

## Evaluating the Revenue Effect of Public Investment\*

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### ABSTRACT

The complementarity between public goods and private goods has been a main focus in recent studies of optimal public good provision. Specifically, when one applies the cost-benefit analysis to a public expenditure project financed by distortionary taxes, the marginal cost of public funds (MCF) may depend on the revenue effect associated with the complementarity between public expenditures and private goods. The purpose of this paper is to investigate the effect of public investment on the revenue of consumption taxes in Taiwan. It follows the theoretical framework formulated by Wilson (1991) to set forth an empirical model for the estimation of the tax revenue function. The empirical results indicate that current public investment has a two- to three-year lag before it affects consumption tax revenue. During the period of observation, 1964 to 1996, the revenue effects of public investments in Taiwan are shown to be positive, implying that public investment in part self-finances and thus reduces the required public funds. From the perspec-

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# 公共投資之稅收效益評估

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## 摘 要

公共財與私有財間的互補性是當今最適公共財提供理論的中心課題之一，尤其當吾人利用成本效益分析來評估以扭曲性租稅融通的公共投資計畫時，其公共資金的邊際成本更需視公共投資與私有財間之互補性所產生的稅收效果大小而定。本文之目的即在探討台灣之公共投資支出對消費稅（貨物稅與營業稅）稅收的影響效果，文中以 Wilson (1991) 的最適公共財提供量決定模型為依據，建立台灣消費稅稅收函數的實證模型，並結合 1964 至 1996 年間的時間數列資料，以 GMM 的計量方法進行實證估計。根據實證結果得知，在樣本觀察期間，台灣的公共投資支出的確對其消費稅稅收產生正向的效果。換言之，公共投資可透過其與被課稅財貨間之互補性所帶來的稅收效果而產生自我融通的功效，從而可減少每一元公共投資的淨資金成本。就成本效益分析的觀點而言，此一稅收效果使公共投資支出的增加有正面而合適的學理依據。然而，由於在近年來台灣公共投資的成本逐漸上升，使得所產生的稅收效果相對減弱，而無法如 1960 年代與 1970 年代的相對高水準。

**關鍵詞：**公共投資、公共資金的邊際成本、稅收效果、淨公共資金