



Revisiting the labor supply effect of social security earnings test: New evidence from its elimination and reinstatement in Japan



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ABSTRACT

We explore the labor supply effect of the social security earnings test in Japan on those aged 65–69 years through a combined examination of the elimination of the earnings test in 1985 and its reinstatement in 2002. We present evidence showing that the effects of changes in the earnings tests on the labor supply of the elderly are not symmetric, controlling for changes in the attributes of workers and firms. The repeal of the earnings test in 1985 did affect the earnings distribution of the elderly (especially for male), while its reinstatement in 2002 did not alter the earnings distribution.

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1. Introduction

For a country with a rapidly aging population and a historically low birth rate, a decline in the labor force is a major challenge since it will lead to a sharp increase in social security benefits for retired persons and increase the burden on the younger generation. As is often debated in the policy arena, a natural solution for mitigating the negative impacts of the declining labor force is to encourage the elderly to remain in the labor force for longer periods.

The impact of a rapid pace of aging on social security programs is a common concern for Japan and other developed countries. Undoubtedly, the retirement age in Japan is the highest among OECD countries, a fact often considered to be one of the most distinctive features of the Japanese labor market. Indeed, the effective retirement age of Japanese workers during the period 2006–2011 was 69.3 years for males and 66.7 years for females (OECD, 2012), higher than the corresponding ages for all European countries and the US.² However, the current pace of aging in Japan

is much more rapid than it is in other developed countries. This calls for major labor policy reforms to support the elderly. The proportion of individuals aged 65 years is expected to reach 25% in 2013, and the pace of aging is expected to accelerate further (National Institute of Population and Social Security Research, 2012). In the projection, the share of the elderly is projected to exceed 33.4% in 2035 and reach 39.9% in 2060. The extremely rapid pace of aging in Japan is likely to offset the positive effects of late retirement on overall labor force participation.

One popular view in policy debates on labor force participation of the elderly in Japan is that the social security earnings test (*Zaishoku Rorei Nenkin* scheme) is a major disincentive to the elderly to engage in paid work because wages are heavily taxed. This scheme is part of *Kosei Nenkin*, or the Employees' Pension Insurance (EPI) program, which is the core public pension scheme and covers approximately half of the pensioners in Japan. The earnings test leads to reduction of social security benefits to EPI pensioners whose labor income, or labor income plus a portion of pension income (hereinafter called “earnings”), exceeds a certain threshold. It is commonly believed that, as in the US, the earnings test penalizes the elderly and is a disincentive to supply labor (Gruber and Orszag, 2003).

This study provides new evidence on the labor supply effect of the social security earnings test on workers aged 65–69 years, with a focus on two major episodes since the 1980s—the elimination of the earnings test in 1985 and its reinstatement in 2002. We focus

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² The effective retirement age is defined as a weighted average of net withdrawals from the labor market at different ages over a five-year period for workers initially aged 40 and above (OECD, 2012).

on workers aged 65–69 years for two reasons. First, they are becoming the target age group for measures to enhance labor force participation in Japan because they have a lower participation rate than the 60–64 years age group.³ In Japan, the mandatory retirement age is effectively equivalent to the age of eligibility for public pension benefits in Japan, which is now in transition from 60 to 65 by 2013⁴. Second and more importantly, the earnings test rule is simple for workers aged 65–69 with a single threshold and rate of benefit reduction, and detection of labor supply effect, if any, on the elderly relatively easy. Further, the test has a clear history: it was abolished in 1985 and reinstated in 2002. For workers aged 60–64 years, on the other hand, the earnings test has multiple thresholds, and reduction rates differ across earning ranges. In addition, there have been periodic test revisions, as well as other reforms with regard to public pension eligibility age and mandatory retirement age, for this age group. These revisions made it difficult to precisely examine the labor supply effect of the earnings test.

We view the reforms as clear-cut natural experiments to examine the effects of revisions to earnings test rules on labor supply of the elderly. This study was facilitated by a large cross-sectional micro-level data set from *Konenreisha Shugyo Jittai Chosa*, or the Survey on Employment of the Elderly (SEE), compiled by the Japanese government, with information on both employment status and social security eligibility. This study provides new evidence on the labor supply effect of the social security earnings tests in Japan, and thus adds a new dimension to the extensive literature on the subject. First, and most important, we examine two major and contrasting episodes, the elimination and reinstatement of the earnings test, whose effect on work incentives to the elderly may be asymmetric. As with many countries, Japan abolished its social security earnings test in the mid-1980s, but, unlike other countries, reintroduced a tougher version of the test in 2002, which offers an interesting potential “double treatment.” To our knowledge, however, there have been few studies that deal with both repeal and reinstatement episodes, and a combined examination of these reforms is unique to this paper.

Second, we employ the methodology of DiNardo et al. (1996) to examine changes in earnings distributions before and after the reforms. One popular approach to examining the labor supply effect of revisions to the earnings test rules is to employ a bunch analysis (analysis of clustering), frequently used in the literature (e.g., Friedberg, 2000; Haider and Loughran, 2008). Unlike previous empirical studies, the time interval of our data set is 4 or 5 years, and we are unable to employ a straightforward application of bunch analysis. Instead, we examine the change in overall earnings distributions using the methodology of DiNardo et al. (1996), which permits us to decompose changes in the earnings distributions into two parts: change in the distributions of worker and firm attributes and change in the effect of the attributes on earnings. We compare actual distributions before the reforms with the counterfactual distribution after the reforms, controlling for changes in worker and firm attributes.

Third, we endeavor to extract lessons from the Japanese experience, which may be useful for other countries. If we find that

rule revisions lead to a large labor supply effect on work incentives, policy makers worldwide can take a cue from this study and further increase even high levels of elderly labor force participation by reducing disincentives. However, if this study does not reveal such results, we may conclude that the elderly Japanese worker's decision to remain in the workforce is less likely due to monetary benefits than to other factors that are likely responsible for the late retirement age.

Here, we present a preview of our empirical results. We show, after controlling for changes in worker and firm attributes, that earnings test revisions seems not to cause symmetric effects on the labor supply of the elderly. The repeal of the earnings test in 1985 did affect the earnings distribution of the elderly (especially for male), whereas the reinstatement of the test in 2002 did not alter the earnings distribution. To obtain these results, this paper proceeds as follows: Section 2 overviews previous research on the labor supply effect of the social security earnings test. Section 3 briefly describes the revisions to earnings test rules in Japan. Section 4 describes the data set used in this study. Section 5 presents the results of bunch analysis using histograms and decomposition analysis of the earnings distribution before and after the elimination as well as reinstatement of the earnings test. Our findings are summarized in Section 6.

2. Previous studies

The results of social security earnings tests are often analyzed according to a labor supply framework found in standard textbooks (see Borjas (2005) for a graphical presentation), with a kinked budget constraint, corresponding to the threshold (Friedberg, 2000). Contrary to the prevailing view, economic theory shows that an a priori prediction of the sign and magnitude of an earnings test rule's effect on labor supply is impossible; the net effect depends on whether the substitution or income effect dominates, which is an issue that must be examined empirically (Borjas, 2005). As summarized by Gruber and Orszag (2003), two branches of studies have examined labor supply effects. One approach relates to bunch (cluster) analyses employed to examine earnings concentration at the test threshold. The other employs sophisticated econometric analyses of the test's aggregate impact on conditional hours worked under the kinked budget constraint, which requires a variety of structural assumptions.

Although a large number of studies have been carried out, we focus only on some important studies published since around 2000. In the US, many early studies found that the earnings test had only an insignificant effect on labor supply of the elderly.⁵ Gruber and Orszag (2003) used changes in the earnings test format over the past three decades to identify the effects of exogenous test rule revisions on labor supply and benefits received. By performing both graphical analyses of breaks in labor supply trends and reduced-form regression estimates based on a difference-in-difference approach, they found no robust influence on male workers' labor supply decisions but some evidence suggestive of an influence on female workers.

However, more recent studies have found that the earnings test has a sizable labor supply effect. Friedberg (2000) performed both bunch analysis and structural model estimation of the aggregate impact of the earnings test on elderly workers as a result of the kinked budget constraint and found that workers had responded significantly to three past changes in earnings test rules. She found the earnings distribution clearly concentrated just below the threshold and confirmed that the bunching had shifted in response

³ In 2010, the labor force participation rates for males were 92.8% for workers aged 55–59 years, 76.0% for those aged 60–64, and 48.9% for those aged 65–69 years; the corresponding rates for females were 63.3%, 45.7%, and 27.4%, respectively. A detailed description of the long-term development of the elderly labor market in Japan since 1980s is provided by Shimizutani (2011). Shimizutani (2013) examined the sensitivity of the labor supply decision of workers aged between 60 and 64 with respect to the earnings test and showed a discouraging effect on working in a large proportion of these workers in Japan.

⁴ Shimizutani and Yokoyama (2009) showed that the average tenure for Japanese workers has increased since the 1990s due to the extension of mandatory retirement from 55 to 60 years.

⁵ For example, Burtless and Moffitt (1985) as well as Gustman and Steinmeier (1985) performed simulations and suggested that elimination of earnings tests would only have minor effects on labor supply.

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