The Firm Level Impact of SME Tax Incentives

Jonathan Friedland
Neil Rankin
University of the Witwatersrand

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Abstract

Since 2001, National Treasury has legislated several types of SME tax incentives with the stated purpose of fostering employment, stimulating capital accumulation and promoting economic growth within this sector. These incentives primarily comprise lower tax rates for SMEs and accelerated depreciation for their capital expenditure. The incentives have undergone several iterations and have been extended significantly over the past few years. The purpose of this paper, therefore, is to exploit these changes in quantifying the effect of such tax incentives at the firm level using both cross-sectional and panel analysis whilst controlling for a variety of firm level characteristics. The theoretical motivations for tax incentives are also tested for their applicability in the South African scenario. Furthermore, several qualitative response models are utilised in measuring the effectiveness of the administrative-easing initiatives undertaken by SARS which aimed to augment the incentives.

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Part I – Introduction

Tax incentives specifically targeted at small businesses are a common feature internationally in the economic landscape as 'tax relief for small firms has always been, and continues to be, a popular political cause…more importantly however is the persistent view that the maintenance of a small business class is socially desirable' (Musgrave, 1976). South Africa has not been immune to this trend with whole sections of the income tax code devoted to this goal. These provisions first appeared in 2001 and since then have been broadened considerably with the stated purpose of National Treasury to foster economic growth in the form of greater capital investment and employment. This paper aims to exploit these extensive changes in an effort to investigate whether the tax reforms have had any significant impact at the firm level.

The purpose of this research is to gauge the effectiveness of tax incentives to promote investment, employment and growth for Small and Medium-sized Enterprises (SME) mainly in the manufacturing sector. The study is done at the firm-level utilising the World Bank's Enterprise Surveys for South Africa in 2003 and 2007. The specific tax incentives evaluated relate to s 12E of the Income Tax Act No. 58 of 1962 (hereafter referred to as the Act)[1]. Section 12E targets Small Business Corporations (SBC) so as to provide relief in the form of lower and progressive tax rates as well as accelerated depreciation allowances, both of which are unavailable for non-qualifying companies. Whilst s 12E was first introduced in 2001, it has been vastly extended since, in terms of its scope and the benefits it provides. As two datasets exist as at 2003 and 2007, the research is able to evaluate the effectiveness of these tax reforms utilising both cross-sectional and panel analysis.

Whilst other research has been undertaken into the topic of tax incentives, it is usually done at the macroeconomic level whereas this paper examines tax incentives at the firm-level. Owing to the significant developments in s 12E between 2003 and 2007 and the panel datasets provided, the research is able to track how firms which did not qualify in 2003 for the incentives but subsequently did in 2007 (due to an expansion of s 12E) may have changed their behaviour. Furthermore, via two cross-sectional

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[1] Unless otherwise stated, any reference to sections relate to that of the Act.

analyses, comparing SBCs to non-SBCs, the paper is also able to assess whether the incentives have resulted in greater investment, employment and growth, controlling, *inter alia*, for firm size, region, sector and age. This is done for 2003 when s 12E was less generous and again for 2007 when it was more liberal. Apart from this, the data also allows one to evaluate the various administrative-easing initiatives embarked upon by the South African Revenue Service (SARS) during this period utilising qualitative response regression models.

The paper is structured as follows: Part II traces the development of s 12E, its purpose and details which companies may qualify for the tax breaks. A literature review of the theory surrounding tax incentives is performed in Part III. The motivation for tax incentives, what is expected *a priori* and the outcomes of other research into the topic are all discussed. Part IV describes the data and the Enterprise Survey in more detail whilst Part V provides the econometric specifications and models used. Part VI presents the results of the quantitative analysis and Part VII concludes on the research as a whole.

Part II – The Purpose and Development of s 12E

Section 12E first appeared in 2000 against the stated belief of National Treasury that 'internationally, it is recognised that small and medium enterprises have an important role in economic development and employment creation' (National Treasury, 2000); it was subsequently passed in 2001 effective for that year. The initial iteration of s 12E focussed primarily on introducing a progressive rate structure[2] into the corporate income tax regime resulting in a 15 percent tax rate for qualifying SBCs whose taxable income was below R100,000 and the standard rate of 30 percent applying to taxable income thereafter. Section 12E can be divided into two parts – those subsections delineating which companies qualify as an SBC and those which deal with the effects of such qualification. Each of these will now be discussed.

The legislation governing SBC qualification is long and not all sections are relevant for this analysis; as such the salient requirements affecting this research are presented below.

A company qualifies as an SBC provided:

- It is a private company (as opposed to public or listed), all shareholders of which are natural persons. The impact of this requirement is that the tax breaks would not apply to group companies where one of the subsidiaries – if not for this provision – would enjoy the benefits despite its holding company being very large.

- The gross income is less than a predetermined threshold. This threshold has changed significantly over the years. In 2001 when s 12E first became effective the qualifying amount was only R1 million. By 2006 it had increased to R14 million thus widening the net of companies to which s 12E would apply. It is this latter scope increase together with the further

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[2] There are three possible tax rate structures. A flat tax refers to a single rate for the entire income range. Progressivity (or progressive taxation) is where the tax rate increases as income increases. Regressivity is where the tax rate declines as income rises. This is depicted graphically in Appendix 1.

introduction of even more beneficial provisions which facilitate the ensuing analysis.

- Not more than 20 percent of the receipts and accruals of the company is derived from investment income which encompasses mainly interest, dividends and rental. The idea here is that the company should be active and not an investment holding company if tax breaks are to be granted. This concept is further supported in granting greater tax relief to manufacturing firms over non-manufacturing ones.

- The shareholders of the company may not hold shares in any other company other than listed companies (other exceptions such as shares in friendly societies and sectional-title schemes are also allowed however these are irrelevant for this research topic). It is submitted that this is a type of anti-avoidance provision as it prevents a shareholder shifting the operations and income among several companies that he owns so that each can benefit from s 12E despite it being too large to qualify on a consolidated level.

Once a company qualifies as an SBC certain tax breaks are provided. As mentioned above, this started with lower tax rates but has been extended over the years. As the data used in the econometric analysis are derived from 2003 and 2007, it is instructive to discuss the changes throughout this period.

In 2003, the qualifying threshold was R5 million with the rate structure being 15 percent on the first R150,000 and the standard corporate rate of 30 percent thereafter. Furthermore one of the most beneficial aspects of s 12E became operative: capital purchases of manufacturing equipment could be deducted entirely in the year it is acquired thus encouraging fixed capital formation.

During 2004 no specific changes were made to s 12E however several initiatives were introduced by SARS to ease the administrative burden on taxpayers. These programmes were diverse and included, *inter alia,* a reduction in the number a returns to be filed, colour coded forms, greater tax guidance, the formation of a Service Monitoring Office for aggrieved taxpayers who are dissatisfied with SARS's service

and lastly the creation of informal (and less adversarial) dispute resolution mechanisms as an alternative to court litigation thus lowering costs. Whilst these initiatives would be open to all companies and not just those qualifying as SBCs, they were undertaken to benefit small businesses in particular, as noted by National Treasury in the 2004 Budget Tax Proposals by classifying the above programmes under the heading 'Measures in Support of SMMEs' and immediately preceding this it is noted that 'small businesses continue to have general administrative concerns…In recognition of these concerns, a task team…will be established to review administrative aspects of small business interactions with SARS' (National Treasury, 2004).

Following this review, in 2005 even more administrative-easing programmes were introduced. Once again they were not exclusive to SBCs but they would be the biggest beneficiaries thereof. These programmes largely comprised small business helpdesks, community tax helpers and the provision of accounting and payroll packages for small businesses. 2005 also saw extensions to s 12E specifically. The eligibility threshold was increased from R5 million to R6 million and additional progressivity was legislated with the creation of a third corporate income tax bracket. Prior to this, as mentioned above, there were only two income tax brackets being 15 percent on the first 150,000 and 30 percent for taxable incomes thereafter. With the introduction in 2005 of a third income tax bracket the applicable tax rates for each bracket was as follows:

R0 – R35 000 of taxable income at 0 percent

R35 001 to R250 000 of taxable income at 10 percent

R250 001+ of taxable income at 29 percent

The savings provided by this graduated rate structure should not be underestimated. For instance an SBC with taxable income of R1 million would have a tax bill 20 percent lower than a non-SBC with the same taxable income[3].

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[3] SBC tax payable = 0.29*(1,000,000 – 250,000) + 0.1*(250,000) = 242,500

Non-SBC tax payable = 0.29*1,000,000 = 290,000

Percentage saving = (290,000 – 242,500)/242,500 = 19,59%

These savings become even more pronounced (proportionally) the lower the taxable income.

The 100 percent immediate deduction of capital assets used in manufacturing was retained. Similar accelerated deductions were extended to capital assets of a non-manufacturing nature; these assets could now be written-off over three years in the ratio of 50:30:20 percent. It was estimated that these reforms would cost the *fiscus* approximately R1,4 billion (Stretch & Silke, 2005).

2006 saw an unprecedented leap in the qualifying threshold from R6 million to R14 million. The effect of this was, and still is, to allow a far greater number of firms to enjoy the extensive tax benefits contained under s 12E. Additionally, the tax brackets were widened for the 10 percent level from R250,000 to R300,000 and from R35,000 to R40,000 for the 0 percent band.

As the panel data analysis contains a time-series component for 2003 and 2007, it is worth emphasising the degree to which tax-breaks for SBCs were extended during this period: In 2003, only a limited number of firms (owing to the low threshold) could enjoy the immediate deduction of manufacturing capital assets and the rudimentary progressive rate structure. By 2007, the SBC net had increased significantly with the 233 percent increase in the qualifying threshold. Furthermore, accelerated deductions were extended to virtually all capital investments, more progressive tax rates with wider income bands became effective and numerous administrative-easing programmes were underway.

With the mechanics and consequences of s 12E thus established, the question is then posed as to the motivation and intention of government in this policy shift to support small business via the tax system. National Treasury believed that the rudimentary progression as existed in 2001, even by itself, would be sufficient 'to benefit small labour-intensive businesses primarily in manufacturing' (National Treasury, 2000) and together with the full write-off of manufacturing assets would 'markedly improve the cash flows of growing small businesses and further enhance the potential for this sector to create jobs' (National Treasury, 2001). The then Finance Minister Trevor Manuel contextualised this policy as part of 'fiscal interventions in support of the

broader economic reforms… that enhance the volume and quality of investment, that encourage employment creation and promote skills development, and measures that will improve the efficiency of asset use' (Manuel, 2001). In the same address, Manuel again reiterated that the SBC tax privileges would be central in job creation. Further motivation was given in 2005 when SBC reforms were extended; again Treasury mentioned the ability of progressivity to increase employment but now also projected that the reforms 'should significantly increase cash flows for small businesses, contributing to the surplus available for reinvestment, thereby supporting business growth' (National Treasury, 2005). The point being that investment as well as employment were now motivations. This two-pronged justification will be tested explicitly in the empirical component of the research.

Part III – Literature Review

Introduction

The purpose of this section is to examine the theoretical underpinning of tax incentives, what *a priori* affects are expected with their implementation and the experience of their implementation elsewhere. Where applicable, the theory will be applied to SMEs taking into account the nuances of the South African economic landscape and s 12E in particular. It should be noted that there are several macroeconomic effects of tax incentives such as the erosion of the tax base and changes to Foreign Direct Investment which are not the subject of this research. The focus here is on the effects of tax incentives (specifically for SMEs) at the firm level in order to gauge the consequences of these incentives on different aspects of the firm such as investment in capital and changes in labour employed.

Progressive Tax Rates

Progressive taxation results in relatively lower tax rates compared to those experienced in higher income bands. Supply-side economists submit that overall lower tax rates stimulate the economy in general and relatively lower tax rates (as occurs under a progressive rate structure) for particular activities tend to encourage those activities (Margo, 1986). As s 12E provides lower tax rates only for specific activities (i.e. SBCs mainly in manufacturing) it is the latter which is of particular interest. The distinction is important as the SBCs do not only enjoy lower rates but are relatively better-off than their larger counterparts.

The theory supporting the conclusion that lower tax rates trigger greater investment assumes that investment is determined primarily by the after-tax rate of return. When the tax rate declines, the after-tax return increases allowing for more investments to rise above the minimum required return by investors. A lower user cost of capital encourages greater capital formation (Khalilzadeh-Shirazi & Shah, 1991). The use of lower tax rates 'is reasonably certain to increase total investment by some extent' (Usher, 1977).

Whilst recognising the theoretical consequences, it has also been noted that the evidence on lower and progressive tax rates 'is not yet firm enough to justify reliance upon this measure as a basis for tax reform' (Margo, 1986). Furthermore it is recognised, as is the case with personal income taxes, that progressivity undermines simplicity (Katz, 1994), something which is desirable for smaller entities.

Corporate progressivity has also been challenged on other grounds (Katz, 1994). Firstly, and most germane to SMEs, it may actually inhibit firm size. The higher tax rates may discourage expansion for the marginal firm. The problem becomes even more pronounced the greater the level of graduation in the tax structure. Secondly, it places an administrative burden on firms which is also something to be avoided for smaller entities. Thirdly, there is an incentive for larger firms to unbundle into smaller entities so as to take advantage of lower rates. This can only be legislated away via complex provisions and calls into question the enforceability by the tax authorities. Lastly, progressive rates discriminate against sole proprietors and partnerships who are unincorporated. This is particularly relevant in South Africa given that the personal income taxes which are applicable to sole proprietors and partnerships are far more graduated with a higher upper-end rate than the corporate rate structure.

Accelerated Depreciation and Investment

The economic reasoning as to why accelerated depreciation allowances are so favourable is explained as follows (Margo, 1986): When a firm undertakes capital expenditure its economic income (i.e. its ability to consume without diminishing wealth) is not reduced immediately but only occurs as and when the asset is used in production. If the total or greater part of the asset's value is deducted in earlier periods the income for tax purposes is understated thus reducing the tax liability to the firm's advantage. Of course, in future years the taxable income is overstated however the present value of the immediate deduction exceeds that of subsequent overpayments resulting in an overall benefit to the firm. As explained by Hall and Jorgenson (1967) in their seminal paper on the issue 'This tax policy [a full initial deduction] represents the ultimate liberalization since it is equivalent to treating capital expenditures in the same way as current expenditures for tax purposes'. As Musgrave (1976) states,

'deduction of capital costs gives rise to tax savings to the investor, and these are greater the earlier the capital costs are deducted'. Musgrave represents this mathematically as:

$$PV_T = t(R.A_n - \frac{C}{d}.A_d)$$

Where PV_T is the present value of the tax payments, t is the corporate tax rate, R is annual taxable income, C is the cost of the investment, d is the number of years the tax authorities allow the investment to be depreciated, which can only be integer values given that income tax assessments are made annually. A_n and A_d are the present value annuity factors for R1 discounted at the market interest rate i for n and d years respectively. Insofar as s 12E is concerned, d is equal to one representing an immediate deduction and thus yielding the lowest possible value for the present value of the tax payments. *Ceteris paribus*, as d increases, so PV_T increases meaning a greater present value of taxes payable.

Such accelerated depreciation does not reduce the total amount of tax that will be paid; the tax liability is reduced in the earlier years and increased in later years. 'The gain results form a once-and-for-all tax postponement, with the Treasury losing revenue in the earlier years and recouping it thereafter' (Musgrave, 1976).

In a study by King and Fullerton (1980), the effective marginal tax rate on machinery in United Kingdom, where immediate expensing is legislated, was undertaken. The result was an effective negative 36,8 percent rate which was the lowest of the four countries surveyed and the country who also had the highest share of machinery in its capital stock. In a simulated study by Hall and Jorgenson (1967) for the United States 1954-1963 tax code, they found the 'effects of such a policy on investment expenditure would have been very substantial'.

The argument has also been made that these types of tax incentives are redundant as profitable enterprises would in any event invest and expand (especially if demand and business confidence is high) and thus they do not spur additional investment (Margo, 1986 and Usher, 1977). It was noted by the Khalilzadeh-Shirazi and Shah (1991) that

incentives can sometimes 'confer windfall gains on some activities at substantial cost to the treasury without inducing commensurate behavioural response'.

Taking the criticism further, it has also been argued that these allowances are counter-productive in fostering employment as they reduce the cost of capital resulting in a substitution of capital for labour. The problem is particularly acute in countries where capital is scarce but labour is not (Margo, 1986). As such, the South African Standing Commission on Taxation Policy (1983) suggested that 'incentives should not over-stimulate capital-intensive, as against labour-intensive, industries' and furthermore, investment in human-capital should be encouraged as well.

Whilst s 12E provides for lower tax rates as well as accelerated depreciation, the effectiveness of the latter is considered superior in that it targets new investments specifically. 'Since it is the profitability of *new* investment that matters for incentive purposes, accelerated depreciation…can give a more powerful stimulus than can rate reduction' (Musgrave, 1976; emphasis in original).

<u>Effectiveness of Tax Incentives</u>

The justification for implementing the tax incentives discussed in this paper is to spur investment, increase employment and foster economic growth (Manuel, 2001). The question is then posed as to whether they are effective in achieving these goals. To pre-empt the conclusion, the results are very mixed across different research. The lack of consensus has, in itself, been recognised by the World Bank (1991) in evaluating the lessons of tax reform in several countries (including developing countries).

As noted above, the studies by Hall and Jorgenson (1967) as well as King and Fullerton (1980) yielded positive results. However, as was noted by the previous South African Board of Trade and Industries, experience suggests that investment in manufacturing is primarily influenced by demand and the level of business confidence and less by capital allowance incentives. Historically there is international evidence to support this, such as in Germany and Japan where accelerated depreciation is almost non-existent yet investment, as a share of GDP, exceeds that of the United Kingdom and United States where such allowances are available (Margo, 1986).

As mentioned above, a source of scepticism over tax incentives is that firms would in any event undertake the investment without the tax breaks. In theory, only the marginal firms should be targeted. As noted by Anderson (1992) 'an important reason for the cost inefficiency of tax incentives is that they are available to all qualifying investments. A large part of investment would have occurred in any event. Measures that target marginal investment have been hard to implement'.

On a theoretical level, Musgrave (1976) cautions the use of tax incentives with the proviso that according to investment theory,

> 'Investment is undertaken to expand the capital stock, which will be desirable only if existing capacity is not excessive in relation to expected sales. If so, the profits tax has no direct bearing on investment. Fiscal effects enter only via resulting changes in aggregate demand'

In gauging effectiveness of investment tax incentives in South Africa a comparison can be drawn to Mexico during the 1980's. The motivation behind the tax programmes in these countries was very similar with the main differences being that Mexico focussed on small industries whilst South Africa focuses on small businesses. It is also noted that the instruments used were different. Mexico used tax credits whereas South Africa uses accelerated allowances and progressive rates; despite these differences, it is submitted that both will reduce effective tax rates. As shown by the World Bank (1991), the Mexican programme was ineffective and later scrapped altogether. Indonesia had a similar experience.

The conflicting evidence implies that incentives may have a firmer theoretical foundation than an empirical one. For this reason, institutions like the World Bank (1991) have begun to delineate between 'sectoral tax advice' and 'general tax advice'. 'Sectoral tax advice', such as promoting SBCs in manufacturing, tends to favour the use of tax incentives; however, 'general tax advice' counsels simplifying the tax code and the limiting of special provisions and incentives. As such 'the Banks advice reflects a lack of consensus among professionals [regarding]…the use of tax incentives to promote investment' (World Bank, 1991). Owing to the experience of

Mexico (mentioned above) and others such as Indonesia, Argentina and Colombia (where virtually all tax incentives were eliminated), less emphasis is given to specific sectoral aims but rather the revenue raising role of taxes as 'tax incentives usually cause a serious drain on the national treasury' (Khalilzadeh-Shirazi and Shah, 1991). This should not be construed that incentives have been abandoned in all developing nations, most notably in this regard is Korea where they are popular and also extend to small businesses (Khalilzadeh-Shirazi and Shah, 1991 & Katz, 1994). Furthermore, even sectoral initiatives 'are difficult to fine tune [and] are unpredictable in terms of economic calculations' (Katz, 1994). Despite this however, the view is not beyond reproach as the World Bank (1991) themselves recognise that 'a number of unresolved and controversial issues still remain'. It is interesting that the use of tax incentives to promote investment is listed as one such area that is unresolved.

Tax Incentives and SMEs

International evidence indicates several broad categories in which the tax system affects smaller enterprises (Katz, 1994):

- Since SMEs do not have access to capital markets to raise equity and long-term debt, there is a much greater reliance on internal funding via retained income. Thus the taxation of corporate earnings directly depletes the principle source of equity capital forcing the entity to resort to short-term debt (such as overdrafts) which in turn increases their risk exposure. Accordingly, the progressive rate structure prescribed by s 12E is justified in mitigating this problem and allowing greater funds for re-investment than would otherwise exist under the standard corporate rate.

- Owing to the ability of larger firms to raise capital, tax incentives for investment discriminate against SMEs which are also more labour intensive. The accelerated 100 percent depreciation allowance provided by s 12E makes SBC status far more favourable thus helping mitigate this bias.

- Accelerated depreciation of assets incentivises firms to substitute away from labour to capital. This fact, which was explicitly brought to the attention of government via the First Interim Commission of Enquiry into the Tax Structure of South Africa (1994), is at odds with their stated justification for s 12E that it would 'enhance the potential for [SBCs] to create jobs' (National Treasury, 2001). Khalilzadeb-Shirazi and Shah (1991) acknowledge in their World Bank paper dealing with tax policy in developing countries that tax incentives are often 'used to advance wide-ranging but sometimes conflicting tax policy objectives'. This type of conflicting policy has already occurred in South Africa during the late 1980's when the World Bank (1994) estimated that the cost of capital 'inclusive of tax breaks and interest subsidies' for labour intensive industries was almost three times as high as that for the capital intensive sector. The system clearly worked against job creation.

- Due to limited expertise, compliance costs fall disproportionately on SMEs; this problem is compounded further with frequent changes in the legislation. It is this notion which gave impetus to the administrative-easing initiatives undertaken by SARS. Ironically however, s 12E is neither simple nor short. This is a common phenomenon in legislating tax incentives, especially specifically targeted ones such as s 12E, that there is a trade-off between the simplicity of administration and the ability to target effectively. The more specific the incentive the more difficult it is to administer. The issue becomes particularly problematic when it involves SMEs where simplicity has added importance. With this said, if government support is deemed necessary, tax incentives may still be simpler and more cost-effective than the alternative being direct subsidisation which requires active government involvement for success.

Theoretically, it is via these channels that government is able to influence SMEs and as shown above, National Treasury has made use of them in drafting s 12E.

As a final issue insofar as tax incentives and SMEs are concerned, a key objective of any tax incentive scheme should be to support the informal sector; however this is necessarily limited as the sector falls outside the tax net (Katz, 1994). Section 12E has

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been criticised for excluding sole proprietors and partnerships from its scope thus eliminating any possible support for the informal sector entirely (Mitchell *et al*, 2005).

Conclusion

Whilst the theoretical consequences of tax incentives are less ambiguous, their effectiveness is highly questionable and may 'have an arbitrary and haphazard impact on small businesses' (Katz, 1994) if any effect at all. Internationally, there has been a marked trend in relying less on tax incentives and specifically in developing countries. As Usher (1977) concludes:

> 'we typically do not know…the effects of these programmes upon the economies where they are adopted. Nor can we say with any degree of assurance how incentive programmes might best be designed to maximize the amount of investment [and] to slant investment toward labour intensive techniques'.

Owing to this sentiment it is increasingly advised that 'all tax incentives and exemptions should be listed with a cost-benefit analysis carried-out' (White Paper on the RDP cited in Katz, 1994).

Part IV – The Data

General

The data used in the empirical evaluation is taken from the Enterprise Surveys conducted by the World Bank. The following information about the survey draws primarily from the various Enterprise Survey manuals which accompany the data as well as World Bank explanations thereon (World Bank 2007, World Bank 2009 and World Bank 2010).

The Enterprise Survey is undertaken at a firm-level of a representative sample of the economy's private sphere. Whilst the survey encompasses multiple sectors, this research is only concerned with the manufacturing survey; the reason being that s 12E is targeted mainly at stimulating this sector above all others. To ensure greater integrity of the data, the survey respondents are the owners and top management of the firms. The sample methodology ensures that the major economic regions of South Africa were covered. Over 90 percent of the questions are objective whilst the remainder are more opinion orientated. This research makes use of both types such as labour employed as an example of the former and the respondents view about tax obstacles as an example of the latter. The mode of data collection is face-to-face interviews. Overall, the survey collects data concerning the business environment, the perception thereof by firms, how this changes over time and what the constraints to firm performance and growth are.

The most recent Enterprise Survey was undertaken in 2007 where the variables derived pertain to that year. As the most far-reaching change to s12E (being the increase in the qualifying threshold from R6 million to R14 million) was effective from end of the first quarter of 2006, the data allows for up to 21 months to evaluate the effect of the change. As other developments of s 12E were legislated even earlier these too will thus be factored into the data.

The next most recent Enterprise Survey relates to 2003. Panel analysis is facilitated due to the structure of the survey. For certain questions, in both surveys, the

respondent was required to submit 'recall' data. For 2007, this was the comparative for 2003; for the 2003 survey, values for 2002 and 2001 were submitted for selected questions. As such, the research makes use of this 'recall data', and balanced panel set, for the panel analysis

The Sample and Sampling Methodology

The sampling methodology is stratified random sampling with replacement where all members of the population have the same probability of being selected. For a stratified random sample, the population is grouped homogeneously and then a random sample is selected. Sampling weights take care of the varying probabilities of selection across different strata. The strata for the Enterprise Survey are firm size, business sector and geographic region. The World Bank submits that this methodology ensures sample sizes large enough to 'conduct statistically robust analyses'.

Owing to the provisions necessary to qualify as an SBC (discussed earlier in this paper) a sample of SBCs must be extracted. This is done as follows:

- Only private companies are considered: This is explicitly asked in the survey and thus the sample can be constrained for this requirement.

- The gross income must be below the predetermined threshold (being R6 million in 2003 and R14 million in 2007): The survey requires the respondent to submit the company's turnover which can then be used for this provision. It should be noted that the turnover value would be based on accounting conventions which differ slightly from the Income Tax definition. The difference between the two being that the Act will tax cash received but not yet accrued. From an accounting perspective, such advance payments are treated as a liability and not turnover thus resulting in a mismatch. However this mismatch would in the vast majority of cases be immaterial especially given that the quantum is the difference between the cash receipt inclusions for the current year less the value of the cash receipts that were included in the

prior year. As such it is highly unlikely that a firm would be disqualified purely as a result of this.

- Not more than 20 percent of the receipts and accruals of the company is derived from investment income: As the survey is limited to companies in manufacturing and not investment holding firms this has already been factored into the sample.

- The shareholders of the company may not hold shares in any other company other than listed companies: Whilst this cannot be ascertained from the survey, two factors should be borne in mind. Firstly, as the sample excludes large firms (as they serve no purpose in the analysis) only small and medium sized firms are included. It is assumed that these companies represent the primary source of income for their shareholders and as such the shareholders would not be conducting other operations outside their principle company. Secondly, s 12E can result in significant tax savings which incentivizes the shareholder not own shares in other private companies (listed company holdings are not disqualified).

- All shareholders must be natural persons (as opposed to companies): The questionnaire specifically asks if the company is part of a larger firm implying a group company structure where the shares of the company surveyed would be owned by a holding company. All such companies have been excluded from the SBC sample. Furthermore, all foreign and government shareholdings have also been excluded as it is likely that they would not be individuals but other companies.

The multiple requirements for SBC qualification result in two approaches that can be adopted in the regression analysis. First is to define the dependent variable to satisfy all those requirements except the turnover qualifying threshold. A dummy variable can then be used assuming a value of one if the observation is below the threshold. The second option is to include all observations for the regressand and let the dummy

variable assume a value of one provided all the SBC requirements are met. This will be discussed in more detail in Part V.

Descriptive Statistics

The 2007 data has 827 cross-sectional observations and 382 panel observations which have been linked to the 2003 dataset. 65 percent of the firms (692) are classified as manufacturing based on s 12E. There are 741 small and medium firms and 196 large firms. The majority of the firms (719) where surveyed in Johannesburg with other regions including Cape Town, Durban and Port Elizabeth in order of frequency.

The 2003 data comprises 800 formal privately owned firms. There are 603 manufacturing firms which translates to 75 percent of the observations. Construction, wholesale and retail make up the remainder. Four provinces were covered in the survey, being Gauteng, the Western Cape, KwaZulu-Natal and the Eastern Cape with the majority coming from Gauteng (63 percent).

From the 2007 dataset, 152 firms qualified for all of the s 12E requirements and thus would be subject to the incentives. In the panel analysis using the 'recall' data provided by respondent as comparatives for 2003, there are 71 firms which did not qualify in 2003 but subsequently did in 2007; and 81 firms that qualified throughout the period. From the 2003 dataset, 25 firms qualified in 2003 for the incentives, bearing in mind the lower qualifying threshold of R5 million turnover for that year.

Tabulated, the above is represented as follows:

Qualifying Status:	2007 Data	2003 Data
Qualified in 2007 but not 2003	71	N/A
Qualified in 2003 survey	N/A	25
Qualified 2007 and 2003 based on panel recall	81	N/A
Total Qualifying	152	25

Part V – Econometric Specifications

The quantitative component of this paper is to gauge the effects of the tax incentives at the firm level. This is done utilising a cross-sectional comparison in 2003 and 2007 between SBC qualifying firms and non-SBC firms where the former was subject to the incentives and the latter excluded. A panel analysis is also undertaken to measure the effects of the incentives on those firms which, owing to the scope increase of s 12E in 2006, subsequently qualified but previously did not versus those firms which qualified throughout the period. Various qualitative response regression models are also utilised in measuring the effectiveness of the administration-easing initiatives undertaken by SARS targeted mainly at SBCs.

The first specification, being cross-sectional, is of the form:

$$\ln y = \beta_0 + \beta_1 X_i + \beta_2 U_i + \varepsilon_i$$

Where X is a vector of exogenous firm level characteristics, U_i is the dummy variable which denotes SBC qualification of firm i (=1 if i is an SBC, 0 otherwise). The firm level characteristics are listed in Table 1 of Appendix 2 for the different data sets used. On a broad level, the regressions generally control for size, sector, region and age. To cater for a non-linear relationship in age, the square was also included. Generally the regressions were run so as to produce heteroscedastic corrected standard errors.

The idea behind this specification is to understand how an SBC qualifying firm (the dummy) differs in behaviour (the dependent variable) from non-SBC firms whilst controlling for certain firm characteristics.

As there are several requirements for SBC qualification, one has several options available of how to apply them to the sample. For instance, the most restrictive method is to apply all the non-revenue requirements to the dependent variable and then allow the dummy to assume a value of one if the company is below the revenue threshold. This is the most restrictive because the regression sample is limited to firms

that in all respects, other than revenue, would otherwise qualify for the tax incentives. As the dummy represents firms under the revenue threshold these are the only ones that would qualify in a sample of very similar companies. As such, qualification is the only significant difference in the sample. The least restrictive method is to leave the dependent variable (and thus the sample) unrestricted and allow the dummy to assume one for all SBC requirements together. The reason why this is the least restrictive is that it allows for greater variation amongst the firms in the sample. This is not to say that the latter method should not be used; in certain cases greater variation is desirable especially where one wants to gauge changes in behaviour between SBC companies and, say partnerships, which may be very similar to SBC companies but would not qualify because they are unincorporated entities. In order to assess this, one would not want to restrict the sample to companies only as is done in the first method above. In any event, these two methods are two ends of the spectrum; the requirements can be combined between the dependent variable and dummy in several combinations. What determines this is the goals of the particular regression and is discussed specifically in the next section.

Specification 2 is a piecewise regression which is denoted algebraically as:

$$\ln y = \beta_0 + \beta_1 X_i + \beta_2 Z_i + \beta_3 U_i (Z_i - Z^*) + \varepsilon_i$$

Where X is a vector of firm level characteristics other than turnover, Z_i represents the turnover of firm i, Z^* is the structural break value also known as the knot and U_i is the structural break dummy (=1 if the turnover of firm i is larger than the knot, 0 otherwise). Under this specification, β_2 gives the slope of the regression line in Segment I (i.e. before the structural break) and β_3 gives the change in the slope for Segment II (i.e. after the structural break). For this analysis, the structural break is given by the SBC qualifying threshold such that β_3 gives the change for non-qualifying firms.

This specification uses the piecewise technique to gauge the difference in firm behaviour between qualifying and non-qualifying companies. The purpose is a robustness check on the output of Specification 1 by potentially providing

corroborative results. Accordingly, the dependent variables are the same in Specifications 1 and 2. Because of the structure of a piecewise regression, the restrictions are placed such that all non-revenue requirements relate to the dependent variable whilst the qualifying revenue threshold constitutes the knot.

Specification 3 is an ordinal logit, where the outcomes cannot be represented on an interval scale but ranking nevertheless exists.

Specification 4 is a multinomial logit, where unlike the ordinal logit above, the regressand is unordered in the sense that there is no ranking of outcomes.

The above two regressions are used for the survey questions which elicited a qualitative response as opposed to a numerical value.

Specification 5 is a regression utilizing the first-difference method for panel data, denoted algebraically as:

$$\ln y_{it} - \ln y_{it-1} = \beta_1(X_{it} - X_{it-1}) + \beta_2 U_{it} + \varepsilon_{it}$$

Where X_{it} is a vector of exogenous firm level characteristics for firm i at time t. U_{it} is the dummy variable which denotes SBC qualification of firm i at time t (=1 if i is an SBC, 0 otherwise). As the data gives a two period panel structure, the first difference estimate is efficient with no possibility of autocorrelation.

For certain questions in the survey, the respondent was asked to provide a comparative value relating to prior years. This 'recall' data thus allows for a panel analysis using the above specification.

Part VI – Results

Cross-Sectional Analysis

Both the 2003 and 2007 surveys provide data on several key aspects of taxation and how it affects the firm. This enables an evaluation to be undertaken as to how incentives have influenced firm behaviour via a number of indicators. As there is an overlap between the surveys in certain areas, the cross-sectional results of each year can be used to corroborate one another. However in other cases, the surveys are not identical and thus for some regressions there may not be scope for corroboration.

Effect of Incentives on Output, Labour and Capital

The log of the output-labour, output-capital and capital-labour ratios were estimated controlling for firm level characteristics. The purpose here is to assess the effect of the incentives (i.e. qualifying firms represented by the dummy) on the ratios above. As this is estimated using Specification 1 (cross-sectional), the dependent variables do not represent growth rates (this is done in the panel analysis below) but are rather static comparisons between SBCs and non-SBCs as at 2003 and 2007. Where-ever the capital variable appears, estimation was done twice: first for capital measured at net book value (NBV) and second for capital measured at replacement cost where the results are presented in that order. The same specification was used to estimate the log of turnover, capital, number of employees and capital expenditure. In all these regressions, the sample excluded any non-manufacturing firms as well as any firms that were not 100 percent private domestically owned. The dummy then assumes a value of one if the other SBC requirements are met, namely that the firm is a non-group private company below the revenue threshold. That is, the sample is constructed such that SBCs, as represented by the dummy, capture the effects of the incentives and, if not for this, are very similar to the other firms in the sample. The overall idea of the cross-sectional analysis is to assess how the behaviour of SBCs differed from non-SBCs, especially insofar as the intentions of National Treasury are concerned (as discussed in Parts II and III) whilst specifically controlling for firm size and other characteristics.

The results for the different dependent variables for 2007 are given in the respective columns of Table 2 of Appendix 2[4]. As can be seen the results are somewhat unexpected. The output-labour and capital-labour (both at NBV and replacement cost) ratios all display a negative relationship for the dummy which are statistically significant. Furthermore these are all economically significant in that the ratios decrease by 66.29[5], 66.39 and 65.15 percent respectively on qualification. Given that firm size has been controlled for, one would not expect such economically significant negative relationships. Whilst not statistically significant, the output-capital ratios are lower for qualifying firms by 0.32 and 3.51 percent for NBV and replacement cost respectively, which in any event are not that economically significant.

When analysing the effect on output, capital and number of firm employees, the results show a statistically significant negative relationship for the dummy for output and both capital variables of 66.29, 66.39 and 65.15 percent respectively. This indicates that, even after controlling for size differences, the incentives were not potent enough to bridge the gap in output and capital stock of SBCs against their larger counterparts as was National Treasury's hope. That the dummy in the regression of the number of employees is statistically insignificant suggests SBCs and thus the incentives, *ceteris paribus*, show no signs of a larger workforce. This is particularly relevant given that the incentives were intended specifically to increase SBC employment and thus widen the gap. When looking at whether there is a difference in the extent of capital purchases, again a statistically insignificant relationship follows with a p-value 0.135.

The same econometric specification (with the same purpose as 2007) run on the 2003 data lends strong corroborative evidence for the 2007 output[6]. Qualitatively, eight of the ten regressions display the same relationship and statistical significance of the dummy as 2007 with the only differences being for the output-capital ratio at

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[4] All tables referred to in Part VI are contained in Appendix 2.

[5] The dummy variable coefficients are interpreted as $[(e^x - 1)*100]$ where x is the coefficient given in the Appendix.

[6] The 2003 analysis utilises a qualifying revenue value of R5 million, being the SBC threshold for that year.

replacement cost and the number of firm employees. Quantitatively there is slightly more variation but still within a reasonable range of those observed in 2007. The results are given in Table 3. The output-labour and capital-labour ratios are all lower for SBCs by 80.46, 81.3 and 82.85 percent respectively. When compared to 2007 and recognising that changes in sample composition may be distortionary, the difference in these ratios between SBCs and non-SBCs is greater thus implying that the extension of s12E since 2003 may have had some effect in closing the gap between the two types of firms albeit not entirely.

Looking at the turnover and capital dependent variables, they are lower by 80.46, 81.3 and 82.85 percent on qualification – once again the gap appears to have closed somewhat by 2007. The number of people employed by SBC firms is lower by 51.11 percent. This is one of the cases where the relationship is opposite to that of 2007. As the 2003 result is statistically significant, whereas 2007 is not, the former might be more reliable and especially since it is consistent with the panel regressions. The extent of capital purchases by SBCs was also lower by 68.76 percent which is just statistically significant at the 10 percent level whereas by 2007 the difference became insignificant. Once again, whilst recognising sample composition issues, this suggests that the accelerated allowances for capital expenditure may be having some effect (in fact, this is shown to be the case later).

Given that the 2003 and 2007 results largely confirm one another, certain robustness checks were done by altering the composition of the sample via the placement of the SBC restrictions. Firstly, the sample was further limited with the exclusion of any high-turnover firms by restricting the regressand to exclude firms above R23 million. This was done so as to make the sample firms more similar. Qualitatively, in terms of relationship and statistical significance, the results were identical for 2003. In 2007 there was only a minor difference in that the dummy for the log of employees and capital expenditure now became significant. As the qualifying threshold in 2003 was much lower than in 2007, the same check was undertaken but this time excluding firms above R13 million. Once again, the nature of the results was unaffected.

The next check was to allow for the greatest variation by not restricting the dependant variables at all and only letting the dummy take on a value of one if all SBC

requirements are met. In both 2003 and 2007, the nature of the relationship and statistical significance was unchanged.

As a final test of the results, the data was applied to a different econometric model, being Specification 2. Owing to the mechanics of a piecewise regression, the knot can only relate to revenue. As such all SBC requirements, other than revenue, were placed on the dependent variable and the piecewise dummy then assumes one if the firm's turnover is above the qualifying threshold for 2003 and 2007 respectively. This is the opposite of the regressions above where the dummy coefficient was for qualifying firms (i.e. firms under the threshold). As such if a comparison is to be made to the above regressions, the sign of the piecewise dummy coefficient needs to be reversed.

The output of this specification is given in Tables 4 and 5 for 2007 and 2003 respectively. The 2007 regression substantiates the earlier regressions in that all piecewise dummies indicate the same nature of relationship and significance. The 2003 piecewise regression confirms, in all major respects the 2003 cross-sectional with the only difference arising in the output-capital (at replacement cost) where the relationship is reversed; however in both this case and the cross-sectional one, no statistical significance for this variable is observed.

Up to this point, the following can be deduced from the cross-sectional analysis. It appears that even whilst controlling for firm size and other characteristics, the incentives, as represented by the dummy, were not sufficiently effective in raising the labour productivity and capital-labour ratios to the same level as the larger non-SBCs; the same holds for output and capital. The incentives may have nonetheless accounted for growth in these variables (which is the focus of the panel analysis) however this section just shows that, *ceteris paribus*, it was unable to equalise these them with the larger non-SBCs as was hoped for by National Treasury. What may be inferred, however with less certainty owing to changes in sample composition, is that the differences between SBCs and non-SBC in these variables were significantly smaller by 2007 in light of a more liberal s 12E. Employment has been a cornerstone of s 12E since 2001 and it was envisioned that the incentives would foster employment specifically in this sector. However thus far, there is little to indicate that the

incentives account for any difference in the size of the workforce between SBCs and non-SBCs.

Furthermore, the various robustness checks by altering the sample composition (and especially those which made the sample firms very similar other than for qualification) produced, to all intents and purposes, the same results for 2003 and 2007. This is further confirmed in the piecewise regressions.

Qualitative Response Analysis

This next part of the cross-sectional analysis gauges the effect of tax progressivity and the administrative easing initiatives; the latter being implemented in 2004 and 2005. Both surveys asked the respondent to rank the obstacle posed by tax rates and tax administration on a five-point scale from 'no obstacle' to 'very severe obstacle'. The purpose here is to assess how SBCs responded to these questions and thus the effects of tax progressivity and the administration reforms. Specification 3, being an ordinal logit, is used. It was in 2005 that the corporate rate structure became more progressive with the introduction of a third income tax bracket (two brackets were already in existence in 2003). As mentioned in the literature review, greater progressivity is associated with greater complexity and could even inhibit firm growth as the higher tax rates act as a disincentive for growth to the marginal firm. Accordingly, one would expect a higher tax rate obstacle response in 2007 than in 2003. Conversely, the administrative easing provisions should see a lower obstacle response in 2007 for the tax administration question. In both cases, the complexities of sample composition changes are recognised.

The sample is restricted to exclude high-turnover firms (above R28 million) as inclusion thereof could produce misleading results as these companies are likely to find tax administration less onerous solely due to their reliance on tax specialists who are familiar with the process and legislation. Whilst the SARS initiatives did not exclude specific companies, particular mention was made that they were directed at SBC-type companies. As such, the regressions are aimed at assessing whether SBCs, as the intended target of the initiatives, have benefited more than other firms. Accordingly, the dummy assumes one for all SBC requirements with no limitations

on the sample. This method of applying the restrictions is the same for all the qualitative response regression models and allows for the greatest variation in the sample composition thus allowing for more meaningful comparisons to be made.

Looking first at the tax administration question, the ordinal regression results in terms of odds-ratios are presented in Table 6. In 2007, the odds were 44[7] percent that a qualifying firm would find tax administration more of an obstacle than non-qualifying firms. With a p-value of 0.114 this is only just statistically insignificant for the 10 percent level. When looking at the predicted probabilities of each level in the five-point scale presented in Table 7, what is interesting to note is that a higher probability is predicted for qualifying firms to respond with higher obstacle levels than non-qualifying firms. The 2003 analysis contained in Tables 8 and 9 shows that the odds are 17 percent that a qualifying firm would find tax administration more of an obstacle than non-qualifying firms albeit statistically insignificant. The predicted probabilities are consistent with 2007. Together this shows that the administrative easing programmes have had little or no effect as the odds are greater for SBCs to find tax administration more of an obstacle after the reforms were completed. It could be that complexities of the legislation swamp any attempts at administrative simplification.

If the streamlining of SARS administration was effective it would have also had an impact on reducing compliance costs for SBCs. The results of the compliance cost logit[8] are presented in Table 10. The statistical insignificance once again supports the view of the ineffectiveness of the reforms. SBCs do not, in any significant sense, consider compliance any less of an obstacle than non-SBCs. In any event, the negative relationship is expected *a priori*, owing to the more limited nature of an SBC's undertaking. The most interesting variable of the output is that of age which shows that the older the company is the less likely it is to consider tax compliance costs an obstacle. This could be as a result of higher upfront tax structuring costs which are in

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[7] The interpretation of the odd ratio is that if the coefficient is greater than one it means that the odds are higher for qualification by $[(x-1)*100]$ where x is the coefficient. If the coefficient is less than one it means that the odds are lower for qualification by $[(1-x)*100]$.

[8] The question asked not for the actual rand amount of compliance expenditure but rather the managers' perception of compliance cost obstacle on the five-point scale mentioned earlier.

place for the firm's entire life as well as a learning curve associated with tax compliance. Table 11 which is the predicted probabilities of each obstacle level support this conclusion.

Turning to the obstacle posed by tax rates; the odds-ratio results together with the predicted probabilities are presented in Tables 12 to 15 for 2007 and 2003. The coefficient for 2007, which is statistically significant, implies that the odds are 73 percent that a qualifying firm is more likely to find tax rates a greater obstacle than non-qualifying firms. The predicted probabilities indicate it is more likely to be SBCs in higher obstacle levels. In 2003, the odds were also 73 percent, although not significant, with the same pattern in the predicted probabilities. These results are consistent with what is predicted beforehand in the sense that progressive rates are often specifically cited as a source of complexity and is why the proposals for flat taxes are so common. The statistical and economic significance of 2007 is particularly interesting given that the most progressive rate structure under s 12E was operating by that year.

In the regressions immediately above, no control regressors were included for region and sector as there is no *a priori* reason to do so. The low pseudo R-squared values are of less importance in such logit models with the direction and significance of the coefficient taking priority (Gujurati, 2003).

Managers' perception of corporate taxes versus other tax types, namely VAT (Value-Added Tax), municipal and 'other' taxes is considered as a means of assessing the success of the administrative easing programmes. In 2007, respondents were asked to rank which of the above rates posed the greatest obstacle. Specification 4 being a multinomial logit is used for estimation in terms of the odds ratio where the results are presented in Table 16. As can be seen, the odds of a qualifying firm selecting VAT over corporate taxes is 43 percent more than a non-qualifying firm whereas for municipal taxes it is 48 percent less and for other taxes 153 percent more. Despite the fact that they are not significant, the direction of the results are somewhat consistent with daily perception as VAT is, especially for smaller firms, very burdensome in that returns have to be submitted every two months versus annually for income tax. Furthermore the mechanics of VAT are complex with many exceptions and therefore,

it would make sense that smaller firms without tax specialists would find VAT a greater obstacle. It should also be noted that the administration easing initiatives were targeted more toward income tax and less toward VAT which helps explain this result. Similarly, municipal taxes are straight-forward and would, as the results show, be considered less onerous than corporate taxes. The fact that 'other' is considered a substantially higher obstacle than corporate taxes is difficult to explain for certain, as the 'other' taxes are not specified. In all likelihood, it is referring to customs and import duties which are notoriously complex and often require freight-forwarders to administer.

Overall, the qualitative analysis implies the following. In both 2003 and 2007 SBCs do not find tax administration any less of an obstacle than non-SBCs. Despite SARS's attempt to ease the administrative burden, it appears that this has not been successful as the complexities of the legislation, and in particular that relating to SBCs, is burdensome. As discussed earlier in this paper, this was raised by critics of tax incentives for small businesses in that it comes at great expense in terms of simplicity. Whilst recognising the change in the sample composition could be distortionary, in 2007 the odds of a greater obstacle response by SBCs was greater than that of 2003 despite the fact that the administrative reforms were undertaken in 2005. Furthermore, the lack of statistical significance of compliance costs supports the submission that the reforms have not yielded any meaningful results.

For 2007, data was available to hone into what tax types are posing the greatest obstacles. VAT and 'other' posed a greater obstacle than income tax with municipal taxes being least problematic. Presuming that 'other' comprises customs and import tariffs, these results are in line with *a priori* expectations.

Similarly, the tax rate analysis also satisfied *a priori* expectations. The tax progressivity experienced by SBCs indicates that it is considered to be an obstacle for these companies, just as critics of progressivity had predicted.

Testing Tax Incentive Justifications

As discussed in the literature review, the oft-cited and key motivations of tax incentives for small businesses are firstly, to lower the after-tax rate of return thus spurring investment and secondly to provide additional funds (through lower taxes) for reinvestment given that small firms are unable to issue public debt and equity instruments. Both these assertions can now be tested; the first using the 2007 data and the second using the 2003; Specification 1 was used in both.

There are several factors which affect the required rate of return, most notably for smaller firms is the level of financial risk measured by the extent of leverage in its capital structure, the cost of debt financing and value of collateral offered. Whilst other control regressors could also be included such as debt-equity ratios, most of these are highly correlated with the cost of debt such that it is unnecessary for their inclusion. The results are presented in Table 17. In the absence of lower tax rates, one would expect the required rate of return for smaller entities to be significantly higher given that they are often considered riskier and ergo are subject to higher interest rates. These higher interest rates translate to higher required rates of return on investments. The fact that the coefficient on the dummy is statistically insignificant, implying SBCs do not exhibit higher required returns than larger non-SBCs, may be attributable to the lower tax rates and accelerated allowances. It is noteworthy that this result mirrors the capital expenditure result above.

The results of whether SBCs retain a greater proportion of profits are presented in Table 18. Once again there is no significant difference between SBCs and larger non-SBCs insofar as their retention of profits is concerned. If SBCs are able to distribute the same amount as non-SBC then the former are also not constrained by a lack of internal funds for expansion and thus this motivation may not be valid in the South African scenario.

Panel Analysis 2007

A panel analysis of the same firm from 2003 to 2007 can be undertaken from the data for certain variables. In some instances, the 2007 survey requested the respondent to

'recall' what the variable was for the 2003 year as a means of comparison. The recall variables relevant for this research are output (turnover) and employment (number of employees). This in turn allows one to generate an output-labour ratio. As all firms were required to submit a 2003 comparative, the data provides a balanced panel. Specification 5, being a first-difference regression is used for estimation.

Similar to some of the cross-sectional regressions, the method used for the SBC restrictions was to limit the sample via the regressand for all non-revenue SBC requirements and then allow the dummy to assume one for those companies in the sample that were below the revenue threshold. This is the most precise method of applying the restrictions as the sample firms are the same in most respects other than for the fact that some qualify for s 12E by virtue of a lower turnover. As before, high-turnover firms (above R28 million) were excluded from the sample.

A meaningful analysis entails separating the firms into three groups:

1. Those subject to the tax incentives for the entire period 2003-2007;

2. Those subject to the tax incentives for the period 2006-2007 (i.e. those that qualified due to the higher qualifying threshold of R14 million legislated in 2006). Previously the threshold was R5 million for 2003 and 2004 and R6 million for 2005);

3. Those that never enjoyed the tax benefits.

Once each group has been established, dummies can be generated for each and run against the dependant variables to see how the behaviour between them differs. It should be noted that for interpretation, group 3 is designated as the base case and thus no dummy is generated for it.

Conceivably there is still another group, being those firms which were subject to the tax incentives for only the period 2003-2006. However it is extremely unlikely that any firm could fall into this category as it would mean a growth rate of at least 133 percent in one year. To fall into this group would mean a turnover of less than R6

million in 2005 to qualify and then a turnover of more than R14 million in 2006 to be disqualified. Accordingly, this group does not need any further attention.

The method used to delineate which firms fall into which groups was as follows:

- Firms were placed into five revenue categories (based on 2003 values) beginning with those firms under R5 million turnover and each category increasing by R3 million thereafter.

- Compound growth rates were then derived for each category by comparing the average turnover of each category in 2003 to what it was in 2007.

- Once the compound growth rates were obtained, they could then be applied to the average turnover for each category in estimating what their revenue would have been for the intervening years between 2003 and 2007. Accordingly, it can thus be calculated when each firm exceeded the qualifying threshold, for how long on average they were subject to the incentives and thus into which group they should fall.

If the average revenue was below R5 million in 2003 and then again below R14 million in 2006 and 2007, these firms would then fall into group 1. If the average revenue was above R5 million in 2003 but below R14 million in 2006 and 2007, these firms would then fall into group 2. Finally, if the average revenue was above R5 million in 2003 and above R14 million in 2006 and 2007 these firms would comprise group 3.

Looking at the results given in Table 19, all the regressions have moderate R-squareds and display overall significance. Essentially there is statistical significance for an increase in the output-labour ratio for firms which qualified for the incentives throughout the period 2003-2007 of 13.07 percent as against firms which never qualified. There was also a statistically significant decline in employment of 9.15 percent for firms which qualified throughout compared to firms which never qualified. For these variables, no significant changes were observed for firms that

qualified only in the last two years of the analysis 2006-2007. Similarly for the change in turnover regressand, no significance resulted for either category of firm.

What then these results suggest is that the incentives were effective in increasing labour productivity mainly due to a decline in overall employment. There does not appear to be any growth (as indicated by the turnover variable) as a result of s 12E. Lastly, the increase in the threshold to R14 million has as yet had no effect on firms that previously did not qualify as SBCs but do so now.

As a robustness check on the above results and particularly that each firm has been placed in the correct group, the analysis was re-performed under a slightly different approach. As explained above, the process of grouping the firms and calculating the compound growth rates was forward-looking from 2003 to 2007. Under this method, one starts from 2007 and works backward by asking which firms that qualified in 2007 would also have qualified in 2006 (when the changes were enacted). Based on this, one can then present-value these numbers via recalculated growth rates to identify the revenue levels these firms were operating at in 2003. One can then look at those firms that did not qualify in 2003 and subsequently did, as well as those firms that qualified throughout against the base case of those which never qualified. It was calculated that, on average, firms in 2003 with revenue between R5 million and R8.5 million should be placed in group 2; those firms above R8.5 million in group 3; and those below R5 million in group 1. The important point is that this method yields essentially identical groupings as that above and thus produces almost identical results.

Panel Analysis 2003

The 2003 survey provides recall data for two prior years being 2002 and 2001 for certain variables thus facilitating a panel analysis. The analysis here however differs from that above. In 2007, the purpose was to gauge the difference in behaviour between firms that qualified throughout the period 2003-2007 versus those which qualified in 2006-2007 as a result of the jump in required revenue threshold. In this panel analysis there is no such jump and thus has a different aim: to measure the

change in behaviour between 2001 (before s 12E became effective)[9] and 2003 of those firms which qualified during 2002-2003 against those that did not. It should be noted that because the 2003 survey provides values for all intermediate years between 2001 and 2003, there is no need to calculate growth rates and estimate which firms fall into which groups as was done in the 2007 panel.

The results are given in Table 20. The only statistically significant result is that of change in capital between 2003 and 2001. The positive coefficient on the dummy variable implies that the firms which qualified in 2002-2003 had a higher change in capital during the period 2001 to 2003 by 154.3 percent over the firms that never qualified. The incentives do not appear to have had any meaningful influence in the initial few years on increasing output or labour productivity. What is interesting is that in the initial few years of s 12E, there was no statistically significant difference in employment and growth between SBCs and non-SBCs; by 2007 however a statistically negative relationship for employment ensued. The significantly increased capital stock by SBCs over these years provides some evidence as to how output could remain unchanged by 2007 with lower employment and greater output-labour ratios.

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[9] Technically s 12E had already been passed in 2001 however given the low qualifying threshold of R1 million together with the other requirements, no firms in this sample were eligible.

Part VII – Conclusion

Between 2003 and 2007, tax incentives in the form of lower tax rates and accelerated depreciation allowances together with administrative easing initiatives granted to small businesses have been greatly expanded thus facilitating this quantitative analysis. Overall, the primary findings of this paper indicate that the tax incentives increased the output-labour ratios for firms which qualified as SBCs for the period 2003-2007. This greater labour productivity was due to a constant output with declining labour as employment dropped by over 9 percent for SBCs during this time. As no data was available for changes in capital for this period, it is submitted that capital must have increased so as to maintain output at its constant level. The 2003 panel analysis, where data was available, lends some credence to this hypothesis as the data shows, with statistical significance, that capital actually rose in the period 2001 (before the incentives became effective) to 2003. Furthermore this view is supported in that the gap between SBCs and non-SBCs for capital expenditure, derived in the respective cross-sectional analyses, had closed significantly by 2007 in comparison with 2003 suggesting the incentives contributed in this regard (changes in sample composition between 2003 and 2007 may be distortionary though). Accordingly, it appears that the accelerated depreciation allowances of s 12E did result in greater capital investment. This is in accordance with theoretical expectations.

Throughout s 12E's history, National Treasury repeatedly expressed their hope that these incentives would foster employment within the small business community. As noted in Part III of this paper, providing tax breaks for capital purchases and thus lowering its after-tax cost is likely to see a shift towards more capital intensive techniques, possibly at the expense of labour. At the very least, capital-labour ratios should rise. Presumably, National Treasury were of the hope that whilst such ratios would increase, the absolute amount of employment would nonetheless rise, especially if such capital expansion were to drive sector growth. As discussed above, capital-labour ratios may have risen but with no concomitant rise in employment. Furthermore, as shown in both the 2003 and 2007 panel regressions, the incentives

appear to have had no effect on increasing turnover which might, in itself, indicate the lack of sectoral growth and thus reduced employment.

The results also provide interesting evidence on the effect of the scope increase of the incentives that occurred in 2006. Those firms, which owing to the higher qualifying threshold, became SBCs in 2006, but were not prior to this, showed no statistically significant change in output, employment or labour productivity for the two years 2006-2007. This suggests that the capital-labour transition discussed above takes longer than two years before being reflected meaningfully in the financial data of the firm thus providing some evidence on the lags associated with tax incentives.

In the cross-sectional analysis, the theoretical basis and motives of National Treasury for SME tax incentives were tested empirically. It was shown that there was no statistically significant difference in the required rate of return for capital investment between SBCs and non-SBCs. In the absence of lower tax rates, one would expect SBCs to exhibit higher required returns as they are generally subject to higher interest rates. As no difference was observed, this implies that the lower tax rates have adequately mitigated the differential in the after-tax rates of return between the two categories. This result is supported in that there is also no statistically significant difference in the capital expenditure of SBCs and non-SBCs in both 2003 and 2007.

The other oft-cited motivation for lower tax rates is to provide a greater pool of retained income for capital investment given that this is the primary source of funding for SMEs. The results however suggest little difference in the dividend policies of SBCs and non-SBCs and thus this justification for lower tax rates may not be entirely applicable for the South African case. The lower profit retention of SBCs indicates that they are not constrained by a lack of internal funding for investment and thus this justification by National Treasury appears to rest on a somewhat shaky empirical foundation. In this result we see the warning of Musgrave (1976) that potentially 'the profits tax [will have] no direct bearing on investment' especially if capacity exceeds predicted sales.

The cross-sectional results have yielded interesting insight into how the incentives have affected the behaviour of SBCs *vis-à-vis* their non-SBC counterparts. Even

whilst controlling explicitly for firm size, statistically significant negative relationships were observed for the output-labour and capital-labour ratios as well as the level of capital stock and output for SBCs. This suggests that the incentives were not effective, *ceteris paribus*, in closing the gap in labour productivity, capital investment and output as was intended by National Treasury at the outset. The 2007 and 2003 analyses together with the various robustness checks are very corroborative of one another especially in terms of the nature of the relationships and levels of significance.

The qualitative analysis was able to test whether SARS has been effective, at least from the managers' perspective, in easing the administrative burden via its various initiatives that ran parallel to the promulgation of s 12E and in many respects were targeted directly at SBC-type entities. The overall lack of significant coefficients as to whether SBCs consider tax administration any less burdensome compared to larger non-SBCs indicates that the reforms have not made any meaningful progress in this arena. This was something explicitly addressed earlier in this paper in that s 12E is neither simple nor short and thus the structure of the legislation (which is mainly unavoidable owing to the many necessary provisos and anti-avoidance provisions) may not be appropriate for small entities to interpret and administer despite SARS's best efforts. Significance was however observed for the tax rate obstacle in the 2007 logit when the rate structure was most progressive and also posed the greatest obstacle. National Treasury should have taken heed of the perennial criticism on the complexity of tax progressivity which is so central to s 12E.

It was mentioned in Part III of this paper that there is considerable uncertainty and mixed *a priori* expectations as to the effects of tax incentives. This research has shed considerable light on the consequences of South Africa's experiment with SME tax breaks. It appears not to have had its intended effect; whilst capital may have grown, it has not been the engine of growth for small businesses as output and employment has not risen. In fact, many SBCs actually showed signs of reduced employment. The results confirm the Katz Commission's (1994) conjecture that such incentives 'have an arbitrary and haphazard impact on small businesses'. This has also come at the price of greater complexity and administrative costs. Like South Africa's counterparts in Mexico, Indonesia and elsewhere, its experience with tax incentives has not been

favourable and should, just like those other countries, consider scrapping them altogether for a more uniform and administratively easier tax system. Overall, given the results of this paper, South Africa would be wise to follow the 'general tax advice' of the World Bank which counsels simplifying the tax code and the limiting of special provisions and incentives.

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Appendix 1 – Graphical Representation of a Flat, Progressive and Regressive Tax Rate Structure
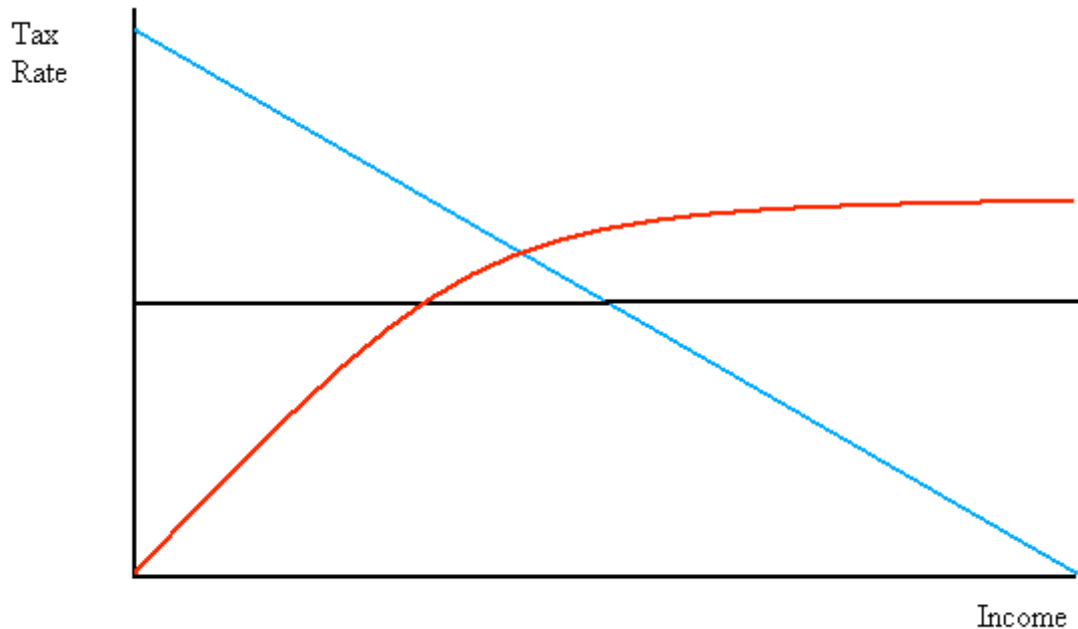
The black line represents a flat tax. As the name implies, the tax rate is constant over the entire income range. The red graph shows a progressive rate structure where higher income is associated with higher tax rates. The progressivity need not necessarily take the functional form depicted – the only requirement is that higher incomes are associated with higher tax rates. The reason for this depiction is that it better accords with reality in that generally the rate eventually tapers-off after a given income level and does not rise indefinitely. Strictly, the graph should not be continuous as brackets are often used to affect the progressive structure, as is the case with s 12E where there are currently three brackets. Lastly, the blue line indicates a regressive tax rate structure in that as income increases, lower tax rates are applicable thereto. Owing to equity considerations this is not done intentionally via the income tax system but is rather observed in indirect taxes such as VAT where the tax paid as a percentage of income is higher for lower income groups, hence the regressivity. The extent of regressivity determines the functional form of the graph, it need not be linear.

Appendix 2 – Statistical Results

Table 1a – Enterprise Survey 2007

Variable	Determination
Dependent	
lnTurnEmp	Logarithm of output-labour ratio
lnTurnCapnbv	Logarithm of output-capital ratio at net book value
lnTurnCaprep	Logarithm of output-capital ratio at replacement cost
lnCapnbvLab	Logarithm of capital-labour ratio at net book value
lnCaprepLab	Logarithm of capital-labour ratio at replacement cost
lnturn	Logarithm of turnover
lnlab	Logarithm of number of employees
lncapnbv	Logarithm of value of capital at net book value
lncaprep	Logarithm of value of capital at replacement cost
lncapex	Logarithm of value of capital expenditure
TaxTypeObst	Type of tax which poses the obstacle (i.e. VAT, municipal and other)
lnERR	Logarithm of expected required return on an investment
dlnTurn2007_2003	Change in the logarithm of turnover between 2007 and 2003
dlnEmp2007_2003	Change in the logarithm of number of employees between 2007 and 2003
dlnTurnEmp2007_2003	Change in the logarithm of the output-labour ratio between 2007 and 2003

<u>Independent</u>

DumTurnPty/QualifyDum	= 1 if firm qualifies as an SBC, 0 otherwise
foodsect	= 1 if firm is in the food sector, 0 otherwise
textsect	= 1 if firm is in the textile sector, 0 otherwise
garmentsect	= 1 if firm is in the garment sector, 0 otherwise
chemsect	= 1 if firm is in the chemicals sector, 0 otherwise
plastsect	= 1 if firm is in the plastics sector, 0 otherwise
nonmetmins~t	= 1 if firm is in the non-metallic minerals sector, 0 otherwise
fabmetsect	= 1 if firm is in the fabricated metals sector, 0 otherwise
machsect	= 1 if firm is in the machinery sector, 0 otherwise
electsect	= 1 if firm is in the electronics sector, 0 otherwise
ct	= 1 if firm is located in Cape Town, 0 otherwise
pe	= 1 if firm is located in Port Elizabeth, 0 otherwise
durb	= 1 if firm is located in Durban, 0 otherwise
age	Age of the firm as at 2007
AgeSquared	Square of the age of the firm as at 2007
lnEmpSize*	Logarithm of the number of employees in the firm
COD	Cost of debt
collat	Value of collateral provided

* Where the dependent variable is the logarithm of the number of employees,
this dependent variable then denotes firm size by the logarithm of turnover

Variable	Determination
Dependent	
lnTurnEmp	Logarithm of output-labour ratio
lnTurnCapnbv	Logarithm of output-capital ratio at net book value
lnTurnCaprep	Logarithm of output-capital ratio at replacement cost
lnCapnbvLab	Logarithm of capital-labour ratio at net book value
lnCaprepLab	Logarithm of capital-labour ratio at replacement cost
lnturn	Logarithm of turnover
lnlab	Logarithm of number of employees
lncapnbv	Logarithm of value of capital at net book value
lncaprep	Logarithm of value of capital at replacement cost
lncapex	Logarithm of value of capital expenditure
lnProfRet	Logarithm of value of profits retained by the company
lnERR	Logarithm of expected required return on an investment
dlnTurn2003_2001	Change in the logarithm of turnover between 2003 and 2001
dlnEmp2003_2001	Change in the logarithm of number of employees between 2003 and 2001
dlnTurnEmp2003_2001	Change in the logarithm of the output-labour ratio between 2003 and 2001
dlnCapnbv2003_2001	Change in the logarithm of capital at net book value between 2003 and 2001
dlnCapnbvLab2003_2001	Change in the logarithm of the capital-labour ratio at net book value between 2003 and 2001

<u>Independent</u>

DumTurnPty/QualifyDum	= 1 if firm qualifies as an SBC, 0 otherwise
foodsect	= 1 if firm is in the food sector, 0 otherwise
textsect	= 1 if firm is in the textile sector, 0 otherwise
clothsect	= 1 if firm is in the clothing sector, 0 otherwise
woodsect	= 1 if firm manufactures products of wood and/or cork
printsect	= 1 if firm is in the printing sector
chemsect	= 1 if firm is in the chemicals sector, 0 otherwise
plastsect	= 1 if firm is in the plastics sector, 0 otherwise
metsect	= 1 if firm is in the metallics sector
fabmetsect	= 1 if firm is in the fabricated metals sector, 0 otherwise
macsect	= 1 if firm is in the machinery sector, 0 otherwise
motorsect	= 1 if firm manufactures motor vehicles, trailers etc
furnsect	= 1 if firm manufactures furniture
MedCity	= 1 if firm is located in a large city defined as over 1 million people
LargeCity	= 1 if firm is located in a medium-sized city defined as between 250,000 and 1 million people
age	Age of the firm as at 2003
AgeSquared	Square of the age of the firm as at 2003
lnEmpSize*	Logarithm of the number of employees in the firm

* Where the dependent variable is the logarithm of the number of employees,
this dependent variable then denotes firm size by the logarithm of turnover

Table 2 – Cross-Sectional 2007

Dependent Variable:	lnTurnEmp		lnTurnCapnbv		lnTurnCaprep		lnCapnbvLab		lnCaprepLab		lnturn		lnlab		lncapnbv		lncaprep		lncapex	
Regressors:	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|
DumTurnPty	-1.087382	0	-0.0031554	0.994	-0.0357514	0.92	-1.090407	0.012	-1.054192	0.006	-1.087382	0	0.2307954	0.14	-1.090407	0.012	-1.054192	0.006	-0.6672969	0.135
foodsect	-0.0919339	0.611	-0.1152766	0.753	-0.1340584	0.674	0.125763	0.757	0.0312663	0.93	-0.091934	0.611	0.0509278	0.717	0.1257631	0.757	0.0312663	0.93	0.3703593	0.501
textsect	-0.3603166	0.285	-0.3600278	0.641	-0.4055186	0.512	0.3257832	0.674	0.04908	0.927	-0.3603169	0.285	0.0306756	0.838	0.3257835	0.674	0.04908	0.927	-0.260932	0.861
garmentsect	-0.2176901	0.257	-0.2395497	0.49	-0.3430488	0.279	0.0276931	0.943	0.1257571	0.731	-0.2176903	0.257	0.2113633	0.177	0.0276933	0.943	0.1257572	0.731	-0.465662	0.358
chemsect	0.1964908	0.242	0.2769015	0.547	-0.3447635	0.411	-0.1076548	0.822	0.540167	0.227	0.1964906	0.242	-0.0606511	0.671	-0.1076549	0.822	0.5401669	0.227	0.623813	0.274
plastsect	0.169996	0.627	-0.0045078	0.993	-0.6402816	0.236	0.1829685	0.748	0.8113198	0.099	0.1699961	0.627	-0.0133438	0.955	0.1829685	0.748	0.8113196	0.099	0.8851567	0.321
nonmetmins~t	-1.132004	0.119	-2.333104	0.016	-2.136304	0.011	1.235847	0.111	1.008861	0.094	-1.132004	0.119	1.050456	0.062	1.235847	0.111	1.00886	0.094	1.043348	0.252
fabmetsect	0.1237128	0.473	0.087924	0.837	0.023833	0.952	0.0704333	0.877	0.1000398	0.811	0.1237127	0.473	-0.1135235	0.389	0.0704333	0.877	0.1000399	0.811	-0.7930822	0.209
machsect	0.3502138	0.074	-1.217107	0.001	-1.04331	0.005	1.572131	0.001	1.392562	0.004	0.3502135	0.074	-0.4957299	0.048	1.572132	0.001	1.392562	0.004	0.9493744	0.293
electsect	0.4144693	0.009	0.5481586	0.515	0.6139529	0.481	-0.1089963	0.901	-0.195183	0.829	0.4144691	0.009	-0.6679791	0.059	-0.1089969	0.901	-0.1951828	0.829	0.5752667	0.537
ct	0.0424084	0.771	0.4824661	0.2	0.3743262	0.309	-0.458094	0.233	-0.332966	0.389	0.0424083	0.771	-0.0383341	0.734	-0.458094	0.233	-0.3329659	0.389	N/A	N/A
pe	-0.3842429	0.025	0.081978	0.793	0.2088043	0.659	-0.478215	0.184	-0.5956159	0.22	-0.3842428	0.025	-0.0447072	0.835	-0.4782148	0.184	-0.5956158	0.22	N/A	N/A
durb	-0.140273	0.315	0.3155772	0.289	0.4173225	0.171	-0.4887133	0.125	-0.5696719	0.074	-0.1402731	0.315	0.3171995	0.011	-0.4887133	0.125	-0.5696719	0.074	N/A	N/A
age	0.0149107	0.302	-0.052327	0.102	-0.0797143	0.009	0.0635872	0.065	0.0947505	0.003	0.0149107	0.302	0.0460135	0	0.0635872	0.065	0.0947505	0.003	-0.0266175	0.582
AgeSquared	-0.0001313	0.61	0.0009465	0.129	0.0015336	0.011	-0.0010198	0.111	-0.0016663	0.006	-0.0001313	0.61	-0.0007441	0.002	-0.0010198	0.111	-0.0016663	0.006	-0.0000186	0.985
lnEmpSize	-0.2995347	0	0.3118079	0.088	0.1891442	0.283	-0.638185	0.002	-0.491335	0.009	0.7004653	0	0.4864995	0	0.3618149	0.072	0.508665	0.007	0.5923763	0.017
_cons	13.97613	0	1.33227	0.051	1.492849	0.02	12.77258	0	12.49462	0	13.97613	0	-4.986704	0	12.77258	0	12.49462	0	11.13073	0
Observations	178		170		177		170		177		178		178		170		177		77	
Adj R-squared	0.3754		0.1085		0.118		0.1757		0.1904		0.6438		0.5632		0.2426		0.3292		0.2725	
Prob > F	0		0		0.0001		0		0		0		0		0		0		0.0599	

Table 3 – Cross-Sectional 2003

Dependent Variable:	lnTurnEmp		lnTurnCapnbv		lnTurnCaprep		lnCapnbvLab		lnCaprepLab		lnturn		lnlab		lncapnbv		lncaprep		lncapex	
Regressors:	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|
DumTurnPty	-1.63269	0	-0.3729427	0.601	0.1246035	0.721	-1.676882	0	-1.76305	0	-1.632689	0	-0.7154956	0.004	-1.676882	0	-1.76305	0	-1.163428	0.101
foodsect	-0.3331697	0.675	-0.4436067	0.72	0.3075583	0.571	0.22382	0.646	-0.6424395	0.358	-0.3331695	0.675	0.0211848	0.948	0.22382	0.646	-0.6424394	0.358	-1.395998	0.306
textsect	0.0185269	0.962	0.536341	0.498	1.30006	0.091	-0.6612019	0.219	-1.318278	0.024	0.0185271	0.962	0.8371901	0.08	-0.6612019	0.219	-1.318278	0.024	-0.6461006	0.515
clothsect	-0.1256648	0.788	0.3791458	0.719	-0.3074927	0.46	-0.4847247	0.657	0.1427142	0.761	-0.1256644	0.788	0.5256297	0.613	-0.4847249	0.657	0.1427145	0.761	-0.5253782	0.641
woodsect	-0.0150202	0.971	0.4257893	0.585	0.8540528	0.221	-0.3192117	0.391	-0.8841924	0.157	-0.0150199	0.971	0.0392277	0.895	-0.3192116	0.391	-0.8841926	0.157	-1.143304	0.391
printsect	0.2871341	0.485	1.136972	0.126	0.0803312	0.879	-0.7124019	0.081	0.2202194	0.576	0.2871342	0.485	-0.3817428	0.217	-0.712402	0.081	0.2202193	0.576	-1.803625	0.047
chemsect	0.0447717	0.919	0.1256863	0.865	-0.0017105	0.997	-0.0704504	0.845	-0.0238462	0.932	0.0447717	0.919	-0.5772112	0.145	-0.0704502	0.845	-0.0238463	0.932	-1.011179	0.269
plastsect	0.408951	0.417	0.8769449	0.336	0.121384	0.845	-0.1242851	0.839	0.2852164	0.604	0.408951	0.417	-0.1620658	0.618	-0.1242853	0.839	0.2852167	0.604	-0.1938927	0.857
metsect	0.3028945	0.506	0.4849958	0.482	-0.4853123	0.373	0.0300627	0.935	0.8364507	0.102	0.3028945	0.506	0.0118968	0.969	0.0300622	0.935	0.8364507	0.102	(dropped)	
fabmetsect	-0.0714704	0.906	0.3489382	0.65	0.7479639	0.267	-0.6870224	0.25	-0.9458353	0.167	-0.0714702	0.906	-0.1742426	0.531	-0.687022	0.25	-0.9458354	0.167	-2.463314	0.194
macsect	-0.443248	0.276	1.163571	0.102	0.9973909	0.107	-1.572666	0	-1.423	0.012	-0.4432476	0.276	-0.4177459	0.171	-1.572666	0	-1.423	0.012	-1.806758	0.05
motorsect	0.1363892	0.746	0.3208174	0.676	-0.4012202	0.453	-0.0720233	0.864	0.585006	0.097	0.1363898	0.746	-0.4105749	0.217	-0.0720232	0.864	0.585006	0.097	(dropped)	
furnsect	0.2697777	0.515	0.9235464	0.171	0.6008808	0.254	-0.5985373	0.178	-0.306905	0.426	0.269778	0.515	-0.2395099	0.446	-0.5985373	0.178	-0.3069051	0.426	-1.497542	0.064
MedCity	-0.9615342	0.041	2.955265	0.009	5.597246	0	-4.004534	0	-6.467013	0	-0.9615348	0.041	-1.613613	0.007	-4.004534	0	-6.467014	0	N/A	N/A
LargeCity	-0.9937022	0.112	-1.632734	0.171	2.476782	0	0.5337358	0.241	-3.506854	0	-0.9937023	0.112	-0.0651774	0.903	0.5337355	0.241	-3.506854	0	N/A	N/A
age	-0.0184436	0.561	-0.0864476	0.08	-0.0071285	0.76	0.0551656	0.021	-0.0188825	0.607	-0.0184437	0.561	0.0344979	0.024	0.0551655	0.021	-0.0188825	0.607	-0.0636846	0.442
AgeSquared	0.0002206	0.554	0.0013569	0.023	0.0003052	0.368	-0.0010177	0.009	8.04E-06	0.986	0.0002206	0.554	-0.0003371	0.088	-0.0010177	0.009	8.04E-06	0.986	0.0007888	0.416
lnEmpSize	-0.7641273	0	-0.0907584	0.701	-0.0153362	0.911	-0.7516766	0	-0.7182232	0	0.2358728	0.102	0.1307145	0.233	0.2483235	0.122	0.2817767	0.109	-0.3449644	0.399
_cons	16.34645	0	3.885922	0.123	-1.759413	0.025	12.96888	0	18.09683	0	16.34645	0	1.528625	0.4	12.96888	0	18.09683	0	15.34372	0
Observations	93		77		91		77		91		93		170		77		91		45	
Adj R-squared	0.4326		0.3245		0.3508		0.5285		0.4988		0.5049		0.4379		0.6186		0.5435		0.2134	
Prob > F	.		.		.		.		.		.		.		.		.		.	

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Table 4 – Piecewise 2007

Dependent Variable:	lnTurnEmp		lnTurnCapnbv		lnTurnCaprep		lnCapnbvLab		lnCaprepLab		lnturn		lnlab		lncapnbv		lncaprep		lncapex	
Regressors:	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|
DumTurnPty	1.455243	0	0.325211	0.283	0.4071134	0.129	1.153129	0	1.050587	0	1.455243	0	-0.1602478	0.232	1.153129	0	1.050586	0	0.6594729	0.012
foodsect	-0.0752286	0.644	0.0692566	0.837	0.0156833	0.957	-0.0548004	0.874	-0.0995501	0.743	-0.0752286	0.644	0.1697533	0.213	-0.0548003	0.874	-0.0995501	0.743	0.1983578	0.515
textsect	-0.4315905	0.227	-0.4870387	0.472	-0.500303	0.371	0.3759999	0.638	0.0731365	0.89	-0.4315908	0.227	0.1140364	0.438	0.3760002	0.638	0.0731365	0.89	-0.4684454	0.749
garmentsect	-0.2156229	0.189	-0.2877895	0.379	-0.3788056	0.189	0.0790442	0.832	0.1636262	0.63	-0.2156228	0.189	0.2626559	0.067	0.0790444	0.832	0.1636263	0.63	-1.012826	0.001
chemsect	0.1171759	0.403	0.0256133	0.948	-0.3909148	0.236	0.0842813	0.836	0.5071425	0.142	0.1171758	0.403	-0.0409091	0.742	0.0842813	0.836	0.5071425	0.142	0.1837141	0.555
plastsect	0.1753965	0.494	-0.1629509	0.697	-0.578977	0.172	0.3423999	0.442	0.7546525	0.06	0.1753966	0.494	-0.1209694	0.543	0.3423997	0.442	0.7546523	0.06	1.104614	0.027
nonmetmins~t	-1.100595	0.021	-2.260013	0.003	-2.020613	0.001	1.184422	0.083	0.9226288	0.077	-1.100595	0.021	0.8481036	0.134	1.184422	0.083	0.9226282	0.077	0.2502115	0.686
fabmetsect	-0.0414387	0.772	-0.1274276	0.709	-0.3115314	0.335	0.1211685	0.74	0.2702968	0.422	-0.0414388	0.772	0.0216874	0.862	0.1211685	0.74	0.2702969	0.422	-0.0303197	0.911
machsect	0.1538351	0.272	-0.3457652	0.491	-0.2476518	0.616	0.5103895	0.331	0.4007141	0.442	0.1538351	0.272	-0.0334456	0.829	0.5103896	0.331	0.4007141	0.442	0.2698138	0.5
electsect	0.1608266	0.389	0.4108765	0.639	0.3390414	0.639	-0.2343422	0.772	-0.177522	0.783	0.1608263	0.389	-0.1795508	0.355	-0.2343424	0.772	-0.1775219	0.783	0.1248826	0.79
ct	-0.0720773	0.539	1.098935	0.002	0.8179456	0.009	-1.184501	0.001	-0.8907965	0.006	-0.0720773	0.539	-0.0107695	0.918	-1.184501	0.001	-0.8907964	0.006	N/A	N/A
pe	-0.465605	0.002	0.1696877	0.57	0.2323529	0.569	-0.6546748	0.053	-0.6995456	0.1	-0.4656049	0.002	0.1544921	0.483	-0.6546746	0.053	-0.6995455	0.1	N/A	N/A
durb	-0.2483527	0.078	0.4727496	0.07	0.5537285	0.044	-0.7624336	0.006	-0.8143353	0.005	-0.2483528	0.078	0.271183	0.018	-0.7624336	0.006	-0.8143353	0.005	N/A	N/A
age	0.0061887	0.366	-0.0251414	0.152	-0.0304764	0.072	0.0296289	0.094	0.0367408	0.028	0.0061887	0.366	0.0195239	0.007	0.0296289	0.094	0.0367408	0.028	-0.0140027	0.327
AgeSquared	0.0000128	0.856	0.0002053	0.292	0.0002911	0.131	-0.0001755	0.345	-0.0002789	0.126	0.0000128	0.856	-0.0001768	0.059	-0.0001755	0.345	-0.0002789	0.126	0.0000747	0.636
lnEmpSize	-0.2874223	0	0.1616669	0.253	0.0035284	0.978	-0.4751023	0.001	-0.2927871	0.026	-0.2927871	0	0.5699109	0	0.5248977	0	0.707213	0	0.8925737	0
_cons	13.00141	0	1.497188	0.001	1.601262	0	11.61384	0	11.40631	0	13.00141	0	-5.905927	0	11.61384	0	11.40631	0	9.585984	0
Observations	248		239		247		239		247		248		248		239		247		262	
Adj R-squared	0.5224		0.0957		0.0908		0.1723		0.1954		0.8208		0.6852		0.3949		0.484		0.5046	
Prob > F	0		0.1081		0.0661		0		0		0		0		0		0		0	

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Table 5 – Piecewise 2003

Dependent Variable:	lnTurnEmp		lnTurnCapnbv		lnTurnCaprep		lnCapnbvLab		lnCaprepLab		lnturn		lnlab		lncapnbv		lncaprep		lncapex	
Regressors:	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|
DumTurnPty	1.837608	0.001	0.4541472	0.563	0.1499207	0.734	1.368393	0	1.602079	0	1.837608	0.001	0.6448664	0.026	1.368393	0	1.602079	0	0.9445362	0.101
foodsect	0.4835016	0.562	-0.1653654	0.862	0.4524003	0.534	0.1917654	0.631	0.0891281	0.877	0.4835017	0.562	-0.1326097	0.726	0.1917656	0.631	0.0891284	0.877	-0.6369709	0.553
textsect	-0.3538741	0.38	-0.0523564	0.922	0.3274763	0.611	-0.4230528	0.454	-0.7209732	0.223	-0.3538736	0.38	1.041658	0.006	-0.4230525	0.454	-0.720973	0.223	-0.0527774	0.961
clothsect	-0.6662288	0.268	0.2973779	0.681	0.087693	0.913	-1.015629	0.259	-0.7780568	0.354	-0.6662286	0.268	1.248734	0.104	-1.01563	0.259	-0.7780569	0.354	-0.3123512	0.805
woodsect	-0.2929697	0.446	0.2038658	0.744	0.5244689	0.431	-0.3975549	0.326	-0.7464395	0.206	-0.2929696	0.446	-0.0942422	0.7	-0.3975547	0.326	-0.7464396	0.206	-0.5489139	0.565
printsect	-0.0149194	0.968	0.48164	0.45	-0.4645878	0.386	-0.4009292	0.388	0.5219898	0.201	-0.0149194	0.968	-0.242221	0.36	-0.4009291	0.388	0.5219898	0.201	-0.6122636	0.586
chemsect	0.0405814	0.926	-0.123961	0.828	-0.2751843	0.596	0.2177555	0.514	0.33563	0.364	0.0405813	0.926	-0.4259405	0.249	0.2177558	0.514	0.33563	0.364	-0.3602348	0.696
plastsect	0.2133223	0.597	0.6605646	0.29	-0.1821396	0.748	-0.2639673	0.517	0.4415003	0.372	0.2133223	0.597	0.1036694	0.74	-0.2639674	0.517	0.4415006	0.372	0.1316682	0.875
metsect	-0.3604602	0.433	-0.6983046	0.335	-1.14074	0.064	0.4330452	0.338	0.8236288	0.041	-0.3604604	0.433	0.0683208	0.756	0.433045	0.338	0.8236288	0.041	(dropped)	
fabmetsect	-0.1030564	0.829	0.1038664	0.861	0.3124119	0.621	-0.3300198	0.521	-0.4551029	0.462	-0.1030564	0.829	-0.0020596	0.993	-0.3300195	0.521	-0.4551029	0.462	-1.652058	0.192
macsect	-0.2263067	0.689	0.9604429	0.098	0.4572935	0.465	-0.9927661	0.046	-0.5776079	0.374	-0.2263063	0.689	-0.5916029	0.066	-0.9927659	0.046	-0.5776076	0.374	-1.551586	0.068
motorsect	-0.308676	0.404	-0.5294196	0.33	-1.082377	0.026	0.1699925	0.682	0.8284005	0.048	-0.3086754	0.404	0.0984045	0.848	0.1699928	0.682	0.8284006	0.048	1.055004	0.207
furnsect	-0.1020843	0.764	0.4462723	0.407	0.4671106	0.443	-0.539049	0.153	-0.5770692	0.232	-0.1020842	0.764	-0.025671	0.917	-0.5390489	0.153	-0.5770691	0.232	-1.341488	0.076
MedCity	-0.7312512	0.269	1.59698	0.285	2.800188	0.083	-1.853955	0.219	-3.425968	0.02	-0.7312516	0.269	-1.256594	0.19	-1.853954	0.219	-3.425968	0.02	N/A	N/A
LargeCity	-0.4879913	0.44	-0.7256184	0.411	1.311639	0.195	0.3659016	0.532	-1.721517	0.114	-0.4879912	0.44	-0.9122494	0.157	0.3659019	0.532	-1.721517	0.114	N/A	N/A
age	0.0008607	0.97	-0.0290046	0.38	0.0110173	0.549	0.0175197	0.34	-0.0117029	0.619	0.0008607	0.97	0.0187618	0.154	0.0175197	0.34	-0.0117029	0.619	-0.0092209	0.893
AgeSquared	0.0000368	0.872	0.0005187	0.189	4.45E-06	0.983	-0.0003546	0.218	0.0000488	0.843	0.0000368	0.872	-0.0001348	0.324	-0.0003546	0.218	0.0000488	0.843	0.0000964	0.911
lnEmpSize	-0.3824895	0.012	0.137517	0.39	0.1950423	0.193	-0.4568887	0.001	-0.5142804	0	0.6175105	0	0.2791004	0.037	0.5431113	0	0.4857196	0.001	0.1891259	0.584
_cons	12.88465	0	1.725379	0.198	-1.110907	0.325	10.87085	0	13.69695	0	12.88465	0	-0.4525976	0.83	10.87084	0	13.69695	0	11.77455	0
Observations	126		105		124		105		127		126		126		105		127		62	
Adj R-squared	0.2485		0.1819		0.1597		0.3682		0.2989		0.5243		0.5366		0.5467		0.4282		0.2025	
Prob > F	0.0003		0.0044		0.0003		0		0		0		0		0		0		.	

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Table 6 – Tax Administration 2007

Regressor	Coefficient	P>|t|
QualifyDum	1.441088	0.114
lnEmpSize	1.250285	0.028
age	0.9836564	0.1
AgeSquared	1.000007	0.172
Observations	825	
Pseudo R-squared	0.0109	
Prob > chi-squared	0.0001	

Table 7 – Predicted Probabilities for Tax Administration 2007

Predicted Probability of 'No Obstacle'	
QualifyDum	Prediction
0	0.8559
1	0.8048
Predicted Probability of 'Minor Obstacle'	
QualifyDum	Prediction
0	0.0832
1	0.1097
Predicted Probability of 'Moderate Obstacle'	
QualifyDum	Prediction
0	0.0404
1	0.0562
Predicted Probability of 'Major Obstacle'	
QualifyDum	Prediction
0	0.0162
1	0.0231
Predicted Probability of 'Very Severe Obstacle'	
QualifyDum	Prediction
0	0.0043
1	0.0062

Table 8 – Tax Administration 2003

Regressor	Coefficient	P>|t|
QualifyDum	1.173871	0.761
lnEmpSize	0.7791661	0.392
age	0.9932036	0.863
AgeSquared	1.000156	0.793
Observations	94	
Pseudo R-squared	0.0075	
Prob > chi-squared	0.8077	

Table 9 – Predicted Probabilities for Tax Administration 2003

Predicted Probability of 'No Obstacle'	
QualifyDum	Prediction
0	0.6192
1	0.5808
Predicted Probability of 'Minor Obstacle'	
QualifyDum	Prediction
0	0.2002
1	0.2137
Predicted Probability of 'Moderate Obstacle'	
QualifyDum	Prediction
0	0.1016
1	0.1141
Predicted Probability of 'Major Obstacle'	
QualifyDum	Prediction
0	0.0397
1	0.0456
Predicted Probability of 'Very Severe Obstacle'	
QualifyDum	Prediction
0	0.0393
1	0.0458

Table 10 – Compliance Costs

Regressor	Coefficient	P>|t|
QualifyDum	0.9326957	0.805
lnEmpSize	1.171038	0.114
age	0.9772234	0.028
AgeSquared	1.000011	0.033
Observations	825	
Pseudo R-squared	0.0065	
Prob > chi-squared	75.71	

Table 11 –Predicted Probabilities for Compliance Costs

Predicted Probability of 'No Obstacle'	
QualifyDum	Prediction
0	0.0127
1	0.0136

Predicted Probability of 'Minor Obstacle'	
QualifyDum	Prediction
0	0.8411
1	0.8487

Predicted Probability of 'Moderate Obstacle'	
QualifyDum	Prediction
0	0.089
1	0.0842

Predicted Probability of 'Major Obstacle'	
QualifyDum	Prediction
0	0.0381
1	0.0357

Predicted Probability of 'Very Severe Obstacle'	
QualifyDum	Prediction
0	0.019
1	0.0178

Table 12 – Tax Rates 2007

Regressor	Coefficient	P>|t|
QualifyDum	1.73169	0.006
lnEmpSize	1.251675	0.006
age	0.9913082	0.277
AgeSquared	1.000003	0.737
Observations	824	
Pseudo R-squared	0.0145	
Prob > chi-squared	0.0008	

Table 13 – Predicted Probabilities for Tax Rates 2007

Predicted Probability of 'No Obstacle'	
QualifyDum	Prediction
0	0.7931
1	0.6888
Predicted Probability of 'Minor Obstacle'	
QualifyDum	Prediction
0	0.1085
1	0.1522
Predicted Probability of 'Moderate Obstacle'	
QualifyDum	Prediction
0	0.0567
1	0.0889
Predicted Probability of 'Major Obstacle'	
QualifyDum	Prediction
0	0.0377
1	0.0631
Predicted Probability of 'Very Severe Obstacle'	
QualifyDum	Prediction
0	0.0041
1	0.0071

Table 14 – Tax Rates 2003

Regressor	Coefficient	P>|t|
QualifyDum	1.725072	0.263
lnEmpSize	0.9950522	0.984
age	1.015208	0.666
AgeSquared	1.000006	0.99
Observations	94	
Pseudo R-squared	0.587	
Prob > chi-squared	0.8077	

Table 15 – Predicted Probabilities for Tax Rates 2003

Predicted Probability of 'No Obstacle'	
QualifyDum	Prediction
0	0.4377
1	0.311

Predicted Probability of 'Minor Obstacle'	
QualifyDum	Prediction
0	0.2064
1	0.2011

Predicted Probability of 'Moderate Obstacle'	
QualifyDum	Prediction
0	0.2383
1	0.3011

Predicted Probability of 'Major Obstacle'	
QualifyDum	Prediction
0	0.0732
1	0.1128

Predicted Probability of 'Very Severe Obstacle'	
QualifyDum	Prediction
0	0.0443
1	0.0741

Table 16 – Tax Type

VAT		
Dependent Variable:	TaxTypeObst	
Regressors:	Coefficient	P>|t|
QualifyDum	1.429735	0.36
lnEmpSize	0.6069214	0.006
age	0.9429533	0.265
AgeSquared	1.001684	0.18
Municipal		
Dependent Variable:	TaxTypeObst	
Regressors:	Coefficient	P>|t|
QualifyDum	0.5208905	0.357
lnEmpSize	0.7475244	0.271
age	1.022848	0.74
AgeSquared	1.000608	0.676
Other		
Dependent Variable:	TaxTypeObst	
Regressors:	Coefficient	P>|t|
QualifyDum	2.534469	0.531
lnEmpSize	0.675579	0.61
age	1.596123	0.316
AgeSquared	0.9917859	0.423
Observations	207	
Pseudo R-squared	0.0667	
Prob > chi-squared	0.013	

Table 17 – Required Rate of Return

Dependent Variable:	lnERR	
Regressors:	Coefficient	P>|t|
QualifyDum	0.0404987	0.672
lnEmpSize	-0.1215077	0.038
COD	0.0020843	0.769
collat	-0.0006903	0.166
_cons	3.402053	0
Observations	43	
Adj R-squared	0.1568	
Prob > F	0.0328	

Table 18 – Profit Retention

Dependent Variable:	lnProfRet	
Regressors:	Coefficient	P>|t|
DumTurnPty	-0.0310661	0.76
foodsect	-0.0087511	0.878
textsect	0.12373	0.116
clothsect	0.0910331	0.123
woodsect	0.0019502	0.971
printsect	-0.1454062	0.142
chemsect	-0.1496657	0.266
plastsect	-0.5274347	0.12
metsect	-0.1084105	0.208
fabmetsect	-0.0733213	0.341
macsect	-0.0687777	0.318
motorsect	-0.1249972	0.24
furnsect	-0.1696207	0.292
age	0.0138862	0.097
AgeSquared	-0.000198	0.084
lnEmpSize	-0.0532767	0.316
_cons	4.659815	0
Observations	90	
Adj R-squared	0.1988	
Prob > F	0.0646	

Table 19 – Panel Analysis 2007

Dependent Variable:	dlnTurn2007_2003		dlnEmp2007_2003		dlnTurnEmp2007_2003	
Regressors:	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|
DumSize20~v2	0.0184465	0.795	-0.0959977	0.046	0.122854	0.11
DumSize2~2_2	-0.0304045	0.702	-0.0622558	0.258	0.0288502	0.711
age2003	-0.0006621	0.933	-0.0078352	0.122	0.0071545	0.429
age2003squ~d	0.0000504	0.71	0.0000918	0.346	-0.0000414	0.799
lnEmpSi~2003	-0.2274499	0	-0.3638242	0	0.1355481	0.051
foodsect	-0.1645944	0.019	-0.0242513	0.661	-0.1412673	0.054
textsect	0.1648619	0.254	0.0138741	0.911	0.1533196	0.27
garmentsect	-0.0944677	0.311	0.0334152	0.575	-0.1133386	0.203
chemsect	-0.1551848	0.201	-0.1156626	0.027	-0.0383114	0.733
plastsect	0.1138721	0.339	0.0095655	0.879	0.105018	0.338
nonmetmins~t	-0.0130561	0.89	0.1690505	0.139	-0.1824871	0.177
fabmetsect	-0.0289414	0.77	0.0124387	0.869	-0.0326342	0.825
machsect	-0.0280708	0.788	-0.1911171	0.027	0.1636883	0.111
electsect	-0.3635809	0.01	0.0649107	0.718	-0.4233479	0.003
ct	-0.2709232	0	-0.0491056	0.327	-0.226357	0.002
pe	-0.2602457	0.005	-0.0461123	0.35	-0.2240025	0.017
durb	-0.199577	0.005	0.0974896	0.088	-0.3048461	0
medium	0.2246833	0.02	0.4587336	0	-0.2215163	0.04
large	0.6901768	0.001	0.8418245	0	-0.1435769	0.504
_cons	1.054041	0	1.18509	0	-0.1376119	0.473
Observations	160		162		160	
Adj R-squared	0.267		0.5275		0.264	
Prob > F	0.0001		0		0	

Table 20 – Panel Analysis 2003

Dependent Variable:	dlnTurn2003_2001		dlnEmp2003_2001		dlnTurnEmp2003_2001		dlnCapnbv2003_2001		dlnCapnbvLab2003_2001	
Regressors:	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|
DumSize	-0.1416932	0.821	0.1033327	0.353	-0.3322987	0.661	0.9333314	0.098	0.2272985	0.509
age2001	-0.0551134	0.228	-0.0067405	0.14	-0.043446	0.375	0.011381	0.414	0.0306971	0.016
age2001squ~d	0.0006655	0.222	0.0000772	0.229	0.0005261	0.37	-0.0002008	0.391	-0.0004354	0.059
lnEmpSi~2001	0.1227167	0.277	0.0262651	0.431	0.068485	0.542	-0.0272394	0.761	-0.0828137	0.234
foodsect	-0.984429	0.478	-0.0309203	0.818	-0.9032819	0.531	0.0989128	0.672	-0.0754915	0.689
textsect	-0.1001086	0.835	-0.0408852	0.731	-0.0265433	0.955	0.010923	0.961	-0.0403586	0.816
clothsect	0.1239618	0.822	0.060138	0.771	0.1265262	0.782	0.6710745	0.321	0.5429151	0.243
woodsect	0.227055	0.687	-0.0536849	0.617	0.3408415	0.533	-0.1551214	0.593	-0.0954089	0.683
printsect	0.3655909	0.437	-0.0902098	0.442	0.476341	0.29	-0.2149283	0.388	-0.3404942	0.154
chemsect	0.577101	0.28	0.0931289	0.465	0.4263664	0.42	0.5124222	0.32	0.1954891	0.645
plastsect	0.1933503	0.668	0.1168768	0.492	0.1741959	0.712	1.070171	0.089	0.8728288	0.008
metsect	0.6107967	0.268	-0.0108246	0.889	0.6232384	0.282	-0.0886626	0.723	-0.3032466	0.143
fabmetsect	0.1578177	0.782	-0.0509953	0.61	0.2960989	0.599	-0.0959056	0.661	-0.098787	0.619
macsect	0.3022708	0.556	-0.0205106	0.834	0.3266514	0.53	0.8285299	0	0.7639224	0
motorsect	0.4503809	0.403	0.0159264	0.882	0.43319	0.409	-0.0757211	0.749	-0.2990116	0.152
furnsect	0.5241857	0.275	0.0523029	0.625	0.4895994	0.279	0.0744635	0.814	-0.2455678	0.312
MedCity	-0.3444065	0.703	0.1017232	0.526	-0.6197961	0.56	1.303404	0.11	0.1144305	0.828
LargeCity	-0.960545	0.282	0.0652846	0.543	-1.085745	0.267	1.710075	0.005	0.8673528	0.02
_cons	0.9071088	0.422	0.0212177	0.91	0.9814086	0.415	-1.574033	0.081	-0.6808429	0.192
Observations	73		84		72		63		62	
Adj R-squared	0.1988		0.1424		0.1811		0.4572		0.4257	
Prob > F	.		.		.		.		.	