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Thinking longer, working harder: how long-dated bonds can help Europe's ageing population

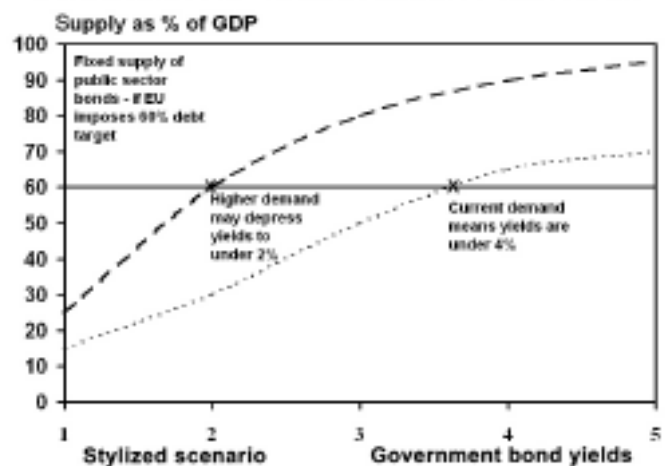
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Summary

- One explanation offered for the so-called 'conundrum' of low long-term bond yields has been the linkage of strong demand for bonds with the pre-retirement phase of the 'baby boomer' generation.
- If demand for bonds, particularly secure long-term government-backed bonds, continues to rise, this may well create a bubble. This could be followed by a crash if pensioners started to draw down savings at a later date.
- The risk of disruption in financial markets could be reduced if the supply of suitable securities were to be expanded to match demand. Of course the private sector can respond by tailoring debt issues to this emerging 'grey' market, but pension funds may still find it difficult to avoid chasing the relatively small supply of government-backed paper whether or not individual savers could be persuaded to switch allegiance. This suggests that, contrary to current fiscal orthodoxy in Europe, government debt should currently be expanding at a faster rate.
- We argue here that increasing the supply of government-backed bonds is not only an appropriate action to consider to stabilize markets but one that could generate extra funds to be used to bring forward infrastructure spending. This change in policy need not be detrimental to public finances or economic prospects. Any spending must be aimed at improving investment and productivity.
- We propose that debt targets should not be rigid but flexible and based on the population savings cycle and demand for 'grey' bonds. Otherwise the EU economy will remain stuck in a sub-optimal trend with the additional risk of financial market volatility.

Potential EU bond market scenario



Introduction

Population 'ageing' is set to affect a number of countries in the near future owing to the twin impact of people living longer, with a consequent expansion of the old age population, and lower fertility rates, resulting in fewer children.¹ It has been estimated that the ratio of people over 65 to those between 20 and 64 could double to 50% from the current 25% by 2050, reaching 40% by 2030.² More and more people are likely to spend a larger proportion of their lives living on retirement income.

In this paper we look at the implications of population ageing in Europe for aggregate savings, investment and productivity.³ In particular we focus on the effect of ageing on investment demand and examine the influence of population age structure on financial market asset prices and returns. Economic theory has quite a lot to say on savings and investment in the context of growth models, although admittedly the message is not always unambiguous. Given population ageing in the EU as a whole, relative to the US, theory might suggest that higher savings rates in Europe reflect the present phase of a long-term pension plan on the part of pre-retirement baby boomers (those currently aged 50–65). Extra inflows into investment need to foster higher productivity rates so that the next generation can sustain both its own consumption and that of the pension age group. Those in the pension group, as a result, should benefit from the rise in productivity as it is linked to their investments and represents a return on the capital they have invested.

In practical terms, there remain two big question marks over this process. First, there is the issue of whether higher productivity rates are actually achieved. Could it be the case, for instance, that investment fails to take place and/or turns out to be ineffective? The second question regards the form of return that will be paid to investors later on, which determines the relative reward from higher productivity for workers versus savers/investors. In market economies this is seen as being determined by financial markets, but government also influences the outcome through, for instance, regulatory constraints. Real returns are influenced by factors such as inflation and taxation, which are political as well as economic variables.

We argue that imperfections in the bond market are surfacing on the back of strong and rigid demand for low-risk securities from savers in their pre-retirement years. As 'grey' savers, on aggregate, are rather inflexible in their investment preferences, the risk is for bond prices to soar now and drop later. Increased issuance of long-dated government bonds in

Europe could then provide a means of meeting rising demand for such investment instruments in a way that would smooth returns over a number of years, mop up Europe's excess savings – perhaps even some of Asia's – and usefully channel the funds raised into domestic investments.

Besides correcting market imperfections, there is a further advantage in increasing the issuance of long-dated securities, namely that they would provide funding for long-term infrastructure projects. Investing in such projects could provide domestic investment opportunities, increase productivity and absorb some of Europe's unemployment. In terms of public finance, long-dated bonds would allow a relatively high level of public debt to be funded without pushing up bond yields from current low levels.⁴ However, such recommendations contradict the current orthodoxy that debt – and deficits – should be considerably reduced. We propose that debt targets should not be rigid but flexible and based on the population savings cycle.

The impact of ageing on saving and investment demand

The link between an individual's age, consumption and saving decisions has been explored within the context of the permanent income hypothesis (Friedman, 1957) and the later life-cycle hypothesis (Modigliani and Brumberg, 1954; Ando and Modigliani, 1963). Both theories imply that consumption will be smoothed out through an individual's lifetime. Notably, the life-cycle theory of consumption suggests that early in one's life consumption may well exceed income as individuals may be making major purchases related to buying a new home, starting a family and beginning a career. At this stage in life, individuals may borrow against their expected labour income in the future. In mid-life, expenditure will begin to level off while labour income increases and therefore saving increases as well. Individuals at this point will repay debts and start to save for retirement in stocks, bonds, pensions schemes etc. At retirement, income normally decreases and individuals start to rely on income from pension plans, typically annuities (based on bond holdings) for private pension funds. They may also draw down savings, selling off some of their financial assets.

What happens when the baby boomers do retire?

Given current, quite extreme, demographic trends in a number of countries, the life-cycle hypothesis predicts that population ageing will result first in a pre-retirement savings boom, to be followed by a decline

in the savings rate as older households begin to draw down their retirement funds. According to the 'asset meltdown hypothesis' theory (Poterba, 2001), the retirement of the baby boomers will lead to a sell-off of assets that have been accumulated during prime working years to support retirement consumption. As a result, the saving rate, which depends critically on the relative size of different age cohorts in the population, will eventually decline as a percentage of national income.⁵ Arguably, the decline in household saving may be accompanied by an increase in public-sector expenditure to meet the income and health needs of the aged. Heavier spending requirements could push the public sector into large deficits unless taxes were to rise as well.

According to empirical evidence (Brooks, 2000; Davis and Li, 2003), however, the 'asset meltdown hypothesis' is the worst-case scenario. Consumers typically dispose of assets at a less rapid rate than this simplified version of the life-cycle model suggests. Uncertainty plays a major role in the pace of wealth reduction during retirement both because of the uncertainty of the timing of death and the limited options to respond to unforeseen contingencies. Moreover, the liberalization of financial systems has given rise to rapid international integration of financial markets. In this context, the 'meltdown' theory might be attenuated by the growing economies and wealth of emerging markets.

Even if changes in household portfolio allocation are unlikely to result in an 'asset meltdown', they can have important effects on demand for different kinds of assets. People become increasingly risk-averse with age and tend to switch to safer assets – indeed they may be required to do so in pension plans, typically switching to annuities, based on bond holdings, to provide an old-age income stream. Empirical evidence (Davis and Li, 2003) suggests that this could have significant implications for asset prices as the baby boomer cohort starts to switch from stocks to bonds on retirement.⁶ Such a marked rise in demand will push bond prices up and yields down, possibly creating a bubble unless there is a simultaneous increase in the supply of suitable instruments. Pensioners may be left with a poor return, not reflecting their previous investment and the impact this may have had on raising productivity. Company schemes that are committed to making fixed pension payments will face costly top-up payments to make good shortfalls in funds. Indeed, this problem is already being discussed as a serious threat in the UK as bond yields have recently dropped sharply, implying heavy funding costs for a number of companies if they are to meet pension obligations. We note that the normal market reaction – to switch

to alternative assets as relative prices change incentives – may not work as well as markets would like in circumstances of a relatively stubborn demand for bonds and the search for secure yields. The risk premium on alternative instruments might rise without this eliciting a significant reduction in bond demand – although additional new savings might flow into other markets, thereby raising the overall national savings rate even more. This is because of the combination of the inflexible 'grey' demand for bonds and an equally inflexible supply of paper from governments. Having inflexible demand and supply is a recipe for market instability and, in this case, further falls in yields.

A question of productivity

Population ageing also has important implications for economic growth and productivity. Ageing implies a contraction of the future workforce in many industrial countries. The goods and services that the retired population will be able to purchase, irrespective of the source of their income, will be produced by relatively fewer workers.⁷

In a closed economy, if output is to meet the expectation both of a larger group of pensioners for a decent standard of living, commensurate with the aim of their savings, and of workers – who probably anticipate not stable but rising real wages – then clearly labour productivity has to increase. This will require a build-up of investment in the near term if the main route to raising labour productivity is through a higher capital/labour ratio. This process may take the form of enhancing infrastructure to enable improved productivity later on – for example, better transport systems to reduce journey times, up-to-date healthcare facilities or better housing to cut energy use, repairs and maintenance – as well as implementing labour-saving methods in manufacturing (robotization and upscaling of plant size where economies of scale can be achieved) and reducing labour-intensive manufacturing in general.

Provided the projects that benefit from the boost to investment raise productivity, then this should be reflected in valuations of the capital stock. In other words, the stock-market values of companies should rise. Returns for investors should be in the form of a higher peak value for shares and an increased dividend stream. Baby boomers, however, are likely to maintain relatively high demand for bonds as part of their mature savings plans. To match required investment profiles, the return to pensioners should be via payments on their holdings of government-backed bonds used to fund the projects.⁸ By the time the projects were completed, the retired baby

boomers would be ready to dis-save; thus falling investment needs would correspond to falling savings. Of course, the cycle would be renewed as the baby boomers died away, leaving a more balanced population structure behind.

The adjustment, however, depends on the economy's openness. In a completely closed economy, domestic investment and national saving should rise and fall in tandem over the long run. But in economies open to the rest of the world, rapidly ageing countries can also export some of their excess savings to less rapidly ageing countries elsewhere in the world. In other words, in an open economy fluctuations in the domestic saving and investment balance are reflected in changes in the current account balance. Indeed, macroeconomic adjustments can be channelled through exchange rate movements and external-sector transactions. For example, investment funds from developed countries are likely to flow to developing parts of the world where investment demand remains buoyant.⁹

However, prudential advice concerning currency and risk exposure for pension plans tends to discourage large holdings in foreign assets, putting a cap on the 'benefits' that could be reaped in an open economy. In addition, we cannot ignore conditions in the domestic economy. If the latter is operating at full capacity with full employment, this would tend to argue in favour of more savings and investment flowing abroad in the high savings years. But in Europe there may, arguably, be more scope for faster growth and a reduction in the high rates of unemployment if more investment were to be encouraged to stay at home. This is not to say that there would be no savings flows abroad, especially for high net worth and less risk-averse savers, but for Europe, currently high savings could help to push the economy to achieve a better growth rate. The choice may not be the same for the EU as for the US, where the economy is growing more strongly.

Saving Europe

Can the framework explored above offer some insights into the outlook for Europe and policy prescriptions? After all, unlike the US, Europe is facing the challenge of population ageing with high saving rates, high unemployment, low GDP growth and low productivity.

It is also true that in Europe many baby boomers can rely on a state pension – the first pillar of old age income¹⁰ – rather than on savings alone. However, the increasingly widespread wish to maintain living standards once retired, increasing longevity, the uncertainty about Europe's future economic outlook

and more awareness of personal finance¹¹ are behind the increasing trend for individuals to save in order to provide a safety net and supplement their pension income. There is thus a high savings rate and it is clearly geared to pension-type investments. In the US the household saving rate as a percentage of disposable income has fallen considerably – from around 7% in 1990 to more or less zero in 2005 (OECD, 2005). The saving rate in Europe is higher. In the euro area it has edged up from 9% in 2000 to almost 11% in 2005 on the back of pending reforms of the pensions system and uncertainty *vis-à-vis* the economic outlook (OECD, 2005).

Although the breakdown of saving rates by age group is not available, demographics suggest that the bulk of this saving is likely to come from the baby boomers, who represent about 20% of Europe's population. Moreover, according to the life-cycle theory, this group is currently in its high-earning, high-saving years, swelling total private savings.

There is a current opportunity to tap this growing source of savings. Later, as this cohort moves into retirement, it will start to run down its savings and it will be replaced in the economy's savings cycle by significantly smaller cohorts. It is likely, though not generally expected, that, in this later phase, private savings will tend to fall, possibly steeply. The saving rate as a percentage of national income depends critically on the relative size of different age cohorts in the population. Consistent with the life-cycle, savings rates tend to decline in countries where there is a large retired population (Disney, 1996). The situation becomes even more critical once the group of pensioners becomes bigger than the pre-retirement group. The aggregate saving rate, therefore, is likely to drop after reaching a peak.

Two critical issues: productivity rates and future rates of return

There are two critical issues related to the ageing of Europe's baby boomers. One is the need to raise labour productivity. The other relates to portfolio composition.

As discussed above, an economy with a shrinking active population needs more capital to raise labour productivity and output. Given Europe's currently high saving rates, this should not be a problem – the capital stock will rise as long as these savings are channelled into productive domestic investment. However, the marginal product of capital will fall as the capital/labour ratio rises, steadily reducing prospective investment returns, while a shrinking workforce might also curb domestic investment opportunities. As these trends become more pronounced, they will eventually

discourage savings and drive investment abroad. If, by this time, the economy has reached the phase of pensioners reducing savings and spending more of their assets, then it will simply settle into an equilibrium of high labour productivity but falling investment for some years until the baby boomer generation dies away.

This scenario is particularly attractive for Europe. Infrastructure projects – from high-speed railways to extensions of motorways to energy-sector projects and port developments – could be advanced¹² if funding were to be brought forward. Indeed, investment might also be geared to funding of essentially private-sector projects, but the key here is to tailor the method of fundraising – through government-guaranteed long-dated paper – to leverage the appeal to pension needs. Typically, large infrastructure projects, such as those in the energy and transport sectors, require very long-term financing and it is not unusual for this to have government backing in some form.

The alternative view is that Europe's high savings are not channelled into domestic investment but flow abroad. Some of the EU's excess savings have flowed into the US markets, helping create a potential bubble there too. It also means that domestic demand and job creation in Europe remain weak. And there might be insufficient investment to raise long-run productivity and opportunities. Can Europe afford this? It might be in both continents' interests to have more of the EU's savings recycled into EU domestic investment, especially if this were to boost EU employment and demand growth in the process.

Clearly it is important for Europe to achieve higher productivity rates in the long run through domestic investment now, but the related issue is how to ensure an adequate, stable return on assets for pensioners to maintain old-age incomes. If, as seems likely, mature savers continue to switch into so-called 'low risk' assets, that is 'grey' grade bonds, this will push yields even lower and create a bigger bubble. Demand here is driven by the need for this class of asset – almost irrespective of relative returns. Normally, falling government bond yields would make the return on other instruments such as equities more attractive, pulling savings back and limiting the slide in yields. But in the 'mature saver' model, this does not happen and the equity risk premium – and corporate bond spread – simply rises. The charge into bonds creates a self-feeding frenzy in pension planning as an ever larger fund is needed to meet old-age income requirements based on lower yields. Faced with the prospect of this situation becoming worse, the attraction of very long-term bonds has increased, guaranteeing yields and smoothing the potential volatility in bond markets.

The case for long-dated bonds

There is an opportunity here to absorb investor demands through the issuance of long-dated, government-backed securities. Given Europe's demographic trends and high savings rates, issuing long-term debt could be a good way to mop up the large pool of savings while at the same time optimizing the internal distribution of savings and stabilizing returns. Long-dated bonds, indeed, are low-risk and do not offer high returns, but they do stabilize returns over a long time-frame. Increasing the supply of such instruments would allow savers to keep a greater proportion of their funds in their domestic currency without driving bond yields down to such low rates that pensions would become impossible to fund. The alternative is that European savers put their money into other instruments, such as property or US bonds, with the possibility of creating a bubble in these asset markets as well as depressing prospects for productivity gains at home.

Funds raised through long-dated bonds would address the issue of improving the investment balance and productivity rates as they would provide extra inflows into infrastructure projects, which could be brought forward instead of postponed. Future prospects¹³ would be enhanced if this process fostered a higher rate of productivity in the future so that the next generation of workers could sustain both their own consumption and that of the pension age group. The pension group, as a result, would benefit from the productivity rise, which would be linked to its investments, although the return the pensioners would actually receive would be in the form of a guaranteed rate on the long-term government-backed bonds, with the government acting as the intermediary.¹⁴ The additional benefit here is that infrastructure spending and higher investment in general would create jobs now in order to 'save jobs' later. Indeed, according to demographic projections, the labour market will be tighter in 10–20 years' time.

Long-dated government bonds would also provide investors with a kind of insurance policy, allowing them to lock in higher yields than might be on offer should a bond bubble be allowed to escalate and burst. They could rely on the government to be the arbiter/enforcer that ensures payments of an income stream on the bonds, either through the direct means of taxes and state pension payments or through upholding an economic, market and regulatory structure that ensures returns to investors and enforces contracts. Governments can enforce this process of 'locking in wealth' by adjusting their borrowing over time.¹⁵ This would amount to making risk transfers across generations, reflecting a political consensus that insurance against the asset market

effects of demographic shifts is worthwhile. Investing in long-dated domestic assets presents the further advantage of avoiding country and currency risks. Investors, especially risk-averse ones, are 'home biased' as, depending on available options, they tend to invest a disproportionate percentage of their net worth in domestic assets.¹⁶ Indeed, pension fund restrictions often require this. Governments cannot ignore the responsibility of maintaining a sufficient supply of suitable investment instruments, even if this means acting as financial intermediaries in the investment process.

Policy implications

Investor preference for instruments such as government debt may suggest that government debt levels should be rising – and can safely do so without putting upward pressure on bond yields. Concerns, however, are typically expressed about the 'threat' of rising government deficits and debt in the context of the challenge of population ageing. Might this orthodox view be wrong?

Certainly concerns over public debt do not seem consistent with the very strong demand for long-term government debt at fairly low interest rates, as witnessed by the demand in 2005 for the historic issue of 50-year bonds by the French government,¹⁷ the latest downward pressure on UK long rates, and generally firm demand for long-dated government bonds, typically by long-term investors such as insurance and pension funds. This may be because neither the basic form of economic theory nor the EU's 'received wisdom' on government debt seems to properly address the institutional framework of savings and thus the 'demand side' for investment instruments. The savings and investment process has been traditionally seen as a market- and private pension-driven solution, consistent with pursuing the objectives of stabilizing government deficit and debt. A key implication of the assessment for potentially

higher government-backed investment, given investor demand for such paper, is that the 'steady state' government debt/GDP ratio is not exogenous or a fixed parameter in the system. It may vary according to the population age and savings structure. Europe's current demographic patterns and savings rates – prior to the retirement of the baby boomers – may provide a window of opportunity for more aggressive public debt expansion linked to increasing public investment. The baby boomers would then receive their pensions from the proceeds of the long-term bonds used to fund an accelerated investment expansion. Investors of this type favour government-backed paper for reasons of security and regulations in the pensions market. Indeed, adjustment of supply might help savers avoid an undesirable boom-bust cycle in bond markets during the pre- and post-retirement impact of the baby boomer cohort. Inasmuch as increased investment activity now would boost the economic situation and jobs, the eurozone economy could benefit considerably from tapping this source of funds. Extra investment spending in this context would not be inflationary as the euro would benefit from European savings being kept 'at home' and the supply side of the EU economy would be strengthened – offsetting any near-term deterioration in the current account and government debt.

Fear of rising government deficits and debt seems to be precluding this adjustment mechanism. Instead of the ad hoc targets for debt imposed in the eurozone, we propose to estimate debt targets on the basis of the 'population savings cycle' and the investment instruments required for meeting pension plans. Then there could be an equivalent long cycle in demand for EU government debt that permits a rise in such debt over the next decade without this putting pressure on EU interest rates or causing 'crowding out'. This view, however, is in stark contrast to recent efforts to cut debt, which may be driving pension savings into potentially dangerous bond and property market bubbles at home and abroad.

Endnotes

¹ This trend is already starting to affect a number of countries, such as Japan.

² United Nations, Statistical Database, www.un.org/databases.

³ Although we focus here on Europe, to some extent the message applies to Asia, especially given the strong precautionary motives for Asian savings. Both continents have substantial savings flows, but seem to have difficulties finding enough suitable investment opportunities at home.

⁴ There may be some risk of the European Central Bank reacting by raising short rates – for example, if it does not agree that unemployment could safely fall – but short rates are a fairly weak tool in continental Europe anyway.

⁵ Some of the empirical research, however, suggests that saving behaviour does not necessarily correspond with the life-cycle hypothesis. For a review of literature see Bosworth et al. (2004).

⁶ The evidence that ageing influences the average risk tolerance, however, is not conclusive (Campbell, 2001). The available data on the type of financial assets held by age group and wealth percentiles show that it is mostly the wealthy and older individuals who are more likely to directly own traded equity and businesses (Poterba, 2004).

⁷ Of course we do not factor in the increase in the number of immigrants.

⁸ If the savers' demand for government backing is strong – and it may be in the context of European savings profiles – then government agencies should be prepared to act as arbiters and enablers in this process of matching projects with the nature of the savings flows. Markets should be to facilitate this arbitrage, but governments might still be required to play a role if only in changing regulations and increasing pension fund guarantees, improving demand for private debt instruments.

⁹ A critical question for future cross-border capital flows is whether retirement of baby boomers in the high-income countries will reduce the rate of domestic investment by more than it reduces saving.

¹⁰ This may be less true in the UK than continental Europe.

¹¹ Pension reforms themselves increase awareness of retirement issues, so that individuals will recalculate their savings and portfolio decision more frequently (Kohl and O'Brien, 1998).

¹² For an overview of existing projects, see www.eib.org. As a note of caution, we are certainly not advocating the infamous 'bridges to nowhere' or increased general government spending.

¹³ We do not intend to argue here about how projects are managed or even whether they are entirely private investment projects. The issue we raise is simply a financial one in terms of the need to use the demand for long-term guaranteed savings instruments more effectively for Europe's benefit – and the government must face up to some responsibility in this process, whether as a go-between or through advancing its projects to raise real investment, growth and jobs.

¹⁴ This may be even more pertinent for very long-dated bonds.

¹⁵ Brooks (2000) argues that the pay-as-you-go pension scheme fails to provide an insurance against the risk of reduced per capita retirement benefit on the back of adverse demographics. Therefore the government should insure individuals against such effects by varying the supply of debt over time.

¹⁶ Blanchard and Giavazzi (2002) show that the correlation between national saving rates and domestic investment rates has fallen sharply within the EU as there has been greater economic integration.

¹⁷ In February 2005 the French Trésor, after a quick consultation, issued €6bn in 50-year bonds. Initial plans were for a €3bn–€5bn issue with a coupon of 4%, but more than €19bn was bid for, so the deal size was increased.

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