

KLAUS SCHMIDT-HEBBEL



Comments on E. Philip Davis,
“Demographic and Pension-System
Challenges to Financial and
Monetary Stability”

Reform of unsustainable pay-as-you-go (PAYG) defined-benefits (DB) pension systems is a major policy challenge faced by all countries in the world. This challenge is larger – and more urgent – in countries undergoing more advanced stages of demographic transition, where quick population ageing strains to the limit the finances of traditional pension systems. But in these countries – typically advanced OECD economies and European transition economies – there is also larger political resistance to pension reform, due to the relatively larger share of older workers and pensioners among voters.

Against this background, Philip Davis’ paper provides a timely and useful review of potential implications of ageing – with and without pension reform – for financial and monetary stability, drawing on extant literature and his own research, complemented by qualitative arguments and well-informed speculation.

Estimate of Pension Reform Effects on Average**Annual 1981–2002 GDP Growth in Chile**

	Point estimate	Range estimate
	%	
Average 1981–2001 GDP growth	4.60	
Due to pension reform:		
Saving and investment	0.13	0.03–0.32
Labor markets	0.10	0.05–0.15
Financial deepening and TFP	0.20	0.13–0.27
Overall	0.49	0.22–0.93

Source: Corbo and Schmidt-Hebbel (2003).

My comments are on four subjects, structured more or less in the order they are considered in the paper. I start with a brief reference to my work with Vittorio Corbo on macro and growth effects of pension reform. Then I discuss at more length the paper's discussion of the financial risks and the monetary implications of ageing (and pension) reform. I end with a few remarks on the empirical evidence reported in the paper.

1 Pension Reform and Macroeconomic Performance

The paper provides a useful review of the recent literature on the macro effects of ageing generally and under unreformed PAYG DB pension systems in particular. The review focuses on the main channels of transmission to growth and welfare, through saving, investment, the current account, the labor force, and labor productivity.

There is also some reference to the likely effects of pension reform – transitions from PAYG to FF systems – on growth and welfare, largely occurring through the same channels but with vastly different economic consequences. But these references are much more cursory as in preceding surveys of the effects

of pension reform on growth, e.g. World Bank (2004), Lindbeck and Persson (2002), Schmidt-Hebbel (1998).

In this context I mention the results from my recent joint work with Vittorio Corbo on the effects of Chile's 1981 pension reform on saving, investment, labor markets, capital market deepening, TFP, and aggregate growth. Why Chile? Because this country has the longest post-reform experience of a deep and radical shift from statemanaged PAYG DB pension savings to privately-managed fully-funded defined-contributions pension savings in the world. In a nutshell, our empirical findings suggest that roughly one tenth of Chile's average annual GDP growth rate during the post-reform period can be attributed to its 1981 pension reform (table 1). This implies that roughly 5% of Chile's current GDP level can be explained by the effects of pension reform on capital formation, labor markets, and production efficiency levels.

2 Risks to Financial Stability from Ageing (and Pension Reform)

The author is torn between two positions about the financial risks posed by ageing (and pension reform).

On the one hand, E. Philip Davis states: “In general, we are sympathetic to the view that even if there are price changes with the decumulation of pension funds, they will not necessarily be precipitate, and hence the issue may be one affecting the level of retirement income and the welfare of pensioners rather than systemic financial market stability.” “Since financial markets tend to be efficient and forward looking, and because demographic changes are slow moving and predictable, the market meltdown could be forestalled with rational expectations.”

“On the other hand, the tendency of markets to overreact in both directions is apparent from the recent boom in IT stock prices, and hence vigilance is needed. If there are indeed such sharp changes in market prices during ageing, they may give rise to losses threatening solvency on the part of financial institutions or investors taking leveraged positions, possibly requiring emergency liquidity assistance.”

Being *de facto* closer to the second position, the paper identifies six risks for financial stability:

Risk 1 (due to demographic transition): high baby-boom cohorts’ saving leads to excess liquidity, asset-price bubbles, bursts, and possible financial crises. The converse risk at baby-boom cohorts’ retirement phase: low saving, lack of liquidity, meltdown of asset prices, possibly financial crisis.

Risk 2 (due to unsustainable PAYG deficits under ageing): bond financing of PAYG budget deficits leads to decline in credit rating (higher country risk premiums), higher interest rates, lower growth, and lower asset prices. Eventually solvency problems lead to financial crisis and recession.

Risk 3 (as a result of pension reform): the declining share of saving channeled through banks may lead to banking crises.

Risk 4 (as a result of pension reform): institutional investors’ portfolio shifts toward equity, mortgages, and high-yield corporate and sovereign bonds lead to asset price bubbles. Banks contribute to the bubble by increased corporate and housing lending and hence are increasingly exposed to bubble bursts and financial crises.

Risk 5 (borne by DB pension funds): DB pension funds may generate moral hazard, leading to excessive investment in high-risk securities.

Risk 6 (associated to private pension funds): risk of large and swift portfolio shifts by institutional investors leads to market illiquidity and asset price collapse.

Note, however, that risks 1 through 4 are not unforeseen high-frequency events that lead to sudden financial crises but reflect anticipated long-term trends due to ageing or pension reform. Therefore they are more consistent to the first position espoused by the author and not a source of significant concern.

Risk 5 is a risk caused by a specific form of pension funds. As long as funds do not bear investment risk – as is the case of many recently reformed pension systems – this risk vanishes.

Risk 6 is an implication of fiscal and governance weaknesses in countries that issue sovereign securities or governance weaknesses in corporations that issue equity and bonds. Exposure to this risk is inherent to any financial investment and can be ameliorated only by following conservative investment and hedging strategies.

The aforementioned arguments lead to a position rather close to first view espoused by the author: ageing (and pension reform) cause first-order changes in the levels of relevant macroeconomic, fiscal, and portfolio variables – as well as in intergenerational welfare – but are unlikely to entail first-order risks to financial stability.

3 Monetary Policy Implications of Ageing

I discuss next four themes on the monetary policy implications of ageing that are analyzed in the paper.

1 Should monetary policy respond to real consequences of ageing?

On the one hand, the author states: “The standard assumption is that if central banks resist pressures to accommodate, then inflation will not rise, since inflation is a monetary phenomenon.” On the other hand, the paper identifies three real long-term consequences of ageing that supposedly call for monetary policy responses:

- (i) Monetary policy should be loosened in response to high real interest rates (due to ageing), which will help attenuate the peaks of risks.
- (ii) Central banks will have to deal appropriately with deflation that may come with increased savings from baby-boom cohorts and precautionary savers worried about their PAYG defined benefits.
- (iii) More into the future, central banks will have to deal with the consequences of: (a) dissaving of retiring baby boomers, leading to excess demand and inflationary pressures; (b) the negative supply shock derived from a smaller workforce, which rein-

force inflationary pressures; and (c) larger CA deficits, leading to ER depreciation. The combination of the three latter would require a tighter monetary stance. None of the three latter consequences of ageing entails unexpected high-frequency real shocks that may warrant a monetary policy response. They are low-frequency, trend changes that are foreseeable and affect both actual and potential output and/or actual and neutral interest rates. There is no justification for monetary accommodation under these or related long-term real consequences of ageing or of pension reform.

2 Should monetary policy respond to a financial stability objective, in addition to the standard price stability goal?

There is strong academic and policy debate surrounding this question. E. Philip Davis comes down on one side of this debate by suggesting that monetary policy should respond to misaligned asset prices and sharp price movements.

However the case is not so easily laid down in favor of intervening through monetary policy in times of “irrational exuberance.” The debate is definitely not yet settled between the bubble bursters (for example Cecchetti et al., 2000, or Borio, 2004, espousing intervention) and the non-interventionists (for example Bernanke and Gertler, 1999, or Goodfriend, 2002).

In fact, most central bankers tend to lean toward the second view, which could be summarized in the following four propositions:

- (a) monetary policy should react to asset prices as long as they affect forecasts of future inflation and output gaps,

- (b) as a corollary of the latter, current policy horizons – typically extending from 18 through 36 months – should be extended to longer horizons in order to take account of more gradual buildups of asset market and lending booms,
- (c) emergency lending to individual institutions or emergency monetary policy measures are warranted at exceptional time of systemic risks, and
- (d) in order to prevent the frequency and intensity of systemic crises, regulation and supervision of financial and capital markets should be continuously strengthened and modernized.

3 Do unsustainable PAYG deficits pose a threat to monetary policy in the case of bond financing of unsustainable PAYG deficits that eventually are accommodated by inflation financing?

The paper identifies this threat and links it to the fiscal theory of the price level, based on strong non-Ricardian assumptions. I think this is not an issue of which is the best theory of inflation (fiscal or otherwise) but it boils down to an empirical matter related to the institutional framework on which monetary policy rests. Direct or indirect monetary accommodation of fiscal deficits – independently if caused by public pensions or any other fiscal imbalance) – were tolerated in many industrial and emerging economies from the 1960s to the 1980s. However a quantum shift took place in the 1980s and early 1990s when monetary policy was entrusted to independent central banks aiming at

low and predictable inflation. It seems unlikely that this worldwide institutional change – reflected in worldwide low inflation – will go in reverse during the next 2–4 decades of rapid ageing in both industrial and emerging economies.

4 Should changes in monetary transmission channels caused by ageing (and/or pension reform) be seriously studied and considered by central banks?


Certainly they should. This paper makes an innovative contribution to the discussion of monetary transmission changes induced by ageing and pension reform and paves the way toward subsequent systematic analysis.

4 Econometric Results and Simulations

The specification and estimation results for U.S. stock price changes and real bond yields (reported in table 1)¹ are not consistent with consumption-based asset pricing models or portfolio models allowing for imperfect asset substitution. Omission of variables pertaining to the latter models may induce omission and/or specification bias and lead to an overestimation of the role of ageing on asset prices. This may contribute to the large magnitude of the simulated 2004–2025 decline in U.S. log stock prices (by 0.50% in chart 2) and simulated rise in U.S. real bond yields (by 6%).

A similar argument may be made in relation to the specification and estimation of key macroeconomic variables (table 2). Without controlling for inflation, growth, productivity, and housing price determi-

¹ The following charts and tables refer to charts and tables in the contribution of E. Philip Davis.

nants that are standard in the theoretical models and empirical literature for the latter variables, it is likely that the coefficient estimates of demographic variables are subject to potentially severe bias. Hence, at their best, the panel results for seven industrial countries on the role of demographic variables in shaping macro outcomes should be interpreted as simple correlations between both sets of variables. For example, one may conclude that inflation has tended to be lower when demographic transition was more advanced in seven OECD countries during the second half of the 20th century. But beware of doing statistical inference from this largely spurious correlation. 

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