# Discussion

## Wen Jiandong

I would like to start by congratulating Larry Kotlikoff for his excellent paper, which provides us with an insight into the impacts of demographic change on global macroeconomic variables. The paper focuses on Japan, the United States and the European Union as examples of developed countries/regions and China as an example of a developing country. Its main conclusion, with which I agree, is that China, by acting initially as a capital absorber and then later as a supplier of savings, can play an important role in moderating the impacts of demographic change and enhancing the welfare of both developing and developed economies.

Using an extension of the overlapping generations model (Samuelson 1958; Diamond 1965) with consumers whose saving patterns conform to the life-cycle hypothesis (Ando and Modigliani 1957), the paper reinforces the importance of cross-country interdependence. Cross-border movements of goods and finance can act as a buffer, cushioning the impacts of ageing by providing economies with greater investment opportunities and sources of funds, across space and time. However, achieving these gains will require greater co-ordination of macroeconomic policies and the abandonment of protectionism. Barriers to trade and foreign direct investment do harm to present as well as future generations. I also feel that another solution to the challenges brought about by population ageing may be freer movement of people, as proposed by Mode IV of the World Trade Organisation's General Agreement on Trade in Services.

If we accept the argument of this paper (and others presented at this workshop), global imbalances, which are a controversial issue right now, are to some extent the natural result of demographic change. It is important to note that China, despite its high saving rate, currently runs a trade deficit with 'younger' economies, like those of the Association of Southeast Asian Nations. In turn, China runs a trade surplus with the EU and the US and exports its savings to these economies. This pattern is not unique to China. As Ito and Krueger (1999) show, Japan's foreign exchange reserves are highly correlated with demographic variables and there is also high correlation between current account outcomes and age-dependency rates.

As China plays such a significant role in Larry's paper, it will be useful to briefly consider a few background statistics. China is a large, open economy, whose total trade flows (exports plus imports) are currently equivalent to about 64 per cent of its GDP. Although still young by developed country standards, China's population is ageing rapidly. Despite rapid economic growth, which has averaged 9.5 per cent annually over the past five years, China remains relatively poor, with GDP per capita of just US$1 735 per year. Investment, which accounts for around 43 per cent of China's GDP, has been a key driver of growth in recent years. But China's saving rate is even higher at close to 50 per cent of GDP. As a result, China is a substantial capital exporter and ran a capital and financial account deficit of US$63 billion, equivalent to 2.8 per cent of GDP, in 2005.

Will the saving behaviour of Chinese households remain stable? In my view, answering this question requires an understanding of the rationale behind China's current high saving rate. Aside from cultural factors, there are two important factors that may encourage the saving rate to remain high. First, Chinese households face many uncertainties in the future, including concerns related to protectionism, the liberalisation of factor and product markets, and the perceived inadequacy of the social security system. Second, capital markets are still underdeveloped, requiring a high self-financing rate.

However, since the 1990s, the Chinese government has begun to establish a social security system. Although the pension scheme is currently underfunded, the government is attempting to remedy this, including by injecting part of the revenue from the privatisation of state-owned enterprises into the social security system and setting up individual accounts. Also, major reforms have been implemented to improve stock market regulations, and the markets for property mortgages and credit cards are developing rapidly. Therefore, it seems reasonable to assume that China's saving rate will gradually converge to that of developed countries.

I have a few additional suggestions for improvements that could be made to the paper. First, the assumption that total factor productivity in China will catch up with the US by 2050 (or even reach 50 per cent of the US level, as in Larry's alternative scenario) is too ambitious. It seems to me that it will become more and more difficult for China to close the gap in the later stages of its development process, particularly as its production becomes more technology-intensive (of course, China's need to import this technology represents another channel through which its development will enhance the welfare of the developed world). Second, the paper might have benefited from a greater focus on what demographic change means for foreign exchange markets. Exchange rate movements will have a great impact on rates of return to cross-border investments. From my perspective, China's current account surplus is partly a reflection of its relatively young population and should not be taken as an indication that its exchange rate is presently undervalued. Third, it may be misleading to assume that the same income distribution pattern exists in China as in the other countries examined in this paper. In China, the highest earners are in the white-collar group that only emerged in the past two decades. Fourth, Larry may be interested to note that, although it does not tax capital gains, China has taxes on interest and dividend payments (of 20 per cent) and corporate taxes (with an effective tax rate of about 25 per cent) instead of the zero rates he assumes in his paper.

## References

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## General Discussion

The question of whether life-cycle models can predict the size and direction of future capital flows was widely debated. One participant noted that such models consistently fail to explain the observed pattern of historical and present current account balances and questioned why their projections should be more accurate in the future. Other participants argued that medium- and long-run changes in aggregate saving rates are difficult to reconcile with the predictions of simple life-cycle models and suggested that movements in saving rates implied by life-cycle behaviour might be overwhelmed by other factors. In particular, the life-cycle hypothesis suggests that saving rates should have risen in many OECD countries over the past couple of decades, and yet household saving rates have in fact fallen over this period. Although most participants agreed that modelling exercises could play a useful role in helping policy-makers to understand the consequences of demographic change, there was general consensus on the need to develop a better understanding of the motives for private saving. In response to these comments, Larry Kotlikoff agreed that the direction and size of global capital flows over recent years are difficult to explain. But he argued that perceived failures of the life-cycle hypothesis often reflect the inability to develop measures of saving that are consistent with theory and noted that his own research has shown that, when appropriately measured, personal saving behaviour is consistent with the life-cycle hypothesis.

There was considerable discussion about the assumptions regarding the future development of the Chinese economy in Larry Kotlikoff's paper. One participant questioned whether one should expect Chinese private saving rates to remain high in the future, noting that present saving trends may simply reflect a shift in the desired stock of physical capital relative to labour. It was also noted that the paper's findings are particularly sensitive to assumptions about future trends in total factor productivity, about which there is little certainty. One participant observed that the magnitude of the projected capital flows, relative to output, in Larry Kotlikoff's paper far exceeded current levels. Given the current concern over potential 'global current account imbalances', other participants wondered whether such large capital flows would be feasible in the future.

There was also some discussion of the effect of pay-as-you-go (PAYG) pension systems on private saving behaviour. One participant questioned how Axel Börsch-Supan and Larry Kotlikoff could reconcile their papers'conclusions that the scaling-back of public PAYG pension systems would lead to an increase in private saving rates with the observation that countries which still rely heavily on PAYG systems, particularly in continental Europe, often have higher private saving rates than countries such as the United Kingdom or Australia, where pre-funded individual retirement saving plans are far more prevalent. A number of answers to this paradox were proposed. One participant suggested that high private saving rates in continental Europe reflect the concern that governments have, and may continue to, renege on their pension obligations. Another questioned whether low observed private saving rates might indicate that individuals are myopic and asked whether the authors could incorporate this into their models. In response to these

comments, Axel Börsch-Supan argued that the deregulation of financial markets and relatively high rates of home ownership in many Anglo-Saxon countries explain their relatively low private saving rates. He suggested that, once these factors are taken into account, researchers will find a positive relationship between private pension provision and private saving rates.