The Effect of Fringe Benefit Tax on Wages: Evidence from India

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Abstract

Using a new tax on fringe benefits initiated in India in 2005, this paper seeks evidence for the hypothesis that the difference in higher marginal tax rates on wages, relative to lower rates on fringe benefits, induces a reallocation of the total compensation package toward fringe benefits. Firm-level panel data on employee total compensation and wages across all industries is used to link their marginal tax rate on fringe benefits and choice of compensation. The key finding is that a tax on fringe benefits only affects the wage allocation of highly paid employees relative to employees lower on the pay scale. Using my most conservative estimate, I find that an increase in fringe-tax by 1 percentage point increases wages by one percent. Another major finding in this paper is that fringes are heterogeneous in nature and their provision can be for enhancing the productivity of an employee. In provision of such productivity enhancing fringes the firms observes a hierarchy among its employees.

JEL classification: J33; L20; G30; H2; J3

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1 Introduction:

Immediately after an imposition of tax on perks (relating to cars) by the Indian government in 2005, the corporate car sales declined by 20-30 percent. Some companies withdrew their car allowance to employees giving them more cash in hand, whereas some other retained it picking up the tab (The Hindu Business Line, 2005). This paper argues that a firm provides perk or fringes to an employee with different motivation (Rajan and Wulf, 2006). First, to benefit the employee by avoiding high taxation on wages, henceforth after an imposition of taxes the employers will curb this tendency. Second, to enhance the productivity of the employees and indirectly benefit the employer, in such case even after imposition of a tax on perks the employer will continue providing it. The economists have always been interested in studying the factors that determine the provision of fringes to an employee by a firm.

The existing literature offers three main motivations behind a firm's rationale to offer these fringe-benefits to its employees instead of providing an equivalent monetary compensation. The first postulated viewpoint in the corporate finance literature (Grossman and Hart, 1980; Jensen, 1986) is that this is a means for managers to misappropriate some of the surplus the firm generates. This is managerial excess and hard to observe by investors of the firms. The second argument for providing some of these fringe benefits (like travel benefits) is to enhance the productivity of its employees. They are provided by firms from a rationale of positive external benefit (Rajan and Wulf, 2006), as the employees they cannot fully internalize the value. One final argument (Gruber and Poterba, 1994; Woodbury, 1983; Royalty, 2000) is that firms weigh the relative tax burden on each component of the compensation package and provide the cheaper component in larger amounts. This creates a distortion in optimal allocation of fringes and wages in the compensation packet.

Irrespective of this considerable interest in the factors determining the provision of fringes by a firm and particularly the distortion created by the wage-fringe tax wedge, it is difficult to analyze this issue. Gruber and Poterba,1994 put forth several reasons for it. Foremost, there is lack of instances of taxation on fringes. Second, it is difficult to discern the tax effect from other individual-specific effects (behavioral differences) and study its impact on fringe benefits. One body of literature (Sloan and Adamache,1986; Taylor and Wilensky, 1983;Woodbury, 1983) studies a single cross-section and the impact of tax-rates on fringes (health insurance, insurance coverage) consumed by individuals. But these studies usually suffer from omitted variable bias which affects both the tax-rate and fringe-benefit allocation choice. For example, in the presence of children, the health insurance fringe benefit will be consumed more and taxes will also be affected by tax benefits. This causes the estimation of distortion created by the tax-wedge of fringe benefits and wages to be inconsistent. Lastly, it is difficult to discern the effect of time

trends and tax-rate change. Truner,1987; Long and Scott,1982 studies how fringe benefits have changed as the tax-rate changes over time. But these studies usually suffer from time series spurious correlations. This is due to the fact that the time-series tax trend may be correlated with fringe benefit trends like shifts in unionization or wide divergence in income.

In this paper I try to surmount the problem stated in the above studies. Using a new tax imposed on fringe benefits beginning in Fiscal Year (FY) 2005 in India, I study its effect on the average wage allocation in the employees' compensation package. Using firm-level panel data on total employee compensation and wages across all industries, I link the marginal tax rate on fringe benefits to the choice of compensation. The two major data sources used are industry-level data for FY 2000-FY 2005 from the Annual Survey of Industries (ASI) and data at the firm level for FY 1999-FY 2006 from the Center for Monitoring Indian Economy (CMIE). I utilize a two-way fixed effect method, which is equivalent to a difference in differences method[1] in panel data to conduct this analysis. In this paper I find that an increase in the tax rate on fringe benefits induces a higher allocation toward wages in compensation packages[2]. Further, this effect is more pronounced for highly paid employees. Using my most conservative estimate, I find that an increase in fringe-tax by 1 percentage point increases wages by one percent. Another major finding in this paper is that fringes are heterogeneous in nature and their provision can be for enhancing the productivity of an employee. In provision of such productivity enhancing fringes the firms observes a hierarchy among its employees.

This paper makes three main contributions to the empirical literature on distortion of compensation package allocation due to taxation. First, it exploits the direct evidence of taxes' impact on fringe benefits and their effect on employees' wages which has not been previously analyzed due to an absence of instances of taxation on fringe benefits. Second, the study finds systemic evidence of highly paid employee's compensation being more sensitive to taxation than those in a lower pay scale. This is consistent with the hypothesis of employees' choice of fringe benefits being affected by taxation, the higher tax gap between marginal wages and fringe benefits, greater is the incentive to allocate towards fringe benefits. Third, for one part of the analysis it overcomes the drawback of difference in differences method being affected by a sample composition change, by concentrating only on those firms which were present both pre and post tax reform in the industry. In addition, this paper also provides some insight into the relatively scanty

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[1] This method has become widespread in the literature(Gruber and Poterba, 1994;Marquis and Phelps, 1987). In this approach the difference in treatment effect between the control group (does not have tax-preferences) and treatment group (tax-preferences) is considered, both pre and post tax treatment. The cross section differences control for the time spurious correlation and the time difference between controls and treatment individually controls for cross-section spurious correlation.

[2] The allocation of compensation observed is an equilibrium value of employee's demand and employer's supply.

body of corporate literature on fringe benefits as being purely managerial excess (Jensen, 1976; Grossman and Hart, 1980; Rajan and Wulf, 2006).

The remainder of the paper proceeds as follows. Section 2 lays down the details of the Fringe-Benefit Tax introduced in India. Section 3 provides a brief theoretical framework of distortion between wages and fringes created by taxation. Section 4 discusses the identification technique and the data source and choice of variables used for the analysis has been discussed in section 5. Section 6 explores the empirical findings which are supplemented by two sets of data, the CMIE and ASI, with some robustness checks. Section 7 summarizes my findings and some limitations that exist in the study.

2   Background

Between 1989 to 1996, the allocation of fringe benefits[3] to wages in a typical compensation package was 32 percent in an Indian industrial sector[4]. This has increased to 42 percent by 2000 as illustrated in Figure A.1. This increase in the allocation of fringes can be ascribed to the fact that the fringes had a nominal or zero tax compared to wages. Although there was provision per the Indian Income Tax Act for taxing perquisites and allowances, the employers could directly reimburse employees for expenses incurred. This made it difficult to effectively capture the true extent of a perquisite due to the problem of tracking cash flow. Further, there are facilities or amenities collectively enjoyed by the employees and difficult to attribute to an individual employee for taxation purpose. In 2005 a new tax on fringes Fringe Benefits Tax (FBT) was introduced which taxed employers[5] on the value of the fringes (perquisites or benefits) that employees derived due to employment.

FBT taxed employers on the basis of the value of fringes provided or deemed. The base rate for valuation varied from 5 to 100 percent, depending upon the expenditure head under which the fringes have been provided and were taxed at a flat rate of 30 percent with an applicable surcharge and cess[6], (Jhanwar, 2005; Kishore ,2008). The complete details in the variation of valuation of each expenditure item considered for FBT is provided in Table A.1. For example if a firm provided the employees with employee stock and options the entire cost of transaction undergone would be considered for taxation but if the same employees where provided hospitality or lodging then only at maximum 20 percent of the expenses would be considered for taxation.

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[3]Fringe benefits are nonmonetary compensation firms offers to employees. These can take various forms, ranging from pension funds or welfare benefits to club membership and use of an executive jet.

[4]Industry-wise data on total compensation and its break up is unavailable for the service sector.

[5]Tax payable as per definition of employer by section 115W of the Income Tax Act.

[6]There is variation in surcharge rate between domestic, non-domestic and cooperative firms. See Finance Bill, Union Budget India for details.

Further on the basis of ownership and the industry a firm is engaged in the effective tax rate varied as reflected in Table A.2. It has nine columns, representing the taxation on three[7] different expenditures of fringe benefits firms of various ownership faces. Certain industries receive concession in certain expenditure heads for the valuation of fringe compared to the others (see appendix B.1). In most cases, the effective tax rate difference between the concession and non-concession sector is 5 percentage points. For example a firm in computer software (NIC-722) is valued at 5 percent for travel expenditures but a firm in business process outsourcing (NIC 723) is valued at 20 percent for the same (see appendix B.1). This leads to a difference in an effective tax rates of approximately 5 percentage points between these two industry. Similarly, if a domestic firm belongs to the airline and air-cargo, hotel or shipping industry it faces an effective tax of 1.6 percent on every amount it spends on hospitality but the firms in other industries face a 6 percent tax for the same. The highest effective tax rate that a firm faces is for expenditure on private benefits, such as superannuation funds and employee stock options (ESOP). For this type of expenditure on fringe benefits there is no concession; the only variation observed is due to the ownership type. The effective tax-rate on superannuation funds had a break in fiscal year 2006. Initially, in fiscal year 2005, for every positive amount contributed towards superannuation the fund was taxed at approximately 33 percent; however after fiscal year 2006 it was only taxed if the amount exceeds Rs 1000000 ($ 2000).

Although the revenue collection from this tax as a percentage of total direct tax has been a meager 3 percent (see Figure A.2) i.e. Rs. 8500 crore in FY 2008 ($1700 million), it generated considerable controversy and was finally abolished in 2009. The grounds of objection from corporate firms were that it had increased compliance costs and taxed true business expenditures as deemed fringes. Only few empirical studies (Kishore, 2008; Kishore, 2009) have studied this tax till date and have concentrated on the revenue collection pattern from various sectors of the economy. In the current study I analyze the effect of implementing this tax on distortion behavior of the employees. The variation of effective tax rate across firms is used as an identification strategy.

3 Modeling Preferences of Employees for Compensation Components:

To motivate the empirical work, I present a simple theoretical framework which modifies the Woodbury(1983) model. I will present a basic model and then discuss several extensions.

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[7]Due to data limitation only the effective tax-rate on these three types of expenditure can be exploited in this study.

A. *Basic Model*

ASSUMPTION. There are only two components of compensation (wages and fringes) and an employee's utility (U) (well-behaved), is a function of the quantities of wages (z_w) and quantities of fringes (z_f). In order to compare non-monetary fringes with monetary wages I assume an implicit price for both components of the compensation. The employee faces different prices individually at the market than that the employer for various components of compensation package.

This assumption is logical on the basis of the fact that employers have economies of scale due to which a price difference can occur for the same component. For example, when the employers provides health insurance it can provide it at a much cheaper rate using the pool of employees than the market rate for the same coverage. The employee individually faces implicit prices (p_w) for wages and (p_f) for fringes and maximizes her utility given by

$$U = U(z_w, z_f), \tag{1a}$$

w.r.t. to the budget constraint of (1b)

$$z_w p_w + z_f p_f = M. \tag{1b}$$

Thus, the employee's indirect utility function (V) is a function of the implicit prices she faces for wages (p_w) and fringes (p_f) and the total compensation package (M).

$$V = V(p_w, p_f, M). \tag{2}$$

However, if the employee receives this component from the employer she receives them at different prices, the employer's price of wages being (q_w) and fringes (q_f).The employer can provide this component and would allow the worker to choose a mix of compensation package which lies on the following locus (M) provided in (2),

$$z_w q_w + z_f q_f = M. \tag{3}$$

Thus, the employee if purchasing from the employer at implicit prices (q_w) for wages and (q_f) for fringes would maximize utility

$$U = U(z_w, z_f),$$

w.r.t. to the budget constraint of (2)

$$z_w q_w + z_f q_f = M. \tag{4}$$

Let us consider an economy where neither fringes nor wages are taxed. Solving the maximization problem and manipulating the first order conditions under both the scenarios the following optimal allocation condition is derived. Under the optimal allocation condition provided in (5) there is no distortion between employers provided allocation and individual allocation of wages and fringes, as both of them face the same price ratio. The allocation condition of fringes and wages in the compensation will depend on the price ratios given in (5)

$$\frac{p_w}{p_f} = \frac{q_w}{q_f}. \tag{5}$$

B. *Taxation on Wages*

Till now in the simple model I have considered no taxation on either or fringes taxed. However, in practice usually the wages are taxed but fringes are exempted from tax. Let us introduce a taxation on wages such that now the wages are taxed at a marginal rate (t_w) but fringes are not taxed. In this new scenario where employee's wage income is taxed at a constant tax rate[8] (t_w), her new budget constraint is provided in (6).

$$z_w p_w (1 - t_w) + z_f p_f = M, \tag{6}$$

After solving the maximization problem with the budget constraint in (6) a new optimal allocation condition is obtained provided in (7).

$$\frac{p_w}{p_f} = \frac{q_w}{q_f} \frac{1}{(1 - t_w)}, \tag{7}$$

$$As \ |t_w| \ < \ 1, \frac{p_w}{p_f} > \frac{q_w}{q_f},$$
$$if \ q_w \ = \ q_f = 1, \frac{p_w}{p_f} = \frac{1}{(1 - t_w)} > 1.$$

In this new optimal condition (7) there is a difference in the price ratio faced by the employer and employees. The employee's implicit price ratio of wages to fringes is higher than that of her employer. Thus, for the employee wages have become more expensive than fringes. This would induce a higher allocation of compensation in fringes than in wages compared to a no-tax case (assuming there is no change in preferences i.e. utility remains unchanged and both fringes and wages are normal good); it distorts the allocation of compensation. Further, this effect would be prominent for those employees for whom the difference between the marginal tax rate of wages and fringes is greatest. Thus, compared to a secretary or clerk an executive will have a higher incentive to distort the

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[8]Woodbury(1983) assumes a constant tax-rate for simplification.

fringe-wage allocation.

C. *Taxation on Wages and Fringes*

I extend the Woodbury (1983) model by considering a scenario where both wages and fringes are taxed. Let the marginal tax rate of wages be (t_w) and of fringes be (t_f) respectively. The statutory liability of fringe tax (t_f) is on the employers which on the basis of the value of fringes they provide to their employees. Thus the employer's locus (M) is transformed to the following in (8).

$$z_w q_w + z_f q_f (1 + t_f) = M, \tag{8}$$

Solving the maximization problem of the employee with the new budget constraint provided in (8) transforms the optimal allocation condition to (9).

$$\frac{p_w}{p_f} = \frac{q_w}{q_f} \frac{1}{(1 - t_w)} \frac{1}{(1 + t_f)}. \tag{9}$$

As both $|t_w| < 1$ and $|t_f| < 1$, therefore

$$\frac{p_w}{p_f}_{\,wage-tax} \quad > \quad \frac{p_w}{p_f}_{\,wage-tax,fringe-tax} \qquad but, \tag{10a}$$

$$iff \;\; |t_f| \;\; \preceq \;\; |t_w|$$

$$\frac{p_w}{p_f}_{\,wage-tax,fringe-tax} \quad > \quad \frac{p_w}{p_f}_{\,no-tax}. \tag{10b}$$

Thus in comparison to the tax on wages (only) situation in the new state the distortion of wages and fringes would reduce. This is because the implicit price ratio of wages to fringes faced by the employees is less than the previous case of a tax on wages only. This would cause more wages to be preferred than fringes in the compensation basket in the post fringe tax era. However, as long as the taxes on fringes are less than on wages the distortion would exist.

The model yields a number of testable implications. With respect to wages in the compensation basket of an employee, it predicts that an increase in taxation on fringes should be associated with an increase in the wages of the employees, the effect being prominent for highly paid employees relative to those in the lower on the pay scale.The marginal tax rate difference between wages and fringes at the heart of the model implies that the higher the difference is between the two rates the higher the incentive is for employees to allocate more towards fringes than is optimal. Also, if fringes were optimally allocated then there should not be any change in wage allocation between pre and post fringe tax states. I test these predictions, accounting for various econometric challenges which I outline below.

4 Identification technique

The equation of interest at the industry-level is the following:

$$(\log W)_{jt} = \alpha_0 + \beta_1 (FBT)_{jt} + \beta_2 (X)_{jt} + \mu_j + \lambda_t + \gamma_j(t) + \nu_{jt}; , j = industry, t = year \quad (11)$$

where $(\log W)_{jt}$ is log of the average wages of an employee engaged in an industry in a given year. The regressor of interest $(FBT)_{jt}$ is the effective tax rate on different expenditure heads that an industry faces depending on its concession or non-concession status;(μ_j) is industry fixed effects ,(λ_t) year dummies with (t=2000,..,2005) and (ν_{jt}) stochastic error term .

The equation of interest at the firm-level is the following:

$$(\log W)_{it} = \alpha_0 + \beta_1 (FBT)_{it} + \beta_2 (X)_{it} + \mu_i + \lambda_t + \gamma_j(t) + \nu_{it}; i = firm, j = industry, t = year \quad (12)$$

where $(\log W)_{ijt}$ is the log of average wage of an executive engaged in a firm in a given year. The regressor of interest $(FBT)_{ijt}$ is the effective tax rate on different expenditure heads that a firm faces depending on its concession or non-concession status and provision of a superannuation fund.; (μ_i) is firm fixed effects ,(λ_t) year dummies with (t=2000,..,2007) and (ν_{ijt}) stochastic error term.

The coefficient of interest (β_1) would state the change in average wages due to an increase in the effective tax rate, and is expected to be positive. As the FBT was introduced by a sudden policy change this is equivalent to a natural experiment, where the effective tax rate of a firm is exogenously determined by the industry's concession and non-concession status or provision of superannuation fund in a firm.

Endogeneity Issues: In the above scenario there may be factors that causes the parameter (β_1) to be endogenous. First, usually factors like unions, average age of employees and ownership (domestic and foreign) which determine the workers' compensation are also correlated with nature of the industry. In a simple cross-section analysis some of these factors would be correlated both with the FBT tax rate in an industry and the compensation it offers to its employees, leading to a spurious correlation. For example, foreign ownership firms in most cases offer higher fringes on average (like recreation facilities, performance linked non-monetary compensation awards) than their domestic counterparts to improve efficiency and performance. The presence of unions and senior employees increases the fringes proportionate to wages in the employee's basket. Marby (1973) and Freeman (1978) argue that union leaders can inform their members regarding advantages of the fringe benefits and force the management to provide them, by collective bargaining power. They would also like to retain them because the bureaucracy

and administration increases their power and increases their probability of survival thus, factors like proportion of high skilled workers (managers), union dominance and foreign ownership will determine the compensation mix of the industry. If the industries which obtain concession (lower FBT) have a higher proportion of skilled workers, foreign firms or unions then this would cause a spurious negative correlation between wages and tax rate of the industry. Similarly, one needs to control for spurious correlation in time series data between wages and tax-rate.

I have used two identification strategies to solve this problem:

(i) Cross-Section: Difference in tax rate between concession versus non-concession industries (suffers from cross-section spurious correlation $cov(\mu_i, FBT_{it}) \neq 0$).

(ii) Time Series : Before versus after FBT imposition in 2005 (suffers from time-series spurious correlation $cov(\lambda_t, FBT_{it}) \neq 0$).

Individually, they would create a spurious correlation but combination by panel removes the spurious correlation in cross section by firm fixed effect and in time series by time fixed effects. This methodology is reasonable under the assumption that factors like union and ownership are time-invariant. Thus, I am conducting an equivalent to difference in differences technique by employing a two-way fixed effect panel estimation technique.

Secondly, another concern is that some of this wage increase may be caused by industries' past wage trends, evident in Figure A.3. Ideally, one would like to compare only industries with similar past wage growth trends. The simplest technique to overcome this problem is by incorporating an industry linear trend $\gamma_j(t)$ at the 3 digit level NIC for the industry-level and at the 4 digit level for the firm-level analysis respectively.

These procedures should purge the estimates of any endogeneity.

5   Data

The data used in this paper are drawn from two secondary sources the Center for Monitoring Economy (CMIE) and the Annual Survey of Industries (ASI), both of which are panel data. In this paper the unit of analysis is both industry and firm level, for the industry level analysis ASI was used and for the firm level analysis CMIE is used. In this section I explain the various sources and justify the choice of variable used for the analysis.

5.1   Decomposition of Wages by Skill of Labor

The exclusive data on wages of all employees, workers and managers in different industries at NIC 4 digit onwards were collected from ASI. Further information on the number of people, workers and managers engaged, was used to calculate the average wage for each

of the category in an industry. A major advantage of this data is that it provides a detail information on employees' compensation paid in wages excluding bonus exclusively (see Data Appendix). This helps to overcome the problem to distinguish a rise in wages of the employee on the basis of performance rather than that from distortion behavior. The ASI employment module provides information on workers' and managers' wages at the industry level, for 128 industries at 4 digit NIC[9] from 2000FY to 2005FY resulting in 768 balanced panel observations.

Table A.3 summarizes the average wage rate across industries in the industrial sector. In the Indian industrial sector an average employee earns approximately Rs 59874 per annum ($1197) in wages as a part of their compensation. A manager on average earns approximately Rs 117700 (2354$[10]) more than an average worker. However, in logarithmic form the dispersion in the wage is low for both workers and managers.

5.2   Executive Compensation

The information on the executive compensation was collected from the CMIE. CMIE has been used to track executive compensation at the firm level over a period from 1999 FY to 2006 FY resulting in 3816 unbalanced panel observations. The advantage of the firm level information is that one can compose the sample with those firms that were present in both the pre FBT period and the post-FBT period. This allows preventing a rise in wages driven by a change in sample composition.

The CMIE is a micro-data repository tracking more than 10,000 audited firms for over 10 years, which are publicly listed and report to the Security Exchange Board of India (SEBI). However these firms are a sample of the entire industry. Beside providing information on individual firm characteristics (ownership type, economic activity the firms are engaged in with NIC 5 digit classification, location of plants) it also gives details about the boards of directors' compensation packages as is the required norm for all publicly listed companies under SEBI from 2001 onward.

Table A.4 summarizes the average wages of the executives at firm level for all sectors of the economy combined and for the industrial sector only. On average an executive earns approximately Rs 965112 per annum ($ 19302) in wages as part of the compensation. Executives on average have slightly more tenure,[11] and there are more regular directors on a board in the industrial sector in comparison to the economy as a whole. In the industrial sector there are more sales on average than in rest of the economy and they are more concentrated.

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[9]There was a change in the NIC classification during our study period between 2003 and between 2004 at 4 digit level, we adjust our ASI data and follow the NIC98 classification definition .

[10]1$=50Rs

[11]The tenure here is calculated by the total number of periods each executive has spent on the board from 1990.

A noteworthy point is that the average executive wage is noisy and negatively skewed (*vertical outliers* which cannot be detected by naked eye from the residual of the model as it suffers from masking effect) this may cause bias in our analysis as the mean is sensitive to outliers. When one performs fixed effect it aggravates such bias. This problem is partly taken care of by using a logarithmic form of the wages for the analysis. The problem becomes more acute when the independent variables are noisy (*leverage outliers*), the analysis becomes both biased and inconsistent (Baltagi,2009). Ideally, one should use a robust estimator technique for fixed effect analysis as has been proposed by Bramati and Croux (2007). There are two potential problems with adopting the robust estimator technique in this case. Firstly, for higher skilled workers (executives and managers) these observations may be representing true compensation and not mere outliers. Second, the authors' methodology is valid for only balanced panel and does not allow for clustering, although it is hetroscedastic robust.

5.3 Taxation on Fringes

The fringes that an employee enjoys can be broadly classified into two types productive fringes and private fringes. The definition used in Rajan and Wulf, 2006 is used here to classify the fringes as productive and private fringes. In the case of productive fringes by using it not only the employee benefits but also the firm benefits, however in the case of private fringes the employee exclusively only benefits. For example, when a firm incurs lodging and travel expenses on employees not only the employee benefits from it but it also gains, as it enhances the productivity of the employee. However, a benefit of fringes like superannuation funds (pension funds) is enjoyed by the employee alone. The effective tax rate on fringes has been compiled from the section 115WB, 115WC of Income Tax Act and assorted budget issues. A few simplifications are done in order to compute the productive fringes. First, the cross-section variation is at the industry level, thus the analysis can be conducted for only two taxes (travel and lodging);[12] where I assume all the firms belong to the domestic sector. There was a change in the NIC classification in 2004, thus to maintain uniformity I follow the NIC 98 definition and adjust the data accordingly (see appendix B.1).

Table A.3 and Table A.4 summarize the effective tax rate of fringes at the industry and firm level. The taxation of fringes on travel expenditures and lodging expenditures, which are productive fringes, can be considered only at the industry level. These taxes exploits the cross-section variation between concession and non-concession industries which is approximately 5 percentage point, but the effective tax on an average firm in an economy varies between 1 percent to 3 percent due to imposition of the taxes. On the other hand,

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[12]The ASI data does not provide a higher classification beyond NIC 0400. I assume that all those industries are in the construction sector.

although the effective tax rate on the private fringes are much high approximately 34 percent at maximum but on average a firm in an economy effectively faces only 3 percent after imposition of this tax. A high variation on the effective tax rate on private fringes compared to the productive fringes indicates that the provision of private fringe like superannuation funds (pension funds) for executives is more dependent on management decisions of the firm.

6 Effect of a Tax on Fringes

6.1 Basic Results

Table A.5 provides the basic results for various version of equation (11). There are six columns decomposing the average employee's wage into the average manager's wage and the average ordinary worker's wage. The analysis is conducted for two alternative taxes on fringes. Columns (1)-(3) present the effect of a tax on travel expenditure. Column (4)-(6) present the effect of a tax on lodging expenditure. The dependent variable in column (1) and column (4) is the average manager's wage while in column (2) and column (5) it is the average wages of all employees engaged in an industry, and that of column (3) and column (6) is the average ordinary worker's wage in an industry. I control in all specifications for year effects and industry linear trend at the three digit NIC level.

Irrespective of the kind of tax on fringes, a robust pattern is observed. As one moves from column (1) (column (4)) to column (3) (column (6)) respectively, the positive significant effect of taxation disappears. There are two key findings. First, consistent with the theory of distortion, I find that an imposition of tax on fringes has a positive and significant effect on average employee's wage. This reflects that a higher marginal tax rate on wages compared to that of fringes induces an allocation of compensation towards fringes than optimal. Therefore, after an imposition of taxes on fringes there is reallocation of compensation towards wages, reducing the distortion. Second, the effect is prominent for highly[13] paid employees (manager) compared to low paid employees (ordinary worker). This fact further strengthens the assumption of distortion, which states that the higher the marginal tax rate on wages the employee faces the greater is the incentive to induce the compensation towards fringes than is optimal. Thus, a low-paid ordinary worker who has a low marginal tax rate would have less incentive to induce changes in fringes, compared to a highly paid manager who faces higher marginal income taxes. The coefficient of tax on travel and lodging expenditure implies that an increase in the taxation merely by 1 percentage point raises the average manager's wage by 1 percent, approximately by

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[13]Managers earns approximately Rs 117700(2615$) additional than that of the workers on average in a year.

Rs 1628 ($ 32) per annum.

Finally, to compare with other studies of the tax literature I compute the cross-price elasticity of fringes on wages which is 0.1. This implies that if the fringe-taxes are raised by 100 percent then an average manager's wage would increase by 1 percent. The low elasticity attributes to the narrow base of the tax.

This is similar to the finding of Woodbury (1983, 179) where the author found a cross-price elasticity of (all) fringes on wages to be of 4 percentage (BLS employee compensation data) and 2 percentage (Census of Government School District) data for U.S. Findings of other studies which consider other measures of elasticity and much specific fringes are not ideally comparable with this study. Gruber and Porteba (1994) considered own price-elasticity of health-insurance coverage for self-employed workers and found an elasticity greater than one in absolute value. Royalty (2000) found a cross-price elasticity of tax-rate of wages on employer provided health insurance eligibility to be 1 and pension eligibility to be 1.2. Gruber and Lettau (2004), in another study of health insurance offered by employers, found an own price elasticity to be (-0.25) .On the other hand, Truner(1987) found statistically significant but very small effect of taxes on health insurance provision.

Two key assumptions are internal to the analysis. First, an effect of tax on both productive fringes (travel, lodging) and private fringes (superannuation fund) have been assumed to be homogenous. Productive fringes enhance the productivity of the employees of a firm and they are provided by the firm as the employee herself may not be able to fully comprehend the benefit. In contrast, the employees only benefit from private fringes. Therefore the allocation of these two fringes should not be similar at optimal. Heterogeneity in the effect of tax on productive and private fringes is a more reasonable expectation. Second, it is assumed that the effect of tax is homogenous across all categories of managers. In reality, there is a hierarchy in a firm from CEO to lower rank managers on the basis of productivity, thus the effect of a tax on productive fringes should also be heterogeneous. In the following section I relax these assumptions.

6.2   Heterogeneous Effect of Fringe Benefits Tax

In this section, I relax the assumption of a homogenous effect of taxes on both productive and private fringes. Fringes for travel, lodging, hospitality are time-saving; increases the productivity of the employees. These perks benefits the firms more than the employees, the employees cannot fully internalize the full value of this category of perks. On the other hand, fringes like superannuation funds benefit the employees alone. The former fringes can be categorized as productive fringes whereas the latter are private fringes (Rajan and Wulf, 2006). It is in the interest of the firm that executives who conducts multi-billion dollar deals remains fresh, thus after traveling in business class they would remain more

fresh and better positioned to negotiate rather than one who has been cramped in an economy class. Further, it may be cheaper for firms to provide these perks as the firms have economies of scale. Thus the conjecture that the productive fringes enhances the productivity of the firm and are true business expenditure leads to a testable hypothesis. At optimal the executives of a firm should be provided more productive fringes than private fringes. The distortion effect should be prominent for private fringes than productive fringes for the executives.

Table A.6 provides main results for various version of equation (12). There are six columns, effects of three alternative fringe tax on average wages of the executives have been provided for both all sectors of the economy and industrial sector specifically. The other factors like sales, tenure, number of regular directors on board, location of the firm that also affects the salary of executives of a firm have been controlled for all specifications. The industry linear trend at four digits NIC has been controlled.

Consistent with the hypothesis of heterogeneous effect of fringes, I find a positive and significant effect of taxation for private-fringes and negligible effect for productive-fringes on average wages of the executives. As one moves from column (1) to column (3) and column (4) to column (6) the effects of a fringe-tax on an average executive's wage becomes negligible. This pattern is robust for the economy as a whole and the industrial sector individually. This finding is strengthened by the fact one is comparing the effect of different fringe-taxes at a particular point on the same executive employed in a firm. Henceforth, a change in behavioral pattern or a change in composition of the board of executives causing this divergence in fringe-taxes on executive wages can be overruled. This indicates towards the fact that for the executives and the firms these productive fringes are true business expenditure and not just purely managerial excess. On the other hand these executives do have incentive to allocate more on private fringes in the compensation than is optimal just to evade higher marginal taxes. However, one cannot rule out the fact that expenditure on productive fringes like travel and lodging are seen partly as a symbol of prestige by the executives and the firms would find it more difficult to withdraw these than private fringes. Overall this confirms the hypothesis that both from the viewpoint of employers and employees the fringes or perks areheterogeneous in nature. Further consistent with the executive compensation literature I find an increase in the sales of a firm significantly increases the average wages of the executive.

The coefficient of taxation on superannuation fund states that if the taxation increases by 34 percentage point (effective tax rate after FBT) it raises the executives' wage in an average firm by 9 percent, approximately by Rs 86,860 ($ 1737) per annum.

6.3 Hierarchy in the Provision of Productive Fringes

In this section, I relax the assumption that the effect of taxation on productive fringes is homogenous across all managers. As the productive fringes enhance the productivity of the firm, therefore it is in the interest of the firm that their provision increases with productivity of the employee. Therefore the executives who are more productive and whose opportunity cost of time is more for the firm should be provided a higher amount of these fringes at optimal level than a lower rank manager (Rajan and Wulf, 2006). Thus the conjecture that productive fringes enhance the productivity of the firm leads to a testable hypothesis. At optimal the more productive employee should be provided with more of these fringes; the executives who are the most productive persons in the firm should be provided more of these fringes than a lower rank manager. Hence, there should be less evidence of distortion for productive fringes for executives of the firm than other lower-rank managers.

In order to test this hypothesis I consider two scenarios after imposing a tax on the productive fringes. In the first scenario, I take into account the after effects of imposition of a tax on productive fringes on the wages of an average manager[14] in an industry depicted in the columns (1) and column (2) of table A.7. In the second scenario, I consider the imposition of similar tax on an average executive's wages of a firm as depicted in column (3) and column (4) of table 7. Comparing column (1) (column (2)) with that of column (3) (column (4)) of table A.7 respectively, it becomes evident that the effect of a tax on productive fringes is more prominent for average wages of average managers than for executives of the firm. The very fact that the effect of a tax on productive fringes raises the wages of an average manager but has negligible effect at executive level indicates less distortion for executives than lower rank managers. From this it is evident that the firms observe a hierarchy in provision of productive fringes and at optimal the executives are provided more with these fringes than an average manager, on the basis of the productivity. This is logical on the basis of the fact that the executives conduct multi-billion dollar deals and providing them these perks would enhance their productivity, leading to higher marginal benefit of the firm than providing the same to a lower rank manager.

6.4 Robustness Check: Placebo Test

In this section I test the hypothesis that a concession (lower taxation) on fringes that were given to some industries were not provided on the basis of any favoritism to growing industries. A crucial assumption internal in this analysis is that the effective tax rates a firm or industry faces are exogenously determined. This assumption would be

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[14]Aggregate managers include all ranks of managers.

invalid in a scenario where the concession status for the fringe benefit tax is not randomly determined and is provided favorably to growing industries. This would lead to a spurious relationship of wage increase and FBT. As a possible mechanism to discern the spurious from the casual effect I create a simulated tax on fringes in the previous period FY2004 and test its effect on the average wage. Under the assumption that the increase in average wage is a causal effect of FBT and not any spurious correlation one expects to find an insignificant effect on the average wage in the previous period, before this tax was actually imposed. The results of the tests are provided in table A.8 and table A.9.

Table A.8 provides estimates of equation 11 with the main regressor as simulated tax on fringes at the industry level. Consistent with the hypothesis of exogenous FBT, I find a negligible effect of taxation on travel expenditure in the previous period on average wage of all types of employees in the pre FBT period. However, a tax on lodging expenditures is associated with a significant negative effect in the previous period. This indicates that in reality an increase in the average wage at the industry-level caused by a tax on lodging expenditure is more than a tax on travel expenditure and has been actually under-estimated here.

Table A.9 provides estimates of equation 12 with various versions of simulated tax on fringes at the firm-level. A negligible effect of taxation for both productive and private fringes on average executive wages in the previous period is found, implying a casual effect.

These estimation results gives confidence to the claim that the average wage increase that is found after FBT imposition is not a spurious regression and indicates a casual effect.

7   Conclusion

This study suggests that taxation on fringe benefits reduces the distortion in compensation package by increasing the allocation of wages in compensation package. The effect is more prominent for high paid workers like managers than average workers. This pattern is broadly consistent with the theories of taxation where a high marginal tax on wages causes shift in allocation in fringes than optimal in compensation.

Another major finding in this study is that fringes are heterogeneous in nature and a hierarchy is observed in the provision of certain type of fringes among managers. This pattern is consistent with the corporate literature where a firm has various motives behind providing its managers with perks. Some of the fringes are provided to enhance the productivity of the managers and considered as a symbol of prestige.

These results indicate towards a interesting future research question. Industries vary in mechanisms of hiring and retaining employees. Certain industries like service sectors

uses perks to attract employees than an average industrial sector, therefore the employees from these industries would have a high allocation of the perks in compensation package. An interesting question for future study is that how a imposition of fringe tax affects the hiring scheme and sectoral employment of industries who rely heavily on perks to attract and retain employees.

The distortion in fringe benefit allocation created due to taxation reduces with an imposition of taxation on fringe benefits, compared to a counterfactual where there are no such taxes. However, for certain fringe benefits a higher allocation is actually driven purely by productivity enhancing motivation rather than just evading taxes. So a careful analysis is required before coining higher allocation of fringe benefits as the effect of distortion caused by taxation.

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A Tables and Figures

Fig. A.1 -Trends of Fringes and Wages over Time for All Industries
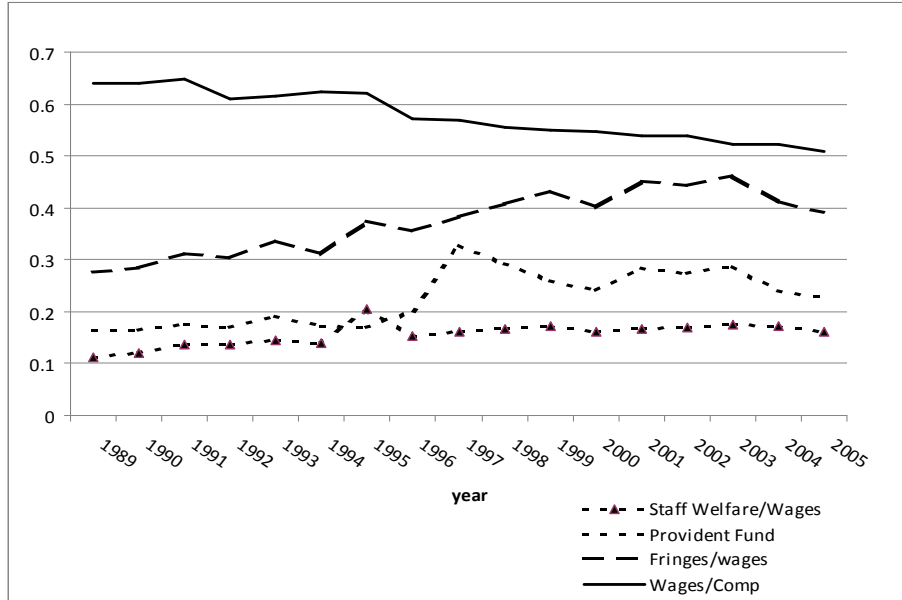
Source: Assorted Issues of Annual Survey of India.

Fig. A.2 -Revenue Collection Trends of Fringe Benefit Tax in India
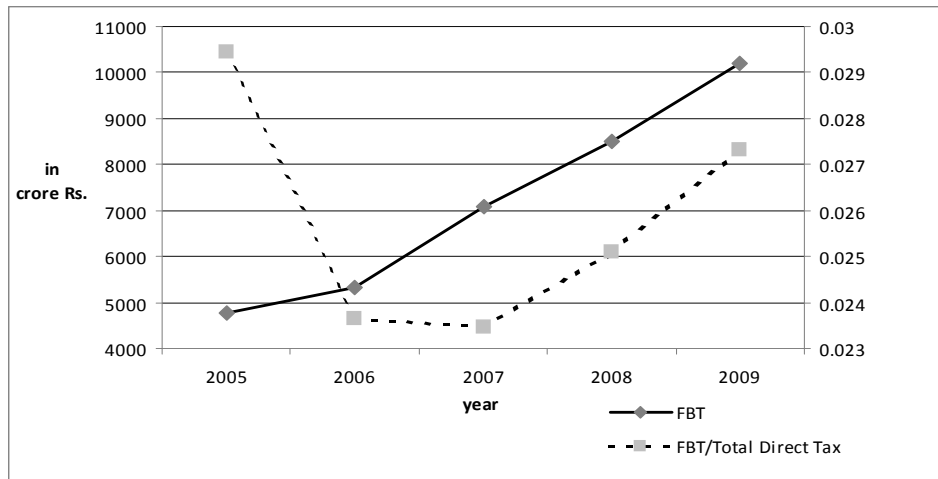
Source: Assorted Issues of Union Budget, India.

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Fig. A.3 -Trends in Average Wages (All Employees) across Concession vs Non-Concession Sectors
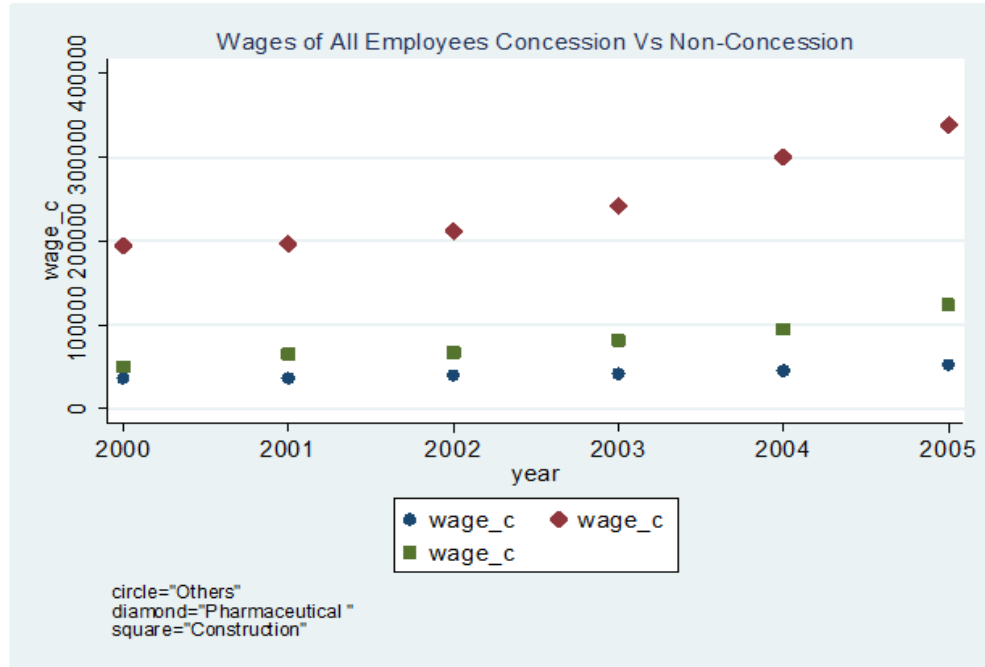
Source-Annual Survey of Industries

Fig. A.4 -Trends in Average Wages (Managers) across Concession vs Non-Concession Sectors.
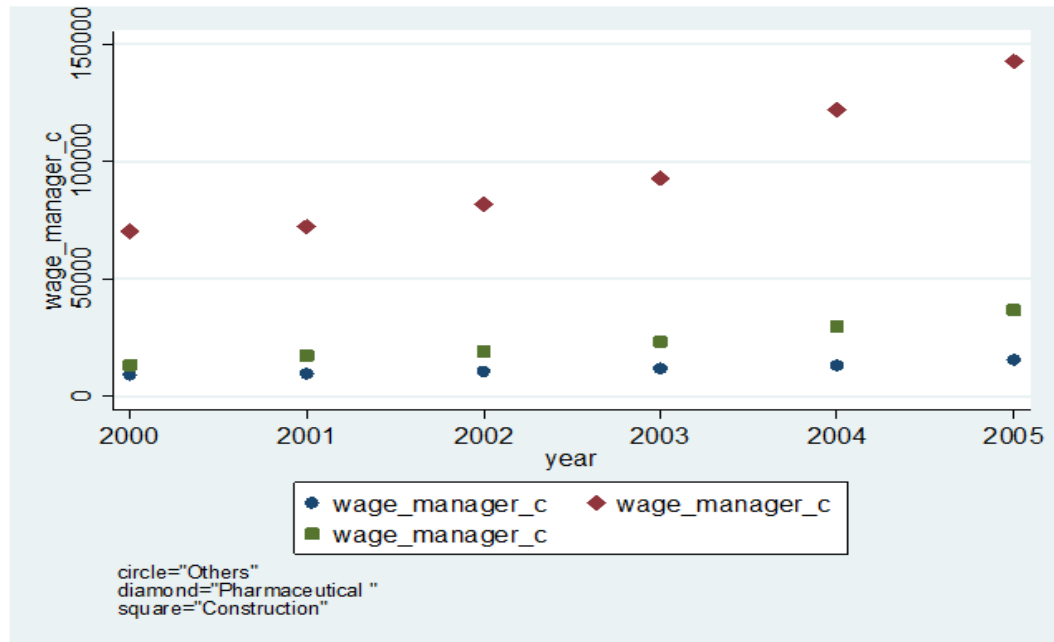
Source-Annual Survey of Industries

Fig. A.5 -Trends in Log (Average) Executive Wages across Concession vs Non-Concession Sectors.
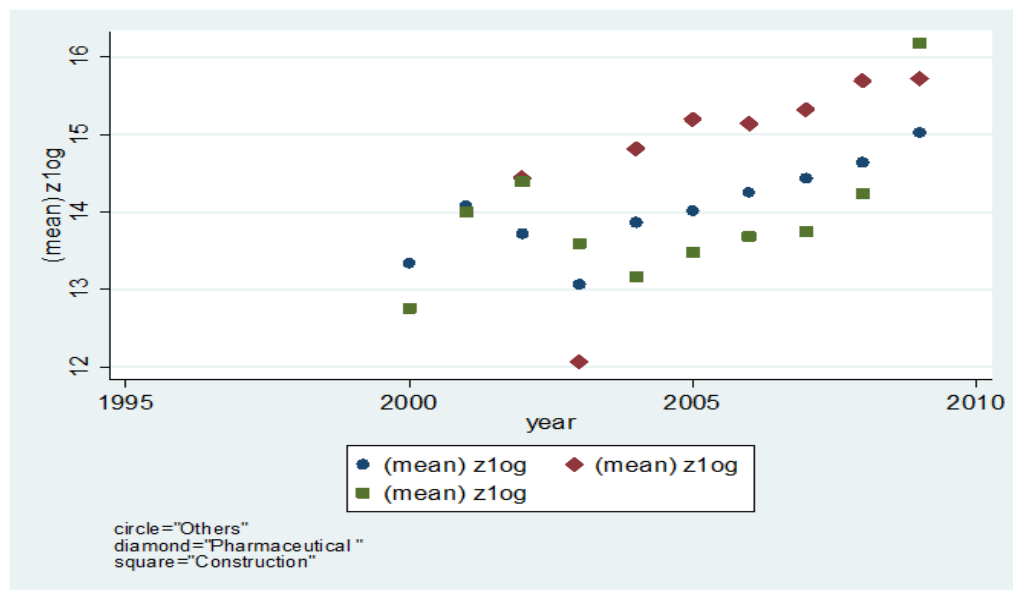
Source-Center for Monitoring Indian Economy

Table A.1 -FBT Heads and Valuation Base Rate

Expense Heads Specified as FBT Base	Valuation Rate (% of Expenses)
Contribution to Superannuation fund (above 1 lakh per annum)	100
Free or Concessional ticket	100
Value of ESOP	100
Entertainment	20
Hospitality	20
Sales promotion excluding expenditure from advertisement	20
Employees Welfare	20
Conveyance	20
Hotel & Lodging	20
Repair, running of motor car	20
Repair, running of aircraft	20
Use of Telephone	20
Maintenance of accommodation	20
Festival Celebration	50
Health Club and similar facilities	50
Any other Club facilities	50
Gifts	50
Scholarships	50
Tour and Travel including Foreign Travel	5

Source-Adopted from Kishore (2008).

Note-The travel and conveyance heads were clubbed before (with 20% valuation) and have been sepearted from 2006-07.

Table A.2- Effective Tax Rate of FBT

Sector	Travel			Lodging			Superannuation Fund		
	Domestic	Non-Domestic	Cooptv.	Domestic	Non-Domestic	Cooptv.	Domestic	Non-Domestic	Cooptv.
Airline, Air-Cargo	6.8	6.3	6.2	1.7	1.6	1.5	33.99	31.67	30.9
Construction	1.7	1.6	1.5	6.8	6.3	6.2	33.99	31.67	30.9
Computer Software	1.7	1.6	1.5	1.7	1.6	1.5	33.99	31.67	30.9
Pharmaceuticals	1.7	1.6	1.5	1.7	1.6	1.5	33.99	31.67	30.9
Shipping	6.8	6.3	6.2	1.7	1.6	1.5	33.99	31.67	30.9

Note-Superannuation Fund in FY 2005 it was taxed for any positive amount, from FY 2006 it was taxed above for Rs100000. Source - Complied from Kishore (2008) and Sections 115WB, 115WC of Income Tax Act and Assorted Budget Issues.

Table A.3 -Descriptive Statistics of Selected Variables at Industry-level (with ASI)

Variables	Obs	Mean	Standard Deviation	Min	Max
Log of average wage of all persons	768	11.11	.54	9.51	12.70
Log of average wage of workers	768	10.82	.48	9.45	12.51
Log of average wage of managers	768	12.03	.49	10.13	13.26
Tax Travel	768	0.01	.03	0	.07
Tax Lodging	768	0.01	.03	0	.07

Table A.4 -Descriptive Statistics of Selected Variables at Firm-level (with CMIE)

Variables	Obs	Mean	Standard Deviation	Min	Max
All Sectors					
Log of average wage of directors	3861	13.78	1.20	2.49	21.74
Log of sale	3861	4.06	2.58	-2.99	11.68
Tenure	3861	5.77	4.19	1	17
Number of regular directors	3861	1.85	1.04	1	8
Tax Superannuation fund	3861	0.03	0.10	0	0.34
Tax Travel	3861	0.03	0.03	0	0.07
Tax Lodging	3861	0.03	0.03	0	0.07
Industrial Sector					
Log of average wage of directors	3038	13.83	1.17	2.49	18.57
Log of sale	3038	4.66	1.88	-2.99	11.68
Tenure	3038	5.93	4.31	1	17
Number of regular directors	3038	1.89	1.04	1	8
Tax Superannuation fund	3038	0.03	0.10	0	0.34
Tax Travel	3038	0.03	0.03	0	0.07
Tax Lodging	3038	0.03	0.03	0	0.07

Table A.5 -Job-wise Variation in Effects of FBT on Employees' Wages in an Industry (with ASI).

	LogWage Managers	LogWage All	LogWage Workers	LogWage Managers	LogWage All	LogWage Workers
	(1)	(2)	(3)	(4)	(5)	(6)
Tax Travel	0.91**	0.01	-0.08	-	-	-
(Productive Fringe)	(0.37)	(0.26)	(0.23)	-	-	-
Tax Lodging	-	-	-	0.73**	0.16	0.10
(Productive Fringe)	-	-	-	(0.27)	(0.16)	(0.12)
Industry Trend	Yes	Yes	Yes	Yes	Yes	Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	768	768	768	768	768	768

**(5% significance level)*(10 % significance level). Standard errors are clustered at 3 digit industry level.

Employees represents all individuals engaged in an industry. Workers include both regular and contract

workers. 63 Industries' linear trend & 6 year effects have been controlled.

Table A.6 -Heterogeneous Effects of Fringe Benefits on Executive Wages in a Firm (with CMIE)

	Log Executive Wages (in All Sector)			Log Executive Wages (in Industrial Sector)		
	(1)	(2)	(3)	(4)	(5)	(6)
Tax Superannuation Fund	0.27**	-	-	0.25**	-	-
(Private Fringe)	(0.11)	-	-	(0.13)	-	-
Tax Travel	-	-0.05	-	-	-0.11	-
(Productive Fringe)	-	(0.62)	-	-	(0.74)	-
Tax Lodging	-	-	0.09	-	-	0.04
(Productive Fringe)	-	-	(0.63)	-	-	(0.74)
Log Sale	0.09	0.09	0.09	0.16**	0.16**	0.16**
	(0.06)	(0.06)	(0.06)	(0.05)	(0.05)	(0.05)
Number of Regular Directors	-0.14	-0.14	-0.14	-0.15	-0.15	-0.15
	(.08)	(.08)	(.08)	(.09)	(.09)	(.09)
Tenure	-0.07	-0.07	-0.07	-0.06	-0.06	-0.06
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
State Trend	Yes	Yes	Yes	Yes	Yes	Yes
Industry Trend	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3861	3861	3861	3038	3038	3038

**(5% significance level) *(10 % significance level). Standard errors are clustered at 3 digit industry level.

Linear Trend at 4 digit industry level has been controlled .

Table A.7 -Hierarchy in Provision of Productive Fringes in Industrial Sector

	Log Managers' Wages (ASI)		Log Executive Wages (CMIE)	
	(1)	(2)	(3)	(4)
Tax Travel	0.91**	-	-0.11	-
(Productive Fringe)	(0.37)	-	(0.74)	-
Tax Lodging	-	0.73**	-	0.04
(Productive Fringe)	-	(0.27)	-	(0.74)
Log Sale	-	-	0.16**	0.16**
	-	-	(0.05)	(0.05)
Number of Regular Directors	-	-	-0.15	-0.15
	-	-	(.09)	(.09)
Tenure	-	-	-0.06	-0.06
	-	-	(0.05)	(0.05)
Year Effects	Yes	Yes	Yes	Yes
State Trend	No	No	Yes	Yes
Industry Trend	Yes	Yes	Yes	Yes
Observations	768	768	3038	3038

Table A.8-Untangling True Effects from Spurious Correlation of FBT on Wages (with ASI)

	LogWage Managers	LogWage All	LogWage Workers	LogWage Managers	LogWage All	LogWage Workers
	(1)	(2)	(3)	(4)	(5)	(6)
Simulated Tax Travel	-0.26	-0.64**	-0.04	-	-	-
(Productive Fringe)	(0.30)	(0.23)	(0.25)	-	-	-
Simulated Tax Lodging	-	-	-	-0.45**	-0.81**	-0.24**
(Productive Fringe)	-	-	-	(0.15)	(0.09)	(0.09)
Industry Trend	Yes	Yes	Yes	Yes	Yes	Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	768	768	768	768	768	768

**(5% significance level) *(10 % significance level). The simulation break point is FY2004.

Not rejecting the null hypothesis (absence of previous trend) is ideal.

Table A.9-Untangling True Effects from Spurious Correlation of FBT on Wages (with CMIE).

	Log Executive Wages (in All Sector)			Log Executive Wages (in Industrial Sector)		
	(1)	(2)	(3)	(4)	(5)	(6)
Simulated Tax Superannuation Fund	0.05	-	-	0.04	-	-
(Private Fringe)	(0.10)	-	-	(0.10)	-	-
Simulated Tax Travel	-	0.09	-	-	-0.57	-
(Productive Fringe)	-	(0.06)	-	-	(0.40)	-
Simulated Tax Lodging	-	-	0.09	-	-	-0.55
(Productive Fringe)	-	-	(0.06)	-	-	(0.39)
Log Sale	0.09	0.09	0.09	0.16**	0.16**	0.16**
	(0.06)	(0.06)	(0.06)	(0.05)	(0.05)	(0.05)
Number of Regular Directors	-0.14	-0.14	-0.14	-0.15	-0.15	-0.15
	(.08)	(.08)	(.08)	(.09)	(.09)	(.09)
Tenure	-0.07	-0.07	-0.07	-0.06	-0.06	-0.06
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Trend	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3861	3861	3861	3038	3038	3038

**(5% significance level) *(10 % significance level). Standard errors are clustered at 3 digit industry level.

The simulation break point is FY2004.

B   Appendix: Calculating the Effective Fringe Benefit Tax-Rate of Firms

This appendix describes the procedure for calculation of the effective tax rate a firm faces in each industry. The effective tax rate FB_{ik} on each expenditure head is computed by using the following formula for the firm:

$$FB_{ik} = [TB_k \times TR_i] \, ; i = firm, k = \exp enditure \; head.$$

where TB_k is the FBT base rate for a particular expenditure i.e. percentage of the total expenditure head considered for tax calculation. TR_i represents the tax rate for a particular firm respectively

Table B.1 - Effective Rates of Fringe Benefit Tax for DifferentFfirms and Different Expenditure Heads@

Sector	FBT Base Rate(% of expense incurred)						Tax Rate		
	Hospitality	Travel	Hotel	Repair	ESOP	Others	Domestic	Non-Domestic	Cooptv.
Airline, Air- cargo	5	20	5	0	100	20	33.99	31.67	30.9
Construction	20	5	20	20	100	20	33.99	31.67	30.9
Computer Software	20	5	5	20	100	20	33.99	31.67	30.9
Hotel	5	20	20	20	100	20	33.99	31.67	30.9
Pharmaceuticals	20	5	5	20	100	20	33.99	31.67	30.9
Shipping	5	20	5	20	100	20	33.99	31.67	30.9
Motor Vehicles	20	20	20	5	100	20	33.99	31.67	30.9
Others	20	20	20	20	100	20	33.99	31.67	30.9

Source - Compiled from Kishore (2008) and Sections 115WB, 115WC of IncomeTax Act and Assorted Budget Issues.

@The effective rate is the product of the Valuation Base Rate and the Firm's Tax Rate. The firm's Tax rate is the tax rate it faces according to income tax status. Foreign ownership firms are assumed to have Non-domestic Status for simplification but in reality some of them may enjoy the domestic status. ESOP and the Superannuation Fund (Ins) are clubbed together as they have the same effective tax rate. Travel and conveyance are clubbed together.

C Data Appendix

Definition of Expenditure for consideration of Fringe Benefits Tax

Expenditure on Lodging: The fringe benefits shall be deemed to have been provided by the employer to his employees, if the employer has, in the course of his business or profession (including any activity whether or not such activity is carried on with the object of deriving income, profits or gains) incurred any expense on, or made any payment foruse of hotel, boarding and lodging facilities.

Expenditure on Travel: The fringe benefits shall be deemed to have been provided by the employer to his employees, if the employer has, in the course of his business or profession (including any activity whether or not such activity is carried on with the object of deriving income, profits or gains) incurred any expense on, or made any payment for conveyance, tour and travel (including foreign travel).

Contribution to Superannuation Fund: Any contribution by the employer to an approved superannuation fund for employees.

Annual Survey of Industries(ASI)

ASI is a representative sample survey of mainly the manufacturing industries extending from FY1987-FY2005. It extends to the entire country except the States of Arunachal Pradesh, Mizoram, and Sikkim and Union Territory of Lakshadweep. From 1997 onwards, it covers all factories registered under Sections 2m(i) and 2m(ii) of the Factories Act, 1948[15] hiring more than 100 workers. 12 States/UTs, namely, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Nagaland, Tripura and Pondicherry, A&N Islands, Chandigarh, Goa, Daman & Diu, D&N Haveli, which were industrially backward ,were surveyed on complete enumeration basis. The rest of the universe was covered on sampling basis through an efficient sampling design adopting State X 3 digit industry group as stratum so as to cover all the units in a span of three years.

Workers are defined to include all persons employed directly or through any agency whether for wages or not and engaged in any manufacturing process or in cleaning any part of the machinery or premises used for manufacturing process or in any other kind of work incidental to or connected with the manufacturing process or the subject of the manufacturing process . Labour engaged in the repair & maintenance, or production of fixed assets for factory's own use, or employed for generating electricity, or producing coal, gas etc. are included.

Employees include all workers defined above and persons receiving wages and holding clerical or supervisory or managerial positions engaged in administrative office, store keeping section and welfare section, sales department as also those engaged in purchase

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[15]Factories employing 10 or more workers using power; and those employing 20 or more workers without using power.

of raw materials etc. or purchase of fixed assets for the factory as well as watch and ward staff.

Total Persons Engaged include the employees as defined above and all working proprietors and their family members who are actively engaged in the work of the factory even without any pay, and the unpaid members of the co-operative societies who worked in or for the factory in any direct and productive capacity. The number of workers or employees is an average number obtained by dividing mandays worked by the number of days the factory had worked during the reference year.

Wages and Salaries are defined to include all remuneration in monetary terms and also payable more or less regularly in each pay period to workers as compensation for work done during the accounting year. It includes (a) direct wages and salary (i.e., basic wages/salaries, payment of overtime, dearness, compensatory allowance, house rent and other allowances), (b) remuneration for the period not worked (i.e., basic wages, salaries and allowances payable for leave period, paid holiday, lay-off payments and compensation for unemployment, if not paid from sources other than employers), (c) bonuses and ex-gratia payment paid both at regular and less frequent intervals (i.e., incentive bonuses, good attendance bonuses, productive bonuses, profit sharing bonuses, festival or year-end bonuses, etc.). It excludes lay off payments which are made from trust or other special funds set up exclusively for this purpose i.e., payments not made by the employer. It also excludes imputed value of benefits in kind, employer's contribution to old age benefits and other social security charges, direct expenditure on maternity benefits and crèches and other group benefits. Travelling and other expenditure incurred for business purposes and reimbursed by the employer are excluded. The wages are expressed in terms of gross value i.e., before deduction for fines, damages, taxes, provident fund, employee's state insurance contribution, etc.

Contribution To Provident Fund And Other Funds includes old age benefits like provident fund, pension, gratuity, etc. and employers contribution towards other social security charges such as employees state insurance, compensation for work injuries and occupational diseases, provident fund-linked insurance, retrenchment and lay- off benefits.

Workmen and Staff Welfare Expenses include group benefits like direct expenditure on maternity, crèches, canteen facilities, educational, cultural and recreational facilities; and grants to trade unions, co-operative stores, etc. meant for employees.

Total Emoluments is defined as the sum of wages and salaries, employers' contribution as provident fund and other funds and workmen and staff welfare expenses as defined above.

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Sales refer to the sum of industrial sales and income from non-financial services. This field reflects what most non-finance companies would report as Sales or Income from its

main activities. It includes the income the company earned through the sale of industrial goods and its various associated incomes such as sale of scrap or raw material or through providing job-work, utitility services, trading or other services. It includes all kinds of incomes that the company may earn through the providing of all kinds of non-financial services.

Salaries and wages refer to the periodic payments made to the employees for the services rendered by them.

Superannuation Fund: Contribution to the provident fund has been considerd similar as superannuation fund. The "Employees Provident Fund Act" mandates that employers are required to make a contribution, in favour of the employees, to the Provident Fund Account an amount equal to 12 per cent (earlier 10 per cent) of the basic pay and dearness allowance. This is a statutory requirement essentially to save for the post-retirement life of employees. Any amount that is contributed by the employer during the year to this account is reported by the companies as contribution to Provident fund.

Director's Remmuneration: The remuneration paid to directors which is reported under this datafield includes the amount of salary paid, contribution to provident fund, value of perquisites, performance linked incentive to whole time directors and also the commission paid to them.