

Decline and Prosper: Ageing Has Not Led to Workforce Contraction but Higher Participation and Greater Equity

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Extended abstract:

Economic implications of demographic ageing and depopulation have become a dominant feature of population-related policies in low-fertility countries. Although the spectre of rising health care and pension costs receives much attention, the over-riding concern is for slower GDP growth due to contraction of the workforce (e.g. Clements et al., 2015; Parr et al., 2016). This study explores the assumptions underlying these dismal projections and finds them to be ill-founded.

Analyses modelling future contraction of the workforce often use the proportion of working-age people or the old-age dependency ratio as surrogates (e.g. McDonald and Temple, 2010; Parr and Guest, 2014; Parr et al., 2016). More sophisticated approaches (e.g. Clements et al., 2015; Australian Productivity Commission 2016; Marios et al., 2019) use a version of the Cobb/Douglas function (Cobb and Douglas, 1928):

$$Y = aK^bL^{1-b} \quad (1)$$

where Y is output, a is multifactor productivity, K is physical capital, b is the fraction of production attributable to physical capital, and L is labour, the product of population and workforce participation. Extending this approach, participation rates can be further disaggregated by age, gender and/or level of education.

None of these analyses consider the impact of labour market tightening on workforce participation. They assume that labour supply alone, not labour demand, is the limiting factor in the size and composition of the workforce. Current participation rates are projected to persist in the future (or, in some studies, continue recent trends) regardless of whether the supply of job-seekers is supplemented by higher fertility or immigration, or whether working-age population is allowed to contract. This defies accepted market theory: a tightening labour market can be expected to reduce unemployment and encourage employers to broaden recruitment criteria and improve wages and conditions, enabling or motivating more people who were not working to join the workforce, or encouraging older people to defer retirement.

Empirical evidence is now available to test these assumptions. A number of countries have had low fertility and migration for long enough to experience appreciable shrinkage in working-age proportion. In this study, we compared OECD countries, looking for signs that ageing was constraining the economy through a smaller workforce, fewer hours worked per capita or lower productivity growth. We found no evidence of these trends. In cross-sectional analyses, proportion employed or hours worked per capita were unrelated to the proportion of working-age people, nor the proportion aged over 65. In longitudinal studies, no downward trend in proportion employed was observed over the period in which working-age proportion had declined. These impacts on workforce participation infer less income support is needed for unemployed or disabled adults. Together with lower expenditure on education, this would partly off-set rising pension payments.

Productivity growth was also as strong or stronger in countries with greatest working-age contraction compared with those with younger age profiles. Fears that an older median age of workers will suppress productivity (Skirbekk, 2008) appear to be ill-founded (Börsch-Supan, 2013; Kotschy and Sunde, 2018). In contrast, higher capital to labour ratios and investments in automation to make better use of more costly labour are likely to raise productivity (Acemoglu and Restrepo, 2017).

Labour market theory expects that tightening labour supply should lead to lower unemployment and higher wages, especially for the low-paid. Expanding the supply of job-seekers would have the opposite effect. This is considered a truism among economists and is the basis for such metrics as the Non-Accelerating Inflation Rate of Unemployment (NAIRU) but is absent from the discourse on impacts of ageing. Supporting this hypothesis, across the OECD, youth underutilization was found to be positively correlated with growth rate of the working age population ($R^2 = 0.16$, $P = 0.001$), while income share of the lowest income quintile was negatively correlated ($R^2 = 0.215$, $P = 0.006$). Analyses dealing only with national averages or aggregate metrics overlook this positive effect of labour market tightening on income inequality. Inequality is correlated with a wide range of social ills, with greater impact on wellbeing than per capita wealth (Wilkinson and Pickett, 2009).

Similarly, fiscal implications of health care are often projected on the basis of current age-specific costs, not considering concurrent changes and adaptive responses. Among OECD countries, no correlation was found between a country's extent of ageing and its expenditure on health care. Most recent increases in healthcare costs are due to changing treatment technologies and expectations; the proportion of increase attributable to ageing has been relatively small (Australian Productivity Commission, 2013). Zweifel et al. (2004) demonstrated that most lifetime health cost is related to proximity to death, rather than to age. As increasing longevity has been characterised by increasing years of good health, the proportion of people with less than 15 years of life

expectancy is projected to increase at about half the rate of old-age dependency and the proportion of adults with disability increases even less (Sanderson and Sherbov, 2010). It should be remembered that most people classified as having some disability are cared for by family members, often elderly partners classified by economists as 'dependent' (Betts, 2014).

The assumption that supply of job-seekers (not labour demand) determines the workforce and total production has been the basis for considerable pre-emptive social engineering. Pro-natalist policies attempt to increase birth rates, and many countries have already scheduled increases in pension age. Elevated immigration levels have been called for or justified as a means of mitigating old-age dependency, despite many studies concluding that the impact on age structure is small and temporary, in comparison with a very dramatic impact on population size, and consequently on natural resources per capita, environmental damage and vulnerability to adverse events (Götmark et al., 2018).

Traditional headline measures of economic success can misrepresent wellbeing trends in declining and ageing populations, fuelling concerns about depopulation. Both population growth and contraction invalidate aggregate GDP growth as a measure of per capita betterment. A shrinking population can have rising GDP per capita even as national GDP declines. Due to ageing, even a declining GDP per capita might be concurrent with rising age-specific and lifetime earnings. Combined with less income inequality and lower housing costs, depopulation can foster prosperity that is masked by inappropriate economic statistics.

Rather than implementing policies to avoid depopulation and ageing, it is important to celebrate the many benefits, in order to cultivate a sense of personal and communal agency in building a more sustainable and equitable future together. Environmental sustainability requires that humanity collectively must consume less energy and natural resources, in addition to shifting technologies to eliminate greenhouse gas emissions. Population reduction allows post-growth economies to be economies of betterment rather than belt-tightening.

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