Longevity and old age finance with family ties: An exposition

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Overview:

- Is there any welfare improving and financially viable choices that can be defined by bringing in family commitments and tie up with pension and health care finances in the long term?
- Can these, if these choices exist, reduce financial strain on social security systems?

Issues to deal with:

- Altruism, solidarity, mutual exchange and reciprocity
- Vs.
- Market mechanism; demand and supply sides

- i.e.
- Tradition, custom and beliefs
- Vs.
- Market forces: Scarcity, incentives and economic value

Family side

- Finding non-marketed activities that
- Increase welfare & optimizing financial resources,
- Create economic value and are
- Exchangeable, but we need to
- Identifying contributions within family, financial and non-financial

Market side

- Need to reconsider,

- State and private retirement and pension plans
- Health care systems
- Portability of pensions

Literature

- Esping-Anderson and Myles (2006), Discussions but no formal framework.
- Ishikawa (1975), Kotlikoff and Spivak (1979), (1981), on risk sharing,
- Cremer et-al (1992), that considers bargaining within family,
- Samuelson (1958) on social insurance,
- Becker (1964), (1981), Philipson and Becker (1996), Clark (2000), on human capital,
- Borsch-Supan (2007), Holzmann and Palmer (2006), Modigliani and Muralidhar (2004), Overbye and Kemp (2004), on pension reform,
- Blake (2003, 2006 a, b), Blake, Cairns, and Dowd (2001, 2006) and Doherty and Mahul (2000), on securitization of life insurance,
- Grossbard-Shechtman (2003), on marriage markets,

And

- De Dekens, Pond and Riel (2006), on solidarity and networking.

Changes in savings and consumption

- Life cycle models (Modigliani and Brumberg, 1954, Yarri, 1965, Aueback, Gokhale and Kotlikoff, 1991, 1994, Attanasio and Rohwedder, 2003 and Bottazzi, Jappelli and Padula, 2005). They show elasticities of wealth holding (social security credits) increase with age.
- A decline in savings and an increase in consumption specially at older ages, (Kotlikoff, Gokhale and Sabelhaus, 1996)
- There are also many conflicting results on whether private pensions crowd out social security or not.

Intergenerational risk sharing

- Kotlikoff and Summers (1981), Gordon and Varian (1988)
- Udry (1996)

- Family wealth accumulation proposed here,

  The paper builds on private pension plan arrangements

Two alternative private pension plans

- Individual Pension Plans (IPP)

and

- Individual Retirement Accounts (IRA)

These plans are

- Adaptable to individual circumstances and portable
- Many tax rules
- Need matching incentives to maintain pension wealth, actuarial neutrality and assessment.

Some initial challenges

- Strong family ties and commitments are generally observed in developing economies that may not have access to many financial instruments to design a pension plan.
- Many investment vehicles and opportunities available for IPP and IRA are found in open economies with loosely connected family and kin commitments.

Some legal aspects

- Implicit and explicit legal arrangements
- Need to define “interests” and “interested parties”
- Need to consider how wealth is created and distributed
- Ownerships and benefits are to be identified
- Inter-family relations re-examined
- The key must be in quantifying activities such as housework and caregiving.

What we are considering here:

- An individual pension account with properties of a fully funded private pension as in Ihori (2002).
- Consider primarily housework and care for elderly
- Introduce replacement cost and shadow prices

Family pension design

- A family or household in formed at time t with m members, $m \geq 2$,
- age profiles are A_m with life expectancy τ_{mt} in three periods,
- Period ,one growing up and education, period 2 for contributions, and in period 3 benefits of contributions and accumulation are enjoyed.
- Exit and entry may take place at any of these periods.
- Corresponding contractual arrangements and commitments are defined on entry and delivered on exit.
- Financial input to family consists of wealth created by its members and outputs are the corresponding benefits enjoyed with this wealth.

Family wealth function

- Family wealth W_{ft} is created which is the sum of individual wealth contributions W_{mt}.

$$W_{ft} = \sum_{m=1}^{M} W_{mt}\,, m = 2, \cdots, M; t = 1, 2, 3, \qquad f = 1, 2, \cdots, F$$

- At any time, subsequent to t, family can dissolve through exit of any member. Exit may be voluntary or through death.

Pension rights P_{mt}

$$P_{mt} = g(W_{mt}), \qquad W_{mt} > 0, \qquad m = 2, \cdots, M; t = 1, 2, 3$$

- With individual wealth W_{mt},

$$W = g(A, E, L, \varepsilon)$$

- Age A_{mt}, education E_{mt}, labour supply L_{mt}, and chance events ε.
- Assume $E_{mt} = 0$ or 1 depending on member having education or not and $\varepsilon \sim (0, 1)$ for all periods.

Labour supply

- Labour supply consists of those supplied outside the family $L_{\omega t}$ for which wages ω_{mt}>0 are received and labour or activities supplied within the family L_{ft} for which the opportunity or replacement cost φ_{mt} are considered.

$$L_{mt} = L_{ft} + L_{\omega t}$$

- Return to one unit of labour supplied outside in-elastically and the return to aging is seniority γ_{mt} which is the condition for benefits to be received when old. The return on education ρ_{mt} implies a higher wage when adult and employed in period two.

Wealth accounting identity

$$W_{m(t+1)} =$$

$$(1+r)W_{mt} + \omega_{mt} - c_{mt} - f_{mt} + s_{mt} + (1+r)s_{m(t-1)} + g_{mt}$$

Where c_{mt}, s_{mt}, g_{mt} and f_{mt} are consumption, savings, social security or alternative pension contributions of member m at time t correspondingly. Here g_{mt} is given externally.

Benefits

- Benefits from family are negative contributions, and each member may simultaneously contribute and benefit from a family,
- f_{mt} corresponds to net family contributions. These contributions are money equivalents of services provided within the family or monetized value of these services.
- So $f_{mt} > 0$ or $f_{mt} < 0$.

The internal and external pension link

- We assume pension and social security contributions are linked to family contributions via the following equation.

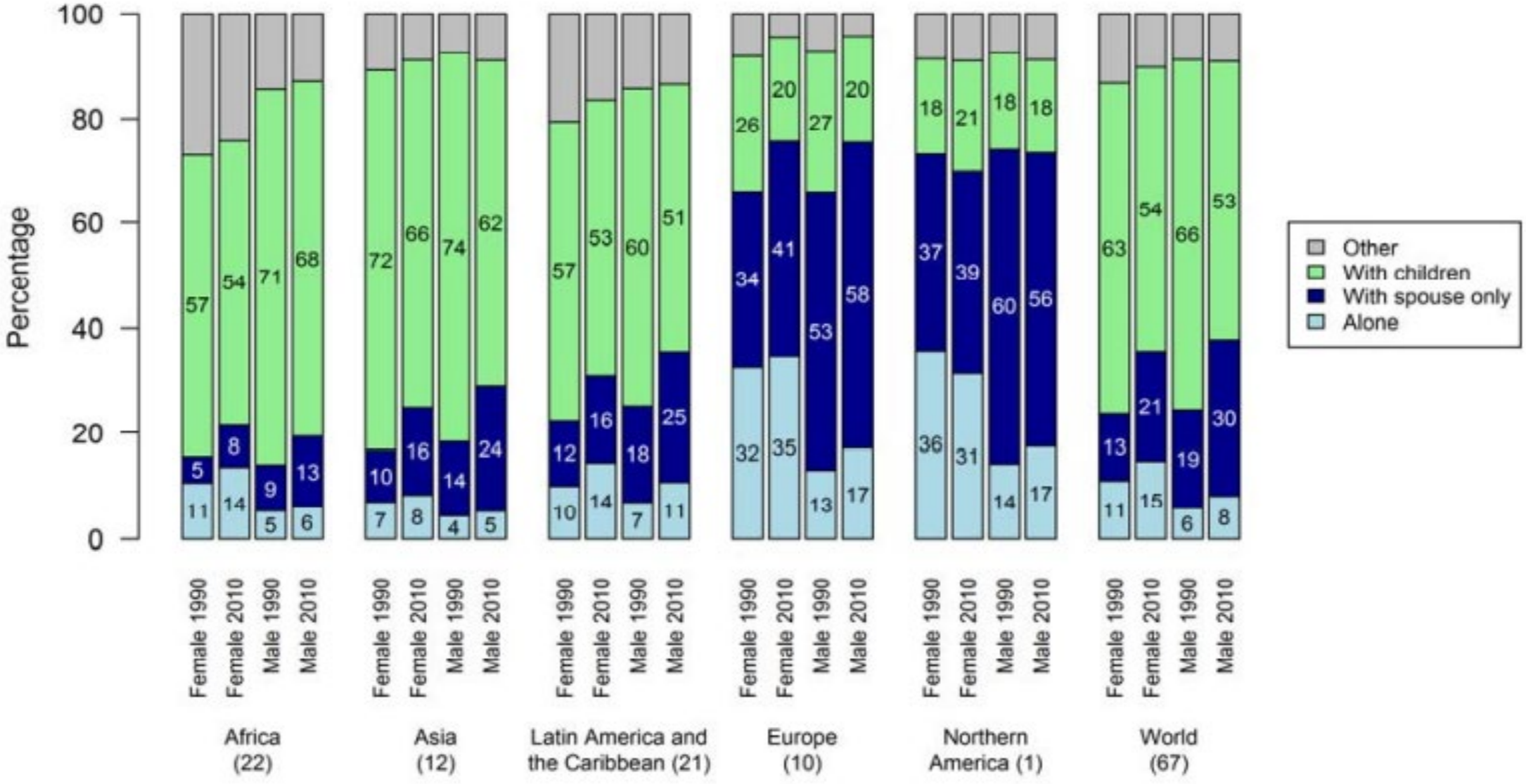
$$g_{mt} = \alpha f_{mt} + \beta \omega_{mt},$$
$$\alpha > 1,\ \beta < 1$$

- β may contain all the multipliers that define benefits in terms of average life time income from work outside family.

Summary of plan in all periods

t=1, young	t=2, adult/working	t=3, retired
$E_{m1} > 0, (= 1)$	$E_{m2} = 0$	$E_{m3} = 0$
$L_{m1} = 0$	$L_{m2} > 0, (= 1)$	$L_{m3} = 0$
$f_{m1} = 0$	$f_{m2} > 0$	$f_{m3} > 0, = (1)$
$C_{m1} > 0, (= 1)$	$C_{m2} > 0$	$C_{m3} > 0$
$S_{m1} = 0$	$S_{m2} > 0$	$S_{m3} = 0$
$g_{m1} = 0$	$g_{m2} > 0$	$g_{m3} = 0$
$b_{m1} > 0$	$b_{m2} = 0$	$b_{m3} = 0$

Figure1: Percentage of elderly living with their children in the world (male/female).



Sourse: UN, Department of Economic and Social Affairs Population Division, 2017.

Model prospects?

- How likely is it that a value function can be defined to internalize and define a pension in a family?
- Is this model a natural extension of family or a possible pressure valve for normal pension plans?
- Do individuals naturally return to family with or without pension accounting, when times are hard?

Thank you.