

# On the Sustainability of Capital-Based Pension Systems

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This note was prepared as a contribution to the Panel Discussion “The Role of Financial Markets” at the Swiss Risk and Insurance Forum’s Meeting 2015. The goal of the note is to stimulate dialogue by putting forward strong hypothesis; it is not meant to present rigorous empirical or theoretical conclusions.

A capital-based pension system is broadly defined as an individual’s accumulation of a stock of value with the intention to use that stock of value to support them in retirement. A much narrower definition is as a class of financial products offered by insurers and pension firms which support the retirement savings accumulation and decumulation phases as part of one, combined solution.

Questions regarding the sustainability of private, capital-based pension systems are raised in the context of secular low interest rates and volatile financial markets on the one hand and economic and technical developments on the other.

Relative to the broad definition, the hypothesis is that capital-based systems are sustainable and, in fact, inevitable. However, relative to the narrower definition as bundled products or services provided by private insurers or pension firms, capital-based pensions will face predictable challenges in the future due to economic-, technological-, regulatory- and behavioural-forces. Those firms which anticipate and react appropriately to these trends will be successful, while those that do not, will not.

## A compelling need

Rational economic agents find it optimal to accumulate a stock of value prior to retirement in order to de-cumulate that stock during retirement. This observation is supported by the Life Cycle Savings and Investment literature<sup>2</sup> under three minimal assumptions, e.g. that consumable resources are not free, that individuals prefer to consume even in retirement and, finally, that they prefer leisure / retirement to work<sup>3</sup>. These fundamental behavioural assumptions are realistic and can be expected to continue in the foreseeable future.

Note that the accumulated stock of value can and has taken many forms over time, ranging for example from an accumulation of human capital (e.g. children), an ownership interest in a family business or farm (e.g. in agrarian and trade crafts societies), a receivable from a corporation or state based on contributions (e.g. an employer-sponsored defined benefit plan or state sponsored second pillar plan<sup>4</sup>)

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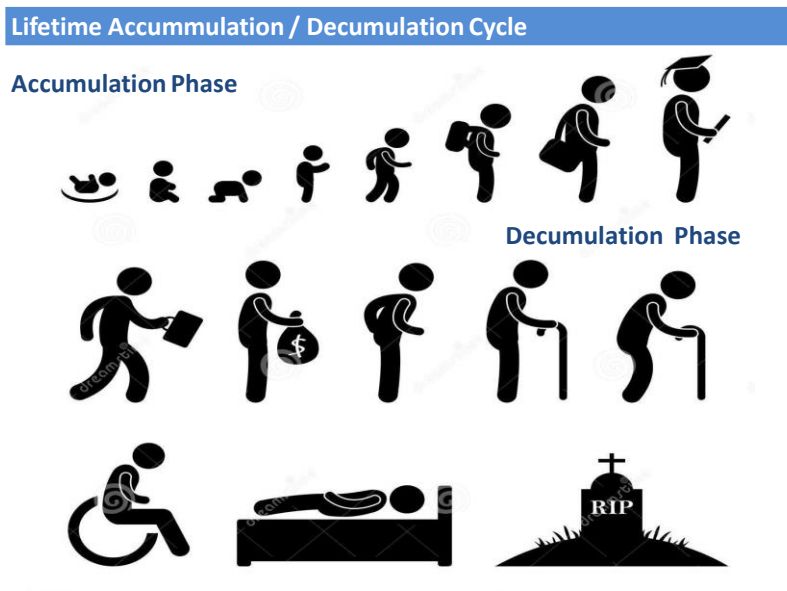
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<sup>2</sup> For a good overview, see for example Brodie.

<sup>3</sup> This simple statement is often formulated in the literature as a concave utility function defined on future period’s consumption, for example  $U(\{C_t\})$ , with  $\partial U / \partial C_t \geq 0$ ,  $\lim_{C_t \rightarrow 0} \partial U / \partial C_t = \infty$  and  $\partial^2 U / \partial C_t^2 \leq 0$ .

<sup>4</sup> The World Bank (1994) characterized retirement systems into three pillars. Pillar 1 is not based on contributions but on need and serves redistribution and social objectives, e.g. alleviating poverty in the elderly or for those that

or voluntary (pillar 3) direct savings and investment in products offered by insurers, banks and other financial services companies.



Hypothesis 1: Broad definition capital-based systems will always exist; this is because the behavioural assumptions underpinning the Life Cycle Savings and Investment theory will continue to hold.

Furthermore, the sustainability and continued existence of broad capital-based systems is independent of interest rate levels or financial market volatility: in spite of the current low rate environment, people will continue to prefer leisure in retirement and they will continue to want shelter, food, etc., as they enjoy that leisure; as a consequence, they will continue to accumulate value in some form to be decumulated at a later date.

Hypothesis 2: All else being equal, the current macroeconomic environment characterized by low rates and volatile markets will only affect an individual's marginal work, savings and investment decisions and not the underlying principles. For example, a lower interest rate makes future consumption more costly relative to current consumption and leisure; it therefore logically increases the years spent in labour and decreases the expected time in retirement. Also, increased uncertainty with respect to future returns or the security of the receivable from the state or employer will likely impact labor and saving decisions in a similar manner as certain, current consumption becomes more attractive relative to less certain, future consumption.

Other factors which influence Life Cycle decisions include actions by the state. For example, a higher probability of state appropriation of private retirement savings (e.g. as has recently been done in Hungary) will likewise decrease savings and increase immediate consumption on the margin. Similarly,

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are not able to work anymore; this pillar is typically administered by the state. Pillar 2 represents mandatory contributions, representing an accruing asset with future payments tied to the contributions; this pillar is also typically administered by the state but can also be administered by private institutions (see Willmore, 1998, for a discussion). Pillar 3 represents voluntary contributions to supplement the other two and is mainly administered by private firms.





state sponsored systems which promote social or redistributive objectives will also influence work, savings and investment decisions on the margin.

## Dramatic evolution

In spite of the very static need there has nonetheless been a dramatic evolution in the provision of capital-based systems. This dramatic evolution has been driven not by financial market developments but rather by broader trends which have accelerated over the past two centuries. More specifically, five interlinked forces have driven a dramatic evolution in capital-based pension systems:

- Fundamental changes in the economy affecting how and where people work;
- Demographic changes, including longer life spans, lower birth rates;
- Greater financial literacy;
- Lower transaction and information costs spurred by technical and financial innovation;
- More secure and transparent financial markets due to financial regulation and accounting rules.

These changes led first to the creation of narrowly defined capital-based systems as a bundled solution to support Life Cycle Savings and Investment needs and ultimately to their disintermediation.

Epoch	Value	Capital-based Pension Analog
Intergenerational		<ul style="list-style-type: none"> <li>• Store of value in the form of family farm or trade and / or „human capital“ (e.g. children)</li> <li>• Retrieval of value in the form of intergenerational family support</li> </ul>
Employer sponsored		<ul style="list-style-type: none"> <li>• Store and retrieval of value combined through an employer- or state-sponsored defined benefit pension system</li> <li>• Supplemented by state provision in circumstances of need</li> </ul>
Private Capital-based		<ul style="list-style-type: none"> <li>• Declining role of employer- and state-sponsored defined benefit plans</li> <li>• Emergence of private, capital-based solutions covering accumulation and decumulation phases provided by insurers and pension firms</li> </ul>
Beginnings of disintermediation		<ul style="list-style-type: none"> <li>• Competition from banks and asset managers (e.g. savings products, index funds, managed funds (income, stable value, capital, etc.)) disintermediating the Life Cycle value chain</li> </ul>
The Future		???

### *From intergenerational to employer-sponsored*

The move from a pre-industrial to an industrial economy dramatically impacted work and savings patterns as well as triggering the development of a broader financial market, leading to a

- Decreased reliance on intergenerational family support (e.g. in the form of human capital accumulation (children) or the inheritance of the family farm or business) as labour migrated from to the city;
- In consequence, an increased reliance on (paternalistic?) employers seeking to attract labor and minimize the disruption inevitable from such a dramatic shift. For example, the first private

pension was provided in 1875 by American Express Railroad Company in the United States, followed by other industrial companies in the US and later in Europe. During this period, pension programs also emerged for public employees, for example covering civil servants in the UK in 1859 and in Germany in 1872 (and for all workers in 1889); in the US, the Civil Service Retirement System was established in 1920, later broadened to include all employees through the Social Security Act in 1935.

- In parallel, evolving financial markets tapped by the same industrial corporations to fund capital investments (e.g. plants, equipment, inventories, etc.). Industrial corporations therefore had an increasing capacity to issue “receivables”, also to employees as well in the form of defined benefit plans;
- However, financial markets were dominated by corporations and large banks, with limited individual access due to high transaction costs and asymmetric information. For example, prior to 1907 officers of JP Morgan sat on the boards of 112 corporations representing close to 85% of the NY Stock Exchange market capitalization; in addition to the direct participation, further control was exercised through Trust companies, including Bankers Trust, Guarantee Trust, Chase National Bank, etc., which grew dramatically prior to the 1907 recession by purchasing securities from corporations.

As a consequence, broadly defined capital-based systems moved from intergenerational commitments to commitments by private and public sector employers in the form of defined benefit plans and state mandated pillar 2 programs. However, narrowly defined private capital-based solutions are not as popular due to limited individual access to financial markets and low financial literacy.

### ***From employer- to private, capital-based solutions***

The next phase, from an industrial to a post-industrial or service-based economy brought additional evolutionary forces to bear.

- Increasing labor mobility across firms and greater employment outside of large industrial corporations, leading to the need for more flexible, company-independent systems;
- Demographic changes pressuring P-A-Y-G<sup>6</sup> state plans (e.g. declining birth rates, increasing longevity due to better health care, etc.);
- Similar demographic trends combined with lower industrial workforce participation and increasing liabilities puts pressure on company-sponsored plans;
- A change in public policy to spur private solutions, e.g. tax incentives on savings and retirement income solutions.

As a consequence, *private* capital-based solutions emerged, initially mirroring employer sponsored programs, e.g. complete solutions provided by insurers and pension firms covering the accumulation and decumulation phases as immediate substitutes for employer and state provided solutions.

### ***The beginnings of disintermediation***

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<sup>6</sup> Pay-As-You-Go, an unfunded system with current benefits funded out of current collections.

The large values accumulated in private, capital-based systems provided by insurers and pension firms represented an attractive target for other competitors. Accessing this potential profit pool by disintermediating the full solutions provided by insurers became possible due to several factors:

- Higher education and financial literacy, leading to a more informed decision maker;
- Greater labour flexibility and mobility requiring “portable” solutions with greater flexibility during the accumulation phase;
- Lower transaction costs and greater availability of savings and investment alternatives due to
  - Technological innovation, e.g. computers, telecommunications, etc., supporting better access to financial markets, lower administration costs, etc.;
  - Financial innovation, e.g. the development of mutual- and managed equity and fixed income funds, ETFs, etc. For example, innovation during the accumulation phase took the form of money market funds (first introduced in 1971 as a response to Regulation Q limitations on bank savings rates), managed funds, indexed funds and ETFs and innovation during the decumulation phase in the form of pay-out annuities.
- More solutions becoming available led to lower tax incentives for combined solutions, creating a more level playing field between solutions;
- More and more reliable information due to increasing regulation and more transparent accounting rules.

Especially on the last point, regulatory and accounting developments began in earnest after the 1929 Great Depression. In addition to banking reform, the 1933 Securities Act defined accounting and disclosure requirements for initial offerings of stocks and bonds while the 1934 Securities Exchange Act created the Securities Exchange Commission and defined reporting requirements for companies whose securities are publicly traded on either organized stock exchanges or in over-the-counter markets.<sup>8</sup>

As a consequence, once the obligations migrated from employers to insurers and pension firms , financial innovation and competitive forces began to disintermediate complete solutions, bringing alternative products offered at different points in the Life Cycle value chain to increasingly knowledgeable consumers.

### **Looking into the crystal ball: The future**

*Hypothesis 3: These forces will accelerate as we move from a service- to a knowledge-based economy, especially*

- The trend towards private solutions, as opposed to employer sponsored solutions, is irreversible and will continue due to increasing labor mobility and demographic changes;
- In addition, there will continue to be disintermediation pressure on complete solutions due to
  - Higher education and financial literacy,
  - Lower transaction costs due to technological innovation;
  - Greater availability of alternatives due to financial innovation.

*Hypothesis 4: In parallel with these well-established trends, two additional forces will play an important role in the future:*

- First, an increasing regulatory emphasis moving beyond transparency focusing on consumer protection and fairness. For example, the Financial Conduct Authority (FCA, 2015) in the UK sets as their mission “...to make sure that financial markets work well so that consumers get a fair deal. This means ensuring that: the financial industry is run with integrity, firms provide consumers with appropriate products and services (and) consumers can trust that firms have their best interests at heart.” It is often said that life products are “sold and not bought”. These regulatory trends, emerging across the globe, is leading to new requirements regarding sales practices, intermediary remuneration, transparency and after sales management and has the potential to fundamentally reshape products and distribution.
- Second, a general failure of intergenerational risk smoothing due to sustained demographic and economic trends. More specifically, while the concept of intergenerational risk smoothing is noble, it seems to have unfortunately turned into intergenerational wealth transfers across cohorts for P-A-Y-G solutions due to declining covered populations and to private solutions as interest rates gone from their “normal” levels to a new, sustained lower level.

As a consequence of these the trends, alternative solutions which disintermediate the Life Cycle value chain will likely accelerate. More specifically, one can anticipate that the steps in the value chain which will be attacked by new products and technologies will be those that

- Offer the highest return on invested capital,
- Are the least efficient from a cost perspective,
- Are the least affected by financial regulation.

One can envision a world where technology companies combine access to customers with intelligent automated advice, easy to use administration and account management facilities and an open platform offering modular, transparent and low cost savings, investment and payout alternatives to meet consumer’s needs.

*Hypothesis 5: In conclusion, simpler, more transparent and cheaper alternative products will emerge with a clearer separation of the savings and annuity phase; from a insurer or pension firm’s perspective, the most attractive parts of the Life Cycle value chain will come under pressure by new, innovative solutions and technologies, leaving behind the capital intensive and lower return activities and services.*

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