

The Relationship between Government Expenditure and Economic Growth in the OECD Countries : Test of Wagner ' s Law

陳韻婷、陳仕偉

E-mail: 9806303@mail.dyu.edu.tw

ABSTRACT

This paper examines the relationships between government expenditure and economic growth for 7 OECD countries. We adopt unit root tests to determine the existence of a unit root of each series. We then employ the autoregressive distributed lag (ARDL) bounds testing approach to test for cointegration. The advantages of the ARDL approach are not prerequisite to examine the non-stationarity property and order of intergration of the variables. The procedure can be employed regardless of whether the underlying variables are integrated of order zero i.e. $I(0)$, integrated of order one i.e. $I(1)$ or fractionally integrated. F-test is used to examine whether a cointegrating relationship exists among the variables. The results show that Thailand supports Wagner ' s law; Italy and New Zealand support Keynesian theory; Denmark, Philippines, Singapore and Switzerland support neither Wagner ' s law nor Keynesian theory.

Keywords : Wagner ' s Law、cointegration、causal relationship

Table of Contents

中文摘要	iii
英文摘要	iv
誌謝辭	v
內容目錄	vi
第一章 前言	1
第二章 文獻回顧	5
第三章 實證方法	9
第一節 單根檢定	9
第二節 共整合檢定	12
第三節 因果關係檢定	15
第四章 實證結果	17
第一節 資料來源與基本統計特性	17
第二節 單根檢定結果	19
第三節 共整合分析檢定結果	21
第四節 線性因果關係檢定結果	23
第五節 與過去文獻對比	25
第五章 結論與建議	27
參考文獻	29
附錄A 各國變數成長率之基本統計量	37
附錄B 取對數原始資料的單根檢定表	39
附錄C 差分資料的單根檢定表	41
附錄D 無時間趨勢項模型之邊界檢定表	43
附錄E 有時間趨勢項模型之邊界檢定表	44
附錄F 線性因果關係檢定表	45
附錄G 各國因果關係結果整理	47

REFERENCES

- 一、中文部份吳定，張潤書，陳德禹，賴維堯(2001)，行政學，台北:國立空中大學出版。二、英文部份Ahsan, S. M., Kwan, C. C., & Sahni, B. S. (1996). Co-integration and Wagner ' s hypothesis: Time series evidence for Canada. *Applied Economics*, 28(8), 1055-1058. Akitoby, B., Benedict, C., Gupta, S., & Inchauste, G. (2006). Public spending, voracity, and Wagner ' s law in developing countries. *European Journal of*

Political Economy, 22(4), 908-924. Ansari, M. I. (1993). Testing the relationship between government expenditure and national income in Canada, employing Granger causality and co-integration analysis. *Managerial Finance*, 19(7), 31-46. Beak, M. (1979). Public sector growth: A real perspective. *Public Finance/Finances Publiques*, 34(3), 313-55. Bird, R. M. (1970). The growth of government spending in Canada. Toronto, Canada: Canadian Tax Foundations. Bird, R. M. (1971). Wagner's law of expanding state activity. *Public Finance/Finances Publiques*, 26(1), 1-26. Biswal, B., Dhawan, U., & Lee, H. Y. (1999). Testing Wagner versus Keynes using disaggregated public expenditure data for Canada. *Applied Economics*, 31(10), 1283-1291. Burney, N. A. (2002). Wagner's hypothesis: Evidence from Kuwait using co-integration tests. *Applied Economics*, 34(1), 49-57. Chang, T. (2002). An econometric test of Wagner's law for six countries based on co-integration and error-correction modeling techniques. *Applied Economics*, 34(9), 1157-1169. Chang, T., Liu, W., & Caudill, S. B. (2004). A re-examination of Wagner's law for ten countries based on co-integration and error-correction modeling techniques. *Applied Financial Economics*, 14(8), 577-589. Engle, R. F., & Granger, C. W. J. (1987). Co-integration and error-correction: Representation, estimation and testing. *Econometrica*, 55(2), 251-276. Ghali, K. H. (1998). Government size and economic growth: Evidence from a multivariate cointegration analysis. *Applied Economics*, 31(8), 975-987. Gandhi, V. P. (1971). Wagner's law of public expenditure: Do recent cross-section studies confirm it? *Public Finance/Finances Publiques*, 26(1), 44-56. Ghartey, E. E. (2008). The budgetary process and economic growth: Empirical evidence of the Jamaican economy. *Economic Modelling*, 25(1), 1128-1136. Goffman, I. J. (1968). On the empirical testing of Wagner's law: A technical note. *Public Finance/Finances Publiques*, 23(3), 359-364. Granger, C. W. J. (1969). Investigating causal relationships by econometric models and cross-spectral methods. *Econometrica*, 37(3), 150-161. Granger, C. W. J., & Newbold, P. (1974). Spurious regressions in econometrics. *Journal of Economics*, 2(2), 111-120. Gupta, S. P. (1967). Public expenditure and economic growth: A time series analysis. *Public Finance*, 22(4), 423-466. Hall, A. D. (1994). Testing for a unit root in time series with pretest data based model selection. *Journal of Business Economic Statistics*, 12(2), 461-470. Halicioglu, F. (2003). Testing Wagner's law for Turkey, 1960-2000. *Review of Middle East Economics and Finance*, 1(2), 129-140. Huang, C. J. (2006). Testing Wagner's law using bonds test and a new Granger non-causality test: Evidence for Taiwan. *The Journal of American Academy of Business*, 8, 86-90. Islam, A. M. (2001). Wagner's law revisited: Co-integration and exogeneity tests for the USA. *Applied Economics Letters*, 8(8), 509-515. Iyare, S. O., & Lorde, T. (2004). Co-integration, causality and Wagner's law: Tests for selected Caribbean countries. *Applied Economics Letters*, 11(13), 815-825. Johansen, S. (1988). Statistical analysis of co-integration vectors. *Journal of Economics Dynamics and Control*, 12(2), 231-254. Johansen, S., & Juselius, K. (1990). Maximum likelihood estimation and inference on co-integration - with applications to the demand for money. *Oxford Bulletin of Economics*, 52(2), 169-210. Kolluri, B. R., Panik, M. J., & Wahab, M. S. (2000). Government expenditure and economic growth: Evidence from G7 countries. *Applied Economics*, 32(8), 1059-1068. Landau, D. (1983). Government expenditure and economic growth: A cross-section study. *Southern Economic Journal*, 49(3), 783-792. Lane, P. R. (2003). The cyclical behavior of fiscal policy: Evidence from the OECD. *Journal of Public Economics*, 87(12), 2661-2675. Lin, C. (1995). More evidence on Wagner's law for Mexico. *Public Finance*, 50(2), 267-277. Loizides, J., & Vamvoukas, G. (2005). Government expenditure and economic growth: Evidence from trivariate causality testing. *Journal of Applied Economics*, 8(1), 125-152. Mohammadi, H., Cak, M., & Cak, D. (2008). Wagner's hypothesis: New evidence from Turkey using the bounds testing approach. *Journal of Economic Studies*, 35(1), 94-106. Musgrave, R. A. (1969). *Fiscal systems*. New Haven, Connecticut: Yale University Press. Murthy, N. R. V. (1981). Wagner's law of public expenditure: An empirical investigation of the Indian economy using the appropriate measure for a valid test. *Indian Economic Journal*, 28, 86-93. Narayan, P. K., Nielsen, I., & Smyth, R. (2008). Panel data, co-integration, causality and Wagner's law: Empirical evidence from Chinese provinces. *China Economic Review*, 19(2), 297-307. Narayan, P. K., Prasad, A., & Singh, B. (2007). A test of the Wagner's hypothesis for the Fiji islands. *Applied Economics*, 40(21), 2793-2801. Narayan, P. K. (2004a). Do public investments crowd out private investments? Fresh evidence from Fiji. *Journal of Policy Modeling*, 26(6), 747-753. Narayan, P. K. (2004b). Reformulating critical values for the bounds F-statistics approach to co-integration: An application to the tourism demand model for Fiji. Paper presented at the Monash University, Melbourne, Australia. Oxley, L. (1994). Co-integration, causality and Wagner's law: A test for Britain 1870-1913. *Scottish Journal of Political Economy*, 41(3), 286-298. Peacock, A. T., & Wiseman, J. (1967). *The Growth of Public Expenditure in the United Kingdom*. London: George Allen & Unwin. Peacock, A. T., & Wiseman, J. (1979). Approaches to the analysis of government expenditure growth. *Public Finance Quarterly*, 7(1), 3-23. Perron, P. (1989). The great crash, the Oil price shock and the unit root hypothesis. *Econometrica*, 57(6), 1361-1401. Pesaran, H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16(3), 289-326. Ram, R. (1986). Causality between income and government expenditure: A broad international perspective. *Public Finance*, 41(3), 393-413. Ram, R. (1987). Wagner's hypothesis in time series and cross section perspectives: Evidence from real data for 115 countries. *Review of Economics and Statistics*, 69(2), 194-204. Sahni, B. S., & Singh, B. (1984). On the causal directions between national income and government expenditure in Canada. *Public Finance/Finances Publiques*, 39(3), 359-93. Samudram, M., & Nair, M. (2008). Keynes and Wagner on government expenditures and economic development: The case of a developing economy. *Empirical Economics*, 36(3), 697-712. Thornton, J. (1999). Co-integration, causality and Wagner's Law in 19th century Europe. *Applied Economics Letters*, 6(7), 413-416. Wagner, A. (1890). *Finanzwissenschaft*, Leipzig, Germany: Winter. Wahab, M. (2004). Economic growth and government expenditure: Evidence from a new test specification. *Applied Economics*, 36(19), 2125-2135. Zivot, E., & Andrews, W. K. D. (1992). Further Evidence on the Great Crash, the Oil-Price Shock, and the Unit-Root Hypothesis. *Journal of Business and Economics Statistics*, 10(3), 251-270.