Investment responses to Japanese tax reforms: A cross-industry comparison

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Abstract

This paper examines the investment responses to past Japanese tax reforms for individual industries. To identify the tax effect, this paper estimates investment functions by using a covariate of the change in tax-adjusted \( q \) caused by tax reform. This method alleviates the measurement error problem and enables the derivation of estimates indicating the valid adjustment cost of investment. Moreover, the findings suggest that firms’ investment responded significantly to tax reforms in the 1980s in general. Also, investments of only a few industries responded to those in the late 1990s, implying that the manner of investment response slightly differs among industries.

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1. Introduction

Thus far, only a few empirical studies have investigated whether the Japanese tax reforms in the 1980s and 1990s had much effect on the decision of corporate investment. Although many people may believe that these corporate tax reforms had a large impact on investment behavior, it was possible that tax reforms did not affect investment decisions so strongly. In fact, the ratio of investment in the private sector to gross domestic product only slightly changed in 1998 and 1999 even though the government implemented large corporate tax cuts in these years. Hence, empirical studies are expected to closely examine the relationship between tax reform and investment behavior in Japan.

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Many works have attempted to investigate the effect of tax policy on investment behavior in other countries.\(^1\) Empirical evidence for before the 1990s did not support a significant effect of tax policy on corporate investment. It was difficult to distinguish the effect of tax on investment from that of other fundamental variables because in aggregated time-series data, which were mainly used in empirical studies before the 1990s, many variables that affect investment moved together over the business cycle. Therefore, even if tax policy greatly impacted investment, extracting this relationship was very difficult. However, in recent years, several empirical studies have found a strong relationship between investment behavior and tax policy by utilizing the cross-sectional variation in tax variables that is driven by tax reforms (Auerbach and Hasset, 1991; Cummins and Hasset, 1992; Cummins et al., 1994, 1996).

Some studies have examined the relationship between tax reform and investment using Japanese microdata. Cummins et al. (1996) estimated the modified investment function for 14 OECD countries and confirmed that changes in corporate tax policy had a large effect on corporate investment behavior in 12 countries, including Japan. They estimated the investment function by utilizing tax reforms to identify the tax effect on investment behavior. By using this estimation method, they could also address the measurement error problem in tax-adjusted \(q\) as this method focused on the change in tax-adjusted \(q\) driven by exogenous tax changes that were correctly observable. In their paper, the coefficient on tax-adjusted \(q\) was estimated to be 0.893 for Japan. This value was considerably larger than those obtained previously\(^2\); moreover, this estimate was reasonable for the parameter of the adjustment cost function.

Next, Uemura and Maekawa (2000) estimated the investment function according to industry and ran a simulation to explore the effect of the 1999 corporate tax cut on investment in Japan. Their results suggested that the effects of this tax cut differed from one industry to another in magnitude and direction, and the investment rates of certain industries fell in response to this tax cut. Since Uemura and Maekawa (2000) estimated the conventional investment functions, unlike the case of Cummins et al. (1996), the former obtained very small coefficients for each industry. These small coefficients, which simulation of Uemura and Maekawa (2000) is entirely based on, might have been downwardly biased by the measurement error in tax-adjusted \(q\).

Several points mentioned in the studies of Cummins et al. (1996) and Uemura and Maekawa (2000) need to be improved in order to examine the relationship between investment and tax reform in greater detail. First, these studies focused only on one tax reform in Japan—for example, Cummins et al. (1996) considered the effect of it in 1989. However, it is important to compare the responsivenesses of investment to tax reforms in the 1980s and 1990s because investment may not necessarily respond to each tax reform in the same manner. Second, the effect of tax change on corporate investment should be examined for each industry because tax reform may have a different effect on the behavior of individual industry firms, as shown by Uemura and Maekawa (2000).\(^3\) Third, Cummins et al. (1996) and Uemura and Maekawa (2000) ignored the presence of the firm’s land assets in the calculation of tax-adjusted \(q\). A more precise value of tax-

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1. Hasse and Hubbard (1996, 2002) closely reviewed the previous empirical studies on the effect of tax policy on investment behavior.
2. The estimated coefficients on tax-adjusted \(q\) ranged from approximately 0.01 to 0.05 in Japan.
3. Although Uemura and Maekawa (2000) estimated the investment function according to industry, Cummins et al. (1996) investigated the effect of tax reform on investment behavior for an entire industry in each country.
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