



National Law School
of India University
Bengaluru

Reliance Chair on Corporate Law and Governance (RCCLG)

RCCLG WORKING PAPERS

3

February 2025

Informality, Tax Rate and Tax Evasion via Sham Litigation

Dr. Suryaprakash Mishra

Reliance Chair on Corporate Law and Governance (RCCLG)

Website: <https://www.nls.ac.in/chairs/reliance-chair-on-corporate-law-and-governance/>

Informality, Tax Rate and Tax Evasion via Sham Litigation

Suryaprakash Mishra

National Law School of India University, Bengaluru

Abstract

In presence of informality, firms strategically false litigate against the government's tax claims and attempt tax evasion by tax deferment. However, in contrast to the conventional wisdom, our results show that a low tax rate encourages evasion while a higher one can be an effective possible solution to the problems of excessive litigations against the government, delayed tax payments, and evasion.

JEL Codes: H25, H 26, H32, K34, K41 and K42.

Key Words: Informality; Tax Evasion; Tax Rate; Strategic False Litigation.

1. Introduction

Size of the government (as in, public expenditure) depends upon the size of its revenue. Since taxes are the (most) dominant source of government revenue, public expenditure undertaken by the government is a function of tax revenue. In a typical developing country, state-sponsored welfare programs, public investment in health, education, infrastructure etc. are helped much if the government manages to earn decent amount of revenue through taxation. Else, they have to depend on borrowings, expanding public debt, raising cost of private investment and possibly getting into a debt trap.

It is well known that the share of direct taxes is typically lower in a poor country. Tax evasion is one mechanism to generate the cash flow needed to finance production and investment when access to bank or equity finance is restricted. Needless to mention that tax evasion creates a dent in the revenue of the government. However, tax evasion is far more serious a problem in a developing country as it is linked with corruption. A huge literature

exists and interested readers may have a look at a recent compendium by Congleton and Hillman (2015). Specifically for tax evasion problem in the context of developing countries one may refer to Dasgupta and Mookherjee (1998), Marjit and Shi (1998), Marjit, Mukherjee and Mukherjee (2000), Loukas et al. (2015) etc. For issues related to corruption one could look at Marjit, Seidel and Thum (2016), Marjit, Mukherjee and Mukherjee (2000), Marjit, Rajeev and Mukherjee (2000), Olken and Pande (2011), Tanzi and Davoodi (2000) etc.

Recently, Marjit et al. (2021) brought to the fore the role of credit market imperfection and existence of informal credit market and their interaction with the act of tax collection by the government. They highlight the idea that investment in informal credit market promises a substantial premium on the formal sector rate of return and hence may lead to deferred tax payment, adversely affecting the tax revenue collection, at least in the current period. The firms use the litigation process to buy time and defer the said payments, and in the meantime earn greater informal returns. They also suggest upfront payment of the disputed tax amount as a mechanism to counter tax evasion.

The purpose of this paper is to show some novel and interesting results by considering factors that were not considered by Marjit et al. (2021). For instance, we make the probability of adverse verdict ρ exogenous, consider progressive taxation, i.e., $t = t(x)$ and also allow the formal sector firms to invest the after-tax income in the formal credit market while diverting the unreported income to the informal sector. While our results have the intuitive flavor of the results of Marjit et al. (2021), we also have some new results.

The above mechanism no doubt has crucial bearing on the size of the informal sector, in turn impacting policy making. Papers by Kenyon (2008), Capasso and Jappelli (2013), Blackburn, Bose, and Capasso (2012) etc. have tried to relate financial development to the size of underground economy. Greater financial development has been shown to reduce the size of the underground economy. However, recently, Marjit and Mishra (2021) show that political economy considerations of the government translated in policy making plays an important role with regard to the (optimum) size of the informal sector.

The rest of the paper is structured as follows: Section 2 provides the benchmark model. Next section introduces the informal credit market and the last section concludes.

2. Model

(a). Formal Sector and Sham Litigation

Consider a large individually owned firm which has sold goods and earned income of x and is liable to pay tx as tax to the government; we assume progressive taxation (throughout the paper), thus, $t = t(x)$ and $t' > 0$. However, the firm contemplates false litigation to appeal against the tax claim of tx by the government. The suit is filed in the current time frame and the verdict comes in the next one. The firm claims that it has earned $\tilde{x} < x$. There is a probability ρ with which the verdict goes against the firm. Even if x is the correct we assume that in the legal battle there are noises in the judiciary process and the judge can make an error of judgement. Hence, with probability ρ , the firm pays $t(x - \tilde{x})^2$ plus an interest cost r and a penalty $f > 0$ and there is a legal cost $\mathcal{L} > 0$. This is the benchmark model with no possibility of earning informal interest rate.

The maximization problem faced by the tax paying firm is given by,

$$V(\tilde{x}) = (x - t\tilde{x})(1 + r) - \rho t(x - \tilde{x})^2(1 + r + f) - \mathcal{L} \quad (1)$$

Differentiating and optimizing gives the following,

$$-t(1 + r) + 2\rho t(x - \tilde{x})(1 + r + f) = 0$$

$$\Rightarrow (x - \tilde{x}) = \frac{(1+r)}{2\rho(1+r+f)} \quad (2)$$

$$\Rightarrow \tilde{x}^* = \left(x - \frac{(1+r)}{2\rho(1+r+f)} \right) \quad (3)$$

It is worth noting that in the above benchmark model the firm's earnings reporting decision is *independent* of the tax rate (equation (3)).

Proposition 1: *Firm's earnings reporting decision is independent of the tax rate.*

Proof: The tax rate cancels out in the FOC. *Q.E.D.*

Substituting the value of \tilde{x}^* into the objective function gives,

$$V(\tilde{x}^*) = x(1 - t)(1 + r) + \frac{t(1 + r)^2}{4\rho(1 + r + f)} - \mathcal{L}$$

$\pi(x) = x(1 - t)(1 + r)$, the benchmark case, when the firm agrees to the tax claim and obviously there is no litigation. Thus,

$$V(\tilde{x}^*) - \pi(x) = \frac{t(1+r)^2}{4\rho(1+r+f)} - \mathcal{L} = \phi(x) - \mathcal{L}; \phi' > 0 \quad (4)$$

Note that for $x > \hat{x}$ firms will take a chance by falsely litigating against the tax claim. This is induced by the facts that $\rho < 1$ and judgements can be erroneous.

Proposition 2: *Given, t, r, f and \mathcal{L} , \exists a critical earnings level, i.e., \hat{x} , such that $\forall x < \hat{x}$ firms do not false litigate and $\forall x > \hat{x}$ they do.*

Proof: See the above analysis. *Q.E.D.*

(b). Informal Sector and Sham Litigation

We now consider a case where the informal rate of return $R > r$ and define the informal – formal rate of return differential as $\tilde{R} = (R - r)$; clearly $\tilde{R} > 0$. The firm in the formal sector invests $(x - \tilde{x})$ to earn R , claims \tilde{x} to be its true income and invests $\tilde{x}(1 - t)$ in the formal sector to earn r . The firms which belong to the informal sector, can not borrow from banks (due to lack of assets as collateral which are required in order to avail loans); they borrow from the formal sector firms at a higher rate of R .

The objective function of the formal sector firm (the tax paying firm) investing (lending) in the informal sector would be as follows,

$$\begin{aligned} V(\tilde{x}) &= (x - \tilde{x})(1 + R) + \tilde{x}(1 - t)(1 + r) - \rho t (x - \tilde{x})^2(1 + r + f) - \mathcal{L} \\ \Rightarrow (x - \tilde{x}) &= \frac{\{(1 + R) - (1 - t)(1 + r)\}}{2\rho t(1 + r + f)} \\ \Rightarrow (x - \tilde{x}) &= \frac{\tilde{R} + t(1 + r)}{2\rho t(1 + r + f)} \end{aligned} \quad (5)$$

$$\Rightarrow \tilde{x}_i^* = \left(x - \frac{\tilde{R} + t(1 + r)}{2\rho t(1 + r + f)} \right) \quad (6)$$

(6) > (3) as $\tilde{R} > 0$. This is the additional incentive for false litigation.

Similarly, as above,

$$V(\tilde{x}_i^*) - \pi(x) = \frac{\{\tilde{R} + t(1 + r)\}^2}{4\rho t(1 + r + f)} - \mathcal{L} = \phi(x) - \mathcal{L}; \phi' > 0.$$

With $\tilde{R} > 0$ (more) firms of (even) smaller turnover will engage in false litigation. Note that now, in presence of the informal sector, firm's earnings reporting decision is *dependent* on the tax rate (equation 6).

Proposition 3: *Earnings reporting by firms is inversely related to the informal – formal rate of return differential.*

Proof: $\frac{\partial(x-\tilde{x})}{\partial\tilde{R}} = \frac{1}{2\rho t(1+r+f)} > 0$ and $\frac{\partial\tilde{x}_i^*}{\partial\tilde{R}} = -\frac{1}{2\rho t(1+r+f)} < 0$. *Q.E.D.*

In the evasion literature, there is a divergence between the theoretical results and empirical findings; most of the theoretical results show that reported income is an increasing function of tax rate while empirical findings say the opposite. Two seminal theoretical contributions have been Allingham and Sandmo (1972) and Yitzhaki (1974). Papers analysing other issues on tax compliance behaviour are Dhimi and al-Nowaihi (2007), Slemrod (2007), Slemrod & Yitzhaki (2002) etc. However, the tax payers' behavioural response is a function of the degree of intervention by the tax authorities*. For a survey on the tax rate and tax evasion, one may refer to Freire-Seren & Panades (2013), which focusses on policy debates claiming that evasion is an increasing function of the tax rate. However, theory does not have a clear prediction on this.

It is well known in the tax evasion literature that when penalty is on total tax evaded rather than on total income misreported, tax rate does not affect the optimal deviation as t cancels out in the first order condition. Here we show that as t increases the extent of false claim will be lower, i.e., better reporting by the firms reflecting greater compliance. Also note that the $(x - \tilde{x})(1 + R)$ term is due to the presence and functioning of the informal credit market. Thus, this extra benefit compensates the extra net marginal cost for non-compliance relative to the usual case, reflecting higher attempted evasion. Thus, the *level of compliance* will be less for any given tax rate in this case. But now tax rate is an effective policy instrument unlike in the standard case. Higher rate of tax actually increases that extra net marginal cost of non-compliance, which would be zero in the usual case. Therefore, *higher tax will imply greater compliance* in terms of the lower value of false litigation.

* Slemrod & Keen (2017) analyse optimal intervention by tax administration and develop a summary measure namely “enforcement elasticity of tax revenue” to measure the behavioural response to such intervention much as the elasticity of the taxable income measures the response to the tax rate.

Proposition 4: *Low tax rates encourage firms to report less earnings and evade more.*

Proof: If t is very low then the optimum for the firm is to report zero income (equation (6)) and the entire income is diverted to the informal sector. This happens because of the term $\frac{\bar{R}}{t}$ with equation (6). Note that for very low t this term is very high and the reported income has to be zero. This means that the entire income earns the informal sector premium. While for higher tax rates the opposite holds. *Q.E.D.*

Thus, tax rate comes out to be a very effective tool to enhance reporting and discourage evasion by the firms. However, there is a range with regard to the tax rate having the said effects on reporting and evasion. The said relationship between reporting and evasion by firms may be a theoretical explanation for the Laffer curve.

Proposition 5: \exists a critical tax rate, \hat{t} such that $\forall t \in (0, \hat{t})$ as the tax rate increases the earnings reporting (evasion) by firms increases (decreases) and $\forall t > \hat{t}$ as the tax rate increases the earnings reporting (evasion) by firms decreases (increases) while for $t = \hat{t}$ the earnings reporting (evasion) by firms attains stationary value.

Proof: Also, from equations (5) and (6) we have that $(x - \tilde{x}) = (x - \tilde{x})(t)$ and $\tilde{x}_i^* = \tilde{x}_i^*(t)$. And $\frac{\partial(x-\tilde{x})}{\partial t} = -\frac{\bar{R}}{2\rho t^2(1+r+f)} < 0$ and $\frac{\partial^2(x-\tilde{x})}{\partial t^2} = \frac{\bar{R}}{\rho t^3(1+r+f)} > 0$ and correspondingly $\frac{\partial \tilde{x}_i^*}{\partial t} = \frac{\bar{R}}{2\rho t^2(1+r+f)} > 0$ and $\frac{\partial^2 \tilde{x}_i^*}{\partial t^2} = -\frac{\bar{R}}{\rho t^3(1+r+f)} < 0$. Also see the above analysis. *Q.E.D.*

We have just established above that the informal sector's rate of return lures the firms (of smaller turnovers as well) to engage in false litigation against the government regarding the tax claims and invest in the informal sector. Thus, the fact that the informal rate of return surpasses the formal rate of return, i.e., $\tilde{R} > 0$, ultimately leads to aggravation of both the problem of and also the ones due to sham litigation. However, we also show that the tax rate can be a potential policy instrument to improve reporting, discourage evasion and hence enhance the tax revenue. Thus, we have shown *that in presence of the informal sector, tax rate is an effective instrument for containing sham litigation, maximizing earnings reporting and minimizing evasion by firms.*

4. Concluding Remarks

We have taken up a practical policy problem related with tax evasion by firms when they can invest in an informal credit market at higher than the formal rate of interest. This may

lead to strategic excessive and false litigations against the government, delaying tax payments even when firms sell their entire output in the formal sector. Thus, taxation and informal credit market can interact in an interesting way. We show that the tax rate can be a potential solution to the issues of excessive litigations against the government, delayed tax payments and evasion, which not only takes care of the said problems but also may enhance the tax revenue of the government.

Declaration of competing interest

We hereby declare that none of the authors has any conflict of interest with any entity/organization.

Data availability

No data was used for the research described in the article.

Acknowledgements: Discussions with Prof. Sugata Marjit are gratefully acknowledged. The usual disclaimer applies.

References

- Allingham, M. & Sandmo, A. (1972). Income tax evasion: A theoretical analysis. *Journal of Public Economics*, 3(2), 323–338.
- Blackburn, K., Bose, Niloy & Capasso, S. (2012). Tax evasion, the underground economy and financial development. *Journal of Economic Behavior and Organization*, 83(2), 243–253.
- Capasso, S. & Jappelli, T. (2013). Financial development and the underground economy. *Journal of Development Economics*, 101(C), 167–178.
- Congleton, R.D. & Hillman, A.L. (ed.) (2015). Companion to the political economy of rent seeking. *Edward Elgar*.
- Dasgupta, A. & Mookherjee, D. (1998). Incentives and institutional reform in tax enforcement. *New Delhi: Oxford University Press*.
- Dhami, S. & al-Nowaihi, A. (2007). Why do people pay taxes? prospect theory versus expected utility theory. *Journal of Economic Behaviour and Organization*, 64(1), 171–192.

- Freire-Serén, M. & Panadés, J. (2013). Do Higher Tax Rates Encourage/Discourage Tax Compliance? *Modern Economy*, 4(12), 809–817.
- Loukas, B., Adrian, B., Rudolf, K. & Matthias, S. (2015). The hidden cost of tax evasion. *Journal of Public Economics*, 129(C), 14–25.
- Marjit, S., Mishra, S. & Mitra, S. (2021). Tax evasion by tax deferment: Sham litigation with an informal credit market. *European Journal of Political Economy*, 69, 102008.
- Marjit, S. & Mishra, S. (2021). Optimum Size of the Informal Credit Market – A Political Economy Perspective. *CESifo Munich, Germany, Working Paper No. 9252*.
- Marjit, S., Seidel, A. & Thum, M. (2016). Tax evasion, corruption and tax loopholes. *German Econ Rev.* doi:10.1111/geer.12107.
- Marjit, S. & Shi, H. (1998). On controlling crime with corrupt officials. *Journal of Economic Behavior and Organization*, 34(1), 163–72.
- Marjit, S., Mukherjee, A. & Mukherjee, V. (2000). Harassment, corruption and tax policy. *European Journal of Political Economy*, 16(1), 75–94.
- Marjit, S., Rajeev, M., & Mukherjee, D. (2000). Incomplete information as a deterrent to crime. *European Journal of Political Economy*, 16(4), 763–773.
- Olken, B. A. & Pande, R. (2012). Corruption in developing countries. *Annual Review of Economics*, 4, 479–509.bla
- Slemrod, J. & Keen, M. (2017). Optimal tax administration. *Journal of Public Economics*, (forthcoming).
- Slemrod, J. (2007). Cheating ourselves: The economics of tax evasion. *Journal of Economic Perspective*, 21(1), 25–48.
- Slemrod, J. & Yitzhaki, S. (2002). Tax avoidance, evasion and administration. In: Auerbach, A.J. & Feldstein, M. (Eds). *Handbook of Public Economics*, North Holland Publishers, 1423–1470.
- Tanzi, V. & Davoodi, H.R. (2000). Corruption, growth and public finances. *IMF Working Paper*, 00/182, 1–27.
- Yitzhaki, S. (1974). A note on income tax evasion: A theoretical analysis. *Journal of Public Economics*, 3(2), 201–201.