

## Overview

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*Charles R. Bean*

*“I am an old man and have known a great many troubles,  
but most of them never happened.”  
—Mark Twain*

My brief is to discuss the implications of population aging for monetary policy. But before doing that, let us recall some of the things we have learned at this symposium about the macroeconomic impact of demographic change.

### **Macroeconomic effects of aging**

To begin with, there are three demographic shocks working their way through: reduced fertility rates, increased longevity, and the temporary increase in fertility that followed World War II. The effects of these shocks differ, as do their importance across countries. The advanced economies and, somewhat later, China will be most affected by population aging in the coming decades. In contrast, some developing countries should see a rising share of the working-age population. The paper by David Bloom and David Canning highlighted the opportunities provided to the latter by this “demographic dividend.”

As far as the consequences of aging go, several contributors have suggested that the affected countries should experience a fall in the growth rate of per capita GDP and changes in saving and investment. Aggregate saving is likely to rise along the transition path as working households prepare for a longer expected retirement. But as those households move into retirement and dissave, aggregate saving should drop back. Life-cycle theory suggests the aggregate saving ratio should be lower in the long run, as the dissaving retirees will be more numerous. That seems to be supported by some macroeconomic studies, although, as previously discussed, some of the microeconomic evidence is rather less supportive in finding that the elderly do not dissave as much as the theory predicts. Finally, the capital intensity of production should rise and the equilibrium rate of return should fall.

The graying of the population could also affect the supply of labor. Increased longevity should lead both to more time spent in retirement and to more time spent in work as people increase their saving in order to maintain their consumption in old age. And we know that wages rise with experience, suggesting that an older workforce should, on average, be more productive, even if in some lines of work productivity may decline beyond a certain age.

The magnitude of these effects depends critically on the degree of openness, on the international correlation of the demographic shocks, and on the response by governments. With a high degree of openness, the common component of the changes in savings and investment behavior will affect the global real rate of return, while the asymmetric components should show up in movements in current account balances and real exchange rates. In addition, the relative scarcity of workers in countries with aging populations should drive up real wages, prompting increased inward migration from countries where labor is more abundant. Those themes were explored in the contributions from Ralph Bryant and John Helliwell.

As far as policy goes, countries that rely heavily on unfunded state pension schemes—as many European states still do—will be forced

either to lower pension benefits or else raise taxes on the working population. The natural consequence of lower state pensions will be greater reliance on private provision. In that regard, though, it is worth noting that some funded private pension schemes have already run into difficulty because of unanticipated increases in longevity. On the other hand, if taxes are raised to preserve the value of pensions, then there may be adverse effects on labor supply and entrepreneurial activity. Finally, government policy toward retirement dates will be key, as an obvious response to increased longevity is to increase the length of the average working life. Given the required size of adjustment, action along a variety of dimensions seems the most likely eventual outcome.

### **Implications for central banks: demography as a source of shocks**

So, how does all this affect central banks? *First*, demographic change represents a macroeconomic shock. But the glacial nature of demographic change appears to suggest that the implications for monetary policy should be modest. Saving ratios are more likely to drift up or down over many years or even decades rather than change abruptly. The same is true of developments in current accounts, real exchange rates, migration, and labor force participation.

But though the demographic changes will be drawn out, income expectations or the institutional environment could shift more abruptly. Dealing with the consequences of an aging population is one of the trickier economic problems facing governments, particularly in countries with generous unfunded pension schemes. Given the glacial nature of demographic change, it will be tempting to postpone sensitive decisions. Don Johnston's reference to the inaction by OECD governments on this front over the last six years highlights the possibility that decisive action may only be triggered as public debt spirals and the financial markets start worrying about monetization or default. Abrupt movements in asset prices and sharp movements in saving behavior could then be the result.

Even where there is less reliance on state provision, there could be quite sharp changes in expectations and the environment. In the United Kingdom, for instance, increased longevity and falls in equity prices have led to the closure of many defined benefit company pension schemes, with the attendant transfer of risk from employer to employee. Part of the response to that has been increased investment in real estate and an expansion of “buy-to-let” as a means of providing for retirement. That has added to the upward pressure on house prices, something that the Bank of England’s Monetary Policy Committee has been much exercised about recently.

### **Natural rates**

*Second*, demographic developments will affect the natural rate of interest and the natural rate of unemployment, the reference points we habitually use to judge the stance of monetary policy. As already noted, the analysis presented at this symposium points to a lower natural real rate of interest, both along the transition path and in the steady state. But is the impact likely to be quantitatively significant? Axel Börsch-Supan’s simulations for the European Union point to a decline of around one and a half percentage points in the real rate over the next 30 years. On the other hand, David Miles (1999) finds an effect only a third that size in a similar model. Moreover, the results that Jim Poterba presented in his paper suggest there is little evidence of a strong statistical link between demographic variables and the rate of return in the United States. Clearly, there is much uncertainty here, but it is worth pointing out that we have seen much larger movements in long-run real interest rates over the last decade, reflecting the impact of factors such as the acceleration in productivity and changes in budgetary positions.

That the natural rate of unemployment may also be affected is less obvious. However, the aging of the population means that the rate of inflow into the working population and the exit rate into retirement will both be lower in the long run. The former tends to lower the natural rate, as there will be relatively fewer unemployed young

workers looking for jobs. Whereas the latter raises it as there are fewer vacancies arising out of retirement. In standard matching models (see Christopher Pissarides 2000) the first effect dominates, so the natural rate should fall. In addition, the changing age structure of the working population is likely to affect average quit rates. For instance, we know that average job duration tends to be shorter for younger workers than older workers. If younger workers constitute a smaller share of the workforce, then the average quit rate and the natural rate of unemployment should both be lower. But whether these effects are quantitatively significant is another matter altogether. Moreover, they may well be offset by worsening skill mismatch if there are some workers whose productivity declines sharply after a certain age and that interacts with generous unemployment benefits—a problem alluded to in discussion by Alan Blinder.

### **The transmission mechanism: the impact of interest rates on demand**

A *third* route whereby a grayer population may have an impact on the conduct of monetary policy is through its impact on the transmission mechanism. Changes in interest rates affect consumer spending through three channels: wealth effects, intertemporal substitution, and the interaction of cash flow and credit constraints. Now, the old are typically richer in financial and real capital, while the young are richer in human capital. Moreover, the marginal propensity to consume out of wealth should rise with age. So, wealth effects should be more important for the old. In contrast, the young are less likely to own assets that can be used as collateral and more likely to be subject to credit constraints.

So, an aging population means the wealth channel is likely to become relatively more important compared with the intertemporal substitution and credit channels. Increased longevity should also lead older workers to carry even higher levels of financial wealth into retirement, further accentuating the wealth effect. But whether that leads to an overall rise or fall in the monetary policy multiplier is less

obvious. David Miles (2002) reports simulations with an overlapping-generations model that suggest the policy multiplier will indeed rise. But in the United Kingdom, with its high levels of home ownership financed through variable rate borrowing, the impact of higher interest rates on the cash flow of constrained borrowers and on the value of housing collateral appears to be a particularly important part of the transmission mechanism. In that case, the monetary policy multiplier could well fall.

### **The transmission mechanism: the Phillips curve**

A grayer population could also affect the transmission mechanism by flattening the short-run Phillips curve. There are two possible mechanisms at work. First, as already noted, workers may want to work longer in order to provide for their retirement. In addition, so long as the state retains some responsibility for supporting the elderly, governments are likely to want to extend the typical working life in order to keep the tax burden down. But a substantial increase in mandatory retirement dates seems relatively unlikely. Rather, as Don Johnston noted, governments are likely to combine more modest increases with fiscal inducements that encourage potential retirees to continue working in some form after the normal retirement age. The participation and supply of hours from these workers is likely to be more elastic than those of prime-age workers, leading to an increase in the cyclical responsiveness of overall labor supply and a flatter Phillips curve.

The second mechanism is through inward migration into the aging developed economies. Now, any such migration will most likely be mainly a steady flow. But, to the extent that such migration responds to job availability in the receiving countries, then it will act as a safety valve when they start overheating. The potential for a country to grow rapidly without significant upward pressure on inflation by taking advantage of inward migration is illustrated by the experience of the Republic of Ireland over the last 15 years—a sort of reverse diaspora as Irish workers on the British mainland and elsewhere returned home.

### **The political economy of inflation**

A *fourth* impact of aging on central banks may be through its impact on the constituency for low inflation. Other things equal, increased longevity should lead not only to more retirees but also to higher average wealth holdings. That will be even more likely if governments respond to aging by cutting back on the generosity of state pensions and encouraging greater private provision. Moreover, employers in countries like the United Kingdom have been shifting pension arrangements from a defined benefit basis to one of defined contribution. Workers saving for retirement will therefore typically find themselves exposed to more risk than before. In order to hedge some of that risk, they are likely to want to hold a greater fraction of their portfolios in bonds rather than equity and, assuming that the majority of bonds remain nominally denominated, the constituency for keeping inflation low will be larger.

### **Financial stability**

The *fifth* dimension of the impact on aging on central banks relates to their role as guardians of the stability of the financial system. An aging population, particularly if it is also associated with a move from unfunded to funded pension schemes, implies a higher saving rate for the population of working age. Moreover, those funds are likely to be channeled through institutional investors rather than banks, hastening the structural changes that are already taking place in bank-dominated capital markets such as those in some euro-area countries.

The greater scope for diversification and risk-shifting with securitized lending rather than bank-intermediated finance means that, in principle, this could be a positive development from a financial stability perspective. But against that, it may be harder to trace exactly where some kinds of risk end up. So, at a minimum, central banks will need to develop further their antennae for the surveillance of macro-prudential risks.

Furthermore, increased reliance on personal pension provision will increase the sensitivity of savers to underperformance, whether it results from fraudulent behavior, the misguided use of funds, or just plain bad luck. Financial supervisors should expect to receive heightened criticism for perceived regulatory failings. And monetary policymakers can expect to be criticized for allowing asset prices to fall.

But let me conclude by noting a *sixth* and final impact of increased longevity on central banks that I see as quite unambiguously beneficial: Namely, that it allows even older and wiser chairmen and governors to run the show!

## References

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