

Global Ageing: What is at Stake?

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Abstract

A central question for economists and politicians alike is how demographic change will affect the wealth of nations. Which countries will gain, which countries will lose in the international pecking order? Equally important is the question how these gains and losses can be influenced by public policy. With these two core questions in mind, this brief paper reviews the most important economic challenges and opportunities due to global ageing for Europe.

Introduction

The expected change in the age structure in virtually all industrialized countries – but also in many developing countries – is dramatic and will lead to a substantially higher proportion of older people in the world. The ageing process deeply affects future labour, financial and commodity markets. On a macroeconomic level, labour is becoming relatively scarce in the ageing countries while capital becomes relatively more abundant. This precipitates changes in the relative price of labour, will lead to higher capital intensity, and might generate large international flows of labour, capital and goods from the faster to the slower ageing countries. On a microeconomic level, the age composition of the labour force will change, which might affect labour productivity. Consumption and savings patterns are likely to alter when the elderly become a larger proportion of consumers and savers, with widespread implications for capital and goods markets.

While ageing is global, there are marked international differences in the speed and the extent of the ageing processes. Even within the industrialized countries, differences are large. Europe and Japan have already a much older population than North-America. Italy and Germany are ageing faster than France and Great Britain. In Asia, some countries start from a relatively young population, but ageing is very quick. A particular dramatic example is China. Due to the globalisation of our economies, no study of ageing can disregard these differential changes. International flows of capital, goods and services, and labour – in descending order of mobility – will be important mechanisms moderating the effects of population ageing in each individual country.

Labour markets

Understanding the development of the labour force during the next decades is crucial for any analysis of global ageing because the long run macroeconomic development is dominated by fundamentals such as the relative scarcity of labour and the relative abundance of capital. The essential macroeconomic effects of population ageing are a changing balance between capital and labour, and between labour supply and demand for consumption. An ageing society has relatively few workers for the existing capital stock that produces consumption goods for a still relatively large number of consumers. The fundamental parameter for economic performance during the ageing process is therefore the ratio between workers and consumers.

It is very unlikely that the decline in this ratio can be compensated by an equiproportional increase in productivity and/or capital accumulation. GDP in most European countries will therefore almost surely decline, and these countries are likely to become members with a declining weight among the G8/G20 countries.

From a domestic consumer's point of view, total GDP might be less relevant than GDP per capita. However, total population sizes will stay relatively constant for most European countries until about 2035, maybe slightly declining or increasing. Once the baby boom generation decreases, however, many European countries will face a significantly declining population. Labour force as a share of the adult population – the so called support ratio – will therefore decline slower than total labour force. For example, the German support ratio is projected to decline from 56% in the year 2000 to 49% in the year 2035, a 15%-decline in 25 years.

This figure is useful because it demonstrates the force of ageing in an understandable metric. A decline of 15% in the 25 year period between 2010 and 2035 translates in a negative growth rate of around 0.45 percentage points per annum from 2010 to 2035. The long-term real productivity growth of a typical European economy is about 1.5% per annum. In other words, the negative economic force of ageing, simply by reducing the number of workers available to produce goods and services, corresponds to between a quarter and a third of the average annual productivity growth. To compensate for the lack of workers by higher productivity of the existing workers, total factor produc-

tivity would need increase by 40%, probably an unrealistic figure.

The variability range for this forecast is large and almost entirely depends on future labour force participation of the young, the elderly and the female. In most pessimistic scenarios of unchanging labour force participation, the impact of the declining support ratio is huge. On the other hand, in an optimistic scenario of Denmark-style labour market reforms, the shift in the age structure is compensated for almost entirely by the increase in participation rates.

This example bears several lessons for policy in times of global ageing. First, the huge variability of the projections and the leverage of employment on GDP make clear that it is important to better understand how public policy can influence labour force participation rates. Structural reforms such as education reform and pension reform have potentially huge “side-effects” on GDP growth through their impact on employment, over and above the often more prominently discussed impacts on social budgets. Second, the above example shows how strongly the differential force of global ageing depends on to the extent to which an increasing quality of labour will compensate for the decreasing quantity of labour. “Side effects” of structural reforms on productivity may in the long-run dominate any direct but static effects, because they change the growth path of the economy.

Not only the size but also the age structure of the working population will change radically in the coming decades. We again use Germany as an example for how dramatic the change will be. The modal age of the German work force in the year 2000 was around age 36; in 2010, this peak age will increase to 46 years; and a further 10 years later it will be 54 years. The baby boomers then retire – the age distribution curve flattens out and changes very little in the following decades.

This fundamental change in the age structure of the working population will have profound effects on the microeconomics and the sociology of the labour market. The most important – and most controversial – aspect is the potential effect on labour productivity. If labour productivity is age dependent, a shift in the age structure will also bring about a change in aggregate productivity, even if age-specific productivity were to remain constant. We know little about the size of these effects. Rather, more research on age-specific productivity is needed to better understand whether ageing economies will suffer from a productivity decline, amplifying the effects of a shrinking quantity of labour. At the very least, however, we understand that further education increases productivity – and herein lies an important policy message: prevent all actions that make further education less attractive, and strengthen all steps that increase the investment value of further education – such as a later retirement age.

Interactions between labour, product and capital markets

The labour market is not insulated from other markets. It is not only directly affected by population ageing, but also indirectly by ageing-induced changes in product and capital markets.

Product demand will change, since an older population of consumers has different preferences and needs than a younger population. Consumption demand may also decline for at least two reasons. First, because GDP per capita will decline in the face of a shrinking labour force unless this is offset by higher capital input and productivity. Second and more subtly, it is likely that more retirement income comes from asset income which fluctuates more than annuitized pension and labour income. This will increase precautionary savings and depress consumption, given a fixed level of income.

Consumption behavior changes with increasing age. For example, spending on goods in the group “transport and communication” falls over the life cycle, while goods in the “health and hygiene” group, as well as costs of shelter, account for a growing share of older households’ budgets. Hence, if the age distribution of an economy is changing, the composition of consumption will change accordingly. Most notably the aggregated expenditure on health will increase during the ageing process while the corresponding spending on transport will decline.

Changing product demand will then precipitate shifts in sectoral labour demand. Employment in the health sector will increase; it will decline in the transport sector. Some estimates suggest that more than a sixth of all workers will need to change their jobs due to population ageing.

Labour supply is also affected by capital market fluctuations. The more retirement income is provided through funded pension income (e.g., 401k plans or other individual accounts invested in the stock market), stock market performance will, at the margin, affect the retirement decision of workers as well as their consumption demand.

Understanding this mechanism is important for analyses of global ageing since it may substantially amplify capital market disturbances. Stock markets have exhibited huge swings, and we do not fully understand how bubbles emerge and even less how to predict and prevent them. This topic has a clear political dimension since the flexibility of choosing the retirement age is a core transmission mechanism for these interactions between the capital market on one side and labour and product markets on the other side.

Capital markets

Capital markets play a crucial role in global ageing since capital is the factor which moves with the least frictions

across countries, and it permits to shift resources from one period to another. The first mechanism permits international diversification of demographic risks, the second mechanism permits intertemporal (even intergenerational) substitution of resources.

Both issues are complicated in a system of many countries, some of them ageing faster than others, some of them not ageing at all. There will be competition across the ageing regions for profitable foreign direct investment in regions that age slower or not at all. An important area of research is therefore to gauge the relevant orders of magnitude in a system of regions which is tied together by flows of capital combined with reverse flows of goods and services.

Capital market issues cannot be studied in isolation from public policy. Most importantly, the share of private pensions in total retirement income is a major determinant of the supply of loanable funds. Fundamental pension reform has therefore a large impact on capital markets. In turn, the future performance of capital markets will have a huge impact on the success of the current generation of pension reforms. If rates of return stay low, or if an “asset meltdown” will occur due to falling asset values when the baby boomers retire, funded pensions will not provide the much searched for escape from the demographic problems that plague the public pay-as-you-go pension systems.

Does global ageing decrease the supply of global capital? There are two main channels for effects of demographic change on domestic capital formation. First, decreasing labour supply reduces demand for investment goods since less capital is needed. Second, in a closed economy, a decline in national savings leads to a decline in investment by definition. In an open economy, the link between these two aggregates is broken to the extent that capital is internationally mobile.

Model predictions show a small decline in future saving rates. Neither is the aggregate saving rate immune against demographic changes, nor is a dramatic decline a likely event. Again, policy matters. The projected aggregate saving rates under a fundamental pension reform – transforming current pure pay-as-you-go systems into multi-pillar systems in which all future demographic burden is absorbed by a funded component – are substantially higher. This helpful effect of a pension reform is stronger in an open-economy scenario.

Several articles in the popular press have attributed recent rises in stock market prices to population ageing and raised the fear that an asset market melt-down might occur when

the baby boom generation decumulates its assets. The academic literature is much more relaxed. Simple closed-economy models underlying dramatic asset meltdown scenarios miss the important fact of international capital flows under global ageing. Because of international diversification, the melt-down of the asset market is lower than predicted by closed-economy versions of conventional OLG models. We show that the decrease in the rate of return which results from both population ageing and moving towards pre-funded pensions is modest, less than 100 basis points, even when we assume that Europe is a closed economy. The return on capital can be improved by international diversification, that is, by investing pension savings in countries with more favorable demographic transition paths than Europe.

Some policy conclusions

Global ageing will affect labour, product and capital markets in fundamental ways which will change the growth path of GDP and the wealth of the European countries. We understand the basic mechanisms behind these changes, are able to trace some of the complex feedback effects in general equilibrium, and have some rough ideas of the magnitudes involved.

Public policy can influence these labour, product and capital market changes essentially only on a microeconomic level – most directly by adapting the labour market to a situation in which labour is becoming increasingly scarce. The main policy tools in order to utilize labour reserves are retirement and education policies.

Capital markets can diversify the risks generated by labour scarcity. They are therefore strategic markets in a globally ageing world. The supply of capital is directly influenced by pension policies that foster savings. While we do not fully understand the interactions between pension policy and economic growth, we know that policies such as pre-funding and privatization have side effects on the growth rate which are particularly welcome in times of global ageing.

The international transmission mechanisms that generate the helpful effects of diversification do not work smoothly. Understanding the frictions to the free flow of capital, the sources of instability in global financial markets, and the kind of policies that are appropriate to reduce frictions and instability, is an important and highly policy relevant research area for global ageing.

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