Development of an Analytical Model for Widening of Taxpayer's Base

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PREFACE

The Study on *Development of an Analytical Model for Widening of Taxpayer's Base* is a result of a detailed study undertaken by National Institute of Public Finance and Policy. The Study was commissioned by Central Board of Direct Taxes. The report has been prepared by a team of researchers led by Dr. R. Kavita Rao and comprised Mr D.P. Sengupta, Dr. Sacchidananda Mukherjee, Dr. Sudhanshu Kumar, Suranjali Tandon and Deborshi Brahmachari.

The opinions expressed in this report are those of the authors. The members of the Governing Body of National Institute of Public Finance and Policy are in no way responsible for the opinions expressed in this report.

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Dr Rathin Roy
Director

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Chapter 1: Data Sources, Description and Problems

1.1 Introduction

This study was undertaken for the Central Board of Direct Taxes to analyse and develop an Analytical Model for the number of taxpayers in the personal income tax system. The Terms of Reference of the study is reproduced below.

The Institute shall undertake a Study for CBDT on "Development of an Analytical Model for Widening of Taxpayer's Base" having the reference terms of reference:

a) Time series analysis of evolution of number of tax payers in relation to macro-economic and policy variables

b) Cross section analysis: quantifying the number of non-filers using taxpayer data and income distribution data

c) Profiling of non-filers from data available from income tax returns and income or consumer expenditure surveys.

d) Using the salient facts from a, b and c above to construct an analytical model on number of tax payers in the tax system

e) Policy suggestions on how to expand the set of people filing returns.

The focus of this study is on the number of personal income tax payers. Two ideas implicit in the conception of this study are: first, that the number of filers in the system is smaller than the number that "should be" filing; and second, the number of filers should be increasing over time.. Economic growth and other related variables should drive changes in the number of filers. These two ideas have been used to formulate the structure of analysis for the present study.

To begin with, we explore the empirical relation between number of returns filed and macro-variables such as level of per capita income, sectoral composition of GDP, inequality in distribution of income and inflation. This analysis is based on long time-series data for number of returns filed per year, augmented by information on changes in the tax structure. Such an analysis helps us in identifying the prevailing relation between the macro variables considered and number of tax payers reporting to the tax regime. This approach however does not provide any estimates of the number of people not filing returns in the system.

Since understanding changes in the number of tax payers and hence of non-filers over time would have little meaning without some sense of the level of total potential tax payers, at least for a year, in the second part of the analysis, we explore some alternative ways of determining the

total potential number of tax payers that should be in the system. For this part of the analysis, we need to determine a distribution of income from income tax returns and compare the same with the "actual" distribution of income. While there are consistent annual consumption surveys in India, there are very few surveys for incomes. The two known surveys with reasonably large samples are the NCAER income consumption survey which is undertaken periodically and the CMIE consumer pyramids survey which undertakes a quarterly survey of a fixed set of households for both consumption and income purposes. It is also possible to consider the National Sample Survey (NSS) consumer expenditure surveys as a proxy for the distribution of income. A comparison of the income distribution from tax returns with that from other sources can provide a point estimate of the number of non-filers for the year for which data is available.

Before embarking on the actual analysis itself, it would be useful to first discuss the available data and any limitations thereof. As is evident from the above discussion, this analysis uses two kinds of data:

1. Time series data on number of tax payers

2. Cross section data for determining "actual" income distribution of tax payers when compared to distribution of tax payers as reflected in the returns filed.

The present chapter presents a discussion on the data series that would be used for analysis. An attempt is also made to define a few of the key concepts we are using in this study. The chapter examines data sources, describes the data sets, and discusses their limitations.

This chapter is followed by a chapter that summarizes the results obtained from time series analysis (Chapter 2). Chapter 3 presents a discussion on cross section analysis along with some characterisation of non-filers within the limitations of the availability and comparability in data. Chapter 4 presents some alternative ways of analytically modelling the number of taxpayers. This is followed by a discussion of some of the measures that can bring in a larger number of taxpayers into the system (Chapter 5). Chapter 6 brings together the broad conclusions from the analysis.

1.2 Data for Time Series Analysis

There are two series that we have been able to find for "number of taxpayers" in the system. Before discussing these two series, it is important to highlight the different concepts that exist

vis-a-vis this notion. The "number of people/units" in the system can be viewed in the following ways:

i. Number of tax payers: These are people/units from whom the government collects tax but, they may or may not be filing returns. For instance, in case of salaried tax payers, some might have paid taxes since the tax is deducted at source, but they may not file a return.

ii. Number of returns: These are people/units filing returns in one of the formats designed by the government.

iii. Number of effective assessees: From our discussion with officials of the tax department, it appears that this category refers to the number of people/units who are expected to file a return in a given year. It could vary from the actual returns filed in a year to the extent that a filer in an earlier year might not have filed return in the current year for some reason. It could be due to a decline in income or death of the individual filer or a partnership being dissolved, for instance).

iv. Number of assessments: Some scrutiny of the return by the department to validate its correctness can be called assessment. The notion/coverage of assessments has changed over the years in income tax as in other taxes in India. Currently, very few returns are subjected to thorough scrutiny. Most of the returns filed are only processed for arithmetical accuracy.

Ideally, the number of tax payers should be the subject of enquiry since these are the units that contribute to the collection of taxes in the country. However, since the system can only identify the tax payers through the number of returns filed, this or a close approximation of this, the number of effective assesses, can become the subject of study here. We now turn to the data series that are available for analysis.

1.2.1 All India Income Tax statistics

This dataset has been complied using various issues of *All India Income Tax Statistics*, published by the Central Board of Direct Taxes, Ministry of Finance. The series we use is for the period from 1974-75 to 1999-2000. Unfortunately, the publication was discontinued after 1999-2000. It provides the total number of tax payers under each category (viz. Individuals, HUFs, Firms, Trusts, Company and Others). From the discussion in the documents, it is observed that the data is based on income tax returns filed every year.

1.2.1.1 Changes in the definition of 'income tax payer' in AIITS

It has been observed in the various issues of this document that the notion being captured in the data has changed over the years. Until 1977, the data is referred to as *Number of Assessees*. From 1978, however All India Income Tax Statistics reported *Number of Assessments*. This changed further from 1984, where *Number of Returns* was being captured.

While the first change in coverage is not reflected in the data in the form of a sharp increase or decline, the second change from 1984 onwards is reflected in the form of a sharp increase in the numbers reported, as is evident from the figure 1.1.

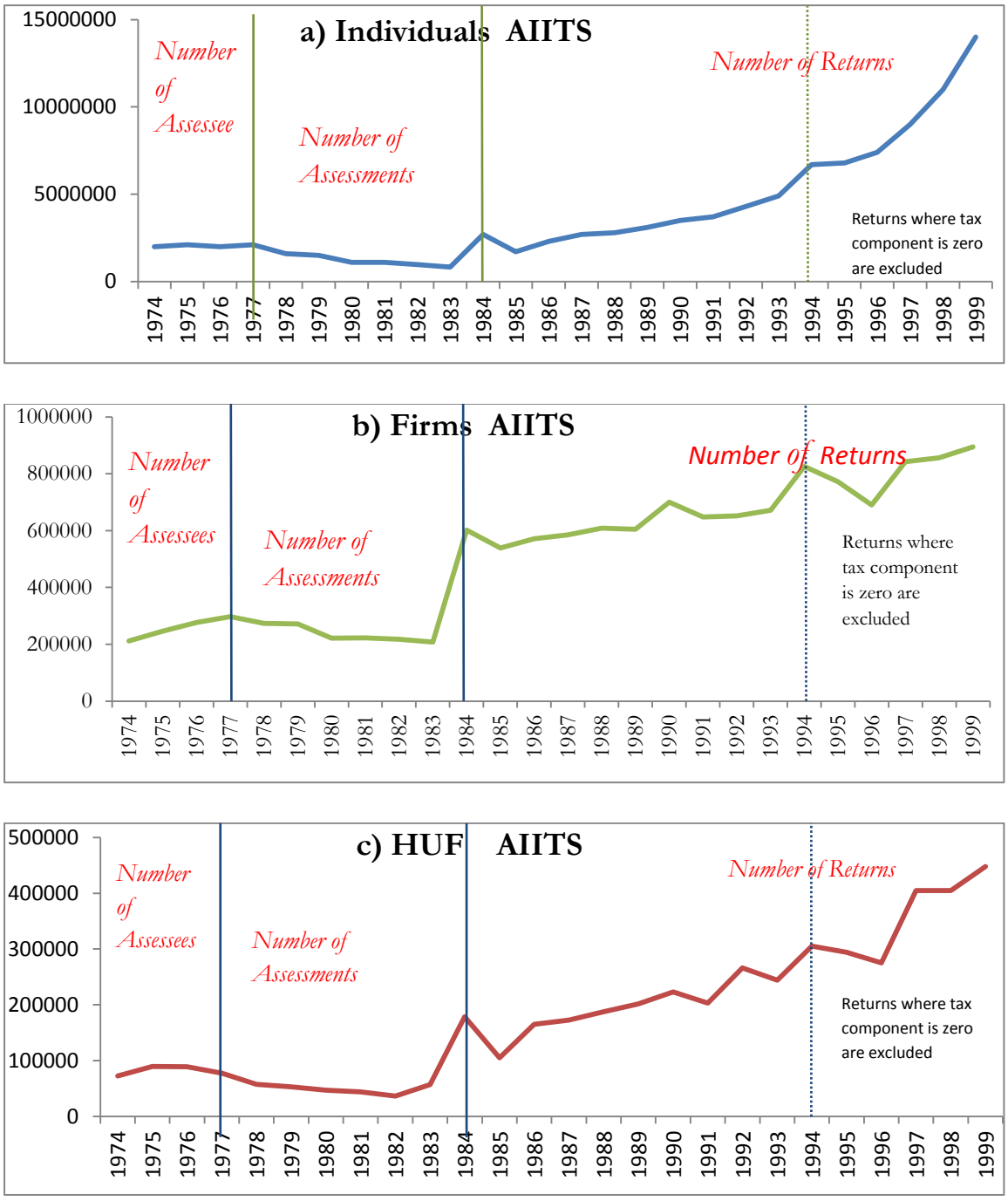
There was a further change in coverage from 1994-1995 Here onwards the total number of returns does not include returns where tax component is zero[1].

Apart from the change in definitions, the data source has been criticised on its coverage as well. For instance the NIPFP's report *Aspects of Black Money in India, 1985*[2] had discussed some of the shortcomings of the AIITS data as follows:

- The extent of underreporting in AIITS data as compared to C&AG data is substantial. Any estimate based on AIITS data hence will be a serious underestimate.
- The gap between the total number of assessments recorded in the AIITS data and the total number of assessees reported by the C&AG report is not entirely attributable to undercoverage. The AIITS totals also exclude assessments which did not result in either demand or refunds. Almost all of these excluded assessments relate to cases of 'N.A and filed' relating to individuals and firms.
- In the old series a substantial proportion of AIITS data related to previous assessment years. The new series provides information on income assessed to tax on an assessment year basis.

[1] This is reported in the discussion on limitations of the dataset in the publication.
[2] *Report on Aspects of Black Money in India*, New Delhi: National Institute of Public Finance and Policy, 1985.

Figure: 1.1: Number of Individuals/Firms/ HUFs in the Income tax system: various definitions[3]



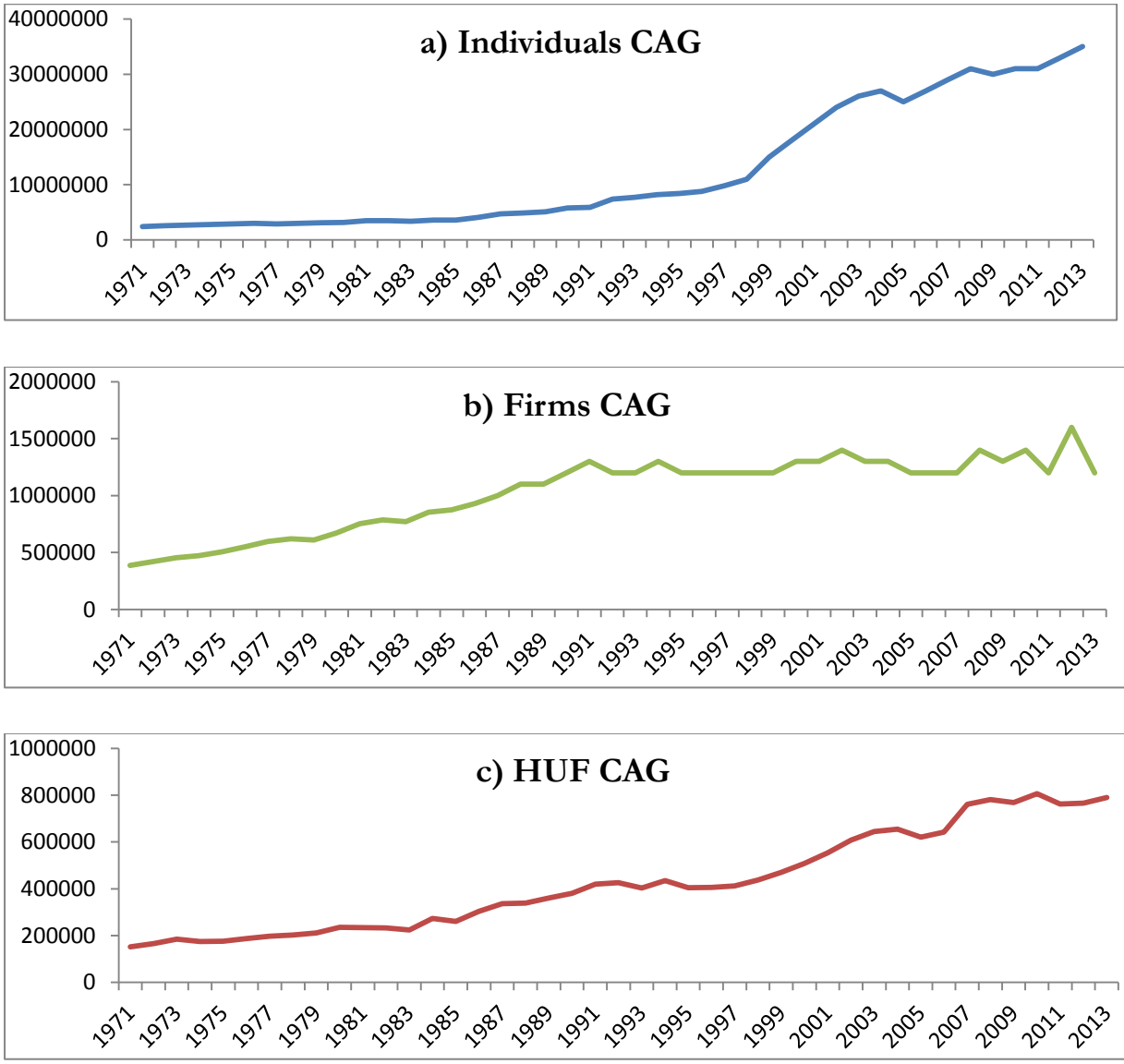
Note: The vertical lines in the graphs indicate the years in which the definitions have changed.
Source: All India Income Tax Statistics (AIITS), various years, Directorate of Income Tax, New Delhi

3 In this study 1973 refers to 1972-73 and so on.

1.2.2 CAG data

The other source of data is from the Compliance Report of the Union Government on Direct Taxes produced by the Comptroller and Auditor General of India. This series will be referred to as CAG data and is compiled for number of income tax payers under each category (viz. Individuals, HUFs, Firms, Trusts, Company and Others) for various years. Here the number is referred to as *Assessees*. We have compiled the data for 42 years, from 1971 to 2013. The following graphs show *Assessees* across years for individuals, firms and HUFs.

Figure 1.2 CAG Data: Assessees across years



Source: Direct Taxes, Union Receipts Audit Reports, Comptroller and Auditor General of India, various years.

CAG reports total number of assesses under each category in the section "Analysis of Income tax (including corporate taxes)" and a few more detailed tables in the Annexure of the report

every year. But, these reports do not cite any source for the data. Nor, do they provide any definition for the term '*assesses'*.

A third shorter series was received from the Income Tax Department extracted from CAP-II. This series was referred to as *Effectice Assessees*. A comparison of this series with that obtained from the CAG suggests that the two series are the same. A comparison of the two series for individuals and firms is presented in the following tables. On this basis, we have concluded that the CAG series is the same as the *Effective Assessees* series. Given that we could get the *Effective Assessees* series from the CAP-II only from 1996-97, the CAG series is being treated as equivalent.

Table 1.1

Individuals		
Year	*Effective Assessees*	*Assessees (CAG)*
2008-09	30101260	30101260
2009-10	31384084	31384084
2010-11	31035394	31035394
2011-12	33189567	33189567
2012-13	34604064	34604064

Firms		
Year	*Effective Assessees*	*Assessees (CAG)*
2008-09	1310849	1310849
2009-10	1354330	1354330
2010-11	1229722	1229722
2011-12	1559895	1559895
2012-13	1183522	1183522

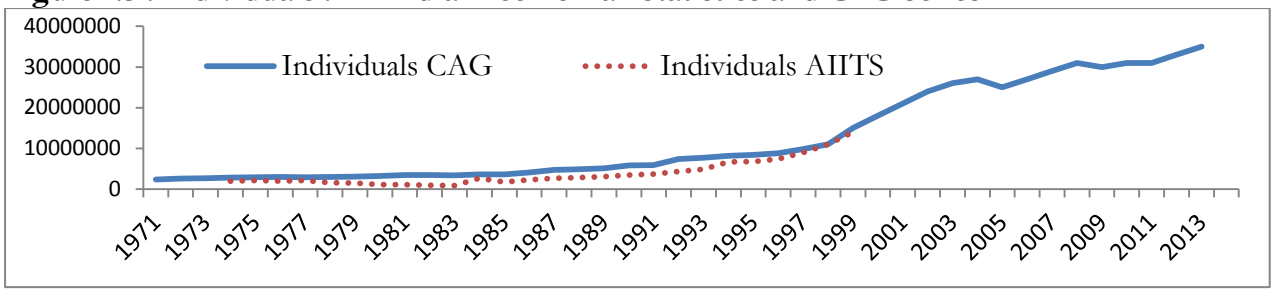
Source: Extract from Central Action Plan-II, Income Tax Department and Direct Taxes, Union Receipts Audit Reports, Comptroller and Auditor General of India, various years.

1.2.3 Comparison between *All India Income Tax Statistics and CAG Series.*

a) Individuals

The two series for Individuals are close to each other and exhibit an upward rising trend. However, the CAG series is both longer and consistently above the AIITS series and two series come close together only in 1998.

Figure 1.3 : Individuals : All India Income Tax Statistics and CAG Series

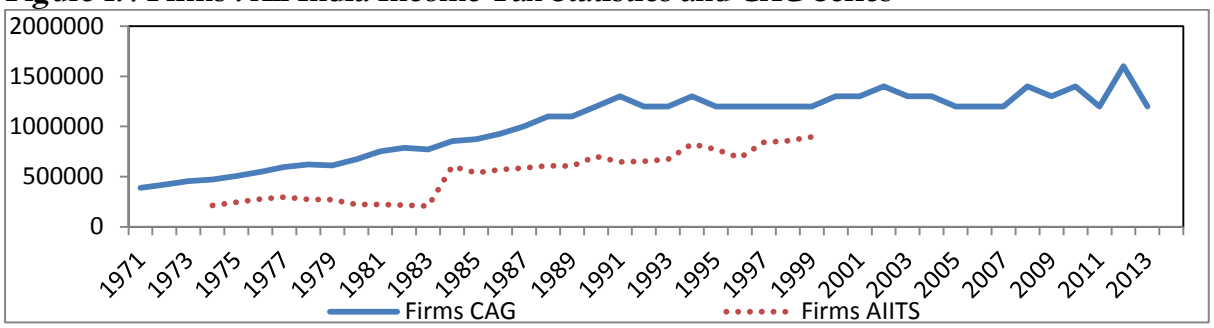


Source: ***Direct Taxes, Union Receipts Audit Reports, Comptroller and Auditor General of India, various years and All India Income Tax Statistics (AIITS), various years, Directorate of Income Tax, New Delhi.***

b) Firms

As for Firms, the All India Income Tax Statistics series behaves in a rather erratic way. The trend is quite different from that of the CAG series. The CAG series shows a consistent increase till 1991, after which it appears to fluctuate around a stable level. The AIITS series however shows a consistent increase from 1984 to the end of the series. The levels in these two series too are distinctly different.

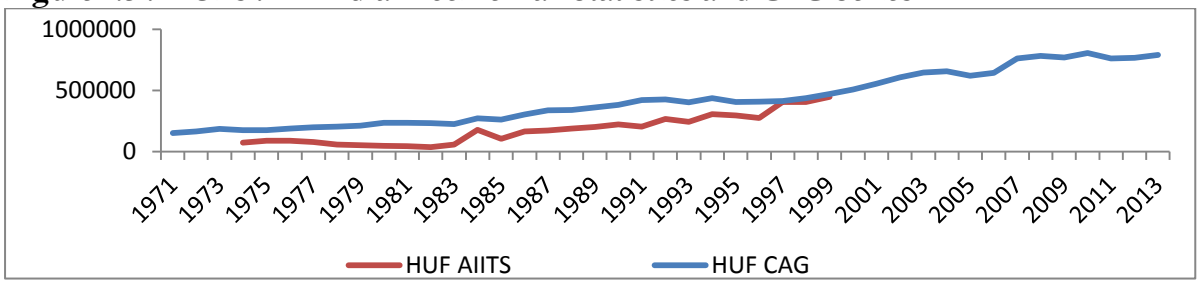
Figure 1.4 Firms : All India Income Tax Statistics and CAG Series



Source: ***Direct Taxes, Union Receipts Audit Reports, Comptroller and Auditor General of India, various years and All India Income Tax Statistics (AIITS), various years, Directorate of Income Tax, New Delhi.***

c) HUF

Figure 1.5 : HUFs : All India Income Tax Statistics and CAG Series



Source: ***Direct Taxes, Union Receipts Audit Reports, Comptroller and Auditor General of India, various years and All India Income Tax Statistics (AIITS), various years, Directorate of Income Tax, New Delhi.***

As in the case of individuals, the series for HUF for both AIITS and CAG show a similar trend. However, AIITS remains consistently far below the series from CAG until the last three years when they come closer. The volatility in the series too is more in case of AIITS.

1.2.4 *Choice of Data series for time series analysis*

Given the above comparison and discussion, it is clear that for the purposes of analysis, the CAG series is more useful. To begin with, there exists a consistency in the coverage. This allows us to use a long time series. Second, the CAG series continues until recent times allowing the analysis to discuss recent developments as well. Therefore, the present study is based on the CAG data.

Related to the above, is the second question of which categories of taxpayers to analyse. There are three broad categories of taxpayers discussed so far – individuals, firms and HUF. An attempt is made to examine and assess the first two in more detail in this study, since the economic concepts of these two notions are far clearer than that of the HUF. Since HUFs as an entity is essentially viewed by the tax payers as a tax planning instrument, and is advised by chartered accountants as way to save tax, it may be inferred that most of the HUFs are already filing returns and are included in the list of filers. In fact, the Wanchoo Committee[4] had indicated that the institution of HUF was being widely used for tax avoidance. The Committee had arranged studies to be made in certain Commissioners' charges. They found out that in respect of certain families, the number of income-tax files in respect of the HUF was more than the total number of members in the family. The committee observed: "…*The Hindu undivided family as a unit of assessment is retained in most cases only when it enables the persons concerned to reduce their tax liability and that in other cases, it is promptly partitioned without considerations of sentiments coming in the way*..."

1.3. Cross Section Data:

1.3.1 Individuals

For cross section analysis of income distribution, the study requires distribution of income for individuals and firms in the economy. For the Individuals, as discussed earlier, there are two household surveys that cover incomes of the households – NCAER survey on income and consumption of households and CMIE consumer pyramids.

[4] Ministry of Finance, Direct Taxes Enquiry Committee: Final Report, December, 1971.pp 74-75

India Human Development Survey (IHDS) is aimed at capturing the socioeconomic and demographic characteristics of Indian households, with a particular focus on income expenditure, savings and debt, and other aspects of household life in India. These include amenities and dwelling details, water usage, health, and detailed consumer behaviour data, with a section on the consumer mind space. The survey was conducted in two phases, starting with a listing survey. The first round (IHDS-1) of the survey was completed in 2004-5 covering 41,554 urban and rural households in all states and union territories of India (except Andaman/Nicobar and Lakshadweep). The NCAER is currently collating the data from IHDS-II and the data are expected to be made public in early-2015.

CMIE claims that Consumer Pyramids is the largest survey of households of India. It focuses on income, expenses, savings, borrowings, investments and ownership of assets of households. It also has information on age, gender, education, occupation, health financial inclusion and mobile connectivity of individuals. The survey covers over 150,000 Households (over 700,000 individuals) in 24 States & Union Territories. The CMIE does not provide access to unit level data and the prepared tables in the Consumer Pyramids link is focused more on consumption than on income per se. considering the fact that decomposition of the incomes by source would not be available, this source of information was not considered useful for the purposes of the present study. So, for the purposes of the study of Individual taxpayers, we focus our analysis to 'The National Survey of Household Income and Expenditure' data for the year 2004-05. Further, since our concern extends to beyond 2004-05, the analysis from NCAER data is extended to the later years using household consumption survey data from NSS surveys.

The National Sample Survey Organisation (NSSO) has been set up by the Government of India in 1950 to collect socio-economic data employing scientific sampling methods. Household consumer expenditure survey is the most frequent survey of the NSSO from its inception. NSS surveys on Household Consumer Expenditure with a large sample of households have been conducted quinquennially from the 27th round (1972-73) of NSS onwards. The NSS 68th round survey, carried out during July 2011-June2012, is the ninth and the latest available quinqennial survey in the series. In the present study we use data from two surveys – 61st round and 68th round. The former is used for calibrating the relation between the NCAER survey and NSS survey and the latter is used to get estimates for 2011-12. These two rounds correspond to two 'quinquennial rounds' of the surveys or the surveys with the large sample size. We analyse the information available for the 124643 surveyed households in the 61st round for the year 2004-05 (79297 rural and 45356 urban households). For the year 2011-12, we use information for the

101662 surveyed households (59695 rural and 41967 urban households) from the 68th round of the survey.

Consumer expenditure surveys conducted in NSS rounds besides the 'quinquennial rounds' - starting from the 42nd round (July 1986 - June 1987) - also provide data on the subject for the period between successive quinquennial rounds, using a much smaller sample. These rounds are known as annual rounds. However, due to the smaller sample size of these surveys we use data from the quinqennial rounds of surveys only.

1.3.2 *Firms*

Turning to firms, there is no readily available database on firms in India. To begin with, it is important to recognise that while there is a legal provision to guide and govern activities within the ambit of partnerships, i.e., Indian Partnership Act, 1932, it is not mandatory for a partnership firm to get registered under this Act to carry out business.[5] Under the Act, Registrar of Firms is a mere recording office and he/she cannot verify whether firm is defunct, unless a firm gives notice in Form E u/s 63 for dissolution. Therefore, database on firms registered with Registrar of Firms cannot be taken as the population of partnership firms on two counts. First, registration of firm is not mandatory and second, Registrar does not clean the database by taking out the dissolved firms.

An alternative source of data can be the Economic Census[6] and Survey[7] of Unincorporated Non-agricultural Enterprises (excluding construction) undertaken by the NSSO. While the data from the census undertaken in 2011-12 is not yet available, the survey data can be used. The survey relates to the period July 2010 – June 2011 and covers both proprietorships and partnerships. It provides a lot of details of incomes and expenditures of these firms, along with a classification of the economic sector they are associated with. While this database is very useful for our present purpose, it needs to be incorporated keeping in mind a few caveats:

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[5] A partnership firm is formed when two or more persons come together to carry out a business in partnership. First, they execute a partnership deed in which all terms and conditions are written including duration of the firm. Most of the firms write duration as "At Will". Some firms which are formed for specific project or work do specify the duration. The law indicates that such firms get dissolved automatically on expiry of period mentioned in the deed. While the law does not require all Partnership firms to be registered, it does provide that an unregistered firm cannot move any court against third party or partners cannot file any suit against each other, though a third party can sue a Firm or Partners. This is the limited benefit from registration.

[6] Provisional Results of Sixth Economic Census, All India Report, Central Statistical Office, Ministry of Statistics and Programme Implementation, GOI, New Delhi, July 2014

7 Survey of Un-incorporated Non-Agricultural Enterprises (Excluding Construction) in India, NSS 67 Round, July 2010 –June 2011, Schedule 2.34, NSSO, Ministry of Statistics and Programme Implementation. GOI.

1. This survey does not cover firms associated with construction activity.
2. The classification of firms in the survey is as per the NIC codes, whereas the classification in income tax data uses a different classification which does not easily and directly map on to the NIC code.

In order to understand the present state of maintenance of database on registered partnership firms and also to verify the authenticity of data on partnership firms from the NSS 67th round survey, we requested the Inspector General of Registration or Registrar of Firms of selected States - West Bengal, Tamil Nadu, Maharashtra, Uttar Pradesh, Rajasthan, Odisha, Kerala, and Gujarat (selected on the basis of percentage share in total number of partnership firms as we get from NSS 67th round survey)[8] – to share with us the cumulative 'Number of Active Registered Partnership Firms' for 2010-11, 2011-12 and 2012-13.

The information was forthcoming only from states - Kerala and Maharashtra. For Maharashtra, information was received from three out of four offices (Aurangabad, Pune, Nagpur and Mumbai) (Table 1.2). Average number of registrations of firms in Aurangabad office is 763 (minimum 629 in 2010-11 to maximum 841 in 2013-14), Pune is 3,704 (2,990-4,063), Nagpur is 597 (480-759) and in Kerala the number is 3,904 (3,604-4,272).

Table 1.2: Annual Registration of Partnership Firms

Year	States/Areas			
	Aurangabad, Maharashtra	**Pune, Maharashtra**	**Nagpur, Maharashtra**	**Thiruvananthapuram, Kerala**
2010-11	629	2990	480	4040
2011-12	795	4063	553	3604
2012-13	788	4060	759	3700
2013-14	841			4272
Average	763	3704	597	3904
Min	629	2990	480	3604
Max	841	4063	759	4272

Source: Personal Communication

The NSS 67th Round Survey shows that there are 96,542 Partnership Firms in Maharashtra. Given the average number of registrations per year, it appears that to arrive at the numbers reported by the NSS Survey we need to cumulate registrations over about 20 years. The same is the case for Kerala where the numbers reported by NSS survey are 63,987 Partnership Firms. However, if one considers the stock of registered firms, there is a huge discrepancy – for

[8] See Figure A1 in the Appendix I

instance, for Pune, the total number of firms registered so far is reported to be 2.25 lakh. Given average annual registration of 3700 firms, this stock can be arrived at only if one cumulates over 60 years. In other words, the stock figures reported by the Registrar of firms is perhaps a gross number without correcting for defunct and dissolved partnership contracts. In other words, while the data from the two sources can be used to validate one or the other, the data does seem to suggest that the stock figures reported by the Registrar of Firms is not a good figure to base any analysis on. Since the only other figure for stock relates to the NSS Survey, the present study focuses its attention on this source alone.

1.3.3 Choice of Data for Analysis

Following from the above discussion, the present study would be working with the following data sources for cross section analysis:

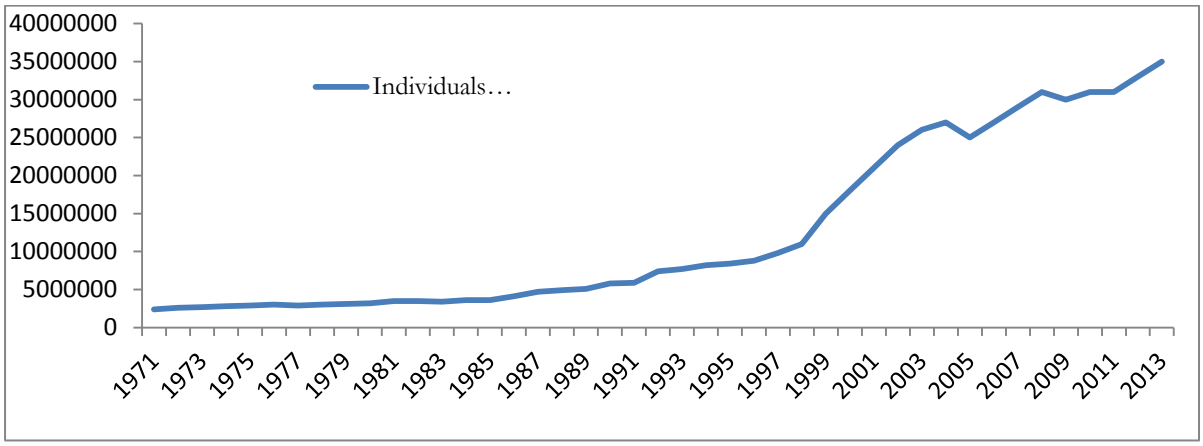
- For individuals: The NCAER survey of 2004-05 supplemented by the NSS consumer expenditure surveys for later years
- For Firms: Partnership firms as reported in Unincorporated Non-agricultural Enterprises (excluding construction) in July 2010 – June 2011 by the NSSO.

Chapter 2: Time Series Analysis

2.1 Individual Tax Payers

For an initial understanding of the series, we plot the series to examine for any distinct changes in trend over the period from 1971 to 2013 (Figure 2.1). The figure reveals that there were steady increments to the number of individual tax payers till 1998. This is followed by a sharp increase till 2003. After 2003, rapid growth is not observed any more.

Figure 2.1 Number of Individual Taxpayers



Source: Direct Taxes, Union Receipts Audit Reports, Comptroller and Auditor General of India, various years.

Even in terms of rate of growth, the individual taxpayers grew by 35 per cent in 1999 and the increase was sustained over the next 4 years with an annual average rate of growth of 14 per cent for the period 2000-03 as compared to the 5.45 and 3.04 prevailing in the period prior to and following 1999-03.

To begin with, it would be useful to explore whether there are any policy changes within the ambit of income tax policy and administration which can explain the observed sharp increase in the number of effective assessees. The Finance Acts for these years do reveal some interesting developments which are summarised below segregated into administrative and compliance measures and policy measures.

2.1.1 Administrative measures

There are broadly two kinds of measures in this category which could have contributed to the increase in number of effective assessees.

i. The "one-by-six" scheme was implemented with effect from 1st August 1998. This scheme identified six indicators of economic well-being of economic agents and required all individuals who have access to any one of these measures to mandatorily file a return of income. The indicators identified included expenditure on motor vehicle, subscription of mobile cellular, occupation of immovable property, foreign trips, club membership and credit card holders. It was initially applicable to anybody who satisfied two out of the first four criteria[9] and its scope was expanded and modified over the years. For example in 2000-01 it was implemented in 76 more cities with population above 2 lakhs. In 2001-02 it was extended to all urban areas. Further, in 2002-03 mobile connections were removed from the list however Wireless in Local Loop (WLL) continued to remain on the list. It should be mentioned here that the one-by-six scheme was discontinued in 2006-07. It is possible that the gains from this policy were more or less realised by 2003-4 given the criteria it was started with.

ii. Finance Act 1998 made quoting of PAN compulsory for a number of transactions such as opening of bank account, deposit exceeding Rs. 50,000 etc.[10] The suggestion of increased information with the tax department allowing for better profiling of the tax-payers could have induced increases in the returns filed as well.

2.1.2 Policy Changes

Every Finance Act brings in some changes in tax policy. Among the policy changes brought in during the period 1998-2003, the following could possibly influence tax payment and return filing: During this period the exemption threshold was raised from forty thousand to 50 thousand. Further, housing incentives to individuals were increased periodically. Between 1998 and 2002 the deduction for income from house property was raised from 20 per cent to 30 per cent and the deduction for interest payable on housing loans for self-occupied houses was increased from fifteen thousand to one lakh fifteen thousand.[11] The maximum deduction under

[9] Measures to Widen Tax base, Memorandum of Finance Bill 1997,
Finance Act 1998 available at http://indiabudget.nic.in/ub1997-98/mem/MEM2.HTM
[10] Finance (No. 2) Act, 1998
http://incometaxindiapr.gov.in/incometaxindiacr/contents/CBDTFiles/Circulars/CBDTLaws/HTMLFiles/dtc46tnt.htm
http://articles.economictimes.indiatimes.com/2002-01-05/news/27334526_1_standard-deduction-income-tax-tax-payers

section 88 was raised from 14000 in 1998 to 20 per cent of the amount invested the latter capped at Rupees 1 lakh in 2005-06. As to how these policy changes could have brought about changes in the return filing, the reasons could be as follows: If one assumes that there exist a number of individuals in the economy who should be filing returns but are not filing returns, then reducing the tax liability associated with a given level of income along with a perception that the tax department has augmented its information set leading to better detection of leakages/non-compliance could encourage individuals to start filing returns. Further, with the growth of the real estate market, and easier access to housing loans , it is possible to argue that increased incentives to invest in this segment of the economy too would induce people to declare incomes and pay taxes so as to have evidence of credit worthiness. Along with the tax incentives related to housing offered to individuals, the inclusion of housing loans in priority sector and the expansion of its scope to private builders and intermediaries in the period following 1999 provided the supply side conditions conducive to realise the impact of such tax incentives. By 2007 the housing loans disbursed by commercial banks increased to Rs.1,28,923 crore from Rs.9,631 crore in 1998. There was increase particularly in the years 2002-05, with the peak rate of growth in 2003-04 of 74 per cent[12].

While the administrative changes were specific to this period, policy changes have been a more frequent event. It is therefore important to know, if these policy changes alone determined the changes in the number of effective assessees in the system, or whether there is any influence of other economic variables. The following subsection explores this issue using correlation and regression analysis. In addition to identifying some of the economic variables that are of consequence, the analysis should also be able to answer another important question – if the number of effective assessees in the system were pushed by the one-by-six policy, did withdrawal of the policy induce a reversal. While a bare examination of the trend of effective assessees does not reveal a decline, a more robust analysis will be attempted in the following subsection, by examining whether the effect of economic variables driving number of effective assessees changed subsequent to 2003.

[12] Thingalaya N.K., Moodithaya M.S. and Shetty N.S.(2009) "Housing Finance : A Study of Experiences of Commercial Bank" Report Number 15 IIBF, available at http://www.iibf.org.in/documents/reseach-report/Report-15.pdf

2.1.3 Regression Analysis

It is proposed in this section that the number of effective assessees in the system would be influenced by the level and composition of economic activity in the country as well as the level of inequality. As a first step in the attempt to identify important variables, the correlation of the number of effective assessees with a range of other economic variables is presented in Table 2.1. The estimates of correlation is presented both for the total number of effective assessees and effective assessees as a percentage of working population.

i. ***Sectoral composition of the economy:*** The share of taxpayers in working population is expected to increase with an increase in share of incomes of sectors that generate more employment and have greater backward or forward linkages with other sectors in the economy. Further, there is considerable difference in the tax treatment of different sectors, more so if one considers both direct and indirect taxes together. Thus, the first set of variables we have considered are the shares of different sectors in GDP. The disaggregation considered is agriculture, manufacturing, construction, services related to trade and transport[13] and other services [14]. Here it should be mentioned that while one can consider either sectoral growth or shares in GDP, the latter is a closer approximation of the structure of the economy. From the correlations, we observe that the share of trade, construction and other services in GDP are positively correlated with the number of taxpayers. The three taken together constitute the service sector in India. The service sector has had a relatively higher rate of labour absorption in India. Moreover the labour productivity in the services sector has been amongst the highest and has been growing over time. These two factors can contribute to a growth in tax paying population with an increase in share of services in GDP. Further, services sector suffers lower tax liability when compared to manufacturing since manufacturing is subject to state VAT as well as CenVAT, while services are subject only to service tax and that too selectively. (During this period, the negative list provision of service tax had not yet been brought in.) Thus, growth in the services sectors could be more conducive to augmenting the number of effective assessees.

[13] Trade and Transport includes trade, hotels and restaurants, transport and communication.
[14] Other services include financing, insurance, real estate & business services and community, social & personal services.

Income from agriculture is exempt from income tax. Thus it is expected that an increase in the share of agriculture in GDP should lead to a decline in the number of effective assessees. This is reflected in the correlations as well.

For all the sectoral shares, the value prevailing in the previous year have been taken as the explanatory variable since a change in the composition of GDP is expected to impact the taxpayers over a period of time, say a year.

ii. ***Share of unorganised sector in GDP*** is representative of informal transactions within the economy. Therefore with higher level of activity in the unorganised sector, the share of people paying taxes is expected to decline. This is reflected in the correlations as well.

iii. ***Share price index***: reflects the kind of risk based returns that can be earned in the market. Therefore an increase in the share price index is expected to increase the number of individuals who would gain from investing in these instruments. Since investment in these instruments would need to be through formal savings/financial instruments, the latter in turn should result in increase in the number of effective assessees.

iv. ***Interest rates on deposits in banks:*** Higher interest rates should encourage individuals to undertake higher formal savings, in banks. People with earnings from the formal institutions are more likely to file a return. Therefore maximum deposit rate has been selected as variable.

v. ***Remittances*** are an important inflow into India, these are repatriated earnings. While remittances per se are not subject to tax, since these incomes are transferred through the formal banking system, the utilisation of these monies too could remain within formal sector and hence could contribute to raising the number of effective assessees.

vi. ***Exports and imports*** Exports and imports are transactions that engage the domestic agents with those outside the economy. The procedural requirements for such cross-border transactions increase the visibility of the individuals. In addition, with the opening up of the economy greater specialisation is imperative. In order to specialise and reap the benefits of integrating into global production networks it becomes essential for the firms/companies to a) hire skilled labour b) record their transactions. Therefore when the share of external trade increases in GDP the increase in levels of income and reporting by taxpayers is expected to increase.

vii. To analyse whether financial assets have encouraged people to pay taxes, we have utilised changes in ***financial assets as percentage of personal disposable income***. If households choose to save their money in the form of financial assets then they are expected to declare these savings and incomes therefrom. Greater use of such instruments is thus expected to raise the level of declared incomes and potentially the number of taxpayers.

viii. ***Statutory tax rate*** is an important factor that an individual will consider before making the decision to file a tax return/declaring his income. The statutory tax rate has been computed for individuals by assuming different levels of income- 3 and 10 lakhs.[15] Using the slabs and tax rates prevailing in each year we calculated the tax liability and divided the same by total income to get the statutory rate. As a refinement, the deduction/rebate under sections 80C and 88, whichever is relevant in a particular year have been taken to adjust the income to find the ***effective statutory tax rate***. The tax rate is negatively correlated with the number of effective assessees, since any increase in the rate will incentivise the concealment of income and perhaps even non-compliance with filing of returns.

x. ***Inequality*** can also have an impact on the share of the tax paying population. For this purpose we construct the Gini Coefficient for urban sector, using household consumer expenditure survey.[16] The analysis focuses on urban sector, since a larger segment of the taxpayers are expected to be in the urban sector. The Gini Coefficient measures the deviation of income distribution from perfect equality. It measures the difference between the line of perfect equality and Lorenz curve (that is the share of income earned by a fraction of population.) With an increase in Gini the share of income accruing to the higher income groups increases. Since the taxable population will be associated with the higher income deciles, an increase in the incomes of the higher income deciles would be associated with an increase in the number of people with taxable income. The correlation between Gini coefficient and the number of effective assessees reflects this possibility.

xi. ***Inflation:*** The rise in general level of prices raises the nominal incomes. At higher levels of income, individuals may choose to avoid taxes since the real income accruing to an individual may be perceived to be declining. Therefore people may avoid taxes to compensate for loss in purchasing power due to inflation. This

[15] The benchmark income is taken for one year, i.e. 2009-10 and the comparable incomes for other years are computed by deflating this income by the rate of inflation.

[16] This series has been constructed using various rounds of NSS consumption expenditure surveys, both annual and quinquennial.

negative correlation is observed between the share of population paying taxes and inflation measured by changes in GDP deflator.

xii. Lastly, ***per capita income*** has been taken as an indicator of the growth in average level of income, which is expected to be positively correlated with the number of taxpayers. That is, with an increase in the level of income, the proportion of individuals filing returns and paying taxes should increase.

Table 2.1 Pair wise correlation of individual taxpayers with Macroeconomic Variables

Independent Variables	Individual Taxpayers	Individual Taxpayers by working population
Share of services other than trade and construction in GDP	0.9253*	0.9278*
Urban Gini	0.4476*	0.4759*
Share of agriculture in GDP in t-1	-0.8964*	-0.8714*
STR assuming income of 10 lakhs in 2009-10 in t-1	-0.9348*	-0.9315*
STR assuming income of 10 lakhs, adjusted for deductions, in 2009-10 in t-1	-0.9021*	-0.9131*
STR assuming income of 3 lakhs in t-1	-0.5614*	-0.5213*
STR assuming income of 3 lakhs, adjusted for deductions, in 2009-10 in t-1	-0.5926*	-0.5671*
Inward remittance as a percentage of GDP	0.9410*	0.9340*
Change in Share Price Index	0.3665*	0.3687*
Share of trade in t-1	0.9132*	0.8937*
Maximum Deposit Rate	-0.0988	-0.1261
Share of construction in t-1	0.9243*	0.8663*
Share of Manufacturing in t-1	-0.2034	-0.2551
Share of unorganised in period t-1	-0.7107*	-0.6948*
GDP per capita	0.9298*	0.8607*
Inflation based on GDP deflator	-0.3192*	-0.3646*
Exports plus imports as a percentage of GDP	0.9554*	0.9003*

Note: correlation with the asterisk indicating whether they are correlated at 5 per cent level of significance.
Source: Calculated (for individual sources check Appendix I)

From Table 2.1 it is evident that the share of agriculture, contribution of unorganised sector to GDP, construction and trade, STR (all measures-), changes in share price index, inward remittance as a percentage of GDP, per capita GDP, share of exports and imports in GDP and changes in financial assets by personal disposable income are significantly correlated with the share of taxpayers in total population. Given that these variables are also correlated with one another, it would make sense to select a few of these. We carried out a stepwise regression by taking all the variables and dropping out variables for which the coefficient was relatively less significant or insignificant. Through this process we identified a set of variables that can predict the percentage of taxpayers in working population. Two alternatives specifications are presented

in the Table 2.3 below. Given that Figure 2.1 suggested that there was a break in the series during the period, we checked for a break in relevant years using the Quandt-Andrew test for the breakpoint (Table 2.2). The year 1999 is identified as break point by the test.

Table 2.2: Test for Breakpoint in Individual taxpayers

Quandt-Andrews unknown breakpoint test Null Hypothesis: No breakpoints within 15% trimmed data Varying regressors: All equation variables Equation Sample: 1973 to 2011 Test Sample: 1979 to 2006 Number of breaks compared: 28		
Statistic	**Value**	**Prob.**
Maximum LR F-statistic (1999)	24.22	0
Maximum Wald F-statistic (1999)	121.09	0
Exp LR F-statistic	8.83	0
Exp Wald F-statistic	57.21	0
Ave LR F-statistic	5.56	0
Ave Wald F-statistic	27.82	0

Source: Calculated
Note: probabilities calculated using Hansen's (1997) method

Table 2.3: Estimated equation for taxpayers[17]

Variable Name	**Individual Tax Payers by working population (1)**	**Individual Tax Payers by working population (2)**
Share of Construction in t-1	1.46*** (4.41)	
Share of Construction in t-1* dummy for 2001-12	1.06*** (4.86)	
Urban Gini	22.92*** (9.41)	17.97*** (7.35)
Dummy for 1999	11.98*** (8.29)	10.92*** (8.33)
Dummy for 2000	11.15*** (10.02)	12.24*** (8.52)
Share of Trade, Restaurants and hotels in GDP in t-1		
Share of trade Restaurants and hotels in t-1 *dummy for 2001-12		0.614*** (3.99)
STR using 10 Lakh income adjusted for deductions in t-1	-14.12*** (-4.75)	-15.33*** (-3.39)
Share of services other than trade and construction in t-1		
Share of services other than trade and construction in t-1*dummy for 1971-2000		0.265** (2.36)
Exports+Imports by GDP in t-1		0.24*** (4.49)
Adj R square	0.9970	0.9976

Source: Calculated
Note:
1. * significant at 10 per cent, ** significant at 5 per cent and *** significant at 1 per cent
2. t-1 in the variables refers to one period lag being used.
The values in parenthesis are the t-statistics

[17] The same equation is estimated for level of taxpayers and the results are provided in the appendix

Incorporating dummies[18] to account for the break, the estimates are presented in Table 2.3. Since the relationships are changing across the structural break, in Table 2.4 the relationships have been summarised by collating the impact of each variable in the two periods- pre and post 2001.

Table 2.4 Estimated Coefficients Pre and Post 2001

Variable Name	(1)	(2)
Share of construction in t-1Pre-2001	1.46	
Share of construction in t-1 Post-2001	2.51	
Urban Gini	22.92	17.97
Share of Trade, Restaurants and hotels in GDP in t-1 pre-2001		-
Share of Trade, Restaurants and hotels in GDP in t-1 post-2001		0.614
STR in t-1 pre 2001	-14.12	-15.33
STR post in t-1 2001	-14.12	-15.33
Share of services other than trade and construction in t-1 pre 2001		0.265
Share of services other than trade and construction in t-1 post 2001		-
Exports+Imports/GDP in t-1 pre 2001		0.24
Exports+Imports/GDP in t-1 post 2001		0.24

Source: Calculated

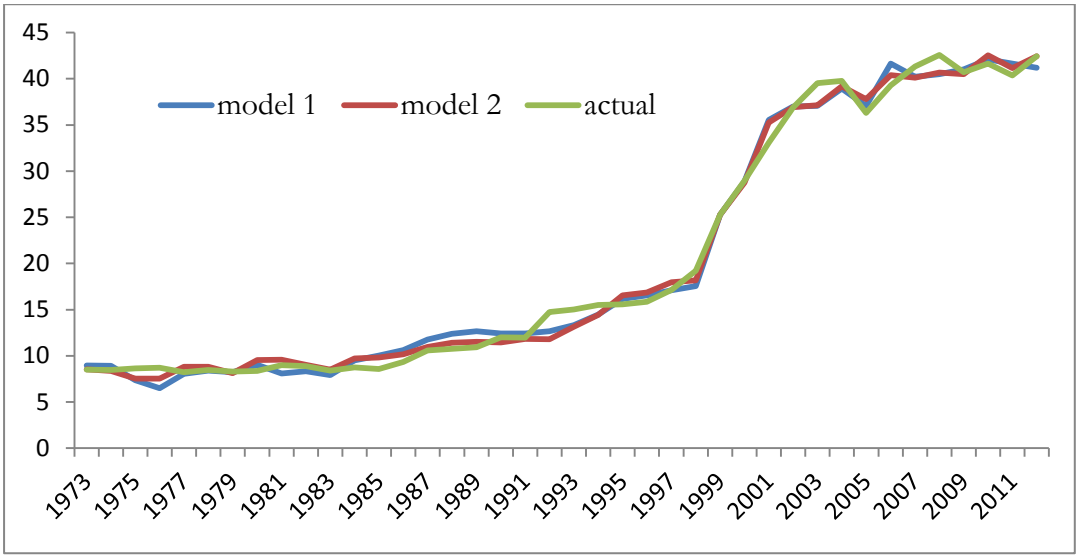
From the results of the estimated models presented in Table 2.4 it is evident that inequality measured by Gini coefficient explains the share of taxpayers in population. That is, a positive coefficient is estimated using both specifications. Increase in urban inequality is emerging as an important determinant of the number of taxpayers. Share of exports and imports have a positive impact on the proportion of taxpayers. While the services are positively correlated with the share of tax payers in both periods, it is important to note that with the introduction of the lagged value of STR some of these variables no longer remain significant. In particular, the lagged share of construction no longer remains significant. Therefore two alternative specifications are presented here – one with construction and STR and the other where construction is replaced by other services sector variables. In both specifications, determinants of number of taxpayers change across the two periods. In the first specification, the impact of a change in share of consumption is higher in the second period when compared to the first. In the second

[18] Since the break extends over more than three years, we have used three dummies – one for individual years a second for the entire period and a third to check for structural break in terms of the economic variables. For the last period, interactions dummies are used to separate the effect of levels from any changes in the impact of the different explanatory variables on the variable being explained.

specification, while "other services" emerge as important determinant in the first period, trade and transport become significant for the second period.

We compare the fit of the two models to ascertain their predictive powers, i.e. whether the chosen variables explain the changes in proportion of taxpayers (*see figure 2.2).* The figure seems to indicate that overall, both the equations seem to provide a good fit.

Figure 2.2: Predicted and actual value of taxpayers by working population

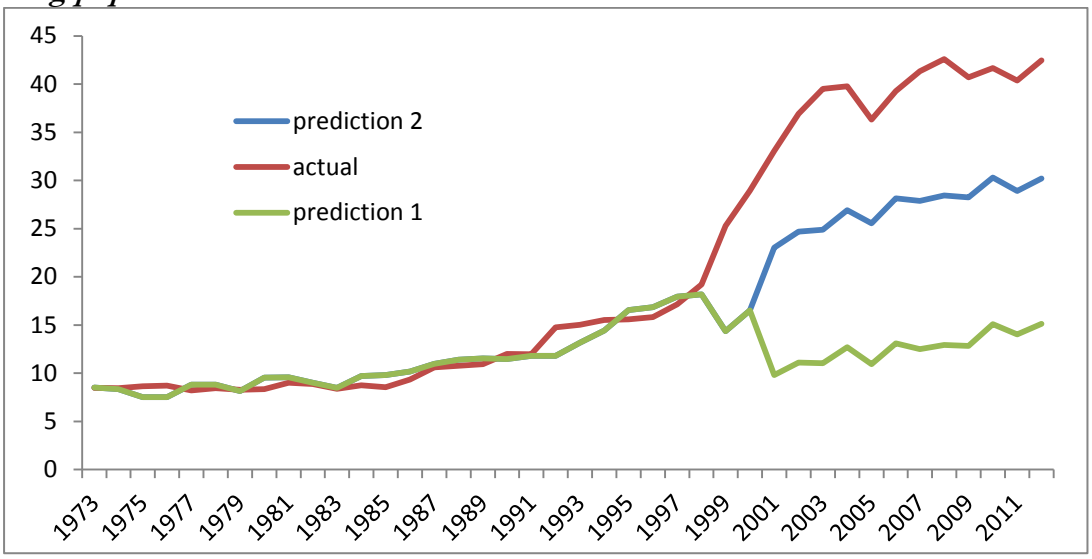


Source: Calculated

An important question to ask is whether the administrative changes brought in during 1998-2003 which are being associated with a sharp increase in the number of taxpayers resulted in a sustained increase or not. In order to explore this question, in Figure 2.3, we present the actual ratios counterposed against the predicted ratios, if the dummies are excluded from the exercise. There are possible ways of predicting – one assuming that the original relation continues till today and the second assuming that while changes in the impact of economic variables does happen, there is no change in the level. The actual number of taxpayers as a proportion of working population is considerably higher than the other two series depicted in the graph. Prediction 1 provides estimates of the ratio if the trends till 1997-98 continued till today. There is a structural break observed in 2001. Post 2001, while other services no longer affect the ratio, domestic trade emerges as an explanatory factor. Predicting the ratio with these variables gives us Prediction 2 of the graph. It is evident that in both these cases, the ratio of taxpayers to working population and by inference, the total number of taxpayers, remain considerably below the actual levels. In other words, some non-economic factors were crucially important for raising this ratio

to the current levels. From the analysis of the changes in tax policy and tax administration, it appears that these changes were driven by measures such as "1/6 scheme".

Figure 2.3: Predicted versus Actual Values: Individual Taxpayers as a proportion of working population



Source: Calculated

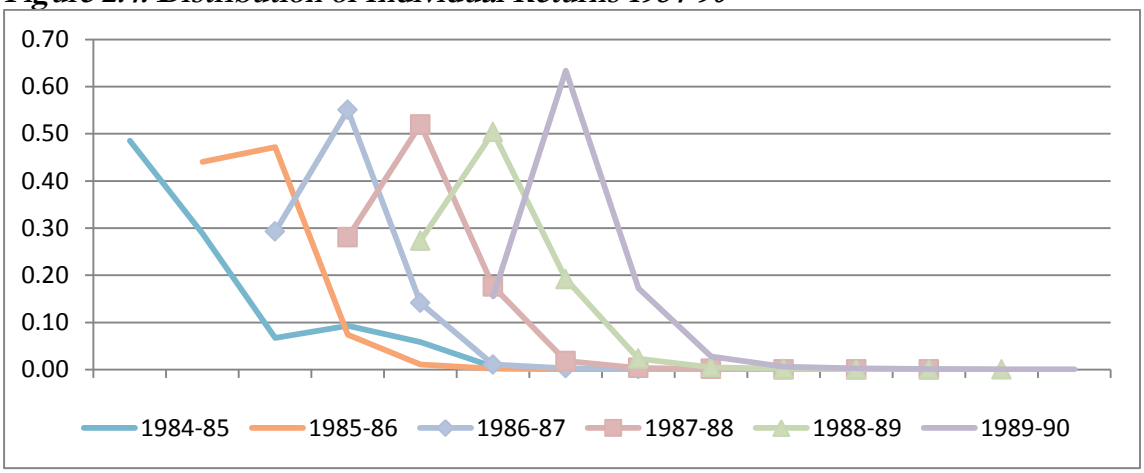
2.1.4 Changes in distribution of taxpayers across size-classes

Other than the total number of taxpayers, the underlying distribution too is of interest. It is normally argued that the income distribution of tax payers would be a lognormal distribution or a Pareto distribution with a concentration of observations at the left side, i.e., in lower income groups. It would be interesting to observe whether there are any changes in the distribution of taxpayers by income categories over the years. The All India Income Tax Statistics (AIITS) used to report the income wise classification of the individual returns. Taking the distribution, we plot the same over years to analyse in which size class is there a concentration of the taxpayers and whether there has been any change. However it is important to note that the AIITS data pertains to the number of returns for a given financial year rather than the number of taxpayers, as reported by CAG. While it would be more interesting to analyse a distribution based on number of effective assessees, since that data is not available, the present analysis uses the AIITS data. Since some alternative information was available to the study team for the year 2008-09, an attempt is made to compare the AIITS distribution with that for 2008-09 later on.

For the purpose of observing the changes in the distribution of individual tax payers over the years with more clarity, the set of graphs were clubbed into three figures, Figures 2.4 - 2.6. In

each of the figures, the graph for each year is moved forward by one space to make it easy for comparison. The graph for each year shows the share of the different size classes in the total number of returns filed, beginning with the lowest income category.

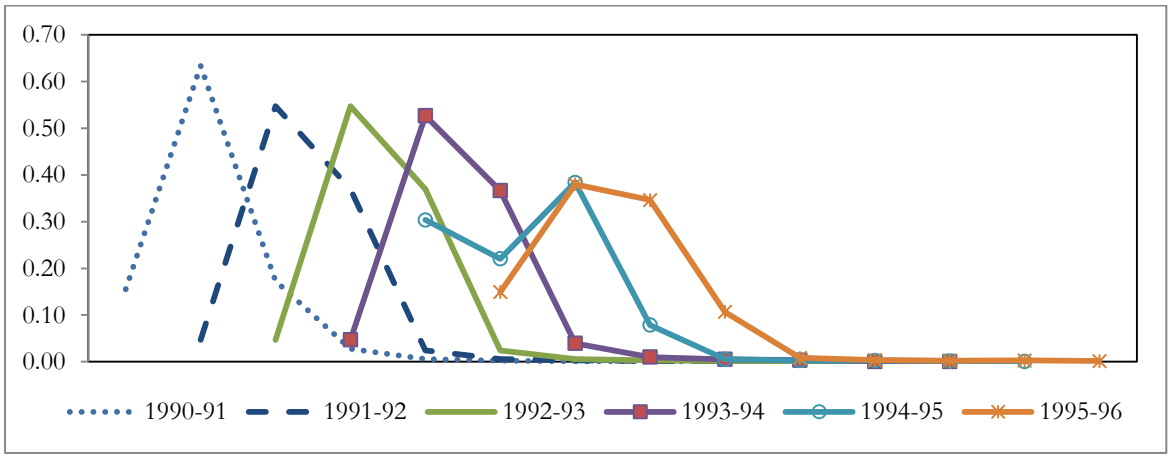
Figure 2.4: Distribution of Individual Returns 1984-90



Source: All India Income Tax Statistics

The distribution of the returns shows that over the years the number of returns in the first group that is the income close to the exemption[19] threshold has been declining whereas the largest number of returns is concentrated in the second group *(See figure 2.5)*.

Figure 2.5 Distribution of Individual Returns 1990-96

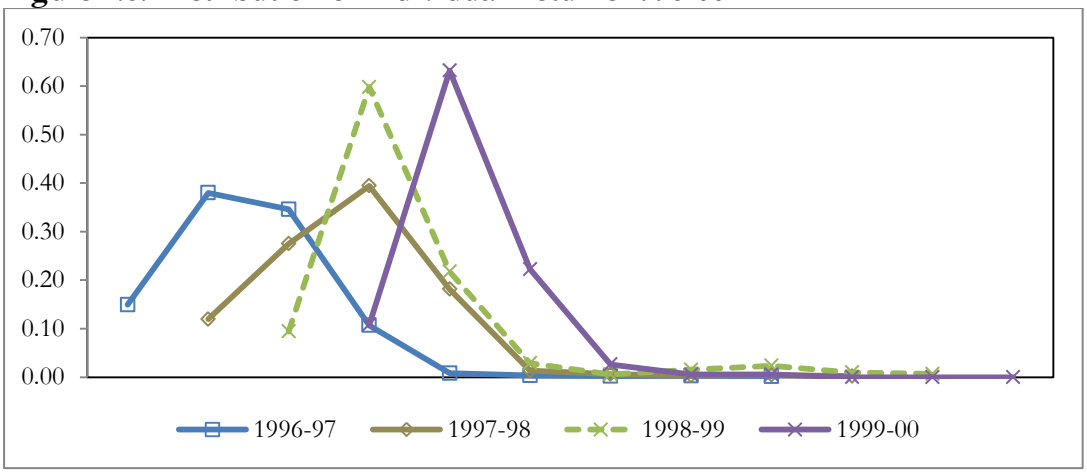


Source: All India Income Tax Statistics

The distribution of the taxpayers changed slightly after 1991, where there is increase in the number of returns in the third group (refer to the Appendix I for class intervals). The share of the third group remains more than 20 percent till 1999-2000.

19 Since the exemption limit matched the slabs reported for the lowest income group in AIITS only for the years 1997-98 and 1998-00 and in that year zero returns were mandatory, the distribution in these years may reflect the actual distribution of returns.

Figure 2.6: Distribution of Individual Returns 1996-00



Source: All India Income Tax Statistics

The concentration in the third group grew sharply (50-100) and due to the changes in the tax intervals for the years 1998-2000 this group became the second. However, for the period 1991-2000, a concentration of number of returns filed in the group of 50-100 is observed.

The above suggests that while there continues to be considerable concentration of tax payers in the lower income groups, the share of the first category being low suggests that there is possibly some non-filing happening in this category (see Table A.1 in Appendix I). People in the lowest bracket do not find it attractive to file a return. This is an aspect that needs to be addressed with concern. In the cross-section analysis, an attempt will be made to assess whether, with the limited information available on actual income distribution, there is any reason to believe that the above is not a concern.

In order to compare the distribution of the tax payers using AIITS with the information provided by the department, we inflate the annual class intervals using GDP deflator[20] (base year 2004-05) and distribute the total individual taxpayers(CAG) as per the average percentage (for 1998-99 and 1999-00) of taxpayers in each category. The class intervals were revised in these years and there is slight variation in distribution of these two years. Therefore it would be reasonable to assume that the distribution in the following years was around the average of the two years than that for either year. The purpose of this exercise to establish that if we adjust the nominal income in each of the slabs and compare it with the size class distribution reported in 2008-09, it will reveal whether the distribution has changed over time. Table 2.5 compares these two sources of information.

[20] GDP deflator, World Bank, http://data.worldbank.org/indicator/NY.GDP.DEFL.KD.ZG

Table 2.5: Distribution of Taxpayers

Source: Data provided by DG systems for Study on Unaccounted Income/Wealth both Inside and Outside the Country, NIPFP, 2013.

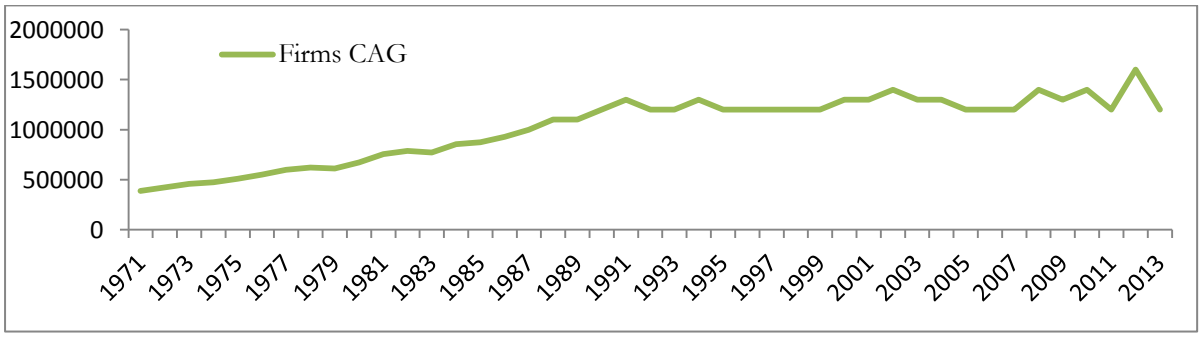
Average of 1998-99 and1999-2000 at 2008-09 prices		2008-09	
Class Interval of AIITS inflated using GDP deflator	**Percentage of taxpayers 2008-09**	**Class Interval of Taxpayers as per ITD**	**Percentage of taxpayers**
Less than 310654	93.9	< 3 Lakh	90.4
310654 to 776637	2.7	3 to 5 lakhs	5.14
776637 to 1553274	0.55	5 to 15 lakhs	3.52
1553274 to 3883185	1.04	15 to 40 lakhs	0.72
3883185 to 7766371	1.19	40 to 80 lakhs	0.16
Above 7766371	0.49	Above 80 lakhs	0.10

Comparing the two sources of information reveals that the percentage share of taxpayers in the lowest and the top three categories is more as per the distribution using AIITS than the actuals. While the shortfall in the first category may be due to the changes in filing requirements, inflation and growth in income should have increased the share of the first two categories. However, the difference in the shares in these two categories is accompanied by a concentration of taxpayers in 5-10 lakhs category. One interpretation of this trend is that the increase in income has not led to a similar increase in the taxpayers.

2.2 Firms:

To begin with, it is illustrative to look at the number of effective assessee firms being reported in the CAG database. Figure 2.7 seems to suggest that while the number of firms has been steadily increasing till 1991, in subsequent years, the numbers fluctuated between 12 lakh and 14 lakh almost through the entire period.[21]

Figure 2.7: Number of effective assessees Firms



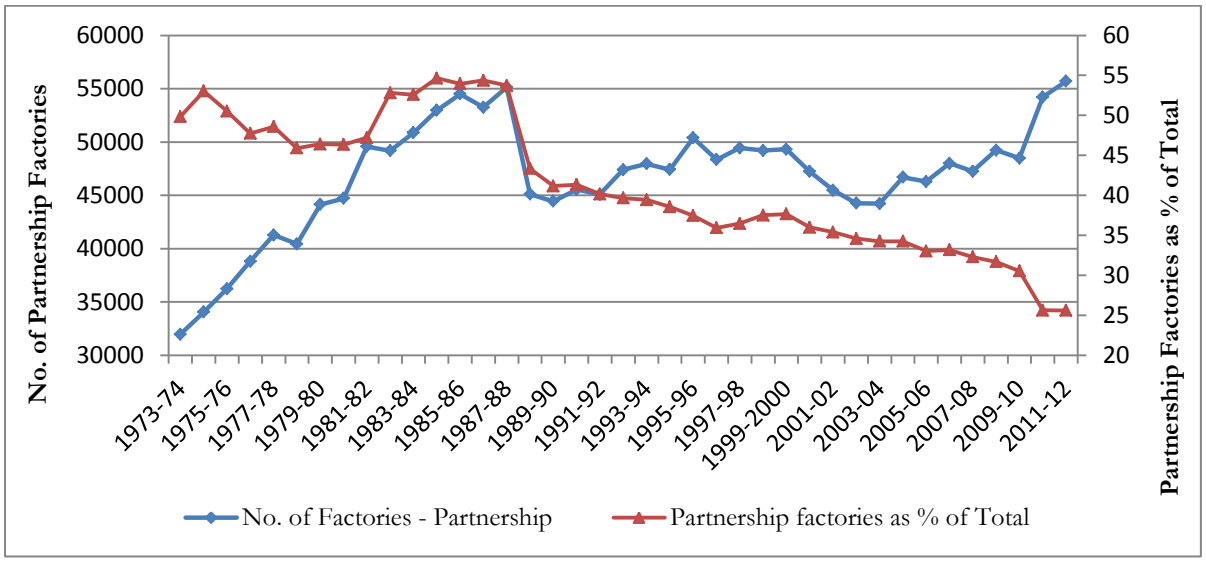
Source: Direct Taxes, Union Receipts Audit Reports, Comptroller and Auditor General of India, various years.

[21] 2011 is the only year when there is a sporadic increase to almost 16 lakh after which it returned to the 12 lakh level.

Given that there is no other time series data for all partnership firms in the country, we attempt to validate this observation with data for a subsection of the economy – manufacturing. The Annual Survey of Industries also reports information on the manufacturing sector based on form of organisation of the industry.

Figure 2.8 shows the number of partnership factories within manufacturing for the same period as above. The figure highlights the fact that the number of firms within manufacturing sector working as partnership firms was increasing till 1987-88, and after which there is a sharp fall followed by stagnant levels till 2009-10. Then, some increase is observed in last two years. If one considers the share of partnership firms in all firms, one finds that the share was stable till 1987-88 and then there is a consistent fall.

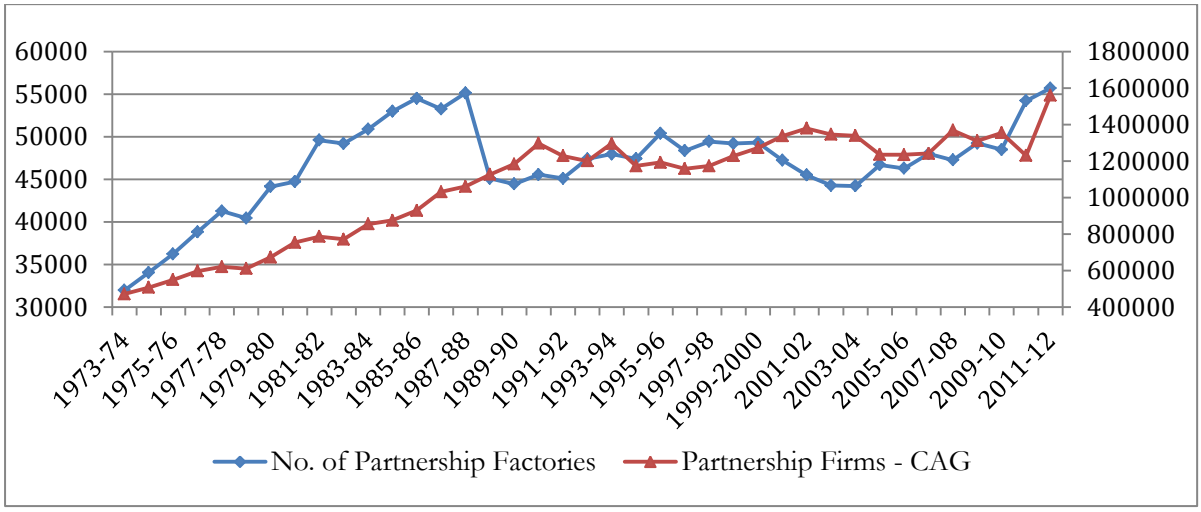
Figure 2.8: Partnership factories within manufacturing



Source: The Annual Survey of Industries, various years

Figure 2.9 compares the partnership firms as reported in ASI database and that of CAG Audit Reports. Though there is scale difference between these two datasets, as ASI database captures only factory sector (engaged in manufacturing) whereas CAG Audit Reports captures all assessees under Firms, it is evident that the two datasets show similar trends. For partnership firms in manufacturing, the fall started earlier (in 1987-88) as compared to overall partnership firms which show a change in trend since 1990-91. The stable trends of the both the datasets (during 1988-89 to 2010-11) matches and it suggests that perhaps partnership is no longer a desired form for organizing business.

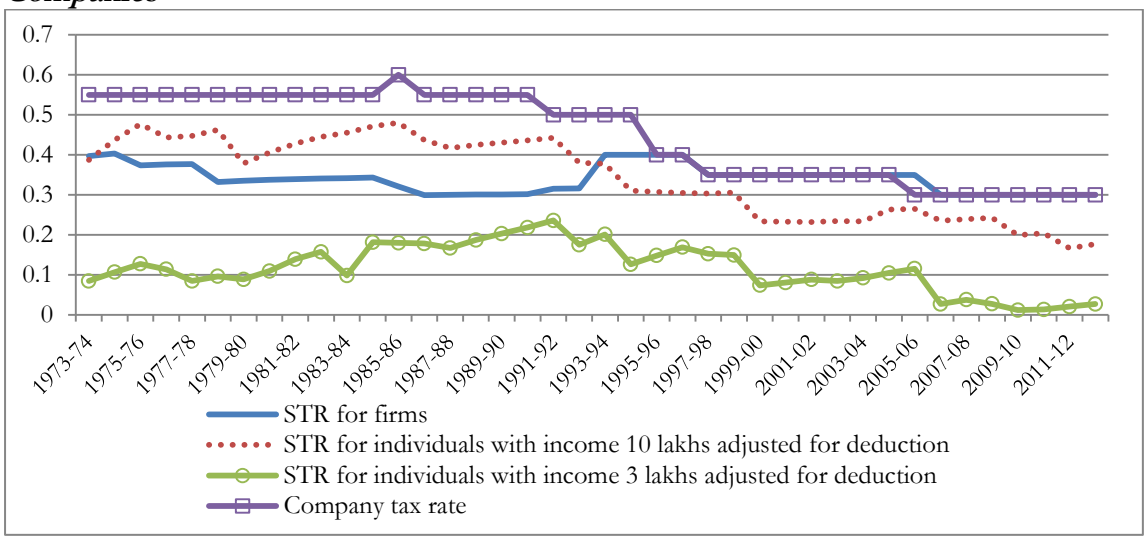
Figure 2.9: Comparison between ASI database and CAG Audit Reports.



Source: CAG reports and The Annual Survey of Industries, various years

The most crucial determinant of the choice to be a firm is the tax rate that is applicable on the income of entity. Therefore, we compare the statutory tax rates that would be applicable to companies and individuals with that of firms; these are the two alternative forms for organisation of economic activity. From figure 2.10 it is evident that in 1994 the STR applicable to individuals earning an income of 10 lakhs fell below that of a firm with a gross income of a crore[22]. Subsequently, in 1995 the STR of firms and companies converged. This may have been due to the definition change where the distinction between the registered and unregistered firms was given up. From the trends it is easy to see that if the firms were used to minimise tax liability/ effective tax rate then these incentives ceased to exist after 1995.

Figure 2.10 Statutory tax rates for Firms, individuals (3 lakhs and 10 lakhs) and Companies



Source: Calculated

[22] The rate was calculated using the rates and slabs applicable to registered firms

While the stagnation in the firm assessees can be attributed to the changes in STR, the stagnation began in 1991. There were perhaps other changes in economic policy that may have initiated the trend. Some of these are identified below.

One of the important differences between a company and a firm is the transparency associated with the former which does not apply to the latter. In accordance with the regulations under the Companies Act, the companies are required to prepare and submit to the regulator, audited accounts. In the case of firms, however, there is no such regulator and no prescribed and monitored forms of book keeping and accounting. This distinction does add to the cost of companies, but makes them more reliable or acceptable to others for investment or lending purposes. The impact of these differences was perhaps accentuated in a period when the economy was opening up and more capital flows of various kinds were becoming available.

Prior to 1991, the mobilisation of investment on the stock market through primary issue was regulated by the Controller of Capital Issues who had the responsibility of fixing the price at which a share could be issued as well. This did not allow for price discovery by the issuer and perhaps placed limits on the use of capital markets for raising equity. This scenario however changed after 1991, when the Securities and Exchanges Board of India was constituted to replace the Controller of Capital Issues. In 1992, with the incorporation National Stock Exchange, the credibility of listed entities clearly improved alongside making price discovery more transparent. Here, since only public limited companies can be listed on the stock exchange the preference for firms is expected to decrease.

In addition to the above, a number of other changes too happened. The New Industrial Policy was introduced in 1991. The important changes that the policy sought to bring in were to encourage ease of inflow of foreign capital to priority sectors either through technology agreements or direct investment. The automatic approval channel was opened to technology agreements and FDI (up to 51 per cent) was allowed in priority sectors. Since direct investment is of the form of equity participation, it would potentially make being a company relatively preferable. Further foreign entities may prefer entering into agreements with companies, since for companies, the compliance due to reporting requirements may be better as compared to firms.

In the same period (post 1991) norms relating to the external commercial borrowing by corporate undertakings too were eased. To allow flexibility to borrowers, end-use and maturity prescriptions had been substantially liberalised. Moreover, corporates were allowed to borrow up

to a certain limit under the automatic route. As a consequence between 1990-91 and 1997-98, the share of ECBs in total capital inflows increased from 31 to 40 per cent. The ceiling on external commercial borrowing has been revised periodically and the extent to which any single corporate entity can resort to external commercial borrowing has also been raised over time[23].The ease of obtaining external borrowing increases if the entity is a company since its credit history and financial position are well documented and mandatorily validated.

Another critical aspect of the new industrial policy 1991 was the changes to MRTP that primarily entailed removal of the threshold limits of assets in respect of MRTP companies and dominant undertakings. This eliminated the requirement of prior approval of Central Government for establishment of new undertakings, expansion of undertakings, merger, amalgamation and takeover and appointment of directors under certain circumstances. Given the reduction in restrictions on the size of companies, the need to use firms to avoid scrutiny may have also vanished.

The items reserved for small scale sector too have declined over time. In the years following 1997, the number of products de-reserved has increased over years[24]. This too may have contributed to the decline of firms since a larger number of products were now available to the non-SME units to produce. All of these factors, individually and collectively, could have contributed to the stagnation of number of effective assessee firms.

While these factors are important, it is important to empirically establish that the trend in the number of firms has changed over time. Further, in terms of economic indicators, it would be interesting to identify the factors which could be contributing to the growth of number of assessees in this segment of tax payers. This is attempted below.

2.2.1 Regression Analysis:

While the graph for the number effective assessee firms does suggest that there is a change in the trend in the period after 1991, it is important to validate this observation by using empirical techniques. This is the first step towards identifying the factors that could be influencing the evolution of the number of effective assessee firms in India. The analysis uses data for the period

[23] Chandrasekhar, C.P., Debt as burden, The Hindu, January 18, 2012.
http://www.thehindu.com/opinion/columns/Chandrasekhar/debt-as-burden/article2726394.ece

[24] List of Items reserved for exclusive manufacture in micro and small enterprises, Ministry of Micro, Small and Medium enterprises available at http://www.dcmsme.gov.in/publications/reserveditems/resvex.htm

1973 to 2011. To begin with it is assumed that the level of economic activity would drive the number of firms in the economy. To capture this, two variables are considered – Per capita GDP (PCGDP) and GDP from services sector (SERGDP). In addition to these variables, it is expected that since partnership firm is one of the three alternative forms of organising business, the tax rate of partnership firm when compared to the other two categories too could influence decision, as discussed above. Therefore, the ratio of statutory tax rate of companies to firms and the ratio of statutory tax rate of individual to firm are incorporated as explanatory variables. The results from this regression exercise suggest that while the impact of per capita GDP is statistically significant, the same does not hold for all the other variables considered.(Table 2.6) However, since we are interested in exploring whether there is a break in the series, we test for the same using Chow Test. The Chow test indicates that there are breaks in both 1990 and 2001 (Results reported in Table 2.7). Using this information, the equation in Table 2.6 is modified using dummies to segregate the effects across the three periods-pre 1990, 1991-2001 and post 2001. This result is reported in Table 2.8. These results suggest first, that the explanatory power of the formulation improved considerably – the adjusted R square increased from 0.82 to 0.98. Further, from the results it is evident that the impact of an increase in per capita GDP had been distinctly different in the three periods. The coefficients in the three periods are summarised in Table 2.9 below. In the first period, i.e., 1990, an increase in per capita GDP is associated with an increase in the number of firms. In the second period, the result is reversed, and an increase in per capita GDP leads to a reduction in the number of firms and finally in the third period, i.e., after 2001, there is no relation between these variables. Interestingly, while tax rates did not have a significant impact in the first regression, after incorporating the periods, both the tax ratios emerge to be significant – while an increase in the tax rate of companies vis a vis firms encourages formation of firms, the increase in the tax rate of individuals vis a vis firms discourages the formation of firms. These results are quite intuitively obvious – in the hierarchy of preferences for organising business, individual based organisation is least preferred, firms come in between and companies emerge as the most preferred form.

Table 2.6: Results

Dependent Variable	Log(No. of Firms)@	t-stat
Constant	10.26	4.39
log(Per Capita GDP)	0.3	3.87
STRCompany/STRFirm	0.28	1.33
STRIndividual/STRFirm	0.18	0.77
log(Share of GDP from Service sector)	0.09	0.11
Adj. R2		0.82
F-stat		46.05
Prob(F-stat)		0
Durbin-Watson Stat		0.51

Source : Calculated

Notes: ***, ** & * - implies estimated coefficient is significant at 0.01, 0.05 and 0.10 level respectively

Table 2.7: Chow Test

Chow Breakpoint Test: 1990 2001			
Null Hypothesis: No breaks at specified breakpoints			
Varying regressors: All equation variables			
Equation Sample: 1970 2012 IF 1972<YEAR<2012			
F-statistic	28.27012	Prob. F(10,25)	0
Log likelihood ratio	100.4101	Prob. Chi-Square(10)	0
Wald Statistic	256.6698	Prob. Chi-Square(10)	0

Source: Calculated

Table 2.8-: Modified Model 1

Dependent Variable	No. of Firms	t-stat	
Constant	6.06	7.39	***
log(Per Capita GDP)	0.44	16.53	***
Dummy for1990*log(Per Capita GDP)	-0.59	-20.65	***
STRCompany/STRFirm	0.17	2.1	**
STRIndividual/STRFirm	-0.22	-2.22	**
Dummy for1990	5.12	21.49	***
log(Share of GDP from Service sector)	1.09	4.06	***
Dummy for 2001	-1.39	-1.86	*
Dummy for 2001*log(Per Capita GDP)	0.14	1.94	*
R2	0.98		
Adj. R2	0.98		
F-stat	241.02		
Prob(F-stat)	0		
Durbin-Watson Stat	2.37		

Source : Calculated

Notes: @ - implies number of income tax assesse of partnership firms reported by Comptroller and Auditor General of India

******, ** & * - implies estimated coefficient is significant at 0.01, 0.05 and 0.10 level respectively***

Table 2.9: Comparison of coefficients across periods

	Before 1990	1990-2001	After 2001
constant	6.06	11.18	9.79
log(Per Capita GDP)	0.44	-0.15	-0.01
STRCompany/STRFirm	0.17		
STRIndividual/STRFirm	-0.22		
log((Share of GDP from Service sector))	1.09		

Source: Calculated

An alternative formulation is presented in Table 2.10. This formulation explains the changes in the number of effective assessee firms in terms of the growth rate of GDP, share of agriculture in GDP and the ratio of the tax rate for firms to companies. With these variables, it is found that with only one break incorporated through the use of Dummy, we can get a fairly good explanation of the dependent variable. The results can be summarised as follows: The three year moving average of GDP growth was positively driving the number of firms till 1990. From 1990 onwards, however, the effect reverses itself. An increase in the growth of GDP seems to result in a decline in the number of firms. The impact of the change in statutory tax rates too changes between the two periods – in the first period, the company rate was much higher than the firm rate and an increase in the ratio of firm rate to company rate suggested that the firm rate was increasing faster than the companies, thereby reducing the incentive to remain a firm. This is reflected in the fact that the coefficient of this variable is negative – the number of firms declines. In the second period, with the convergence in the rates for firms and companies, this effect disappears. As expected, a decline in the share of agriculture has resulted in an increase in the number of firms – a decline in the share of agriculture suggests that the rest of the economy is growing faster than agriculture indicating expanding economic opportunities for the firms and other players.[25]

[25] Dumm2 is a year specific dummy for 2011, when there is a sporadic surge in the number of firms, which vanishes in the next year. Since this is not a sustained change, no attempt has been made to explain this change.

Table 2.10: Model 2

Variable	No. of Firms	t-Statistic	Prob.
Three year moving average	19330	2.61	**
STRfirms/Company Rate	-2382884	-5.93	*
Constant	2394424	11.93	*
Dummy	-429915	-1.32	
Dummy* Three year moving average	-33070	-3.42	*
Dummy* SRT FIRMS/Company Rate	2117305	4.38	*
Dummy	286616	3.72	*
Share of Agriculture in GDP	-13228	-2.52	**
R-squared		0.9506	
Adjusted R-*squared*		0.9398	
F-statistic		88.07	
Prob(F-statistic)		0	
Durbin-Watson stat		1.77	

Source: Calculated

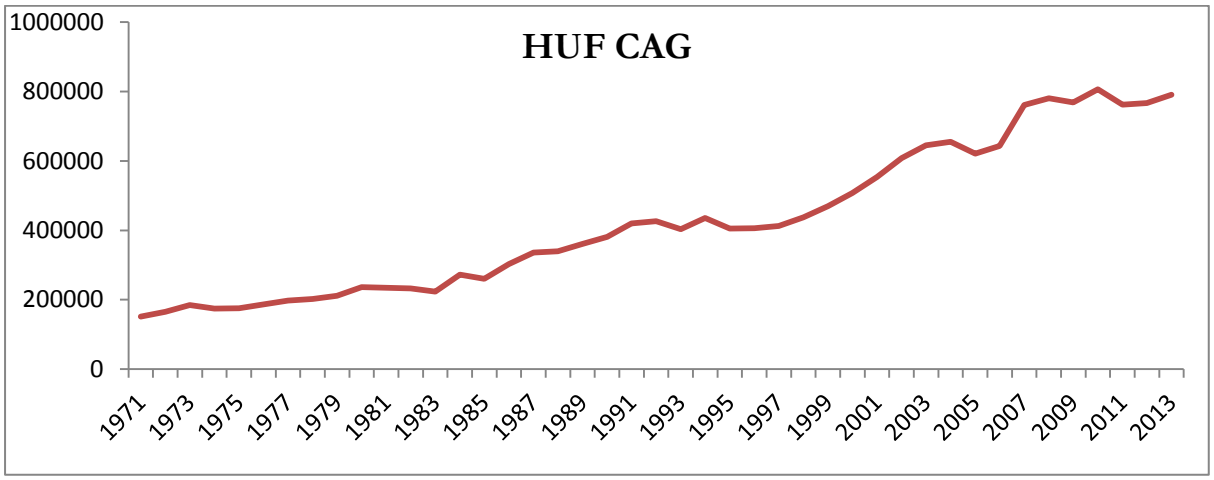
These results do validate the discussion earlier about the likely factors that could have resulted in the tapering off of the use of firms as a form of organisation of business. Whether we take the level of per capita GDP or the rate of growth of GDP, the results suggest that the positive impact of an expansion in the economy on number of firms is not visible in the period. It could perhaps be argued that the entrepreneurs might be choosing to be either individual entrepreneurs or companies rather than be partnership firms in the changed environment. This last hypothesis however cannot be completely validated through rigorous empirics since while the number of individuals and the number of companies have increased more or less consistently, the decomposition of individuals into those filing returns with business income and others is not available.

2.3 Hindu Undivided Family

We first plot the series to examine for any distinct changes in trend over the period from 1971 to 2013 (Figure 2.11). The figure reveals that there were steady increments to the number of HUF tax payers. Other than the occasional dips in the number of HUFs, observed in 1995-1997 and again in 2005-2006, the series has been steadily increasing.

The growth rate has been very erratic. Since 1998-2003, HUFs grew steadily with an average of 7.7%. Since 2004, the growth rates have been less than 5 %, 2007 being an exception registered 18% growth among HUF tax payers.

Figure 2.11 Number of Taxpayers under HUF category



Source: Direct Taxes, Union Receipts Audit Reports, Comptroller and Auditor General of India, various years.

2.3.1 Regression Analysis

While the economic rationale for setting up a HUF is far from clear, an attempt is made in this section to identify the economic factors that might be influencing the evolution of the number of HUF in the tax system. All the economic variables considered in section 2.1 are considered here as well. As a first step in the attempt to identify important variables, the correlation of the number of HUFs with a range of other economic variables is presented in Table 2.11. Most of the economic variables except inflation and inward remittances seem to be correlated to the number of HUF taxpayers.

Table 2.11 Correlations

Independent Variables	HUF Taxpayers
Urban Gini	0.5632*
Share of construction in GDP	0.9365*
Share of agriculture in GDP	-0.9547*
Share of services other than trade and construction in GDP	0.9028*
STR assuming income of 10 lakhs in 2009-10	-0.8953*
Inward remittance as a percentage of GDP	0.9168
Share Price Index	0.8937*
Share of unorganised Sector	-0.7693*
Exports plus imports as a percentage of GDP	0.9397*
Gold Price	0.8158*
Inflation	-0.0813
Log Per capita income	0.9695*
Number of tax rates	-0.8133*

Source: Calculated (for individual sources check Appendix I)
Note: Asterisk indicates significance at 5 per cent level..

2.3.2 Regression Results

Since the above variables will be correlated with each other, we attempt to identify the crucial variables by the use of stepwise regressions using these variables. The final results of the same are presented below in the table 2.12.

Table 2.12: Estimated equation for HUF taxpayers

Explanatory variables	**Coefficients**
Share of Construction in GDP	62132.7*
Share Price index	1270.6 *
STR assuming income of 10 lakhs in 2009-10 (deductions)	-391274.1*
Number of tax rates	-23852.7 *
Constant	297177.5 *
R square	0.9616

Source: Direct Taxes, Union Receipts Audit Reports, Comptroller and Auditor General of India, various years.
Note: * indicates significant at 5 per cent

The level of activity in construction is a good indicator for stock of wealth. With higher share of construction in GDP, number of HUFs is found to increase. Share price index reflects the kind of risk based returns that can be earned in the market. Even with this variable, there is a positive relation. In other words, indicators of wealth or changes in wealth appear to be important determinants of the number of HUF. Both the tax rate and the number of rates too emerge as driving down the number of HUF. With an increase in the number of tax rates, it might be attractive for an HUF to split their incomes since that would reduce the overall liability.

2.4 Conclusion

The analysis in this chapter shows that for both the individuals and firms, there is a distinct change in trend in the period considered. The same however is not evident for HUF. For the individuals, the break comes after 1998 while for firms, the break comes somewhat earlier (by 1991). Interestingly, the change in trend for these two types of entities was in opposite directions – while the number of firms stagnated, the number of individuals filing returns dramatically increased. An effort has been made to identify the various policy changes that might have induced or supported the observed changes in trend.

Further, the study does identify some variables that emerge as being important in influencing the evolution of these series. For the individuals, the important variables are share of various services in GDP, urban inequality and some indicators of trade. For the firms, apart from some

economic variables such as per capita GDP/ growth in GDP, share of agriculture/services in GDP, the differences in the tax rate between firms and companies and/or firms and individuals emerge to be important variable to explain the observed trends. These results suggest that both tax policy and other economic variables are important for determining the trends in number of effective assessees in the category of individuals and firms.

Apart from these, the other interesting result is that while it has been argued that policy and administrative measures have pulled up the number of individual taxpayers, once the administrative measures have been withdrawn, the total number of assessees has not dropped off. It is observed that the sensitivity of the variable to some economic variables is weaker in the second period, suggesting that there might be some slackening in the growth of number of assessees. In other words, relying on changes in the economy to bring in more assessees into the system may not be as effective as alternative administrative measures which could be faster in achieving the same goal.

Chapter 3: Cross Section Analysis

Chapter 2 provided an analysis of the trends in the number of returns filed by individuals and firms. While this analysis did indicate that there are some significant changes in the trends and identified some of the factors that contributed to the changes in the trends, it did not provide any mechanism for identifying the total number of potential tax payers that should be in the system. In an attempt to work in this direction, the present chapter undertakes an analysis of cross section data. The analysis uses alternative sources of information on incomes earned by individuals and firms and attempts to identify the potential number of tax payers for the tax regime.

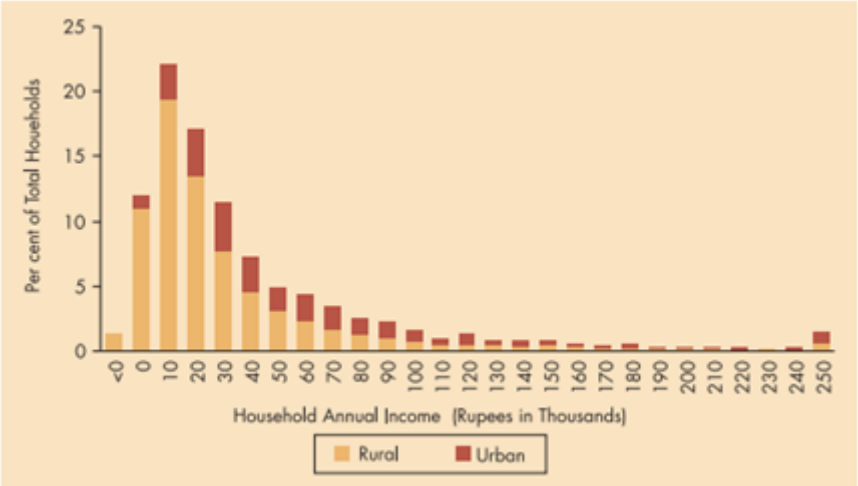
The chapter is organized into three parts. Section 3.1 analyses the available information for individuals, section 3.2 looks at the evidence for firms and section 3.3 provides some concluding remarks.

3.1. Individual Tax Payers:

As discussed in Chapter 1, given the constraints in the availability of data for cross section distribution of income, we work with the income data provided in the India Human Development Survey (IHDS) survey for the year 2004-05. This is a sample survey conducted across the country to look at the human development related indicators. The survey also collects information about the income profile of the households (HH) and their consumption expenditure. Thus, from this survey, we get income distribution of the household and also information on their consumption expenditure. Since agricultural income is exempt from income tax in India, for the purpose of our analysis, we look at the non-agricultural income of the households.

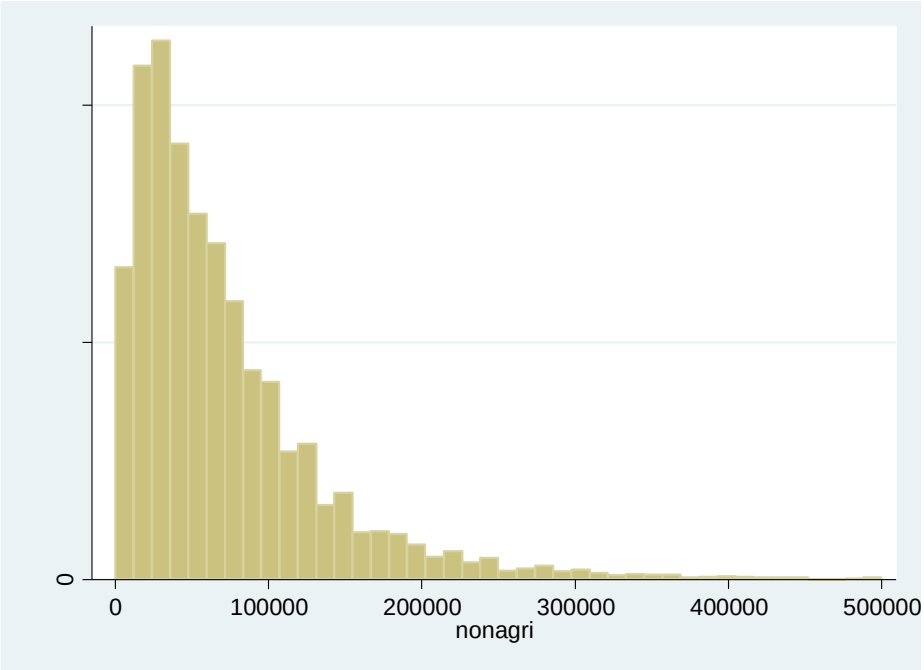
The annual household income distribution from the IHDS for the year 2004-05 is given in the Figure 3.1 and the distribution using non-agricultural income is given in Figure 3.2. As per the income tax slab corresponding to this year, income up to Rs. 50000 was not chargeable to tax i.e. individuals earning income up to Rs 50000 or below did not have to pay tax and hence did not have to file tax return. Using this information, we look at the income distribution of the year to see approximately what percentage of individuals had an income of Rs. 50001 or more. The cut-off percentile to file the return is reported in Table 3.1.

Figure 3.1: Annual Household income distribution



Source: IHDS 2004-05 survey data.

Figure 3.2: Distribution of Annual Household Non-agriculture Income



Source: IHDS 2004-05 survey data.

Table 3.1: Percentile at the taxable income of Rs. 50000 (2004-05)

Income in Rs.	Total Income percentile	Non-agriculture Income percentile
50000	70.5%	76.8%
100000	88.2%	90.4%

Source: IHDS survey data 2004-05

This analysis is based on household income.[26]To obtain the number of individual tax payers, therefore some assumptions need to be made on the number of income generating individuals in the household. Table 3.2 provides alternative scenarios corresponding to different assumptions. For instance, if we assume that on an average, there are two income generating individuals in the household, then only households with income greater than around Rs 100000 should be filing returns. By this measure, there are approximately 11.8% of the household with income above Rs 1 lakh. As per the IHDS data, the average family size is 5.2. The estimated population of India in this year was 1090 million. Thus, the number of household is approximately 209.6 million. 11.8 percent of these households would have taxable income, each with two earners. Thus, the number of individuals who should be filing returns would be approximately 3.66% of the population (approx. 40 million) for the year 2004-05.

Now if we assume that half of the households have only one earners and the other half has two earners each, then the estimated number of tax filers are 4.07% of the population (approx. 44 million). Considering the other extreme that there was only one earner per family, the number of tax payers are derived to be 4.47 percent (i.e., 49 million). These figures are quite different from actual number of effective assessees in 2004-05, which is 24.8 million.

Table 3.2: The estimated number of tax filers for the year 2004-05

	Non Agricultural Income	
	% of population that should filing return	**Number of individuals that should be in the tax net**
All HH with two individual earners	3.66%	40 million
Half with one and half with two earners in the HH	4.07%	44 million
3/4th of HH with single earner and 1/4th with double income earner	4.27%	46 million
All Single earner HH	4.47%	49 million

Source: Calculated using IHDS survey data 2004-05

For exploring an alternative scenario, if all income were taxable, the number of taxable individuals can be similarly computed. These are reported in Table 3.3. The results suggest that if agricultural income were also subject to tax, the number of potential tax payers would be considerably higher. It is important to recognize that these are all individuals with incomes above the statutorily defined exemption threshold.

[26] The IHDS survey does collect information on incomes earned by individuals for most of the economic activities, but does not assign incomes earned from all sources to the individuals in the family. For instance, the incomes from interest etc as well as income from sale of property are not explicitly assigned to any individual member of the household.

Table 3.3: The estimated number of tax filers for the year 2004-05

	Total Income	
	% of population that should filing return	**Number of individuals that should be in the tax net**
All households have 2 earners	4.55%	50 million
50% households have 2 earners	5.11%	56 million
25% households have 2 earners	5.39%	59 million
All households have one earner	5.67%	62 million

Source: Calculated using IHDS survey data 2004-05

The discussion so far indicates that for the benchmark year, the number of tax payers is considerably lower than the potential number of tax payers as estimated from the IHDS. The survey and the corresponding analysis are for the year 2004-05. For the analysis to be relevant for more recent years, it is necessary to find ways of updating the series to a more recent period. There are two alternative ways of undertaking this exercise:

i. Using the income distribution from the IHDS data, a new series can be obtained by correcting the incomes for all individuals in the economy with inflation. The new distribution of income for people above the exemption threshold can then be compared to number of returns filed for the year 2011-12. The differences observed between these two series would be a reflection of two factors – first, changes resulting from the increase in real income and any associated changes in inequality, and second, non-compliance by some segments of the economy.

ii. Using IHDS data, we estimate a relation between income and consumption and other family characteristics for 2004-05. This model is then used to "predict" the income corresponding to consumption reported in the NSSO surveys for recent years. The distribution of income so obtained can be used to infer about the number of tax payers who should be in the tax system today.

In the first part of the analysis some alternative scenarios are considered, and we provide estimates of the number of potential taxpayers in each of these cases. This is followed by a discussion of the profiling to the extent it is permitted by the available data.

3.1.1 Approach 1: Using Growth in Income to generate new Distribution of Income

The information in IHDS relates to the year 2004-05. Two alternative assumptions have been used to correct each of the income streams for the sample households – first, by using the nominal growth in GDP for the relevant activity. For instance, for business income, the growth

in non-agricultural GDP in nominal terms was used. This would capture the effect of both inflation and increase in real incomes. In some cases, if an appropriate deflator is not available, we have corrected only to the extent of inflation in the economy as measured. The second scenario uses growth in nominal per capita GDP as the uniform factor of correction for all kinds of income. The different sources of income in the study and the corresponding correction factors used are presented in Table 3.4 below.

Table 3.4: Correction Factors used to generate Income Distribution for 2011-12

Source of Income	Nature of Correction Factor	Value of Correction Factor
Scenario 1		
Wages and Salaries	Percentage increase in per capita compensation to employees in nominal terms in organized sector in India	2.550
Business Income	Percentage increase in non-agricultural GDP in nominal terms	2.86269
Animal Husbandry	Percentage increase in agricultural GDP in nominal terms	2.5923
Income from sale of non-agricultural property	Inflation measured using GDP deflator	1.59
Income from house renting of property	Inflation measured using GDP deflator	1.59
Income from pensions from private work	Inflation measured using GDP deflator	1.59
Scenario 2		
All incomes	Increase in nominal per capita income	2.54695

Source: Calculated

Applying these correction factors to the incomes of individual households, we have computed projected incomes for 2011-12. Of these incomes, only those that would be subject to taxation are added to get the taxable income of the household. These would include wages and salaries from non-agricultural activities, sale of non-agricultural land, business income, income from animal husbandry and others. The category "Others" includes income from property, pensions, interest and dividends. The total of these incomes is used to obtain an estimate of the number of households, which should be paying tax. Once again, as in the earlier section, some assumptions need to be made regarding the number of income earners in each household. The number of potential tax payers under the two scenarios is presented in Table 3.5 below. From the table it is evident that, under all assumptions in both scenarios, the number of potential tax payers is higher than the actual number of tax payers. The results suggest that there exists a significant scope for increasing the number of people filing returns in the country.

Table 3.5: Estimates of Taxpayers Under different Scenarios Using IHDS for 2011-12

	Scenario 1 Using Sectoral GDP deflator		**Scenario 2 Using growth in per capita GDP**	
Assumptions	Total Number	As % of Population	Total Number	As % of Population
50% households have 2 earners	28.15 million	2.34	27.54 million	2.29
25% households have 2 earners	31.93 million	2.66	31.26 million	2.6
All households have one earner	35.723 million	2.98	34.98 million	2.91
Actual returns from ITD	26.10 million	2.17		

Source: Calculated

The IHDS survey does provide information on the income earning by members of the household for most sources of income. An attempt is made to construct income distribution by individuals from this database as well and the data is brought to present date by using the inflation correction factor. Table 3.6 provides an estimate of the number share of potential tax payers in the population under three alternative assumptions. (See Appendix II– for a discussion of the methodology adopted to arrive at these numbers.)

Table 3.6 Estimates of Potential Tax Payers to Population: 2011-12

Alternative Assumptions	**Percentage share of taxpayers**
1. Business income is split amongst all working in the business	2.35
2. Business income is assigned to head of household	2.53
3. Business income is assigned to one person working in business	2.44

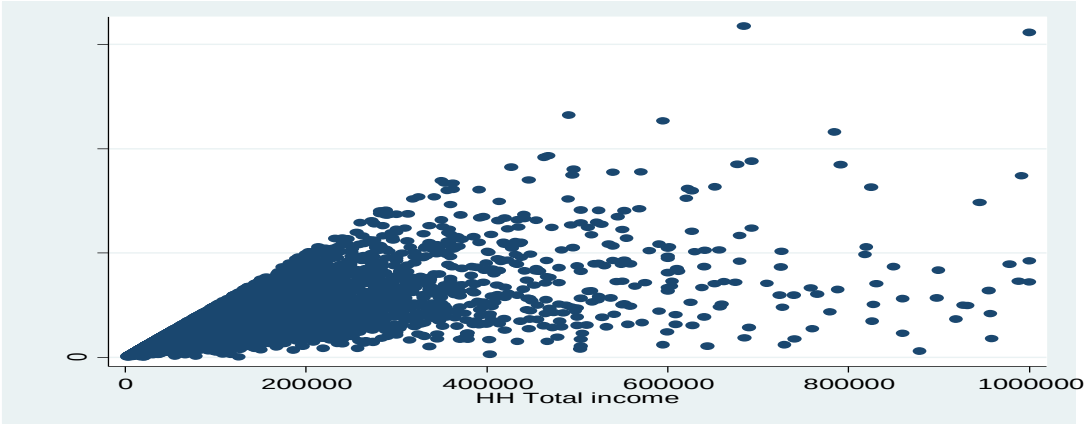
Source: Calculated

3.1.2 Approach 2: Utilizing the information in consumption expenditure for approximating income

The IHDS data is available for only one year (2004-05) whereas the consumption data by NSSO is available for a year as recent as 2011-12 (68th round). Thus if we develop a framework where the information in consumption expenditure can be used to get an approximate income distribution from the IHDS data, then the same framework can be utilized to generate the income distribution for the recent years using the corresponding consumption expenditure survey data.

From the Figure 3.3, we observe that while there is a strong relation between income and consumption expenditure for lower income ranges, it weakens as the income of the households increases.

Figure 3.3: Income vs. Consumption for the households for year 2004-05



Source: Constructed using from IHDS data

We also observe that the relationship is significantly different for rural and urban household; and also for the indebted and non-indebted households. Classifying households into these four categories, and into deciles, an estimate of the relation between the income and consumption of the households is obtained. This relation is obtained both for total income and non-agricultural income. These relationships are applied to the household consumption expenditure data obtained from NSS for 2011-12 to obtain a distribution of income[27]. Tables 3.7 provide estimates of the potential number of taxpayers under alternative assumptions on the number of taxpayers in each household. The tables show two important features:

1. The number of taxpayers in the system matches those predicted by the survey if one assumes that the half the households have two earners. If the number of households with two earners is less than half, the number of taxpayers as per this approach is higher than the total number of taxpayers reported to be within the system.
2. Total number of potential taxpayers estimated by the first method is more than the total number estimated by the second method. This could suggest that changes in the income distribution as reflected in the consumption expenditure in the period since 2004-05 has resulted in a smaller number of individuals crossing the exemption threshold. If we consider the mean value of urban consumption by top 20 percentile divided by bottom 20 percentile, this ratio has increased from 2.56 in 2004-05 to 2.73 2011-12. Therefore, it is possible that income has become more concentrated.

[27] A detailed discussion of the method and the corrections applied are discussed in section 4 of chapter 5.

Table 3.7: Number of Taxpayers as percentage of total population (based on Non-Agricultural Income)

	Based on NSS-68th round
Half with one and half with two earners in the HH	2.23%
3/4th of HH with single earner and 1/4th with double income earner	2.57%
All Single earner HH	2.90%

Source: Calculated using NSSO 68th Round

3.1.3 Profiling of Individual Tax Payers

While the number of potential tax payers is higher than the actual number of returns filed, it would be useful to know at least by an income classification, in which categories the difference is the largest. Table 3.8 provides a classification of the households by size of income, when compared to the size classification of individual tax payers. Before looking at the table 3.8, it is important to recognize that the two sets of numbers are not immediately comparable, since the former talks about the number of households while the latter talks about the number of individuals. The only assumption under which these numbers will be comparable is when all households have only one income earner each.

Turning to the table 3.8, one exclusion that needs to be mentioned upfront is that the lowest income category – of incomes less than Rs 2 lakh has been excluded from the analysis since the number of households in this category would be very large and a significant number of them would not be liable to tax. Therefore, the number of returns and the number households would not match. A preliminary comparison of the data for this category suggests that the number of households with income above the exemption threshold but less than Rs 2 lakh is about 11.25 million in Scenario 1 and 11 million in the Scenario 2 as compared to 9 million from income tax data. The 9 million from the income tax department could be including nil returns as well, by individuals with income below the exemption threshold. If so, the missing numbers in the range 1.6 lakh to 2 lakh would be even starker.

Turning to the other categories, in the lower income categories, the comparison suggests that the income tax department records a smaller number of returns while in the higher income brackets, the numbers in the income tax department records are higher. This is not to suggest that those in the higher brackets correctly report all their income.

It may be mentioned that this projection of income is based on the assumption that there is no change in the inequality of income. An increase in inequality is likely to increase the incomes of

the higher income groups, which in turn would either result in an increase in the total tax collected – if incomes accrues to already taxed individuals – or to an increase in the number of people liable to pay tax, if the income accrues to individuals who were hitherto exempt from taxation. This is indicated by the results in chapter 2 as well.

Table 3.8: Size Distribution of Taxable individuals (in %)

Gross Income classes	**Scenario 1**	**ITD Data**	**Scenario 2**
2 lakh – 3 lakh	50.2	24.3	49.2
3 lakh – 4 lakh	23.2	11.8	25.1
4 lakh – 5 lakh	11.3	8.1	10.5
5 lakh – 8 lakh	10.3	11.9	10.6
8 lakh – 10 lakh	2.2	2.8	1.19
10 lakh – 12 lakh	1	1.6	0.8
12 lakh – 15 lakh	0.8	1.4	0.6
15 lakh – 20 lakh	0.5	1.1	0.1
20 lakh – 25 lakh	0.2	0.6	0.2
25 lakh – 50 lakh	0.2	0.8	1
50 lakh – 100 lakh	0	0.3	0
Above 100 lakh	0	0.1	0
Total number of returns	30.5 million	26.1 million	29.3 million

Source: Calculated using data from Income Tax Department
Note: This table is worked out on the assumption that there is one earner per household

Taking the alternative approach of using income reported within the survey itself, this income distribution of individuals with incomes higher than the exemption threshold too can be compared to the data provided by the Income Tax Department (Table 3.9). This comparison reveals that while for two income categories, the survey throws up more people, in all other income categories, the Income Tax data shows more numbers. In these two categories, the difference is about 70 lakh. From these results, two implications can be drawn – the survey may not be adequately covering the higher income groups. For the lower income groups, it is possible that individuals either report lower than their true income or do not file at all.

Table 3.9: Number of Assessees: Survey versus Income Tax

Income category	Survey	Income Tax Department Data
Upto Rs 2 lakh	49.05493	91.39131
2 Lakh to 3 lakh	131.12272	63.34210
3 lakh to 4 lakh	58.93167	30.92931
4 lakh to 5 lakh	22.77278	21.11977
5 lakh to 10 lakh	19.89180	38.46797
10 lakh to 15 lakh	2.15872	8.01609
15 lakh to 20 lakh	0.49746	2.97334
20 lakh to 25 lakh	0.35617	1.55172
25 lakh to 50 lakh	0.24123	2.09772
50 lakh to 1 crore	0.05062	0.70597
1 crore to 5 crore	0.05361	0.38325
5 crore to 10 crore	0	2500
More than 10 crore	0	1416
Total Taxpayers	28513171	26101771

Source: Calculated using NSSO (2012) and data obtained from Income Tax Department

To get some more insights into profile of taxpayers, Table 3.10 presents a comparison of the estimates of individuals reporting different combinations of incomes. The table shows that while the survey has a large fraction of people reporting only salary, or only business, in the income tax data, there are a larger proportion of people reporting incomes from multiple sources. This distinct difference could be a result of inadequate coverage of higher income groups. The other difference that becomes evident is that while survey shows a predominance of salary incomes, the income tax data has a relatively larger representation of business incomes. This feature could be a reflection of the differences in the definition of salary in common parlance when compared to definition of salary for income tax purposes. In the latter, an individual employed as a consultant with a fixed fee per month would file ITR4 with income from business, but in common parlance, these individuals would be considered to be earning a salary.

In terms of size classification, if the entire sample is divided into those with no business income (ITR1 and ITR2) and those with business incomes (ITR4, 4S), then the profile indicates that in the salary earners, there is a bunching of individuals in the 2-4 lakh categories. In the Income Tax Returns, they are more evenly distributed up to incomes of 10 lakh. On the other hand, in business incomes, there is a concentration in the less than 2 lakh category while, the distribution in the survey is more spread out. This could possibly be a reflection of two factors: first, if the distortion because of mismatch in definition of salary is different across sectors. Second, if business earners report more incomes in survey than in the income tax return.

Table 3.10: Comparison of Income sources

Category	Percentage as per Survey	Percentage as per ITD
Only salary	68.5	27.0[a]
Only Business	20.4	
Only Salary and Business	2.0	2.5[b]
Only other income	1.3	10.8[c]
Salary and other income	5.3	10.7[d]
Business and other income	2.1	45.3[e]
Business and salary with other income	0.4	3.7[f]

Source: Calculated using NSSO (2012) and data obtained from Income Tax Department

Note: Since it is not possible to segregate only business from business with other incomes, in the survey business plus business and other incomes can be compared with the total business and others as per ITD. The difference shows up in other incomes, where ITD reports higher percentages.

a. ***ITR 1 and 2: total returns less others***
b. ***ITR 4: total returns less business and others and business plus salary plus incomes***
c. ***ITR 1 and 2: total returns less salary with others***
d. ***ITR 1and 2: total salary returns less only salary returns***
e. ***ITR 4 : returns reporting business minus salary***
f. ***ITR 4: returns reporting salary***

Table 3.11 profile of salary versus business income earners (in per cent)

Category	ITR1 and 2 as per ITD	Individuals reporting salary and other incomes as per survey	ITR 4 and 4S	Individuals reporting business and Salary incomes
0 to 2 lakhs	22.7	19.73	46.6	9.6
2 to 3 lakhs	19.7	45.88	28.5	46.3
3 to 4 lakhs	14.6	21.75	9.2	17.4
4 to 5 lakhs	11.8	7.08	4.6	10.7
5 to 10 lakhs	22.2	5.25	6.1	12.2
10 to 15 lakhs	4.7	0.24	1.6	2.3
15 to 20 lakhs	1.7	0.05	0.8	0.6
20 to 25 lakhs	0.9	0.02	0.7	0.4
25 to 50 lakhs	1.1	0	0.6	0.3
50 lakhs to 1 Crore	0.3	0	0.3	0.1
1 crore to 5 crores	0.2	0	0.5	0.1
5 crore to 10 crore	0.0	0	0.2	0.0
>10 crore	0.0	0	0.1	0.0

Source: Calculated using NSSO (2012) and data obtained from Income Tax Department

From the profiling, it appears that there is significant under-reporting in number of salaried tax payers. This however does not manifest itself in business. In fact, in business, the number of

returns is larger than the numbers being reported by the survey. This could be due to a difference in the understanding of the definition of salary for the two purposes. We classified the business incomes earned by individuals in the survey, as per the categories specified by the income tax department. While in the survey there is sector related information for 99 per cent of the surveyed households, in the information provided by the department, information is available for only 53 per cent of the returns. Therefore, it is not possible to make a comparison of the number of taxpayers in each sector. As an alternative, we can look at the sector wise composition of taxpayers. The percentage share of taxpayers with business income and business and salary is compared with the sector distribution of taxpayers in ITR 4 and 4S. Before presenting the results, it is important to mention that the classification of activities in the survey and by the ITD are quite different – the ITD has categories like commission agent and professionals which are not found in the survey. In the survey these individuals would be perhaps be clubbed with the kind of activity they are associated with. An attempt has been made to bring the numbers as close to being comparable as possible. The table 3.12 summarizes the results.

Table 3.12: Sector-wise shares of taxpayers

Sector	**%_of taxpayers as per ITD**	**%_ of taxpayers as per survey**
Manufacturing	8.6	13.2
Trading	35.9	50.9
commission agents	14.0	1.6
builders, estate agents	1.1	4.6
contractors	10.5	0.7
Professionals	12.2	1.4
Service sector	15.3	21.3
Financial services	1.9	4.1
Entertainment industry	0.4	0.0
Others	-	2.1

Source: NSSO (2012) and Income Tax Department

In most sectors for which there appears to be a correspondence between the ITDs definition and the survey's broad definition, the survey shows higher shares than the income tax return data. This could be a result of the fact that a set of agents reporting to be commission agents, professionals etc. are not adequately captured in the survey or because the agents are accounted for in the sectors of economic activity they are associated with. For instance, if commission agents are largely related to trade, then clubbing these two categories together brings ITD's numbers and the numbers from the survey closer together. For better profiling of non-filers and to get a sense of whether filers are reporting appropriate levels of income, it would be useful for the department to make it mandatory for people with business income to incorporate a sector

and/or multiple sectors in their return. In addition, the department could attempt to bring greater convergence between the activity codes used in the returns and the activity codes used in the rest of the economy.

3.2 Firms

In terms of Section 139 (1) of the Income Tax Act, every person whose total income during the year exceeded the maximum amount not chargeable to tax was required to file a return of income. Companies are chargeable on all income and hence were technically required to file returns of income. However, the department noticed that companies that had incurred losses were not filing returns of income. Therefore, Finance Act, 2001 amended Section 139 to provide that every company is required to file a return even if it had incurred a loss. Thereafter, Finance Act, 2005 stipulated that all partnership firms should file their return of income irrespective of their level of income.[28] The relevant section of the Income Tax Act is reproduced below.

In attempting a cross section analysis of firms, we need to use alternative information on the number and distribution of firms in the country. As discussed in Chapter 2, since there is no regulatory mechanism in place to monitor the creation, growth and possible dissolution of firms, there is no formal source of information on the same. While there is the Sixth Economic Census of all firms undertaken by the MoS&PI during January 2013 to April 2014, the results of the census are not yet available for analysis. What we do have are the results of a Survey of Unincorporated Non-Agricultural Enterprises by NSSO for the year 2010-11. The survey provides information on a large number of variables which capture not only the sectors and the size of the firms but also their turnover and incomes. The following section is based on the information available from this survey.

NSSO has conducted Survey of Unincorporated Non-Agricultural Enterprises (excluding construction) in July 2010 – June 2011 and unit level data is analysed for our exercise (NSSO

[28] Return of income.
139. [(1) Every person,—
(*a*) being a company [or a firm]; or
(*b*) being a person other than a company [or a firm], if his total income or the total income of any other person in respect of which he is assessable under this Act during the previous year exceeded the maximum amount which is not chargeable to income-tax,
shall, on or before the due date, furnish a return of his income or the income of such other person during the previous year, in the prescribed form and verified in the prescribed manner and setting forth such other particulars as may be prescribed :"
Note:
The phrase [or a firm] was inserted by the Finance Act, 2005, w.e.f. 1-4-2006.

2012).[29] In Table 3.13, we compare number of assessees under ITR 5 for financial year 2009-10 with the latest NSS survey of unincorporated enterprises. Since the survey was conducted during July 2010-June 2011, the information of the financial year 2010-11 would not yet be available to the firms and hence it is assumed that the information provided by the firms would correspond to the assessee data for 2009-10. The first result obtained from a comparison of the total number of assessees in the Income Tax Database when compared to the numbers in the survey is that the numbers in the Income Tax Database is considerably smaller than those in the survey – the Survey indicates that the estimated number of partnership firms is 11, 25,693 while the number of returns filed is 4, 87,057. Given that the law stipulates that all partnership firms should be filing returns, this suggests that less than 45 percent of the firms are actually filing returns as per the law.

Taking this exercise to the next step, it is useful to get some further details on the kinds of firms that are not complying with the requirements of the law. To begin with, an attempt is made to examine the size class wise distribution of firms. This comparison is presented in Table 3.13. For NSS unit level data, we have taken net surplus which is comparable to size class of net income as given by the IT Department.[30] This comparison throws up some surprising results –the number of partnership firms reported in NSS survey is lower than that of assessee numbers as we get from the IT Department database for most of the income categories considered. The exceptions are the first two net income size classes and size class 11 (i.e., Rs. 60 lakh to 70 lakh).

The observed differences in the distribution of firms suggest two possibilities:

1. First, there is considerable under-reporting in the lower income categories of firms. It can be argued that the compliance cost for small firms would be high, and hence they choose to remain outside the income tax net. It the policy makers are sympathetic to this view, and then by law, these small firms should be excluded from the requirement of filing of return. Alternatively, it could be argued that the law needs to be complied with – in which case, simplification of procedures along with other administrative measures need to be taken to ensure that returns do get filed. An essential pre-condition for the same, is the generation of a reliable database by agencies other than the Income Tax Department as well.

[29] Survey on Unincorporated Non-agricultural Enterprises (Excluding Construction): NSS 67th Round: July 2010 - June 2011, National Sample Survey Office, M/o Statistics and Programme Implementation(MOSPI),Government of India (GOI)
30 Net Surplus = Total Receipts – Total Operating Expenses – Distributive Expenses – Total Emoluments – Rent Payable – Interest Payable. We have left out those firms showing zero Net Surplus from our analysis.

2. The second possibility is that there are a number of paper firms undertaking diligent filing of returns. These may not have a physical presence, and hence may not get reflected in surveys and censuses done. This can be validated when the results of the census become available.

Table 3.13: Income Based Comparison of Number of Assessee Firms

	SIZE CLASS (Net income as per return - Part B-TI, Item 13)	No of Assessee ITR5: 2009-10 (A)	ITR5-2009-10 (% share)	No. of Partnership Firms (NSS) (B)	% share
1	< Rs. 5 Lakh	397,497	81.6	1,047,846	93.08
2	5 lakh to 10 lakh	34,848	7.2	49,314	4.38
3	10 lakh to 15 lakh	14,567	3.0	10,022	0.89
4	15 lakh to 20 lakh	8,418	1.7	3,428	0.30
5	20 lakh to 25 lakh	5,409	1.1	3,033	0.27
6	25 lakh to 30 lakh	3,830	0.8	1,901	0.17
7	30 lakh to 35 lakh	2,935	0.6	2,307	0.20
8	35 lakh to 40 lakh	2,149	0.4	1,749	0.16
9	40 lakh to 50 lakh	3,287	0.7	1,355	0.12
10	40 lakh to 60 lakh	2,277	0.5	587	0.05
11	60 lakh to 70 lakh	1,742	0.4	2,801	0.25
12	70 lakh to 80 lakh	1,256	0.3	180	0.02
13	80 lakh to 90 lakh	1,051	0.2	117	0.01
14	90 lakh to 1 crore	929	0.2	179	0.02
15	1 crore to 5 crore	5,723	1.2	778	0.07
16	5 crore to 10 crore	635	0.1	96	0.01
17	10 crore to 50 crore	434	0.1		
18	50 crore to 100 crore	48	0.0		
19	100 crore to 500 crore	20	0.0		
20	> Rs. 500 crore	2	0.0		
	All	487,057	100	1,125,693	100

Source: NSSO (2012) and Income Tax Department

An alternative form of profiling that can be attempted for the firms is to look at the distribution of firms according to the economic activity/ sector they are associated with.

As a first step in this direction, the following table 3.14 provides a summary of the number of firms that have provided information on the activity they are associated with, both in the income tax data and the Survey data. The information suggests that while the return filed by firms does have a column for activity code, majority of the firms do not fill this information.

Table 3.14: Summary of available information on activity code

	Income Tax Data	Survey Data
Total Number of Firms	496,948	1,125,694
Firms without activity code	11716	
Percentage of firms without activity code	2.36	
Firms that cannot be classified	417,414	161,909
Percentage of firms that cannot be classified	84	14.38

Source: NSSO (2012) and Income Tax Department

This places doubts on the reliability of any inference drawn from this data. However assuming that the trends in the available data are representative of all tax payers, Table 3.15 below provides a comparison of the shares of different activity codes in both the data series.

Table 3.15: Activity Code-wise Comparison of Number of Partnership Firms as Reported in NSSO Survey and ITD Database

Activity Code	Activity Description	No. od Assessee under ITR5 (AY2009-10)						No. of Firms (NSSO) (Having Positive Net Surplus) (Nos)	
		Profit Making Activities (Nos)		Loss Making Activity (Nos)		Total (Nos)			
M2	Manufacture of Food Products	3,538	(4.9)	517	(6.7)	4,055	(5.1)	51,587	(4.6)
M3	Manufacture of Beverages	46	(0.1)	5	(0.1)	51	(0.1)	7,928	(0.7)
M4	Manufacture of Tobacco Products	54	(0.1)	5	(0.1)	59	(0.1)	20,653	(1.8)
M5	Manufacture of Textiles	1,214	(1.7)	167	(2.2)	1,381	(1.7)	73,971	(6.6)
M9	Manufacture of Paper and Paper Products	77	(0.1)	8	(0.1)	85	(0.1)	2,848	(0.3)
M10	Printing and Reproduction of Recorded Media	270	(0.4)	36	(0.5)	306	(0.4)	6,447	(0.6)
M11	Manufacture of Coke and Refined Petroleum Products	192	(0.3)	19	(0.2)	211	(0.3)	5	(0)
M12	Manufacture of Chemicals and Chemical Products	236	(0.3)	22	(0.3)	258	(0.3)	5,492	(0.5)
M13	Manufacture of Pharmaceuticals, Medicinal Chemical and Botanical Products	210	(0.3)	22	(0.3)	232	(0.3)	135	(0)
M14	Manufacture of Rubber And Plastics Products	80	(0.1)	5	(0.1)	85	(0.1)	6,425	(0.6)
M15	Manufacture of Other Non-Metallic Mineral Products	308	(0.4)	50	(0.6)	358	(0.5)	23,913	(2.1)
M16	Manufacture of Basic Metals	278	(0.4)	15	(0.2)	293	(0.4)	2,792	(0.2)
M18	Manufacture of Computer, Electronic and Optical Products	128	(0.2)	12	(0.2)	140	(0.2)	531	(0)

Activity Code	Activity Description	No. od Assessee under ITR5 (AY2009-10)						No. of Firms (NSSO) (Having Positive Net Surplus) (Nos)	
		Profit Making Activities (Nos)		Loss Making Activity (Nos)		Total (Nos)			
M20	Manufacture of Machinery and Equipment N.E.C.	1,009	(1.4)	98	(1.3)	1,107	(1.4)	4,042	(0.4)
M21	Manufacture of Motor Vehicles, Trailers and Semi-Trailers	347	(0.5)	35	(0.5)	382	(0.5)	2,007	(0.2)
M22	Manufacture of Other Transport Equipment	26	(0)	1	(0)	27	(0)	373	(0)
M24	Other Manufacturing	7,253	(10.1)	824	(10.6)	8,077	(10.2)	43,641	(3.9)
S1	Accommodation	159	(0.2)	30	(0.4)	189	(0.2)	7,441	(0.7)
S2	Food and Beverage Service Activities	910	(1.3)	121	(1.6)	1,031	(1.3)	78,243	(7)
S3	Other Land Transport (excluding 49212, 49213)	1,033	(1.4)	75	(1)	1,108	(1.4)	17,396	(1.5)
S6	Postal and Courier Activities	36	(0.1)	2	(0)	38	(0)	879	(0.1)
S7	Information and Communication	172	(0.2)	45	(0.6)	217	(0.3)	11,187	(1)
S8	Financial service activities except insurance and pension funding	567	(0.8)	103	(1.3)	670	(0.8)	12,437	(1.1)
S9	Other financial activities	3,953	(5.5)	644	(8.3)	4,597	(5.8)	1,979	(0.2)
S10	Real Estate Activities	11,412	(15.9)	789	(10.2)	12,201	(15.3)	11,619	(1)
S12	Administrative and support service activities	3,083	(4.3)	156	(2)	3,239	(4.1)	24,336	(2.2)
S13	Education	375	(0.5)	81	(1)	456	(0.6)	35,095	(3.1)
S14	Human Health and Social work	464	(0.6)	30	(0.4)	489	(0.6)	30,280	(2.7)
S15	Other community, social and personal service activities	18	(0)	4	(0.1)	22	(0)	59,445	(5.3)
T2	Activities of commission agents	2,031	(2.8)	193	(2.5)	2,224	(2.8)		
T3	Wholesale Trade, except of Motor Vehicles and Motorcycles	6,309	(8.8)	505	(6.5)	6,814	(8.6)	71,684	(6.4)
T4	Retail Trade, except of Motor Vehicles and Motorcycles	15,680	(21.8)	1,736	(22.4)	17,416	(21.9)	348,974	(31)
	Cannot be classified	10,325	(14.4)	1,391	(18)	11,716	(14.7)	161,909	(14.4)
	Total Reported	**71,793**	**(100)**	**7,746**	**(100)**	**79,534**	**(100)**	**1,125,694**	**(100)**
	Total Assessee (ITR5)	**437,046**		**59,902**		**496,948**			

Source: NSSO (2012) and Income Tax Department
Note: Figure in the parenthesis shows the percentage share in Total Reported
Highlighted activity codes show the percentage share in total number of reported firms according to NSSO Survey are much higher than those reported by the ITD.

The results suggest that sectors where a significant difference in share is observed are manufacturing of tobacco products, manufacturing of textiles, food and beverage services,

manufacturing of other non-metallic minerals, education, human health and social work, other community, social and personal services, retail trade, except of motor vehicles and motorcycles.

Given that a number of firms do not file returns, it is useful to identify factors that might be influencing this decision of partnership firms. While the NSS survey does not capture information on compliance with income tax regulation, it does capture information on compliance with another tax law - the survey captures information whether partnership firms are registered under State sales tax / VAT Act or not. Since state VAT authorities have been issuing PAN based registration numbers, the firms are expected to have PAN registration. Further, given that all partnership firms are supposed to file a return, if a firm does not file a return, it can either be that the firm has a PAN and does not file or the firm does not have a PAN at all. While the first case can be dealt with by tax administration since it has information on registration, if we can understand factors which influence non-registration in VAT laws, they might be useful in understanding the second category. A recent study does undertake an analysis of factors influencing the registration decision of partnership firms under the State sales tax/Vat Acts. (Mukherjee and Rao (2015). The results of this paper are summarized below.

The first observation of interest in the paper is that of 8317 partnership firms surveyed, only 1666 are registered for purposes of VAT. However, since the present system of taxation limits the liability of tax mostly to sale of goods,[31] if one looks at firms engaged in manufacturing and trade, we find that while most of the registered firms are from this segment of economic activity, not all firms in these activities are registered under VAT/sales tax. (See Table 3.16). Limiting the analysis to these segments of the economy, which are currently subject to VAT, the study shows that even within manufacturing there are wide variations in the percentage of firms that register for VAT. (See table 3.17) This table also shows that for most of the segments of manufacturing considered, the registered firms report a lower ratio of average annual Gross Value Added (GVA) and turnover when compared to their unregistered counterparts. In other words, firms that have higher share of input taxes choose to register for VAT purposes since the benefits from input tax credit are higher for them.

[31] Some of the services enterprises too are required to register with the VAT departments since they could be providing some goods in addition to their primary activity of providing services. Further, in some cases, the firms seek to register themselves with the tax department to avail of concessional imports of goods into the state under the CST Act.

Table 3.16: Distribution of Partnership Firms registered with VAT/ Sales Tax Act by Activity

Major Activity Description	Partnership Firms		
	No. of Enterprises registered under VAT/ Sales Tax Act	No. of Firms	% of Enterprises Registered
Manufacturing activity	625	2,768	22.6
Trading activity	801	2,655	30.2
Transportation and storage activities	20	237	8.4
Postal and courier activities	3	15	20.0
Accommodation and food service activities	122	912	13.4
Information and communications	14	131	10.7
Financial and insurance activities	2	40	5.0
Real estate activities	9	100	9.0
Educational activity	3	422	0.7
Human health and social work activity	21	153	13.7
Other activities	36	726	5.0
Not mentioned	10	158	6.3
All	**1,666**	**8,317**	**20.0**

Source: Computed by authors from NSSO (2012)

Table 3.17: Major Activity-wise registration under VAT of Partnership Firms

Activity Description	Registered under VAT	Total No. of Firms	% of Firms Registered	Average Annual GVA/ Annual Turnover	
				Registered	Unregistered
Manufacture of food products	74	515	14.4	2.94	0.37
Manufacture of textiles	35	301	11.6	0.31	0.66
Manufacture of wearing apparel	15	288	5.2	0.32	0.66
Manufacture of wood and wood products, except furniture; manufacture of articles of straw and plaiting	27	181	14.9	0.28	0.61
Manufacture of other non-metallic mineral products	204	347	58.8	0.43	0.40
Manufacture of fabricated metal products, except machinery and equipment	30	146	20.5	0.34	0.51
Manufacture of furniture	14	125	11.2	0.27	0.42
Other manufacturing	31	257	12.1	0.31	0.46
Manufacturing (Sub Total)	**622**	**2,737**	**22.7**	**0.66**	**0.49**
Trade and repair of motor vehicles and motor cycles	64	237	27.0	0.21	0.60
Other wholesale trade	282	529	53.3	0.18	0.22
Other retail trade	448	1,842	24.3	0.16	0.22
Trading (Sub Total)	**794**	**2,608**	**30.4**	**0.17**	**0.26**
Total (including services)	**1,663**	**8,317**	**20.0**	**0.39**	**0.39**

Source: Mukherjee and Rao (2015)

Turning to the turnover of firms, while firms with turnover above 30 lakh are expected to be registered with most State VAT authorities, the study shows only for turnover above Rs 1 crore do over 70 percent of the firms register.[32] Even with turnover between 1 crore and 5 crore, about 24 percent of partnership firms are not registered with the VAT department. Further, the location of a firm too seems to play some role in influencing registration – firms located within household premises are less likely to register when compared to those located outside the household.

To validate the observations, the paper reports the results from a Probit model. The results are reproduced in Table 3.18 below. While the table validates all the observations – possibility of registration increases with size of the firm and age of the firm and with decline in the ratio of value added to total turnover, it does through up one surprising result. The results indicate that manufacturing units are less likely to register compared to trading firms. This result is apparently counterintuitive since all manufacturing units with turnover above Rs 1 lakh are expected to be registered with the tax department. This result suggests two things – one, it is possible that manufacturers are small units not part of supply chain with their own marketing systems. Since they are not integrated with the rest of the economy, they may not perceive any merit in registering for VAT. Second, the fact that manufacturing units are less likely to register suggests that the tax departments are unable to monitor the economic activity being undertaken in their jurisdiction. Given that they are less likely to register for VAT, it is expected that they would not be filing a return for income tax either.

[32] In some states the threshold is as high as Rs 50 lakh.

Table 3.18: Regression Results for Partnership Firms having Manufacturing and Trading Activities

Dependent Variable: Registration of Manufacturing and Trading Firms in States Sales Tax/ VAT

Independent Variables	Model 1	Model 2	Model 2	Model 3
Constant	-7.188 ***	-5.793 ***	-3.845 ***	-5.811 ***
	(0.403)	(0.342)	(0.328)	(0.482)
LTURNOVER	0.423 ***			
	(0.034)			
LANNETSURPLUS		0.298 ***		
		(0.028)		
LANNUALINV			0.096 ***	
			(0.026)	
LMKTVALTOTAST				0.280 ***
				(0.034)
LTOTWORKER	0.329 ***	0.556 ***	0.608 ***	0.570 ***
	(0.041)	(0.035)	(0.062)	(0.055)
YEAROOP	0.005 **	0.005 **	0.015 ***	0.009 ***
	(0.002)	(0.002)	(0.005)	(0.003)
LOCATIONOUT	0.492 ***	0.527 ***	0.8 ***	0.384 *
	(0.086)	(0.084)	(0.183)	(0.199)
LGVATURNOVER	0.03	-0.384 ***	-0.578 ***	-0.364 ***
	(0.047)	(0.034)	(0.075)	(0.055)
MFG	-0.27 ***	-0.275 ***	-0.014	-0.367 ***
	(0.06)		(0.13)	(0.088)
No of Observations	3396	3396	745	1611
Obs with Dep=0	1977	1977	377	923
Obs with Dep=1	1419	1419	368	688
McFadden R-squared	**0.283**	**0.265**	**0.31**	**0.268**
LR statistic	1304.625	1221.218	319.9183	589.7199
Prob(LR statistic)	0.0000	0.0000	0.0000	0.0000

Source: Estimated by authors

Notes: Figure in the parenthesis shows the heteroskedasticity-consistent (HC) standard error (i.e., Huber–White standard errors) of the estimated coefficient
***, **, and * - imply estimated coefficient is significant at 0.01, 0.05 and 0.10 level respectively.
REGVATACT = 1 if the firm is registered under VAT/Sales Tax Act, 0 otherwise
LTURNOVER – log of annual value of total receipts (in Rs.) (per month total receipt x no. of months operated in last 365 days)
LANNETSURPLUS – log of annual Net Surplus (in Rs.)[33]
LANNUALINV – log of annual investment (net addition of fixed asset, in Rs)
LMKTVALTOTAST – log of market value of total (own and hired) asset (in Rs.)
LTOTWORKER – log of total worker (including full time, part time, male and female)
YEAROOP –year of operation of operation (age of the firm)
LOCATIONOUT = 1 if location of the enterprise outside the household premises, 0 otherwise
LGVATURNOVER - log of ratio of Annual Gross Value Added and Turnover
MFG – 1 if the firm is engaged in manufacturing, 0 otherwise

[33] Net Surplus = Total Receipts – Total Operating Expenses – Distributive Expenses – Total Emoluments – Rent Payable – Interest Payable.

3.3 Conclusion

The analysis in this chapter shows that both the individuals and the firms possibly do not comply fully with the prescribed requirements for filing of returns. In the case of individuals, we find that for the year 2004-05, the difference can be anywhere from 40 percent to 70 percent of total number of assessees. Projecting the incomes forward, the figures estimated for 2011-12 suggest a lower difference of upto 30 percent. Turning to firms, the number of firms filing returns appears to be less than half the number of firms in operation in the country. The number of missing tax payers, in other words, seems to be considerable.

Given these numbers, next task would be to identify some characteristics of these individuals and firms. In other words, we need to profile the missing individuals and firms. The first step in this direction is to profile by size of in Income come reported. The results for such an analysis for both individuals and firms suggest that the missing assessees are concentrated in the lowest income groups. For the individuals, they are concentrated in the categories with incomes less than 4 lakh per annum while for firms, they are concentrated in the income groups with income less than Rs 10 lakh.

An alternative way of profiling both individuals and firms is to identify the sectors/economic activities they are associated with. For individuals, this exercise threw up some difficulties since only half the returns contained information on activity code and further, the activity codes used in the survey and those used by the department were quite different. For the firms, an attempt was made to explore this possibility and is constrained by the fact that while over 4 lakh firms file returns, only 79500 firms provide information on the sector/activity code. This places limits on the conclusions that one can draw from the comparison.

Chapter 4: An Analytical Model for Number of Taxpayers

4.1. Introduction

One of the aims of the present study is to develop an analytical model for number of taxpayers in the tax regime. The analysis in Chapters 2 and 3 indicate two features about the evolution of the number of taxpayers in the tax regime:

1. Except for a sharp increase in the numbers during the period 1998-2003, the number of people filing returns which is proxied by the number of "effective assessees", if viewed as a proportion of the total working population, displays a remarkably stable trend over time The analysis in the chapter suggests that the sharp increase could be attributed to changes in compliance requirements like the introduction of 1/6 scheme. Though there are some economic variables that influence the change in the ratio of "effective assessees" to total working population, the impact is rather minimal.
2. The actual number of taxpayers in the country does not appear to be dramatically different from the estimates of potential number of taxpayers based on the NCAER survey. Across the two scenarios and the three cases considered, we get a difference ranging from 14-20 lakh if half the households (HH) have 2 earners and 84-96 lakh if all households have only one earner.

Taking the discussion further, for developing an analytical model for number of taxpayers, we have used three different approaches

1. Using the time series analysis, we predict the likely number of returns to be filed, based on the econometric model estimated in chapter 2. This model relates this number to the changes in the economic variables during these two years. This is discussed in section 2.
2. Using the cross-section analysis, we build a model by which the number of potential tax payers can be predicted. This is discussed in section 3. This analysis throws some light on the impact of changes in exemption threshold and number of taxpayers.
3. Finally, since one is trying to understand the decision of filing or not filing a return by the tax payer, in section 4, we present an economic model which shows that there could be conditions under which the individuals might find it preferable not to file a return.

The conclusions that can be drawn from these separate approaches are presented in the last section (Section 4).

4.2. Forecasts based on Time Series Analysis

From the time series analysis, it is important to recall a few salient features of the results. Table 2.4 from Chapter 2 has been reproduced for convenience. Firstly, the behaviour of the series is different pre and post 1999-2000. There is a considerable increase in the numbers at this break point which has been attributed to policy initiatives such as "1/6". The variables that are found to be important too vary across these two periods. While urban inequality and the statutory tax rate (STR) are consistently found to be significant in both periods, the other economic variables appear to be significant either in the first or the second period. Domestic trade[34] for instance, is significant post 2000 while international trade is consistently important in both periods. Services other than trade and construction are found to influence in both periods, but the effect is lower in the second period when compared to the first.

Table 4.1: Individual Taxpayers: Estimated Coefficients Pre and Post 2001

Variable Name	**Model 1**		**Model 2**	
	Pre 2001	**Post 2001**	**Pre 2001**	**Post 2001**
Share of construction in t-1	1.46	2.51		
Urban Gini	22.92	22.92	17.97	17.97
Share of Trade, Restaurants and hotels in GDP in t-1			-	0.614
STR in t-1 pre 2001	-14.12		-15.33	-15.33
Share of services other than trade and construction in t-1			0.265	-
Exports+Imports/GDP in t-1			0.24	0.24

Source: Generated

Using these coefficients, we can predict the number of taxpayers for the period till 2014 (Table 4.2a and 4.2b). The Table shows that regression relation provides a good approximation of effective assessees in the system. For the years 2012-13 and 2013-14, we have 34.9 million and 35.7 million respectively.

[34] Domestic Trade includes trade, hotels and restaurants, transport and communication.

Table 4.2a : Predicted and Actual Values of Number of Effective Assessees (in Millions)

Year	Actual	Predicted
2001-02	23.7	23.71
2002-03	25.9	24.34
2003-04	26.6	26.20
2004-05	24.8	25.81
2005-06	27.4	28.18
2006-07	29.4	28.53
2007-08	30.9	29.51
2008-09	30.1	29.95
2009-10	31.4	32.07
2010-11	31	31.62
2011-12	33.2	33.20
2012-13		34.94
2013-14		35.79

Source: Generated

These numbers suggest that while the number of taxpayers has been increasing, the increase has only been marginal. From these estimates, it would also appear that expansion in trade both within the economy and with the rest of the world are important in expanding the number of individual tax payers in country. The other variable of consequence is the urban Gini, i.e., the inequality in urban areas – the variable suggests a perverse impact. Since the tax payers belong to the highest income groups in the economy, an increase in urban inequality would lead to an increase in the incomes of these groups which in turn could bring in more people into the tax net. From this model, it follows that to increase the number of effective assessees; the government needs to focus on expanding both domestic trade and international trade. But such efforts can bring in only incremental changes in the numbers.

Similarly, we can forecast the number of firms from the econometric model. Table 4.2b gives the forecasted values. While for the last two years of the sample period that is 2010 and 2011 the predicted value is quite different from the actual values in all other years the values are quite close. For the last two years the model predicts 14.2 lakh and 17.06 lakh firms.

Table 4.2b: ***Predicted and Actual Values of Number of firms***

Year	Actual	Predicted
2000	1342441	1289803
2001	1383324	1302766
2002	1342441	1329083
2003	1342441	1329083
2004	1239229	1302766
2005	1239229	1276969
2006	1239229	1289803
2007	1369560	1276969
2008	1315859	1315859
2009	1355933	1369560
2010	1226899	1369560
2011	1559694	1411269
2012		1425453
2013		1706577

Source: Generated

4.3 Forecasts Based on Cross-section Analysis

To derive estimates of the potential number of taxpayers in the economy, we need income distribution of individuals in the economy. However, as discussed in the earlier chapters, there is no direct or readymade information available from any survey or census that will reveal the income distribution for the recent years. One large scale survey on income, the IHDS, is available for the year 2004-05. In order to infer about income distribution in more recent times, an attempt is made to generate an income distribution based on distribution of consumption expenditure. Using the information from the IHDS survey data, we first fit a model to generate the predicted income. The model is validated by comparing the predicted income and the actual income from the survey. This model is then used to generate the income distribution for households covered in the NSS 61st round of the consumption expenditure survey (2004-05) and then to the recent survey of the 68th round for the year 2011-12.

As discussed earlier, since the generated income is household income, we use alternative assumptions about the number of earners in a household. Upon incorporating the information on the exemption threshold for tax purposes, we can obtain estimates of potential taxpayers as a percentage of total population. The approach and the corrections made to obtain estimates for 2011-12 are presented below.

4.3.1 A model to predict income

IHDS survey gives us data on both the income and the consumption expenditure. In absence of any theoretical support for predicting income through consumption expenditure we rely on a relation between the income distribution and the consumption expenditure distribution determined through the data mining. The one relationship reported here is based on the relation for different deciles of the households. In refining these numbers, we observe that the relationship is significantly different for rural and urban household; and also for the indebted and non-indebted households.[35] In the IHDS survey data, 64% of the rural households and 48% of the urban households are indebted. The decilewise percentage share of the indebted households in this survey data is given in table 4.3.

Table 4.3: Percentage share of indebted households (IHDS survey data)

	Rural Households(HH)		Urban Household (HH)	
	Indebted HH	Normal HH	Indebted HH	Normal HH
Decile 1	37.17	62.83	39.05	60.95
Decile 2	54.28	45.72	44.79	55.21
Decile 3	61.31	38.69	48.63	51.37
Decile 4	67.03	32.97	47.85	52.15
Decile 5	68.11	31.89	49.54	50.46
Decile 6	68.32	31.68	45.01	54.99
Decile 7	70.12	31.01	46.83	53.17
Decile 8	67.98	32.02	46.88	53.12
Decile 9	67.53	32.47	51.21	48.79
Decile 10	72.78	27.22	60.00	40.00

Source: Calculated using IHDS survey Data

For purpose of analysis, we consider two categories of income – total income and non-agricultural income. Non-agricultural income of the household is defined here as total income net of income from agricultural activity and income from remittances. The latter category is of interest since within the taxation system in India, agricultural income is not subject to income tax by the Union government, following the allocation of taxing rights by the Constitution.

In order to explore the relation between consumption and income within the IHDS survey, we explore almost all the variables that are common in both the NSSO survey and the IHDS survey. Both characteristics of the households and the composition of consumption expenditure were used to explain the relation between consumption expenditure and incomes. However, the

[35] For our purpose, the indebted households are those where the consumption expenditure is higher than the income earned in a year.

results do not improve with the inclusion of most of these variables. Thus, we keep only those variables which add to the predictive ability of the model. Apart from the decile to which the household belongs, the only other variable which was found to be useful was the household size. The estimated relationship explaining Total income and the Non-Agricultural Income are reported in the table 4.4 and table 4.5.

Table 4.4: Coefficients for Total Income prediction using IHDS survey data (2004-05)

Income	Urban_indebted	Urban_normal	Rural_indebted	Rural_normal
Household Size	1954.49	-2866.91	1177.27	-2837.81
Decile 1	0.29	2.34	0.31	2.84
Decile 2	0.36	2.16	0.35	2.56
Decile 3	0.40	2.10	0.33	2.45
Decile 4	0.42	2.12	0.35	2.20
Decile 5	0.42	2.04	0.33	2.60
Decile 6	0.45	2.07	0.33	2.23
Decile 7	0.47	1.99	0.32	2.15
Decile 8	0.49	1.94	0.33	2.08
Decile 9	0.51	1.94	0.33	2.09
Decile 10	0.42	1.99	0.33	2.19
Adj R-sq	**0.80**	**0.67**	**0.71**	**0.57**

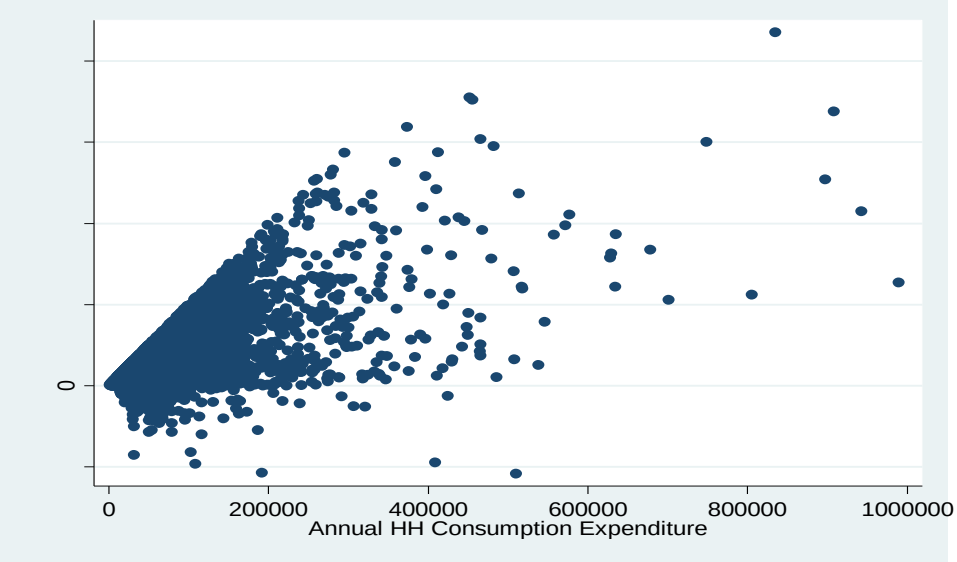
Table 4.5: Coefficients for Non-Agricultural Income using IHDS survey data (2004-05)

Non-Agricultural Income	Urban_indebted	Urban_normal	Rural_indebted	Rural_normal
Household Size	1707.15	-3084.45	419.84	-298.31
Decile 1	0.20	2.17	0.08	1.04
Decile 2	0.31	2.09	0.15	1.00
Decile 3	0.38	2.02	0.15	0.94
Decile 4	0.41	2.07	0.18	0.97
Decile 5	0.40	2.00	0.19	1.04
Decile 6	0.44	2.04	0.20	1.11
Decile 7	0.46	1.96	0.20	1.14
Decile 8	0.47	1.92	0.21	1.13
Decile 9	0.51	1.89	0.23	1.14
Decile 10	0.41	1.92	0.24	0.98
Adj R-sq	**0.77**	**0.64**	**0.48**	**0.57**

Figures 4.1-4.8 below show the original data and the predicted data. The graphs do indicate a reasonable degree of fit for the four categories of households considered.

Figure 4.1: IHDS: Households (HH) income vs. consumption

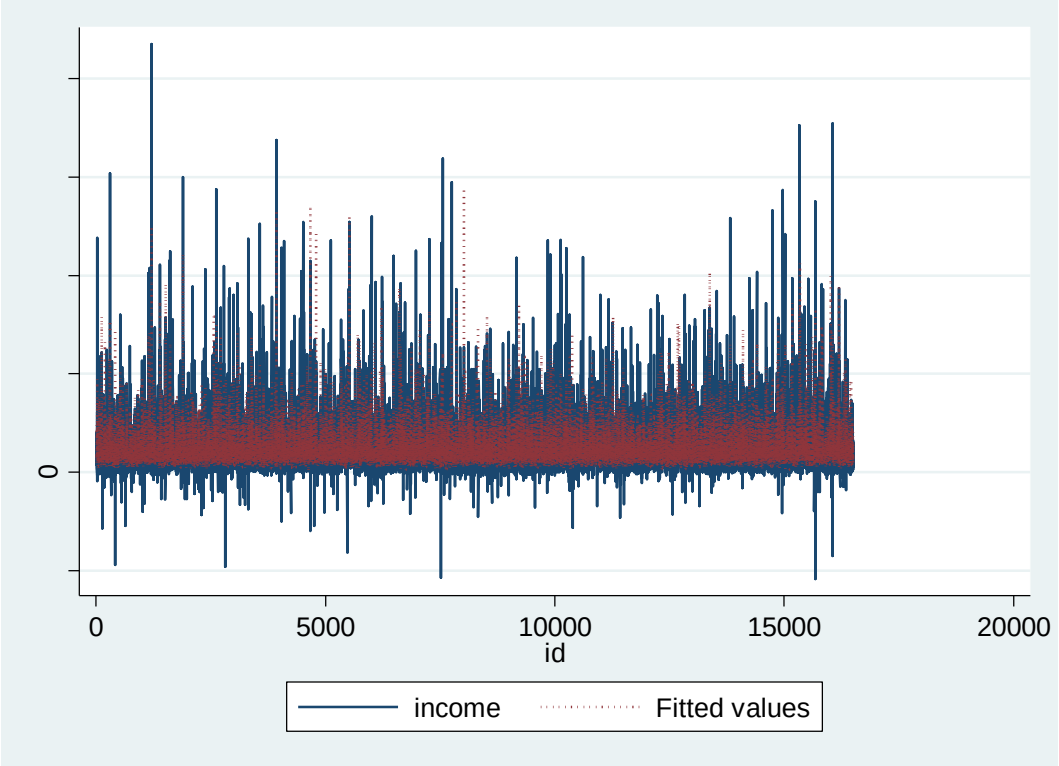
Rural Indebted ***Households (HH)***



Source: generated using IHDS survey Data

Figure 4.2 IHDS: Actual Income versus Predicted Income

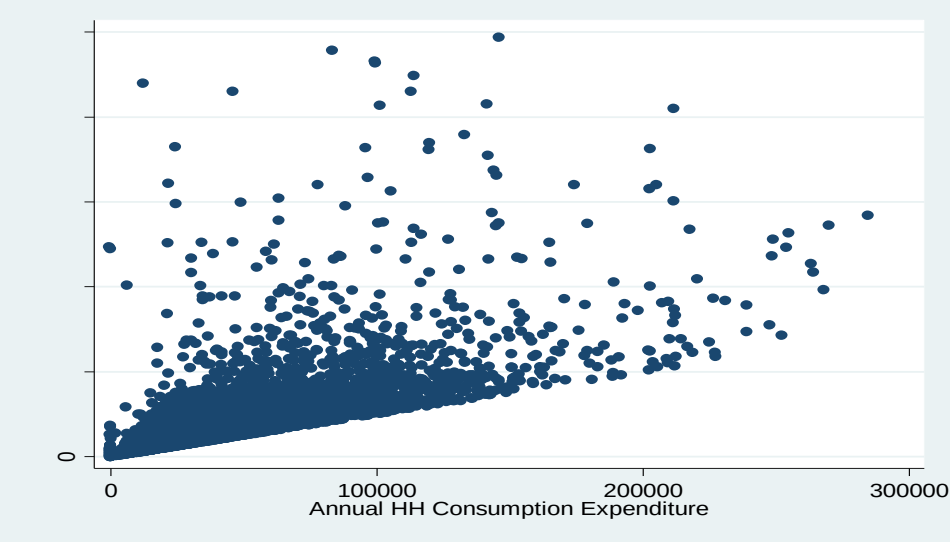
Rural Indebted HH



Source: generated using IHDS survey Data

Figure 4.3 IHDS: HH income vs. consumption

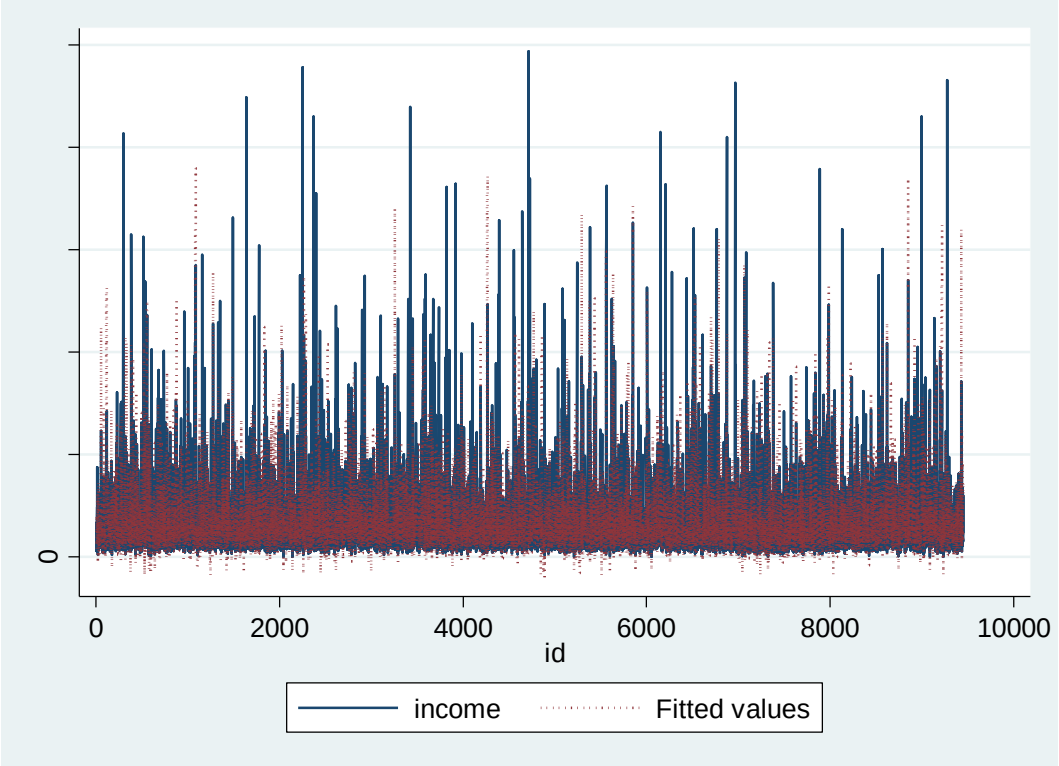
Normal Rural HH



Source: generated using IHDS survey Data

Figure 4.4 IHDS: Actual Income versus Predicted Income

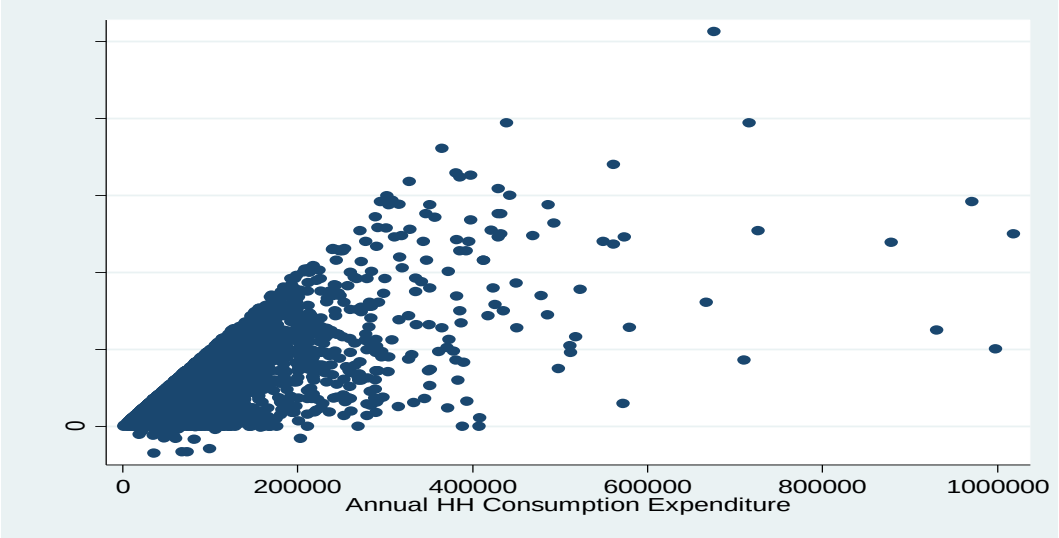
Normal Rural HH



Source: generated using IHDS survey Data

Figure 4.5 IHDS: HH income vs. consumption

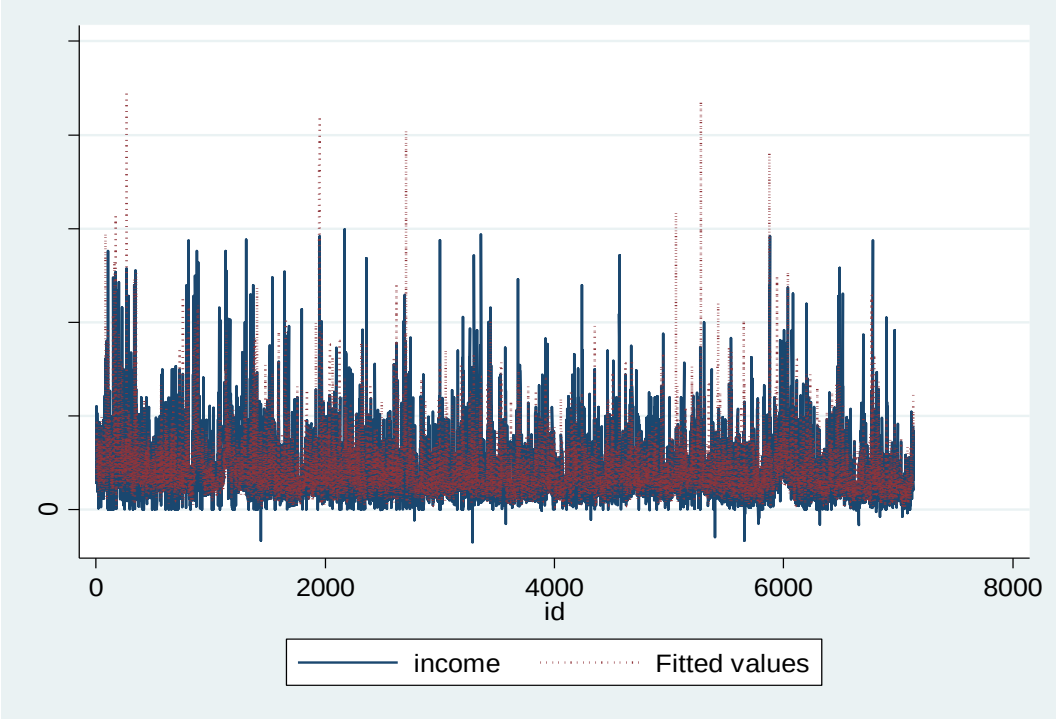
URBAN indebted HH



Source: generated using IHDS survey Data

Figure 4.6 IHDS: Actual Income versus Predicted Income

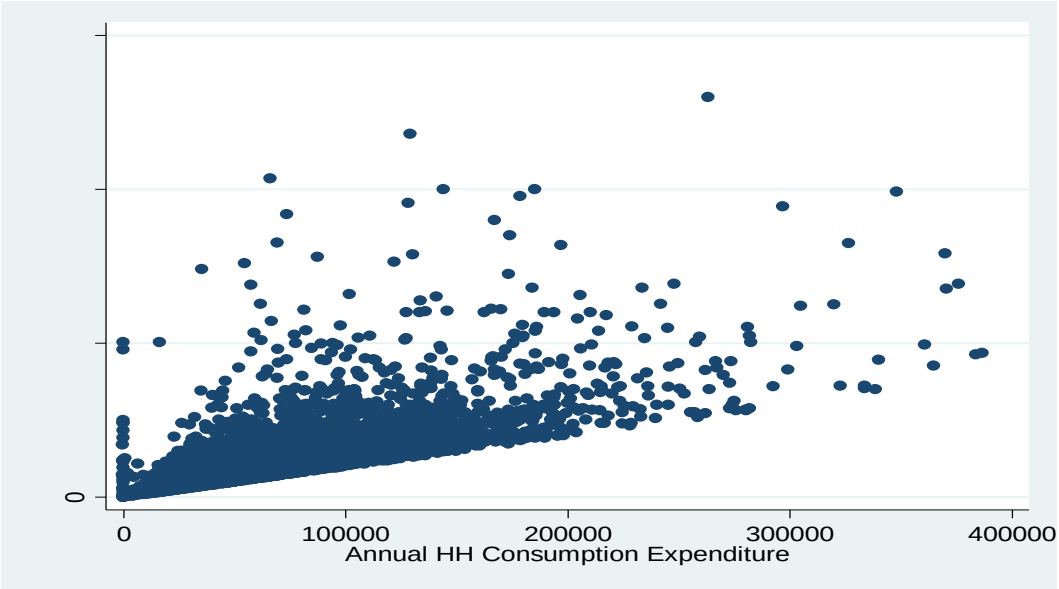
URBAN indebted HH



Source: generated using IHDS survey Data

Figure 4.7 IHDS: HH income vs. consumption

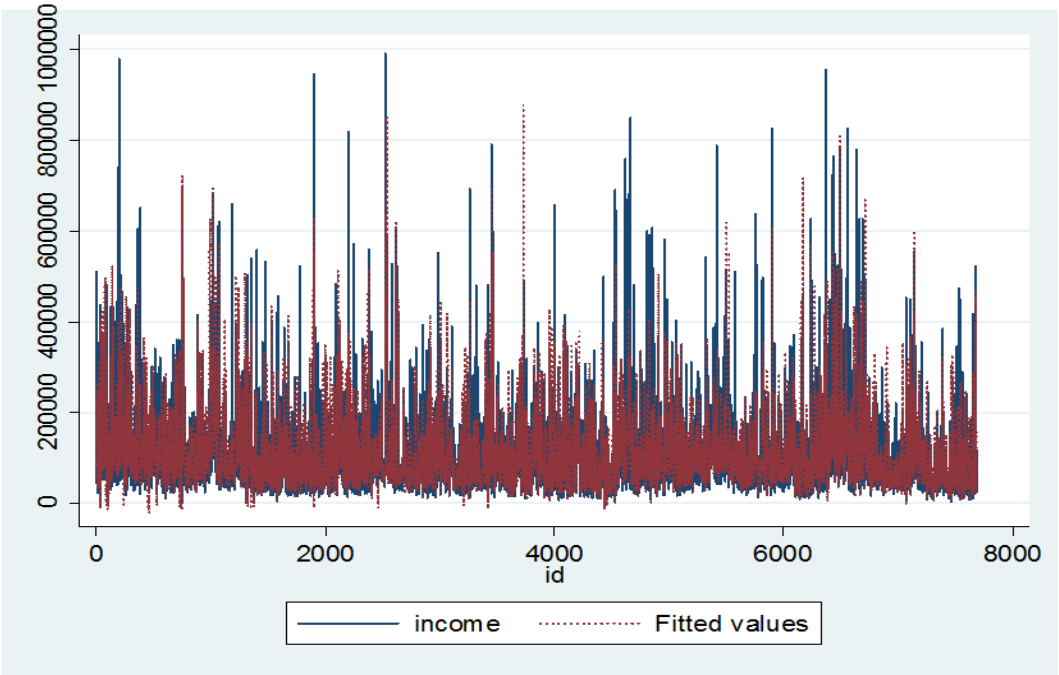
URBAN normal HH



Source: generated using IHDS survey Data

Figure 4.8 IHDS: Actual Income versus Predicted Income

URBAN normal HH



Source: generated using IHDS survey Data

In order to validate this model, it is first applied to NSS 61st round which provides data for the same year. It is expected that the results from the IHDS survey and the NSS survey should be similar. Any differences need to be corrected for, before we can use the model to predict numbers for any other year. In order to apply the model to the NSS data, the sample households need to be divided into "indebted" and "non-indebted" households.[36] The shares of the households for each decile are kept as reported in table 4.6. Keeping these shares constant, a household is assigned to a particular group by random selection. Given the large sample size of the survey, the subgroups or subsets of the survey data are expected to be a closer approximation of the composition in the population. To validate the comparability of the data, a comparison of the mean consumption of different deciles in the two surveys is undertaken. It is found that the means are different. To make the data comparable before we use the regression coefficients from the IHDS data; we multiply the NSSO consumption data by the factor or ratio reported in the table 4.6.

Table 4.6: Decile wise Mean annual Consumption of the Rural and Urban households (in INR)

	Rural Households			Urban Households		
	IHDS survey	**NSS 61st round**	**Ratio**	**IHDS survey**	**NSS 61st round**	**Ratio**
Decile 1	10170.35	8514.91	1.19	17546.17	12381.20	1.42
Decile 2	16859.23	14255.12	1.18	27511.11	20926.53	1.31
Decile 3	21309.52	17799.10	1.20	34080.77	26978.16	1.26
Decile 4	25314.19	21114.68	1.20	40279.73	33150.30	1.22
Decile 5	29553.84	24505.46	1.21	47212.29	39532.56	1.19
Decile 6	34530.93	28170.97	1.23	54887.62	47103.16	1.17
Decile 7	40834.60	32691.90	1.25	64168.88	55791.42	1.15
Decile 8	49754.78	38744.76	1.28	77360.19	67435.01	1.15
Decile 9	65285.82	48607.19	1.34	100888.60	86307.51	1.17
Decile 10	128893.60	93017.67	1.39	185252.00	161432.10	1.15

Source: Calculated using IHDS survey Data

The estimated coefficients are first applied to the NSSO survey for the year 2004-05 (NSS 61st round and IHDS surveys were carried out in same year) and, then to the most recent available large scale consumption expenditure survey of the NSSO (NSS 68th round survey) to generate a distribution for total income and non-agricultural income.

The marginal propensity to consume in 2004-05 from national income aggregates was 0.5914. In 2011-12, the marginal propensity to consume is 0.5922 in constant prices and 0.5634 in current

[36] An attempt was made to identify variables that can segregate the indebted households from the non-indebted ones using data from the survey. However, none of the variables could provide a fair estimate. Hence as an alternative, the households are randomly assigned.

prices. Since we have a relation between income and consumption at 2004-05 prices, applying this relation would give us the income corresponding to the consumption of 2011-12 assuming the marginal propensity were to remain unchanged as in 2004-05. However, since the marginal propensity has changed, declined in fact, for the same level of consumption we should be getting a higher level of income. This is obtained by applying a correction factor of 1.05.

Total income and the non-agricultural incomes predicted through this approach are for the households. However, income tax is applicable on the income of the individuals. In absence of the individual level income distribution, we make assumptions with regards to number of income earners in a household and then generate the individual income distribution under different scenarios. Three scenarios we create are: all households have only one earner; half of the households are single and half double income earners; three-fourth of the households consists of single income earners and one-fourth of the households are double earner households. We expect the actual distribution to lie somewhere in between the ranges given by these scenarios.

We apply the exemption limit for the individual income taxpayer on the income distribution to get an estimate for the number of taxpayers. We generate this number as a share of the total population for both total income and the non-agricultural income. The estimates are provided in the table 4.7 and table 4.8.

From table 4.7 we observe that the number of potential taxpayers for the year 2011-12 is estimated to be 2.57%, based on the assumption that three-fourth of the households are single earner. Another interesting feature evident from this table is that as compared to 2004-05, the share of potential taxpayers in population has declined quite sharply by over a percentage point, under all alternative cases.

Table 4.7: Number of Taxpayers as percentage of total population (based on Non-Agricultural Income)

	Based on IHDS survey	**Based on NSS-61st round**	**Based on NSS-68th round**
Half with one and half with two earners in the HH	4.26%	4.11%	2.23%
3/4th of HH with single earner and 1/4th with double income earner	4.56%	4.62%	2.57%
All Single earner HH	4.86%	5.12%	2.90%

Source: Calculated using IHDS survey Data and NSS 61st and 68th round

Table 4.8 presents the estimated number of taxpayers if agricultural income is also taxed. Thus the difference between the numbers between the table 4.7 and table 4.8 tells us the number of potential taxpayers benefitting due to the exemption provided to the agricultural income. Over one percent the population was outside the tax net in year 2011-12 due to the exemption

provided to the agricultural income. The difference would be higher if the number of households with 2 earners is less than one-fourth of the total households.

Table 4.8: Number of Taxpayers as percentage of total population (based on Total Income)

	Based on IHDS survey	Based on NSS-61st round	Based on NSS-68th round
Half with one and half with two earners in the HH	5.56%	6.05%	3.25%
3/4th of HH with single earner and 1/4th with double income earner	5.86%	6.52%	3.81%
All Single earner HH	6.16%	7.00%	4.36%

Source: Calculated using IHDS survey Data and NSS 61st and 68th round

4.3.2 Changes in the exemption limit and the number of taxpayers

This approach allows us to ask another interesting question – what is impact on the number of potential taxpayers when the exemption threshold is raised. Taking the two years for which we have data at the moment – we can ask the question, what happens, if the exemption threshold had remained unchanged from 2004-05 till 2011-12. Table 4.9 provides an estimate of potential taxpayers with this exemption threshold. The table highlights the fact that there is considerable reduction in the number of taxpayers because of the increase in the exemption threshold. Without such a sharp increase in the exemption threshold, the number of taxpayers could have been between 10 and 11 percent of the total population. The changes in the exemption threshold have more than eroded the likely expansion in base that should have resulted with the rapid economic growth witnessed in the economy during this period.

Table 4.9: Number of Taxpayers as percentage of total population (based on Non-Agricultural Income)

	Based on actual exemption limit	Based on the assumption of 50000 exemption limit in 2011-12
Half with one and half with two earners in the HH	2.23%	10.01%
3/4th of HH with single earner and 1/4th with double income earner	2.57%	10.52%
All Single earner HH	2.90%	11.52%

Source: Calculated using IHDS survey Data

Considering the alternative case where not just non-agricultural income but all incomes were subject to tax, the potential number of taxpayers would be substantially higher at over 10 percent of the total population. (Table 4.10)

Table 4.10: Number of Taxpayers as percentage of total population (based on Total Income)

	Based on actual exemption limit	Based on the assumption of 50000 exemption limit in 2011-12
Half with one and half with two earners in the HH	2.23%	13.66%
3/4th of HH with single earner and 1/4th with double income earner	2.57%	14.82%
All Single earner HH	2.90%	17.06%

Source: Calculated using IHDS survey Data

4.3.3 Way forward from our Model

The above exercise provides a mechanism to get an estimate for the taxpayers in the economy. In order to generate the income distribution, it relies on the information from the large scale survey data for consumption expenditure and the income level. It can be argued that these relations between consumption and income too can change over time. To correct for this, as soon as a new large scale reliable survey for the consumption expenditure and income becomes available, the coefficients for the relation between the distribution for consumption expenditure and the income level needs to be re-established for the purpose of generating a new forecast of income distribution using the NSSO consumption expenditure survey data. In the meantime the existing coefficients can be used by making a suitable adjustment for the changes in the marginal propensity to consume in the economy over time.

4.4 Section 4: An Economic Model

A third approach to analysing the behaviour of agents is to use a theoretical model. In the present section this approach is adopted to seek answers to the question – when will a taxpayer choose not to file a return, when filing of a return is mandated by law. To an extent, the results from the analysis can be validated by some simulation exercises on the parameters within the model. An attempt is made to provide some simulation results to validate the story emerging from the model.

In the theoretical literature, there are broadly two strands – one based on expected utility and the other based on "prospect theory". One of the landmark papers in the first category is by Alingham and Sandmo(1972), which argues that individuals choose how much of their income to declare to the tax authority by maximizing the expected utility. The individual faces

uncertainty in whether his return would be scrutinized or not. If it is scrutinized, he gets a lower income and if it is not scrutinized, he gets a higher income, provided he has under-reported his income. In the literature following this approach, it is found that unless there is a very high probability of being scrutinized, there is no incentive for the individual to comply. To address this issue, there emerged an alternative strand of literature on modelling the response of individuals to uncertainty called "Prospect Theory".

Kahneman and Tversky (1979) through the use of lottery choices demonstrated that individuals apply different weights to their losses as against their gains, i.e. while an individual is risk averse in choices pertaining to gains he/she is risk taking in losses. Since an individual evaluates his gain or loss from certain given level of income, it is necessary that instead of the impact of lottery choice on full incomes, the event is evaluated by taking the difference from a *reference point*. This reference point is the income/ endowment of the individual if he does not make the lottery choice. In the literature, papers that use prospect theory to explain tax evasion, such as Dhami and Nowaihi (2007) and Piolatto and Rablen (2013) use the post-tax income as the reference point. Further, since the decision in gains and losses are different, instead of the applying pure probability, a *weighting function*, that is a non-linear transformation, of probability is introduced. This captures the fact that people underweight moderate or high probabilities and overweight low probabilities. Advancements in prospect theory by Tversky and Kahneman (1992) suggest that a cumulative distributive function for the weights be assigned so that the outcome of the lottery is weighted by the change in probability at a given value associated with that lottery. In literature, the Prelec weighting function owed to Prelec (1998) has been used. Further, since the individual is more averse to losses than gains of the same value, a *parameter of risk aversion* (commonly referred to as Arrow-Pratt measure of constant risk aversion) is attached to losses in the value function. Taking all these elements, a value function is specified that consists of a component of gain and loss both weighted by the weighting function. The value function is maximized to find parameter values for which the individual will/will not evade taxes.

Following from this strand of literature, we attempt to ask whether it would be incentive compatible for some individuals to not file returns even if their incomes exceed the exemption threshold. The following discussion models this decision and presents some simulation results.

4.4.1 The Model

The tax regime is characterized as follows: for incomes below E, there is no tax liability. For incomes above E, people have to pay tax at the rate of 't'. People perceive that a fraction 'p' of the returns received by the government is subject to scrutiny.[37] In a case a return is picked up for scrutiny, the tax department can identify the entire amount of income that is being suppressed. In that case, in addition to the tax on such incomes, the individual has to pay a penalty of "λt". The department also undertakes some efforts to bring in "non-filers". It is therefore proposed that if there is a non-filer, then the department has a probability "q" of detecting such an individual and scrutinizing this case. If such a case is scrutinized, and income is found to have been concealed, the same tax and penalty provisions would be applied to this individual. In addition, a non-filing penalty too can be applied to this individual.

Consider an individual earning income of "Y". The individual chooses to declare income of "D" in his tax return. Further, there are two other costs faced by the individual – one, there is a stigma associated with being shown to be a defaulter. This stigma is modelled as follows: for every rupee of income suppressed, the individual faces a stigma of "sY". This implies that for a rupee of income suppressed, individuals with higher overall income face more stigma than individuals with lower income. Further, for a given level of overall income, the stigma increases with an increase in the income suppressed. The second cost is the cost of being scrutinized and may be associated with time and effort required to comply with the scrutiny process. This cost is modelled to be "$c=aY-bY^2$". The cost increases with an increase in the overall income – could be because more documents need to be scrutinized or more effort might be expended by the official for those with higher incomes. Beyond a certain level of income, these costs might not increase anymore and this is captured by the second term in the cost function.

Following prospect theory, all options by the individual are compared to the reference income where the individual has paid full tax that he is liable to. In other words the reference income is

$$R = Y - (Y - E)t$$

[37] It is possible that the actual fraction of returns being scrutinized is equal to that perceived by the people. This would not change the results of the model. It is also possible that the cases taken up for scrutiny are not just randomly selected but selected on the basis of some criteria. But this aspect is not being explored in the model.

4.4.2 Filing of Return

If the individual decides to file a return, his assessment of value if not caught is

$$X_f^{nc} = Y - (D - E)t - [Y - (Y - E)t] = (Y - D)t$$

If the individual's return is scrutinized, then his assessment of value is

$$X_f^c = Y - (D - E)t - (Y - D)(t + t\lambda + sY) - c - [Y - (Y - E)t]$$

This can be simplified into

$$X^c = -[(Y - D)(t\lambda + sY) + c]$$

While X^{nc} represents the gains to the individual, X^c represents the loss. Gains and losses are assigned weights, ω^+ and ω^- based on probabilities associated with gains and losses. The value function can then be written as

$$V^f = \omega^+[X^{nc}]^\beta - \omega^-\theta[X^{nc}]^\beta$$

$$= \omega^+[(Y - D)t]^\beta - \omega^-\theta[(Y - D)(t\lambda + sY) + c]^\beta$$

$O<\beta<1$ indicating diminishing marginal utility and "θ" is the parameter for loss aversion.

The individual chooses a "D" so as to maximize the value function from filing, V^f.

$$\frac{\partial V^f}{\partial D} = \beta\omega^+(-t)[(Y - D)t]^{\beta-1} + \omega^-\theta\beta(t\lambda + sY)[(Y - D)(t\lambda + sY) + c]^{\beta-1} = 0$$

Denoting

$$\pi = \left[\frac{\omega^-\theta(t\lambda + sY)}{\omega^+ t}\right]^{\frac{1}{(1-\beta)}}$$

We can simplify the equation above to get

$$\frac{D}{Y} = \frac{\pi t - t\lambda - sY - -c/y}{\pi t - t\lambda - sY}$$

As long as there is a cost of compliance on being audited, the individual agents in the economy choose to reveal less than their total income.

4.4.3 Non-filing of Return

In case the individual decides not to file a return, the functions for losses and gains will be written as follows

$$X_{nf}^{nc} = Y - [Y - (Y - E)t] = (Y - E)t$$

If the individual's return is scrutinized, then his assessment of value is

$$X_{nf}^{c} = Y - (Y - E)(t + t\lambda + sY) - c - [Y - (Y - E)t] = -[c + (Y - E)(t\lambda + sY)]$$

The weights associated with these events would be based on the probabilities associated with these events and can be denoted as ϖ^+ and ϖ^- respectively. The corresponding value function would then be written as

$$V^{nf} = \varpi^{+}[(Y - E)t]^{\beta} - \varpi^{-}\theta[c + (Y - E)(t\lambda + sY)]^{\beta}$$

To determine whether the individual will choose to file or not file, one needs to compare the values of the value functions. Since the individual has a choice of the amount of income to declare in the first case where (s) he files a return, the value function should be valued at the optimal value of D.

In order to determine whether filing is a consistently superior choice or not for all income levels, it would be useful to present results in the form of simulation results. The parameter values adopted for the simulation exercise are as follows. Based on the paper by Tversky and Kahneman (1992), the values of β and θ have been fixed at 0.88 and 2.25 respectively. Further, as shown by Nowaihi, Bradley and Dhami (2006), by adding the parameter for loss aversion, the weighting function and power of the utility can be made same for losses as well as gains. For providing the weights for gains and losses, we are using Prelec weighting functions which are defined as

$$\omega^{+}(1 - p) = \exp(-(-\log(1 - p))^{\alpha})$$

and

$$\omega^{-}(p) = \exp(-(-\log(p))^{\alpha})$$

The value of α is set at 0.35[38]. As α is increased, the value of the weighting function will approach the actual probability. A low value of α therefore indicates a high weight given to events with low probability, as with the probability of audit.

[38] Dhami and Nowaihi (2007) use α=0.35 for their calibration exercises. We have adopted the same value.

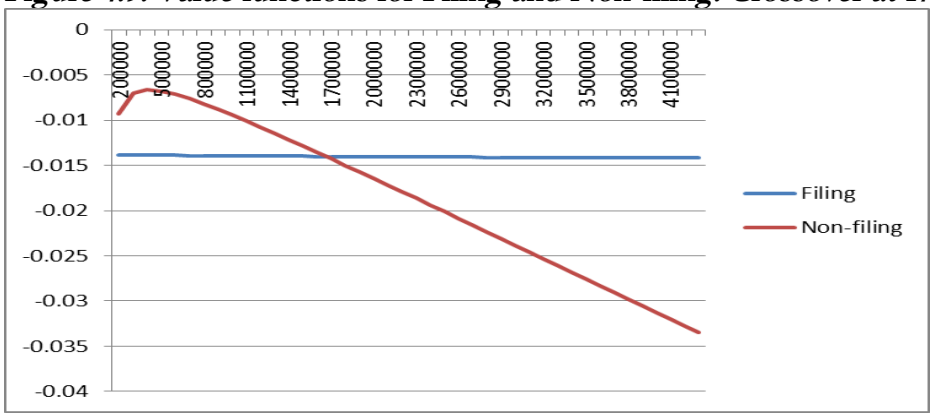
The tax rate, t, is fixed at 30 percent; the exemption threshold is fixed at Rs 180000 and the penalty on unpaid taxes, λ, is fixed at 100 percent of taxes owed. The stigma and the cost functions are defined as follows:

$$Stigma, sY = .00000001 * Y^2$$

$$Cost\ of\ audit, cY = 0.01 * Y - 0.0000000001 * Y^2$$

With these parameter values, if we assume that the probability of audit in the case of filing is 10 percent and the probability of being caught in the case of not filing is 5 percent, then for all incomes below 17 lakh, the model suggests that non-filing is a superior choice to filing. This income will henceforth be referred to as the changeover income. The value functions for both filing and non-filing corresponding to different levels of income are presented in the graph below.[39]

Figure 4.9: Value functions for Filing and Non-filing: Crossover at 17 lakh



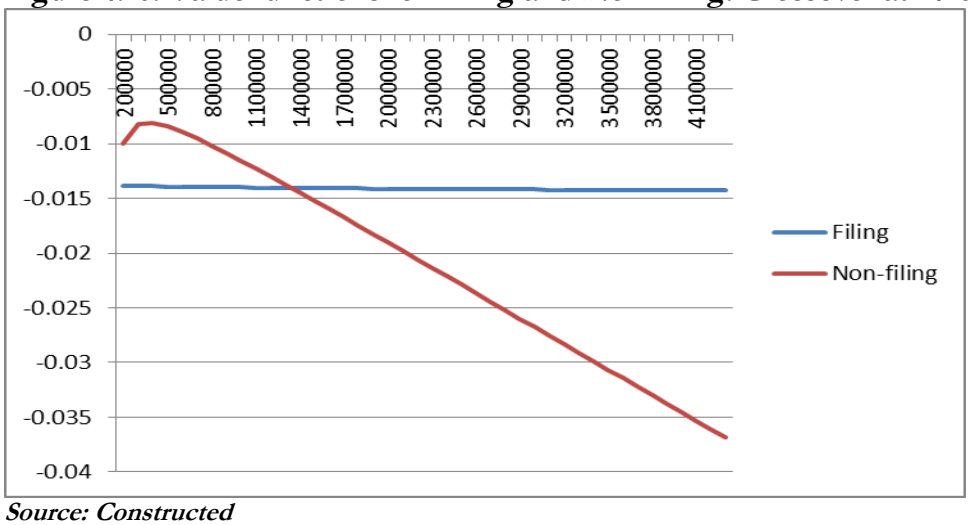
Source: Constructed
Note: Penalty of 100%, p=.1 and q=.05 and tax rate is 30%.

i. Impact of change in the tax rate

To consider what the impact of changes in the different parameters/policy variables on the changeover income are we consider a few cases below. First, consider the case where the tax rate is lower – say at 20 percent instead of the 30 percent assumed to begin with. As depicted in the next graph, the changeover income reduces to Rs 14 lakh from Rs 17 lakh. In other words, with a reduction in the tax rate, the range of incomes for which non-filing is a preferred option, too reduces. More people will find it attractive to file returns if the tax rate is reduced.

[39] It may be mentioned that the way the value functions are defined, there is no reason to assume that the value will be positive alone. Even in the case of negative values, the interpretation remains the same – the agent seeks to minimize the loss or maximize the value that he can derive from the two options available to him/her.

Figure 4.10: Value functions for Filing and Non-filing: Crossover at 14 lakh

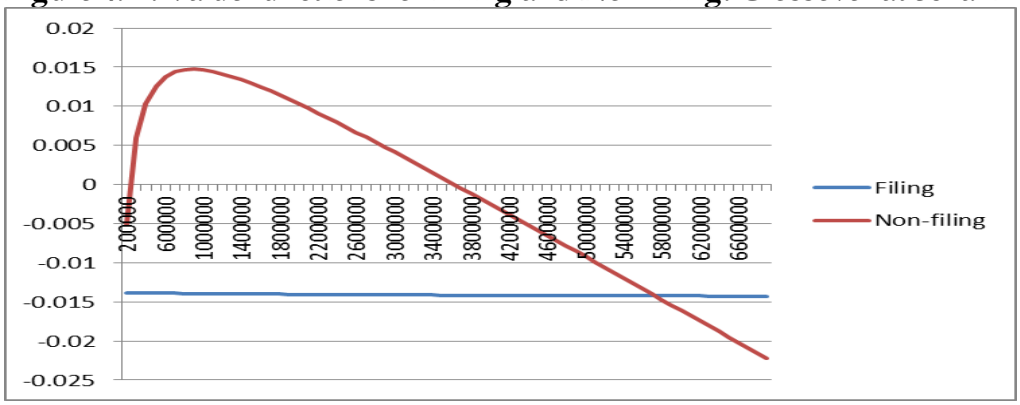


Source: Constructed
Note: Penalty of 100%, p=0.1 and q=0.05 and tax rate is 20%.

ii. Impact of change in the probability of detection on non-filing

If the probability of detection in the event of non-filing is reduced from 5 percent to 3 percent, the changeover income increases substantially to Rs 58 lakh. While one might question the extent of sensitivity of changeover income to changes in the parameters and policy variables, what needs to be noted that the model suggests a fairly intuitive result – that if people perceive a decline in the probability of detection in the event of non-filing, they are less likely to file a return. This is reflected in Figure 4.11.

Figure 4.11: Value functions for Filing and Non-filing: Crossover at 58 lakh



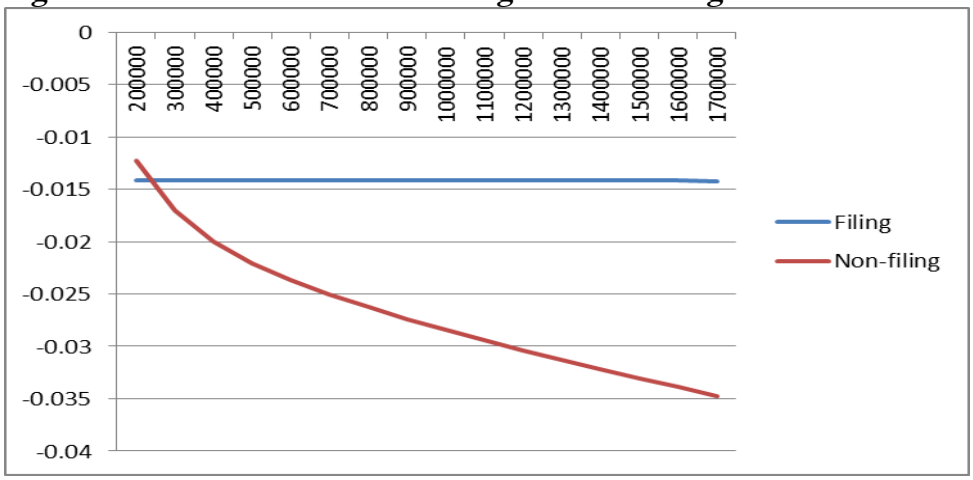
Source: Constructed
Note: Penalty of 100%, p=.1 and q=.03 and tax rate is 30%.

iii. Impact of change in the penalty rate

If we consider the case where the penalty rate is increased from 100 percent to 110 percent, the changeover income reduces to between 2 and 3 lakh. In other words, the behaviour of

people appears to be very sensitive to changes in the penalty rate. Once again while the extent of correction can be considered too large, it is the direction of correction which the model seeks to draw attention to – an increase in the penalty rate is shown to lead to a reduction in the range of incomes for which non-filing might be a preferred option.

Figure 4.12: Value functions for Filing and Non-filing: Crossover at 2 lakh



Source: Constructed
Note: Penalty of 110%, p=.1 and q=.05 and tax rate is 30%.

The results from the present model suggest three interesting and fairly intuitive results:

1. With fairly reasonable assumptions on the tax and penalty rates and probability of audit, there exist a range of incomes for which non-filing of returns can be a preferred option.
2. This range can be influenced a suitable choice of tax rate and penalty rate. An increase in the penalty rate or a reduction in the tax rate can induce more people to file returns.
3. An increase in the probability of detecting non-filers too can induce more people to file voluntarily.

Within the existing literature, using prospect theory, some papers such as Yaniv (1999) have demonstrated that advance tax or tax deduction at source can be shown to be a useful mechanism to induce filing of returns. Similarly, it can be shown that if one can provide an income supplement associated with return filing then it can transform the decision in favour of filing a return.

It should be noted here that the model works under rather restricting assumptions – it assumes that even an individual's return is scrutinized, all suppressed income is revealed and there is no discretion in the application of penalty. In this situation, there is also no scope for litigation for

challenging the assessment of the tax department. Incorporating these changes can modify the results obtained here.

4.5 Conclusions

From this chapter, the following conclusions can be drawn

1. The predicted number of effective assessees is 35.79 million in 2013-14. This number is sensitive to the share of trade in GDP and the ratio of imports and exports to GDP.
2. In terms of the difference between the potential and actual returns filed in the country, the cross section model suggests that the number of potential returns can be higher by about 18 percent over the actual numbers for 2011-12 if one third of the households have two earners. In other words, the differences are not very large. The results however do indicate that sharp increases in the exemption threshold seem to have eroded the tax base in terms of number of people within the tax regime. If the exemption threshold had remained unchanged from 2004-05, for instance, the number of people filing a return would have been as high as 10.5 percent, i.e., 4.8 times the number filing a return at present.
3. The economic model suggests that there can exist conditions where even with incomes above the exemption threshold, people might prefer to not file a return. The range of incomes for which non-filing is a preferred option decline with a decrease in the tax rate and with an increase in the penalty rate. Further, an increase in the probability of detection too has a similar result.
4. The results in the time series analysis and the economic model both suggest that a reduction in the tax rate will bring in more people into the tax regime.

Chapter 5: Measures to Increase Number of Taxpayers

5.1 Factors influencing Compliance: A Survey of Literature:

In recent times there has been a large body of research about the compliance behaviour of taxpayers. In a November 2010 paper titled *'Understanding and influencing taxpayers' compliance behaviour'*, the SME compliance subgroup of the OECD Forum on Tax Administration, did a study of the research papers on tax compliance as also summarized the results of a survey done amongst certain member jurisdictions. [40]

As explained in the paper, a better understanding of taxpayer behaviour helps the revenue authorities to influence such behaviour towards the ultimate goal of voluntary compliance as opposed to enforced compliance.

Research on taxpayer compliance is relatively new, starting in the 1970s but has picked up momentum in recent years. The earlier studies represented by Alingham and Sandmo, concentrated on the economic aspects of tax evasion and divided taxpayers in two neat segments: compliant and non-compliant. According to this theory, depending on the cost-benefit analysis, a taxpayer makes a choice; the benefit being the unpaid taxes and the cost being the possibility of getting detected and paying fines. As a logical corollary of this theory, the prescription is that in order to increase compliance, the frequency of audit should be increased and the fines should also be increased. This deterrence theory, according to the OECD paper, was very influential in the enforcement practice of revenue bodies in the OECD countries.

Subsequent researches have however brought out the shortcomings of this theory pointing out that compliance cannot be explained by the deterrence theory alone and that considering the very low probabilities of detection and fine in most of the jurisdictions, there are a surprisingly large number of taxpayers who are compliant. So, the question to be asked is why taxpayers comply with the law Subsequent researchers brought in psychological and behavioural aspects in the theory of compliance.

Behavioural economists Kahneman and Tversky through the prospect theory introduced the concept of loss aversion. People tend to be risk averse for gains but risk seeking while averting loss. Taxpayers may thus resort to non-compliant behaviour to avert the loss of being called upon to pay a large sum of tax demand.

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[40] Understanding and Influencing Taxpayers' Compliance Behaviour (November, 2010) available at: http://www.oecd.org/tax/administration/46274793.pdf

Other factors that are used to explain compliance behaviour are norms, opportunities and economic factors and all these factors can interact with each other.

Norms can be personal and social. Personal norms stem from the personal experience and perception of the particular taxpayer. These are the deeply rooted convictions held by the taxpayer and are referred to as tax morals in the tax literature. These norms develop over time and are difficult to be changed in a short period of time.

As compared to the personal norms, there are also the societal norms that influence to a great extent the compliance behaviour of someone belonging to a particular social group. People are generally inclined to follow what they see or perceive others to be doing as part of the social norms. These social norms, however, are not static but get modified in the social process. Therefore, it is possible to influence such norms by positive interventions.

The interrelationship between the different actors in the tax compliance game is also illustrated by the agent based tax evasion models. These models use *Ferromagnetism* that allow for analysing tax compliance behaviour in large populations of heterogeneous agents that interact with each other in a direct manner. *Ferromagnetism* is a concept of Physics that describes the basic mechanism by which certain materials are attracted to magnets. In tax evasion literature, the concept is used with the assumption that a tax payer's compliance is associated with other tax payers' compliance. These models test how behavioural dynamics may raise or prevent tax evasion. They emphasise on the interactions among the various entities like taxpayers, law makers, tax practitioners, tax authorities, etc. involved in the taxation process; and the dynamics that these interactions may generate. A standard model of statistical mechanics, *the Ising model of ferromagnetism* is used for analysing income tax evasion dynamics under different enforcement scenarios. (Michael Pickhardt, (2014), Georg Zaklan,(2009) et al.).

Connected with the concept of norms is the idea of fairness. People will pay their fair share of taxes when they see others similarly situated within the group pay such taxes. There is thus a strong correlation between the perceptions of the behaviour of others and tax compliance. It is possible that the prevalent social norms that may result from a wrong perception may even affect someone otherwise having strong personal standard. When the perception is that tax evasion is rampant and the Revenue authorities are unjust or unfair or that the government squanders

taxpayers' hard earned money, a taxpayer may consider that non-compliance with the tax law may not be bad after all.[41]

Unlike personal norms, social norms are susceptible to change. However, these norms tend to be mostly negative. An example of such negative social norm can be found in the observation of Justice Sabyasachi Mukherjee of the Supreme Court of India, in the case of Commissioner of Wealth TaxVs. Arvind Narottam,[42] albeit in the context of tax avoidance:

> *"It is true that tax avoidance in an underdeveloped or developing economy should not be encouraged on practical as well as ideological grounds. One would wish, (…), that one could get the enthusiasm of Justice Holmes that taxes are the price of civilization and one would like to pay that price to buy civilization. But the question which many ordinary taxpayers very often, in a country of shortages with ostentatious consumption and deprivation for the large masses, ask is, does he with taxes buy civilization or does he facilitate the waste and ostentation of the few. Unless waste and ostentation in Government spending are avoided or eschewed, no amount of moral sermons would change people's attitude to tax avoidance."*

While the tax department may have little capacity to influence spending programmes of the government, as the OECD report points out; the tax administration needs to keep the policy makers aware of the issue.[43]

Opportunities for non-compliance will obviously increase actual non-compliance. It is common knowledge that opportunities for non-compliance or partial compliance is more prominent amongst the self-employed as compared to the salaried who are subject to deduction of tax at source. Besides, they also have more opportunity to deal in the cash economy. Therefore the effort of the administration needs to be limiting such opportunities.

The OECD report however cautions about the attitude of the *lazy non-complaints*, those who would like to comply but find it too much of a hassle to obey the law. For these groups the forms and processes need to be simplified. In this connection, the following observation is apt even for the direct tax administration in India.

"…Taxpayers sometimes feel they have to struggle really hard to do the right thing. Some can feel obstructed by complex tax laws and unclear tax forms, by a website that is down and if operational forms a perplexing labyrinth of intangible web pages, by a telephone number that is perpetually engaged, and by unaccommodating tax

[41] Understanding and influencing Taxpayers'Compliance Behaviour -Paragraph 77
[42] CWT Vs Arvind Narottam: 173 ITR 479 (SC)
[43] Understanding and influencing Taxpayers 'Compliance Behaviour -Paragraph 111

officers who are more than willing to explain why they are too busy to assist. Confronted with so much hindrance, taxpayers may feel insecure if they have actually met all the requirements, feel that their efforts are not acknowledged, feel they are treated unjustly, and ultimately may loose (sic lose) their intrinsic motivation to comply now and in the future."[44]

The report also talks about the *lazy compliant* who would not have complied but find it hard to work out a successful scheme and the tax administration needs to make evasion difficult to keep these folks in the path of the straight and narrow.[45] Encouraging electronic payment and having a robust third party reporting will make it difficult to evade.

As per literature, fairness and trust in the tax administration is one of the important components of tax compliance. This is intuitively true for every tax administration including that of India. However, while people even when dissatisfied with the tax administration; normally consider it to be fair that may not be the case for India. In this connection, it is interesting to study the observation of the Taxation on Income (Investigation Commission) that was set up at independence in 1947. In the chapter titled: " *Relations between the Department and the Public*", the report states:[46]

"(…) In paragraph 339 of their report, the Royal Commission on the Income-tax, in 1920,state: '*Even good administration cannot prevent taxation from being to some extent unpopular with those who contribute to it, because taxation deprives the citizen with of a portion of his means and devotes it to objects with which he may have little acquaintance and less sympathy, but an administration that is sympathetic and scrupulously fair, while adopting proper safeguards against evasion, can do much to reconcile the tax-payer to his lot and convince him that within the limits of the Statutes the tax has been laid upon him with due care and justice.*' While the Royal Commission found that in England "the income- tax was successfully administered", the replies to our Questionnaire show the general belief to be otherwise in this country. The Indian administration does not appear to have achieved even a ***"****passive acquiescence and a certain grudging co-operation on the part of the tax-payer",* which is the minimum necessary to secure the *"smooth working of the taxing machine so as to produce the full measure of revenue with the minimum of irritation to the tax-payer and with the least possible inequity between one tax-payer and another.*" After 67 years, that seems to be an ideal the department still needs to strive for.

[44] Ibid, Paragraph 91
[45] Ibid, Paragraph 91
[46] Report of the Income-Tax Investigation Commission submitted on 29-12-1948 [paragraph 438]

In the context of the present study, it is important to note this particular observation in the OECD report: [47]

"The most common example of limiting opportunities for evasion and mistakes is to introduce third party reporting with or without a tax withholding regime. Third party reporting can be used for pre-filling tax returns. This will limit opportunities for evasion and mistakes even more while at the same time constituting a service for the compliant taxpayer. It makes it very easy for the taxpayer to do the right thing."[48]

There are studies for many developed countries which suggest that collection of third party information by the tax departments is critical to foster an environment of voluntary compliance. In the context of the US economy, Slemrod notes "Although officially the U.S. income tax system is based on voluntary compliance, in one sense that characterization is purely Orwellian. An elaborate system of employer withholding, matching of information reports, and audits with penalties for detected evasion "encourages" compliance. The fact that, line item by line item, there is a clear positive correlation between the so-called voluntary compliance rate with the U.S. income tax and the presence of these enforcement mechanisms confirms their importance."[49] Based on the US IRS 2001tax gap analysis, Jennifer Hepp states: "Voluntary income tax compliance is positively correlated with "visibility." When the taxpayer is entirely responsible for calculating and paying her own taxes, such as those earning rents and royalties or farm income, the compliance rate is just 46 percent. The compliance rate jumps to over 90 percent when the income is subject to some form of information reporting. The compliance rate increases further when the income is subject to substantial information reporting, rising to over 95 percent. Expectedly, compliance reaches its peak of 99 percent when the income is subject to substantial information reporting and withholding. Taxpayers who fall outside of the withholding and reporting scheme, such as self-employed individuals, however, have significantly lower compliance rates."[50]

Even in a country, generally associated with very high tax morale, Denmark, it seems that third party reporting plays a crucial role in the compliance behaviour of the taxpayers.[51] In an experiment, a sample of over 40,000 individual income tax filers was selected. Half of them were randomly selected to be thoroughly audited. It was found that the tax evasion rate is very small (0.3%) for income subject to third party reporting, but substantial (37%) for self-reported income and since 95% of all income is third-party reported, the overall evasion rate is very

[47] Understanding and influencing Taxpayers 'Compliance Behaviour OECD (2011)
[48] Ibid Paragraph 90
[49] Trust in Public Finance- Joel Slemrod
50 The pursuit of "voluntary" Tax Compliance in a Globalized world- Jennifer Hepp
[51] 'Unwilling or unable to cheat? Evidence from a randomized tax audit experiment in Denmark.'

modest. The research therefore concluded that that third party reporting is an extremely effective enforcement device and enforcement resources are better spent on third-party information reporting than on traditional audits of self-reported items.

There are thus many actors in the compliance paradigm- the most prominent being the government, the taxpayer himself, the tax gatherer or the tax department, the tax accountants or representatives and other taxpayers. Alm et al in a 2012 paper point out that until now, the literature had mostly concentrated on the taxpayer himself.[52] However, all the actors have influence on the ultimate behaviour of the taxpayer and hence it needs a 'full house' of measures to tackle the problem. The authors note the different factors affecting compliance in the following table:

Table 5.1: Economic and psychological determinants of tax compliance

Perspective	Conclusions from research
Economic determinants	
Frequency of audit	A higher probability encourages compliance, where a subjective probability appears to have more impact on compliance than an objective probability
Fine	A higher fine has some deterrent effect
Marginal tax rate	A higher marginal tax rate has an ambiguous effect on compliance
Income Opportunity to avoid or to evade taxes	A higher income has an ambiguous effect on compliance. The self- employed with ample opportunities to evade are likely to be less compliant than taxpayers with more limited opportunities (e.g., source withholding)
Psychological determinants	
Complexity of tax law	Tax laws are too complicated and compliance is thus difficult, even if desired Attitudes are often treated as the source of tax morale.
Personal norms	Internalized values or the personal tendency to obey laws
Social norms	The norms and values in a social setting affect compliance
Societal norms	The norms and values of a society as a whole affect compliance
Distributive justice	A distinction is made between horizontal equity (e.g., an individual's tax burden

[52] Combining Psychology and Economics in the analysis of Compliance: From Enforcement to Cooperation- James Alm, Erich Kirchler and Stephan Muehlbacher

	relative to others with equal income), vertical equity (e.g., an individual's tax burden in comparison to those capable of contributing more or less), and exchange fairness (e.g., an individual's tax burden relative to the receipt of public goods financed by tax revenues)
Procedural justice	The fairness of the procedures for making tax-relevant decisions: having a voice in policy making, transparency, consistency, neutrality, etc., and fairness of interaction between authorities and taxpayers
Retributive justice	The fairness of the form and severity of the punishment imposed on tax offenders

Source: Table reproduced from Alm et al.(2012)

Thus simplicity of the law and procedure, fairness in dealing with the taxpayer, horizontal and vertical equity of the tax system, capacity to deal effectively with the non-compliant appears as important prerequisites for compliance. The economic and psychological perspectives of tax compliance are combined in a '*slippery slope framework'* analysis reposed by Kirchler, Hoelzl, and Wahl (2008). . It supposes two routes to tax compliance: deterrence of tax evasion by audits and fines on the one hand, and building a trusting relationship with taxpayers by services and support on the other hand. In this framework, trust in authorities and power of authorities as well as their interaction are key determinants of tax compliance. The framework assumes that not all taxpayers share the same mentality to taxpaying and that not all of them react in the same way to measures of tax enforcement. Thus, two forms of compliances are distinguished: *enforced compliance* and *voluntary compliance*. Enforced compliance is assumed to depend mainly on *power* of authorities to enforce taxpaying, e.g., through audits and fines, the voluntary compliance depends mainly on *trust* in authorities and a good relationship with taxpayers, e. g., by providing certain kinds of services and support to make taxpaying easier and more convenient. Both strategies may be useful and necessary to guarantee a high level of tax compliance. The framework concludes that the combination of power and trust is crucial. A reduction of power and/or trust may lead to a slippery slope – for given levels of power, increase in trust may increase compliance and vice versa. Reduction in the factor of either power or trust will lead to decrease in compliance. The reduction however is not uniform. At first, the overall tax compliance decreases somewhat; however, beyond a point there is a drastic fall. Beneath a certain level of power and/or trust, tax compliance might begin to sink quite drastically. The framework suggests that the position the authorities adopt or its attitude towards taxpayers is important for compliance. Thus, the framework highlights the necessity to consider the power of authorities, the trust in authorities,

and their dynamic interaction. Since the taxpaying should not be perceived exclusively as an onerous duty, but also as a well-accepted duty; the role of tax authorities should be determined considering the distinctions between enforced and voluntary compliance.

5.2. Types of compliance:

Compliance has several dimensions- one is 'reporting compliance' and the other is 'filing compliance'. Reporting compliance relates to those that are already in the tax system. Most of the literatures on compliance study refer to reporting compliance. Filing compliance is difficult to measure because there is no observable material in the form of declaration in the return of income. Two US IRS sponsored studies throw some light on some aspects of the compliance behaviour including on filing. In a paper titled- 'Taxpayer information assistance services and tax compliance'[53] behaviour, James Alm, Todd Cherry, Michael Jones, Michael McKee reflecting laboratory experiments with students, find that faced with uncertainty relating to true tax liability, taxpayers might under report or over report or may simply choose not to file faced with a fine for underpayment detected in audit. The paper concludes that *actions to increase taxpayer services* could lead to less tax evasion.

The other paper titled- *'Social Programs as positive inducements for tax participation'* by James Alm, Todd L. Cherry, Michael Jones, and Michael McKee examine the behavioural aspects of non-filers and is of particular interest in the context of our study. The authors point out that a tax enforcement mechanism in most of the countries typically starts with the filing of a return. It is only thereafter that all the audit and scrutiny can take place and the tax administration can find out under reporting and resort to fines and penalties in such cases. However, this administrative feature in most of the countries make non-filing attractive since the non-filer by not coming into the tax system avoids both the financial burden of the taxes and at the same time also avoids the probability of detection. The phenomenon is most prevalent amongst individuals that are not subject to third party information reporting or subject to withholding**.** The study also finds that while individual amounts involved may be small, collectively, the amount contributes substantially to the tax gap. In a study conducted by the US IRS, taxes not reported by non-filers were estimated to be $27 billion for the year 2001 out of the total tax gap of $343 billion. The study mentions that such gap may be more significant for developing countries.[54] According to the study while auditing and fines may be relevant for checking reporting compliance, filing

[53] paper available at: http://econ.tulane.edu/RePEc/pdf/tul1101.pdf
[54] Footnote 2 of the paper

compliance can perhaps be influenced by positive inducements. Citizens can be encouraged to file if the direct transfers to those that are entitled are routed through the tax system, particularly if the filing of a return is made the precondition for availing the benefit. The US earned income tax credit and childcare expense tax credit are examples of tax credit that incentivize taxpayers to file return of income. These credits are refundable credits – the taxpayer can claim refund if her tax liability is less than these credits. The laboratory experiments done in the study suggest that targeting tax credit to low income earners offers strong inducement to file. Besides, reminding the potential filers of the existence of the benefits should be made a part of the program. According to the authors, 'the ability to induce greater amounts of filing via positive inducements presents governments with a largely unutilized policy too in the endless quest to deal with non-compliance.

What comes out of the above discussions in terms of actionable points are designing a very robust system of third party reporting, a robust withholding system, simplification of the processes and an active campaign highlighting the efforts of the department in simplifying such processes and designing an incentive program through the tax system. In this background, let us examine the efforts of the Department in this regard and see if there is any scope of improvement.

5.3 An Assessment of Existing Policies of the Income Tax Department:

The policy options for increase in the number of tax payers have to be predicated upon certain grounds realities.

- The first condition is that the potential tax payer knows that the Government has the relevant information in its possession and therefore it is prudent to file the return of income
- It is not possible for the tax department to physically verify every activity and income of its citizens.
- In so far as business activities are concerned the department has earlier resorted to door to door surveys. But these have not again proved to be effective and have in fact often led to charges of harassment
- Despite various efforts in encouraging people to move away from a cash base system, ours is still a cash base economy and is likely to be so for quite some time in the future.

Accordingly, identification of potential tax payers can therefore be routed through monitoring expenditure.

However, such monitoring can only be through application of information technology

5.3.1 Central Information Branch (CIB)

"*An efficient machinery for collection, collation and dissemination of information is a sine qua non for an efficient tax administration charged with the function of collection of taxes and countering tax evasion."*[55] Following the acceptance of the recommendations of the Wanchoo Committee's report, in August, 1975 the CBDT reorganized the existing information set up and renamed it as the Central Information Branch (CIB) with the objectives of countering possible tax evasion and growth of black money and to broaden the tax base. The functioning of the CIB has under gone several changes and currently the CIB functions under the guidance of the Directorate of Income Tax (Intelligence and Criminal Investigation) [DITICI].

The underlying philosophy of the CIB is to let the taxpayers know that the tax department is keeping a watch on their activities with the hope that this will act as a deterrent and increase compliance. Here, the tax department collects from various persons/authorities, information relating to certain transactions/expenditure and then passes the same on to the assessing authorities, who then can verify whether those items of investments/expenditure were disclosed in the return of income.

The functioning of the CIB has come under the scrutiny of the CAG on two occasions; first in the year 1991 and then again in the year 2011. In 1991, the CAG was of the view that the overall objective of the CIB in increasing the tax base was not achieved and there was significant shortfall in achieving the targets in collection of information and verification in number of circles.

As per the 2011 CAG report, the key functions of the CIB are: (i) collection, collation of information from internal as well as external sources and its dissemination to Assessing Officers and other users in ITD; (ii) widening of tax base through identification of stop filers and non-filers; (iii) deepening of tax base by providing information for proper selection of cases for scrutiny assessments. CIB collects information relating to financial transactions like investment,

[55] Direct Taxes Enquiry Commission, December 1971

expenses, payment of taxes, etc. and details of persons involved in some specified activities. This information relates to 40 internal and external sources.

The power to call for information is derived from section 133(6) of the Income Tax act. In terms of the instructions issued by the CBDT from time to time, CIB collects information in respect of certain compulsory sources and from certain optional sources depending on the exigencies of the particular region/locality. Section 139A of the Income Tax Act read with rules 114B and 114C makes quoting of PAN compulsory for certain transactions. The idea is that these transactions will contain PAN which then can be matched with the declarations made by the taxpayers. However, the rules allow for persons not having PAN to file form no 60 and those having agricultural income to file form no 61. The CAG 2011 report found widespread misuse of this facility and even companies that are compulsorily required to file returns of income used these forms. Major part of the information remained unutilized and there was no uniform system to process these forms for follow up action.

It may be noted that the Task Force on Direct Taxes (Kelkar Committee) had also reviewed the working of the information collection system of the CBDT and in that connection pointed out certain deficiencies that are valid even now as is evident from the CAG's report 2011. As pointed out by the committee, the CIB first issues letters to various agencies, calling for information under Section 133(6). However not all agencies respond promptly and consequently summons under Section 131 need to be issued and even then, many agencies try to stall or even resist communication of information. Many a times the information is furnished in local languages and there is no uniformity in mentioning even the names and addresses. Obviously, this strains CIB's resources and delays verification and dissemination of information. In respect of optional heads, there is no uniformity and discretion is used in calling for information thereby creating possibilities of rent seeking. Besides the lack of adequate manpower, also hampers its work. The CAG report 2011 points out that there was an overall shortage of 53.63% in the Directorate. In the result, as per the CAG report, "*the CIB did not collect information from all compulsory codes and approved optional codes. A large number of collected pieces of information were without PAN and had zero value. All the persons were not furnishing the information called for and penal action was not taken against them.*"

In view of the discussions in the preceding paras, it may be logical to conclude that the institution of the CIB has not been successful and it may be worthwhile to see if some alternative can be found.

5.3.2. 1/6 Scheme:

In his budget speech for the year 1997-98, the then Finance Minister stated: "It is inexplicable that in a country of over 900 million people, only 12 million people are assessed to income-tax and, what is worse, only about 12,000 assessees are in the tax bracket of income above Rs.10 lakhs. I intend to make a beginning in widening the tax net by an amendment of Section 139 of the Income-tax Act. My proposal is that residents of large metropolitan cities who satisfy any two of the following economic criteria, namely, ownership of a four-wheel vehicle, occupation of immovable property meeting certain prescribed criteria, ownership of a telephone and foreign travel in the previous year, should normally fall within the taxable slabs and should voluntarily file their tax returns…." At this stage, it may also be noted that there was a very simplified return form for those that fell within this scheme.

Subsequently, the scheme was made one-by-six and the coverage was increased gradually. Telephone was taken out of its ambit in 2004. The task force on direct taxes in its 2002 report had recommended increasing the basic exemption limit to Rs 100000. Allaying the apprehension that the measure would reduce the tax base, the committee observed that "most taxpayers with incomes of up to Rs.1 lakh will continue to file returns on account of the one-by-six scheme and therefore the concern that they drop out of the tax net is misplaced."[56]

The report of the Task Force on Implementation of the FRBM Act headed by Dr. Kelkar again considered the issue of raising the exemption threshold to Rs 100000 from the then prevailing Rs 50,000. The task force took a leap of faith that the past episodes of increase in exemption limit was followed by an increase in the number of taxpayers and recommended such an increase and allayed the apprehensions of a fall in taxpayer base by observing that the taxpayer base would remain protected because of the one-by-six scheme and that the government could also consider using gross total income as the basis of filing tax return. [57]

In the budget for 2005-06, a number of measures were taken to expand the tax base. These included making it compulsory for partnership firms to file their return irrespective of their level of income; shifting the basis of filing of return from total income to gross total income; changing the one by six criteria by removing subscribers to cellular phone but adding a further one of persons incurring an expenditure of more than fifty thousand rupees on consumption of electricity. However, for some inexplicable reason, in the budget for 2006-07, the scheme itself was abolished.

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[56]See Para 1.25 of the report of the task force.
[57] FRBM Report dated 16 July 2004.

That the scheme was successful in increasing the number of taxpayers is obvious from the growth of taxpayers that we have analysed earlier. The analysis done in this study of the number of taxpayers over a period of time shows that there was a spurt in the number of assessees when the 2/4 (1/6 scheme) was first introduced in 1997. Thereafter the growth in the number of assessees does not show any significant movement. Therefore, *it is necessary to make filing of return compulsory based on some economic criteria without linking the same with quantum of income if we want to bring the marginal taxpayers in the tax net*. In the absence of data, it is not possible to estimate the tax gap relating to personal income tax but the experience in the USA indicate that a sizeable portion of the tax gap is represented by this group.

5.3.3. Quoting of PAN:

In the budget of 1998,[58] while strengthening the economic criterion, the Finance Minister also stated as follows:

"Coupled with tax widening, tax evasion continues to be a serious handicap. While efforts at enforcement would be strengthened, I propose to undertake a new initiative in making it obligatory for assessees to quote their PAN or GIR number mandatorily in respect of certain high value transactions. These transactions would be: -

- Purchase & Sale of immovable property
- Purchase & Sale of motor vehicles
- Transaction in shares exceeding Rs.50,000
- Opening of new bank accounts
- Fixed deposits of more than Rs.50,000
- Applications for allotment of telephone connection
- Payment to hotels exceeding Rs.25,000/-.

With increased usage of computerisation, this data will be fully utilised for increasing the tax-base and for preventing the leakage of revenue."

The CBDT has from time to time, prescribed by way of rules the transactions that require an individual to furnish the PAN at the time of entering such transaction. Many new items have been progressively added. The latest rules prescribe the following transactions and the limits.

[58] Para 93 of the Budget speech of 1998-99

Table 5.2 Transactions requiring quoting of PAN

Serial Number	Transaction-nature	Monitory limit for quoting of PAN (Rule 114B)
1	Sale/Purchase of immovable property	5,00,0000
2	Sale/purchase of motor vehicle	No limits
3	Time deposit with banking company	50,000
4	Deposit with Post Office Saving Bank	50,000
5	Sale and purchase of securities	1,00,000
6	Opening of a bank account	No limits
7	Application for Basic/cellular telephone connection	No limits
8	Hotels/Restaurants bills	25,000
9	Purchase of Bank draft in cash	50,000
10	Cash deposit with a bank in a day	50,000
11	Payment in cash for foreign travel*	25,000
12	Application for credit/Debit cards	No limits
13	Purchase of units/shares/debentures/bonds	50,000
14	RBI bonds	50,000
15	Life Insurance Premium	50,000
16	Purchase of Bullion/Jewellery at one time	5,00,000

Source : Income Tax Rules, Rule 114B

Note: * Does not include travel to Bangladesh, Bhutan, Maldives, Nepal, Pakistan, Sri Lanka, Saudi Arabia for Haj, China for Kailash Mansarover.

Quoting of GIR no was discontinued in 2004.The proviso to the rule specifies that a person not having a PAN may furnish form no 60 giving the particulars of the transaction. Those having income only from agriculture can furnish form no 61.

While quoting of PAN is compulsory, it is not clear what the intermediaries will do with such information. Rule 114D states that the persons collecting the form 60/61 shall forward the same (except in the case of bank account opening) to the Commissioner CIB in two instalments. Forms received up to 30th September shall be submitted by 31st October and forms received up to 31st March shall be forwarded by 30th April.

In his budget speech 2015, the Finance Minister mentioned: *"Quoting of PAN is being made mandatory for any purchase or sale exceeding the value of Rs. 1 lakh. The third party reporting entities would be required to furnish information about foreign currency sales and cross border transactions. Provision is also being made to tackle splitting of reportable transactions."* It is not clear if the new limit of Rs 1,00,000 will be applicable for all transactions and the separate monetary limits for different types of transactions will be dispensed with. Corresponding rules have not been framed as yet. In a way, this is a welcome move since the coverage will increase if it extends to all transactions. However, in

respect of certain transactions, the present limits that are pegged at Rs 50,000 or 25,000 will not be covered. If the target is to capture high value transactions, then this seems to be a good move. However, since the non-filing is a concern with marginal taxpayers, it will perhaps be useful to have lower limits so that this group too can be closely monitored.

5.3.4 Annual Information returns (AIR)

The Kelkar committee[59] rightly pointed out that the process of tax enforcement begins with identification of taxpayers, which is difficult task in an economy where unorganized sector predominates and only an effective taxpayer information system and monitoring can achieve this task. The task force recommended that PAN should be extended to all citizens and this would obviate the need for a separate citizen identification number; the responsibility of issuing PAN should be transferred to a different agency and the requirement of quoting PAN should be extended to most financial transactions. While allotment of PAN has been outsourced, the other two recommendations have not been accepted.

Once a taxpayer is registered, it is necessary to collect information from various sources and match the same with the information available regarding the particular taxpayers. With that end in view, the task force suggested formation of a taxpayer's information network (TIN) facility that would integrate all the information relating to the taxpayers that come through the TDS system, the information returns and the database of payments and refunds. Thus an important component of this information system is the third party information in the form of annual information returns. Considering the functioning of the CIB, the task force recommended that the Income tax Act should be amended to provide for annual information return by third parties in respect of transactions as may be prescribed. Although it is not stated, implicit in the recommendation is the fact that the information being collected by the CIB would be covered by the AIR system.

The Finance Act, 2003 introduced section 285BA to give effect to the recommendation. The section underwent some changes subsequently. Its ambit has recently been increased to submit financial information, as will be required under FATCA. However, we limit the discussion to domestic transactions. In terms of the section 285BA, annual information return in respect of certain high value transactions is required to be submitted by specified persons in respect of specified transactions as given in rule 114E registered or recorded by them during the financial

[59] Task Force on Direct Taxes Report, Government of India 2002

year. The due date of filing the return is 31st August of the following year. The NSDL has been authorized to receive the returns. The number of transactions in respect of which the information has to be collected and submitted to the tax department is only 7 and the value of the transactions has also been kept very high. In terms of Rule 114E the transactions and the limits are as follows:

Table 5.3: Transactions captured by AIR

Serial Number	**Transaction-nature**	**Monitory limit for reporting (Rule 114E)**
1	Cash Deposit in the savings bank account in a year	10,00,000
2	Credit card transaction in a year	2.00,000
3	Purchase of units of a Mutual Fund	2,00.000
4	Purchase of bonds/debentures of a company	5,00,000
5	Sale and purchase of securities	1,00,000
6	Purchase or sale of immovable property	30,00,000
7	RBI bonds	5,00,000

Source: Income Tax Rules, Rule 114E

As per rule 114E, the return is required to be filed on or before 31st August immediately following the financial year in which the transaction took place. Section 271FA provides for a penalty of Rs 100 per day of default.

The functioning of the system of annual information return was reviewed by the C&AG (Report No.4 of 2013 (Performance Audit). The audit pointed out that there were little checks in place to ensure that persons furnishing the information had included all the eligible transactions in their report and that the reported information was correct. The audit also found that the AIR filers did not furnish information in the correct way; names of assessees were wrong or misspelt or abbreviated; addresses of transacting parties were not correctly mentioned. The department did not levy penalties against person who did not file the AIR or filed belatedly as also against those that gave incomplete information. From the reply of one of the officers, it is apparent that since third parties were helping the department by furnishing information, persuasion was preferred over punishment. As in the case of CIB information, the audit also found that in respect of

some charges, many transactions were without PAN and people were filing form 60/61 and there was inadequate processing of such forms.

The CAG has recommended as follows:

a. "Compliance to the monitoring system put in place by CBDT needs to be ensured at different levels of ITD. The Ministry replied (December 2012) that with continuous evolution, functionalities are improving. The efforts are further continuing. However, implementation and monitoring issues require additional manpower for which proposal is under consideration.
b. Utilization of declarations received in Form 60/61 may be ensured by digitizing and disseminating them. The Ministry noted the observations and intimated (December 2012) that high value Form 60/61 were being digitized now.
c. Nomination of Designated Assessing Officers on regular basis to deal with Non-PAN AIR cases may be emphasized. The Ministry replied (December 2012) that an expert group has been set-up to suggest modalities for better utilization of Non-PAN AIR and CIB data. On receipt of recommendations, further action would be taken.
d. ITD may fix definite responsibility on AOs who fail to record or utilize the information available to them in course of their assessments. The Ministry replied (December 2012) that the issue of feed-back system in respect of such information was under consideration of the CBDT. The modalities would be worked out to see how the objectives could be taken forward under the given constraints of manpower."

However, the CAG recommendation is based on the current working. To be effective, there is a necessity to reengineer the process itself. An examination of the items of income to be reported shows that the limit has been kept at a very high level. It is possible that the information disclosed in the information return would not possibly have been disclosed but for such return. But it is unlikely that these persons would not at all be in the tax net. In other words, the information return as it exists today is perhaps useful more in the area of deepening of the tax base rather than in the area of widening of the same

5.4. Suggestions:

Based on the analysis of the literature and the country practices, certain suggestions can be made to improve filing compliance in India. These are discussed below.

5.4.1. Clear Policy objectives:

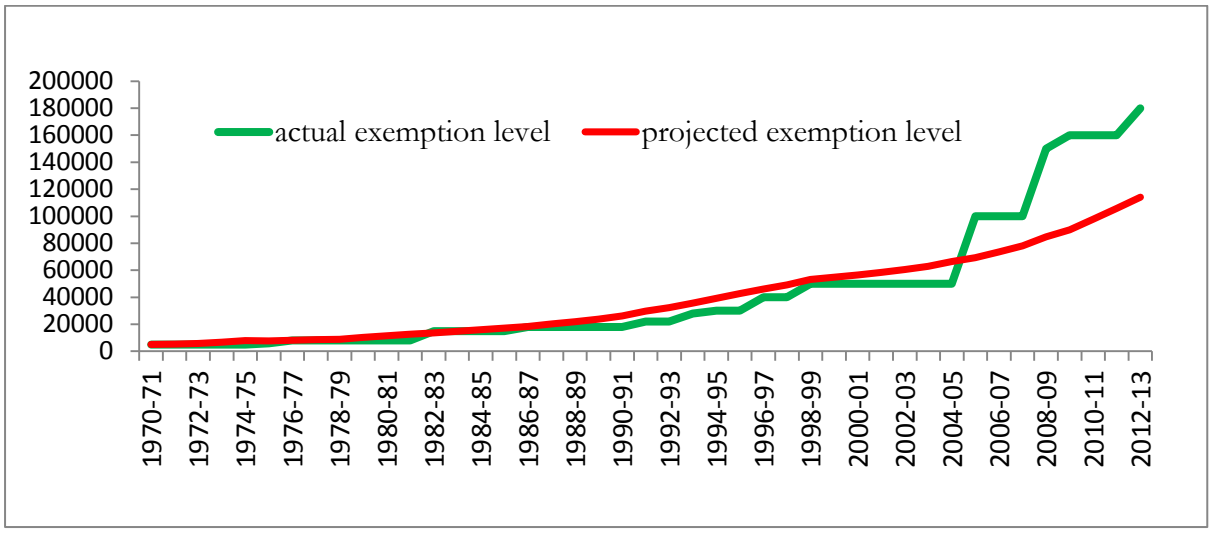
As discussed in the Chapter 2, there have been many differing experiments in the income tax department about the need of having an expanding number of tax payers on its rolls. There could be two views on these aspects. One view is that since most of the taxes collected actually come from the tax payers at a higher limit of taxable income, there is no point in burdening the tax department with a large number of tax returns that end up in not yielding much revenue. It is perhaps with this end in view that the income tax department had exempted salaried tax payers whose income was up to Rs.5 lakh from filing tax returns. However, the other view is that unless the tax department has all the potential tax payers in its records much of the cross verification through collection of information becomes meaningless.

5.4.2. Policy Changes

A. Exemption threshold

It is obvious that the number of assessees will depend upon the basic exemption limit that is put in place by the law. Figure 5.2 shows actual exemption threshold and the inflation adjusted threshold, taking exemption threshold for 1970-71 as the point of reference. The figure shows that till about 2004-05, the actual exemption limit was more or less in line with the inflation rate. However, the subsequent raising of the exemption limit is much above the inflation adjusted exemption level. One theory is that the increase in the exemption limit will automatically bring more people in the tax net. This is, however, not borne out by empirical evidence for the period 2005-06 onwards. In fact, the fall in number of new taxpayers for this period can be attributed at least partly to this disproportionate increase in the basic exemption limit. As discussed in Chapter 4, there is substantial erosion in the number of taxpayers as a result of increase in the exemption threshold – if the exemption threshold remained Rs 50,000, then the potential taxpayers would be over 4 times the present number.

Figure5.1: Evolution of Exemption threshold



Source: Calculated from Union Budget, Various years

Note: The projected exemption level is derived after correcting the exemption level of 1970-71 income tax exemption level.

B. Linking incentives to filing of returns

The shift to exemption regime from the rebate regime was followed by a change in the filing requirements which is now based on Gross Total Income (GTI) rather than on total income. Thus assuming that a person having a Gross Total Income of INR 400000 avails a deduction of INR 150000, he is left with an income of INR 250000. His income is not taxable. But, under the present law, he is required to file a return of income since his GTI exceeds INR 250000.The question is whether such types of taxpayers actually file their returns of income. Although, there is the provision of a penalty of INR 5000 under section 271FA, that may not be a good enough deterrence for such class of taxpayers to come into the tax net by filing returns of income. No criminal prosecution can be brought against such persons under section 276CC since no tax is payable.

In order to get such people to actually file returns of income, it is necessary to make the deduction available under various sections like 80C contingent upon filing of return. In other words, there should be a provision to the effect that no deduction under the specified sections would be allowed for anyone having gross total income above the exemption limit unless a return is filed.

C. Incentivizing taxpayers: The Korean example

The South Korean experiment to incentivize use of credit cards by the SME sector as also the issue of cash receipts has drawn the world attention.[60] The 'credit card income deduction' scheme was introduced in Korea in 1999 and was initially available to salary earners only in recognition of the fact that this group exhibited higher transparency in reporting taxable income. One could deduct 10% of the amount in excess of 10% of total salary if the amount paid through credit cards amounted to 10% or more. There was a maximum outer limit of 3,000,000 won or 10% of the total salary for the taxation year whichever is less. The deductible amounts also included the credit card expenses of the immediate family members as well. Since the objective was to increase the transparency of commercial transactions, transactions with government bodies, insurance payments and such like were excluded. There was also a lottery prize of 100 million won involving credit card slips. This encouraged even lower income groups to use credit cards. The program was subsequently extended to debit cards.

As for the seller or provider of services, there was a scheme of 'tax deduction based on an increase in income'. Under this scheme, there was a deduction available from the taxes payable amounting to 50% (maximum) of increased credit card payments times the share of credit card sales in total sales.

"Between 1996 and 2003, the number of points of sale (POS) and credit cards per person grew by nearly 200%. The measures account for part of the increase in the number of taxpayers, which went from 2.7 million to 3.6 million between 1996 and 2000. Finally, tax revenue went from 14% in 1996 to 17% in 2000, and the informal economy decreased from 16% of the GDP in 1993 to 12% of GDP in 2000. A decade after the implementation of the measures, Korea had become the second ranked economy in the world in the use and penetration of credit cards."[61]

The Finance Minister in his Budget speech 2015 has also stated: "One way to curb the flow of black money is to discourage transactions in cash. Now that a majority of Indians has or can have, a RUPAY debit card. I, therefore, propose to introduce soon several measures that will incentivize credit or debit card transactions, and disincentivise cash transactions."

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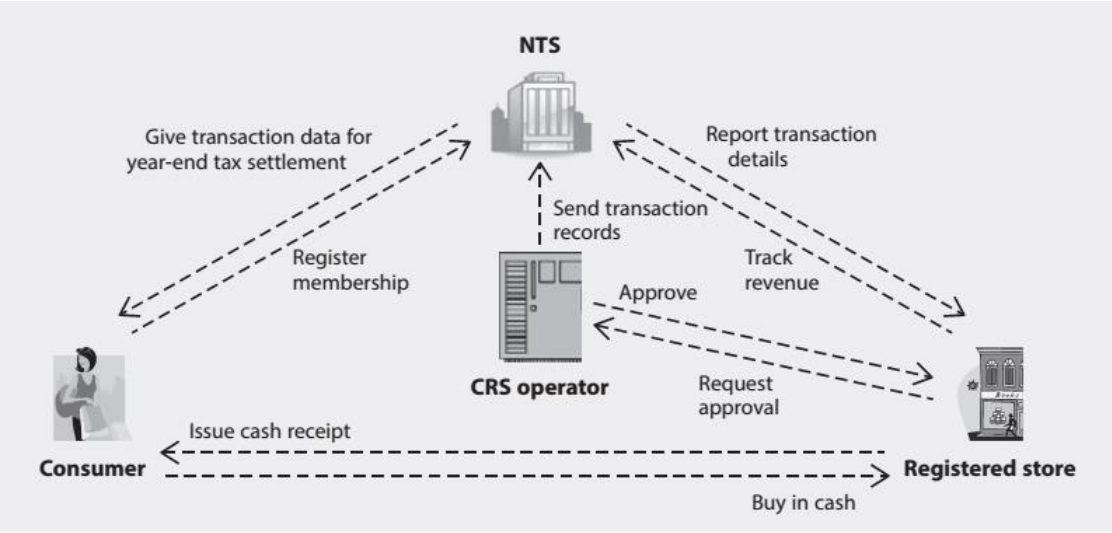
[60] See for example the reference to the South Korean experiment in - OECD (2014), Tax Compliance by Design: Achieving Improved SME Tax Compliance by Adopting a System Perspective, OECD Publishing. http://dx.doi.org/10.1787/9789264223219-en

[61] Banking Penetration in Uruguay, Banco Bilbao Vizcaya Argentaria, https://www.bbvaresearch.com/wp-content/uploads/migrados/WP_1308_tcm348-372180.pdf

Apart from the use of credit cards, more interesting is the experiment in incentivizing the issue of cash receipt by business establishments. Under this scheme when a vendor registered with the NTS receives cash, he is obliged to issue a receipt using electronic devices through which the transactions are reported electronically to the National Tax Service (NTS). Salary and wage earners get the same benefit as is available for credit card.[62] The lottery system ensured that even those that do not get the benefit of deduction insist on receipt.[63] As for the business owner, he can enjoy benefits both by issuing and receiving Cash Receipts. When he issues Cash Receipts, he can claim 1.3% VAT credit of the corresponding transaction. In addition, issuers can receive a 20 won tax credit for transactions at less than 5 thousand won. When business owners receive Cash Receipts for expense deduction, they get input credit benefits. The schema is as follows:

Figure 5.2: The Cash Receipt System[64]



Source: OECD (2014) [65]

5.4.3. Administrative Measures

A. Third Party Information

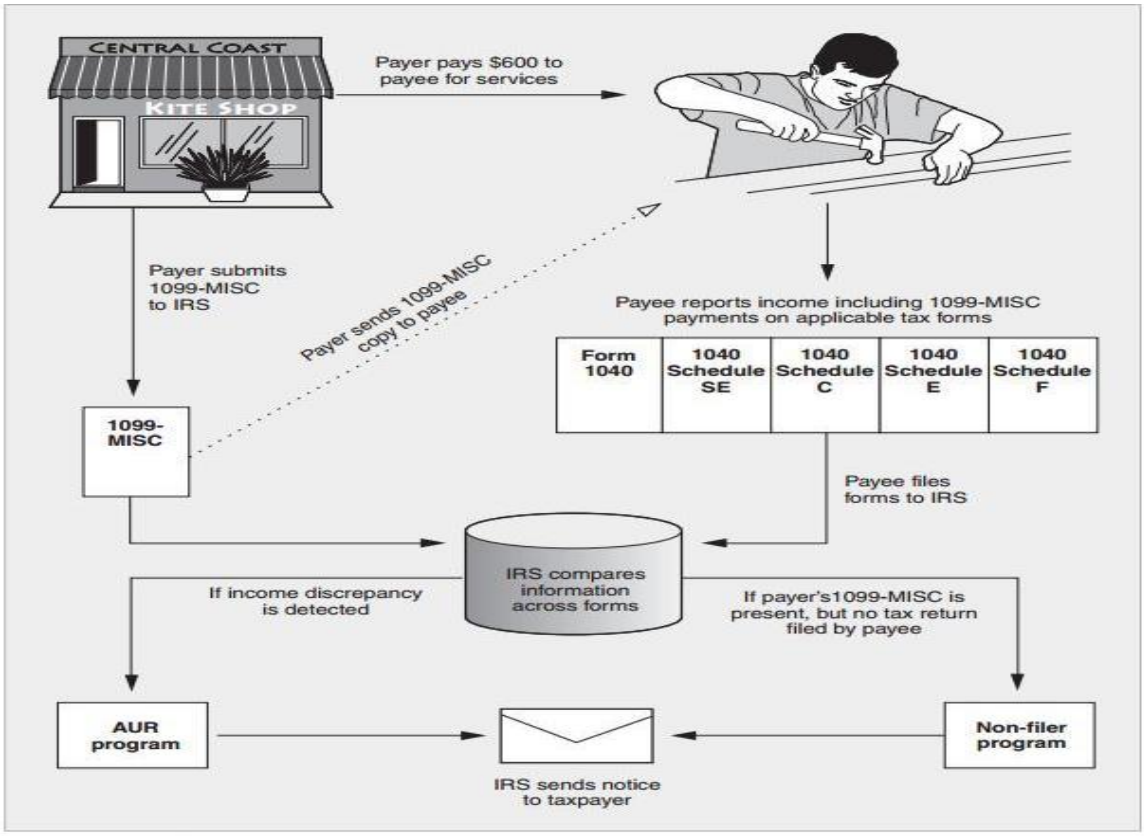
The US IRS requires information returns under various heads. These are – General reporting including MISC reporting, Education reporting, Health Insurance reporting, transfer of stock

[62] Jae-Jin Kim & Beom-Gyo Hong (2013) Credit Card Stimulation Policy in Korea: Assessment and Recommendations, Korea Institute of Public Financehttp://eng.kipf.re.kr/publication/Publication_View.aspx?idx=522060
[63] http://www.oecd.org/tax/administration/tax-compliance-by-design-9789264223219-en.htm
[64] NTS Annual Report 2013 and information supplied by Korean NTS Official http://www.keepeek.com/Digital-Asset-Management/oecd/taxation/tax-compliance-by-design/the-future-tax-compliance-environment_9789264223219-6-en#pag
[65] OECD (2014),Tax Compliance by Design: Achieving Improved SME Tax Compliance by Adopting a System Perspective, OECD Publishing. http://dx.doi.org/10.1787/9789264223219-en

reporting and retirement reporting and some times the amount to be reported may be as low as $10.

Payers are required to submit form 1099-MISC for a variety of payments made in the course of a trade or business. For 1099-MISC reporting, a trade or business includes businesses, non-profit organizations, and federal, state, and local government agencies. The types of reportable payments include payments to nonemployees for services of at least $600; royalty payments of $10 or more, medical and health care payments made to physicians or other suppliers (including payments by insurers) of $600 or more. Personal payments, such as a payment by a homeowner to a contractor to paint personal residence, are not reportable. Other payments that are not reportable include payments to a corporation, payments for merchandise, and wages paid to employees. Wages paid to employees have to be reported separately on a form W-2. [66] The Government Accountability Office (GAO)[67] gives the following illustration of the process of information submission and verification:

Figure 5.3 Matching 1099- MISC Reportable Non-Employee Compensation Information With Individual Tax Returns



Source: GAO analysis of IRS information.

[66] IRS Could Do More to Promote Compliance by Third Parties with Miscellaneous Income Reporting Requirements, GAO-09-238, http://www.gao.gov/assets/290/286636.pdf

[67] GAO-09-23S

In its August 2009 information note on withholding & information reporting regimes for small/Medium- sized businesses & self-employed taxpayers, the Forum on Tax Administration compliance sub-group, on analysis of the practices in 7 jurisdictions [Canada, Ireland, Japan, New Zealand, Norway, the UK and the USA], also reiterates that very high levels of compliance can be achieved in respect of income that is subject to both withholding and information reporting requirements, while lesser but still reasonably high levels of compliance can be achieved in respect of income that is subject to substantial information reporting and that compliance is likely to be considerably less in respect of income from SME/ self-employment activities that is neither subject to withholding nor information reporting requirements. [68]

In view of the foregoing discussion, it is necessary to increase the ambit of third party reporting in India also. Considering the fact that CIB has not been effective in increasing the tax base, there is no point in continuing with this experiment. However, the information that is collected is very relevant. Therefore, the proper alternative will be to expand the domain of Annual Information Return.

The department now collects information on 40 heads through CIB. These have been developed over a long period of time. A code has been given to each head of information. Ten of such *codes* are compulsory. The balance 30 codes are optional depending on the prevalence of the particular form in the different commission rate. Much thought has gone into designing the source codes. A careful examination of these source codes reveals that the following 19 of them are on the expenditure side and are of such a nature that only taxpayers having at least taxable income can incur the same. Such information can be captured in the AIR. (Table 5.4)

Table 5.4: Proposed items for AIR:

S.No.	Source	Item
1.	Registrars/Local Municipal Bodies	(i) Sale and purchase of immovable property valued at Rs.5,00,000/- or more (ii) Information relating to transfer of capital assets where value declared for the purposes of stamp duty is more than the sale value. Information collected to include names and addresses of sellers, date of transaction, amount of sale consideration and value adopted for stamp duty purposes
2.	RTOs/Finance	Sale and purchase of motor vehicles valued at

[68] Withholding & information reporting regimes for small/Medium- sized businesses & self-employed taxpayers- OECD [August 2009]

	companies/car dealers	Rs.5,00,000/- and above
3.	Banking company/ financial institutions	Time deposit exceeding Rs.2,00,000 with a banking company
4.	Post Office	Deposits exceeding Rs.2,00,000/- in any account with Post Office saving bank
5.	Hotels and Restaurants	Payment to hotels and restaurants against their bills for an amount exceeding Rs.1,00,000/- at any one time
6.	Banks	Payment in cash for purchase of bank drafts or pay orders or banker's cheques from a banking company of an amount aggregating Rs.1,00,000/- or more during any one day
7.	Banks	Deposits in cash aggregating Rs.2,00,000/- or more with banking company during any day
8.	Travel Agents/Airlines	Payment in cash in connection with travel to any foreign country of an amount exceeding Rs.1,00,000/- at any one time
9.	Bank and financial institutions	i. Payment made by any person against bills raised in respect of credit card issued to that person aggregating to Rs.1,00,000/- or more (in a year ii. Payment made by any person against bills raised in foreign currency in respect of credit card issued to that person aggregating to Rs.50,000/- or more in a year
10.	Mutual Funds	Names and address of investors investing Rs.1,00,000/- and above but less than Rs.2,00,000/- in Mutual Fund units
11.	Registrar of Companies/ Companies/institutions	Name and address of Investment investing Rs.2,00,000/- and above but less than Rs.5,00,000/- for acquisition of debentures or bonds issued by a company or institutions
12.	Telecom companies	Subscriber to Cellular telephone, landline telephone including internet connections by having bill amount exceeding Rs.1,00,000/- per annum
13.	Clubs, Gymnasiums, Health Centres, Spas, Holiday/Country Resorts	Any person who is a member of such Club, Gymnasiums, Health Centres, Spas, Holiday/Country Resorts where entrance fee is Rs.50,000/- or more
14.	Post Office	Purchase of Kisan Vikas Patras/Indira Vikas Patra/national Savings Certificates of Rs.1,00,000/- or more
15.	State Excise Department	Name, address of the liquor shops, license amount paid
16.	Electricity Boards/ Undertakings	Electricity bills above Rs.2,00,000/- in a year for residential premises and Rs.5,00,000/- in a year for commercial establishments
17.	Builders & contractors/ Housing Co-operative Societies	Name and address of persons who have entered into agreement for purchase and sale and details of transactions Rs.10,00,000/- and above
18.	Insurance Companies	Payment of insurance premia of Rs.2,00,000/- and above
19.	Educational institutions	Payment details of admission in educational institutes under Management Quota and NRI quota and payments exceeding Rs.2,00,000/- per year

B. Form 60/61:

However, to be useful, the escape route of form 60/61 needs to be first plugged. Form 60 was notified under second proviso to Rule 114B at a time when the department used to allot PAN on its own and there was a considerable backlog in the allotment of the same. That is no longer the case. Following the Kelkar committee recommendation, allotment of PAN is outsourced and NSDL and UTISL receive applications and allot the PAN. There is hardly any waiting time. In fact, the number of PAN allottees is much more than the total number of taxpayers on the record of the Income Tax department. On the other hand, the facility of quoting PAN is a convenient escape route for complicit taxpayers and intermediaries. This also becomes evident from the Cobrapost[69] tapes relating to Money laundering.

By way of an example:

"Singh has a way out: "Usmein PAN number … ho toh gaya na Form 60 ke base pe we can deposit the cash. Form 60 hota hai usmein declaration hoti hai ki mere paas PAN card nahin hai theek hai to usmein Form 60 hota hai wo hum le lete hain ki is bande ke paas PAN card nahin hai aur hamne iska account khola hua hai deposit kar raha hai fund uske liye hota hai (PAN number in that … it is done then. On the basis of Form 60 we can deposit the cash. There is a declaration in Form 60 that I don't have a PAN card…Ok. We take a Form 60 from the customer saying that he does not have a PAN card and we have opened an account for him. He is depositing funds in it. That is for this purpose)."

The CAG study on both CIB functioning and AIR functioning also indicates that the quoting of PAN is abysmally low. There is no logic of continuing with the proviso to rule 114B and the same should be deleted.

As for FORM 61, the same applies to agriculturists who enter into the specified transactions. This was considered necessary in view of the fact that agricultural income is exempt from income tax. However, the transactions are of such a nature that the agriculturists that would be covered are likely to have other incomes from investments/loans/ fixed deposits. In other words, they are unlikely to be pure agriculturists. Therefore keeping the focus on transactions and not on the nature of income, this rule also needs to be scrapped. Besides, there is no rule that an agriculturist cannot have a PAN. This may also help the department to detect those agriculturists having non-agricultural income above the threshold limit.

[69] Cobrapost.com

C. Prepopulated returns:

The OECD forum on tax administration- Taxpayer's services subgroup issued a paper titled: Using Third Party Information Reports to Assist Taxpayers Meet Their return Filing Obligations- Country Experiences with The Use of Prepopulated Personal Tax Returns.[70] The paper, based on a survey of the country practices in Denmark, Estonia, Finland, Norway, Sweden, Iceland, Chile and Spain, posits that there are certain benefits in the system of prepopulated tax returns being sent to the taxpayers. These are:

1) a substantially reduced compliance burden for taxpayers;
2) greater certainty for taxpayers that they have fully reported their income and properly claimed their deduction entitlements;
3) an improved image of revenue body, resulting from the more personalised service being given to taxpayers;
4) faster processing of taxpayers' tax return information;
5) quicker refunds of overpaid tax to taxpayers; and
6) elimination of much of the work associated with raising amended assessments that result from unintended taxpayers' errors and/or traditional post-assessment verification programs.

From the compliance perspective, such returns by their very design will include information concerning taxpayers' liabilities that might not otherwise have been reported by them. In addition, the process of sending pre-populated returns serves as a reminder to taxpayers of the need to complete their filing obligations and thus may reduce the level of follow-up action otherwise required by the revenue body. Moreover, assisting taxpayers in these ways also may increase respect for the revenue body as, compared to traditional approaches, the availability of pre-populated returns is likely to be viewed by most taxpayers as a genuine and personalised service that was not previously available.

In India, there are reports that for certain items the tax department might prepopulate the return in order to facilitate filing of returns.[71] This is indeed a very good move and need to be progressively expanded.

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[70] Using Third Party Information Reports to Assist Taxpayers Meet Their return Filing Obligations- Country Experiences with The Use of Prepopulated Personal Tax Returns available at: http://www.oecd.org/tax/administration/36280368.pdf

[71] Coming soon: Pre-filled I-T return forms, Vrishti Beniwal, New Delhi March 30, 2013 http://www.business-standard.com/article/economy-policy/coming-soon-pre-filled-i-t-return-forms-113032900193_1.html

One area may be particularly mentioned. The latest revenue-foregone statement shows that the government has foregone Rs 422.9 crores in respect of 80G deduction. This is a particularly fraud prone system of giving deduction. The 80G certificates are issued in non-statutory forms and credit is taken without proper verification. Since the charitable institutions that receive the donations and issue the certificates are to file their returns, it is desirable that the tax department directly credits the appropriate amount of deduction/ rebate through its computerized system. The same can hold true for donation to political parties and deduction on account of health insurance premiums paid. The latter accounted for Rs 1008 crores of revenue foregone in 2014-15. Further, for other savings instruments too, where benefits under section 80C are being provided, in principle this policy can be adopted.

D. Information Dissemination

Tax collection is not a pleasant function and there are always attempts to project the tax collector as a villain. A particular mention may be made of an attempt to create or at least influence the impression about the unfairness of the direct tax administration in a December 18, 2014 article by Rajiv Kumar in the edit page of the Times of India- Taxing times for make in India[72]: *CBDT will scare away investment if it is allowed to pursue witch hunts on business*. After accusing the CBDT of many misdemeanours, including 'tax terrorism' he writes: *"For domestic investors and indeed for common taxpayers like you and me CBDT is a virtual terror."* It is true that the CBDT had issued a rejoinder pointing out the actions taken for minimizing litigation, but it did not get the prominence that would have nullified such negative publicity

At times, the Revenue authorities themselves may contribute to the formation of such negative impression by highlighting cases of tax evasion that send the message that tax evasion is widespread. It is therefore very important for the Revenue authorities to communicate in such a manner that the signal is that most of the taxpayers are compliant but those that are not will be caught by them and punished.

In fact, Tax administrations around the world have been motivated towards creating a positive image among the taxpayers through various measures over the years. One such measure is through revealed information relating to efficiency and transparency of the return process. The Internal Revenue System[73] of the United States government for example, reports a large set of

[72] Rajiv Kumar: Senior fellow, Centre for policy research
[73] Examination Coverage, IRS http://www.irs.gov/uac/IRS-Enforcing-Laws

information (more than 50 variables) relating to number of returns filed, to number of returns filed electronically, number of returns under examinations (scrutiny), number of zero returns filed, number of stop filers and number of returns with additional tax and penalties were recommended after examination etc. in its website. The Canada Revenue Agency[74], Australian Tax Office[75] and HM Revenue and Customs[76] too, report information relating to efficiency and transparency of the return process.

The table below lists some of the information that a tax administration may report on its website to address this issue. Dissemination of such information in public media could help build a more positive image of the department.

Table 5.5: Information of Building Image of the Department

Total Number of Returns Filed
Number of Returns Filed Electronically
Number of Returns under Scrutiny
Number of Returns under Scrutiny facing disputes with taxpayers
Number of Returns with review and errors
Number of Stop Filers
Number of Returns with additional tax and penalties
Number of late filers
Number of zero returns
Number of audit notification/ scrutiny notification sent
Number of non-filers/ later filers who were sent notice by the tax administration

Source: Constructed

[74] Final Statistics, *CRA* http://www.cra-arc.gc.ca/gncy/stts/t1fnl-eng.html
[75] Taxation statistics, ATO https://www.ato.gov.au/About-ATO/Research-and-statistics/Taxation-statistics/
[76] HMRC statistics https://www.gov.uk/government/statistics

Chapter 6: Conclusion

Chapter 1 of the study examines and compares the available data sources. In view of the limitations of such data sources as discussed in detail, the study carries out the time series analysis using CAG data on number of assesses while the cross section analysis has been carried out using the Indian Human Development Survey for individuals and the NSS Survey on Unincorporated Non-agricultural Enterprises (Excluding Construction) in India.

The time series analysis of the total number of taxpayers in the categories of firms and individuals, in chapter 2 reveals that:

1. Both for individuals and firms, the growth in the number of taxpayers has plateaued. While for the individuals, the break comes after 1998, for firms the break comes somewhat earlier by 1991. Interestingly, the change in trend for these two types of entities was in opposite directions – while the number of firms filing return stagnated, the number of individuals filing returns had dramatically increased till 1998.

2. The study indicates that both tax policy and other economic variables are important for determining the trends in number of effective assessees in individuals and firms.

3. While policy and administrative measures pulled up the number of individual taxpayers, once the administrative measures were withdrawn, the total number of assessees has not dropped off.

4. Economic growth and changes in the economy to bring in more assessees into the system may not be as effective as alternative administrative measures which could be faster in achieving the same goal.

While the time series analysis reveals that the total number of taxpayers has increased and that there are variables which explain the change in these numbers, it is also important to understand the underlying distribution. In chapter 3 we compared alternate sources of information and arrived at a broad conclusion that the number of taxpayers as calculated is higher than that reported by the income tax department. But the difference is not very large for individuals but is substantial for firms.

To examine whether there is close correspondence between income tax data and the data from the survey across income and activity classification, chapter 3 presents results on profiling of taxpayers. These results suggest that while in lower income groups the survey shows much larger

numbers than the income tax department data on returns, the differences disappear and even reverse themselves in the higher income categories. This holds both for individuals and firms. For the individuals, the differences are concentrated in the categories with incomes less than 4 lakh per annum while for firms, these are concentrated in the income groups with income less than Rs 10 lakh. This result suggests that while the overall number of taxpayers might not be at wide variance, there is considerable scope to increase the numbers in the lower income categories.

In the activity wise profiling, with the caveat that significant number of returns do not contain information on activity code, the composition indicates that in the survey some manufacturing sectors and food and beverage services show up more prominently than in the returns. Similarly, in the case of individuals, in manufacturing, trading, building and estate agents and services sector, the share in the survey is higher than the share in the ITD returns. Sectors like professionals and commission agents are not that common in the survey. These results too indicate that there could be some scope for expanding the number of taxpayers. However, more focused identification of sectors has been hampered by the non-availability of data.

Chapter 4 provides some models for predicting the number of effective assessees. This is followed by an economic model to understand the conditions under which individuals might prefer not to file a return. The results from this chapter can be summarised as follows:

1. The predicted number of effective assessees. The same is 35.79 million in 2013-14. This number is sensitive to the share of trade in GDP and the ratio of imports and exports to GDP.

2. In terms of the difference between the potential and actual returns filed in the country, the cross section model suggests that the number of potential returns can be higher by about 18 percent over the actual numbers for 2011-12 if one third of the households have two earners. In other words, the differences are not very large. The results however do indicate that sharp increases in the exemption threshold seem to have eroded the tax base in terms of number of people within the tax regime. If the exemption threshold had remained unchanged from 2004-05, for instance, the number of people filing a return would have been as high as 10.5 percent, i.e., 4.8 times the number filing a return at present.

3. The economic model suggests that there can exist conditions where even with incomes above the exemption threshold, people might prefer to not file a return. The

range of incomes for which non-filing is a preferred option decline with a decrease in the tax rate and with an increase in the penalty rate. Further, an increase in the probability of detection too has a similar result.

4. The results in the time series analysis and the economic model both suggest that a reduction in the tax rate will bring in more people into the tax regime.

Using the results we have obtained in the study so far, chapter 5 presents some suggestions on how to bring in the non-filing taxpayers into the system. These suggestions are grouped into three categories. To begin with, it is essential to have a clear policy perspective on whether the tax department wants to concentrate on revenues alone and hence concentrate on revenue yielding tax payers who also happen to be from higher income groups, or whether the marginal taxpayer too needs to be brought in to improve the culture of compliance. Once a decision in favour of the latter is taken, there are a series of policy and administrative decisions that can aid in reducing non-filing. The policy measures can be summarized as

- Refraining from increasing the exemption threshold too frequently – while every government has the right to decide on the exemption threshold, increases in the exemption threshold tends to erode the tax base in terms of number of tax payers significantly. Some countries even desist from correcting the exemption threshold for inflation on a regular basis.

- Limiting the benefits from tax policy incentives to individuals/agents who comply with the tax laws like filing of returns.

- Incentivizing the move away from cash to other financial instruments: it is often remarked that India continues to be a cash based economy which undermines compliance with tax laws. Taking from the Korean experiments, the chapter proposes some incentives that can be given to encourage this move.

In addition the chapter also proposes some administrative measures. These can further be divided into two categories – those that could further augment the cause of "enforced compliance" and those that could aid "voluntary compliance" as formulated in the literature on slippery slope. To begin with measures suggested to augment "enforced compliance" are:

- Third Party Information: there is substantial literature to suggest that compliance and filing improves with increase in information with the government. The chapter therefore

proposes a change in the system of collection of information away from the present institutional arrangement of CIB to an augmented list for AIRs.

- Form 60/61: It has been argued that some of the success from the effort to collect information is defeated by the option of filing forms 60 and 61. It is therefore proposed that the department should do away with these forms and PAN be made mandatory for all income earning individuals in the economy, irrespective of what their source of income is.

Turning to measures to support voluntary compliance, the study has identified the following measures:

- Prepopulated returns: these can be a mechanism of aiding the taxpayers' efforts at return filing by informing the taxpayer of certain details that are already with the department. It can therefore be treated as a service to the tax payer. In the case of delinquent taxpayers, such services might make the department more visible and hence induce compliance. It is understood that the department is already considering this issue.

- Information Dissemination: Tax departments tend to face a lot of bad publicity for their efforts to bring in the evading taxpayer. It would be useful to address this issue by periodically putting out information on the extent of interface of the tax department with the average tax payer. Such information could work towards increasing confidence of the taxpayer on the department.

Appendix – I

The size classes in the AIITS were revised from time to time a summary of the classification has been provided below:

Table A.1 Size classification of number of returns (in Rs. 000)

1984-85	1985-91	1991-92	1992-93	1993-95	1995-98	1998-00
0-20	0-20	<25	<28	<35	<40	<40
20-25	20-50	25-50	28-50	35-50	40-50	40-100
25-30	50-100	50-100	50-100	50-100	50-100	100-200
30-50	100-200	100-200	100-200	100-200	100-200	200-500
50-100	200-300	200-300	200-300	200-300	200-300	500-1000
100-200	300-400	300-400	300-400	300-400	300-400	1000-2500
200-300	400-500	400-500	400-500	400-500	400-500	2500-5000
300-400	500-1000	500-1000	500-1000	500-1000	500-1000	5000-10000
400-500	>1000	>1000	>1000	>1000	>1000	>10000
500-1000						

1. The data sources for each variable has been listed below
   i. *Share of Unorganised*: Calculated using the data from National Accounts Statistics in Table 76.1
   ii. *Share of Compensation of employees in GDP*: Calculated using the data from National Accounts Statistics in Table 76.1
   iii. *Deposit Rate*: Handbook of Statistics on Indian Economy from Table 74 (maximum rate was taken)
   iv. *Share of Manufacturing*: Handbook of Statistics on Indian Economy from Table 3
   v. *Share of Agriculture*: Handbook of Statistics on Indian Economy from Table 3
   vi. *Share of Trade*: Handbook of Statistics on Indian Economy from Table 3
   vii. *Growth in per capita GDP*: Calculated from data in Handbook of Statistics on Indian Economy from Table 1
   viii. *Inward remittance as a percentage of GDP*: World Development Indicators, World Bank
   ix. *Statutory Tax Rate*: Computed using tax slabs and respective rates prevailing in each year. A certain level of income is assumed in 2009-10 and this is deflated using the GDP deflator. Tax on this income is calculated (making deductions under sections 80 C or 88 as is applicable in that year) and the tax is divided by income to get the rate.

x. *Urban Gini Index*: Calculated from various annual NSSO report on household consumer expenditure and interpolated for years when the report was not available.

xi. *Share of exports and imports in GDP*: Handbook of Statistics and World Development Indicators, World Bank.

xii. *Per capita GDP*: Calculated form Handbook of Statistics on Indian Economy Table 1

3. Table A.2 *Correlation between Share of construction and various measures of STR*

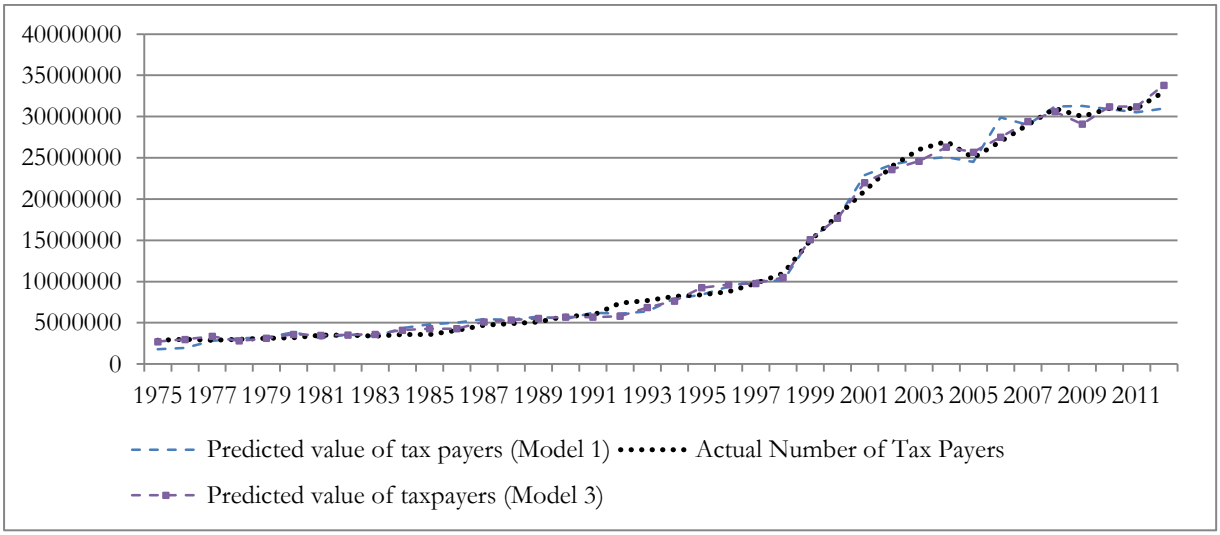
Variables	Share of construction
STR in t-1 (3 lakhs)	-0.5280*
STR in t-1 (10 Lakhs)	-0.8482*
STR in t-1 (10 lakhs adjusted for deduction u/s 88 and 80 C)	-0.7794*
STR in t-1 (3 lakhs adjusted for deduction u/s 88 and 80 C)	-0.5256*

4. Table A.3 *Regression of Total Taxpayers on Macroeconomic Variables*

Variable Name	**Individual Tax Payers (1)**	**Individual Tax Payers (2)**
Share of Construction in t-1	810697*	
Share of Construction in t-1* dummy for 2001-12	2283622***	
Inward remittance as a percentage of GDP	1545466***	
Urban Gini	15800000***	10700000***
Dummy for 1999	7783254***	6730468***
Dummy for 2000	8845587***	7419458 ***
Share of Trade, Restaurants and hotels in GDP in t-1		197416.6
Share of trade Restaurants and hotels in t-1 *dummy for 2001-12		1544999 ***
Dummy for 2001-12		
STR using 10 Lakh income adjusted for deductions in t-1		- -9116489**

Variable Name	Individual Tax Payers (1)	Individual Tax Payers (2)
STR using 10 Lakh income adjusted for deductions in t-1*Dummy for 2001-12		- 47300000***
Share of agriculture in t-1		313318*
Share of exports *plus* imports in GDP		158675.6 **
Share of exports plus imports in GDP*dummy 1971-2000		
Share of services other than trade and construction in t-1		338166*
Share of services other than trade and construction in t-1		-391605.6*
Constant	-7383933***	-9564992**
R square	0.9921	0.9960

5. Figure A.1 Predicted and actual value of taxpayers



Source: Calculated

6. Changes in Tax policy

- The changes in DDT may be responsible for the differences in distribution over the years. The rules relating to taxation of dividends went through a change number of times. In 1997 the dividends were made taxable for companies. This was withdrawn in 2001 and 2002 after which it continued to be taxable in the hands of the company.

Table A.4 Changes in tax policy related to individual income tax

Year	Exemption Limit	Rate of Tax	Standard Deduction	Housing Incentive
1996-97	_	The rate applicable to first slab was reduced from 20% to 15%	The deduction for those with incomes less than 60K was increased to 18,000 from 15,000 (for the rest it remained at 33.3 % or 15K	Interest deductible on housing loan-limit was raised from 10K to 15K
1997-98	_	The rate applicable to first slab was reduced from 15% to 10%	Upper limit of standard deduction was raised to 20K for all persons.	
1998-99	Limit was raised to 50K		Standard deduction rose to 25,000.	1/5th deduction of income from house property raised to 1/4th Interest on capital borrowed for repairs/cons raised to 30K
1999-00				Deduction of interest (self-occupied house) was raised to 75K from 30K
2000-01			Limit for housing loan qualifying for deduction raised from 10K to 20K u/s88	
2001-02			Salary income less than1lakh will get rebate of 30 per cent u/s 88	Interest paid on loan for acquiring a self-occupied is deductible up to 1.5 lakhs
2002-03				
2003-04			12,000 for children's education eligible<5L 40% or 30k and >5L 20K	
2005-06	Lowest slab raised to 1,00,000 and highest to2,50,000		Section 88 eliminated and consolidated Rs 1 lakh is eligible as deduction	

2006-07				
2007-08				
2008-09	Lowest slab raised to 150000 and highest to 5,00,000		Additional deduction of Rs.15,000 allowed under Section 80D to an individual paying medical insurance premium for his/her parent or parents.	
2009-10	Limit raised to 160000			
2010-11	Highest slab raised to 8,00,00		Deduction of an additional amount of Rs. 20,000 allowed, over and above the existing limit of Rs.1 lakh on tax savings, for investment in long-term infrastructure bonds as notified by the Central Government	
2011-12	Limit raised to 180000		Additional deduction of ` 20,000 for investment in long-term infrastructure bonds proposed to be extended for one more year.	
2012-13	Limit raised to 200000			
2013-14	Tax credit of Rs.2000 to everybody with income >5Lakh			

7. *Note on Statutory Tax Rate*

1. Individual STR

The STR was calculating by assuming an income of 10 lakhs in 2009-10 and deflating the same using the value of GDP deflator for each year. Therefore, deflating 10 lakhs by the GDP deflator in 1970 gives the equivalent income of 10 lakhs in 1970.

Tax rate is calculated using the formula $\frac{\sum(slab_j - slab_i) * Tax\ Rate_j}{Gross\ income}$ where $j > i$

From 1970-91 and from 2007-08 onwards 80 C was available to individuals to claim deduction from their incomes to calculate the taxable income from 1991-92 to 2006-07 this was replaced by section 88 where a certain fraction of the savings were deductible from tax liability.

The deduction u/s 80 C was also slab based. For example in 1980 up to 5000 was eligible for 100 per cent deduction 5000 to 10000 was eligible for 5000 plus 35 per cent of sums invested above 5000 and for above 10000 it was 8500 plus 20 per cent of amount in excess of 10000. It would be reasonable to assume that if the income exceeds 10000 then at least the second slab will be utilised therefore while calculating the deduction the second slab is considered. Further, taken the highest slab is difficult to work with since the deduction claimed would have to be assumed to be some amount and this assumption would have to be modified as per the income in that year. For these two reasons we work with second slab. Till 1991 we take the pre -tax income and deduct the maximum eligible value of deduction. After deducting this we calculate tax on the remaining income as per the formula described above. In the years when section 88 was applicable we took maximum deduction from tax available for the years 1991-92 to 2002-03. In the years 2003-04 to 2006-07 a change was introduced to section 88 where the deduction available to the individual was capped at a certain percentage of savings. Again we assume that the individual saves half his income and apply deduction as per the slab that the savings fall under.

2. Firm STR

The STR for this is calculated in two steps first we calculate the tax paid by

i. For the firm
ii. Then for the partners

Then we add this to find the rate of total income of firm.

We assume that the firm has a turnover of Rs. 1 crore. This income is deflated suing the GDP deflator. For this income we take the slabs and rate of tax applicable to registered firms. After calculating the tax paid by the firm $\sum(slab_j - slab_i) * Tax\ Rate_j + (Income - slab_{j+k}) * Tax\ Rate_k$. The post -tax income of the firm is then split equally between two partners and the tax on this calculated in the same way described for individuals (deductions are not taken into consideration). The tax paid by firm and partners is added to find the statutory tax rate.

8. *Table A.5 : Certain important changes relating to filing of return of income*

Gist of the Provision	The details	Remarks
General provision for filing of return:	Section 139 of the Income Tax Act, 1961 creates a general liability for every person having taxable income to file a return of income voluntarily before the due date. The tax officer has also discretion to call for a return. Till 1.4.1989 the tax officer could extend the date of filing of return on an application made in this behalf. This was withdrawn by Direct tax Laws (Amendment) Act, 1987 read with Direct tax (Second Amendment) Act.	See however fourth proviso to Section 139 (1) that changed the basis of filing of return to Gross total income
Salaried employees not to file return of income:	The Finance Act, 1974 w.e.f 1.4.975, introduced a sub- section 1A in Section 139 that provided that it would not be necessary for a salaried person to file a return of income if he had income only from salaries and income from certain other sources for which deduction was available u/s 80L. This was subject to certain conditions. The salary was not to exceed Rs 24000.	Finance Act, 1992 w.e.f 1.4.93, withdrew this provision
Returns showing income below taxable limit invalid:	By the Taxation Laws (Amendment & Miscellaneous Provisions) Act, 1986, sub-section 10 was introduced to provide that a return of income that shows total amount below the maximum marginal limit would be considered to be non- est. This was applicable from assessment year 1986-87 onwards.	This provision was subsequently withdrawn by the Finance Act 1991 as in the absence of a return the claim of deductions could not be verified
One by six scheme:	Finance Act, 1997 introduced a proviso to section 139 by virtue of which a person was required to file a return if he satisfied two of the four economic criteria [occupation of immovable property exceeding a specified floor area, ownership of motor vehicles, subscription to telephone, expenditure on foreign travel]. Finance (No.2) Act, 1998 added two more criteria [holding of credit card and club membership] and provided that satisfaction of any one of these would make filing of return compulsory. This was effective from 1.4.1999 .	The Finance Act, 2006, finally withdrew the provision with effect from Assessment year 2005-06
Compulsory filing of return by companies and firms:	The Finance Act, 2001, recast section 139 and now it is made clear that filing of returns is compulsory for companies even if the company has made loss during the year. This is effective from 1.4.2001.	The Finance Act, 2005 w.e.f 1.4.2006, has extended the provision to firms also
Return to be filed if Gross Total Income exceeds the threshold:	Finance Act, 2005 changed the basis of filing of return and now casts	Basis of filing return changed from net income to gross income w.e.f 1.4.2006

	responsibility of filing return on every person to file a return of income if the total income before giving effect to provisions of 10A, 10B etc. or deductions under Chapter VIA exceeds the maximum amount not chargeable to tax.	
Resident assessees to file a return even if there is no taxable income if he has foreign asset:	Finance Act 2012 made a provision to the effect that even if a resident person does not have taxable income during the relevant year, still he has to file a return if he has any foreign asset or has signing authority in any account located outside India. The provision is effective from 1.4.2012	
Salaried employees having income up to 5 lakh not required to file return for AY 20011-12 and 2012-13	Through a notification, the CBDT had exempted salaried employees having salary from one employer up to Rs 5 lakhs and having income from other sources up to Rs 10,000 from filing a return of income. However, this has not been continued for subsequent years.	The provision was effective for two years only.

Appendix –II

Note on the estimation of number of taxpayers in India using NCAER survey 2004-05

The Indian Human Development Survey (IHDS) provides information on household and individual incomes. The total income of the household has been disaggregated into various sources that include farm income, animal care, wages and salaries, non-farm business income, income from renting property, interest, dividend and capital gains, pension, proceeds from sale of non-agricultural land, income from sale of agricultural land, scholarships, gifts and from government sources such as insurance or IRDP. From all these sources of income we have excluded farm income since agricultural income and proceeds from sale of agricultural land since these are exempt from income tax[77]. Similarly, scholarships and other government grants are excluded since these transfers are to provide income support to individuals and are not normally large enough to bring the beneficiaries within the income tax brackets.

The data from the survey is provided at two levels – at the level of the household and at the level of the individual. The household file provides separate information on all these heads of income[78]. In the individual file however, details for all heads of income are not provided - the income from salary has been attributed to specific members. In the case of business, while the owner of the business within the members of the household is not identified, all members who participated in the business have been identified. . The individual file contains information on each household member for each of the households identified by a unique ID. There is a household ID in the household file, further there is a unique person ID assigned to each member of the household. Since the individual data file contains information on who in the household earns wages and salary and the person who participates in business (1,2 and/or 3), we create a pivot so that for each household there are corresponding columns represented by individual id stating separately who earned how much income. It easy to attribute wages and salary to the person id within the household since the file for individuals provides the amount earned along with hour, days and months worked. Unlike wages and salary the business income has not been split among the individual earners. To address this problem we divide the total income from business one/two/three by the number of individuals working in business one/two/three. This income is then allocated to each of the individuals who are supposed to have participated in the business. In some cases, while the individuals have not responded to who has worked for a business but in the household file business income is reported. In such cases, due to the lack of any additional information, we assign this income to the head of the household. Income from animals is also assigned to individuals responsible in the household. We extend this exercise to two other scenarios where the income from business is attributed to the head of household and when all of the business income is added to the income of one of the persons participating in the business.

Information on the earners of "income from other sources" is not reported. Here we assume that the income under this head is attributable to the head of the household. Since the survey reports the ID of the person who is the reported head of the household, we take the heads of

[77] As per rules sale of agricultural property beyond 8kms of a specified area considered as municipality

[78] Some of these heads are merged together to give a single figure. For instance, interest, dividend and – are combined into one figure.

incomes- income from renting property, interest, dividend and capital gains, pension, proceeds from sale of non-agricultural land- as the income accruing to the head of the household. We get total income of an individual within a household by adding all the heads of incomes earned by him/her. Therefore for each individual represented by a unique id within the household we get the total income earned within a year.

Since the income data pertains to 2004-05, we need to make the same comparable to latest information provided by the tax department on the total number of assessees for the year 2011-12. Therefore we inflate the respective heads of income using the inflation factors for the relevant sector. In order to inflate wages and salaries the growth in compensation per employees[79] was taken, for business income non-agricultural GDP was used, for animal care, growth in agricultural GDP and for income from other sources GDP deflator were used. Once these incomes are inflated to bring them to their corresponding levels in 2011-12 we apply the exemption threshold, that is Rs. 180000, to individual incomes to count the number of individuals in each household that are within the tax bracket. To the sample estimate of all individual tax payers we apply population weights to get the percentage of population paying taxes. The table given bellows provides the estimates for all scenarios.

[79] Compensation of employees reported in NAS divided by total employment reported in Handbook of Statistics

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