



**Responsible Land Governance:
Towards an Evidence Based Approach**
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**PREDICTING TAXPAYER BEHAVIOUR AND COMPLIANCE:
AN ECONOMIC ANALYSIS OF JAMAICA'S PROPERTY TAX SYSTEM**

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Abstract

Property tax compliance in Jamaica has been described as a national disgrace, yet the reasons why so little tax is collected remain unclear. Tax literature suggests a rational economic trade-off between the benefit of evading tax versus the risk of getting caught and paying a fine, and the tax payer is prepared to take more risk the higher the amount of tax payable. Then there are behavioural reasons, centering on how individual taxpayers think others behave, on the perceived fairness of the tax system and benefits obtained from paying the tax. Property taxation has its own idiosyncrasies, particularly in developing economies. Administration may lack resources to maintain the property tax. Legislation may be unclear regarding who pays, particularly where tenure is customary or informal. Levels of tax may simply be too high. Enforcement action in cases of non-payment may be weak. This paper examines property tax compliance/non-compliance in Jamaica, contextualizing it to provide insights on how the property tax system and land market has been shaping the compliance equilibrium. This investigation focuses on land and property issues; namely the nature of taxable tenure rights and the asymmetry of land and property information between taxpayers and tax administrators.

Key Words: moral hazard problem, New Institutional Economics, tax compliance/non-compliance, transaction costs

Introduction

Tax compliance is critical for the growth of developing economies (Picur and Riahi-Belkaoui, 2006). It is important for two main reasons. First, tax evasion affects the distribution of the tax burden. Secondly, tax revenue is the bread-and-butter of state and local governments (Slemrod, 2015).

Much of the research on tax compliance has concentrated on income tax. But land and property taxation presents some unique challenges in relation to compliance: the need for detailed and regularly updated information on units of land and property and their owners and occupiers being key. These, coupled with administrative issues such as corruption, malpractice, lack of resources, ineffective enforcement and an inability to enact legislation, and country specific factors such as the culture and ethics, provide justification to investigate property tax compliance in developing countries. Slemrod and Yitzhaki (1996) argued many models used in the literature ignore the aforementioned issues because of the measurement challenges they present to researchers. But in developing economies, these issues are important, because land and property tax is often administered in environments characterized by limited administrative capabilities, diverse cultural and ethical traits among taxpayers with strong sentimental attachment to property.

This paper investigates how institutional features maintain the property tax compliance equilibrium in Jamaica. The paper provides preliminary insights on how formal and informal rules of the property tax system and land market, collectively shape the compliance equilibrium.

Literature Review

Tax Compliance

Defining compliance

The traditional economic school of thought portrays taxpayers as utility maximisers. As such, using Rational Choice Theory, the decision to evade or comply is an economic trade-off between the benefit of evading and the probability of detection. Allingham and Sandmo (1972) viewed the decision to pay income taxes as a portfolio allocation problem. Accordingly, they regarded tax evasion as a risky asset in which the taxpayer must decide what portion of their income to invest. If a taxpayer is risk averse, then (s)he will be compliant. However, if the taxpayer participates in evasion, (s)he takes on the risk of being detected and penalized (Ritsatos, 2014). Allingham and Sandmo (1972) argued that the probability of detection or tax penalty (if detected) increases compliance. They also suggested that the probability of detection would be higher for a taxpayer with multiple sources of income. The model assumes a taxpayer would first underreport income sources with the lowest probability of detection and then underreport income sources with a higher probability of detection (Slemrod, 2015). Thus the probability of being caught increases with the amount of income evaded. Subsequent research demonstrated a positive relationship between tax rates, evasion and enforcement costs (Yitzhaki,

1974), that higher tax rates increase evasion (Clotfelter, 1983, Crane and Nourzad, 1985, Cowell and Gordon, 1988, Panades, 2004, Cabelle and Panades, 2007) and lower rates increase compliance (Alm *et al.*, 1990).

Allingham and Sandmo's 'Deterrence Model' has faced some criticism in terms of its inability to handle the heterogeneous nature of taxpayers (Scotchmer and Slemrod, 1989 and Slemrod, 1989) and model misspecification (Cuccia (1994) cited in Devros (2014), p19). Consequently, different approaches were used to investigate tax compliance. Spicer (1974) compared the quality of services provided to taxpayers to the amount of taxes they were required to pay and Song and Yarbrough (1978) investigated the effect of taxpayer ethics and values on compliance. These studies demonstrated that ethics and equity have a significant impact on tax compliance.

Tversky and Kahneman's Prospect Theory (1979) challenges Rational Choice Theory, on which the Deterrence Model is based, by arguing human decisions are not always optimal; human responses vary as they are framed by the environment in which individuals are socialized and trained. A fundamental aspect of Prospect Theory is bounded rationality (Samson, 2016). The core of this principle is the belief that the human mind should be analyzed relative to its environment. Thus, humans make decisions under constraints such as imperfect knowledge and computational challenges. This suggests humans are incapable of making the best decisions at all times (Kahneman, 2003). Thus, Alm *et al.* (1992 and 1995) stressed the need to explore tax behaviour, arguing that there are 'irrational' taxpayers who comply even though evading makes more economic sense. In this regard, Prospect Theory creates a platform on which Social Psychology and Economics can merge to form a theoretical framework for studying irrational taxpayer behaviour. Such 'behavioural' tax compliance studies have adopted two approaches: the first incorporates research on the role of ethics in taxpayers' decisions and the second includes studies that explore cognitive attitude-behaviour among taxpayers.

The ethical approach investigates taxpayer beliefs, culture, social interaction with others and sentiments. Jones (1991) argued individuals are affected by six attributes of moral issues when making moral decisions: magnitude of consequences, social consensus, probability of effect, temporal immediacy, proximity and the concentration of effect. Jones added that, collectively, the characteristics of a moral issue determine decision-making and behaviour. The ethical approach suggests if taxpayers believe evasion is unethical then compliance will be high. Alm *et al.* (1992) indicated that a vast majority of taxpayers were compliant even though the probability of detection was low.

The ethical approach has also been extended within the theory of trust. Literature in this area is underpinned by the belief that it is reasonable to expect a strong relationship between compliance and trust in institutions. Torgler (2003a) demonstrated that a strong relationship exists between direct participation rights of taxpayers in a government's decision-making process and tax morale.

Additionally, Feld and Frey (2002) indicated tax morale increased when tax administrators treat taxpayers with respect, and that a relationship of mutual beneficial economic exchange exists between taxpayers and the state. Torgler (2003b) suggested that trust in the political process has a positive effect on compliance, arguing that policy makers must make the creation of a stable and fair tax system a priority. Empirical evidence from Torgler (2003c) implied trust in government, religious beliefs and pride in citizenship were drivers of tax morale. Frey and Torgler (2007) also found strong evidence to suggest that payment behaviour of third party taxpayers significantly influenced tax morale: if taxpayers believed the social norm was evasion, then tax morale would be low. They also suggested accountability, political stability, government efficiency, control of corruption and rule of law are determinants of tax morale in European countries. Bergman (2009) provided strong evidence that accountability, political stability, corruption and weak governance systems were drivers of tax evasion in Argentina. Hindriks *et al.* (1999) demonstrated that tax compliance was higher when taxpayers have high levels of trust in their government. Gilligan and Richardson (2005) also found a strong relationship between taxpayers' perceptions of tax fairness, legitimacy and tax attitudes among taxpayers in Hong Kong and Australia. Uslander (2007) showed a strong positive relationship between trust in government and compliance. Barone and Mocetti (2009), Castro and Scartascini (2013) and Ortega *et al.* (2013) suggest taxpayer attitudes are better and compliance rates are higher when taxpayers are satisfied with government performance and are able to see how tax revenue is spent. James (2012) argued tax administration affects taxpayer morale because it influences a taxpayer's perception of the tax system. As a result, how a tax is administered can affect a taxpayer's intrinsic willingness to comply. Tax administrators need to be knowledgeable on the incidence of benefits received from the tax, the distribution of tax liability across income groups and the distribution of income across income groups.

The ethical approach also incorporates studies that explore the effects of social interaction on compliance. Wenzel (2004) revealed that, when taxpayers belonged to a social group that has high moral value for compliant behaviour, compliance was higher. Fortin *et al.* (2007) showed fairness and horizontal equity increase compliance. Kirchler *et al.* (2008) presented the Slippery Slope Framework (SSF) as a model which focused on the psychological tax contract between taxpayers and tax authorities, synthesizing the ethical approaches of tax morale and trust in institutions. The SSF is a theoretical model that may be used to analyze the relationship between taxpayers and tax authorities and how that relationship influences the social norms and interactions of taxpayers. The framework assumes the psychological tax contract reduces the need for punitive enforcement measures. But where this contract is broken, powerful enforcement mechanisms are needed to ensure compliance. Fischer and Schneider (2009), Ruiu and Lisi (2011) and Muehlbacher *et al.* (2011) found empirical support for the SSF. Lozza *et al.* (2013) used the SSF to examine the relationship between political ideologies and tax compliance and revealed different levels of compliance among taxpayers of

different political ideologies: left-wing taxpayers were more compliant than right-wing taxpayers. However, the latter were more sensitive to the power of tax authorities, and so their tax behaviour was more elastic to enforcement measures. This finding implies there may be instances when punitive enforcement mechanisms increase compliance.

More recently behavioural economists have utilized a cognitive approach to examine tax compliance, grounded in Social Cognitive Theory (SCT) and self-efficacy. SCT suggests when people observe model performing behaviour and its consequences, they remember and use it as a guide. SCT emphasizes that humanity's survival is tied to humans replicating the behaviour of each other. Therefore, whether an individual is congratulated or sanctioned for their behaviour, will determine the outcome of their decision. Self-efficacy occurs when an individual trusts their ability to perform a task contributes to how a person handles a situation (Bandura, 1986). It is a measure for the amount of effort an individual will use to achieve a goal. Within the context of SCT, self-efficacy is integral because behavioural models often use social modelling and persuasion to increase self-efficacy and a desired behavioural outcome. Empirical studies that test SCT and self-efficacy utilize treatment messages to show how they can modify taxpayer behaviour. These messages are sent to taxpayers to measure their effect on compliance. Slemrod *et al.* (2001), Coleman (2007), Kleven *et al.* (2011) and Hallsworth *et al.* (2014) found that such messages significantly improved compliance. Torgler (2003c) showed that provision of public goods, moral suasion and a positive reward for compliance all increased compliance significantly, although a later study revealed that moral suasion had no significant effect on compliance. Del Carpio's (2014) study showed that including the payment deadline was particularly effective in improving compliance.

To summarize, tax compliance literature identifies the following influences on tax compliance:

1. Systemic
 - a. Macroeconomic factors: inflation, currency value, economic activity
 - b. Political stability and public participation in government decision-making
 - c. Governance: accountability, performance, corruption and malpractice
 - d. Taxpayers' income profile
 - e. Tax rate or liability: high burden can lower compliance, but so can a low burden
 - f. Weak enforcement: probability of detection of evasion and severity of punishment

2. Behavioural

- a. Taxpayers' attitude to risk
- b. Link between tax payment and tax expenditure
- c. Perceived quality of service in return for taxation
- d. Perceived fairness of tax
- e. Trust in government
- f. Beliefs and morality amongst taxpayers, including perceived actions of fellow taxpayers

Tax compliance literature has predominantly focused on the income and sales tax. However, a land and property tax (LPT) has its own unique features, which may contribute to the literature by investigating other factors that may influence a taxpayer's decision to evade or comply. The following sub-section explores the peculiarities of a LPT and outlines important gaps in property tax compliance literature that could be addressed by investigating property tax compliance/non-compliance in developing countries.

The Land and Property Tax

Although a land and property tax (LPT) may be regarded as one of the oldest forms of taxation, there are relatively few studies on taxpayer compliance. This may be because, compared to other forms of taxation, such as income tax or sales tax, an LPT displays some unique characteristics.

The tax relies on the identification and recording of taxable units of land and property together with the persons liable to pay. This information is subject to frequent change as people move and land and property changes over time. It is for this reason that the tax is usually administered locally, although in some jurisdictions, central and local governments jointly administer the tax. Elected local officials often manage the tax. Thus, tax administrators may be affected by local influences, thereby making property tax administration a political process that may positively or negatively affect compliance. The political economic setting of the LPT is one that may require local officials to yield to the requests of taxpayers and societal groups, in order to secure their re-election. Thus, taxpayers can dominate the power game at the local level (Bahl & Wallace, 2008; von Haldenwang, 2015).

Typically, the tax liability is assessed as a proportion of some measure of 'value' of each unit of land and property, and everybody pays. Generally, a tax district would determine a tax rate that will yield the amount of revenue required to fund local government activities and effective tax rates normally range from 1-2% of market value. But often some types of property are treated preferentially through de-rating and exemptions, or assessed at different percentages as a result of tax policies. For example, Jamaican property taxpayers can make an application for one of three types of reliefs: 1) Statutory Relief which is given when the market value of a property exceeds its existing use value 2)

Agricultural De-rating that is given to agricultural lands for a period of three years and 3) Special Discretionary Relief which is granted to taxpayers suffering from poverty (Jamaica Tax Administration, n.d.). Although under-assessments may be more desirable to taxpayers, for the tax collector, under-assessments conceal the real distribution of the tax burden. Where the tax is unfair, evasion may be prevalent.

A Land and property tax is a wealth tax; occupiers of high value properties pay more tax. Generally, this seems fair, but in certain circumstances it may be inequitable. Occupiers who are capital rich-cash poor may find themselves unable to meet the tax liability without first releasing capital. It may also be difficult to justify high levels of tax liability on a 'benefits-received' basis. The tax may only be perceived as fair when taxpayers can visibly see the benefits they are receiving. McCluskey *et al.* (1998) argued, property taxpayers in democratic societies will be unwilling to comply if tax services are poor and insufficient.

The administration of a land and property tax can be resource intensive. Not only must details of taxpayers and tax payments be maintained but also the land and property tax base itself requires regular revaluations. Taxable units of land and property are heterogeneous and often changing, meaning that administration is a data intensive process. If revaluations become infrequent, the number of appeals can be high and compliance low. These problems are accentuated in developing economies with inadequate resources.

Allen (1936) notes that usually LPT is not enforced on taxpayers but on the property, by placing a lien on the property and selling it. Although punitive, in cases where administrators lack taxpayer profiles, delinquent taxpayers can relocate to other jurisdictions, thereby forcing governments to sell the property. However, in countries with a heavily burdened court system, the sale may take months or even years. As a result, the tax enforcement mechanism may not have the immediate legal effect that is required.

Infrequent revaluations of the tax base may result in numerous tax appeals, and this can reduce the amount of tax revenue collected if taxpayers are not required to make full payment until the appeal is settled.

Tax collectors have long argued that immediate and rigorous enforcement is needed to ensure compliance. Payment extensions, low penalties and long periods of delinquency before initiating property seizures work against this (Smith, 1936).

These systemic characteristics, peculiar to LPT, may influence compliance, particularly in developing countries. McCluskey and Franzsen (2001) provided strong evidence that property tax compliance was low in developing countries such as Kenya and Jamaica. Bird and Slack (2002) concluded that property tax arrears are high in countries where enforcement is weak and where there are insufficient

resources or expertise to administer the tax: in Kenya for example the average compliance rate was 50%.

The peculiarities of LPT can result in administrative malpractice, corruption and rent seeking behaviour that may reduce taxpayers' trust in the government and negatively influence taxpayer morale and compliance. For example, it is possible for locally elected officials who oversee the administration of LPT to make decisions about the tax that favor sub-groups in their jurisdiction. The number of support structures which property tax administration relies on, is another unique feature that is critical to the efficiency and fairness of the tax system and its ability to attain high compliance rates.

Customary land rights can dominate land tenure in developing countries and in countries where customary land rights have largely been unrecognized by the legal code, but allow the holders of such rights to pay land and property tax, some aspects of the tax base may be hidden and some drivers of compliance may be unknown.

Intuitively, the presence of private and customary land rights in a land market makes the tax base more complex. In an environment of limited resources, weak enforcement and customary land tenure, the ability to attain high compliance rates depends heavily on the production and provision of quality tax goods and services. Thus, where enforcement is lacking and some tenure rights are undocumented, the tax collector relies on the buy-in of the taxpayer in order to achieve optimal compliance rates. It follows, that when the quality of tax goods and services is poor, compliance rates will be low.

Unlike income or sales tax, a property taxpayer's liability is calculated and provided by the government. As a result, there is no need for the tax collector to audit individual taxpayers. Therefore, it should be more difficult for a property taxpayer to evade tax. However, in land markets with customary land tenure, the socially and culturally constructed meanings to terms such as ownership and tenure, which overlays the legal code, helps to position the tax collector-taxpayer relationship within a broader socio-legal context, that not only affects the nature of the economic exchange between the tax collector and taxpayer, but questions the validity of the mechanisms that are being used to capture taxpayer data and collect tax revenue.

The presence of customary land rights alters the taxpayer-tax collector relationship, because where tenure rights are concealed in a private land rights system, it forces, the tax collector to physically find the taxpayer in order to collect the tax. Such a situation increases search and information costs, provides an opportunity for rent seeking behaviour and arguably, gives the taxpayer a more dominant position than the tax collector. As such, it is critical that the institutional framework of the tax efficiently facilitates the data and revenue collection processes.

The Gaps in Compliance Literature

Tax compliance literature has focused on systemic variables such as tax penalties, audits and the probability of detection, when investigating tax compliance/evasion. In order to conduct empirical analysis on these variables, accurate panel and time series data on taxpayer behaviour in response to a change in tax rates, penalties and audits must be available or can be obtained. In developing countries these datasets may be absent, and the infrequency of revaluation exercises makes it difficult to utilize econometric models when solving the tax compliance puzzle. Another shortcoming of the Deterrence Model, lies in the fact that it has not addressed how other systemic features may be influencing the tax compliance/non-compliance phenomenon.

In challenging the Deterrence Model, the Behavioural Paradigm/Norms Model has shown that non-economic factors affect taxpayers' decisions. Studies from the Behavioural Paradigm, frequently used surveys to measure the relationship between taxpayer behaviour and behavioural variables. Although the approach has provided fruitful insights into behavioural factors affecting taxpayer behaviour, surveys are unable to capture the marginal utility of taxpayers. At best, surveys will provide researchers with indicators of average utility and taxpayer preferences. It may also be the case that the perception of taxpayers is based on their beliefs about the behaviour of other taxpayers, which may be incorrect. In addition, not all behavioural tendencies of taxpayers can be (easily) observed.

Another shortcoming of the Behavioural Paradigm, is the absence of literature on how or under what conditions, behavioural factors have a more dominant influence on taxpayer decisions, than systemic factors. As a result, the Norms Model has not been able to prove causation. Although this is a weakness of the model, there is an implicit benefit of this shortcoming. The Norms Model demonstrated that both behavioural and systemic factors are creating and sustaining the compliance/non-compliance equilibrium.

The logical argument can be made that weak enforcement and/or loopholes in tax legislation provides an opportunity for behavioural factors to supersede institutional factors in the decision making process undertaken by taxpayers. Thus, under the assumptions of strict legislation and high probability of detection rates, *ceteris paribus*, it is likely that taxpayers will comply, regardless of their perceptions or personal opinions about a tax. The argument implies the institutional framework of a tax has an instrumental role in defining compliance.

Mikesell and Liu (2013) suggested developed countries were not affected by low property tax compliance rates and revenue. Bird and Slack (2008) also recommended that developing countries should use a bottom-up approach to decentralize the LPT and increase compliance rates. Although this recommendation is seemingly clear, when a LPT is administered in an environment with two title registration systems, there is a greater need to examine the type of data the institution captures, the data collection mechanisms/tools and data application processes. In particular, the LPT literature

suggests the presence of customary land tenure in the land market makes the tax base and taxable units more complex. Recent literature on informal tenure in Latin America suggests, informal tenure holders are compliant property taxpayers, because compliance is perceived as a way to legitimize their tenure (Smolka and De Cesare, 2011 in UN HABITAT, 2011).

In addition, LPT literature has focused primarily on the administration of the tax in a decentralized environment and seemingly less attention is given to developing economies which adopts a more centralized approach to administering the tax. Although there are African countries, with the mix of customary and formal private land tenure rights that have successfully decentralized their LPT, there appears to be an absence of literature that investigates whether decentralization results in high compliance rates. Jiboa and Prichard (2015) demonstrated that decentralization significantly increased revenue collection, but noted the increase was from a low base. They also explained that no official statistics on compliance were available.

It may be argued that empirical research on the institutional dynamics and its influence on the compliance outcome is needed. Franzoni (1998) wrote: “Much work remains to be done to ascertain the impact on compliance of less striking but nonetheless important procedural and institutional factors” (p.68). He concluded that research on the impact of institutional factors on the compliance outcome was still in its infancy.

Method and Analytical Framework

This paper adopts a case study approach to investigate the tax collector-taxpayer relationship in a small island developing economy. Jamaica has been selected as the study location for this paper. Like other developing economies, Jamaica struggles to attain high compliance rates. Her property tax compliance rates are generally in the range of 50-60% (Thomas, 2015 cited in Eubanks, 2015). However, she stands out in comparison to other developing countries, because she has fully a computerized land administration system and conducts property revaluation exercises more frequently than other developing countries.

In this paper, the property tax system and land market are viewed as two inter-connected organizations that work together to create an economic outcome (i.e. the compliance/non-compliance equilibrium). The property tax system represents the tax collector and the land market, is viewed as an institutional arrangement that frames taxpayer behaviour within a country that adopts a private land rights system.

In this regard, the New Institutional Economics (NIE) of Markets Framework is used to understand the interactions between the institutional mechanisms which underpin the property tax collector-taxpayer relationship. The NIE school of thought rejects the rationality assumption of orthodox economics and analyses the coordination costs within a firm and its associated transaction costs under

the assumptions of positive transaction costs, bounded rationality and imperfect foresight (Richter, 2007). New Institutionalists contend, coordination costs within a firm and its associated transaction costs, are an outcome of its ability to purchase inputs from other firms and then convert those inputs into products, which also depends on its coordination and transaction costs (Coase 1995, cited in Coase, 1998, p.73). In summary, the NIE of Markets Framework, facilitates an analysis of the interaction between market actors (i.e. the tax collector and taxpayer) and the rules of the market (Hurrelmann, 2011).

The case study examines the institutional mechanisms of the property tax system and land market to provide insights into the interaction between the tax collector and taxpayer and the potential implications of their interaction on Jamaica’s compliance equilibrium.

Findings and Analysis

The Property Tax System

The Jamaican Property Tax System can be described as a unitary organization that is headed by Cabinet. The island’s recurrent LPT (the property tax) is charged at a percentage of a parcel’s open market value. Although the tax is centrally administered, various aspects of billing, data collection, production, revenue collection and enforcement processes are undertaken by sub-national units in the government. Figure1 (below) and Table 1 (on the following page) illustrate the organizational structure of the property tax system and responsibilities of each agent in the tax administration process.

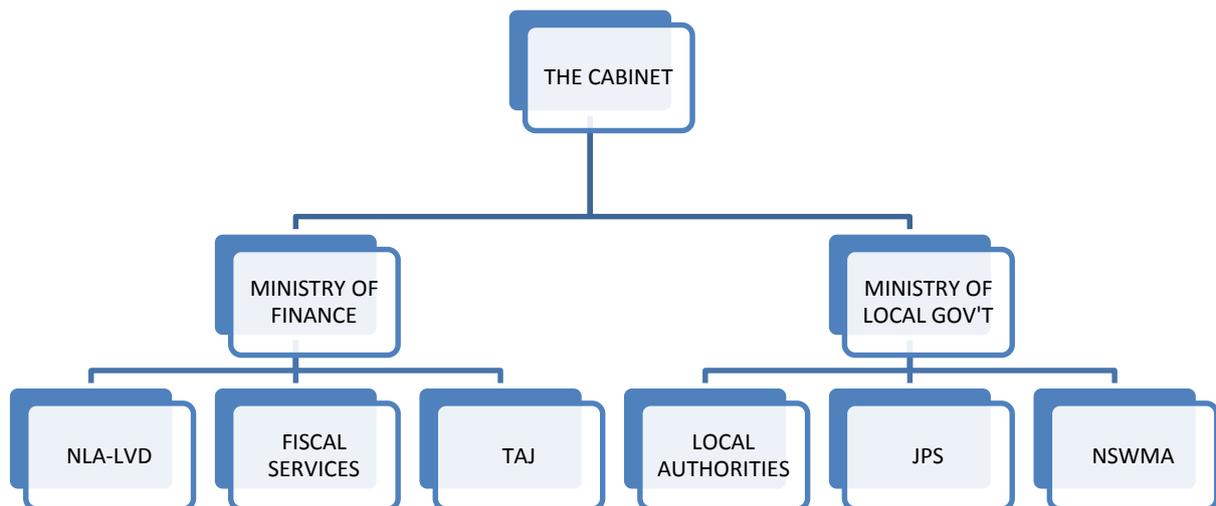


Figure 1. Organizational Structure of Jamaica’s Property Tax System. Source: Wynter (2013) cited in Wynter (2014). Notes: Ministry of Local Gov’t – Ministry of Local Government and Community Development, NLA-LVD – National Land Agency- Land Valuation Division, TAJ – Tax Administration Jamaica, JPS – Jamaica Public Service Company Limited and NSWMA- National Solid Waste Management Authority.

Table 1: Responsibilities of Agents in Jamaica’s Property Tax System

Responsibilities	Agents
Approval of budgets, determination of targets, tax reliefs and exemptions	The Ministry of Finance
Land valuation, assessment and billing	National Land Agency – Land Valuation Department (NLA-LVD), Tax Administration Jamaica, Fiscal Services Department and the Ministry of Finance.
Budget Preparation, Service production and provision	Local Authorities, JPS Co. and NSWMA
Revenue collection and enforcement	Local authorities, TAJ and Ministry of Local Government

Source: Wynter (2014). Formatted by authors. Notes: NLA-LVD – National Land Agency- Land Valuation Division, TAJ – Tax Administration Jamaica, JPS – Jamaica Public Service Company Limited and NSWMA- National Solid Waste Management Authority.

The Land Valuation Department (LVD) of the National Land Agency is responsible for valuing all parcels, updating and maintaining the valuation roll. The LVD is led by the Director of Valuations, who also serves as the Commissioner of Land Valuations.

After the completion of a revaluation exercise, Tax Administration Jamaica (TAJ) determines the liability for each taxpayer, in accordance with the tax rates. In this regard, Jamaica utilizes a progressive tax scale across three value bands. This is presented in Table 2 below.

Table 2: Property Tax Rates

Land Values (JMD)	Tax Rates
< or = \$100,000 JMD	Properties charged a flat rate of \$1,000 JMD
> \$100,000 but less than or = \$1,000,000	\$1,000 plus 1.5 % of unimproved value that is greater than \$100,000
> \$1,000,000	\$1,000 plus 1.5 % of unimproved value that is greater than \$100,000 to a maximum of \$1,000,000 plus 2.0% of unimproved value that is greater than \$1,000,000

Source: Tax Administration Jamaica (2016). Formatted by authors.

Section 3(2) of the Property Tax Act 1903, gives TAJ the responsibility of serving tax assessments on taxpayers. However, in practice, the Ministry of Local Government oversees the process of printing and distributing tax bills. After determining the tax liability for each taxpayer, TAJ transmits this information to the Fiscal Services Department (Fiscal Services). The tax bills are printed by Fiscal Services while the Ministry of Local Government carries out the distribution of tax bills (Wynter, 2014).

The property tax is used to finance “the maintenance and expansion of street lighting, the collection of solid waste and disposal, community infrastructure and civil improvements, repairs to fire stations and rehabilitation of parochial/farm roads and the administration of local authorities” (Jamaica Observer, 24 March, 2013). The Jamaica Public Service Company (JPS) has the responsibility to provide and maintain street lights, while the National Solid Waste and Management Authority (NSWMA) manages the collection and disposal of solid waste. Other tax services such as community infrastructure and civil improvements, repairs to fire stations and the rehabilitation of parochial/farms roads are provided by local authorities.

Local governments are required to prepare and submit their annual expenditure budgets and financial statements to the Minister of Local Government on or before December 1st. They are also charged with the responsibilities of collection and enforcement, alongside TAJ and the Ministry of Local Government. Property taxpayers can pay in person at any of the 29 tax collectorates and bill collection agencies across the island, and online at TAJ’s Tax Portal. Occasionally, TAJ creates temporary collection posts in rural areas, in an effort to boost revenue collection.

Land Tenure Systems in Jamaica

According to the National Land Policy (1996), “lands in Jamaica are predominantly held under the freehold system or leasehold system” (p.29). The UN FAO (2016) identified four types of land tenure in Jamaica – freehold, leasehold, squatted land and state land.

As its name suggest, state land is owned by the government and accounts for 18% of the island’s total surface area or 200,000 hectares (Da Costa, 2003 cited in UN FAO, 2016, para. 4). State land is vested in the Commissioner of Lands (the Commissioner) by virtue of the Crown Property (Vesting) Act 1960. Section 3(2) of the legislation, gives the Commissioner of Lands the power to acquire, hold and dispose of land. However, this power cannot be exercised without the general or written specific authority of the Minister with responsibility for land. Two types of tenure arrangements can occur on state land; government land settlements and leasehold interest in Crown Land.

After emancipation, land was made available for the landless poor based on the recommendations of the 1937 Land Settlement Commission and the Moyne Commission 1938-39 (Hills, 1965; Haughton, 2002). The Government Land Settlement Programme was created to enhance the social wellbeing of the poor while stimulating agricultural production. Essentially, recipients of lots in a land settlement are given the right to use and occupy the lot provided to them, while paying for them in instalments. Each settler is given 25 years to complete their payment. After making full payment, settlers are given the registered title for the parcel assigned to them. In 1892 Jamaica had 359 land settlements. By 1938, there were 26,913 land settlers, dispersed across 197,036 acres of land (Estate Settlement

Schemes cited in Hills, 1965, p.70). In 2002, the average number of land settlements in each parish was 30 (Haughton, 2002).

There appears to be an absence of clear-cut legislation on the establishment of land settlements, the process of selecting sites for them and the procedure for determining the price of lots. In practice, the price of each lot is based on the total infrastructure cost and estimated value of land. This figure is then shared across all lots, based on the lot size of each parcel. In many instances, settlers complete their payments in excess of 25 years. As a result, the provision of registered title is normally delayed (Haughton, 2002).

After annexation from the British Empire, all land parcels became property of the Crown. Land was granted by Royal Patents to colonists for the payment of quit rents. When quit rents were not paid, several acres of properties were forfeited to the Crown. Members of the peasant class were allowed to purchase forfeited lands and some were able to purchase lands from landowners. Colonists who received grants of land by Royal Patents were given registered titles. However, the cost of taking out registered titles was prohibitive for most ex-slaves. In some instances, colonists gave grants of lands to freed slaves without a title, who interpreted that ownership belonged to the family in perpetuity (Clarke, 1953). Thus, there are three types of private land owners in Jamaica. They are: 1) owners whose properties are registered under the State Registration of Titles System, 2) those whose properties are registered under the Common Law System and 3) individuals who 'own' land without having a title as proof of ownership (owners of 'titleless' land). All lands not registered under the State Registration of Title System are known as unregistered lands.

The Registration of Titles System is governed by the Registration of Titles Act 1889. Under this system, an instrument of transfer is used to convey the ownership of land. Properties registered under the Registration of Titles Act are known as registered properties and their titles are recorded at the Registrar of Titles Office. An owner of the fee simple interest in registered land can be the sole owner, a joint tenant or a tenant in common. Although uncommon, individuals may also possess a life estate interest in registered land.

The Registration of Titles Act does not recognize common law titles as conclusive proof of ownership. As a result, owners of unregistered properties with common law titles are required to provide a root of title for 30 years, when making an application for registered title. If the owner is without any documented proof of ownership, he or she is required to prove a root of title for 40 years (The National Land Agency, 2004).

Under the leasehold tenure, individuals, organizations and other legal entities have the right of occupation, exclusive possession and in some instances, the right to earn an income from a property, for a specific period of time. In Jamaica, properties are leased by the government and by private

individuals. “Approximately 21 percent of population lives on rented/leased lands” (Nadelman, 2008 cited in UN FAO, 2016, para. 2).

The Common Law System is governed by the Records Office Act 1879, the Records of Deeds, Wills and Letters Patent Act 1681 and the Conveyancing Act 1889. “Under the Common Law System, a deed of conveyance is used to convey ownership to a purchaser and what is conveyed is an equitable interest in land” (Minott and Noel, 2008, p.1). Owners are given a common law title and the deed of conveyance is recorded at the Records Office.

In the Pre and Post Emancipation Era, English Common Law was regarded as a comprehensive legal system to colonists. But once ex-slaves purchased and received land, a new layer of experience and set of traditional beliefs in relation to the asset, appeared in the practice of inheritance and transmission of land. This new system known as Family Land Tenure, brought with it socially constructed meanings to the legal terms ownership, right and claim, which departs from the statutory definitions of said terms. The tenure is institutionalized socially by kinship ties, traditional beliefs and a value system that is tied to inheritance and governs the ownership, use and occupation of the property. Under customary law, alienation outside the bloodline is sometimes regarded as a taboo but not prohibited.

Clarke (1953) described family land tenure as a customary land right that may be applied to all inherited land in Jamaica. In this regard, family land tenure can be present on registered and unregistered lands. On lands with registered and common law titles, the tenure emerges when the original owners/purchasers die *intestate* and their land is informally transmitted to their children and other family members. Clarke (1953) implied, Family Land Tenure commenced with the provision of titleless land to ex-slaves.

It was also noted by Clarke (1953) that family members might informally subdivide their land and demarcate the extent of ownership for each family member. By doing so, family members no longer regard family land tenure as communal. On the contrary, they consider themselves as tenants in common, who may transfer or sell their share of the property if the original parcel was unregistered. Thus, under customary law, the subdivision of unregistered property severs family land tenure, although the common law title for the original parcel still exists. The physical manifestation of this is a parcel of land with at least two dwellings dispersed over it or a plot of land with visible subdivisions and buildings on each plot of land. The ability of the family land tenure to withstand the pressure of being largely unrecognized by the legal code attests to its resilient nature.

There is no legal requirement for persons with an interest in land and person(s) in possession to ensure that their interests appear on the valuation roll.

Another controversial tenure arrangement is squatting. It may be described as the act of occupying the property of another without their consent. The Statute of Limitations Act 1881, gives squatters the opportunity to become legal owners of private land, after 12 years of undisturbed possession on lands belonging to persons without disability (infancy, idiocy, lunacy or unsoundness of mind) and after 30 years of undisturbed possession on lands belonging to persons with disabilities. In relation to state land, squatters have to satisfy the criteria of undisturbed possession for over 60 years before making a claim of adverse possession (Limitation of Actions Act, 1881).

In 2008, an assessment by the Squatter Management Unit in the Ministry of Housing identified three types of squatting: residential, commercial and agricultural. Squatting on residential lands was noted as being the most prevalent (Guy, 2012 cited in Reynolds, 2012). Johnson (2016) citing the Inter-Development Bank (2016), explained Jamaica has 750 squatter settlements, concentrated in urban areas, with a population of 600,000 individuals.

To summarize, on state land there are government land settlements, leaseholds and squatting. On private land there are two types of land registration systems, which have explicit and, in some instances, implicit provisions on the sale, rental, transfer of and squatting on registered and unregistered land. Private land is also subject to customary tenure rights; namely family land tenure and titleless land. The legal code has been silent on these customary rights, which has had the effect of legitimizing them. An illustration of land tenure systems in Jamaica is provided in Figure 2 on the following page.

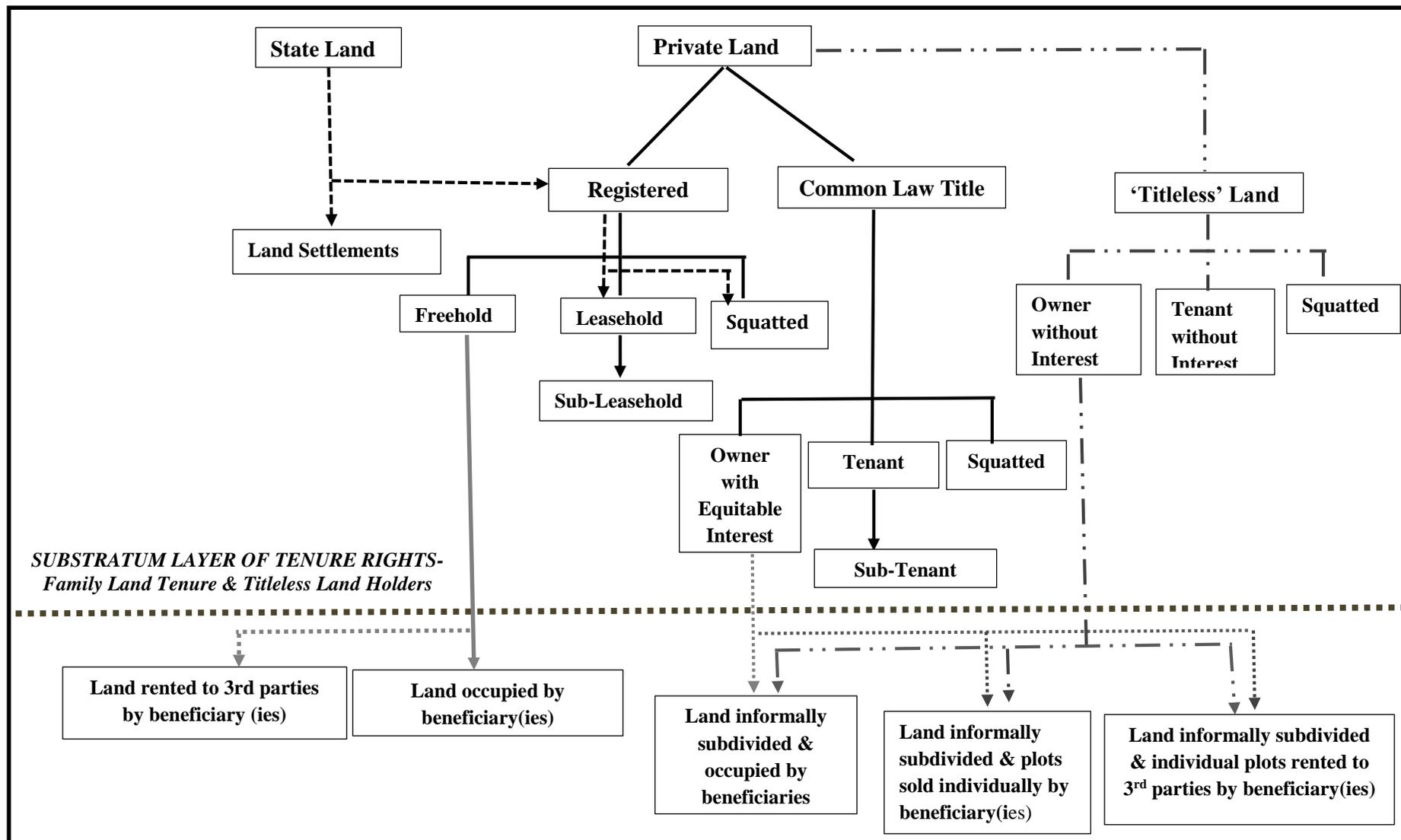


Figure 2. Land Tenure Rights in Jamaica’s Land Market. Source: Authors. *Notes.* Titleless land written as 1 of 3 sub-categories of private land, refers to lands without title that were given as a gift to ex-slaves. If beneficiaries of land with common law title sells their individual plot, it creates titleless land.

An Overview on Property Tax Compliance in Jamaica

The National Land Policy of Jamaica (1996) suggested less than 45% of parcels in Jamaica were formally registered. It was also noted in the Land Policy that the absence of documented evidence on the ownership of customary land, limits the government's ability to obtain information on land ownership, as a basis for taxation. However, Knight & KOH (2014), demonstrated that 53.2% of parcels were formally registered, while the statistics on unregistered parcels were incorrect. Their paper showed, two-thirds of unregistered properties in a case study location, were not recorded on the valuation roll.

Government statistics on land tenure provides data on the number of parcels with formal registered title and common law title (Knight and KOH, 2014). Since both types of title are recorded by the government then, in principle, property ownership details for these properties should be easily obtained by the tax collector. Clarke (1953) indicated that customary land tenure in Jamaica may exist on parcels with formal registered title and those with common law titles. This occurs when property owners die intestate and family members continue to live on the property and pay the property tax in their deceased family member's name. This suggests customary tenure is embedded in the private land rights system. As a result, transactions can occur in a land market outside the government's purview. Thus, investigative research, which explores the coordination between institutional mechanisms that underpin the tax collector-taxpayer relationship in the developing context is required.

Local news reports suggest Jamaica's LPT compliance rate has consistently been low. In this regard, members of the Private Sector of Jamaica have described the island's compliance rate as a national disgrace (Matalon, 2012 cited in Dunkley, 2012, para.1). The former Minister of Local Government and Community Development, opined that revenue collections from the tax, were "woefully inadequate" (Arscott, 2013 cited in McIntosh, 2013).

McCluskey and Franzsen (2001) conveyed that low property tax compliance rates were not uncommon in Jamaica. They suggested, compliance rates ranged from 45% (in 1992) to 58% (in 1996). Sjoquist (2007) also reported a precipitous decline in compliance rates between 2001 and 2003. Over this period, Jamaica experienced a 51.9% reduction in compliance rates from 52% (in 2001) to 25% (in 2003). Additionally, research conducted by the Private Sector Working Group in 2012, revealed Jamaica's property tax compliance rate declined from 70% in 2003 to less than 50% in 2010.

The trend of low compliance rates was also observed in Beale *et al.* (2016). Their study deduced compliance rates from data provided by the Ministry of Local Government in 2015. In this regard, Beale *et al.* (2016) suggested compliance ranged from 39% (in 2009/10) to 45% (in 2013/14). On

May 1, 2015 Senior government officials, from the Ministry of Local Government, reported that a 60% compliance rate was achieved for the 2014/15 financial year (Eubanks, 2015). Sjoquist (2007) on the matter of the influence of the tax rate structure on Jamaica’s compliance rate, argued higher marginal rates can result in lower compliance.

“the lowest collection rates are for the lowest and highest two value classes, while the highest collection rate is observed for the mid-value classes...it appears that collection does not solely depend on the effective tax rate” (Sjoquist, 2007, p.147).

In comparison to other developing countries, Jamaica’s property tax revenue as a percentage of gross domestic product (GDP) falls below the standard property tax yield of 1% of GDP. The International Monetary Fund (2016) indicated Jamaica’s average property tax yield was 0.3% of GDP for the 2000s. Jamaica’s property tax yield was also poor when compared to advanced economies and the rest of the world, for the same period. The International Monetary Fund’s November 2016 Country Report, suggested the property revenue from advanced economies, accounted for 2.25% of GDP. On average, the tax revenue earned 0.8% of GDP in all countries across the world (See Figure 3 below).

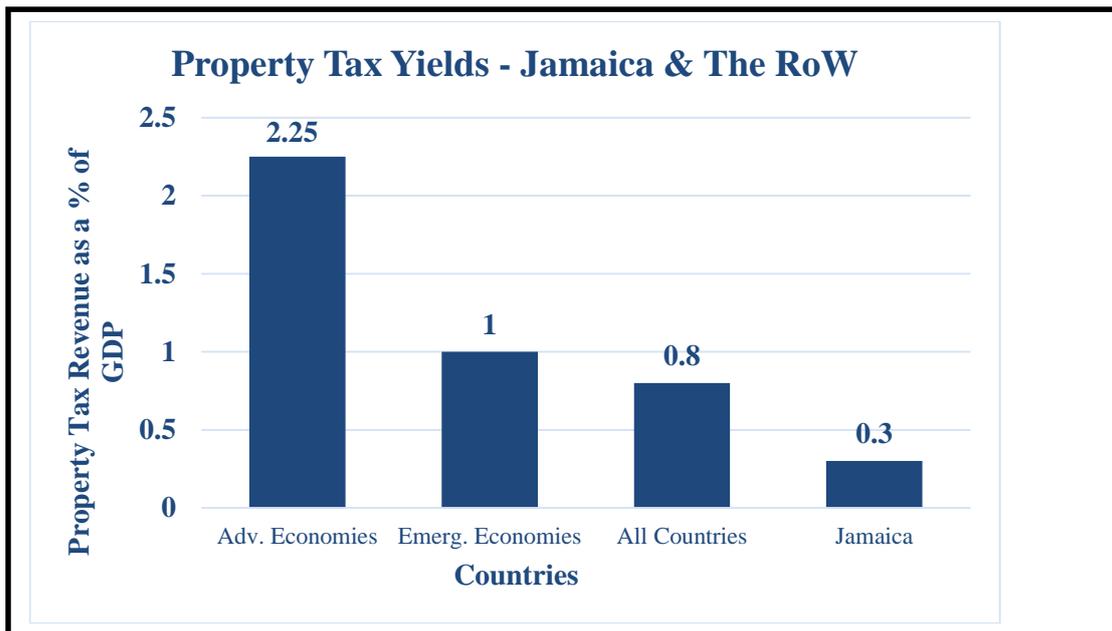


Figure 3. Property Tax Yields- Jamaica and the Rest of the World. Source: The International Monetary Fund (2016), p.9.

The Property Tax System, Land Market and Compliance Equilibrium

There are four critical operations which underpin the tax collector's ability to acquire or maintain a position of dominance in the tax collector-taxpayer relationship. They are taxpayer identification and assessment, service production, revenue collections and enforcement. For the purposes of this analysis, the tax collector's organization (i.e. the property tax system) will be stratified into three operational units – taxpayer identification and assessment, service production; and revenue collection and enforcement. The institutional mechanisms (i.e. the formal and informal rules) that govern each operation will be examined separately. The institutional mechanisms of the taxpayer's organization (i.e. the land market) will also be evaluated, with a view to providing insights on the interaction between the tax collector and taxpayer, and the potential implications it has for Jamaica's compliance equilibrium.

Taxpayer Identification and Assessment

Section 3(2) of the Property Tax Act 1903, mandates that the property tax is to be paid by every person in possession of property that is liable for the tax. The act also defines *person in possession* as “the owner, occupier, mortgagee in possession or other person in actual possession...” (p.10). It is noteworthy that the definition of the Jamaican property taxpayer includes a vast number of individuals that may have actual and/or constructive possession. Likewise, this definition encompasses individuals with legal and equitable interests in land or no interest at all.

While an all-encompassing definition of a taxpayer can assist the tax collector with enforcing the tax on all types of persons living on land, the tax collector's ability is weakened for two reasons:

1. Beneficiaries of a property under will and intestacy do not possess a legal or equitable interest when an intestate's property has not been administered and
2. The registration of land under the Registration of Titles Act and Common Law System is voluntary.

As a result, when a taxpayer is a person in actual possession of an intestate's (un)registered property that has not been administered, the tax collector will not be able to identify who the taxpayer is with the data on the valuation roll (the roll). This issue is further compounded by the fact that under the Common Law System, absolute proof of ownership can only be verified by conducting an extensive title search at the Records Office.

In an effort to reduce the search costs associated with the taxpayer identification process and ensure that persons entered on the roll as owners are the true owners of their land, owners of unregistered properties are required to provide good root of title in order to be placed on roll. Additionally, where an owner died (in)testate and beneficiaries occupy the deceased person's land, they can be placed on the roll as person in possession if they have supplied a copy of the owner's death certificate and proof of their relation to the owner. It is understandable why the tax collector wants to reduce search costs and shift this burden to the taxpayer. However, in this situation, the reduction of search costs makes the data accuracy a function of a person's in possession willingness to be forthcoming. This provides some taxpayers with the opportunity to free ride because the tax collector is not equipped with a data capturing mechanism which collects data on all persons in possession. It may also be inferred that under such conditions, there may be wide disparities between the tax collector's knowledge and actual land market operations. Undoubtedly, such a situation will place the tax collector in a position of uncertainty.

In relation to tax assessments, a closer examination of the progressive rate scale used by the tax collector reveals the following:

1. The rate cap used for properties in the lowest value band made the effective tax rates of those properties regressive.
2. The effective tax rates for properties in the middle value band appears to be relatively proportional and
3. The effective tax rates for properties in the highest value band were progressive. These findings are provided in Table 3 on the following page.

Table 3: Effective Tax Rates

Value Bands	Tax Rates	Selected Property Values	Tax Liability	Effective Tax Rates (%)
< or = \$100,000	\$1,000	\$50,000	\$1,000	2.00
		\$70,000	\$1,000	1.43
		\$100,000	\$1,000	1.00
> \$100,000 but less than or = \$1,000,000	\$1,000 + 1.5 % of land value that is > \$100,000 but < or = \$1,000,000	\$300,000	\$4,000	1.33
		\$650,000	\$9,250	1.4
		\$1,000,000	\$14,500	1.42
> \$1,000,000	\$1,000 + 1.5% of land value that is greater > \$100,000 but < or = \$1,000,000 + 2% of land value that is > \$1,000,000	\$1,300,000	\$20,500	1.58
		\$1,650,000	\$27,500	1.66
		\$2,000,000	\$34,500	1.73

Source: Value bands & tax rates obtained from Tax Administration Jamaica (2016). Tax liabilities and effective tax rates were calculated by authors. Effective tax rates were rounded off to 2 decimal places.

Service Production

The Local Government (Financing and Financial Management) Act 2015 establishes the Parochial Revenue Fund and the Equalization Fund. Section 14(1)(a) of the legislation stipulates that “ninety percent of the amount paid into the Fund, in respect of property tax paid in the relevant parish...” will be disbursed to each local authority (p.15). In addition, Section 14(1)(c)(i) outlines that the remaining 10% will be paid into an Equalization Fund and distributed to each local authority, based on the needs of the relevant parish, upon making an application to the Minister with responsibility for local government. Although there are three service providers, Section 14 of the legislation implies, property tax revenue is only allocated for local authorities.

The National Solid Waste Management Agency (NSWMA) receives its mandate from Section 4 of the National Solid Waste Management Act 2002. Section 4 outlines that the entity is responsible for the collection, management and disposal of solid waste and shall perform any other duty assigned to it by the Minister with responsibility for local government. The National Solid Waste Management Policy (2000) explains that the agency depends heavily on property tax revenue and Central Government (CG) grants. In Wynter (2014), interviewees employed by the NSWMA, complained about being owed by local authorities for garbage collection services. On the other hand,

representatives of local authorities lamented about the infrequency of garbage collection and poor service provided by the NSWMA. They also conveyed that the CG should be paying the NSWMA, rather than local authorities.

Like the NSWMA, the terms of payment between the CG and JPS are unclear. On April 29, 2015, it was reported in the Gleaner (a local newspaper), that the Ministry of Local Government owed the entity \$J 3 billion for street lighting and other electricity costs. On August 16, 2016, the Chief Executive Officer (CEO) of the JPS complained about being owed \$ J 761 million by the Kingston and St. Andrew Corporation (the local authority for Kingston and St. Andrew). The CEO explained that the JPS is unable to provide good quality services because of the debt owed by the government (Tomblin, 2016).

A notable feature of the legislation governing the NSWMA and JPS is the absence of acknowledgement that the services they provide are being funded by the property tax. It was also observed that The Local Government (Financing and Financial Management) Act has no provision that outlines the process by which by property tax revenue is allocated to all service providers. As a result, it may be argued that the arrangement of contractual relations between the CG and service providers contributes to the emergence of the moral hazard problem.

The absence of explicit acknowledgement that tax services are provided from property tax revenue weakens CG's ability to enforce terms of the principal-agent relationship. In this regard, CG is able to free ride because the arrangement of property rights in legislations which govern service providers, gives him an opportunity to shift all the financial burden of service production on his agents without providing any funding towards their production costs. As a result, CG is able to reduce his transaction costs. However, by cutting his costs, he also limits his ability to monitor the performance of his agents, and in turn gives them an opportunity to free ride. Under these conditions it is possible that low quality services will be provided to taxpayers.

Enforcement and Collection

Property seizures and sales are a measure of last resort. The State has the right to place a lien against a property with outstanding property tax collections and may forfeit the property. However, taxpayers have up to ten years to clear their debt. Penalties and interest charges are added to the liability if payment is late but, peculiarly, where LPT has been outstanding for seven years, the liability of the seventh year is written off.

It should also be noted that the tax liability is usually a small percentage of a property's value. As such the tax sale procedure, may be uneconomical because only the tax liability and the costs associated with the sale can be deducted from the sale price.

Wynter (2014) found different levels of enforcement were applied to small landowners, renters and large land barons. Tax administrators admitted to targeting small landowners because it was easier to collect the tax from them. Tax administrators explained only severe enforcement mechanisms would force wealthy taxpayers to comply and highlighted lengthy court delays and the political backlash the government would face by seizing properties. They also believed it was unfair for taxpayers to lose their properties for evasion, describing land as a precious commodity and "...the only thing we got from slavery" (Wynter, 2014, p.175). Tax administrators also expressed their unwillingness to enforce the tax against squatters on private land. Squatting is not illegal in Jamaica and a squatter on private land qualifies as any other person in possession and occupier. Therefore, nothing prohibits a squatter on private land from paying LPT. In fact, it appears that the legal code encourages squatters on private land to be compliant.

Tax administrators have the legal right to remind taxpayers of any overdue liability. They therefore target occupiers of properties with tax arrears for three to six years, making personal visits, reminding them of their arrears (repeatedly, if they felt several reminders were required), collecting cash payments toward their arrears and negotiating payment terms. It is a mechanism that is used extensively in Jamaica because it yields an increase in tax revenue. Although the Tax Collection Act 1867 requires taxpayers to make immediate payment of their liabilities, it does not give the tax collector the right to collect cash payments from taxpayers. Courts which address the substance of statutes have consistently ruled, the term 'immediately' is to be interpreted as such time that is reasonably required to expedite an action bearing in mind the circumstances of the situation (Adams, 2008).

The Tax Collection Act gives tax administrators the right to remind taxpayers of their liability and the latter have 15 days to settle their arrears. Thus, administrators only have explicit authority to deliver reminders but not collect payments. The reminder system may leave taxpayers with a sense of discomfort, as invasive measures are being used to collect the tax revenue, while the quality of service provision is low. However, tax administrators expressed they liked the reminder system because it gives them a position of dominance in the tax field. They believed it gave taxpayers the impression, they were serious about collecting property tax revenue (Wynter, 2014).

Not only does the reminder system present taxpayers with payment options not prescribed in law, it also increases transaction costs and provides administrators with an opportunity to adopt corrupt practices. Dalley (2016) found widespread allegations of corrupt practices in Jamaica's local authorities.

The Structure of Tenure Rights in Jamaica's Land Market

The position of land law on the legal status of beneficiaries of an unadministered estate, suggests equity has not considered that an intestate's property is held in trust for beneficiaries (Bailey, 1965). As a result, beneficiaries are only entitled to legal remedies to ensure the due administration of an estate.

In light of this, the law ignores the difficulty this position poses to the property tax collector. First, it affects the transparency of the tax base. If beneficiaries are the persons in possession of registered properties and properties with common law title, then the tax collector will be unaware of who are the taxpayers. Second, the relatively high cost of estate administration in Jamaica complicates the first issue by creating a barrier preventing beneficiaries from entering into the Registration of Titles System. Third, the legal stance that owners of properties with common law titles only possess an equitable interest and the absence of regulations which prohibit the late registration of property sales under the common law system and the absence of laws on the rental of these properties, creates a three tiered hierarchical structure of tenure rights in the land market. The structure of tenure rights comprises of individuals with legal interests, owners of land with common law title and other individuals with the right of possession. This is presented in Figure 4 on the following page.

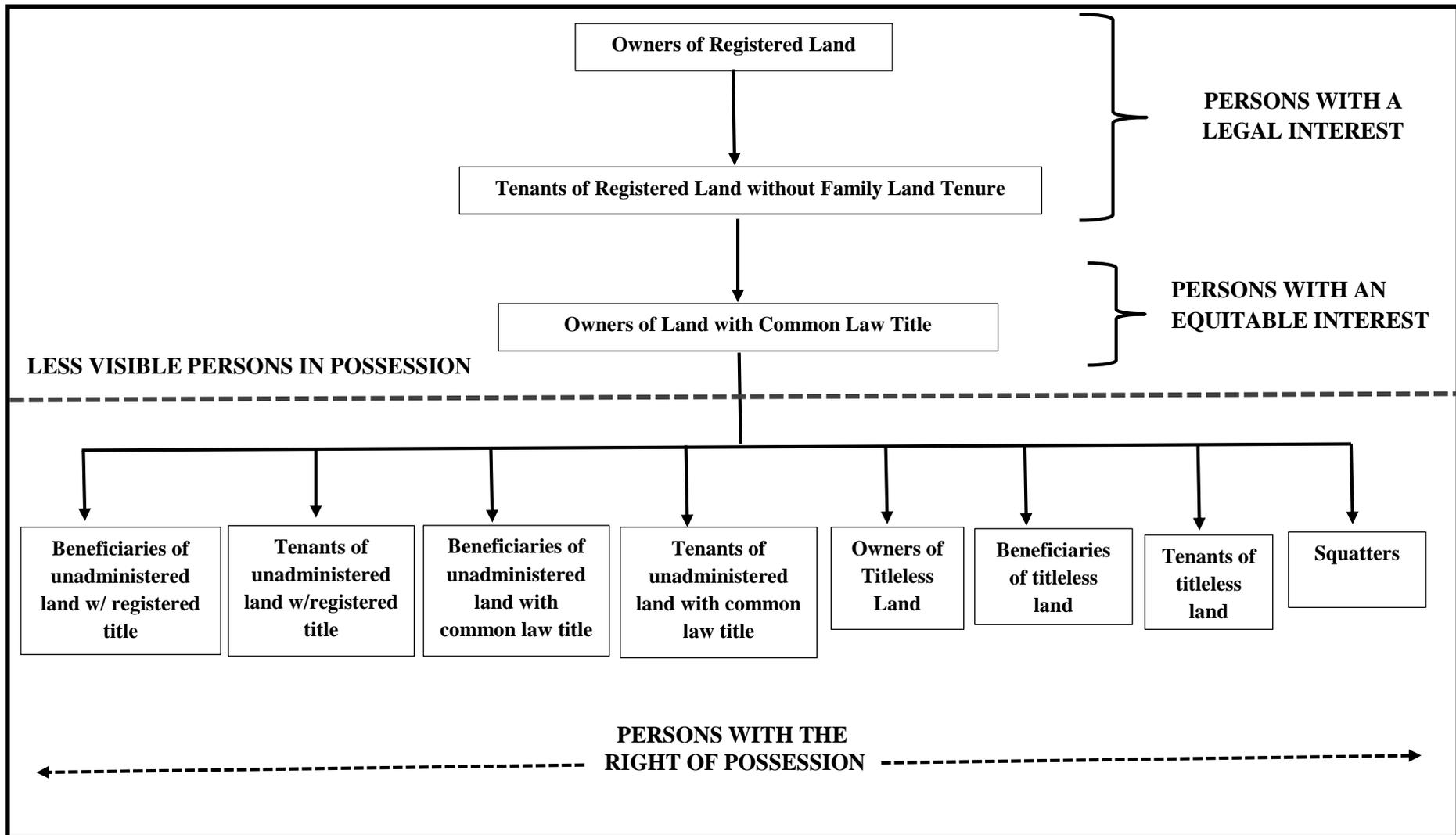


Figure 4. The Hierarchical Arrangement of Tenure Rights in Jamaica’s Land Market. Source: Authors. Diagram created based on the provisions in acts governing tenure rights in Jamaica. The term ‘tenants’ is not used in accordance with the legal criteria for the creation of a tenancy. Abbreviations: w/ - with

Conclusion

This paper has considered the interaction between the Jamaican property tax system and land market and potential implications for the property tax collector-taxpayer relationship and compliance equilibrium. Although the legal code stipulates that any person in possession qualifies as a taxpayer, it cannot prevent an increase in the proportion of the tax base that is less visible. Figure 4 (on the preceding page) suggests there are 11 categories of taxpayers in Jamaica. Eight of which are less visible, while only three categories are visible to the tax collector. In Knight and KOH (2014), it was suggested that 53% of parcels in Jamaica were registered properties. However, the ability of persons with the right of possession to subdivide their parcels can increase the number of parcels in the country.

In addition, the relatively high costs of registering and administering land can prevent beneficiaries of registered land and land with common law title from being visible to the tax collector. Thus, the tax collector is placed in a difficult position because the composition of the tax base can shift from one with a large number of taxpayers who are visible to one where most taxpayers are invisible. It is also noteworthy that this change can occur without the tax collector's knowledge. As a result, it is critical for the tax collector to clearly delineate the distribution and number of taxpayers in each category. But by undertaking this task, he will face high transaction costs.

If the tax collector remains in this situation of uncertainty, there is a risk of not being able to identify some or most of the taxpayers, thereby reducing the ability to collect tax revenue and produce quality tax services. The tax collector's production process is affected by the free rider phenomenon, which presents a moral challenge even if sufficient revenue is being collected. The ex-ante analysis suggests the production of low quality services is possible as a result of the unclear delineation of property rights in the principal-agent relationship between the tax collector and his agents. Thus, when the ability to identify taxpayers and by extension collect revenue is weakened, the probability of producing insufficient or low quality services is higher.

In the processes of enforcement and collection, the tax collector faces some challenges. It may be inferred that formal rules were not accepted by agents because of the high transaction costs they (would) encounter in applying them. Therefore, in an effort to reduce these costs and increase revenue collection, agents applied penalties *ultra vires* to the legal code. As a result, the tax collector experiences the moral hazard problem when enforcing and collecting the tax revenue. The analysis implies the tax collector is challenged by the free rider phenomenon in all units of his organization.

The interaction that the tax collector needs to have with the taxpayer can only occur if there is coordination between the institutional mechanisms of the organization and the land market. In other words, the governance structures of the land market and property tax system must facilitate the repeated exchanged between the tax collector and taxpayer in order to achieve optimal compliance rates. In this regard, the Jamaican case study suggests the hierarchical structure of tenure rights may be working against the tax collector. It appears the hierarchical structure is reinforced by the costs associated with estate administration and obtaining registered title. This results in visible and less visible sections of the tax base. Thus, the visibility of the base is dependent on the willingness to taxpayers to comply.

It may also be inferred that the arrangement of land rights in the legal code, and the terms of contractual relations between the tax collector and agents, are two potential factors that can limit repeated exchange between both market actors. Thus, it is possible there is a coordination failure between the Jamaican property tax system and land market. If the hypothesis is correct, then it follows that property tax evasion is generally a low risk activity for the Jamaican taxpayer. As a result, it is possible that the act of complying is tied to non-economic factors, which go beyond the price mechanism. After evaluating the structure of tenure rights in the land market and the nature of contractual relations within the property tax system, it may be argued that Jamaica has a low compliance equipoise, which consists of two opposing equilibria with the following types of taxpayers:

1. Those living on registered property who comply as a result of having high tax morale and/or a fear of losing their property;
2. Beneficiaries of registered and unregistered properties who comply as a result of their risky tenure status (in this situation the property tax functions as an imputed rent);
3. Squatters who comply to assist their efforts to obtain legal title through Adverse Possession;
4. Individuals with risky tenure who choose to evade because they are hidden from the tax collector;
and
5. Persons with an interest in land who evade as a result of weak enforcement and/or perception of poor quality service delivery.

Doran (2009) argued that the law has a dual function. First, the law should encourage compliance, but the frequently overlooked function is that of defining compliance. Legal scholars may argue that by being lenient to taxpayers, the government is encouraging them to be compliant. However, the provision of low quality services doesn't induce a taxpayer to comply.

The ex-ante analysis suggests the taxpayer generally has a dominant position in the property tax collector-taxpayer relationship. Although the legal code provides the tax collector with a catch all definition of taxpayer, the structure of tenure rights created and enforced by the law, undermine his attempts at achieving high compliance rates.

In conclusion, it may be inferred that the centrally planned order of Jamaica's property tax system results in high transaction costs. In addition, the unclear delineation of contractual relations within the property tax system, and the assignment of tenure rights within the land market, encourages the moral hazard problem and potentially results in a coordination failure between the tax collector and taxpayer, which creates a low compliance equilibrium of two opposing equilibria.

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The National Solid Waste Management Act 2002

The Local Government (Financing and Financial Management) Act 2015

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