論文の内容の要旨

論文題目： Essays on Business Fluctuations
(　　景気循環の考察)

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The Japanese economy is focused on many aspects: the high economic growth after W.W.II, the higher economic performance during the oil shock era compared with the other industrialized countries, the long depression during the 1990s, the equality in income distribution and its deterioration in recent years, and the long hours worked.

In this dissertation, we try to investigate three fields: (i) pension benefit and hours worked, (ii) Japan's lost decade, and (iii) elasticity of substitution between oil and capital. The first field aims to demonstrate the effect of the pension benefit systems on the hours worked. The second one attempts to clarify the reason why Japan experienced the long depression during the 1990s. The final one is a preparation for the analysis on the propagation mechanism of the oil shock.

1 Pension Benefit and Hours Worked

It is pointed out that the social security contributions and the taxes have large effects on the variation among the industrialized countries. Prescott (2004) finds that the taxation can explain the difference of the hours worked between in the U.S. and in the major European countries and the decline in hours worked in these European countries in 1970s and 1980s, by incorporating the social security taxes, the labor income taxes, and the consumption taxes into a representative agent model. However, his model underpredicts the hours worked in Japan and Sweden. The hours worked in Japan, which is the one of the longest in the OECD countries, is much longer than U.S., although the tax burden is close to the U.S.. The hours worked in Sweden is not so much different from U.S. in 1970s and 1980s, although the tax burden in Sweden, which is the one of the highest in the OECD countries, is quite heavier than that in the U.S..

The purpose of Chapter 2 is to show how much the pension benefit can explain this gap between the actual hours worked and the theory, and demonstrate the importance of pension benefit system on the hours worked in the macro economy. Prescott (2004) ignores the pension benefits because their scheme is highly regressive in the U.S., however, they are not in Japan and Sweden. We measure the marginal pension benefit rates of the labor supply, and incorporate them into the previous studies. We find that the marginal pension benefit rates in Japan and Sweden reach 5 percents and more. Then, the marginal pension benefit rates can explain large parts of the discrepancy between the actual hours

worked and the theory in Japan and Sweden. These results imply that the pension benefit systems could have large impacts on the economic activities.

2 Japan's Lost Decade

In the 1990s, after "bubble economy," Japan experienced a prolonged period of economic stagnation. The GNP growth rate per working-age person declined rapidly from 3.2 percent in the 1980s to 0.7 percent in the 1990s. Why did the Japanese economy deteriorate so much?

In Chapter 3, we attempt to reconcile a controversy on the TFP in the Japan's slump during the 1990s by clarifying the role of capital utilization. Hayashi and Prescott (2002) emphasized that the decline in the exogenous TFP growth rate is the main cause. However, some empirical studies pointed out that the fall in capital utilization rates accounts for a large part of the decline in the TFP growth rate. We incorporate variable capital utilization into the neoclassical growth model, calculate TFP taking into account capital utilization, and simulate the aggregate output and capital-output ratio. We find that, although our TFP growth rate in the 1990s is consistent with the empirical studies, our simulation can explain the observed data. This result indicates the importance of capital utilization rates as a source of propagation in the Japan's depression.

In Chapter 4, we attempt to clarify the cause of the decline in the labor input during so-called Japan's lost decade. For this purpose, we pay attention to the increase in the ratio of part-time workers. We calculate the taxes for part-time and full-time workers in addition to the pension benefit rates in Chapter 2; these taxes distort the incentive for employment. We then measure the constant labor effort of part-time workers and the total factor productivity (TFP), which takes into account the effect of the lower labor effort of part-time workers. Finally, we simulate the Japanese economy during 1988–2004. We find that although the average growth rate of the measured TFP is considerably higher than expected, the simulation predicts the lost decade and the decline in labor input. This result indicates that the main cause of the lost decade was the decline in the labor input due to the deterioration in tax rates, in particular, of pension taxes, and that the Japan can possibly reverse the damages caused during the lost decade.

3 Elasticity of Substitution between Oil and Capital

The elasticity of substitution between oil and capital is a key parameter when researchers analyze the effect of oil shocks on the economy by using dynamic general equilibrium models. In Chapter 5, we estimate the elasticity of substitution in the U.S. economy, which is consistent with a large class of DGE models. We find that the estimated elasticity of substitution becomes lower than the value estimated by earlier empirical studies. A low elasticity of substitution implies that oil supply shocks have large impacts on the economy.