

Chapter 2: Literature Reviews

One of the most popular topics in the literature of public finance is the growth of public sector. For one main reason, public spending can easily account for 25% to 40% of national income in any economy. The characteristics of these activities cannot go unexplained. Hence, the determinants of public spending are of great interest in the public finance field.

In the vast public finance literature, a few theories have been established in trying to explain the growth of public expenditure. Afxentiou and Serletis (1991) have divided the principal models used in the explanation of the relative increase of the public sector over time, especially in the postwar period, into four categories: (1) Wagner's Law, (2) the displacement effect, (3) the productivity lag theory, and (4) the theory of bureaucracy. However, Wagner's Law has been the most extensively discussed among all these theories. The authors pointed out the dominance of Wagner's Law in empirical work is 'not just a reflection of its broad scope and the methodological virtue of its simplicity but also a consequence of certain major flaws that plague the other three hypothesis'. Wagner's vision of the rise in the state activity has apparently been confirmed over the last century in most advanced country in the world.

German economist, Adolph Wagner (1893) was the first one to try to formulate a generalized hypothesis of the positive relationship between public expenditure and

national income. This generalizations about government expenditures, not from postulates about the logic of choice, but rather by direct inference from historical evidence. The correlative growth between public expenditure and national income was observed in a number of countries (e.g. Prussia, Bavaria, Britain, North America and Switzerland) towards the end of the 19th century. Economists at that time were convinced that there should exist some kind of 'law' relating public expenditure and output of the country. Adolph Wagner went further to formulate a 'law of expanding state expenditures' that emphasized the growing importance of government activity and expenditure as an evitable feature of a progressive state (Bird, 1971). In simpler words, as per capita income rises in industrializing nations, the public sectors would grow in relative importance. Within this context, public expenditure growth is treated as a behavioral variable.

According to Wagner, there are three main reasons responsible for this phenomenon. First is that the administrative and protective functions of a state would grow accompanying increases in population density and urbanization. New needs for public regulative and protective activity would develop as the country industrializes and legal relationships become more complex. Thus for the economy to function efficiently, state activities of both a preventive and a repressive role have to increase. Secondly, expansion of 'cultural and welfare' expenditures would also increase particularly with respect to education and the redistribution of income. These public services to Wagner were implicitly assumed to have income elasticity of demand greater than unity. Thirdly, there are inevitable changes in technology and the

increasing scale of investment that will require larger public expenditures (Wagner was thinking particularly of the steam power at that time).

Wagner's in his infamous 'Three Extracts on Public Finance' stated the following as a 'rule':

State expenditure may be higher, in absolute terms and as a percentage of national income, in proportion as the immediate economic value (taken in the widest sense) of a public service is greater, its contribution to general productivity greater as well as the "free" national income (i.e. in Roscher's sense that part of the national income which is left after the satisfaction of the people's essential material needs), and finally, in proportion as the part of state revenue derived from sources other than taxation, i.e. from the State's private business activities, is larger.

Wagner also elaborated on the requisite taxation needed to finance the public expenditure level. As the taxation level should not be oppressive burden on the people and due to various political reasons, he stressed that there is a proportion between public expenditure and national income that may not be permanently overstepped.

Wagner's Law was produced in a broad-based manner, leaving ample rooms for interpretations. There are at least six versions of Wagner's Law that have empirically investigated. However, there is no consensus on which version is the most appropriate and convincing test of the Law. Bird emphasized that Wagner's idea nonetheless deserves careful attention since most general theories of expenditure

growth remain, in essence, simply offshoots and modifications of his original ideas. Furthermore, he observed that Wagner's exposition of the 'law' was inextricably entangled with his own normative assumptions as to the nature of the state and of the state activity.

Wagner's Law is often considered as a long-term phenomenon that is expected to be valid in the industrialization phase of an economy. The core implication of Wagner's hypothesis is that the causation runs from growth in national income to growth in public expenditure. More importantly that this also implies that growth in public expenditure does not act as a macroeconomic variable to spur economic growth. Growth in public expenditure is merely a result of growth in the national income.

On the other hand, public literature has always acknowledged the importance of public expenditure as an exogenous variable that can impact upon economic activity. This framework is basically embodied in the Keynesian literature that treats public expenditure as an effective policy tool to correct short-term disequilibrium in the economy. In other words, this represents short-term relationship between public expenditure and national income. As opposed to Wagner's hypothesis, causation invariably runs from growth in public expenditure to growth in national income in Keynesian models.

Ansari (1993) argued that this long-run-short-run dichotomy to explain the difference between Wagner and Keynesian hypothesis is not necessarily correct. According to him, while Wagner's law of expanding state activity has long been accepted as a long-run phenomenon but the same cannot be said about the short-run characterization of Keynesian hypothesis. Public expenditure in the Keynesian framework has always created the perception that it is no more than an instrument of stabilization and that stabilization has no role to play in the long-term economic growth. As mentioned, public expenditure in the Keynesian framework is determined exogenously and used as the fiscal tool to counter fluctuations in the economy. During a recession for instance, normally a big fraction of the public expenditure is directed to developing projects that are growth augmenting and have lasting impact in the economy. Thus, there is this possibility that Keynesian hypothesis holds not only in the short run but also in the long run.

Ansari's argument that Keynesian hypothesis also holds in the long run has important implications to our conclusion. Indeed, if public expenditure and national income are co integrated (i.e. they have a long-run relationship), we cannot discern whether this is due to the validity of Wagner's law or Keynesian hypothesis. Contrary there is also a possibility that Ansari's argument is incorrect and Wagner's Law would be the only explanation for a long-run relationship between public expenditure and national income.

On the other hand, if we cannot find the existence of a long-run relationship, we can conclude that the Wagner's law, which is a long-run phenomenon, does not hold. Even if without the existence of a long run relationship, we will still be interested in the short-run relationship between public expenditure and national income. In such scenario, Keynesian hypothesis may be a reasonable explanation of a short-run relationship. However, further conclusion can only be arrived after conducting the Granger-causality test in order to determine the directions of causality.

Another interesting question is how can we determine whether the effect of the participation of public sector in an economy is beneficial or hazardous? Generally, there can be two outcomes. In cases where the government is efficient, a larger size of public sector can provide significant spillover effects to the private sector, which enhance the participation of private entrepreneurs and stimulate private investment. As a result, public sector that is complementary to the private sector will then help to generate economic growth.

In contrast when the government is not efficient, it is argued that a larger public sector will impede economic growth. Excessive bureaucracy in decision-makings, coordination problems, vaguely defined objectives, lack of monitoring agents and political influences in promoting minority interests at the expense of the general public contribute to the inefficiencies of the public sector. Furthermore, a rise in the public spending may result in the crowding-out of profitable opportunities in the private sector. Thus, public expenditure will result in lower overall productivity.

Both views can be justified by their own arguments. Whichever view applies will depend on the characteristics of the government and economy in question. One thing can be sure is that in order for the Keynesian doctrine to materialize, an efficient government is necessary for public expenditure to spur economic growth. Once again, nothing can be said regarding the validity of Keynesian proposition without conducting the Granger-causality test.

Contending views between Wagner hypothesis and the Keynesian paradigm pertaining to the causality pattern between the size of government and economic growth have spawned a growing body of new research. Many researchers have attempted to find the directions of causality in proving the validity of these views. Often the emphasis was put on Wagner's Law as it is one of the oldest and most cited public expenditure growth theory. Furthermore, it is methodologically attractive since the formulation of Wagner's Law directly links national income as a determinant of public expenditure.

Wagner's Law has long been studied in public finance literature. As mentioned, there are generally two broad categories of empirical works carried out, namely cross-sectional and time-series studies. However, most of these studies were each confined to one country and used only annual data. Earlier researchers have only applied traditional regression analysis in estimating the existence of Wagner's Law. The tests for causality between public expenditure and national income only begin to

emerge in mid 1980's. Landau (1983), Sahni and Singh (1984) and Ram (1986,1987) were among the pioneers who first examined the causality issue. Since then, more and more studies were carried out based on the same essence. More recently, due to new development in econometrics, co integration techniques have also been employed to study the long-term relationship between national income and public expenditure. Empirical tests have yielded mixed results from country to country and period to period.

Sanhi and Singh (1984) tried to determine the directions and patterns of causality between the government expenditures and gross national income in Canada. This study represents one of the pioneer works in this field, focusing on aggregate public expenditure and disaggregated public expenditure. Causality tests were conducted using annual data covering the period of 1926-1980 for aggregate expenditures and 1945-1980 for disaggregated expenditure. The study found bi-directional causality for aggregate expenditure, which means that public expenditure and national income can be treated as jointly dependent variables. Another interesting finding in this study is that an increase in public expenditure may stimulate an increase in national income after a lag, whereas public expenditure reacts to an upsurge in economic activity instantly. At the disaggregate level, public expenditure was divided into a) general government, b) health, education, and welfare, c) transportation and communication, d) debt charges and e) protection. Bi-causality is detected for case (a) and (c) while uni-directional is detected for other cases. Causality runs from national

income to public expenditure for case (d) while from public expenditure to national income in case (b) and (e).

From the results, we can deduce that different category of public expenditure exhibits different impact to national income. Some critics have claimed that the focus on disaggregated public expenditure is against the true spirit of Wagner's Law. Theoretically, Wagner's Law is more concerned on the evolution of aggregate public expenditure. Afrentiou and Serletis (1991) suggested that, '...his hypothesis would not have attracted much attention if he had dealt only with parts of expenditure and neglected the overall picture of government standing.' However, the authors did not deny that the classification into disaggregated public expenditure and their comparative contribution the growth of government is an interesting topic to be examined, although it is against the spirit of Wagner's Law.

Ram (1986) attempted a cross-sectional analysis in conducting the causality test. The study involves 63 countries using quarterly data for the period of 1950-1980. Ram finds limited support for the causal order suggested by Wagner's hypothesis and the Keynesian theory. There is no causality in about half of the sample countries. Not more than one-fourth to one-third of the remaining cases indicates causality as described by Wagner's hypothesis and a similar proportion appears consistent with the direction implied by Keynesian macroeconomic models. A few countries fall into both directions. Despite of the mixed results, the author observed an important point that can be deduced from this paper. The mixed patterns of causality between national

income and public expenditure display dramatic differences across various countries that probably reflect the huge cross-national diversity in economic and political structures. This proved to be an important conclusion and implies that public expenditure behaviour in each country is unique and Wagner's Law is not a universally observed rule.

It is important to note that the early studies in causality analysis did not examine the stationary properties of the variables involved. Due to this major weakness, the results obtained may not be robust and biased. Afxentiou and Serletis (1991) also did a time-series analysis of the relationship between public expenditure and national income for Canada using annual data over the period 1947 to 1986. As an improvement, the authors examined the stationary properties of the variables involved and tested causalities for six formulations of Wagner's hypothesis. The authors find an outright rejection of Wagner's Law in Canada. However, the Keynesian activism is also found not valid in the Canada case. With neither hypothesis is valid, it seems that there should exist alternative theory to explain the behaviour of public expenditure. Another possibility is that there is simply no single theory sufficient in explaining the behaviour of public expenditure.

The causality test is then extended to employ co integration techniques and the estimation of an error-correction model (ECM) to capture the short and long-term relationships between government expenditure and national income. Ansari (1993) used quarterly data in Canada and cover the period of 1961 to 1991 in conducting the

Wagner-Keynesian causality test. The author found bi-directional causation and therefore could not discern the validity of both hypotheses. Co integration results supported a long-term relationship between public expenditure and national income. This confirmed the existence of Wagner's Law, which is a long-term phenomenon. At the same time, the error correction model also displayed evidence of Keynesian hypothesis as a short-run phenomenon. Unfortunately, the author obtained mixed signs for the coefficients and thus interpretation of the results somewhat difficult.

The literature reviews above are mostly focused in the causality studies in Canada as we aim to show the developments in the causality study for public expenditure and national income. Nevertheless, there appears to have inconsistency in the results. This may be attributed to the different period covered in the studies or different empirical methods that are employed. Studies on Wagner's Law have known no boundaries. Similar studies can be detected for Taiwan, Japan, Northern Cyprus, Greece, Turkey, South Korea and other countries. Most of them keep with tradition and run the causality test. Some studies attempted in estimating income elasticities of all types of public expenditures or developing model of public expenditure growth.

This field is basically new to the public finance literature arena in Malaysia and has not been thoroughly investigated. There might be a few empirical studies done on the cointegration and causality test in the context of Wagner's Law in Malaysia. Ismail Salleh and H.Osman Rani in 1991 have done a similar study for Malaysia in 1991. The authors estimated different versions of Wagner's Law using OLS method

covering the period of 1963 to 1986. They did not investigate the stationary properties nor did they employ co integration techniques or Granger causality test in their study. The authors supported the validity of Wagner's Law based on the significant coefficients in their result. Unfortunately, the results were of mixed coefficients signs. Without the employment of recent econometrics procedures like the stationary test and co integration, the results were not reliable.

However, with reference to empirical works done in other countries, a similar study can be examined using data from Malaysia by utilizing recent developed econometrics techniques. In this study, we will investigate stationary properties of the data and employ co integration test procedures in addition to the Granger-Causality test that is crucial to determine the directions of causality.