The Japanese Labor Force in Future with JIDEA7 simulation
(Abstract of presentation)

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Japanese INFORUM type model "Jidea7" is the revised model of JIDEA6. Main different features are as follows: new data 2006 added, *Pseidel*s arranged correctly, *Rhoadjustment* being set properly, *Coef* change calculation readjusted, productivity function being changed and the total I-O balance checked rigidly. Now solidity and consistency of JIDEA7 has improved to the level never realized.

This time, JIDEA7 is used to analyze Japanese future labor force shortage. Japanese Population is forecasted by "National Institute of population and social security research". Japanese population now is going over the peak and taking a step to long decrease period. The labor force shortage will arrive inevitably in a few decades.

Looking from the simulation result of JIDEA7, Japanese economic growth in next decade is very slow. The main driving force of economic growth is export. Even though these slow economic growth, labor shortage takes its shape in next 15 years. If the population growth is fixed, the degree of labor shortage depends on three factors; economic growth, labor productivity and labor participation rate.

Labor productivity forecast is one of the most difficult matters. It depends on fixed investment and technology progress. In our productivity function, the main explanatory variable is time trend but we obliged to readjust it empirically.

The official institute's forecast of labor participation rate is very low and decreasing. If the official forecast assumed to be correct, the labor shortage arrives at 2010. Our model has no balancing mechanism between economic growth and labor market such as Phillips curve. Our model forecast only how much workers needed for the forecasted output.

From the simulation of our model, to adjust the needs of workers, the labor participation rate should be about 66% (base line) instead of 58% (Case I) forecasted by the national institute. Or otherwise, preventing the labor shortage, labor participation rate stay same level and the productivity increase gradually up to 5% until 2020 (case II).

Conclusion

JIDEA7 seems to work properly. To forecast the labor market, it is important to clarify three factors: economic growth, labor productivity and labor participation rate. These factors are all difficult to forecast because they are not determined only by economic factors. But in our model, multi-sector approach makes the problem more transparent and easier to understand the problems we confront in future.