

ORAL PRESENTATION (ABSTRACT)

METHODOLOGICAL CHALLENGES

PUTTING AN ABLE HORSE BEFORE THE CART: THE POWERFUL STABILISING POTENTIAL OF POPULATION GROWTH REDUCTION

Dr. Jane N. O'Sullivan

School of Agriculture and Food Sciences, University of Queensland, Brisbane Australia. j.osullivan@uq.edu.au

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Summary

Most primers on steady state economics state that a stable population, or at least one that is not increasing, is a required component. However, in most ecological economics discourse, proactively stabilising population is not considered among the measures advocated to steer the economic ship onto a sustainable course. This paper will argue that population stabilisation is not only ultimately required, but a powerful lever in a virtuous cycle of effects, not merely stabilising but diminishing resource consumption and environmental impact, reversing income inequality and increasing per capita utility without expanding the economy. Contrary to popular belief, these effects are not multi-generational in time frame but rapid, as they are functions of population growth rate rather than size or density. As a number of nations have now shown, growth rate can be halved within a decade and almost eliminated in a generation using purely voluntary measures with negative net cost, and irrespective of the level of economic prosperity or education achieved. New insights into the diseconomies of population growth will be explained, countering the mythology of its claimed benefits which have myred population policy in moral conflict, leaving this low-hanging fruit ripe and unpicked.

Introduction

In Herman Daly's 10-point plan for a steady-state economyⁱ, 'stabilize population' was listed number 9. It is one point for which he did not discuss any means of achievement.

Likewise, in the recently published report of the Commission on Sustainable Agriculture and Climate Changeⁱⁱ, population growth is pervasive as the central challenge to be accommodated through future growth in food supply. Yet reducing the rate and extent of population growth is conspicuously absent from the many strategies evaluated.

These are merely two examples of the vast recent literature analysing the modern predicament of unsustainability, and offering recommendations involving any amount of social, institutional and physical re-engineering other than the moderation of human births. This paper will argue that these omissions are not only missing the target of ecological sustainability, but missing a powerful driver of other social goals.

One reason for the omission is the pervasive belief in the 'demographic transition theory', which proposes that fertility naturally declines as nations become more wealthy and 'developed', and hence 'affluence is the best contraception'. Lester Brown's Plan Bⁱⁱⁱ is a notable exception in the sustainability literature as it does give high priority to population stabilization, but even he links this goal with that of ending poverty. He evidently believes

that the latter is a prerequisite for the former (as well as being a moral imperative in its own right). The saving grace for his plan is that he does not rely on poverty reduction to take care of birth rates, but advocates the simultaneous promotion of family planning. That the resulting reduction in births may do most of the heavy lifting on poverty reduction is an outcome he does not articulate.

Part of the misconception in ‘demographic transition theory’ is the assumption that population growth itself is economically either neutral or beneficial. This belief has been supported by data comparing the change in size of population with the change in GDP per capita. Most studies, across relatively short time intervals, have found no correlation between these two factors. A number of modeling studies have also concluded that population growth does not change per capita GDP.^{iv,v,vi}

All these studies assume that a given level of per capita GDP buys the same quality of life in a growing population as in a stable one. This belief constitutes a fundamental blindness of most economic analyses to the impact of population growth, because this impact is precisely on the cost structure of a growing population, not on the amount of economic activity (GDP) it generates. The assumption of *ceteris paribus* (all else being equal), which is essential for international or intertemporal comparisons based on GDP per capita, does not hold for comparisons of societies with different rates of population growth.

The economics of growth rate

To explain the costs of population growth, we must acknowledge that the quality of life a society can deliver to its citizens depends to a significant extent on its stock of durable man-made assets – its infrastructure, equipment and trained personnel. The society does not replace all these assets each year, nor could it – there would not be enough economic output to achieve this. Their value lies in durability – each year we get the benefit of the total accrued stock of durable assets, while only having to create a small fraction of it, to replace those units retired at the end of their working life.

The proportion of any asset class replaced in any year depends on its average working life. If power stations last 50 years, we would need to replace 2% per year in a steady state. If buses last 10 years, we need to replace 10% of the fleet each year. If nurses work for 25 years on average after graduation, we would need to graduate 4% of the workforce annually to replace retirees.

What happens when the population is growing? If we add 1% more people each year, we need to increase the total stock of power stations, buses, nurses and all other assets by 1% *in that year*, or we reduce access to the services they provide. Now we need to build 2% plus 1% = 3% of the total stock of power stations, a 50% increase on the power station construction activity we needed just to maintain that stock. We need to buy 11% of the bus fleet, a 10% increase in our purchase budget. We need to graduate 5% of the nursing workforce, a 25% increase.

There is an evident symmetry in these numbers, because the ratio in the calculation of a 1% burden is the reverse of that in the calculation of turnover rate. For 1% p.a. population growth, the percent increase in burden for each asset class is equal to the working life of that asset class in years. A 2% p.a. population growth rate is twice the burden. So the percent

increase in burden, compared with a stable, steady state population, is the percent population growth rate multiplied by the average working life of the asset class.

Increase in acquisition burden (%) = Working life of asset class (years) x population growth rate (% per year)

It is often claimed by proponents of population growth, that we need the extra people, to generate the wealth and taxes to pay for the needed infrastructure. But extra people only add to GDP or tax revenue in proportion to their numbers, less if jobs cannot be created at a sufficient rate to employ them. One percent more taxes can't pay for 50% more large infrastructure, 10-20% more vehicles, appliances and furnishings, 25-40% more training places, and so on, at the same time as providing the additional consumable goods and services that the additional people themselves consume.

This capacity expansion can only be sustained by diverting funds and economic activity away from the provision of welfare and services to the existing population. Hence population growth constitutes a welfare or development opportunity cost.

In terms of the scale of impact on the total economy, estimates of Australian gross capital formation and household spending found that the cost of capacity expansion was at least 10% of Gross National Income (GNI) for a 1% increase in capacity.^{vii} The actual figure may be significantly higher, as a number of conservative assumptions were included in the calculation. This figure is likely to be consistent with other developed countries, and may be at least as great in developing countries, depending on the structure of the economy. For those nations growing at 3% or greater, this means up to a third of total economic activity may be expended on 'running to stand still,' or if it is not spent, they are going backwards in terms of per capita service delivery. It is no wonder that poverty is deepening in these countries.

Nor does it make any sense to borrow money to pay for infrastructure to cater for added people, because capacity expansion (to extend existing service levels to added people, in contrast to improving per capita service levels) is a *recurrent cost* of a growing population, not an investment. It will not generate the extra per capita utility or productivity to pay for itself. Borrowing just pushes today's cost onto tomorrow's people, who will be no better equipped to pay, since they need to find funds to build capacity for the *next* cohort of added people. This misconception, that all spending on durable items constitutes productive investment, has led to escalating and intractable government debt.

Figure 1 depicts how capacity expansion constitutes a recurrent cost, and how the failure to pay for sufficient capacity expansion to keep pace with the population's service demand leads to escalating debt and/or infrastructure and skills deficits. At no point in the future does 'investment' in this expansion lead to greater productivity and capacity to repay debt.

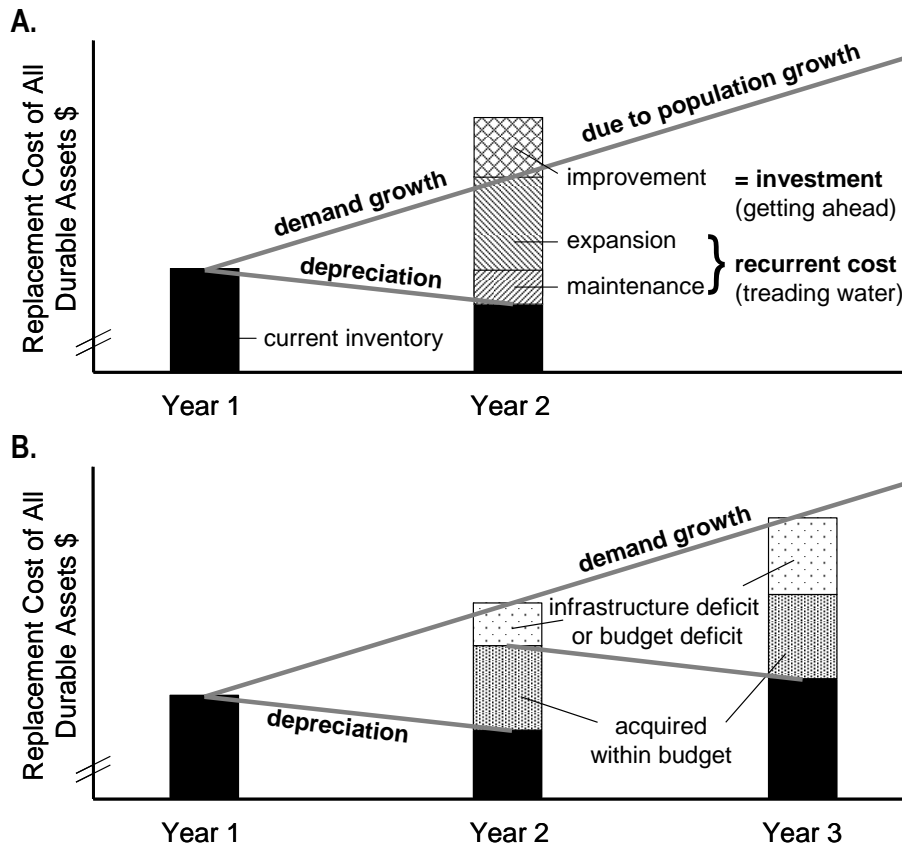


Figure 1. Conceptual illustration of: A. the components of durable asset acquisition as recurrent cost or investment, and B. the escalation of deficit if capacity expansion fails to keep pace with population growth.

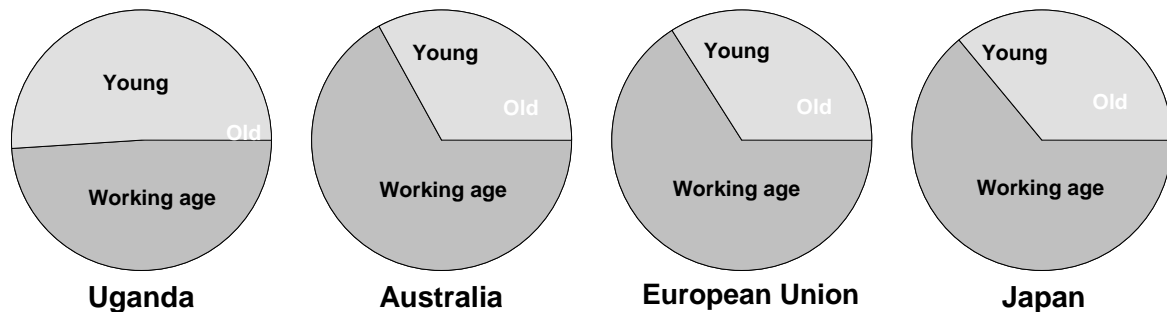
It is critical to realize that all this capacity expansion is not serving the existing people. It is on behalf of people not yet added (or covering a backlog, for people who were not yet added when the extra capacity should have been created). The “not yet added” are not yet paying taxes or producing any services, they are wholly dependent on the existing population to provide this capacity – more dependent than the under-15s and over-65s.

When we talk about age dependency ratios, we are imagining the whole national economic pie being produced by the working-age people, then being divided among all age classes (Figure 2A). The smaller the working-age wedge of the pie, the harder it is to achieve a high quality of life for everyone. As birth rates fall, the proportion in the working age group increases (the ‘demographic dividend’), but as ageing progresses, this trend is reversed to some extent. Concern about population ageing is largely based on this shift. Australia is currently around the ‘sweet spot’ with near maximum proportion in working age, while Europe and Japan are more aged.

However, we are assuming all gross national income (GNI) is available to serve the existing population, and we have just seen that this is not so. *Real wealth per capita is what is left after capacity expansion.* If we add in the “not yet added”, on the basis of the capacity expansion cost of 10% of GNI per 1% growth rate, everyone else’s slice is reduced as a result (Figure 2B). This gives us a very different sense of the burden of population growth, and importantly puts demographic ageing into perspective. For instance, Australia currently has 4.8 people of working age per person over 65, while Japan has only 2.8. Yet the cost of capacity expansion would need to be no more than 3% of GNI per percent population growth

for Australia's working age slice of the pie to be as large as Japan's. Since it's evidently closer to 10%, population growth is a far greater burden than the extent of ageing it may offset.

A: Gross National Income (GNI) distributed per capita to age categories



B: Inclusion of capacity expansion (on behalf of the not-yet-added) to distribution of GNI

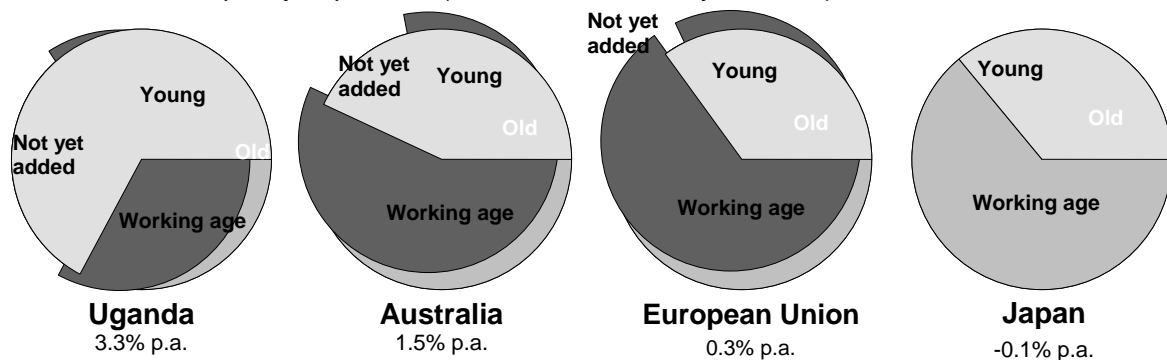


Figure 2.. Economic dependency ratios, A: the pie of gross national income divided among demographic categories, on a notional 'per capita' basis (i.e. according to the percentage of population under 15, 15-65 and over 65), and B: the distribution of GNI when the cost of capacity expansion is included. Capacity expansion (the cost attributed to the 'not yet added') is provisionally assumed to have a cost of 10% of GNI per percentage of annual population growth rate. Current population growth rates and percentage under 15 and over 65 are from Population Reference Bureau (2011).^{viii}

Growth as a driver of inequality in wealth and income

It is widely acknowledged that oversupply of labour suppresses the salaries and work conditions of lowest-paid workers. The impact of illegal immigration on rural workers in USA is an often cited example. Some governments today make the case for accelerating population growth "to prevent inflationary pressures on wages". Such is the pervasive hold of neoliberal rhetoric, even labour-oriented governments can make this pronouncement without a hint of irony. They might as well say "to ensure productivity gains flow to capital and not labour", which is the same thing, and the thing that has driven widening income inequality in the recent decades of neoliberalism.

Employers cannot exploit workers who have a better offer elsewhere. According to a recent media report, China's factory salaries have been growing at 15% p.a. over the last decade, because the flow of migrants from the countryside has slowed and workers can afford to shop around. Of course, that is shifting some jobs to places like Vietnam and Bangladesh, but could only do so until their workers could afford to be choosy also. In contrast, no amount of

employer benevolence can prevent the ever-lengthening ranks of unemployed “demanding to be exploited”, as one Indian trade union official described it to me.

This is not to deny the influence of market liberalism in expanding inequality, through (among other things) lowering progressive tax rates, deregulating predatory financial speculation, removing industrial relations standards and transferring costs of training and environmental impact mitigation to the public purse. Yet the political power of big business to shape governance in their own interest stems from the large share of the economic pie they control after the unemployed have bid each other down on the returns to labour. Let’s not forget the role the same business lobbies play in advocating high immigration rates, precisely to drive this process in their favour.

With the globalization of labour, the oversupply does not need to be in one’s own population. We are all familiar with the effects of Asian labour on the manufacturing sector in developed countries, and its current encroachment on service industries. As the number of developing country workers expands, they need to expand the markets for things they can produce by inventing new products and shortening their lifespan to ensure rapid replacement. Meanwhile job insecurity and underemployment in developed countries is already restricting spending power, reported as ‘weakness in the retail sector’. Ever lower prices (along with easing terms of credit) are needed to match expanding supply of consumer goods with a shrinking pool of people with disposable income. This deflation of mostly discretionary items depresses the measure of inflation in developed countries, and with it the adjustment of welfare benefits and salaries that are linked to inflation statistics. Yet the low-paid gain little as their spending is largely on non-discretionary items that have not deflated. Drawing on such artificially high inflation-adjusted GDP figures, government can pronounce that people have never been better off, yet people know that it is getting ever harder to make ends meet.

People are not at the whim of the labour market if they have their own resources with which to subsist, or to generate a livelihood. The British colonizers in Fiji were forced to import labour from India, because the indigenous people were too rich to accept work on cane fields. They had no money at all, but they had ample arable land, fisheries and forests to meet their needs. Today, with several times the pre-colonial population, landless Fijians labour in factories like their Asian cousins.

I would conclude that the dilution of inheritance through population growth is the primary source of poverty, while the oversupply of labour is a major driver of inequality. Any proposal that seeks to eradicate poverty and build equity, but does not address these forces, is destined to fail. New wealth can be generated and distributed by increasing the utility yield from existing resources, to alleviate poverty without reducing population, but if population growth continues these gains will be quickly eroded.

Population and greenhouse gas emissions

The Special Report on Emissions Scenarios (SRES) of the Intergovernmental Panel on Climate Change (IPCC) explored the impact of different assumptions of population paths, economic outcomes and technology options on future greenhouse gas emissions paths. Only scenarios assuming a low population path achieved less than 2°C warming in 2050.^{ix} Yet moderating population growth is not a strategy currently under consideration in international climate change negotiations.

All humans cause greenhouse gas emissions, but some much more than others. Thus each avoided birth represents avoided emissions, but the amount depends where that birth would have been. Clearly most avoidable births are in low-income settings, but some developed countries are also still growing strongly. Murtaugh and Schlax (2009) calculated that, under USA lifestyle conditions, each child adds to the carbon legacy of the parent over five times more than her lifetime emissions. For a developed country resident, choosing to have one child fewer far outweighed other feasible lifestyle measures to reduce personal footprint.^x In the context of low-income countries, where 90% of future population growth is anticipated to occur, Wire (2009) estimated the cost of abating a tonne of CO₂ using family planning at \$7, compared with low emissions technologies ranging from \$24 for wind power to \$131 for electric vehicles.^{xi} The study conservatively modeled the impact of meeting all “unmet need” for family planning would reduce unintended births by 72 per cent, reducing the projected world population in 2050 by at least half a billion. The reduction in desired family size, which has universally accompanied access to contraception, was not factored in and might double this gain.

Similarly, Wheeler and Hammer (2010) examined costs of both family planning and female education at country level, and found almost half the studied countries had abatement costs from family planning less than \$5 per tonne (competitive with forestry and landuse abatement options) and around 80% less than \$24 per tonne (the starting cost for low-energy technology options). The abatement cost of female education was slightly higher, but the strong synergy between female education levels and efficacy of family planning programmes meant that a balance of expenditure between education and family planning yielded the lowest cost abatement, around \$4 per tonne overall.^{xii}

Emissions avoided by enhanced funding of family planning and girls’ education are incidental to the primary goals of health, gender equity, human development and reducing future vulnerability of populations to climate change impacts. Nevertheless, the cost could clearly be justified on the basis of avoided emissions alone. This is without considering the saving in avoided need for other development assistance, which the UN Population Division has estimated at \$2 to \$6 per dollar spent on family planning.

If policies to accelerate the rate of fertility decline were adopted widely, we might expect to achieve a population growth path similar to that of the UN’s low projection or lower. O’Neill et al (2010) estimated the difference in projected greenhouse gas emissions between scenarios assuming UN’s medium population projection and those assuming the low projection.^{xiii} They took account of impacts of changing age structure, household size and urbanization, in addition to the change in population size. In most regions they found that reduced emissions attributable to ageing roughly cancelled the increased emissions attributable to urbanization, so that the dominant impact was the number of people. They concluded that achieving the low population projection could provide 16-29% of the emissions reductions needed by 2050, and could reduce fossil fuel demand by 37-41% by the end of the century.

Their analysis did not consider the contribution of population growth rate, and the consequent requirement for capacity expansion, as a contributor to consumption patterns. Although capacity expansion does not contribute to the lifestyle of existing people (as discussed above), the emissions generated in the process are distributed among existing people in the calculation of per capita emissions. *Ceteris paribus*, reducing capacity expansion activity will reduce *per capita* emissions intensity. This reduction is additional to the emissions savings by reducing the number of people. However, as ever, *ceteris paribus* is a dubious assumption. It

has already been argued that population growth represents a development opportunity cost, as economic activity is diverted to capacity expansion, away from delivery of other goods and services. In reality, the emissions saving would only be the difference in emissions intensity between capacity expansion and welfare-oriented consumption. However, it is moving this portion of economic activity from relatively non-discretionary emissions intensity to more service-focused activities that are more amenable to transfer to low emissions technologies and behaviours. It is also increasing the level of human development achievable from a given emissions budget, which is no small consideration.

A preliminary estimate of the emissions intensity of capacity expansion activities was derived from data from the United States Environment Protection Agency's report on emissions from key industrial sectors.^{xiv} When emissions contributions from industries such as fossil fuel production and refining, mining, steel and aluminum, cement, rubber and textiles are distributed to their end-uses in infrastructure construction, equipment and consumable items, the emissions intensity for construction was estimated to be 15% higher than the emissions intensity for the economy as a whole. This figure is probably an underestimate, as the embedded emissions in some categories of input materials and transport are not yet included.

The U.S.A population has been growing steadily at close to 1% p.a., and from the above discussion we attribute at least 10% of its GNI to capacity expansion activities. This implies that capacity expansion may be responsible for 11.5% of national greenhouse gases. At the current global population growth rate of 1.15% p.a., we might expect at least 13% of global emissions to be attributable to the construction of infrastructure and equipment to cater for additional people. This estimate does not include any extra land use change caused by additional population pressure, nor any increase in energy cost of meeting societal needs due to human density exceeding local resource limits – such as the need to transport electricity or food over long distances, to move from timber to cement and steel construction, or to recycle or desalinate water.

Between the UN's medium and low population projections, the growth rate difference increases from 0.18% p.a. in 2010-2015 to 0.44% p.a. in 2045-2050. Applying the above estimations of capacity expansion cost and emissions intensity factor, the predicted per capita emissions saving grows from 2.1% to 5.0% over this period on account of reduced requirement for capacity expansion, or 3.9% for the cumulative emissions to 2050. When added to the 16-29% emissions saving attributable to demographic change by O'Neill et al.(2010), the lower population growth path may provide 20-33% of the required emissions reductions by 2050.

The role of population growth in future emissions levels is often dismissed by arguing that consumption patterns are a greater contributor. However, no-one would argue that a single instrument or technology can do the whole job of emissions reductions. To dismiss a potential 20-33% contribution, requiring negative net cost and no on-going maintenance, is hardly rational. To forego an essential component of the only modelled scenarios that succeed in containing warming below 2°C speaks of a denialism at least as stubborn as that of climate change deniers.

Efficacy of voluntary family planning

There would be little point in analyzing the impact of population growth rate, if that rate could not be changed by appropriate interventions. Some people believe that the interventions

needed would be too intrusive on individual reproductive rights to be considered. Yet the list of nations which have successfully reduced family size to near-replacement levels through purely non-coercive, voluntary family planning programmes provides convincing evidence of the efficacy of these measures^{xv}, and the social and economic co-benefits to families adopting family planning.^{xvi} This list contains examples across the spectrum of cultural and religious backgrounds.

Figure 3 shows the course of fertility reduction and of per capita GDP in four countries which actively sought to reduce fertility through voluntary family planning programmes, each paired with another comparable country which did so less actively, later or not at all. In each case, fertility fell before the growth in wealth accelerated, and in each case the lower fertility country achieved considerably higher wealth per capita. The right-hand plot relates TFR directly with GDP, as the downward slope on such plots is commonly used to argue that increasing wealth drives fertility reduction. In each case, the curves are concave, with fertility reducing steeply while there is little improvement in wealth, but GDP growth accelerating once fertility moved below three children per woman. These curves argue that the 'demographic transition theory' wrongly attributes the direction of causation. It appears that fertility reduction is an effective economic stimulus, to a greater extent than affluence is an effective contraception.

It should be noted that the fertility reduction in China was almost complete at the time the one-child policy was introduced in 1978. There is little evidence that coercive policies have contributed to fertility decline there or anywhere.

While the population growth rate of these pairs of countries also reflects the difference in TFR, for some the picture is complicated by differences in migration rate. Further research is underway to investigate the impact of migration rate on age structure and dependency ratios, which might explain why countries with high births and high emigration do worse than countries with similar population growth resulting from lower births and migration.

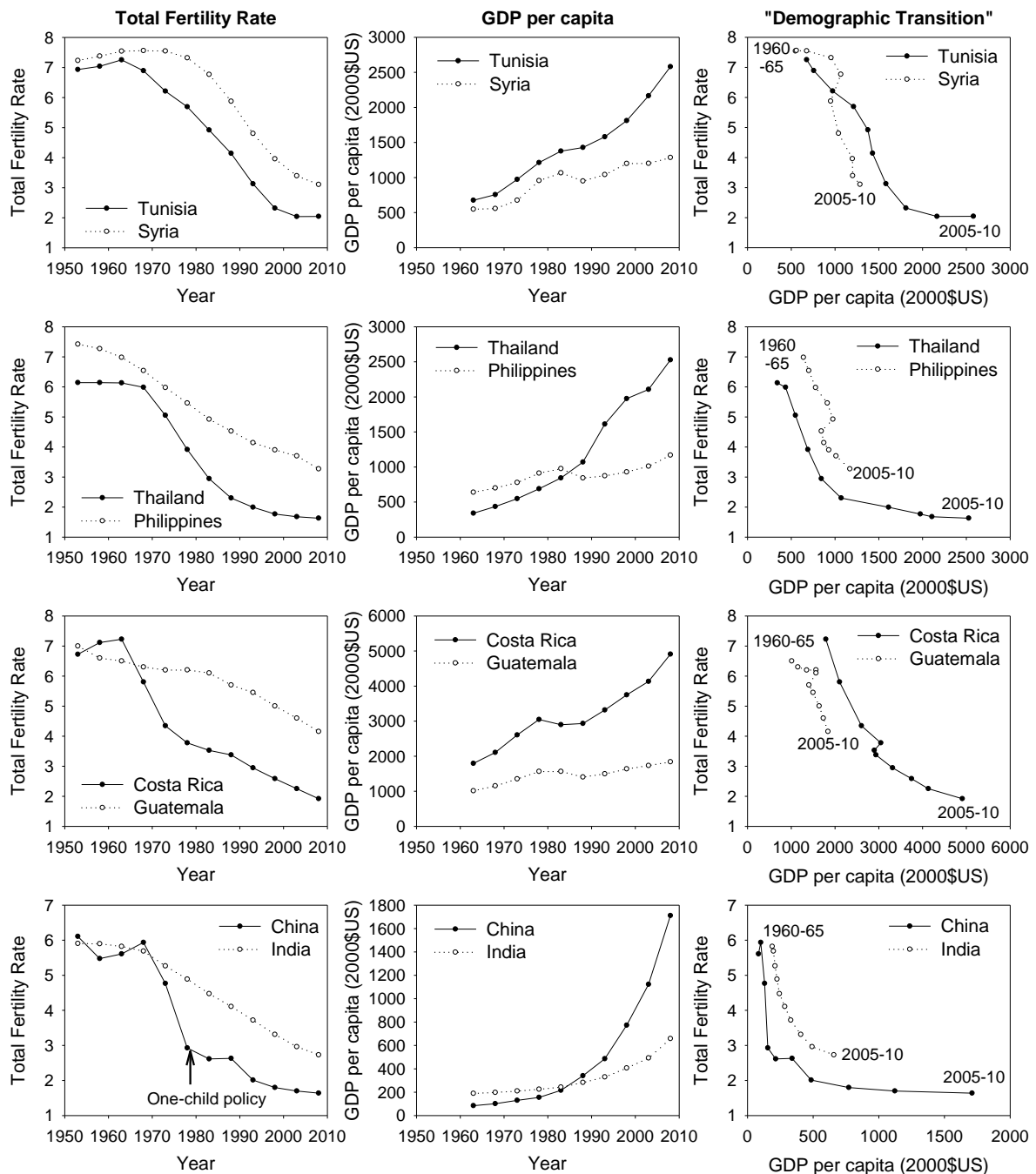


Figure 3. Demographic and economic outcomes for four nations which adopted family planning (solid lines) in contrast with comparable countries in the same region (dotted lines) which were weak or non-adopters of family planning. Left: the change in Total Fertility Rate (TFR, the average number of children born to each woman over her lifetime) over the period 1950 to 2008 (UN Population Estimates, 2010 Revision), middle: the average GDP per capita over 5-year intervals from 1960 to 2008 (adjusted to constant year 2000 US\$, ppp (purchase price parity), from World Bank World Development Indicators, as collated by Gapminder 2010), and right: the relationship between TFR and GDP per capita.

The observation that nations started to move ahead when fertility dropped below around 3 children per woman is consistent with the levels of fertility associated with improvement in food security. Figure 4 shows the change in proportion of people in developing regions reported by the World Health Organisation to have insufficient food, and the TFR prevailing

in each region. This relationship itself is not evidence of causation, but it adds to the evidence that high birth rates hinder development.

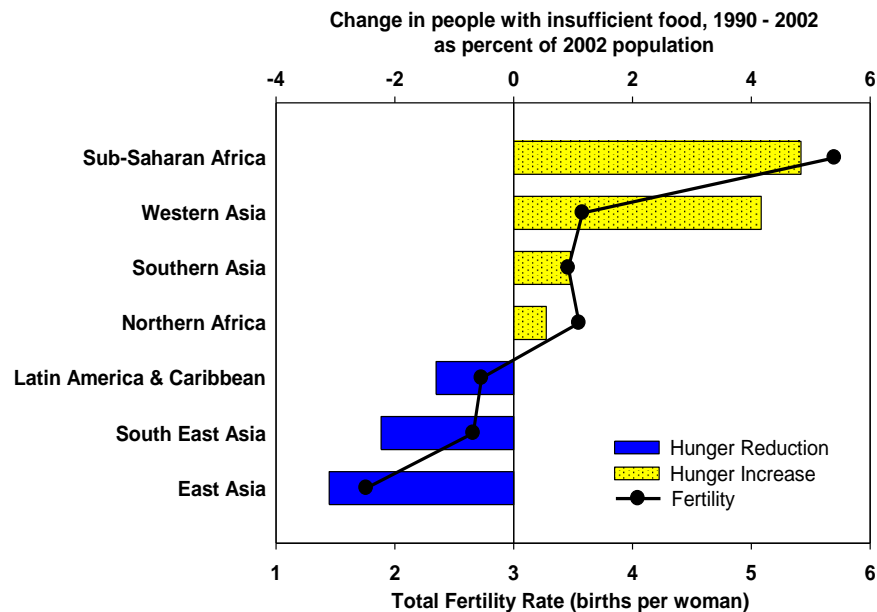


Figure 4. The change in proportion of the population receiving insufficient food (derived from World Health Organisation), and the Total Fertility Rate (UN Population Estimates, 2010 Revision) in major developing regions.

The observation that reducing fertility below three has been sufficient to allow some economic advance should not be taken to mean that a family size of three is an adequate national target. The rapid growth in productivity of agriculture and industrial processes over recent decades may have allowed productivity to overtake demand at this rate of population growth. But it is by no means certain that such productivity growth will continue into the decades beyond peak oil. Even without energy constraints, physical limits to productivity increases are being reached, particularly in agriculture. Keeping pace with growth will only work within absolute resource limits, such as those of fresh water and arable land. These limits are being reached or exceeded in many countries. Human development can only be sustained if populations stabilize before potential productivity gains are exhausted.

Bangladesh, with a current fertility rate of 2.3, is adding as many people to its population annually as it did in the mid-1960s with a fertility rate of 6.9. Its much celebrated early success with family planning has led to a complacent belief that population growth is no longer a problem there. Only fertility below the long-term replacement rate (approximately 2.1, at infant mortality rates prevailing in food-secure, vaccinated populations) can stabilize population, and rates significantly below replacement (1.3-1.8) until stabilization can avoid much further growth from demographic momentum.

Such low fertility rates are not to be feared. In recent years, a widespread fear has been spread that below-replacement fertility leads to economically crippling levels of demographic ageing. Yet no objective academic study has upheld the fears about ageing^{xvii}, and the analysis presented above emphasizes that, even without such simple adjustments as increasing the retirement age, the burden of ageing is small compared with the burden of population growth. Fertility can and will readily rebound from below-replacement levels, if and when the negative impacts of population decline overtake the negative impacts of

overpopulation. When one can comfortably take a pram on a Tokyo subway without fear of crushing, and couples can afford a home with more than one bedroom, the Japanese might well choose larger families. Until then, they have much to gain from population decline, including the concentration of inheritance.

The dominant explanation for the economic boost experienced by nations with falling fertility rate is the resulting increase in proportion of the population of working age. By reducing the number of children and the 'age dependency ratio', overall economic activity per capita is increased. In addition to the raw ratio of 15-to-65-year-olds to younger and older people, reducing births rapidly increases the workforce participation of women. This 'demographic dividend' has been estimated to have contributed from a fifth of China's recent economic growth (Wang and Mason 2007)^{xviii} to a third of the growth of the East Asian 'tigers' (Bloom and Canning 2008).^{xix}

It is proposed here that the 'durability factor' described above, affecting spending on infrastructure, equipment and training, is likely to have contributed a significant proportion of the remaining observed stimulus. Its impact translates into an increased rate of per capita capital accumulation and increased per capita inheritance of capital stocks, as emphasized by Turner (2009)^{xx}, as well as accelerated improvement in human capacity (education), and reduced unemployment. The stimulus may be magnified by a virtuous cycle, of personal optimism contributing to investment, entrepreneurship, educational effort, lawfulness and political stability.

The years of lost opportunity

A second, more sombre line of evidence supports the efficacy of family planning programmes. That is the effect of their recent withdrawal on the rate of fertility decline in individual nations, and on the annual population increment globally.

Over the past 15 years, international support for family planning programmes has largely evaporated, and within developing nations the profile of family planning has moved from being a major pillar of development to being a minor and somewhat embarrassing component of public health programmes. These changes stem mainly from a reframing of reproductive health issues at the International Conference on Population and Development (ICPD) in Cairo in 1994. In a backlash against coercive birth control programmes in China and elsewhere, and through strong influence of religious and economic ideologies in favour of population growth, the provision of contraception was reframed in terms of reproductive health and rights, and links between reducing population growth and improving human development were discredited.

In the early 1990s, family planning constituted more than half of international aid for 'population assistance.' By the mid 2000s, it received less than 5% (Sinding 2009).^{xxi} Over this period, aid spending on HIV-AIDS and maternal health programmes grew strongly, increasing the total spending in this portfolio, but the family planning budget fell in real terms to less than half of its former level, and the expansion of other programmes diverted staff and institutional capacity in recipient countries away from family planning programmes.^{xxii} Perhaps more powerful than the withdrawal of resources was the political taboo placed on any expressed intention to reduce population growth, or to link smaller family size with economic outcomes. Instead of focusing on the synergy between meeting women's

reproductive rights and advancing economic prospects for her family, community and nation, the latter goals were perversely seen to be at the expense of the former.

The result has been observed in the stalling of fertility decline in many sub-Saharan African nations.^{xxiii} In addition, the previously strong family planning programmes in nations such as Indonesia and Bangladesh were wound back before achieving below-replacement fertility.^{xxiv} Globally, the annual population increment was declining throughout the 1990s, but this trend was reversed from 2003, and a greater number was added in each of the next seven years (Figure 5). Part of this rebound is a generational echo of strong growth in the early 1980s, itself an echo of the late 1950s surge. But the rebound was earlier and stronger than the UN's 2000 projection anticipated. The impact of these changes was a marked upward revision of UN's projections for sub-Saharan Africa between the 1998 and 2008 revisions.^{xxv} This is despite the UN's medium projection maintaining the assumption that all high-fertility nations will resume reducing fertility at around one unit per decade.

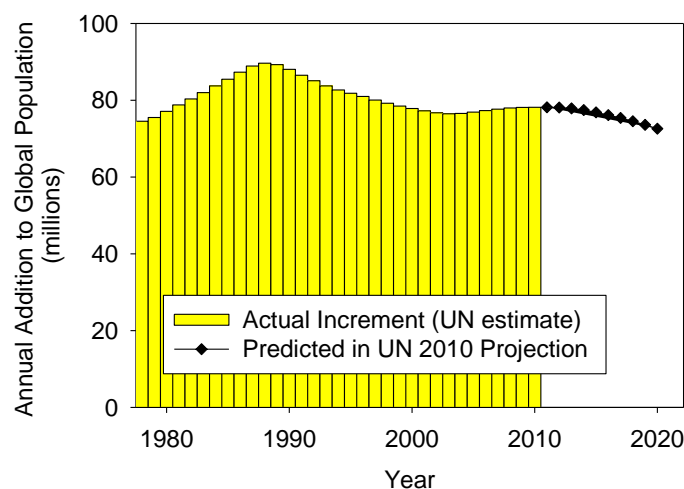


Figure 5. The annual increment of global population, showing the decline achieved in the 1990s, and the rebound since 2003. The anticipated increment in the UN's medium projection (2010 Revision) assumes a resumption in fertility decline.

It is not the business of the UN projection to reflect whether current policy settings are sufficient to drive such a decline, nor to observe that many nations have achieved more than twice this rate of decline through voluntary family planning programmes (2-3 units reduction in TFR in the first decade). Unfortunately, the lack willingness of any global forum to address such policy implications means that the UN's medium projection is taken as a given – an externally imposed condition or challenge to be accommodated, rather than a variable we can control.

Another impact of the 1994 ICPD was that family planning access was omitted from the Millennium Development Goals (MDG). It is noteworthy that the MDG program has reported strong success in reducing infant and maternal mortality, increasing female participation in education and improving a number of other indicators of public welfare. Each of these factors is reputed to drive fertility rates down. Indeed, many international development organizations rely solely on these approaches, claiming that family planning is unnecessary or ineffective. Yet any influence these factors have had on fertility over the past decade was more than negated by the withdrawal of family planning. Despite being by far the cheapest among these interventions, family planning is evidently the most effective.

Currently only about 0.3% of official international aid from OECD countries is spent on family planning. An order of magnitude increase in this budget would barely be felt by other programmes, and would be sufficient to meet the unmet demand in most communities. The UN Population Division estimates that “for every dollar spent in family planning, between two and six dollars can be saved in interventions aimed at achieving other development goals.”^{xxvi} Merely changing the rhetoric around population growth, and giving developing country governments license to reinstate population stabilization as a goal, would greatly enhance programme impacts at no extra cost. Shifting 5% of funds from agriculture, education and health budgets to fund family planning would *increase* food security, educational attainment and health outcomes, in addition to lessening environmental pressures and accelerating economic development. How long can we continue to avert our eyes from such a powerful lever for good?

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