viable method of alleviating poverty. Nonetheless, following its economic liberalization, India has experienced a substantial decrease

in regular and wage employment and the widely reported difficulty in finding work has resulted in a marked increase in self-employment. The main sectors in which the self-employed are active are construction, trade, and services (Ghosh and Chandrashekhar 2007).

3.2 Education, Earnings Differentials, and Self-Employment

One of the best-documented findings of the self-employment literature is that education has definite effects on individuals' self-employment and entrepreneurial decisions (e.g., Evans and Leighton 1989; Casson 2003). Education can provide the skills necessary for self-employment, especially if such employment is of a technical nature, as is often the case in India. In the last decade, economic growth in India has increased 8–9% every year, primarily in the service and manufacturing sectors. At the same time, however, 270 million people in India are still illiterate (UNESCO, 2007).[2]

One of the main determinants of self-employment, aside from possessing the necessary skills, is the returns expected from it. If the returns to higher education are greater from salaried employment than from entrepreneurship, individuals should be more likely to become salaried employees, given the risk levels. As Parker (2004) notes, however, entrepreneurial skills are often non-academic in nature. Therefore, if higher education is merely used as a signaling option (see, e.g., Spence 1973), the self-employed have less of a need for higher education. In other words, if higher education is more relevant for salaried employment, it may be more strongly associated with employment than with the transition to self-employment. In fact, Nafzinger and Terrell (1996) show that in India there are higher returns to education in being a salaried employee than in starting a firm. They also find that the survival rates of firms founded by highly educated entrepreneurs are lower than the less-educated. These findings are consistent with

[2] http://www.unicef.org/infobycountry/india_statistics.html

research conducted in developed countries. Van der Sluis, Van Praag, and Vijverberg (2003) show that, an average, self-employed Americans have a return to education of 6%, whereas employed Americans show a return of up to 9%.

Differences in education might lead to earnings differentials, of course, but Parker (2004) observes that relative earnings do not appear to play a clear and consistent role in self-employment choice. Especially in emerging economies, the neoclassical roots of occupational choice (via returns and expected utility maximization) might be compromised due to market imperfections (Earle and Sakova 2000). Such findings imply that monetary benefits might not be the primary driving force behind self-employment (Hamilton 2000). There might, in fact, be individual motivational factors or factors that are linked to a "push" effect into self-employment (e.g., regional unemployment, as discussed above). To address this potential paradox in studying transition to self-employment it is important to consider both the education level of the individual and the relative earnings of the employed and self-employed in a region. The effect of earnings differentials might be accentuated by the socio-demographic characteristics of individuals. As Fairlie (2007) finds, in the U.S African-American owned firms have lower revenues and profits. It is therefore important to discuss the factor of socio-economic exclusion as a determinant of self-employment.

3.3 Socioeconomic Exclusion and Self-Employment

In our knowledge, Fairlie (1999) is the only research study till date that addresses the issue of racial patterns in transition to self-employment. He finds that the prime factors that deter transition amongst African-Americans are: differences in asset ownership, higher failure rates due to lack of access to financial capital, lending and consumer discrimination against minorities and weak family ties. These findings are supported by Fairlie (2007), who demonstrated that

African-American owned firms have lower-revenues and profits, hire fewer employees and are more likely to close than white-owned businesses. Citing the U.S. census bureau statistics, Fairlie shows that in general, African-American owned firms were disadvantaged in all business areas and had worse outcomes on all factors when compared to white-owned firms. This gives us an indication that racial patterns are determining factors in an individual's choice to become self-employed.

The field of stratification economics has some interesting ideas about economic behavior being dependent on the stratification of economic groups in a society. Such a concept is of particular relevance for India due to its history of diverse communities and social groups.[3] Such diversity often results in an unequal distribution of the country's economic resources between the communities and/or groups. Akerlof and Kranton (2000) present a ground-breaking game-theoretic model of joblessness and social exclusion in which social exclusion impacts employment chances. Akerlof and Kranton's model (AK model) demonstrates that members of socially excluded groups often tend to fall into a state (*equilibrium state in AK model)* where they are highly unlikely to engage in remunerative activity. Akerlof and Kranton propose that the greater the social exclusion, the less likely it is that the individual will engage in remunerative activity. They argue that even if individuals can choose to switch out of their group, they can never really become part of the dominant group, and thus do not even try. If true, this could explain why Blau (1985) found significant differences in self-employment rates in Malaysia between ethnic Malays, Chinese, and Indians.

Extending these arguments, Darity (2005) suggests that dominant groups tend to control access to, and the credentials required for, higher wage jobs. Therefore, one would expect that the behavior of dominant groups depends on the earnings differentials in different occupations.

[3] Akerlof (1976) describes how caste customs affect economic decisions in India.

For example, if self-employment pays more than wage employment, then it pays to be a member of a dominant group member in order to be self-employed. In the context of India, one cannot ignore the effects the caste system has on individual choice. Even though there is constitutionally mandated equality across castes, that this is the case in reality, especially in regard to employment, is extremely doubtful (Darity and Deshpande 2000). Darity and Deshpande (2000) provide clear evidence of wage disparities and earnings differentials that are solely based on caste. For example, Darity (2005) discusses "high caste Hindu privilege" as an example of how dominant groups keep their status as such. Therefore, even though self-employment choice in India may depend to some extent on a regions level of economic development, it is much more heavily influenced by the social group to which the individual belongs.

For the past 60 years, historically economically excluded communities in India, generally described as Scheduled Castes (SC) or Scheduled Tribes (ST) for government purposes, have been the target of many economic improvement and equality schemes. However, there are very few published studies on how, or even whether, these schemes have actually worked and what, if any, their impact has been on the self-employment activities of economically excluded groups. The few studies that do exist, however, contain some very interesting findings. In general, the share of SC/STs in regular employment has always been significantly less than that of other groups. This gap is even bigger when one considers relative earning shares (Majumder 2007). Specific to entrepreneurship and survival of firms, Nafzinger and Terrell (1996) find that firms founded by older entrepreneurs in higher castes are most likely to survive.

Majumder (2007) observed a prominent U-shaped pattern of economic exclusion across the economic scale. At one extreme of the scale, poorer states provide fewer employment opportunities for excluded groups; at the other extreme, in richer states, the excluded groups

(EGs) generally do not possess the capabilities necessary to obtain high-skilled jobs. Citing Amartya Sen's notion of entitlements (Sen 1976), Majumder (2007, 11) writes, "the initial inequalities in entitlements prevent capacity formation among the EGs, which in turn prevents them from entering the job market even when the economy is vibrant and growing". The middle income states, however, show marginally lower unemployment rates than the poorer or the richer states. Therefore, while educational capabilities can restrict an individual's opportunities, economic forces can make individuals naturally vulnerable to become unemployed.

3.4 Self-Employment in Rural and Urban Regions

The three major determinants of self-employment discussed above may have different effects depending on whether an individual lives in a rural or an urban area. Consistent with Blau's (1985) work on Malaysia and the observations of Reynolds et al. (1994) for developed countries, we would expect that residing in an urban area of a richer state would be conducive to switch into self-employment, whereas residing in a rural area in a richer state would be less so. Apparently, the Indian government has similar expectations as its support programs, as they are designed to motivate the unemployed—and particularly the youth—in rural areas to become self-employed (Dreze 1990).

Urban vs. rural location can therefore potentially have additional moderating effects, over and over the previously discussed main effects. For example, within regions, Glinskaya and Lokshin (2007) show that wage differentials tend to be greater in the rural areas of India than they are in the country's urban areas. Regarding education, there is little evidence on the impact of education in non-farm self-employment choice in India, possibly due to heterogeneity in the activities of the self-employed across rural and urban areas (Kijima and Lanjouw 2005). Regarding industry sectors, the main sectors in which the self-employed are active are

construction, trade, and services. The trend toward self-employment is stronger in rural areas, where almost half the population is self-employed, mainly in the non-farm sector (Ghosh and Chandrashekhar 2007).

4. ANALYTICAL FRAMEWORK

Our study investigates three types of factors that may affect transition from salaried to self-employment—individual-level, family-level, and regional-level factors. In addition, we examine both past transition behavior (actually switching from employment to self-employment) and current behavior (saving for business purposes) that is indicative of a likely transition in the future. The models' econometric specifications are detailed in the following subsections.

4.1 Regional-Level Main Effects

We use three sets of regional specifications to test the statistical robustness of our findings for our two dependent variables, transition from employment to self-employment (Models T1–T3) and saving money for future self-employment (Models N1–N3). These specifications differ in that each specification contains a unique regional-level variable that is not correlated with the other regional variable in the specification. For example, in our study, regional unemployment and self-employment rates are moderately correlated. Other studies document that these two rates are, indeed, correlated (e.g., Meager 1992) and thus should not appear in the same specification. For the same reason, we do not include self-employment rates and income differentials in the same specification. Therefore, we test three sets of specifications: (1) state GDP per capita and self-employment rate, (2) unemployment rate and income differential, and (3) unemployment rate and state GDP per capita:

$$Y_{ij} = \alpha + \sum_i \beta_i (Indiv) + \sum_i \lambda_i (famil) + \sum_j \xi_j (region)$$

where $Y_{ij} = 1$ *if* individual 'i' in region 'j' transition ed from salaried to self - employment
$= 0$ *if* otherwise

4.2 Regional-Level Interaction Effects

As previously discussed, there may be considerable differences between individuals living in urban areas compared to those living in rural areas. To understand and isolate these effects, we specify the main effects models with additional interaction effects. These specifications are again tested for both actual entrepreneurs and those with entrepreneurial intentions. The three specifications with interaction effects follow the same pattern as the main effects models.

$$Y_{ij} = \alpha + \sum_i \beta_i (Indiv) + \sum_i \lambda_i (famil) + \sum_j \xi_j (region) + \Theta_1 (Urban\ X\ stateGDP) + \Theta_2 (Urban\ X\ Self-employment\ rate)$$

where $Y_{ij} = 1$ *if* individual 'i' in region 'j' transition ed from salaried to self - employment
$= 0$ *if* otherwise

T4, N4

$$Y_{ij} = \alpha + \sum_i \beta_i (Indiv) + \sum_i \lambda_i (famil) + \sum_j \xi_j (region) + \Theta_3 (Urban\ X\ Income\ ratio) + \Theta_2 (Urban\ X\ Unemployment\ rate)$$

where $Y_{ij} = 1$ *if* individual 'i' in region 'j' transition ed from salaried to self - employment
$= 0$ *if* otherwise

T5, N5

$$Y_{ij} = \alpha + \sum_i \beta_i (Indiv) + \sum_i \lambda_i (famil) + \sum_j \xi_j (region) + \Theta_3 (Urban\ X\ stateGDP) + \Theta_2 (Urban\ X\ Unemployment\ rate)$$

where $Y_{ij} = 1$ *if* individual 'i' in region 'j' transition ed from salaried to self - employment
$= 0$ *if* otherwise

T6, N6

5. DATA AND DESCRIPTIVE ANALYSIS

5.1 Data

To study the demographic as well as regional effects on transition behavior, we need representative data from all regions as well as from all income classes. The administrative regions in India are classified into 28 states and 7 union territories (UTs). The representative dataset should cover all these regions and also provide family as well as individual-level information. The Indian government, through its National Sample Survey Organization (NSSO), conducts household surveys every year. These surveys contain occupational information but none as to employment transition. A more recent dataset that does provide transition details is the National Data Survey on Savings Patterns of Indians (NDSSP) 2004/05, which was conducted by AC Nielsen/Org-Marg on behalf of the Indian Ministry of Finance.

The NDSSP dataset covers 40,862 families and about 211,000 individuals from all states/UTs and is available in the public domain for research and analysis purposes.[4] A random sample technique was employed for both rural and urban areas, under which areas are divided into several segments and then households chosen at random. Each household was asked to provide information on all its members as to occupation (primary/secondary), demographics, marital status, and education. One earning adult member from each family was then chosen to answer the remainder of the questionnaire and thus transition details are available for that respondent only.[5] To check for representativeness, the data were matched to government census data for 2001. For example, the census reports the average household size as 5.33 and the NDSSP reports 5.18. Further, the census reports a workforce participation rate of 39.1% and the

[4] The National Data on Savings Patterns of Indians can be downloaded free of charge at http://finmin.nic.in/stats_data/pension_data/index.htm

[5] To ensure consistent and accurate data, the NSSO conducted a pilot study, comprised of 56 focus group discussions. The questionnaire was designed based on these focus group discussions.

NDSSP reports 34.6%. In addition, information from the two datasets is also similar for sex-ratio, number of people in retirement, and employee salaries. Based on this validation, we use the NDSSP dataset in our study of the transition to self-employment from salaried and wage employment in India. As for the regional effects, we obtained data on regional distribution of self-employment and unemployment from the NSSO. GDP per capita and population density were obtained from the Census of India 2001, Planning Commission of India, and the Annual Economic Survey 2004 from the Ministry of Finance.[6]

In this study we consider two dependent variables: 1) Transition from salaried private employment to self-employment, and 2) Nascent transitioners (those who are currently salaried employees and are saving for business purposes). Regarding past transition behavior, respondents were asked if they had changed their primary occupations in the last five years. If they had, they were asked for their previous occupational code. We then matched the old code with the new one to come up with a sample of about 190 transitioners to self-employment. Of these, 166 were salaried employees in the private sector in their previous occupation. Since the motivation for becoming self-employed might be different for public versus private employees, and to account for sample size restrictions, this study considers the salaried population only in the private sector. The dependent variable was coded as a binary variable where the salaried employees who continued to be salaried are coded 0 and those who transitioned to self-employment are coded 1. The total sample size was 4170, of which 167 people (4.9%) switched employment type. Due to the binary nature of the dependent variable, we use logistic regression in three different specifications. Only one of the 167 transitioners was a woman so we removed women from our analysis. This resulted in a final sample size of 3637, with 166 transitioners.

[6] These are also publicly available data, and can be found on the websites http://planningcommission.nic.in and http://finmin.nic.in

There is also an interest in us, to understand if at all, there is an entrepreneurial intent that is amongst the non-transitioners. Literature on entrepreneurship has also pointed on the role of intentions and proposes that entrepreneurial activity is a result of intentionally planned behavior (Krueger, Reilly, and Carsrud 2000). Although we do not discuss the theoretical implications in detail, we are interested in studying if the factors that are responsible for actual transition have the same or different effects when it comes to intention to transition. Our data allows us to identify such an intention. One of the questions in the survey asks the respondents if they are currently "saving for business purposes". We select the non-transitioners amongst our salaried private employee sample, as above, and then run the same sets of logistic regressions regarding their *nascent* interest in transition to entrepreneurship (Shaver et al. 2001; Davidsson and Honig 2003; Gartner et al. 2004; Wennekers et al. 2005), as demonstrated by their reported behavior of saving for business purposes. The dependent variable is binary and codes if they are currently saving for business purposes or not.

5.2 Individual and Familial Factors

The individual factors that we consider are the age of the respondent, educational level (technical education, bachelor's degree, and postgraduate degree), whether the respondent is the head of the family, and whether the salaried employment was with a small firm. The detailed explanation of definition and measurement of these variables is provided in Table 1. Table 2 details the characteristics of the variables. The mean age of the transitioners was 39 years old and 73% were heads of their respective families. While 20% of the transitioners at the most a technical education, only 15% and 7% of the transitioners had an undergraduate and postgraduate education, respectively. 72% of the transitioners were employed in a small or medium sized enterprise (SME) in the year 2000.

The family and community factors we consider are the size of the family (excluding the respondent) and whether the family is categorized as an economically backward class (Scheduled Caste or Scheduled Tribes). The average family size for transitioners was 5 members. Out of the 166 transitioners, 12% belonged to an economically backward class. This is comparable to the findings in the study by Fairlie (1999) where the African-American transition rate was found to be far lesser than the White transition rate. Considering nascent behavior, the percentage of backward class members improves to 22%. Yet, the willingness and actual transition behavior amongst the economically backward classes appears to be quite lower than others in the sample.

Additional information, such as the annual income from the family's fixed assets (Rs. 2400 or $53)[7], is available in the dataset, however, the data was reported for the year 2005 and not the year 2000. Therefore, we could not use this information in the analysis, as it could potentially be a consequence of the transition (or non-transition) behavior. We do not believe that this is a serious limitation, as other researchers have empirically demonstrated that the role of wealth in self-employment decisions is negligible for lower and middle income households (Hurst and Lusardi 2004), which are more prevalent in emerging economies (lower per-capita GDP) than in developed economies (higher per-capita GDP). In fact, there is evidence suggesting that both rich and poor households in India are equally likely to pursue self-employment (Kijima and Lanjouw 2005).

In summary, when compared to non-transitioners, the transitioners are on average middle-aged and are heads of their families. Most of the transitioners were previously employed in an SME and belong to economically forward classes. It should be noted that most have less than a bachelor's degree education.

[7]At 2005 average exchange rates of 1$= ~Rs. 44.

5.3 Regional Factors

The regional factors we consider are the self-employment and unemployment rates in the state, state GDP per capita (SGDP), and the relative income ratios. We control for the population density of the state. Table 2 presents the average values for each of the regional variables and Table 3 presents the state-level statistics. The average SGDP is Rs. 12,318 ($279). Variation in SGDP, for example, between Uttar Pradesh on the low end and Chandigarh and Delhi at the high end, is mainly attributable to differences in population density and workforce composition. The national average unemployment rate is 11%, although some states, such as Tripura and West Bengal, have rates twice as high (23% and 22%, respectively). The lowest levels of unemployment are found in Mizoram and Delhi. The income ratios varied from 0.87 in Karnataka to 3.19 in Mizoram, indicating that in some states self-employment is less profitable than employment and in other states self-employment more profitable than employment. Thus, the financial attractiveness of self-employment varies from region to region.

The national average rate of self-employment is about 26%, but there is a great deal of regional variation. One can think of the rate as a sort of entrepreneurship indicator that measures the intensity of self-employment activity engaged in by the available workforce in the state. States such as Delhi, Chandigarh, and Manipur have very high self-employment rates according to this measure (more than 30% of the workforce is self-employed), whereas a quite low intensity is observed in Chattisgarh, Mizoram, and Maharashtra (the latter of which is an industrial state and the home of India's business capital—Mumbai).

We calculate the income ratios of the salaried relative to the self-employed using NDSSP data on the total annual income earned by all the self-employed in a state relative to the total income earned by all the salaried workers in that state. In calculating the self-employment rates,

we use the labor-market approach suggested by Audretsch and Fritsch (1994), where the number of self-employed is divided by the number of individuals of "employable age" (i.e., all those 16–64 years-old), thus standardizing the number of self-employed with respect to the size of the workforce. A similar method is used to calculate unemployment rates.

6. ESTIMATION RESULTS FOR ACTUAL AND NASCENT TRANSITIONERS

Table 4 presents the main effect results for the logistic regressions of three different specifications and table 5 presents the results for the logistic regressions including the interaction effects of location (urban vs. rural) for actual transitioners. For nascent transitioners (salaried people who are likely to transition in future), table 6 presents the models N1 to N3 for main effects and table 7 presents the interaction effects. The dependent variable in this case is whether the respondent (salaried employee) has started saving to start a business or involve in a business. This could give us an indication on which factors matter for the intent and commitment to start a business and transition. Also, this is a suitable robustness test for our previous results since we can track if the actual transition behavior is determined by the same factors that determine the intent to transition. We first begin with a discussion of the results for individual and family level variables; we will then proceed to discuss the results for regional unemployment, self-employment and hybrid effects.

6.1 Individual and Family Effects

The logistic estimations in all three specifications for *actual transitioners* show that, if an individual is an urban resident it increases the likelihood to switch into self-employment, with 2% marginal effect. With respect to the *nascent transitioners*, urban residents are highly likely to save for the business purpose. This means that urban salaried residents are likely to transition

into self-employment. It can be expected since in India, the industrial milieu is more often observed in urban areas and opportunities for entrepreneurship are thus higher.

The average age of transitioners is around 40 years and the estimation results also show that as age increases, the likelihood to switch increases too, but the marginal effect of age is quite low. This might be due to the fact that much older people, say in their 60s are typically in the retirement stage in salaried employment (due to mandatory retirement rules) and switching at an age closer to retirement, might make them ineligible to earn pension income after retirement[8]. Therefore, switching in middle-age, when they are in their 40s, seems to be the best option and therefore we do not see a very high marginal increasing positive effect on decision to switch. However, when it comes to *nascent transitioners,* older individuals are less likely to save for business. This is in contrast to the actual transitioning behavior. While older salaried employees are less likely to save for business purposes, they are more likely to actually transition. This strengthens our explanation that although actual transition is increasing in age, switching in middle-age seems to be a better option and therefore older people in salaried sample do not intend to transition.

Family size does neither affect the actual transitioning behavior nor the intention to transition. The individual and family effects remain the same in other specifications too.

6.2 Education and Transition

Technical education contributes to higher likelihood of switching amongst actual transitioners. In all the three specifications, the effect is statistically significant with around 2% marginal effect. Higher education does not show any significant effect on switching. This indicates that people will lower-level of education enter self-employment. In this case, Parker

[8] Especially in the case of private salaried employees, this is true.

(2004) is right when saying that entrepreneurial skills are more often non-academic in nature. In fact, it also confirms our expectation that if education is merely used as a signaling option rather than earning, then the self-employed need not pursue higher education. The result however is not negative. This supports Nafzinger and Terrell's (1996) argument that the returns to education in India are higher in the labor market rather than in self-employment. In contrast with the intended transition we observe a reversal of education effects. While the actual behavior showed that it is the least educated that tend to transition, the intent however is stronger in highly educated individuals. People with post-graduate degrees or above are more likely to save for business purposes (3.3%). Since the returns to education are higher in the labor market than in self-employment, salaried individuals might therefore gather enough resources to save for a potential business. However, this does not materialize into an actual transition.

Another important contributor to actual transition behavior is previous employment in small enterprises. Being employed in an SME before transition contributes positively to the likelihood of transition to self-employment in all the specifications, with a marginal effect of 1.8% in each case. Similarly with respect to intended transition, previous experience with SMEs also positively increases the likelihood to save for business purposes (3.2%).

6.3 Socio-economic Exclusion and Transition

Coming to the family-level variables, we find that if a family belongs to a backward community, then the salaried individual in that family is less likely to switch into self-employment (marginal effect 2%). This result can be either seen in a group-status argument, where if an individual is better-off in one occupation relative to other members of the group, it is dis-incentivizing to take a risk like changing into a risky profession. Another argument can be that the incentives provided in the salaried profession (quotas and reservations for the backward

class families) may be much higher than the incentives expected by being self-employed. Family size does not matter in the switching decision.

This result supports the argument of Darity (2005) that in countries where dominant groups control the resources and take control of higher earning jobs, they therefore would tend to stay in an occupation where earnings are higher. On the other hand such material resources that the dominant groups are endowed with help them to start businesses and make use of networks to survive. Hence, a person belonging to the minority group finds her occupation to be "good enough" and thus keep away from the well-remunerated jobs such as self-employment (as in Akerlof and Kranton (2000) equilibrium result). However, with respect to the *intended transition*, the interesting result is that being in a backward class does not affect the intent to start a business! Clearly, this factor plays a different role in between intended and actual transition behavior. Just as in the education variable, it can be explained that the returns that are already accrued from a salaried job, might allow the individuals to save for a business purpose regardless of the social-group they belong to. However this intent does not lead to actual transition in case of individuals in the backward classes.

6.4 Regional Effects

6.4.1 Self-Employment Rates and State GDP

Model I considers self-employment rate, state-GDP per-capita and population density. The aim of this model was to see if the opportunity side attracts self-employment decisions. Individuals residing in states with higher GDP are less likely to switch. A higher self-employment rate and high economic level of the state controlling for its population density theoretically provides individuals with more opportunities to become self-employed. However, our analysis indicates that higher self-employment rate tends to decrease the likelihood of

transitioning and the marginal effects are quite high at 8%. This result is unclear. Self-employment does not seem to attract people but rather deflect them from transitioning. This might be an indication that self-employment might be a choice in order to avoid unemployment, so people with jobs tend to keep their jobs rather then taking a risk of transitioning. This result shows that in India, self-employment is not an attractive option to transition from salaried occupations. Therefore, either the deciding factor must be earnings differentials between salaried and self-employed people or/and the unemployment rates in the state/ However, one cannot confirm this until we look at the second specification with earnings differentials and unemployment rates.

With respect to *intended transition*, on the regional level, the self-employment rate still remains as a negative determinant (13% marginal effect) for the purpose to save. On the regional level the effect of self-employment therefore seems to be same for intent and actual behavior.

6.4.2 Unemployment, Earnings Differentials and Transition

Model II presents the results of the second specification, where we test the need-based effects on transition behavior. This model tries to understand if self-employment decisions are taken in order to avoid unemployment situation. Model II presents the results where we consider unemployment rate in the states controlling for income ratios between salaried and self-employed, and population density. The analysis of the marginal effects shows that a 1% increase in unemployment rate reduces the probability of transitioning by 15%. This would mean that individuals in states with high unemployment are less likely to transition and more likely to keep their jobs. This confirms the risk-averse behavior which is generally expected in times of high unemployment, for example, as demonstrated by Carsten and Spector (1987) in their meta-analysis of employee occupational transitions between employers.

High-unemployment levels in the states restrict people from taking up risky activities. Risk aversion might play a huge role since this is a case where an economic decision has to be made in an uncertain environment. These results support the meta-analytic findings of Carsten and Spector (1987) regarding employee occupational transitions between employers, who report that higher unemployment rates correspond to lower transition rates. Further, we find no direct evidence for the presence of 'recession-push effects'. In none of our specifications did we find a positive relation between unemployment and likelihood to transition. The negative effect of unemployment can be called the *"barricade effect"* where unemployment restricts movement of salaried to self-employment. On the other hand, since unemployment is high, perhaps the recession-push effect is working towards the transition behavior of unemployed (unemployed choosing self-employment) and thus restricting the entry for salaried employees into self-employment. While there is recession push from one group, the other group faces the "barricade effect".

Coming to earnings differentials, we find that these are insignificant in determining the actual transition behavior. Therefore the standard model of occupational choice generally used in entrepreneurship literature, does not seem to apply in this case. As Parker (2004) observes, relative earnings do not play a clear role in self-employment choice. Mainly with respect to emerging economies, the relative earnings based neoclassical models might be compromised due to market imperfections (Earle and Sakova 2000). The same is the case when the intended transition behavior is observed. The education effects disappear and unemployment rate and income ratios do not seem to be significant either in determining intention.

6.4.3 Unemployment and GDP

Model III: There might be some states where both opportunities as well as necessity factors exist. In order to account for that possibility, we also test a third specification- a 'hybrid model' where we include, unemployment rate as well as state GDP per capita.[9] In this specification, we find that salaried employees in richer states and states having high unemployment rates are less likely to switch. The results do not seem to change from previous specifications. However, the negative marginal effect of unemployment seems to increase to 20%, when controlled for the state-GDP levels. Therefore, unemployment seems to be decisive in restricting transition behavior.

The same is true also for intent to transition. Although in two specifications it is not clear, only after including unemployment and GDP together in model N3, do we see some clear effects. Unemployment rate negatively affects the likelihood to save for business purposes. Hence, unemployment serves as a deterrent not just for the actual behavior but also the intent to start a business.

6.4.4 Regional Interaction Effects with Location

Based on theory and the evidence from other empirical studies, we additionally examine potential interactions between urban/rural residence and the two need-based regional variables (unemployment and income ratio) and the two opportunity-based regional variables (state GDP-per capita and self-employment rate). Table 5 presents the estimation results of models 4 to 6. It should be noted again that we have excluded people involved in agriculture as part of our selection criteria.

[9] Self-employment could not be included due to high correlation. Also, a richer state may provide higher opportunities for being self-employed.

Model IV presents estimation results which include interaction of urban with GDP and urban with self-employment. All the individual and family level variables, except the urban variable, show the same effect as before in all the three specifications. The urban variable however, seems to have lot all its main effects due to inclusion of interactions. The main effects however do not change. The interesting results appear in the interaction variables. As observed before, the main effect of SGDP is negative, but when interacted with urban status, it turns to positive. Therefore, salaried employees residing in an urban area and at the same time in a richer state are highly likely to transition into self-employment. When self-employment rates are interacted with urban variable, the main effect stays negative but the interaction effect becomes positive. Which means that in urban regions, self-employment tends to be really an opportunity factor; but in rural areas it is not.

In model V we test the interactions of income ratio and unemployment with the urban variable. As opposed to the model without interaction effects, the unemployment variable loses its significance both in the main and interaction effects in the specification. However, after including the interaction, the main effect of income ratio variable is positive and its interaction with urban is negative. This means that after controlling for urban-rural component, ceteris paribus income ratio of self-employed relative to salaried tends to be a positive driving force in transition behavior. However, this positive effect can be only seen in rural areas. This might be because the wage differentials were found to be greater in rural India when compared to urban areas (Glinskaya and Loshkin 2007). This is interesting since in our previous specification without interactions, the income ratio (SE/SAL) did not show any effect, which in theory should be crucial in occupational decisions

In model VI we test the interactions of unemployment and GDP variables with the urban variable. Once these two variables are accounted for, the main effect of the urban variable becomes positive again. However, the main and interaction effects of unemployment disappear in significance. GDP, ceteris paribus, remains a negative determinant of likelihood of transition but this is reversed in rural areas. This would indicate that salaried individuals residing in rural areas of states with high GDP per-capita are more likely to switch to self-employment. As we expected, the individuals residing in urban areas in a richer state would be highly likely to switch.

In contrast, the estimations of intended transition exhibit different results. Table 7 presents estimation results of models N4 to N6. As can be observed there are no significant interaction effects in the opportunity model N4. Only the individual main effects persist. When it comes to the necessity model N5, although the main effects of urban and income ratio variables are insignificant, their interaction negatively affects the likelihood to save for business purpose. This means that salaried employees residing in rural areas of states with high income ratios (SE/SAL) are more likely to save for business purposes. The hybrid model which includes unemployment and GDP (model N6) shows again that no interaction variables are significant. Again, unemployment rates serve as a deterrent in likelihood to save for business purposes.

7. CONCLUSION

As one of the first articles to investigate occupational transition to self-employment in India, our article contributes to a growing body of work on self-employment in emerging economies (Blau 1985; Earle and Sakova 2000; Djankov et al. 2006b). It also contributes to the self-employment transition literature (Fairlie, 1999; Dunn and Holtz-Eakin 2000), by extending the conversation from the developed to the emerging economy context. Using the National Data

Survey on Savings Patterns of Indians (NDSSP) 2004/05, we examine the actual and intended transition behavior of 3637 individuals.

Specifically, our results demonstrate that in India, regional-level factors (self-employment rates and unemployment rates) have a substantially (at least four times) greater marginal effect on transition from employment to self-employment than do individual-level factors. Further, we find that self-employment rates and unemployment rates decrease the likelihood of both actual transition and intent to transition. Viewed together, these results suggest that at least in India, employed individuals tend to stay at their jobs rather then taking the risk of transitioning to self-employment, and that self-employment might be option of last resort in order to avoid unemployment.

In addition, we find that local geographic factors, such as urban versus rural location, play a moderating role, in particular for income ratios and state GDP. While the main effects of income ratios between self-employed and salaried individuals were initially insignificant, they became significant when interactions with urban/rural location were introduced into the models of the actual and future transition. After rural and urban location are considered, we find that income ratios do increase the likelihood of actual and intended transition, and even more so in rural areas than in urban areas. The effect of regional GDP, which has a negative significant effect for actual transition, is less negative in urban and even more negative in rural areas. In other words, salaried employees in richer states staying in rural areas are less likely to transition to self-employment. Interestingly, we find no significant interaction effects for the interaction of urban/rural location with the effects of self-employment and unemployment. In summary, while the effects of income ratios and GDP are opposite, they are both more pronounced in rural areas.

Comparing the statistical results for actual transition to self-employment and future intentions, we find that the effects of regional-level factors are generally consistent for both actual transition and intended transitioning, with the exceptions noted above regarding urban and rural location. At the individual and family level, however, there are a few notable differences. While socio-economic exclusion is a hindrance to actual transition behavior, it does not reduce the likelihood of intended transition. Further, while lesser educated are more likely to actually transition, it is the more highly educated whose intentions to transition are greater, as demonstrated by their savings behavior.

The limitations of this paper can also be seen as an opportunity for future research. In the future, in order to better understand the impacts of regional factors on short-term and long-term self-employment policy making, more research is required. First, more in-depth data will be required to explore the precise motivational and cognitive factors underlying transition intentions and behavior. Second, more fine-grained regional data should be collected at the local level where the individuals live and work, to more accurately represent geographic effects. Finally, more detailed data on individual endowments need to be collected for both before and after the potential transition event.

Table 1. Variable Measurement and Sources of Data

Variable	Measurement	Source of Data
Transitioner (1st dependent variable) Nascent (2nd dependent variable)	Y=1; if transitioned from salaried employment in last 3 years otherwise 0 For non-transitioners only Y=1 ; if purpose of saving is business , otherwise 0	NDSSP, Govt. of India, Year 2005
Urban resident	Urban=1 otherwise 0	
Age	Continuous variable minus 3 years	
Head of the family	Head= 1 otherwise 0	
Backward Class	SC or ST=1 otherwise 0	
Technical education	Education up to 12 years or with technical qualification	
Undergraduate	Education up to 15 years (bachelors degree)	
Postgraduate	Education up to Master's degree or above	
Employed in SME	Were an employee in an SME in 2000: Yes=1 otherwise 0	
Family size	Continuous, members of family apart from respondent.	
Log (Population density) Log (SGDP per-capita)	State-wise data in logarithmic form (year=2004) State-wise data on state gross-domestic product in logarithmic form. (year=2004)	Statistics of the Planning Commission of India, Govt. of India; Economic Survey 2004, Govt. of India
Self-employment rate	State-wise data on number of self-employed divided by population between 16-64 in the state (labor market specification). Year=2004	
Unemployment rate	State-wise data on number of unemployed divided by population between 16-64 in the state (labor market specification). Year=2004	
Income ratio (SE/SAL)	Annual income in 2004 of self-employed versus salaried in the state, which are surveyed but do not form part of the sample.	NDSSP, Govt. of India

Table 2. Characteristics of Transitioners from employment to self-employment

Variable	Number(Share)	Mean
Urban residents	140 (84.34 %)	
Head of the family	122 (73.49 %)	
Backward classes	20 (12.05 %)	
Technical education	34 (20.48 %)	
Undergraduate	24 (14.46 %)	
Postgraduate	11 (6.63 %)	
Employed in SME	119 (71.69 %)	
Age		39.13
Family size		5.09
SGDP per-capita		12318 ($279)[(1)]
Unemployment rate in the residing state		10.9%
Population density in the residing state		690.66 [(3)]
self-employment rate in the residing state		25.6%

Source: Authors' calculation based on the National Data Survey on Savings Patterns of Indians 2004/05.
(1) Rupees per year, Dollar conversion at 2005 rates, (3) Per square km
Figures in parentheses represent percentage share in the sample of transitioners.

Table 3. Distribution of Regional Level Variables

State	Population density	Self-employment rate	Unemployment rate	Income ratio (SE/SAL)	State GDP per-capita($)
Andhra Pradesh	275	0.251	0.119257	2.202126	280.73
Assam	340	0.303	0.167469	1.37622	152.75
Bihar	880	0.339	0.082334	2.054358	85.75
Chandigarh	7903	0.505	0.07954	NA	805.73
Chhattisgarh	154	0.112	0.088711	1.400829	187.86
Delhi	9294	0.637	0.067122	1.13121	712.39
Gujarat	258	0.188	0.079687	1.678803	383.59
Haryana	477	0.308	0.082308	1.265908	383.45
Himachal Pradesh	109	0.227	0.106155	1.075999	306.16
Jammu Kashmir	99	0.345	0.154045	1.72401	183.52
Jharkhand	338	0.286	0.124437	2.075238	182.39
Karnataka	275	0.153	0.068445	0.872038	314.09
Kerala	819	0.278	0.243946	1.135953	302.75
Madhya Pradesh	196	0.166	0.092296	2.368844	187.23
Maharashtra	314	0.178	0.077387	1.317266	406.00
Manipur	107	0.369	0.179973	2.763859	182.23
Meghalaya	103	0.227	0.104134	2.373241	256.32
Mizoram	42	0.178	0.063261	3.193546	NA
Nagaland	NA	0.209	0.131783	2.062761	NA
Orissa	236	0.307	0.166437	2.025659	163.09
Punjab	482	0.252	0.096119	1.36417	380.82
Rajasthan	165	0.289	0.078178	1.477656	223.93
Tamil Nadu	478	0.201	0.126328	1.797895	318.16
Tripura	304	0.337	0.231988	1.425186	NA
Uttar Pradesh	689	0.341	0.091556	0.98119	139.50
Uttaranchal	159	0.263	0.113211	1.20936	240.55
West Bengal	904	0.347	0.223173	2.044293	278.89

Source: Authors' calculations based on data from the Economic Survey 2004-05 and the National Data Survey on Savings Patterns of Indians 2004-05. Population density is measured per square km. Both self-employment and unemployment rates are calculated using the labor market approach (w.r.t. total workforce). These can be multiplied by 100 and interpreted as percentages. SE: Self employed; SAL: private salaried.

Table 4. Logistic estimation results for past transition from employed to self-employed.

Variable	Model I	mfx	Model II	mfx	Model III	mfx
Intercept	-1.514 (2.02)		-4.608*** (0.79)		-0.264 (1.98)	
Urban resident	0.711*** (0.24)	0.0232	0.694*** (0.24)	0.02247	0.651*** (0.24)	0.02133
Age	0.0219*** (0.0085)	0.0008	0.0237*** (0.0084)	0.00089	0.0244*** (0.0085)	0.00092
Head of the family	0.380 (0.23)	0.0137	0.338 (0.23)	0.01212	0.309 (0.23)	0.01118
Backward Class	-0.656** (0.26)	-0.0212	-0.744*** (0.26)	-0.02325	-0.678** (0.26)	-0.0216
Technical education	0.388* (0.22)	0.01673	0.360* (0.22)	0.01515	0.403* (0.22)	0.01728
Undergraduate	-0.0391 (0.25)	-0.0015	-0.0641 (0.25)	-0.00235	-0.0235 (0.25)	-0.0009
Postgraduate	0.178 (0.34)	0.0073	0.133 (0.34)	0.00526	0.151 (0.34)	0.006
Employed in SME	0.503*** (0.19)	0.01808	0.523*** (0.19)	0.01847	0.508*** (0.19)	0.0181
Family size	0.0518 (0.042)	0.00197	0.0520 (0.042)	0.00195	0.0345 (0.043)	0.0013
Log (Population density)	0.160 (0.15)	0.0061	-0.0439 (0.094)	-0.00164	0.0244 (0.100)	0.00092
Log (SGDP per-capita)	-0.440** (0.21)	-0.0167			-0.477** (0.20)	-0.018
Self-employment rate	-2.164* (1.29)	-0.0824				
Unemployment rate			-3.997** (1.97)	-0.15008	-5.180** (2.05)	-0.1956
Income ratio (SE/SAL)			0.0223 (0.19)	0.00083		
Observations	3295		3374		3295	
Pseudo R-squared	0.042		0.0416		0.0453	
Prob>chi2	0.000		0.000		0.000	
LR chi2(12)	52.22		52.6		56.34	

Standard errors in parentheses ; *** p<0.01, ** p<0.05, * p<0.1; mfx: marginal effects.
Dependent variable: 0 if self-employed but not changed, 1 if switched to self-employed.

Table 5. Logistic estimation for past transition from employed to self-employed with interaction effects.

VARIABLES	Model IV	Model V	Model VI
Intercept	5.311	-5.804***	3.411
	(3.54)	(0.99)	(2.70)
Urban resident	-0.00504	1.017	1.649**
	(1.00)	(0.66)	(0.69)
Age	0.0224***	0.0239***	0.0247***
	(0.0085)	(0.0084)	(0.0085)
Head of the family	0.382	0.334	0.310
	(0.23)	(0.23)	(0.24)
Backward Class	-0.653**	-0.791***	-0.675**
	(0.26)	(0.26)	(0.26)
Technical education	0.401*	0.368*	0.418*
	(0.22)	(0.22)	(0.22)
Undergraduate	-0.0338	-0.0568	-0.0107
	(0.25)	(0.25)	(0.25)
Postgraduate	0.184	0.114	0.147
	(0.34)	(0.34)	(0.34)
Employed in SME	0.520***	0.524***	0.521***
	(0.19)	(0.19)	(0.19)
Family size	0.0493	0.0502	0.0328
	(0.042)	(0.042)	(0.043)
Log (Population density)	0.139	-0.0629	-0.0158
	(0.15)	(0.094)	(0.10)
Log (SGDP per-capita)	-1.080***		-0.938***
	(0.32)		(0.29)
Self-employment rate	-3.907*		
	(2.14)		
Unemployment rate		-2.676	-2.854
		(2.45)	(2.48)
Income ratio (SE/SAL)		0.622**	
		(0.28)	
Urban X GDP	1.653**		1.197**
	(0.64)		(0.58)
Self-employment X urban	3.613		
	(3.96)		
Incratio X urban		-1.573***	
		(0.55)	
Unemp X urban		-3.017	-6.827
		(4.86)	(4.93)
Observations	3295	3374	3295
Pseudo R-squared	0.0471	0.0489	0.0502
Prob>chi2	0	0	0
LR chi2(14)	58.64	61.75	62.4

Standard errors in parentheses ; *** p<0.01, ** p<0.05, * p<0.1; Interaction variables are marked with a "X" symbol. Dependent variable: 0 if self-employed but not changed, 1 if switched to self-employed.

Table 6. Logistic regression for potential future transition (saving for business purposes) of not-yet-transitioned employees

VARIABLES	Model N1	mfx	Model N2	mfx	Model N3	mfx
Intercept	-3.004*		-1.903***		-1.407	
	(1.78)		(0.66)		(1.85)	
Urban resident	0.336*	0.01816	0.357**	0.0192	0.293	0.01587
	(0.18)		(0.18)		(0.18)	
Age	-0.0269***	-0.00156	-0.0276***	-0.0016	-0.0237***	-0.00136
	(0.0087)		(0.0086)		(0.0087)	
Head of the family	-0.143	-0.00845	-0.196	-0.0117	-0.210	-0.01249
	(0.18)		(0.18)		(0.18)	
Backward Class	-0.147	-0.00819	-0.207	-0.0114	-0.170	-0.0094
	(0.18)		(0.18)		(0.18)	
Technical education	-0.00669	-0.00038	-0.00632	-0.00036	0.0250	0.0014
	(0.20)		(0.20)		(0.20)	
Undergraduate	0.0765	0.00454	0.0497	0.002929	0.0834	0.00493
	(0.21)		(0.20)		(0.21)	
Postgraduate	0.468*	0.03254	0.405	0.02755	0.452*	0.03113
	(0.26)		(0.26)		(0.26)	
Employed in SME	0.584***	0.03187	0.572***	0.03117	0.578***	0.03138
	(0.17)		(0.17)		(0.17)	
Family size	0.0367	0.00212	0.0231	0.00134	0.0206	0.00118
	(0.036)		(0.035)		(0.036)	
Log (Population density)	0.191	0.01108	0.00923	0.00053	0.0343	0.00198
	(0.13)		(0.077)		(0.085)	
Log (SGDP per-capita)	-0.000805	-0.00004			-0.0776	-0.00447
	(0.20)				(0.20)	
Self-employment rate	-2.188**	-0.12696				
	(1.09)					
Unemployment rate			-2.255	-0.13091	-4.300**	-0.24823
			(1.62)		(1.80)	
Income ratio (SE/SAL)			-0.134	-0.00776		
			(0.17)			
Observations	3141		3218		3141	
Pseudo R-squared	0.031		0.033		0.032	
Prob>chi2	0		0		0	
LR chi2(12)	48.05		52.08		49.99	

Standard errors in parentheses ; *** p<0.01, ** p<0.05, * p<0.1; mfx: marginal effects. Dependent variable: 0 if purpose of saving is not for business, 1 if for business. Sample: All salaried employees who have not transitioned into any other occupation.

Table 7. Logistic regression for potential future transition (saving for business purposes) of not-yet-transitioned employees with interaction effects.

VARIABLES	Model N4	Model N5	Model N6
Intercept	-0.686	-2.302***	0.279
	(2.88)	(0.74)	(2.41)
Urban resident	0.564	0.273	0.700
	(0.78)	(0.48)	(0.49)
Age	-0.0268***	-0.0275***	-0.0236***
	(0.0087)	(0.0087)	(0.0087)
Head of the family	-0.141	-0.200	-0.211
	(0.18)	(0.18)	(0.18)
Backward Class	-0.151	-0.239	-0.177
	(0.19)	(0.18)	(0.18)
Technical education	0.00508	-0.00401	0.0374
	(0.20)	(0.20)	(0.20)
Undergraduate	0.0843	0.0549	0.0948
	(0.21)	(0.20)	(0.21)
Postgraduate	0.477*	0.396	0.458*
	(0.26)	(0.26)	(0.26)
Employed in SME	0.586***	0.571***	0.578***
	(0.17)	(0.17)	(0.17)
Family size	0.0350	0.0224	0.0187
	(0.036)	(0.035)	(0.036)
Log (Population density)	0.192	-0.00177	0.0107
	(0.13)	(0.077)	(0.085)
Log (SGDP per-capita)	-0.265		-0.276
	(0.28)		(0.25)
Self-employment rate	-2.072		
	(1.66)		
Unemployment rate		-1.992	-3.458*
		(1.84)	(1.99)
Income ratio (SE/SAL)		0.169	
		(0.21)	
Urban X GDP	0.812		0.581
	(0.53)		(0.49)
Self-employment X urban	-0.799		
	(2.97)		
Incratio X urban		-0.954**	
		(0.41)	
Unemp X urban		0.109	-3.289
		(3.64)	(3.91)
Observations	3141	3218	3141
Pseudo R-squared	0.032	0.036	0.034
Prob>chi2	0	0	0
LR chi2(14)	51.2	58.14	52.55

Standard errors in parentheses ; *** p<0.01, ** p<0.05, * p<0.1; Dependent variable: 0 if purpose of saving is not for business, 1 if for business. Sample: All Salaried employees who have not transitioned into any other occupation, including self-employment. Interaction variables are marked with a "X" symbol.

References

Acs, Zoltán J., and Catherine Armington. 2004. Employment growth and entrepreneurial activity in cities. *Regional Studies* 38, no. 8: 911-927.

Acs, Zoltán J., David B. Audretsch, and David S. Evans. 1994. Why does the self-employment rate vary across countries and over time? *CEPR Discussion Papers 871*, C.E.P.R. Discussion Papers.

Ahluwalia, Montek S. 2002. Economic reforms in India since 1991: Has gradualism worked? *Journal of Economic Perspectives* 16, no. 3: 67-88.

Ahluwalia, Montek S. 2005. India's economic reforms: An appraisal. *Papers of the Planning Commission of India*, Government of India.

Akerlof, George A. 1976. The economics of caste and of the rat race and other woeful tales. *Quarterly Journal of Economics* 90, no. 4: 599-617.

Akerlof, George A., and Rachel E. Kranton. 2000. Economics and identity. *Quarterly Journal of Economics* 115, no. 3: 715-753.

Armington, Catherine, and Zoltán J. Acs. 2002. The determinants of regional variation in new firm formation. *Regional Studies* 36, no. 1: 33-45.

Ashcroft, Brian K., Darryl R. Holden, and Kenneth Low. 2009. Entrepreneurial interest, vision and the self-employment choice decision in UK regions. *Regional Studies* 43, no. 8: 1075–1090.

Audretsch, David B., and Michael Fritsch. 1994. On the measurement of entry rates. *Empirica* 21, no. 1: 105-113.

Banerjee, Abhijit V., and Andrew F. Newman. 1993. Occupational choice and the process of development. *Journal of Political Economy* 101, no. 2: 274-298.

Bhalotra, Sonia. 2003. The impact of economic liberalization on employment and wages in India. *ILO Working paper No. 12*, International Labor Organization, Geneva.

Blau, David M. 1985. Self-employment and self-selection in developing country labor markets. *Southern Economic Journal* 52, no. 2: 351-363.

Boschma, Ron A., and Michael Fritsch. 2009. Creative class and regional growth: Empirical evidence from seven European countries. *Economic Geography* 85, no. 4: 391-423.

Carsten, Jeanne M., and Paul E. Spector. 1987. Unemployment, job satisfaction, and employee turnover: a meta-analytic test of the Muchinsky model. *Journal of Applied Psychology* 72: 374-381.

Casson, Mark C. 2003. The entrepreneur: An economic theory. 2nd ed., Oxford: Martin Robertson, Edward Elgar.

Chandrasekhar, C. P., and Jayati Ghosh. 2007. Recent employment trends in India and China: An unfortunate convergence. *Social Scientist* 35, no. 3/4: 19-46.

Cowling, Marc & Mark Taylor. 2001. Entrepreneurial women and men: Two different species? *Small Business Economics* 16, no. 3: 167-75.

Darity, William Jr. 2005. Stratification economics: The role of intergroup inequality. *Journal of Economics and Finance* 29, no. 2: 144-153.

Darity, William Jr., and Ashwini Deshpande. 2000. Tracing the divide: Intergroup disparity across countries. *Eastern Economic Journal* 26, no. 1: 75-85.

Davidsson, Per and Benson Honig. 2003. The role of social and human capital among nascent entrepreneurs. *Journal of Business Venturing* 18, no. 3: 301-331.

Djankov, Simeon, Edward Miguel, Yingyi Qian, Gérard Roland, and Ekaterina Zhuravskaya. 2005. Who are Russia's entrepreneurs? *Journal of the European Economic Association* 3, no. 2-3:587-597.

Djankov, Simeon, Yingyi Qian, Gérard Roland, and Ekaterina Zhuravskaya. 2006a. Entrepreneurship in China and Russia compared. *Journal of the European Economic Association* 4, no. 2-3: 352-365.

Djankov, Simeon, Yingyi Qian, Gérard Roland, and Ekaterina Zhuravskaya. 2006b. Who are China's entrepreneurs? *American Economic Review* 96, no. 2: 348-352.

Dunn, Thomas, and Douglas Holtz-Eakin. 2000. Financial capital, human capital, and the transition to self-employment: Evidence from Intergenerational Links. *Journal of Labor Economics* 18, no. 2: 282-305.

Earle, John S., and Zuzana Sakova. 2000. Business start-ups or disguised unemployment? Evidence on the character of self-employment from transition economies. *Labour Economics* 7, no. 5: 575-601.

Elfenbein, Daniel W., Barton H. Hamilton, and Todd R. Zenger. Forthcoming. The small firm effect and the entrepreneurial spawning of scientists and engineers. *Management Science*.

Evans, David S., and Boyan Jovanovic. 1989. An estimated model of entrepreneurial choice under liquidity constraints. *Journal of Political Economy* 97, no. 4: 808–827.

Evans, David S., and Linda S. Leighton. 1989. Some empirical aspects of entrepreneurship. *American Economic Review* 79, no. 3: 519-535.

Fairlie, Robert W. 1999. The absence of the African-American owned business: An analysis of the dynamics of self-employment. *Journal of Labor Economics* 17, no. 1: 80-108.

Fairlie, Robert W., and Alicia M. Robb 2007. Why are black-owned businesses less successful than white-owned businesses? The role of families, inheritances, and business human capital. *Journal of Labor Economics* 25, no. 2: 289-323.

Frederick, Howard, and Erik Monsen. Forthcoming. New Zealand's perfect storm of entrepreneurship and economic development. *Small Business Economics*.

Gartner, William B., Kelly G. Shaver, Nancy M. Carter, and Paul D. Reynolds. 2004. Forward. In *Handbook of entrepreneurial dynamics: The process of business creation*, ed. William B. Gartner, Kelly G. Shaver, Nancy M. Carter, and Paul D. Reynolds. Thousand Oaks, CA: Sage.

Glinskaya, Elena, and Michael Lokshin. 2007. Wage differentials between the public and private sectors in India. *Journal of International Development* 19, no. 3: 333-355.

Hamilton, Barton H. 2000. Does entrepreneurship pay? An empirical analysis of the returns to self-employment. *Journal of Political Economy* 108, no. 3: 604-631.

Henley, Andrew. 2007. Entrepreneurial aspiration and transition into self-employment: evidence from British longitudinal data. *Entrepreneurship & Regional Development* 19, no. 3: 253–280.

Hurst, Erik, and Annamaria Lusardi. 2004. Liquidity constraints, household wealth, and entrepreneurship. Journal of Political Economy 112, no. 2: 319-347.

Katz, Jerome A. 1990. Longitudinal analysis of self-employment follow-through. *Entrepreneurship & Regional Development* 2, no. 1: 15-25.

Kijima, Yoko, and Peter Lanjouw. 2005. Economic diversification and poverty in rural India. *Indian Journal of Labour Economics* 48, no. 2: 349-374.

Krueger, Norris F., Michael D. Reilly, and Alan L. Carsrud. 2000. Competing models of entrepreneurial intentions. *Journal of Business Venturing* 15: 411-432.

Majumder, Rajarshi. 2007. Earning differentials across social groups: Evidences from India. *Indian Journal of Labour Economics* 50, no. 4: 943-953.

Meager, Nigel. 1992. Does unemployment lead to self-employment? *Small Business Economics* 4, no. 2: 87-103.

Nafziger, E. Wayne, and Dek Terrell. 1996. Entrepreneurial human capital and the long-run survival of firms in India. *World Development* 24, no. 4: 689-696.

Parker, Simon. 2004. The economics of self-employment and entrepreneurship. Cambridge University Press, Cambridge.

Robson, Martin T. 1998. Self-employment in the UK regions. *Applied Economics* 30, no. 3: 313–322.

Reynolds, Paul, David. J. Storey, and Paul Westhead. 1994. Cross-national comparisons of the variation in new firm formation rates. *Regional Studies* 28, no. 4: 443-456.

Schuetze, Herb J. 2000. Taxes, economic conditions and recent trends in male self-employment: a Canada-US comparison. *Labour Economics* 7, no. 5: 507-544.

Sen, Amartya. 1976. Famines as failures of exchange entitlements. *Economic and Political Weekly* 11, nos. 31-33: 1273-1280

Shaver, Kelly G., William B. Gartner, Elizabeth Crosby, Karolina Bakalarova, and Elizabeth J. Gatewood. 2001. Attributions about entrepreneurship: A framework and process for analyzing reasons for starting a business. *Entrepreneurship Theory and Practice* 26, no. 2: 5-32.

Shutt, John, and John Sutherland. 2003. Encouraging the transition into self-employment. *Regional Studies* 37, no. 1: 97-103.

Spence, Michael. 1973. Job market signaling. *Quarterly Journal of Economics* 87, no. 3: 355-374.

Valliere, Dave, and Rein Peterson. 2009. Entrepreneurship and economic growth: Evidence from emerging and developed countries. *Entrepreneurship & Regional Development* 21, no. 5/6: 459–480.

Van der Sluis, Justin, Mirjam van Praag, and Wim Vijverberg. 2005. Entrepreneurship selection and performance: A meta-analysis of the impact of education in developing economies. *World Bank Economic Review* 19, no. 2: 225-261.

Yamada, Gustavo. 1996. Urban informal employment and self-employment in developing countries: Theory and evidence. *Economic Development and Cultural Change* 44, no. 2: 289-314.

Wennekers, Sander, André van Wennekers, Roy Thurik, and Paul Reynolds. 2005. Nascent entrepreneurship and the level of economic development. *Small Business Economics* 24, no. 3: 293-309.