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CONTENTS

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CONTENTS

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The Consequences of Fiscal Illusion on Economic Growth

Paulo Reis Mourão*

Abstract
This work discusses the impact of fiscal illusion on economic growth. Its main contribution highlights the need for reducing the expected return from participating in fiscal illusion practices in order to prevent adverse effects on economic growth. Additionally, this model reinforces the advantages of productive public goods (not deviated for political unproductive rents) in order to mitigate the negative effects of fiscal illusion.

1. INTRODUCTION

This original short article aims at discussing the implications of *fiscal illusion* on economic growth rates. For this purpose, the following section will contextualize the discussion, introduce a model derived upon the original sense of Puviani's (1903) *Fiscal Illusion*, and conclude that higher levels of fiscal illusion decrease growth rates. However, this negative effect is reduced by higher values of productive public consumption.

2. TOWARD A MODEL FOR DISCUSSING THE *F*

The original sense of Puviani's ideas suggested fiscal illusion as a solution to a prior question: how can resistance to governmental actions be diminished from the perspective of taxpayers?[1] According to Buchanan (1967), the solution mainly studies fiscal illusion in the revenue side of a budget. Illusion can be inserted into revenues in many ways: obscuration of the individual shares in the opportunity cost of public outlays; utilization of institutions of payments that are planned to bind the requirement to a time period or an occurrence which the taxpayer seems likely to consider cheering; charging explicit fees for nominal services provided upon the occurrence of impressive or pleasant events; levying taxes that will capitalize on the sentiments of social fear, making the burden appear less than might otherwise be the case; use of 'scare tactics' that have a propensity to make the alternatives to particular tax proposals seem worse than they are; fragmentation of the total tax weight on an entity into numerous small levies; and opacity of the final incidence of the tax. The final result of this illusion is always gathering higher amounts of public revenues with a minimum of electorate resistance.

Due to the stimulation from Buchanan's rediscovery, this kind of fiscal illusion can properly be labelled the Puviani–Buchanan (P–B) fiscal illusion.

However, as far as we are aware, there is a very significant absence of studies reporting the consequences of P–B fiscal illusion on economic growth rates. We can point out some studies relating fiscal illusion and Public Finances (Oates, 1988; Rogers and Rogers, 1995; Easterly, 1999), but we have no framework discussing how economic growth will react to different levels of fiscal illusion. This work, more precisely the following section, intends to contribute to this purpose, developing the standard AK model (Barro and Sala-i-Martin, 1995, pp. 152-158).

3.1 FISCAL ILLUSION AND A RENT-SEEKING GOVERNMENT

The production function for a given firm *i* takes an *AK* Cobb-Douglas form

$$Y_i = AL_i^{1-\alpha} K_i^{\alpha} G^{1-\alpha}, \qquad (3.1)$$

where $0 < \alpha < 1$, *A* is the level of technology, *L* is labor input, *K* is capital input and *G* is the total of government purchases. Therefore, it is assumed that production for each firm is characterized by constant returns to scale in the private inputs, labor and capital. Additionally, it is also assumed that the aggregate labor force, *L*, is constant. For a fixed *G*, the economy would be characterized by diminishing returns to the accumulation of aggregate capital, *K*. By stating that *G* rises along with *K*, we assume that (3.1) will not be characterized by diminishing returns and that an increase in *G* raises the marginal products of L_i and K_i. Thus, the economy is capable of endogenous growth[2], following the traditional *AK* pattern.

[1] Mourao (2007) is an exhaustive survey on the vast literature that followed the original Puviani (1903)–Buchanan (1960) sense of fiscal illusion.

[2] The equivalence of the exponent on *G* to $1-\alpha$ implies that the constant returns to K_i and *G* generate endogenous growth, i.e., the economy should only increase *G* in a way that it accompanies a rise in *K*.

Now, assume that the government has a balanced budget. This balanced budget is financed by a proportional tax at rate *t* charged on the aggregate of gross output

$$G = tY \; . \qquad (3.2)$$

We also suppose that *t* and, hence, the expenditure ratio, *G/Y*, are constant over time.

In our first case, it is assumed that there is only fiscal illusion perceived by firms, that is, firms know there is an announced proportional tax rate *t*, however due to the level of fiscal illusion f^2, firms actually pay an effective tax rate (1+*f*)*t*. In this first situation, we assume that the government achieves political rents (*ft)* used for private and unproductive ends, and although firms pay the effective tax rate, the balanced budget only incorporates *t*.

The firm's after-tax profit is given by

$$L_i\left[(1-(1+f)t) * Ak_i^{\alpha} G^{1-\alpha} - w - (r+\delta)k_i\right]$$

where $k_i \equiv K_i/L_i$, *r is* the rate of return on capital, *w* is the wage rate and δ is the depreciation rate of capital. The wage rate equals the after-tax marginal product of labor because we assume that firms follow the assumptions of profit maximization and

As there are no transitional dynamics, the growth rates of *c*, *k*[4], and *y* all equal the same constant, $\gamma_{de,rs}$[5].

$$\gamma_{de,rs} = \frac{1}{\theta}\ \alpha A^{\frac{1}{\alpha}} (Lt)^{\frac{1-\alpha}{\alpha}} [1-(1+f)t] - \delta - \rho \quad . \tag{3.6}$$

The effects of government on growth are obtained through two channels: the term $1-(1+f)t$ represents the negative effect of effective taxation on the after-tax marginal product of capital, and the term $t^{\frac{1-\alpha}{\alpha}}$ represents the positive effect of *G*, the public services, on the marginal product.

Computing $\frac{\partial \gamma}{\partial t}$ we get

$$\frac{\partial \gamma_{de,rs}}{\partial t} = -\frac{A^{\frac{1}{\alpha}} L (Lt)^{\frac{1}{\alpha}-2} (\alpha + ft + t - 1)}{\theta}. \tag{3.7}$$

Therefore, the golden rule for the size of the government finds a maximum[6] at

$$t = \frac{1-\alpha}{1+f}. \tag{3.8}$$

If we want to check the effects of fiscal illusion on the optimal decentralized growth rate, we calculate its partial derivative:

$$\frac{\partial \gamma^{*}_{de,rs}}{\partial f} = -\frac{\alpha A^{\frac{1}{\alpha}} \left[\frac{L(1-\alpha)}{1+f}\right]^{\frac{1}{\alpha}}}{\theta L} \ (<0).$$

Therefore, we conclude that higher levels of fiscal illusion decrease the growth rate in a decentralized economy under the previous assumptions.

For the moment, we have shown that (3.8) is the government's best policy, given that the growth rate is the result of the decentralized choices of households and firms in accordance with (3.6). Now, it is time to observe whether the outcomes are Pareto optimal by solving the social planner's problem.

The planner determines the time paths *G(t)* and *c(t)* in order to maximize the consumer's utility $U = \int_0^{\infty} e^{-(\rho - n)t} \ \frac{c^{1-\theta} - 1}{1-\theta} \ dt$. The planner is constrained by the production function (3.1) and the budget constraint

$$Y = C + G + \dot{K} + \delta K \ . \qquad (3.9)$$

It is not difficult to set up a Hamiltonian expression to reach the conditions for dynamic optimization in the social planner's problem. This case will result in a different growth rate chosen by the social planner:

$$\gamma_{sp,rs} = \frac{1}{\theta} \ \alpha A^{\frac{1}{\alpha}} \left[(1-\alpha)L\right]^{\frac{1-\alpha}{\alpha}} - \delta - \rho \ . \qquad (3.10)$$

The social planner satisfies the condition $\frac{\partial Y}{\partial G} = 1$. The key distortion in the decentralized model is that investors consider the private marginal product of capital $\left[1-(1+f)t\right]\frac{\partial Y_i}{\partial K_i}$ because of the effective tax rate $(1+f)t$, which is slightly different from $\frac{\partial Y_i}{\partial K_i}$

These changes will lead to a different growth rate:

$$\gamma_{sp,b} = \frac{1}{\theta}\ \alpha\ A^{\frac{1}{\alpha}}\ \frac{L(1-\alpha)}{1+f}^{\frac{1-\alpha}{\alpha}} - \delta - \rho\ \ . \qquad (3.15)$$

Checking what happens to the social planner's problem of a benevolent government, we find that the differences between the social planner's solutions and the decentralized solutions are smaller in this second case, indicating a proximity (smaller wedge) between the Pareto solution and the rational choices of households and firms.[7]

With few assumptions[8], it is straightforward to conclude that

$\gamma_{de,rs} < \gamma_{de,b} < \gamma_{sp,b} < \gamma_{sp,rs}$.

These inequalities show that a higher level of P–B fiscal illusion originating in political rents used for private and unproductive directions generates low growth rates. When fiscal illusion is characterized by smaller values or when the political rents are being invested in the economy (becoming productive)ow et fese.8(i)-1a-4.6-2.06 e.ner'((n)-4.3(g i)-1.(n)-44(t

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Defining Ordinary Income after *McNeil*

Maurice Cashmere and Rodney Fisher*

Abstract

The High Court decision in *FCT v McNeil* (2007 HCA 5) decided that the market value of put options issued to shareholders over their shares in the company, as a mechanism for carrying out a share buy-back, was ordinary income at the time of issue in the hands of those shareholders who chose not to participate. The jurisprudential basis on which this decision was made is not manifestly clear, but the impact of the decision has the potential to set aside the traditional distinction which has been made between receipts which are on revenue account and those which are on capital account. This article seeks to establish that the approach which is manifest in *McNeil* is out of step with established principles and that the High Court provided no convincing reasons for setting aside the principles which have traditionally been accepted as determining which receipts are to be regarded as being on revenue account. This article seeks to show that the approach which is manifest in *McNeil* was also apparent in the earlier majority High Court decision in *FCT v Montgomery* (1998) 198 CLR 639, although *McNeil* does not appear to have relied on *Montgomery*. However, the authors seek to establish that the principles which can be derived from the majority decision in *Montgomery* are not sustainable. The problem which emanates from *Montgomery* is identified and a return to the position which existed prior to *Montgomery* is advocated as the solution to the problem which now exists. It is suggested that the legislative response of creating different tax treatment for call and put options is a disappointing response, with a preferable approach being the restoration of the previous tax treatment, which had been the undertaking given to industry and capital markets by the government.

1. INTRODUCTION

It might have been anticipated that by the beginning of the 21st century the principles used to determine what constitutes income according to ordinary concepts for the

The impact of the High Court's decision was not properly appreciated until the Australian Taxation Office ("ATO") subsequently issued a draft class ruling to Hutchison Telecommunications[4] advising that it would treat the value of a proposed issue to shareholders of renounceable rights in the issuing company as assessable income on revenue account in the hands of shareholders, from the date on which the rights were issued. This ruling meant that shareholders would be taxed on the value of the rights when they were issued, rather than on the net proceeds of sale when they were sold. In other words, the ATO was seeking to impose tax on unrealised, or paper profits on rights issues, relying on its success in relation to the SGL buy-back to extend the impact of *McNeil*'s case.

This led to calls for immediate action from the Federal government to reverse the controversial ruling, because of the harm it would do to capital markets in Australia.[5]

To address the uncertainty created in capital markets by the decision in *McNeil*, the Government has legislated specific tax treatment for call options and put options.[6] In relation to call options, whereby a company or trustee issues rights to shareholders or unitholders to buy additional shares or units, the legislative provisions affirm existing law that no amount would be included in assessable income of the shareholder, or unitholder, on issue of the rights, with th

ordinary income. Furthermore, it is argued that no convincing reasons were apparent for setting aside time-honoured principles, and that there is arguably an internal tension in the reasoning of the majority decision in characterising the nature of the put option.

While there has been commentary on the practicalities and potential impact of the decision in *McNeil*,[8] this analysis seeks to identify and examine in greater detail the jurisprudential underpinnings of the judicial reasoning underlying the majority High Court decision, and demonstrate how this reasoning accords with, or diverges from,

shareholder was entitled was proportional to the member's shareholding. The sell-back rights were issued without consideration. The sell-back rights were not granted to the shareholders directly. Instead, they were granted in favour of a trustee company, which undertook to hold the number of rights to which shareholders were entitled on separate trusts for the absolute benefit of each shareholder.

If a shareholder wished to sell into the share buy-back, the shareholder was required to give notice to the trustee to vest the sell-back rights in the shareholder, so that the shareholder c5.6(,)7the

be based on perceptions which were later found to be incorrect, or dependent on tax consequences which were not then known.

The two limbs of the majority decision appear to be that:

1) a determination about whether a receipt has the character of the derivation of income depends upon its quality in the hands of the recipient, not the character of the expenditure by the other party.
2) a determination about whether the gain arising from shares has an income characterisation depends on whether the gain has been severed from the shares.[9]

While these two limbs (ournal ofmlournal b)7(r)-98(the -0.d-1.)7(rnsi7(ied.2434 330s5.3(t)-11.1re -03 Tc0.)

The Second Reading Speech accompanying the Bill suggested that the new amendments "… will overcome the impact of the High Court of Australia's decision in *Commissioner of Taxation v McNeil*."[13] This suggestion would appear to be in accord with the previous announcement that the legislation proposed would reverse the effect of the decision in *McNeil*, and restore the previously existing law.

The legislation, however, does not restore the previous law, but rather it operates to enshrine the *McNeil* decision in legislation, thus changing the long accepted position that the gains from rights or options would be a matter of capital, and not assessable as ordinary income at the time of issue. Further, the legislation now provides separate and distinct treatment for call options and put options, which can only operate to add complexity to an already complex area of law.

The Explanatory Memorandum accompanying the Bill provides no discussion or explanation as to why there should be divergent treatment of rights represented by call options and rights represented by put options. Also there is no examination or explanation as to why the *McNeil* decision should be adopted. It may have been expected that if the legislation were to codify the law from the *McNeil* case there would have been some degree of analysis of the principles and authority which the legislation was enacting. As a result of the legislation, there is now the added complexity of different taxation treatment for rights depending on the nature of the right, an outcome which, it is suggested, can hardly be seen as optimal.

Given the uncertainty created in markets by the decision in *McNeil*, the dearth of reasoning

long as the income has been derived by the taxpayer. Then s6-5(4) goes on to provide an extension to the concept of derivation, in that a taxpayer is taken to have received income according to ordinary concepts as soon as it is applied or dealt with on the taxpayer's behalf, or as the taxpayer directs.

So first of all, the ITAA 1997 requires a receipt to be identified as income and then once identified, a determination needs to be made about whether it has been derived by the relevant taxpayer. There are two steps in this process, not one. Income cannot be derived until a receipt of an income nature has been identified. The ITAA 1997 does not define income, other than to provide that it includes income according to ordinary concepts. Nor does the ITAA 1997 define the concept of income according to ordinary concepts, or the concept of derivation.

The leading statement of principle regarding the nature of income is to be found in the judgment of Jordan CJ in *Scott v Commissioner of* Taxation[14]:

The word income is not a term of art, and what forms of receipt are comprehended

must be something which comes in[21]. This latter component relates to the concept of derivation. However, there cannot be a derivation until a gain with an income character has been identified.

In his text Parsons turns to make a number of assertions, or propositions, which can be used in a general way to identify receipts as income. It is proposed to benchmark the principles which emerge from *McNeil's* case against these propositions, but since *McNeil's* case concerned the characterisation of a property-based receipt, only those propositions which are relevant to the identification of receipts arising from property are noted. These are that:

payer was not relevant. That statement does not accurately reflect the second of Parsons propositions referred to above. Nowhere in his text did Parsons state that the character of the amount in the hands of the payer was irrelevant. But it followed, in the view of the majority in *McNeil*, that the character of the sell-back right could be determined by isolating the receipt from the SGL buy-back process, which arose out of the capital restructuring of SGL.[39] This was despite determinations to the contrary in the Full Federal Court, when *McNeil* was before that court.

GP International Pipecoaters Pty Ltd v FCT,[40] a unanimous decision of the High Court in 1990, which adopted the test laid down in *Scott*, was referenced in support of this view. How *Pipecoaters* supported the view taken by the majority was not made clear. Ian Stanley, in his article *As of Right – McNeil's Case*, strongly declaims that it does not.[41]

However, the dissenting judgment of Callinan J in *McNeil*, provides some insight into this issue. There, in criticising the approach of the majority, the judge said "*In my view the character of a payment for the purposes of the statutory definition of income,….cannot always be determined simply and solely by reference to its quality in the hands of a recipient. I do not take GP International Pipecoaters Pty Ltd v FCT to be denying reference to the full circumst*
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established the test as being "*whether a receipt comes in as income must always depend for its answer upon a consideration of the whole of the circumstances.*"[45]

That approach was endorsed in 1987 by *FCT v The Myer Emporium Ltd*,[46] a unanimous decision of the High Court. This case involved the characterisation of the receipt of a payment made for an assignment of interest payable under a loan. Myer Emporium had lent funds to its finance subsidiary and immediately assigned the income stream arising under the loan to an independent finance company for a lump sum. Myer Emporium argued that the payment made to it under the assignment was an extra-ordinary receipt for a retailer and property developer and as such was on capital account, thereby escaping the normal rule that a receipt by a business in the normal course of its business was on revenue account.

The Court disagreed and held that the receipt was on revenue account. The Court accepted that if the assignment could have been regarded as a separate transaction, it may have been possible to say that no gain of a revenue nature would have arisen, because the receipt of the value of the chose-in-action assigned could have been seen as the realisation of a capital asset. But when the facts were viewed as a whole, particularly the fact that the taxpayer had assigned its interest under the loan immediately after the loan was advanced, in order to obtain the immediate benefit of the future interest payments, the receipt was seen as a receipt on revenue account, because it represented no more – nor less – than the quantified present value of the future interest payable under the loan. As a consequence the receipt was not a capital item.

Pipecoaters, which was decided after Myer Emporium, was also a unanimous decision of the High Court. *Pipecoaters* concerned the characterisation of a receipt to assist in establishing new plant for coating industrial pipes. *Pipecoaters* accepted what had been laid down by the earlier authority and finessed in Myer Emporium, but gave more expansive expression to the manner in which characterisation was to be determined. The High Court in *Pipecoaters* expressed the situation in the following way.

Although the amount received as establishment costs was expended by, and was intended by (the payer of the amount) to be expended by, the taxpayer to meet the costs of constructing the plant so far as that amount would extend, and although the amount expended on the construction of the plant was a capital expenditure, it does not follow that the taxpayer's receipt of the establishment costs was a receipt of capital. To determine whether a receipt is of an income or of a capital nature, various factors may be relevant. Sometimes the character of receipts will be revealed most clearly by their periodicity, regularity or recurrence; sometimes, by the character of a right or thing disposed of in exchange for the receipt; sometimes, by the scope of the transaction, venture or business in or by reason of which money is received and by the recipient's purpose in engaging in the transaction, venture or business. The factors relevant to the ascertainment of the character of a receipt of money are not

[45] Ibid p 627.
[46] (1987) 163 CLR 199.

security, or is it a gain in an operation of business in carrying out a scheme for profit-making."

adopted as the precedent. It was not used in this context at all. The judgment gives the impression the majority was merely expounding an orthodoxy.

5.2.2 G

Hill J in *Westfield,* that this would "*eliminate the distinction between an income and a capital profit.*" [64]

The problem which this limited vision causes is manifest. The High Court in *McNeil* saw the position of the shareholders who chose not to participate as being an entitlement *"to be paid the proceeds of trading activities in their rights which were conducted on their behalf by the (merchant bank)."*[65] That entitlement was also seen as being entirely generated by the documentation creating the sell-back rights. But if the full facts had been considered, it would have been apparent that the money paid to these shareholders ultimately came from the share capital account of SGL.[66] Those funds did not have a revenue character.

The importance of judicial consideration of the entire factual matrix, rather than selectively isolated facts, was again highlighted in the High Court decision in *FCT v Hart*,[67] albeit in a context of considering the application of Part IVA, the general anti-avoidance provision.

Under Part IVA the FCT can attack transactions which constitute schemes, where the dominant purpose of someone connected with the scheme was to obtain a tax benefit.There has been much debate about the way in which schemes are identified. A scheme might be drawn narrowly, so that it is identified just by those facts which constitute the tax benefit, or a scheme might be drawn more broadly by reference to the transaction which the taxpayer entered into. If the scheme were drawn by reference just to the identified tax benefit, then inevitably the requisite dominant purpose will be present. This was the view supported by Gummow and Hayne JJ in *Hart.* But this view is contrary to unanimous High Court authority to the contrary.[68] It is also contrary to the approach propounded by Gleeson CJ and McHugh J in *Hart* that where a tax benefit relates to a deduction , the scheme cannot be defined without reference to all the facts which give the expense the character of deductibility for tax purposes. So in *Hart*, while the tax benefit had been identified as capitalised interest payable under a loan, those facts alone could not identify the scheme. The scheme could only be identified by reference to the borrowing transaction which the taxpayer had undertaken for the purpose of acquiring an investment property. As Gleeson CJ and

attached to the share, and, can then be seen as having been shorn from the share to which it relates.

Traditionally, a share has been described as a chose-in-action, but this is not particularly helpful as this description is notoriously vague. The authorities show that a share is a bundle of rights and those rights are the ingredients of the chose-in-action. The one right it does not confer is a right to a physical thing. The classic statement regarding the nature of a share is to be found in what Farwell J said in *Borland's Trustee v Steel Bros & Co Ltd:*

A share is the interest of a shareholder measured by a sum of money, for the purpose of liability in the first place, and of interest in the second, but also consisting of a series of mutual covenants entered into by all the shareholders inter se in accordance with (the appropriate companies legislation). The contract contained in the articles of association is one of the original incidents of the share. A share…is an interest measured by a sum of money and made up of various rights contained in the contract, including the right to a sum of money of a more or less amount.[75]

The reference here to measuring the interest by a sum of money was a reference to the par value of a share. That is no longer quite as apposite, since *the Company Law Review Act 1998 (Cwlth)* abolished the concept of shares having a par value, as well as authorised share capital. So now share capital is represented just by the number of issued shares, each representing a fraction of the company's undertaking with each having a proportionate interest in the assets of the company.

company's constitution and the relevant companies' legislation. A right or option to take up shares is not an inherent part of a share. It arises independently – out of the contractual arrangements which exist between the company and its shareholders – from the actions of the company.

Whether a shareholder has any entitlement depends on the actions of the company. This can be tested by reference to an example. A right to a new issue of shares need not necessarily be made to existing shareholders. If a right to a new issue of shares were granted to a company's financiers, who were not shareholders, it would be difficult to argue that the entitlement to take up the new issue arose out of the shares in the company already on issue. Once created, the entitlement is a separate item of property, but it is not an item of property which is shorn from the share itself. If

In *McNeil* the majority did not refer to *Archibald Howie*, but did refer to *Uther*, and certain other liquidation cases.[86] However, these authorities were rejected on the basis that they afforded no sound analogy. *Miranda* and *Macmine* were also rejected, on the

company. If an original shareholder sells and transfers his shares the transferee upon registration will become legally entitled to all the rights of the member.[88]

In *Ord Forest Pty Ltd v FCT*[89] the majority followed the approach manifest in *Archibald Howie*

found that this would be the case, even if the rights offered to existing shareholders

s134-1 ITAA 1997. On the granting of an option, the holder/grantee will have acquired a CGT asset and if the option is exercised, any capital gain or loss on exercise will be disregarded, as the exercise of the option is merged with the disposal transaction, with the capital gain or loss being determined on that transaction.

If an option is not exercised, the relevant CGT event would be event C2, which happens when ownership of an intangib

Spanish Prospecting Co Ltd that: "*Profits implies a comparison between the state of a business at two specific dates usually separated by an interval of a year. The fundamental meaning is the amount of gain by the business during the year. This can only be ascertained by a comparison of the assets of the business at the two dates.*"[93] This statement of principle was approved by the High Court in *FCT v Slater Holdings (No 2) Ltd.*[94]

It is implicit in this statement that profits arise out of the business activities of the company. So profit, in its ordinary sense, means the excess of returns over the outlay of capital.[95] It follows that the issue by SGL of options over its own shares could only

net proceeds of sale had to be determined and the entitlement to those proceeds, of

context cannot be seen as providing the taxpayer with a proprietary, or ownership right to the sell-back right itself, at any point during the time the trust arrangement subsisted.

In so far as Mrs McNeil was concerned, all she was entitled to under the trust was her proportional share of the net proceeds of the sale, when they had been ascertained. Until that happened there was no certainty that she would receive anything, let alone any specific quantified amount. Until that time she had no more than an expectancy of receiving some sale proceeds. Likewise, until that time her beneficial interest was no more than a right to ensure due performance on the part of the trustee.

11.3 WRONG QUESTION POSED, THE DERIVATION ISSUE

The third issue which arises out of the way the question was framed by the High Court was that it led to the wrong question being posed for determination. The principal issue raised for determination was posed as being "*whether a particular receipt has the character of the derivation of income depends upon its quality in the hands of the recipient …*"[101] That was also a proposition which the FCT put forward as flowing inexorably from his primary submission. But s6-5 ITAA 1997 is not concerned with the character of derivation. As was said at the outset of this paper, it is concerned with whether the receipt can be classified as income, and, only after that has been done, is it concerned with whether it has been derived and therefore forms part of the taxpayer's assessable income. Those are separate considerations, each of them dealing with different issues.

Therefore, the characterisation of a receipt as income cannot be made to depend on its derivation. By concatenating the issue which needed to be determined the majority would appear to have fallen into error. Indeed, if derivation determined the character of the receipt, then all receipts would be income and that would not only eliminate the distinction between income and capital; it would set aside fundamental principles on which income tax is founded. The effect of the High Court's decision is to do just that. Parsons did not accept such a proposition and it is contrary to authority such as *Federal Coke Co Pty Ltd v FC*,[102] which was not referred to by the High Court.

ITAA 1997 does not define what is meant by derivation. The word "derived" does not necessarily have the same meaning as "earned". The Macquarie Dictionary defines the verb "*to derive*" as meaning "*to receive or obtain from a source or origin*". It has been accepted that unless the ITAA makes some special provision to the contrary, the amount derived is determined by ordinary business and commercial principles and the method of accounting to be adopted – as Carden's case established – is the method which "*is calculated to give a substantially correct reflex of the taxpayer's true income.*"[103] Furthermore, as Dixon J, as he then was, said in that case "*…in the assessment of income the object is to discover what gains have during the period of account come home to the taxpayer in a realized or realizable form.*"[104] But Dixon J is

[101] *McNeil* at para 20.
[102] 77 ATC 4255.
[103] *Executor Trustee & Agency Co of South Australia Ltd v FCT* (Carden's case) (1938) 63 CLR 108, 154; *Brent v FCT* (1971) 125 CLR 418.
[104] Ibid p 155.

not to be taken as having indicated that receipts which are realizable, but not received, are always derived. In situations which do not relate to trading income, the judge said that there must be something coming in, since "*for income tax purposes, receivability without receipt is nothing.*" [105]

This is illustrated by *Brent v FCT*.[106] In this case the wife of a notorious train robber had sold her life story for a sum of money which was to be paid at certain specified times. The taxpayer accounted on a cash basis. She was assessed to tax on two of the payments which had fallen due, but not been paid. The non-payment arose because the payments had not been requested by the taxpayer. The High Court set aside the assessment, because those sums had not been received. It followed that they had not been derived.

Mrs McNeil accounted on a cash basis. The option was not paid out to her on the date of creation, nor was it payable in a quantified amount. It may have had a value on the date of creation, but holding something of value is not sufficient to constitute a receipt of income. If there was no receipt in *Brent,* then a fortiori, there could be no receipt in so far as Mrs McNeil was concerned. There would need to be something which was not only realised but received, before it could be said that the gain had been derived.

Under ITAA 1997 there can be a constructive receipt of income. Section 6-5(4) provides that a taxpayer is deemed to have derived income if it is applied or dealt with

Since the ITAA 1997 does not alter the substance of provisions formerly contained in ITAA 1936, it can be assumed that the same considerations apply to s6-5.

So, for Mrs McNeil, there not only needed to be a gain that was realised, that gain also needed to be received, or applied to her credit, or dealt with on her behalf in some way, before it could be said that she had derived income. On the day on which the put option was created Mrs McNeil had merely been provided with a facility which enabled her shares in SGL to be sold. The ability to do so was not, in the circumstances which eventuated, a right which was even exercisable by her. In fact, she had no proprietary interest in the sell-back right at all. Nor had there been any

Section 4 provides examples of how different discipline perspectives might improve research outcomes in three different areas: independence of revenue authorities, governance by and of revenue authorities and the principles of good practice. The starting point is legal and analytical, using legal argumentation and analysis. However, this section shows that cross-disciplinary questions develop through drawing on aspects of accepted economic, accounting and performance management theories that have been incorporated into analysis of tax administration. The aim is to demonstrate that the amalgamation of the theory of different disciplines can bring far deeper analysis and content to questions on areas that are historically considered by a particular group or discipline.

The article concludes by drawing together the broad themes examined in each part. By demonstrating the opportunities that arise from using different methodologies, different contexts, and different approaches, it encourages better use of the open spaces including those provided by universities for collaborative research in tax administration.

2. THE RESEARCH POLICY FRAMEWORK: THE PURPOSE OF THIS ARTICLE

Hughes notes that the informal interactions within and around universities across a broad spectrum of engagement are highly valued by business.[17] There is an assumption in reviews,

that different disciplines use.[26] She suggests that although adapting to a different methodology can be challenging, given most researchers have a narrow discipline background, "the possible combinations for mixed method research are almost unlimited".[27]

The rest of this article seeks to demonstrate that a cross-disciplinary approach could yield valuable insights that are not currently explored. Researchers may use mixed method research as McKerchar suggests. They could also find it useful simply to apply the results of existing research from one discipline to the results of research in another discipline. As noted above, some tax compliance related literature demonstrates the significant benefits of this approach.[28]

3. WHY IS GOOD PRACTICE NEEDED IN TAX ADMINISTRATION AND HOW MIGHT IT BE PURSUED FROM A CROSS-DISCIPLINARY PERSPECTIVE?

The basis for research into good practice in tax administration

Normative theory tends to underpin our fundamental conceptions of property rights. Murphy and Nagel suggest that there are two theoretical strands: consequentialist and deontological.[29] Consequentialist theory follows the utilitarian views of Bentham and Mill that emphasise maximising individual preferences.[30] The argument is that property rights maximise individual preferences and should be protected, particularly

as a legitimate interference with individual property rights in order to maintain society. To put it another way, taxation is not a public good.[33] Rather, it is necessary to allow the efficient and effective operation of society.

It is worth revisiting the assumptions on which the rationale for taxation is based for it drives the analysis of tax administration across all disciplines. If taxation were itself a public good, there would be less importance in determining limits on it. Because it represents interference with the basic order, albeit to allow that order to function, the manner and form of those limits become much more important. Taxation is introduced to perform a function and it should perform that function in the best way possible, within the framework of rules chosen to govern that particular society.

Good practice in tax administration flows directly from the nature of the tax function. It is implicit in the social contract constituting society that a revenue authority should collect and redistribute wealth as fairly and efficiently as possible. The type of politics and economics in the society is irrelevant at this level.[34] Good practice in tax administration is fundamental to the operation of almost any society. It is therefore a legitimate and important research pursuit to determine what good practice in tax administration is. But at this point the research diverges and becomes complex and cross-disciplinary.

Pursuing good practice in tax administration

Take three examples to illustrate the divergence and resulting complexity. Legal theory seeks to provide the best possible framework of rules to constitute and operate the tax system in that society: cognisant of lessons learned from other jurisdictions, but consistent with the nuanced contexts of the home jurisdiction.[35] Public economics and the sub-discipline of welfare economics attempt to design government behaviour to ensure the most efficient, but fair, distribution of income to maximise individual preferences and limit negative externalities.[36] Political and government theorists analyse and explain how political and bureaucratic behaviour can best function to achieve the goals of government given the widely different representative, interest and power groups in society.[37] All this is before governance, management, marketing and accounting theorists design optimal systems to govern, manage, implement, monitor and continually improve tax administration.

The nature of publication in discipline-specific journals limits statements of research context to that particular discipline. It would be useful if researchers placed more emphasis on the inter-disciplinary context and effect of their research: even if only to make their research more accessible to other disciplines. Even within disciplines, it is not always clear where the research fits and how it relates to prior research.

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[33] For example, see J Finnis, *Natural Law and Natural Rights* (1980)155, 276.

[34] Unless it is a state in which property rights are not recognised.

[35] See, for example, JRS Gill, A Diagnostic Framework for Revenue Administration, *World Bank Technical Paper* No 472 (World Bank, 2000); C Silvani and K Baer, Designing a Tax Administration Reform Strategy: Experiences and Guidelines (Washington DC, 1997), *IMF Working Paper* No 97/30; and V Thuronyi (ed.), *Tax Law Design and Drafting* (1996), Vols 1 and 2.

[36] See, for example, HJ Aaron and MJ Boskin, *The Economics of Taxation* (1980); RA Musgrave and PB Musgrave, *Public Finance in Theory and Practice* (5th ed, 1989); and P Abelson, *Public Economics: Principles and Practice* (2003).

[37] Discussed at length in G Tullock, (ed.) *The Vote Motive* (2006).

Barzelay[38] identified a similar gap in 2001 in the research into New Public Management: an approach to the policy debate about administration and management in the public sector popular in the 1980s and 1990s. His response was to argue for a formal propositional approach to "dialogue about doctrinal ideas and policy choices in the area of public management".[39] However, the drawback to this approach is that it tends to formalise research and policy and doctrinal argumentation within a relatively

most often interested in research into tax administration and common issues they seek to answer. There are areas of collaboration. Other areas produce fewer cross-disciplinary works. The table is not intended to be comprehensive but illustrates the significant potential for cross-disciplinary cooperation. In the search for new knowledge, advances are likely to occur more easily if different perspectives are brought to bear.[44]

Discipline	**Issues**
Accounting	• Administrative process • Best practice • Collection • Compliance and compliance measurement • Data management • Harmonisation • Information management and delivery • Intermediaries • Performance and productivity measurement, indicators and benchmarking • Regulation • Reporting standards – effect on administration • Systems management • Tax policy and reform • Tax ethics
Economics and public finance	• Administrative design and process • Best practice • Compliance and compliance measurement • Efficiency • Globalisation • Intermediaries and agency costs • Reform and optimisation • Simplification • Systemic efficiency • Tax policy and reform • Tax system design and design principles
Governance	• Accountability, reporting and budget process • Dispute resolution • Functions, roles and responsibilities • Integrity and corruption • Organisational purpose and outcomes • Risk management • Skill development • Tax governance • Taxpayers' rights • Values
Law	• Tax compliance regulation • Cross-jurisdictional administration • Dispute resolution • Ethics and responsibility • Judicial and administrative law aspects of tax administration

44

	• Legal aspects of administrative design and implementation • Regulation • Regulation of intermediaries • Tax governance • Taxpayers' rights • Tax policy
Marketing	• Customer information management • Customer relations management • Quality assurance and taxpayer satisfaction • Service delivery • Service strategy • Taxpayer segmentation
Political Science	• Accountability • Administrative design and process • Compliance and compliance measurement • Data management • Harmonisation • Information management and delivery • Integrity and corruption • Performance and productivity measurement, indicators and benchmarking • Policy implementation • Reform and optimisation • Regulation • Reporting standards – effect on administration • Simplification • Systems management • Tax governance • Taxpayers' rights • Service strategy • Tax policy and reform
Psychology	• Best practice • Change management • Compliance and compliance measurement • Harmonisation • Information management and delivery • Integrity and corruption • Organisational behaviour • Performance and productivity measurement, indicators and benchmarking • Personnel management • Regulation • Reporting standards – effect on administration • Risk management • Systems management • Tax policy and reform • Tax ethics
Public Sector Management	• Change management • Dispute resolution • Organisational behaviour • Performance and productivity measurement, indicators and benchmarking • Personnel management • Policy implementation • Processes and procedures • Quality assurance • Values

Sociology	• Administrative relationships • Change management process • Organisational behaviour • Compliance culture • Relationship elements of information management and delivery • Cultural impact of performance and productivity measurement, indicators and benchmarking • Impact of regulation • Impact of tax policy and reform • Tax values and ethics

4. EXAMPLES OF HOW DIFFERENT DISCIPLINE PERSPECTIVES MIGHT IMPROVE RESEARCH OUTCOMES

In this part we identify three areas from our own research where different perspectives would provide greater depth to the research outcomes. One aspect of research into tax administration examines good or best practice. As noted by Hasseldine in a keynote address to the *8th International Tax Administration Conference*, mentioned in Section

discipline of the researcher. However, there is much generally accepted good practice implemented in different jurisdictions. This section provides examples of how we might measure good practice in tax administration in three topical research areas: independence of the revenue authorities, governance by and of the revenue authorities and the principles of good practice applicable in tax administration. It bases its analysis in law and governance with a taxpayers' rights perspective. But in each example, the issues bring up questions on which other disciplines could shed light and bring a deeper content.

What makes the area so interesting and rewarding for researchers is that the research outcomes can have a major practical impact on a country's economic and political success. If a tax administration fails or is inefficient, it directly affects the country's revenue base. Tax administration is often used as a vehicle to deliver and monitor welfare payments and is one of the most pervasive and intrusive areas of interaction between the citizen and the state. Ineffective or injudicious tax administration can bring down governments or lead to the resignation of a prime minister.[52]

For this reason, tax administrators are vitally interested in the effectiveness of their administration and produce useful information that can form the basis of broader research. Over a long period, the OECD, in particular, has produced reports that provide useful guidance on good practice generally; agreed good practice in specific areas such as the exchange of information; and surveys and reports to develop good practice, such as the work on strengthening tax audit capabilities. The International Tax Dialogue provides an effective repository of information from the International Development Bank, International Monetary Fund (IMF), OECD, United Nations (UN) and World Bank.

Because tax administrations already exist and operate, most analysis of good practice begins with existing systems. However, first principles are often examined in reports on new or developing areas. Examples include the 2007 IMF *Manual on Fiscal Transparency* and the 2005 OECD Working Party on Regulatory Management and Reform Proceedings, *Designing Independent and Accountable Regulatory Authorities for High Quality Regulation*. They provide a useful starting point for significant further research at a more specific level.

The rest of this section considers aspects of each of the three exemplar areas and illustrates the opportunities they present for broader and deeper cross-disciplinary research. They are also instrumental in allowi bro6(ru)-6.9(n6ae.4(t)-2.6(pplt)-s ()-5.5-6.4(hnthis se)-J-17.8(n

The structure and autonomy of a revenue authority to ensure its independence from political interference is an area of interest to developing countries and countries in transition. Research into this area focuses on such issues as structure, transparency, and independence. It also examines the quasi-regulatory nature of a revenue authority and the negative effects of its character as a public monopoly.

The OECD Comparative Information Series on Tax Administration (OECD 2006 Report) identifies a number of different institutional arrangements across the surveyed group[53] They include:[54] unified and semi-autonomous bodies responsible for

revenue authority is sufficiently independent of political interference. In this context, Tullock would argue from a public choice theory perspective that the most significant hurdle is that the revenue authority is a public monopoly and it is overcoming the negative effects from this that requires most attention.[66] It would be useful to draw these perspectives together.

That said, critiques of New Public Management adopted to some extent by the UK, Australia, New Zealand and Canada in the 1980s and 1990s,[67] note that care needs to be taken in assuming a 'one-size-fits-all' approach to public administration.[68] Before innovative research is applied to tax administration it needs careful testing, based

Public sector governance presents a conundrum because the functions of government and therefore government departments and agencies are so diverse. In the same way that theories of the firm applicable to the private sector cannot be applied without modification to the public sector; application of theories of public sector organisation, governance and management need to be adjusted according to the purpose and function of the department or agency under examination.

The position becomes more complex when examining revenue administration. Governments find increasingly that their revenue authorities are actors on a world stage. The rules for international interaction are burgeoning, for example, through unilateral and multilateral economic, trade, investment and tax co-operation agreements. Analysis therefore extends to these broader international frameworks. Baker and Groenhagen draw attention, however, to the incompleteness of these frameworks. They note that the rules developed to enable international interaction do not extend to the formulation of international governance principles for taxation.[73]

Reviewing the OECD 2006 Report, it is clear that governance is important.[74] However, the elements are blended into different chapters.[75] A useful governance benchmark equally applicable to revenue administration was that issued by the Independent Commission for Good Governance in Public Services in the UK, *The Good Governance Standard for Public Services* (Good Governance Standard).[76] It sets out six major principles:[77]

1. Good governance means focusing on the organisation's purpose and on outcomes for citizens and service users.

2. Good governance means performing effectively in clearly defined functions and roles.

3. Good governance means promoting values for the whole organisation and demonstrating the values of good governance through behaviour.

4. Good governance means taking informed, transparent decisions and managing risk. 4.rrnance0.es 0.12dere055 Twance ve8.9(.)-2.5( )]m4 26042(e)2109(.)-2.5w799a03and ans pdpose a

Taxpayers' Rights: Theory, Origin and Implementation.[79] The importance of governance is critical to effective tax administration. Kaufmann argues that:[80]

example, Stoker suggests that there are five propositions that help us to frame our governance theory:[86]

1. Governance refers to institutions and actors from within and beyond government;
2. Governance identifies the blurring of boundaries and responsibilities for tackling social and economic issues;
3. Governance identifies the power dependence involved in the relationships between institutions involved in collective action;
4. Governance is about autonomous self-governing networks of actors; and
5. Governance recognizes the capacity to get things done which does not rest on the power of government to command or use its authority.

These propositions suggest that effective governance in a revenue authority requires a detailed understanding of its culture and organisation. Organisational behaviour and change management studies will contribute to our understanding of effective governance, particularly as it is value based. Peters and Pierre note from public administration theory that cultural change often determines whether performance measurement succeeds.[87] Braithwaite's socio-political perspective identifies system integrity as a key determinant of successful governance.[88]

Van Roosbroek provides a useful analysis of the development of the debates over governance and its measurement, particularly in relation to values and quality.[89] Whereas legal research into governance (as compared to other areas of quality measurement) has traditionally made less use of the measurement methodologies put forward by Van Roosbroek: hard data, surveys, expert assessments and internal or external evaluations, the results of such measurement have the potential to add value to the conclusions. However, because of the conceptual differences that exist between different strands of research and between researchers, it is acknowledged that great care should be taken in how the data are used. This caveat seems to apply equally to disciplines that, on the surface, appear closely related, in part because governance is socio-political and not apolitical in nature.[90] As is to be expected, the differences to be negotiated become even more acute when comparing results across nations.[91]

The issues become even more complex with the added questions of personal drive and motive to comply with values and ethics to improve governance. In this context it would be useful to research the motives and find a simple goal that represents utility maximisation for tax administrators.[92] This goal would have to distinguish between developed and developing countries and may have to distinguish between different

[86] G Stoker, 'Governance as Theory: Five Propositions' (1998) 50 *International Social Science Journal* 17, 18ff.
[87] BG Peters and J Pierre, 'Governance without Government? Rethinking Public Administration' (1998) 8 *Journal of Public Administration Research and Theory* 223, 230.
[88] V Braithwaite, 'Tax System Integrity and Compliance: The Democratic Management of the Tax System' in Braithwaite, above n 16, 271, 272.
[89] Van Roosbroek, above n 84.
[90] Ibid, 10.
[91] Ibid, 12.
[92] Tullock, above n 37, 62ff.

positions in economic systems. The research might help to find the most effective drivers of improved performance in an environment with limited resources.

The 2006 OECD Report notes that performance budgeting and performance management are the strongest performance trends across the OECD with a particular focus on outputs, efficiency and outcomes.[97] However, it warns of a number of challenges:

- While identifying examples of good practice, the Report notes that many authorities struggle with effective strategic planning to align the purpose, mission and objectives of a revenue authority and its programs for all the stakeholders.[98] Without this it is difficult to define the principles and performance standards that determine good practice for that tax administration.

- The Report recognises the appeal of outcome measures, particularly for the public and politicians, but notes the difficulty in designing appropriate measures for tax administration generally, finding measures for some activities, the technical difficulty of their application and issues of time lag and control.[99] There is particular difficulty in relation to target setting. As with many organisations the level at which the target is set is difficult to get right, as is the number of targets to set so that they do not impose too great a burden on administrators.[100]

- The cost and complexity of setting up data collection systems that produce quality data that are both verifiable and valid adds another layer to the measurement issue.[101]

Because performance measurement in tax administration places such an emphasis on values, taxpayer relationships and service delivery, the OECD 2006 Report provides in this context, without much analysis, a survey of taxpayers' rights, charters, and service delivery standards.[102]

In *Taxpayers' Rights: Theory, Origin and Implementation* Bentley provides, from a legal perspective, a comprehensive analysis of principles and measures that demonstrate good practice in tax administration.[103] The aim was to provide a broad set of rules that would serve as a model for good practice in tax administration. James, Murphy and Reinhart review the experience of the Australian[104] and UK[105] charters of rights and draw some valuable conclusions as to how such rules should be implemented. Their support for the approach of the ATO is reinforced by improvement over time in the results of third party surveys of taxpayer perceptions of the ATO.[106] Legal and administrative rules comprise a useful combination of hard and soft law. However, there needs to be more in-depth inter-disciplinary study to draw together the research that forms the foundation for rule-based approaches and relate it

[97] OECD, above n 53, 37.
[98] Ibid, 39.
[99] Ibid.
[100] Ibid.
[101] Ibid.
[102] Ibid, 49ff.
[103] Above n 46, Ch 7 and Ch 9.
[104] S James, K Murphy amd M Reinhart, 'The Taxpayers' Charter: A Case Study in Tax Administration' (2004) 7 *Journal of Australian Taxation* 336.
[105] S James, K Murphy and M Reinhart, 'The Citizen's Charter: How Such Initiatives Might Be More Effective' (2005) 20 *Public Policy and Administration* 1.
[106] TNS Consultants,

to that underpinning targets and measures flowing from performance management, performance budgeting and other theories.

James, Svetalekth and Wright apply the theory of performance indicators to a case study of Thailand's Excise Tax Administration.[107] Van Stolk and Wegrich take performance indicator theory further to explore the 'relative significance and interaction of different mechanisms of choice and how this shapes the development and application of performance indicators'.[108] Of particular importance in the latter

In the same way, a review of performance budgeting and performance measurement literature generally provides a wide range of useful answers to questions raised in the tax literature as it considers how best to measure tax administration.[114] The issues range from definition of terms, through evaluation of value frameworks, to analysis of the personnel and organisational behaviour effects of such measurement.

Of course, the emphasis on service quality in tax administration raises a range of different issues again. There is a significant body of literature on consumer satisfaction and service quality,[115] but this does not necessarily translate into service quality in the public sector. However, there are ways to use the quality management tools that come from customer satisfaction literature[116] and to do this would allow a much deeper understanding of what service quality in tax administration is and how to measure it.

Good practice in tax administration is measured. It is not measured consistently and it is not always measured effectively. Yet, the literature from different disciplines suggests that there is research available that could form an invaluable base for further research into tax administration that might allow more consistent and effective measurement. The breadth and extent of the literature also suggest that the benefits of much current research into good administrative practice are unnecessarily constrained within disciplines.

[114] A selection is listed here as a stimulus for further enquiry. For example, see the series of Discussion

5. CONCLUSION

The wider research policy framework is placing increasing emphasis on cross-disciplinary research collaboration. The rationale is that in a complex world it is not always possible or sufficient to resolve problems within the research paradigm of a single discipline. This appears to be particularly relevant to research into good practice in tax administration.

To analyse effectively good practice in tax administration, requires a genuinely cross-disciplinary and inter-jurisdictional approach. The strengths of this approach to research have been demonstrated in areas such as tax compliance and tax evasion. Tax administration in both these areas has benefited significantly in its development from the different perspectives brought by the different disciplines.

However, it is apparent that although compliance and evasion have attracted cross-disciplinary research collaboration, this does not extend generally to other areas of tax administration. Yet, the examples in Part 3 identify the benefits of this approach. They also emphasise how important it is to be clear exactly what approach is being taken, from which disciplinary perspective and why. Equally important is to understand the significance of context and the nuances it can bring to research. Perhaps, as McKerchar suggests, there is need for researchers to build confidence in "philosophical research paradigms and strategies of inquiry" different from those with which they are familiar.[117]

If researchers take into account the opportunities that cross-disciplinary research brings, it will substantially enhance the quality of research into tax administration. Instead of just looking for how we might measure and pursue good practice we may well be able to aspire to best practice in tax administration.

117 McKerchar, above n 26, 6.

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Value Added Tax Administration in Ethiopia: A Reflection of Problems

Wollela Abehodie Yesegat*

Abstract
This paper examines VAT administration in Ethiopia and identifies key problems including lack of sufficient number of skilled personnel and gaps in the administration in such areas as refunding, invoicing and filing requirements. The paper suggests that in Ethiopia attempting to implement what is legislated in the main areas (such as refunds) deserves the government's due attention. The study also emphasises the need to strengthen the administration capacity in general and the tax audit program in particular. Furthermore, the paper assesses the assignment of VAT revenue to regional governments and the decentralisation of its administration as a way forward for future research.

1. INTRODUCTION

Ethiopia introduced value added tax (VAT) in the year 2003 as a replacement to sales tax. VAT is the principal source of revenue for the Ethiopian government. For instance, in the 2006–07 fiscal year, federal VAT revenue (on domestic transactions) accounted for about 41 per cent of total federal revenues from domestic sources (EFIRA 2007). Further, since its introduction, VAT has been more revenue productive than sales tax (Teferra 2004). To sustain VAT's revenue role in the government's finance, it is important to ensure that the revenue generated by this tax is raised as efficiently as possible. However, in Ethiopia revenues raised by VAT are usually garnered at the expense of erosion in its salient features. This may be caused by factors including poor VAT administration, i.e., the incapacity of tax authorities to implement the attributes of the tax in practice. A good tax administration is essential in fully implementing the design features of VAT and achieving government's policy objectives at large.

This paper examines VAT administration in Ethiopia. The remainder of the paper is organised as follows. Section 2 presents a brief review of the literature on VAT

* The author is a PhD candidate in the Australian School of Taxation (Atax) at the University of New South Wales and a lecturer at the Addis Ababa University, Ethiopia. The author would like to thank Binh Tran-Nam and Margaret McKerchar for their invaluable comments and suggestions. The author would also like to thank Richard Krever, Michael Walpole, Fiona Martin and Kathryn James for their helpful comments when an earlier version of this paper was presented at the *20th Annual ATTA Conference* held in January 2008 at University of Tasmania, Hobart. Finally, the author wishes to thank an anonymous reviewer for constructive comments.

administration. Section 3 presents the methods adopted. Section 4 presents VAT administration practices in Ethiopia with respect to the main administrative tasks, administrative costs and the administrative organs (the issue of who should administer the tax). Finally, conclusions and limitations of the paper are presented in Section 5.

2. LITERATURE REVIEW

Surveys of taxpayers and tax practitioners (mainly accountants in the private practice) on VAT compliance costs in Ethiopia were conducted from mid November 2006 to July 6, 2007. These surveys were conducted using semi-structured questionnaires designed to elicit both quantitative and qualitative data on compliance costs and problems in the VAT system. Both surveys were conducted using face-to-face interview method.

The sample size for the taxpayer and tax practitioner surveys was 269 taxpayers and 33 tax practitioners. With respect to the taxpayer survey, because of problems (including difficulty of locating potential respondents and lack of cooperation and willingness from them) interviews were conducted with only 193 VAT registered businesses (71.8 per cent response rate). Compared to other compliance costs studies and considering the difficulty of collecting data in poor developing countries such as Ethiopia, a 71.8 per cent response rate was reasonably good.[7] In the case of the tax practitioner survey, face-to-face interviews were conducted with 29 tax practitioners (87.9 response rate).

For the purpose of this paper, the analyses are restricted to survey questions designed to obtain information about the problems in the VAT system. In particular, the paper examines the responses to the taxpayer survey question 'What aspects of the legislation and administrative procedures are problematic for you to comply with the VAT system?' Similarly, the question examined here from the tax practitioner survey is 'Do you have any comments on the VAT system in Ethiopia?' The responses of taxpayer and tax practitioner survey respondents to these questions are summarised and contained in Appendices 1 and 2 respectively.[8]

4. VAT ADMINISTRATIVE PRACTICES

Before turning to the discussion of the tax administration tasks, it is sensible to briefly review the major design features and administrative organs of VAT in Ethiopia. In terms of design VAT is imposed on the supply of goods and services other than exempted supplies (such as bread and milk). VAT is based on the invoice credit method in which taxpayers are given credit for the VAT paid on inputs when it is supported by the relevant documents. The tax is also based on the destination principle
88

are lodged. Non-exporting taxpayers are required to carry forward excess credits to the next five accounting periods; if there are still unused excess credits it is allowed (at least in the legislation) to be refunded within two months from the time of lodging applications.

VAT is administered by the EFIRA, ECA[11] and the Regional Government's Finance Bureaux [12]. The ECA administers VAT on imports into the country. The EFIRA with its VAT department, large taxpayers' office and branch offices (Addis Ababa branch and regional branch offices) administers federal and joint VAT on domestic transactions, while regional governments' finance bureaus administer their own VAT revenues.

With this overview of the design and administration of VAT in Ethiopia the following sections present how the tax authorities perform their responsibilities with respect to the major VAT administration tasks, including taxpayer identification and registration, VAT filing and payment, control of VAT filing and payment, VAT invoicing, VAT auditing, penalties and VAT refunds.

Taxpayer identification and registration

As mentioned previously, the VAT legislation requires businesses undertaking taxable activities in Ethiopia with an annual turnover of ETB 500,000 and more to register for VAT. After the VAT was operational with such a registration requirement, the authority devised forced–registration schemes. These schemes include selective registration requirements that compel all businesses engaged in a specific sector/form of ownership to register for VAT regardless of the level their annual turnover.[13]

In Ethiopia, where the awareness of taxpayers, the culture of paying taxes[14] and the capacity of tax administrators appear to be poor, using sector or ownership specific registration requirements is sensible. However, caution should be exercised in selecting the sectors that should be covered by the VAT. The decision ought to be based on a careful examination of sectors' nature, volume of operations and the level of keeping records.[15] Limiting the number of sectors to be covered by VAT under such a requirement at a manageable level is advisable.

In addition to the sector specific (selected) registration requirement, to encourage VAT registration, government institutions are obliged to transact with VAT registered

[11] The EFIRA and ECA have merged since the year 2008 (Yeneakal 2008).

[12] Ethiopia is a federal country with two self administering cities (Addis Ababa and Dire Dawa cities) and nine regional governments (Amhara, Afar, Oromia, Tigray, Benishangul, Gambella, Somali, Southern Nations, Nationalities and People, and Harari regional governments).

[13] According to this scheme, such businesses as importers, plastic and plastic products factories, computer and computer accessories suppliers, goldsmiths, electronic appliances suppliers, and private limited companies are required to register for VAT.

[14] In discussing the conditions for the choice of an appropriate organisational structure of tax administrations, Vehorn and Brondolo (1999) indicated that the conditions including a taxpaying population that is for the most part inclined to comply with the tax laws if the laws are explained clearly to them do not exist in developing countries.

[15]

businesses for transactions valued ETB 100,000 and above. In general, according to discussion with tax officials, these schemes were designed to help the administration in bringing taxpayers (that were required to register but did not do so) into the VAT net. At March 2008, there were about 32,840 taxpayers registered for VAT (EFIRA 2008).

Examination of survey responses revealed several problems related to taxpayers registration. For example, 13 per cent of (taxpayer survey) and 62 per cent of (tax practitioner survey) respondents indicated the prevalence of VAT unregistered businesses and urged the government's due attention. The dominance of VAT unregistered businesses, according to survey respondents, resulted in uneven market competition and a loss of market share and profitability by registered businesses. Survey respondents identified weaknesses in the tax administration and exclusion of businesses with annual turnover less than ETB 500,000 as the major causes of the prevailing competition problem.

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person. This is a problem for taxpayers[18] that reside in remote areas (where the EFIRA does not have branch offices) and are forced to go to the capital city, Addis Ababa, or nearby cities where the tax authority has a branch office. In addition, in terms of the method of payment, in Ethiopia taxpayers with VAT liability greater than ETB 1,000 may be required to effect payments with bank certified payment orders (CPOs). The use of CPOs is, in fact, to mitigate the problem of insufficient fund balance that might arise from accepting taxpayers' cheques. Nevertheless, such a practice imposes a cost

private sector. Such a phenomenon is likely to impede the recruitment and retention of well trained and qualified personnel, auditors[30]in particular.

Examination of survey outcomes in this connection supports the above assertion. That is, 34.2 per cent of taxpayer survey respondents indicated that tax administrators are not qualified enough and also not capable of handling cases quickly, particularly at the time of audit. These taxpayer survey respondents further indicated that tax administrators lack confidence to make decisions and willingness to help taxpayers. The tax administrators also fail to give consistent[31] information on the same VAT issues. Similarly, 55.2 per cent of tax practitioner survey respondents emphasised the lack of well trained personnel and noted the necessity of staffing the tax authorities with qualified personnel.

In general, the quality of auditors (VAT administrators at large) that appears to be poor coupled with their relatively small number is affecting the effectiveness of the audit program. This is, in turn, likely to impact on the revenue that could be generated through effective audit programs and on the use of effective audits as tools of deterring noncompliance.[32] It is, thus, worthwhile for the government to consider the possibility of recruiting and retaining a sufficient number of qualified VAT administrators, auditors in particular. This can be achieved mainly thr

addition, there are cases where taxpayers convicted of VAT evasion have been fined (both money and imprisonment).[34]

With respect to VAT penalty, 13.8 per cent of tax practitioner survey respondents indicated that the penalty is high. These tax practitioner survey respondents further noted that it is unfair to impose, practically, the same amount of penalty on taxpayers regardless of the amount of VAT un(der)-reported. Similarly, 4.1 per cent of taxpayer survey respondents indicated the lack of consistency in imposing penalties. Respondents of both surveys emphasised the importance of enhancing voluntary compliance and focusing on tax education instead of punishment when there are genuine mistakes.

In general, considering that VAT is still young (introduced for the first time in the year 2003) in Ethiopia, focusing on the implementation of strict penalty provisions (like imprisonment of taxpayers) instead of taxpayers' education may have negative impact[35] on the attitude of taxpayers beyond its deterrence effect. Further, the lack of consistency and transparency in administratively imposing the penalty may open a room for corruption. It is, thus, advisable to try to implement what is legislated in the law regarding penalties (on the financial penalty aspect).

VAT refund

Grandcolas (2005) and Jantscher (1990) noted that managing VAT refunds is one of the challenges of VAT administrations in developing countries. In managing refunds and combating refund frauds, different countries use schemes including denial of refund claims (except to exporters), carrying forward of refund claims, demanding a third party certification[36] of the claim, demanding guarantee, requiring taxpayers to have separate VAT bank accounts, zero rating of supplies to exporters and remission of input VAT on certain goods (mainly capital goods).[37] Some of these schemes are not only to combat refund frauds, but are also intended to reduce the strain on business cash-flows.

Looking closely at the practices concerning VAT refunds in developing countries shows that all developing countries give refunds to exporters and some require other VAT taxpayers to carry forward their excess credits indefinitely (Jantscher 1990). In Ethiopia, as shown previously, for the purpose of refunds, the VAT legislation categorises taxpayers into two groups: zero rated businesses (mainly exporters) and other (non-exporting) businesses. As the outco

voucher system[38] for coffee exporters. According to interviews with tax officials the first cash refund to non-exporting businesses was made in February 2007. In addition, tax officials revealed that refund claimants in the non-exporting business category are mainly importers that claim have excess

federal government. Accordingly, until September 2004, VAT was being administered by the federal government's revenue organs (the EFIRA and ECA). However, since September 2004, the EFIRA has delegated[42] to regional governments the administration of VAT for sole traders residing in their respective jurisdictions revealing the trend in decentralising the VAT administration. As indicated in the literature review, it is crucial to assess the decentralisation of VAT administration within the framework of the whole fiscal system. Consequently, before proceeding to the decentralisation of the administration, the following discussion briefly examines the assignment of VAT revenues in Ethiopia.

Proclamation No. 33/1992 and the Constitution

when the horizontal flow of information betw

It is hence suggested that the government would better look at the possibility of making sufficient resources available for the administration of VAT. Of course, this would be a challenge for countries like Ethiopia where resources appear to be limited. However, considering the role of VAT administration in the overall financial system of the Ethiopian government, allocating reasonably sufficient resources is worthwhile to consider.

Moreover, this paper examined the decentralisation of VAT administration following

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Appendix 2

Summary of responses of tax practitioner survey respondents to the question "Do you have any comments on the VAT system in Ethiopia?"

Summary of responses	Count	Per cent
Failure of tax administrators in fully enforcing the law has caused problems to taxpayers that are part of the VAT net in the form of unfair competition with taxpayers that are required to register but did not do so. The level of the registration threshold also has its contribution to the competition problem. It would be hence worthwhile to consider the possibility of reducing or entirely abolishing the registration threshold.	18	62.0
The treatment of credit sales is creating financial difficulty among traders whose transactions involve credit sales. It would be worthwhile to consider the use of cash basis of accounting.	5	17.2

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Modelling the Effects of Corporate Taxation in the Underground Economy

Konstantinos Eleftheriou*

Abstract

This paper develops a two-sector search model of the labour market in which firms in one sector (the informal sector) evade profit taxes (underground economy). A comparative static analysis is employed to analyze the impact of corporate taxation on unemployment, occupational choice of individuals, mix of jobs, welfare of agents and the size of informal sector. The findings suggest that profit, firing and payroll taxation have the same effects on the above economic variables. However, if a certain condition does not hold, then the number of individuals searching for jobs only in the informal sector decreases with profit taxes. The above result implies that the adoption of active labour market policies, which accelerate the matching process between employers and employees, will mitigate the positive (negative) impact of taxation on the size of underground economy (wages).

1. INTRODUCTION

(ii) The flow of firms out of the taxed sector is not equal to the flow of firms into the tax evading sector and therefore the total number and the arrival rate of vacant jobs decrease. In a Nash bargaining process the former effect increases the outside option (threatening point) of individuals who search only for jobs in the underground sector whereas the latter effect decreases it. If the impact of (i) is greater than that of (ii) on the outside option of those individuals then their welfare unambiguously increases.

Apart from welfare effects, we investigate the impact of an increase of profit and firing taxes on total unemployment and relative sectoral employment (thus measuring the size of the underground sector). We also examine how profit and severance taxes influence the occupational choice of individuals and the mix of vacancies. We find that payroll taxation in Albrecht et al (2006) work has the same impact on the above economic variables with the corporate and the firing tax in our analysis. However, our assumption about the endogeneity of the arrival rate of informal sector jobs is the driving force behind the result, that less people accept only informal sector jobs as corporate income tax or severance tax increase, when the parameter which captures the "technological" advances in the matching process is high enough. This result is the opposite from that of the firing and payroll tax in Albrecht et al (2006). Such a result cannot be obtained in the case of payroll taxation in the Albrecht et al paper, since the arrival rate of informal sector jobs is exogenous. This result also leads us to important policy implications. Active labour market policies favouring technological advances in the matching process between employers and employees (technological advances in the matching process include reforms such as the computerization of employment offices, job advertising on the internet, job-search assistance policies, governmental subsidies into policies helping the matching process etc.), will 'moderate' the

zero– then nobody will work for the informal sector. Moreover, it can be considered as a bit unrealistic. The homogeneity assumption regarding the earnings in the informal sector again limits the effectiveness of active labour market policies in the reduction of the distortionary effects of taxation on wages. In our analysis, individuals

informal). It is obvious that there are situations in real life, where these assumptions are not true. However, such assumptions cannot be incorporated into the limited artificial environment of our model. The policy implications we obtain are logical and well-defined even without these assumptions. Nevertheless, the above cases can be considered as a topic for future research.

$$( ) = \quad ( ) + \delta[\quad ( ) - \quad ( )] \qquad = 1,2 \qquad (2)$$

where $( )$ is the wage received by a worker with skill vector , employed to sector . Equation (2), determines the flow value of employment as the sum of the flow return to employment (the wage) plus the instantaneous capital loss.

Firms

The Bellman equation for vacancies is

$$= - + \frac{(\theta)}{\theta} \quad [\rho ( ) \max\{ \quad ( ) - \quad ,0\}] \qquad (3)$$

Equation (3) incorporates the assumption that is unknown to vacancies before they contact workers and it is only realized when the meeting is taking place. However, firms know the distribution of s'. Thus they form expectations about their capital gain from becoming filled.

The flow value to a firm in sector

Then at the equilibrium wage *, = $\hat{}$, = $\hat{}$ satisfing

$$( ) - ( ) = \frac{( ) -}{1 - \omega \quad \tau} \tag{5}$$

The above condition implies that firms and workers have the same bargaining power. Given the free entry assumption, = 0, equation (5) becomes

$$(1 - \omega \quad \tau)[\quad ( ) - \quad ( )] = \quad ( ) \tag{6}$$

Equation (6) implies that workers and firms have the same decision rule, i.e., if a worker is willing to get employed by a firm in sector then $( ) = 1$ otherwise $( ) = 0$ (a match is formed when there is a positive surplus to the match). By using equations (6), (2) and (4), we get that the wage earned by an individual of type employed in sector is

$$\frac{}{2}[\qquad ( )]$$

Proof: Suppose that $_1 \geq \ _2$. This implies that $_1(\ ) \geq \ _2(\ )$. It can be easily shown that there is an $_2 = \ _2$, such that

$$_2(\ _1, \ _2) = \ (\ _1, \ _2) \Rightarrow \quad (\ _1, \ _2) = \ _2$$

From equation (1) we get:

$$(\ _1, \ _2) = \ (\theta)\varphi[\ _1(\ _1, \ _2) - \ (\ _1, \ _2)]$$

By using equation (2) and (7), we can show that $_2(\ _1) = \dfrac{\varphi\ _1}{2(\ +\delta) + \ \varphi}$. Hence if $_1 \geq \ _2 \geq \ _2(\ _1)$, then $_2(\ ) \geq \ (\ )$ and individuals accept jobs in both sectors. However if $_2 < \ _2 \Rightarrow \ _2 < \ (\ )$, there is no gain from trade with a sector 2 firm and thus workers do not accept jobs in sector 2. Similarly, for $_1 < \ _2$, we get the following Lemma.

Lemma 3

$$_1 \leq \ _1(\ _2) = \frac{(1-\varphi)\ _2}{2(\ +\delta) + \ (1-\varphi)} \qquad 0 \leq \ _2 \leq 1$$

Proof: It is similar to that of Lemma 2.
The economic intuition behind Lemmas 2 and 3 is the following. When the arrival rate

Lemmas 1, 2 and 3 are illustrated in Diagram 1. The blue line is the 45^{o} degree line. On the horizontal axis is the productive capability ($_{1}$) of each individual in sector 1

$$= \int_{2=0}^{1}\int_{1=0}^{1}\lambda(\ ) \quad {}_1 \quad {}_2$$

By doing the calculations, we obtain

$$(\theta,\varphi) \quad = \quad \frac{\delta}{2}\{\frac{(1-\varphi)}{[2(\ +\delta)+\ \ (1-\varphi)][\ \ (1-\varphi)+\delta]}+\frac{\varphi}{[2(\ +\delta)+\ \ \varphi](\ \ \varphi+\delta)}\}+ \quad (17)$$
$$(\ +\delta)\psi\{\frac{4(\ +\delta)+}{[2(\ +\delta)+\ \ \varphi][2(\ +\delta)+\ \ (1-\varphi)]}\}$$

The steady-state employment can be defined as $1-\ $.

Definition 1 $_{V2}$ $_2$, $_1$, θ, , φ

$= 0, \quad = 1,2$,

Let $(\ _1, \ _2)$

$$= \frac{(1-\omega\ \tau)}{\theta\ (\theta,\varphi)}\{\int_0^1 \frac{{}_2[\ \ (1-\varphi)\ {}_2]\delta}{[2(\ \ +\delta)+\ \ (1-\varphi)]^2[\ \ (1-\varphi)+\delta]}\ \ {}_2 +$$

$$\int_0^{2\,(1)}\int_{1\ (\theta,\varphi)}^{2^{-1}(\theta,\varphi)} \zeta\ \ {}_1\ \ {}_2 + \int_{2\,(1)}^1\int_{1\ (\theta,\varphi)}^1 \zeta\ \ {}_1\ \ {}_2\} \qquad (19)$$

where $\zeta = \frac{[2(\ \ +\delta)\ {}_2+\ \ \varphi(\ {}_2-\ {}_1)]\psi}{2(\ \ +\delta)[2(\ \ +\delta)+\ \ ]}$ and ${}_2\,(1) = \frac{\varphi}{2(\ \ +\delta)+\ \ \varphi}$.

Equations (18) and (19) equate the cost of holding a vacancy

as a result of the lower vacancy supply in sector 1 will give an incentive in sector 2 to

parameters are: = 0.5, = 0.3, δ = 0.1, = 0.05 , 0.3

results[12] regarding informal sector as a firing or a payroll tax increases, as long as

Our welfare analysis will focus on the individuals who accept jobs only in the underground sector. This is because under certain conditions their welfare increases with profit tax. More specifically, according to our previous analysis, if (23) holds then $_1$ and the arrival rate of sector 2 vacancies both increase with profit taxation. An immediate result from the increase of $_1$ is the increase of the wage received by the individuals who are employed in sector 2 and their $_2 \leq _1$ (for those individuals $_1$ represents their reservation wage). Moreover, an increase in the arrival rate of jobs in the underground sector decreases the period of unemployment for those searching for sector 2 jobs. Hence, the welfare of individuals with $_2 \leq _1$ (accept jobs only in sector 2) proit tax unambguusly

4.1 FIRING TAXES

Under ng tax hout corporate taxes equation (4) becomes

( ) = [( )] [( )]

$$= \frac{}{\theta\ (\theta,\varphi)}\{\int_0^1 \frac{{}_2[\ \ (1-\varphi)\ \ {}_2]\delta}{[2(\ \ +\delta)+\ \ (1-\varphi)]^2[\ \ (1-\varphi)+\delta]}\ \ {}_2+\int_0^{\ 2\ (1)}\int_{1\ (\theta,\varphi)}^{\ 2^{-1}(\theta,\varphi)}\zeta\ \ {}_1\ \ {}_2+$$
$$\int_{2\ (1)}^1\int_{1\ (\theta,\varphi)}^1\zeta\ \ {}_1\ \ {}_2\}-\frac{\delta\omega}{(\ \ +\delta)}\{[\int_0^1\int_0^{\ 2\ (\theta,\varphi)}\frac{\delta}{(1-\varphi)+\delta}\ \ {}_1\ \ {}_2+\int_0^{\ 2\ (1)}\int_{1\ (\theta,\varphi)}^{\ 2^{-1}(\theta,\varphi)}\frac{\delta}{\ \ +\delta}\ \ {}_1\ \ {}_2 \quad (19b)$$
$$+\int_{2\ (1)}^1\int_{1\ (\theta,\varphi)}^1\frac{\delta}{\ \ +\delta}\ \ {}_1\ \ {}_2]\}$$

The existence of equilibrium can be easily proven (see the Appendix). Following the same procedure with the above subsection, we get $\frac{\theta}{}|_{\varphi=0.5}, \frac{\varphi}{}|_{\varphi=0.5}<0$ (see the Appendix). Hence, an increase in firing tax (when corporate tax is zero) has the same effects as the increase in corporate taxation. In the case of severance taxes, equation (23) becomes

$$\frac{\frac{\theta}{}|_{\varphi=0.5}}{\frac{\varphi}{}|_{\varphi=0.5}}<\frac{(\theta)}{(\theta)(1/2)}=\frac{2\theta}{\kappa(\theta)} \quad (23b)$$

In Albrecht et al (2006) an increase in firing tax will reduce the level of the unemployment rate. In our model the exact opposite result occurs (i.e. unemployment increases in firing tax). This result occurs, because in our analysis the reduction in the job arrival rate is not outweighed by the increasing job duration since it is assumed that there is no endogenous job destruction.

Table 3 presents the results of a simulation of the model described above when (23b) holds. In Table 3, the baseline values of the parameters are $=0.5$, $=0.3$, $\delta=0.1$, $=0.05$, $\omega=0.3$, $=1.5$ and $(\theta)=\sqrt{\theta}$. Table 4 presents the case where (23b) does not hold ($=1.5$, $=0.3$, $\delta=0.1$, $=0.05$, $\omega=0.3$, $=1.5$ and $(\theta)=\theta^{0.5}$).

Table 3. Simulation of the model

% s.1 empl.	% s.2 empl.	s	θ	φ	u	a_2^R	a_1^R

Coles, M., and E. Smith (1996), 'Cross-section estimation of the matching function: Evidence from England and Wales,', 63(252): 589–597.

Giles, D. (1999a), 'Measuring the hidden

As $\theta \to 0$, $\lim_{\theta \to 0}\left(\frac{2\delta[2\delta(\ +\delta)+\ (\ +\delta)+\ 0.5(\ +\delta)]}{(\ +\delta)(\ +2\delta)[\ 0.5+2(\ +\delta)]}\right)=1$,

$\lim_{\theta \to 0}\frac{[2(\ +\delta)\ _2+\ 0.5(\ _2-\ _1)]\psi}{2(\ +\delta)[2(\ +\delta)+\ ]}=\frac{\ _2}{2(\ +\delta)}$,

$\lim_{\theta \to 0}\frac{\ _2[\ 0.5\ _2]\delta}{[2(\ +\delta)+\ 0.5]^2[\ 0.5+\delta]}=0$,

$\lim_{\theta \to 0}\ _2(1)=0$,

$\lim_{\theta \to 0}\ _1(\theta,\varphi)=0$,

$\lim_{\theta \to 0}\ _2(\theta,0.5)=0$,

$\lim_{\theta \to 0}\ _1(\theta,0.5)=0$ (since the reservation values are equal to zero as $\theta \to 0$, the first two double integrals of the above equation are equal to zero). From our assumptions $\lim_{\theta \to 0}\frac{}{\theta}=\infty$. Hence as $\theta \to 0$ the r.h.s of (24) approaches infinity.

As $\theta \to \infty$, the reservation productivities are equal to the 45^o line. Hence the last two integrals of (24) are equal to zero. We get that $\lim_{\theta \to \infty}\frac{}{\theta}\ (\theta,0.5)\int_0^1\frac{\ _2[\ 0.5\ _2]\delta}{[2(\ +\delta)+\ 0.5]^2[\ 0.5+\delta]}\ \ _2=$

$$\lim_{\theta \to \infty}\frac{}{\theta}\lim_{\theta \to \infty}\frac{2[\ 0.5]}{3[2(\ +\delta)+\ 0.5]}\frac{(\ +\delta)}{2[2\delta(\ +\delta)+\ (\ +\delta)+\ 0.5(\ +\delta)]}\ \overset{\text{by applying del Hospital rule}}{=}\ 0$$

Hence as $\theta \to \infty$ the r.h.s. of (24) approaches zero. Moreover as we have shown the r.h.s. of (24) decreases in θ. The above analysis implies that a unique equilibrium exists for $\tau = 0$. The same result is derived in the case of severance tax since $\frac{\delta}{(\ +\delta)}$ does not depend on θ.

Equation (18) describes a downward sloping curve in θ, φ locus ($\frac{\partial}{\partial\theta}|_{\varphi=0.5}<0$ and $\frac{\partial}{\partial\varphi}|_{\varphi=0.5}<0$ (for the proof see below). On the other hand (19) describes an upward sloping curve in θ, φ locus ($\frac{\partial\Gamma}{\partial\theta}|_{\varphi=0.5}<0$ and $\frac{\partial\Gamma}{\partial\varphi}|_{\varphi=0.5}>0$ (the proof is given below).

By substituting $\varphi = 0$ into (18) we obtain

Starting from $\tau = 0$, $\varphi = 0.5$ an increase in τ corresponds to a shift of the curve described by (19) downwards. Hence, if we start from the symmetric case where $\tau = 0$ and $\varphi = 0.5$, and increase τ, there will exist an equilibrium characterized by lower φ and θ. The same analysis is applied in the case of firing taxes.

$$\partial \quad /\partial\theta < 0 \quad \partial\Gamma/\partial\theta < 0 \qquad\qquad \varphi = 0.5$$
$$(\theta)$$

$\partial\ /\partial\theta < 0$ when the derivative is calculated for $\varphi = 0.5$ and the elasticity of (θ) w.r.t. θ is less or equal to 0.5 (the proof for $\partial\Gamma/\partial\theta$ is similar).

Since $\frac{\delta}{(\ +\delta)}$ does not depend on θ, φ the analysis and the results in the case of firing taxes is the same.

$$\partial\ /\partial\varphi < 0 \quad \partial\Gamma/\partial\varphi > 0 \qquad\qquad \varphi = 0.5$$

is the product of the the arrival rate of workers ($(\theta)/\theta$) divided by the measure of steady-state unemployment times the term inside the braces. The derivative of the steady-state unemployment w.r.t. φ is equal to

8 32 TD(()T1j-0.6(0173 TD(/))1.-33..0.40 TD(/)[2

But for $\varphi = 0.5$, $\delta[\delta + \varphi]^2$ is less than $1/(\ + \delta)$ and the last term is equal to zero. Hence, the derivative of the term inside the braces in equation (18) w.r.t. φ, it is always negative if it is evaluated at $\varphi = 0.5$ (the proof for $\partial\Gamma/\partial\varphi$ is similar).

Since $\dfrac{\delta}{(\ + \delta)}$ does not depend on θ, φ the analysis and the results in the case of firing taxes is the same.