LAND-BASED TAX CAPACITY AND TAX EFFORT OF THE STATE GOVERNMENTS IN PENINSULAR MALAYSIA: A REPRESENTATIVE REVENUE SYSTEM (RRS) APPROACH

(Usaha dan kapasiti cukai tanah kerajaan negeri di Semenanjung Malaysia: Kaedah *Representative Revenue System* (RRS).)

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ABSTRACT

The Auditor General Report 2004 revealed that seven out of 13 states in Malaysia are facing dire financial difficulties to the extent of being qualified as at the verge of bankruptcy. One of the solutions proposed would be to devolve more tax responsibilities to the state governments. However, some authors have argued that the Malaysian state governments have not been using their tax base efficiently and the devolution of more tax responsibilities towards them will only result in more inefficiency. It is thus important to gauge the fiscal effort exerted by the state governments before any attempts being made towards increasing tax responsibilities of the state governments. The main objective of this article is to measure the fiscal effort and capacity of the state governments in Peninsular Malaysia. In order to achieve this, we will use the Representative Revenue System (RRS)/ Representative Tax System (RTS) approach. This paper will discuss the preliminary findings of the research using the 2008 data. Our results show that more-developed states tend to have higher index of tax effort compared to the less-developed ones. It is also shown that state governments with high fiscal effort are in a relatively better fiscal position. However, tax arrears do not seem to correlate with the level of tax effort.

Keywords: Public Sector Management, State Governments, Fiscal Performance, Tax Effort, Tax Capacity

ABSTRAK

Pada tahun 2004, Pejabat Ketua Audit Negara menyatakan dalam laporannya bahawa tujuh daripada tiga belas negeri di Malaysia sedang menghadapi masalah kewangan yang serius yang mungkin akan menyebabkan mereka menjadi muflis. Antara cadangan yang diutarakan untuk menyelesaikan masalah tersebut adalah dengan memberikan lebih banyak kuasa cukai kepada kerajaan negeri. Namun begitu, beberapa pengkaji mengatakan bahawa kerajaan negeri di Malaysia tidak menggunakan asas cukai sedia ada dengan cekap dan sekiranya mereka diberikan lebih banyak kuasa cukai, ianya hanya akan meningkatkan ketidakcekapan mereka. Oleh itu adalah penting untuk menilai sejauhmana usaha fiskal *(fiscal effort)* kerajaan negeri. Objektif utama kajian ini adalah untuk menilai usaha fiskal dan kapasiti fiskal kerajaan negeri di Semenajung Malaysia. Untuk itu, kaedah *Representative Revenue System (RRS)/ Representative Tax System (RTS).* Artikel ni akan membincangkan penemuan awal kajian ini. Hasil kajian menunjukkan bahawa terdapat perbezaan yang besar dalam kapasiti dan usaha fiskal kerajaan negeri. Kajian ini juga menunjukkan bahawa terdapat hubungan diantara usaha fiskal dan tahap pembangunan negeri serta kedudukan fiskal negeri. Namun tiada hubungan diantara usaha fiskal dan jumlah tunggakan cukai.

Katakunci: Pengurusan Sektor Awam, Kerajaan Negeri, Prestasi Fiskal, Usaha Fiskal, Kapasiti Fiskal

INTRODUCTION

Of late some of the state governments in Malaysia have been identified as facing dire financial difficulty to the extent of being qualified as at the verge of bankruptcy. The Auditor General Report 2004 revealed that seven out of 13 states in Malaysia were not financially viable as their resources could hardly match their expenditures. The report stated that these states have accumulated over the years up to RM 2.17 billion of arrears in their debts repayments to the federal government. The state with highest amount of arrears is Johor with RM512.24 millions, followed by Kedah (RM491.83 millions); Pahang (RM312.29 millions); Kelantan (RM153.62 millions); Sabah (RM49.15 millions); Perlis (RM48.18 millions); Terengganu (RM190.77 millions) and Negeri Sembilan (RM79.66 millions). Moreover, it was also reported that these states were facing deficit that ranges from RM94.88 millions to RM760.79 millions.

According to the then Auditor General, unless there was a change in the way resources are shared between the federal and the state governments, the latter will go into bankruptcy. Indeed, if we look at the assignment of tax and expenditures powers between the federal government and the state governments, we notice that tax bases that are devolved to the state governments are relatively small compared to the ones that are retained by the federal governments. Shafruddin (1987, p. 80) argues that this situation was arrived at from two basic principles. First it was argued that the federal government needed control of the major sources of revenue to equalize the "levels of wealth among the states" (Shafruddin, 1987, p. 10). It was argued that only if the federal government had the main taxation powers could income be redistributed from rich to poor states. Second, it was argued that the principle of financial responsibility implied that responsibility for raising and spending money should rest with the same authority (Shafruddin, 1987, p. 48). This, in turn, meant that if the provinces were to have limited taxing powers they must also have limited expenditure responsibilities.

However, it should be noted that the financial problem faced by the state governments will not be solved by simply devolving more revenues to the state governments as some authors have argued that the latter have not used their tax bases efficiently (Umi Kalsom, 1990; Ahmad Zafarullah, 2008). One way of gauging the level of efficiency of the state governments' tax collection is by examining the amount of tax arrears that are yet to be collected by them. Every year the state governments have failed to collect a huge amount of tax revenues. For instance, in 2004 the amount of tax arrears for the state of Johor is RM 132 millions which is almost 18% of its total revenue during that year. And for some states, such as Kelantan or Kedah, the amount of tax arrears constitutes up to 50% of their total revenues. These figures point to the importance of analyzing the fiscal effort exerted by the state governments before any attempts towards devolving more tax responsibilities to the latter are made. It is thus the objective of this article to measure the fiscal capacity and fiscal effort of the state governments in Malaysia using the Representative Revenue System (RRS) approach.

The article is organized as follows. Section two will review both the theoretical and empirical literature on fiscal capacity. The methodology will be discussed in section three. In section four, we will present the preliminary findings of our research. Finally section five concludes.

LITERATURE REVIEW

The concept of fiscal capacity was first used in relation to the allocation of federal grants to state and local governments. Before 1962, the measure most used in the United States to represent fiscal capacity was per capita personal income. Controversy existed over this measure's validity as an indicator of revenue-raising ability. Two objections were raised: personal income fails to reflect the diversity of existing state tax and revenue sources, and it fails to take into account the ability of states to "export" taxes. In 1962, two economists (Selma Mushkin and Alice Rivlin) at the U.S. Advisory Commission on Intergovernmental Relations (ACIR) published a report detailing the representative tax system (RTS) as an improved measure of fiscal capacity. In 1986, the ACIR introduced an expansion of the RTS—the representative revenue system (RRS). The RRS included nontax revenues such as rents and royalties, user charges, and lottery revenues. The terminology changed accordingly, and the fiscal capacity measure became a state's "revenue capacity" divided by its population. Analysts began to question the assumption that the cost of service provision could be proxied by a state's population without taking into account differences in income level or demographics. Accordingly, in 1990 the ACIR and Robert Rafuse developed the representative expenditure system (RES) to model more accurately the cost of providing public services in each state (Rafuse 1990a, 1990b.). In all, ACIR produced 12 reports from 1962 to 1993.

After ACIR was disbanded, Robert Tannenwald at the Boston Federal Reserve took over the project and published reports approximately every two years in the remainder of the 1990s (Tannenwald 1998, 1999, 2002, 2004). The latest report by Tannenwald was published in 2006 in which the author compares states in the United States in terms of their relative fiscal capacity, fiscal need, fiscal comfort, and tax effort in state fiscal year 1999 (Tannenwald and Turner, 2006).

Yilmaz et al. (2002) measure the fiscal disparities across the 50 states in the US in fiscal year 2002 by looking at each state's revenue capacity, expenditure need, and overall level of fiscal capacity. The authors find that Connecticut ranks first with the highest representative revenue capacity of $6,272 per person. In comparison, Mississippi, which ranks last, would raise only $3,352 with the same revenue system in place. Alaska displays the highest representative revenue effort of all states, collecting $8,537 compared with its capacity of $5,496; and New York had the second highest, collecting $6,376 compared with its capacity of $5,240. On spending, Mississippi has the highest expenditure need at $6,800 per person, while Hawaii has the lowest at $5,216. Alaska has by far the highest expenditure effort, spending $13,175 per person, compared with a need of $5,995;4 New York has the second highest expenditure effort, spending $8,414 compared with a need of $6,052. At the same time, differences in state revenue capacity and expenditure need might justify federal intervention in terms of equalizing grants.

RRS approach has also been used to measure tax capacity of local and county governments. Hy et al. (1993) examined property taxes and "combined lesser discretionary revenues"(CLDR) which include a variety of fees and other charges. The results show that Arkansas counties (and the state as a whole) generally underutilize tax capacity. Slightly more than 75 percent of the counties ranked below average in capacity with 45 percent of the counties having low capacity and low effort. More important, 60 percent of the counties had below average effort. Counties with high property tax capacity and effort were generally those with large residential populations. In the case of CLDR, 18 percent of Arkansas counties had high capacity and low

effort. At the same time, 29 percent had low capacity how effort. Only 6 percent of the counties had both high capacity and high effort. Another 45 percent had a low capacity but exerted high effort. More recently, Chervin (2007) applied the RRS approach to measure fiscal capacity of the counties in Tennessee. Calculated tax effort ranged from a low of 56% in DeKalb County to a high of 133% in Morgan County. Morgan County's high calculated tax effort index (133%) is not remarkable, given Morgan County's distinction for having both the lowest per capita property assessments and the smallest per capita local option sales tax base in the state. However, the same logic doesn't apply to Giles County, the second highest ranking county in tax effort. Giles County has both an average level of taxable assessments per student and local option sales tax base per student.

Using the same method, Sobarzo (2004) evaluated tax effort and tax potential of the Mexican state governments. The analysis of the results RTS reveals that with some exceptions, both the best and the worst tax performances occur in relatively rich states. The difference, however, is that the best positioned states are those whose capital cities are of medium size, as is the case of Aguascalientes, Colima, Veracruz, Baja California Sur, etc. The worst tax performances occur in states characterized by large capital cities, as is the case of Mexico City, Jalisco, Estado de Mexico, Puebla and, to a lesser degree, Nuevo Leon. According to the author, these findings suggest that large cities concentrate not only economic activity but also the typical problems of large cities, such as large informal sectors, tax evasion, tax elusion, and other illegal activities. Sobarzo (2004) also found that if the analysis is modified and adjusted by population, state tax efforts are conditioned by their heterogeneity. The point is particularly relevant in a country like Mexico which is characterized by accentuated regional disparities. In particular, it seems that while efficiency is a relevant criterion, it is certainly not the only criteria to be considered. Additional elements have to be taken into account when designing a strategy for tax decentralization, such as regional socio-economic disparities and unequal administrative capacities, to mention a few. Furthermore, a comparison of state and federal taxes shows that state taxes are close to the national average, whereas the performance of federal taxes is significantly below the national average. This result suggests that states are doing a "better" job of taxation than the federal government does in the states' territory. However, it could also imply that the federal government is responsible for the more complex taxes.

METHODOLOGY AND DATA DESCRIPTION.

In order to estimate the fiscal capacity and the fiscal effort of the state governments in Peninsular Malaysia, we will use the Representative Revenue System (RRS) methodology which was originally developed by the U.S. Advisory Commission on Intergovernmental Relations (ACIR).

RRS is a very common instrument for analyzing tax capacity in different countries. This approach is conceptually simple and, unlike an econometric approach, RRS give more insight into the particular contribution of specific taxes to the relative accumulated tax effort. The cost of that, however, is that RRS is very demanding in terms of data requirements.

RRS assesses the relative ability of a state to raise revenue from a particular tax by levying a "standard" tax rate on a "standard" tax base. This tax rate is computed in the following manner: First, it is assumed that the nation as a whole imposes the tax on a uniformly defined base. This base equals the nationwide value of all economic stocks or flows that would be taxed if the base

were defined comprehensively. If defined in this manner, the tax base would be devoid (to the extent feasible) of exemptions, exclusions, deductions, and other tax preferences that favor certain forms of economic activity over others or that provide tax relief to taxpayers in certain circumstances. This broadly defined *potential* tax base is then divided into actual revenues collected from the tax in question from all state and local governments nationwide. The resulting ratio is the tax's standard rate. Repeating this exercise for every tax in every state and indexing each state's result to the national average creates an index of fiscal capacity (set equal to 100 for the national average). This measure reveals the ability of each state to raise tax revenue relative to the national average. Using the fiscal capacity index, we will be able to calculate the fiscal effort index. Fiscal effort is measured by looking at the amount of taxes/revenues collected based on the amount that should have been collected (fiscal capacity). More precisely, the step-by-step approach of calculating tax capacity and tax effort is as in Figure 1 below.

Step 1
• Collect data on revenues received by each state (and its localities) for each of the bases in the representative revenue system.

Step 2
• Construct the *standard base* for revenue source in each state, including all sources that could be potentially taxed (or incur charges/fees).

Step 3
• Compute the *representative rate* for each revenue base, by dividing total nationwide collections by the national total base for that revenue item. This creates the *representative revenuerate*.

Step 4
• Apply each *representative rate* to the corresponding revenue item in every state. This determines the hypothetical revenue capacity if every state used the representative rateas its revenue-raising system.

Step 5
• Add together the hypothetical revenue yields from each revenue source in each state to obtain the total *revenue capacity* in each state.

Step 6
• Divide total revenue capacity in each state by its population to determine per capita capacity.

Step 7
• Divide each state's per capita capacity by the national capacity collections and multiply by 100. The result is the revenue capacity index, with an index number of 100 corresponding to the national average.

Step 8

•	Divide each state's actual revenue collections by the state's population to get collections per capita.

Step 9	
•	To calculate *revenue effort*, divide each state's per capita collections by its per capita capacity and multiply by 100.

Figure 1: Tax Capacity and Tax Effort Calculation

DATA DESCRIPTION

The data on state governments' revenues are obtained from the Yearly Financial Statement Reports of the state governments. These reports are published by the State Governments' Financial Office.

As for the data used to calculate the tax base for land-based taxes and revenues, we will use the average land value as the tax base. The value of lands by types of land is obtained from the report published by the National Institute of Valuation Malaysia (INSPEN).

RESULTS AND ANALYSIS

In this article we will only report the results for land tax and land-related revenues for the year 2008. Table 1 displays the land tax capacity and land tax effort indices by state governments in 2008. The average land tax capacity per capita for Peninsular Malaysia is RM63.09. As can be seen from the table, several states have above average land tax capacity. The highest is Melaka with a land tax capacity of RM131.42 and a land tax capacity index of 208. This is followed by Pahang and Negeri Sembilan with an index of 155 and 129 respectively. The state with the lowest land tax capacity is Terengganu with RM41.77 and an index of 66.

In terms of land tax effort, Perak displays the highest effort collecting RM75.16 compared with its capacity of RM44.28 which corresponds to a land tax effort index of 170. This is followed by Selangor and Kedah with an index of 143 and 139 respectively. The state with the lowest effort is Kelantan collecting only RM11.62 compared to a capacity of RM52.90. Other states who recorded low level of tax land effort index are Pahang and Terengganu with an index of 51 and 53.

Figure 2 looks at the correlation between tax effort and tax capacity. As we can see, some states such as Selangor, Kedah and Perak have below average index of tax capacity but have a high tax effort. This may reflect the state governments' capacity to utilize their tax resources in an optimal way. On the other hand, some states such as Melaka and Pahang have a relatively high tax capacity but their tax effort is lower than the national average. This implies that these states have not fully utilized its capacity in order to generate more income. There are also states (Kelantan, Perlis and Terengganu) who have both lower than national average tax capacity and tax effort.

Table 1: Land Tax Capacity Index and Land Tax Effort Index, 2008

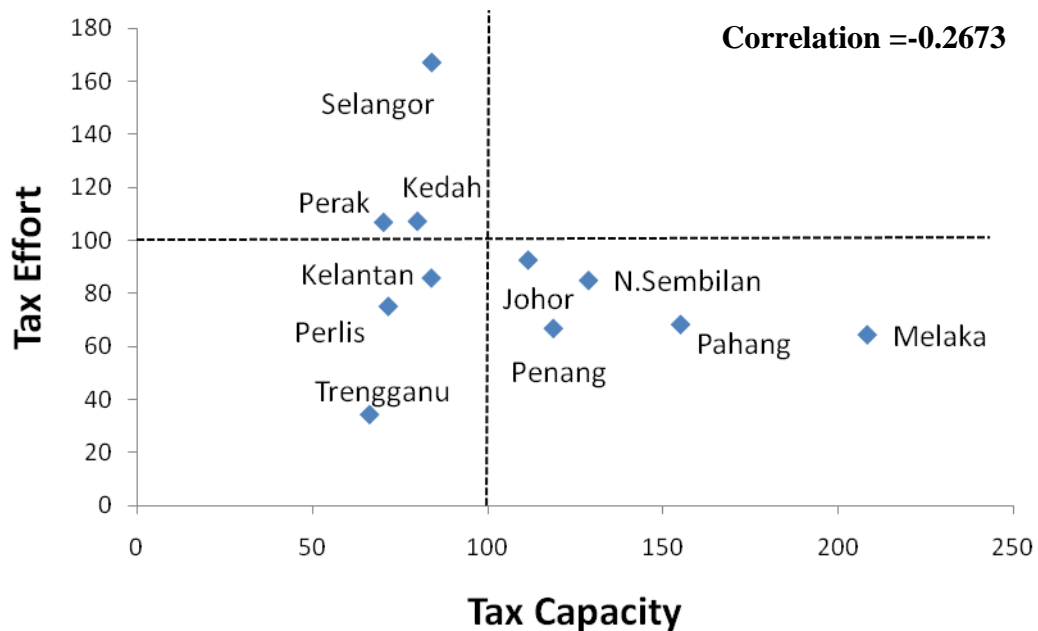| State	Land tax capacity per cap	Land tax capacity index	Rank	Land tax collection per capita	Land tax effort index	Rank
Johor	70.34	111	5	63.37	90	5
Kedah	50.38	80	8	70.12	139	3
Kelantan	52.90	84	6	11.62	22	11
Melaka	131.42	208	1	87.87	67	8
N. Sembilan	81.21	129	3	103.39	127	4
Pahang	97.80	155	2	49.49	51	10
Perak	44.28	70	10	75.26	170	1
Perlis	45.14	72	9	32.47	72	7
Penang	74.88	119	4	55.87	75	6
Selangor	52.97	84	6	75.71	143	2
Terengganu	41.77	66	11	21.98	53	9
P. Malaysia	63.09	100	-	63.09	100	-

Figure 2: Correlation between tax capacity and tax effort

Table 2: Land tax capacity and level of development

More Developed States	Rank	Less Developed States	Rank
Johor	5	Kedah	8
Melaka	1	Kelantan	6
N. Sembilan	3	Pahang	2
Perak	10	Perlis	9
Penang	4	Terengganu	11
Selangor	6		

Land tax capacity tends to increase with the level of development. This is shown in Table 2. Except for Pahang, all the states that have higher than national average tax land capacity are under the category of more-developed states. Only Perak and Selangor have lower than national average land tax capacity. The results can be explained by the fact that land value is relatively higher in the developed states and this will translate to a higher income potential for the state governments.

Table 3: Land tax effort and level of development

More Developed States	Rank	Less Developed States	Rank
Johor	5	Kedah	3
Melaka	8	Kelantan	11
N. Sembilan	4	Pahang	10
Perak	1	Perlis	7
Penang	6	Terengganu	9
Selangor	2		

Table 3 displays the distribution of tax effort by level of development. As can be seen from table, the level of land tax effort also seems to be highly correlated with level of development. Four of the five states that have the lowest level of tax effort are all under the category of less-developed states (Kelantan, Pahang, Perlis and Terengganu). Only Kedah has a relatively high level of land tax effort. These findings can be explained by the fact that state governments with lower level of development may not have the same capacity or resources as the more developed ones especially in term of enforcement. The higher level of tax effort in the more-developed states may also reflect the high level of tax compliance of their population. This is line with the literature that shows that tax compliance is positively correlated with level of development. These results may imply that the state governments that are less developed should be provided technical and financial assistance in order for them to improve their tax effort and eventually their tax collections.

Figure 3 displays the correlation between tax effort and fiscal situation. The figure shows that all states that have lower than average tax effort (except for Penang) have recorded a fiscal deficit. Kelantan who has the lowest tax effort also recorded the highest deficit as a percentage of its total revenue. As for the states who have high tax efforts, they were also those who have among the best fiscal situation. Perak and Selangor have recorded a surplus while Negeri Sembilan has one of the lowest deficit. These results imply that state governments may be able to improve their fiscal situation if they were to exert more effort in collecting their taxes and

revenues. In other words, the deficits that some state governments are facing are partly due to the low level of fiscal effort. Therefore, devolving more tax responsibilities to these state governments will not result in an improved fiscal situation.
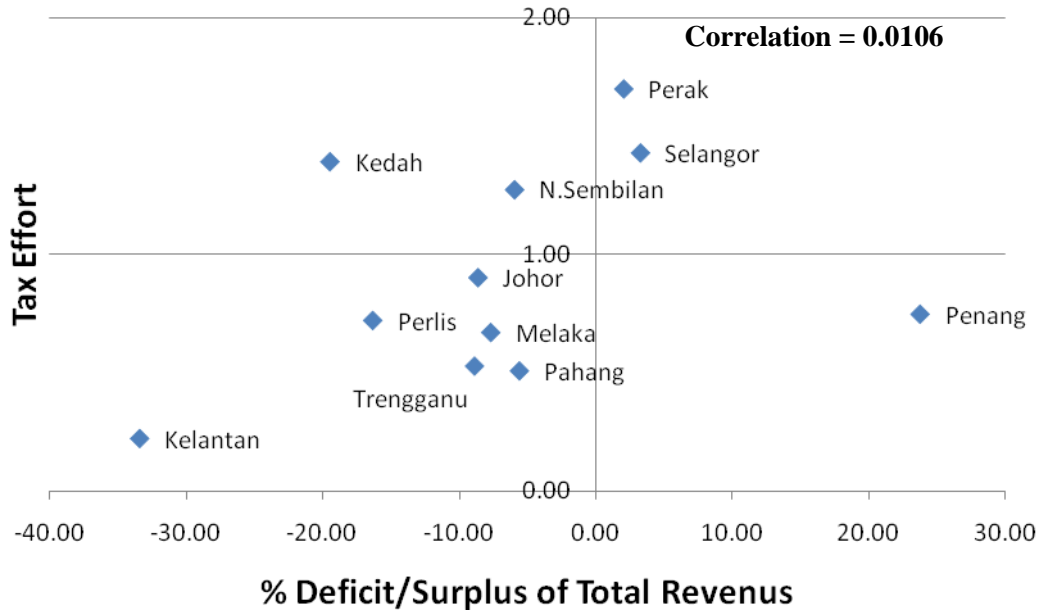

Figure 3: Correlation between tax effort and fiscal surplus/deficit.

Figure 4 looks at the relationship between tax arrears per capita and tax effort. Is the amount of tax arrears correlated to the level of tax effort exerted by the state governments? As shown by the figure, it seems that states that have low tax effort (except for Perlis) have less tax arrears per capita. The four states that have the highest tax arrears per capita are also those who have recorded the highest tax effort. These findings may imply that the amount of tax arrears is not due to the lax of efforts exerted by the state governments. It may simply due to the low level of tax compliance among the taxpayers of these states.
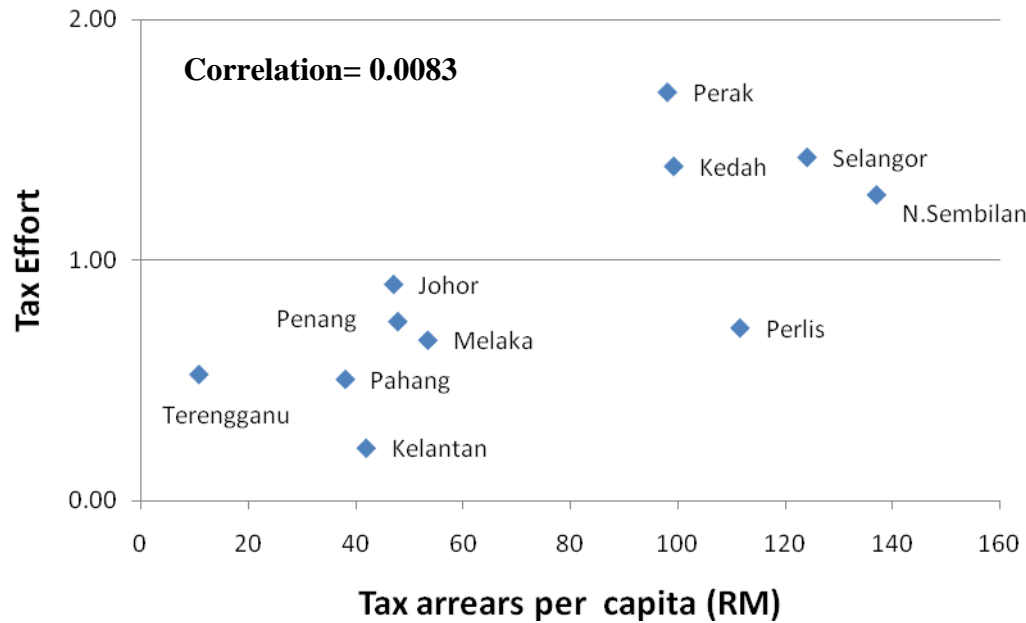
Figure 4: Correlation between tax effort and tax arrears.

LAND-RELATED REVENUES CAPACITY AND EFFORT

Land tax is not the only income that state governments can generate from land. There are other types of revenues that state governments levy on land such as permit and licence. Therefore, using the same base we will now calculate tax capacity and effort indices of all the land-related revenues collected by state governments.

In term of revenue capacity per capita, the results are similar to the ones on land tax. The highest revenue capacity per capita is recorded by Melaka with RM209.03 compared to a national average of RM100.35. This resulted in an index on revenue capacity of 208.29. Pahang displays the second highest revenue capacity per capita with RM155.55 and an index of 155.01. Meanwhile, Terengganu and Perak are at the bottom of the list with a capacity per capita of RM66.43 and RM70.42 respectively. The results indicate that there is no correlation between the size of land and land-related revenues capacity as states that are relatively small such as Melaka fare much better than bigger states such as Perak or Terengganu.

However, in terms of revenue effort we have noted some slight changes in the ranking of the state governments. Selangor displays the highest land-related revenue effort with a per capita collection of RM140.85 compared to a capacity of RM84.26. This corresponds to a revenue effort index of 167.16. Kedah also displays a relatively high revenue effort with a per capita collection of RM85.93 compared to a capacity of RM80.14 (a revenue effort index of 107.22). The states that are at the bottom three are Penang, Melaka and Terengganu with an index of 66.81, 64.43 and 34.32 respectively.

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Table 5 shows the ranking of state governments in term of their revenue effort index by level of development. We noted that level of development does not seem to correlate with land-related revenue effort index. There are as many less-developed states as more-developed ones in the bottom six of the ranking.

It is also worth noting that Kelantan seem to fare much better relatively in term of land-related revenues effort as compared to land tax effort. In other words, what Kelantan lacks in term of land tax collection was overcame in the collection of other land-related revenues. On the other hand, Penang seems to exert more effort relatively in collecting land tax than in levying land-related revenues.

Table 4: Land-related revenue capacity and effort, 2008

State	Land-related revenue capacity per cap	Land-related revenue capacity index	Rank	Land-related revenue collection per capita	Land-related revenue effort index	Rank
Johor	111.88	111.49	5	103.58	92.59	4
Kedah	80.14	79.86	8	85.93	107.22	2
Kelantan	84.13	83.84	7	72.20	85.82	5
Melaka	209.03	208.29	1	134.68	64.43	10
N. Sembilan	129.17	128.72	3	109.67	84.91	6
Pahang	155.55	155.01	2	106.23	68.29	8
Perak	70.42	70.18	10	75.26	106.87	3
Perlis	71.80	71.55	9	53.95	75.15	7
Penang	119.11	118.69	4	79.58	66.81	9
Selangor	84.26	83.96	6	140.85	167.16	1
Terengganu	66.43	66.20	11	22.80	34.32	11
P. Malaysia	100.35	100.00	-	100.35	100.00	-

Table 5: Land tax effort and level of development

More Developed States	Rank	Less Developed States	Rank
Johor	4	Kedah	2
Melaka	10	Kelantan	5
N. Sembilan	6	Pahang	8
Perak	3	Perlis	7
Penang	9	Terengganu	11
Selangor	1		

CONCLUSION

This article is a preliminary attempt at explaining the fiscal situations of the state governments in Malaysia using the Representative Revenue System (RRS) approach. The main objective is to establish an index of fiscal capacity and fiscal effort. These indices can later be used to gauge the fiscal performance of the state governments. It is also very useful in the formulation of a better intergovernmental fiscal system especially in the redesigning of federal transfers.

Our findings show that state governments differ significantly in term of their land-related revenue capacity as well as land-related revenue effort. For example, Melaka has an index of land tax capacity of 208 compared to an index of 66 in Terengganu. Our results also show that more-developed tend to have higher index of tax effort compared to the less-developed ones. It is also shown that state governments with high fiscal effort are in a relatively better fiscal position. However, tax arrears do not seem to correlate with the level of tax effort. Together, the findings of this article imply that devolution of more tax responsibilities to the state governments is not the solution in improving the fiscal situations of the latter. Instead, state governments especially the less developed ones should be provided with technical and financial assistance that will enable them to increase their fiscal effort.

It should be noted that these findings are not sufficient to conclude on the effectiveness of the conduct of tax policy by the state governments. Even though land tax constitutes a major source of revenues for the state governments, we still need to analyze the capacity and effort of other types of revenues notably the forest-related revenues in order to make any conclusion on the performance of state governments' fiscal policy.

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