

MDGs 2.0: What Goals, Targets, and Timeframe?

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Abstract

The Millennium Development Goals (MDGs) are widely cited as the primary yardstick against which advances in international development efforts are to be judged. At the same time, the Goals will be met or missed by 2015. It is not too early to start asking ‘what next?’ This paper builds on a discussion that has already begun to address potential approaches, goals and target indicators to help inform the process of developing a second generation of MDGs or ‘MDGs 2.0.’ The paper outlines potential goal areas based on the original Millennium Declaration, the timeframe for any MDGs 2.0 and attempts to calculate some reasonable targets associated with those goal areas.

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1. INTRODUCTION

In September 2000 the largest-ever gathering of heads of state and government (147 of them) met at the UN to unanimously adopt the Millennium Declaration, committing themselves to a series of international development objectives to be reached by 2015. The eight Millennium Goals which evolved out of the Declaration are widely cited as the primary yardstick against which advances in international development efforts are to be judged. A sibling paper discusses the success of the MDGs in terms of motivating action and change over the past ten years (Kenny & Sumner, 2011).

At the same time, the Goals will be met or missed by 2015. Their power to motivate will be considerably limited in 2016 (and may already be declining). Furthermore, a considerable literature has emerged suggesting that the Goals could have been better designed to set realistic appropriate development targets. It is not too early to start asking ‘what next?’ Indeed, if new goals with as yet unmeasured targets are to be proposed, time is running very short. The current set of MDGs were the product of ten years of UN conferencing –a luxury which will (largely) not be available for a second round if it begins in 2015.

The September 2010 MDG Summit outcome document also mandated the UN Secretary General to initiate a consultation process of what would come after 2015, and to recommend in his annual reports ‘further steps to advance the United Nations development agenda beyond 2015’ (UNGA, 2010 p. 29).

Box 1 outlines one possible timetable going forward drawing upon Manning (2009). It is also possible there will be neither an agreement on any post-2015 framework nor an extension of the current MDGs. One additional element may be the 2012 Rio Summit, where Colombia has proposed the agreement of Sustainable Development Goals “similar to and supportive of the MDGs.”¹ The Rio Summit might provide language or goal areas that would be adopted as part of any new set of MDGs agreed in September 2015 at the UN General Assembly (UNGA).

Box 1. One possible post-MDG timetable

2012	UNSG Taskforce Report produced
Spring 2013	UNSG proposals
Sept. 2013	‘Special Session’ of UNGA
2014	Proposals for indicators for framework
Sept. 2015	UNGA agrees new framework

Source: Adapted from Manning, 2009, pp. 70–71.

In light of the compressed time frame (relative to the time spent on MDGs 1.0) this paper builds on a discussion that has already begun evaluating potential approaches, goals and

¹ UNCSD (2011)

target indicators to help inform the process of developing 'MDGs 2.0.'² A recent contribution to the literature (which borrows analysis from an earlier draft of this paper and shares a co-author) is "Getting to Zero: Finishing the Job the MDGs Started" by McArthur et. al. (2012).

Any discussion begs the question of how goals and targets should be set in the first place. The initial MDGs were largely drawn from the OECD DAC report, *Shaping the 21st Century: The Contribution of Development Co-operation*, published in May 1996,³ which created the International Development Goals (effectively the MDGs minus Goal Eight) those in turn drew on a range of goals set by various international development conferences. Subsequently, a series of expert group meetings jointly sponsored by the OECD, United Nations, and the World Bank refined the goals and identified a set of 21 indicators for measuring progress (see Manning, 2009 for full history).

There are calls for a considerably more participatory approach leading up to 2015. For example, the emerging NGO discussions at Civicus/GCAP and in the 'Beyond 2015' campaign, is coalescing around an "Essential Must-Haves for a Global Development Framework".⁴ These suggest that any replacement MDG framework should be developed in a participative and inclusive way which particularly seeks to involve the voices of excluded groups and people directly affected by poverty and injustice.

Clearly in the run-up to 2015 there will be numerous sets of principles and proposals. One approach might be a goal-led framework, but either set by national governments through deliberative processes, or by a combination of a streamlined set of global indicators (child nutrition, infant mortality and primary/secondary completion rates, among others) with actual indicators and targets set by national governments via deliberative processes. A second approach would be much bolder and more ambitious. It would build a global agreement binding both north and south, with poverty targets for the south and sustainable consumption targets for the north. It could focus on global public goods and global issues, of which extreme poverty and climate-resilient development are central, *or* it could focus on the national dimensions in development in both north and south or what Manning (2009) refers to this as a 'One World' approach (see Sumner & Tiwari, 2011 for further discussion). There are many other potential approaches.

For the sake of tractability (not because the authors necessarily favour such an approach all else equal), this paper will assume that post-2015 goals will be based around a reaffirmation of the Millennium Declaration. The Declaration (to which all UN member states agreed)

² See discussion in Melamed & Sumner (2011) prepared for the UNDP-ODI Cairo workshop and academic forums such as the 2009 conference on 'After 2015: Promoting Pro-poor Policy after the MDGs' in Brussels, convened by DSA-EADI-ActionAid-IDS-DFID or 'The MDGs and Human Rights', convened by Harvard Law School, Oslo University IDS and UNICEF, 22–23 March 2010.

³ OECD/DAC (1996)

⁴ See: <http://www.beyond2015.org> and <http://www.guardian.co.uk/global-development/poverty-matters/2011/jun/17/millennium-development-goals-beyond-2015>

consists of six ‘fundamental values’ including freedom, equality, solidarity, tolerance, respect for nature, and shared responsibility. Some of these are only partially represented in the MDGs, and a new agreement might seek to address this. We also assume that ‘new MDGs’ will again be global and ‘top down’ targets, although perhaps better incorporating the understanding that country targets should be developed out of the global goals via some kind of national deliberation process.

With those caveats on the need for an inclusive process and the paper’s limited scope, this paper discusses potential new or revised goals and targets, as well as time frames and tools to set target levels. It also presents a potential ‘straw man’ list of MDGs including indicative targets based on IMF growth projection scenarios and World Bank inequality estimates for income poverty, a simple model of progress using historical data for some non-income poverty indicators and other approaches in areas including education and the environment. This ‘straw man’ list should be seen as part of an effort to help dialogue on the post-2015 goals as well as methods to set targets, and by no means a definitive proposal for the shape of MDGs 2.0 to be agreed upon in 2015. We suggest some potential language associated with those goals, again and most emphatically in the spirit of an input to discussion.

Section 2 discusses potential goals and target indicators linked to Millennium Declaration language. Section 3 discusses timeframes. Section 4 focuses on strawman targets themselves for the goals discussed previously. Section 5 concludes.

2. REFORMULATING GOALS

The original goals have the considerable advantage of having been ratified in the Millennium Declaration from which they were drawn, by 147 heads of state, suggesting that the areas which they cover are open to wide consensus. At the same time, there have been calls for additions or changes. The major criticisms include:

- The goals mis-specify or ignore important areas (growth, jobs, war/conflict, institutions, population) and mis-target others (a goal for education not learning). There is a debate as to whether the Goals should define human development **outcomes**, or **opportunities** to achieve outcomes. Related to this, the goals are weak on underlying causes of poverty and on **social justice** – meaning equity, rights, vulnerability and exclusion related issues. (This is an issue the Secretary General has raised himself in his annual MDG report).⁵
- The goals are over-specified: some overlap (universal education and education equity), there are multiple goals and targets in the same area (health).
- None of the goals have been taken to be binding on industrialised countries. Goal Eight on global cooperation is notably absent of hard targets. It is worth noting, of

⁵ UNGA, 2011

course, that none of the Goals are *legally* binding on anyone anywhere, nor is it clear who is responsible to meet them.

A first question is whether the existing measures in the Goals or related targets capture (reasonably) precisely the nature of the ‘development’ characteristic claimed to be addressed (see Table 1). In education, completion does not necessary imply ‘learning’. In health, the Goals privilege child and maternal outcomes over (quality-adjusted) life years in the population as a whole. Gender equality has been reduced to equality in access to education. There is widespread dissatisfaction over the environmental goals because there are few targets and it is not even clear what way indicators are supposed to move (Sadasivam, 2005:31-32). Across the Goals, there are considerable questions about the quality of underlying data and revisions, not least as Leo & Thuotte, (2011) note, for example, 31 of 67 countries revised their primary completion (MDG 2) data in 2010/11.

Table 1. MDG Target Indicators and Selected Contentions

MDG Target Indicator	Contentions
Dollar-a-day PPP (and \$1.25/day)	- Basis for particular thresholds (US\$1, \$1.25 or \$2/day) open to question (the first was the average of eight countries' poverty lines in 1980, the second is the average of the world's poorest 15 countries in 2005 and the third is the median average of all poverty lines for all developing countries in 2005 (see Ravallion, Chen, & Sangraula, 2008); - Range of questions about purchasing power parity (see Deaton & Dupriez, 2011) - Limited account of differential experiences (especially intra-household, as typically based on the household head); - Lack of attention to public goods; - Ignores the physical condition of the individual (Sen's critique); - Highly sensitive to the construction of the poverty line and the pricing of items and basket weighting of components; - Problems with heterogeneous household sizes and compositions of households; - Comparability and consistency of national household surveys questionable due to different consumption patterns in different countries; - Lack information on the depth and severity of poverty and inequality among the poor.
Hunger	- Unclear that existing measures accurately capture malnutrition (See Banerjee & Duflo, 2011).
Employment	- 'Full and productive' employment very difficult to define especially where a considerable proportion of activity is self employed and/or informal sector based.
Primary school completion	- Does not necessarily mean daily attendance, high quality education in terms of teaching and resources; or that learning has been achieved; - May be over-reported through children repeating years or inaccurate records on total number of children in age cohorts.
Gender equity	- Equality in access to schooling hardly encompasses all aspects of equality even within education, let alone in other areas of life (e.g. no mention of the Beijing target of access to reproductive health care, which was in the precursor to the MDGs, the OECD DAC International Development Targets)
Health, mortality	- Unclear why child and maternal mortality favored

	over quality-adjusted life years in the population as a whole; - Accurate birth and death records may not exist (and cause of death for maternal mortality rates).
HIV/Malaria	- Question as to highlighting particular health input conditions rather than health outcomes (mortality, morbidity, life expectancy).
Reverse loss of environmental resources, reduce biodiversity loss	- Indicators too vague; - Missing key issues such as climate change, fisheries, etc.
Access to water and sanitation	- Individuals may be recorded as having access to water or sanitation even when the facilities are broken or the person is physically unable to reach them; - Input to health conditions, unclear why privileged.
Slum dwellers	- Measure very vague.

Source: Expanded and developed from original table in Sumner and Tiwari (2009).

With regard to over-specification, in health, Vandemoortele & Delamonica (2010) argue that the three health-related goals could be collapsed into one overall health goal. Similarly, there are two overlapping goals covering universal primary education and gender parity in education (the first implies the second at the primary level). Lastly, it has been argued that local environmental goals are to some extent covered by other outcome indicators (e.g. health).⁶

While there is mis-specification and over-specification in some areas, the MDGs do not capture at all areas including governance, vulnerability or subjective definitions of poverty and ill-being. In exercises like *Voices of the Poor*, poor people suggest important elements of poverty include risk, vulnerability, security, dignity and voice –as well as the importance of jobs and infrastructure. A number of national MDG strategies have incorporated such additional measures of poverty.⁷ Again, law and order –the most basic functions of a state—are not included. And concerns regarding the inequality of outcomes are not directly addressed (Palma, 2011). On the side of donors, aid policy documents overwhelmingly mention peace and security as a goal of development assistance.⁸

⁶ Fukuda-Parr and Greenstein make a broader point with regard to the interconnections between health and education Goals that may suggest the original MDGs had too many of them (2010, p. 5, footnote 7). They note that infant mortality, for example “reflects a number of circumstances, such as accessibility of clean water, sanitation facilities, the education of women, maternal-child health support, provision of primary healthcare facilities, provisioning for food security and others. Child survival, reflecting more broadly the health of children, is instrumentally important for other development objectives such as building human capital and facilitating the demographic transition.”

⁷ See, for example, Sumner and Tiwari (2010)

⁸ Fukuda-Parr (2008) and UNDP (2010).

The original UN Millennium Declaration actually covered a number of these additional areas of broad based development including peace, security, disarmament, human rights, democracy and good governance. While there were no target dates for progress in these areas, the Declaration committed signatories to (inter alia) “strive for the full protection and promotion in all our countries of civil, political, economic, social and cultural rights for all... the right to live their lives and raise their children in dignity, free from hunger and from the fear of violence, oppression or injustice.” The Declaration noted that “Democratic and participatory governance based on the will of the people best assures these rights.” The Millennium Declaration also called for “the elimination of weapons of mass destruction, particularly nuclear weapons” and for countries “[t]o take concerted action to end illicit traffic in small arms and light weapons, especially by making arms transfers more transparent and supporting regional disarmament measures.”⁹

The declaration suggests that 147 heads of state agreed progress in these broader areas was a good thing –even if the development of agreed metrics and timetables might pose insurmountable challenges. This suggests a ‘long-list’ of candidates for additional indicators. Table 2 uses language from the UN Millennium Declaration, including language from outside the specific section on ‘development and poverty eradication’ and discusses their current or potential incorporation in the development goals. It provides a far from exhaustive list of potential MDG 2.0 goals associated with the original language from the UN Declaration.

⁹ UN (2000)

Table 2. The Millennium Declaration, MDGs and some potential new MDG Areas

Declaration Language	Status in Current MDGs	Potential MDG 2.0 Goal Areas
II. Peace, security and disarmament		
...terrorism, drugs, transnational crime, weapons of mass destruction, small arms and light weapons, anti-personnel mines....	<i>Not in current MDGs.</i>	- War deaths - Military expenditure - Arms exports
III. Development and poverty eradication		
An open, equitable, rule-based, predictable and non-discriminatory multilateral trading and financial system.... A policy of duty- and quota-free access for essentially all exports from the least developed countries... Enhanced program of debt relief... More generous development assistance...	<i>MDG 8, but no specific targets.</i>	- Duty-free, quota-free language from original MDGs - Tariffs and subsidies on agriculture commodities - 0.7% of GDP in aid from all high income countries - Commitment to finance costs of MDGs 2.0 on delivery - ODA to low-income fragile states as % total ODA - Remove all OECD taxes on remittances
To halve, by the year 2015, the proportion of the world's people whose income is less than one dollar a day and	<i>MDG 1.</i>	- % of world living on >\$1.25/day and/or >\$2 - % GDP growth per capita - Reduction in those suffering from hunger

the proportion of people who suffer from hunger		- % children stunted
To halve, by 2015, the proportion of people who are unable to reach or to afford safe drinking water.	<i>MDG 8.</i>	- % who are unable to reach or to afford safe drinking water - % reduction of those living without access to improved sanitation
To ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling and that girls and boys will have equal access to all levels of education.	<i>MDGs 2 & 3</i>	- % complete secondary schooling - % who cannot read and understand a simple paragraph. - Scores on internationally comparable tests
By 2015, to have reduced maternal mortality by three quarters, and under-five child mortality by two thirds, of their current rates	<i>MDGs 4 & 5</i>	- Maternal and under-five mortality - Subsume into broader health goal
To have, by 2015, halted, and begun to reverse, the spread of HIV/AIDS, the scourge of malaria and other major diseases that afflict humanity.	<i>MDG 6</i>	- Achieve AIDS transition - % reduction in new (malaria/HIV) infections - % ensured ARV coverage
To provide special assistance to children orphaned by HIV/AIDS.	<i>Not in MDGs</i>	- To provide special assistance to children orphaned by HIV/AIDS
To have achieved, by 2020, a significant improvement in the lives of at least 100 million slum dwellers.	<i>MDG 7</i>	- Improve the lives of X million more slum dwellers.
To promote gender equality and the empowerment of women.	<i>MDG 3</i>	- % reduction in earnings disparity - % reduction in gap of share in non-agricultural workforce

		- % increase in women's representation in parliamentary bodies - % decline in girl/boy disparity at age five
To develop and implement strategies that give young people everywhere a real chance to find decent and productive work.	<i>Not in MDGs</i>	- % reduction in gap between youth unemployment and total unemployment
To encourage the pharmaceutical industry to make essential drugs more widely available and affordable by all who need them in developing countries.	<i>MDG 8</i>	- % 'vital drugs' available generic/at cost.
To develop strong partnerships with the private sector and with civil society organizations in pursuit of development and poverty eradication.	<i>MDG 8</i>	- FDI/remittance/private sector aid flows
To ensure that the benefits of new technologies, especially information and communication technologies... are available to all.	<i>MDG 8</i>	- % reduction of those without access to electricity/lighting/clean fuels - % reduction in population not covered by the mobile signal - % of world with access to the Internet
IV. Protecting our common environment To... embark on the required reduction in emissions of greenhouse gases... conservation and sustainable	<i>MDG 7</i>	- % increase in forest cover - % rise in ratio of protected areas - % of energy from non-fossil sources - GHG emissions/capita - Fuel production per capita (in tons CO2 equivalent)

development of all types of forests... stop the unsustainable exploitation of water resources... To intensify cooperation to reduce the number and effects of natural and man-made disasters.		- Tax on gasoline \$ PPP/litre - % reduction in CO2 emissions per capita/per unit of GDP - Halt known species extinction - Manage agricultural/fisheries resources sustainably
V. Human rights, democracy and good governance Promote democracy and strengthen the rule of law... strive for the full protection and promotion in all our countries of civil, political, economic, social and cultural rights for all... combat all forms of violence against women ...work collectively for more inclusive political processes... ensure the freedom of the media to perform their essential role and the right of the public to have access to information.	<i>Not in MDGs</i>	- % countries (world's population) ranked free by polity/Freedom House - % countries improve World Governance Indicators scores
VI. Protecting the vulnerable Expand and strengthen the protection of civilians in complex emergencies... encourage the ratification and full implementation of the Convention on the Rights of the Child and its optional protocols on the involvement of children in armed conflict and on the sale of children, child prostitution and child pornography.	<i>Not in MDGs</i>	- Ratification of the convention on the rights of the child - % in child labor

VII. Meeting the special needs of Africa Give full support to the political and institutional structures of emerging democracies in Africa... encourage and sustain regional and subregional mechanisms for preventing conflict and promoting political stability, and to ensure a reliable flow of resources for peacekeeping operations on the continent...take special measures to address the challenges of poverty eradication and sustainable development in Africa, including debt cancellation, improved market access, enhanced Official Development Assistance and increased flows of Foreign Direct Investment, as well as transfers of technology... help Africa build up its capacity to tackle the spread of the HIV/AIDS pandemic and other infectious diseases.	<i>Not in MDGs</i>	- Aid/capita received in sub-Saharan Africa (SSA) - FDI flows/capita received in SSA - Debt /GDP in SSA - Weighted tariffs faced by SSA exports - % aid to improve health systems in Africa
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To move from the long list presented in Table 2 to a more manageable and realistic set of enumerated targets, it is enough to note some constraints faced by any potential goals: they have to be ubiquitously accepted as important foci for development efforts with global applicability. Perhaps most importantly, they will need to be acceptable to a consensus gathering of world leaders. Realistically, new numerical goals in particular would also have to involve targets that are preferably already measured. Failing that, they should be targets that are easy to measure –with accuracy and using relatively non-controversial indicators. They should also be amenable to both relatively rapid change and influenced by policy, so that even with the challenges of accurate measurement, progress is possible to discern. Absent a robust objective method to evaluate which potential goals meet these thresholds, we have used our subjective opinions, hopefully somewhat justified below.

With regard to potential goals covering peace, security and disarmament, the issue of measurement may be a major factor –not least, there is no official UN count of global war deaths. Major arms exporters and importers would likely resist a measure that suggested reducing arms exports using a particular metric was an unalloyed good. Military expenditure as a percentage of GDP may be a more politically plausible numerical goal area at the global level and is presented in internationally agreed data sets. Having said that, discussions around drafts of this paper suggests such a numerical target may remain politically unacceptable to a large number of countries.

Similarly with human rights, democracy and governance, there are no internationally agreed measures of the quality of a country's governance or respect for rights. Given that, it appears doubtful that a consensus decision would be reached to include Freedom House or Worldwide Governance Indicator measures as part of any target related to a governance and rights goal, as it might be. This suggests that any language in a Millennium Declaration update would have to remain unquantified as in the original Declaration. There are internationally accepted numbers on child labor that might be used to monitor progress on protecting the vulnerable, however the underlying data is very weak.¹⁰ Given that, it is not clear that a separate numerical child labor goal would add considerably to a school enrolment goal.

Turning to the development and poverty goals, a considerable complaint regarding the original MDGs is that they ignored income growth and jobs, which are of the highest priority both to political leaders and to people in rich and poor countries alike according to poll evidence.¹¹ At the same time, it is not clear what benefit a specific international development goal on global income growth per capita would have in terms of influencing policy in a particular direction (in that it appears unlikely to influence economic policy in the US and China, for example). This perhaps implies that a statement of the centrality of growth to the development process but absent a target may be the appropriate

¹⁰ Dillon, et al. (2010)

¹¹ Tortora & Marlar (2010)

incorporation. Again, while the International Labor Organization's (ILO) elevation of 'decent work' as a universal target might be included in goal language,¹² a specific numerical indicator would be harder to add, because the nature of work varies so considerably between low and high-income countries. The initial MDG's focus on the incomes of the World's poorest people surely remains a more suitable development goal.

In that regard, we follow Santos & Sumner (2012) in focusing on a \$2 poverty line for three reasons: (i) because it is the average (median) poverty line of all developing countries rather than the \$1.25 measure, which is the mean of the national poverty lines of the poorest 15 countries in terms of consumption per capita (Chen & Ravallion, 2008, p. 4; Chen & Ravallion, 2010); (ii) because given that the current MDGs are based on \$1 (updated to \$1.25), it makes sense to raise aspirations for any new set of MDGs (iii) because there will likely be 2 billion people living under \$2 in contrast to just 0.6-0.8bn under \$1.25 in 2015 and thus, again, the aspiration for a 2030 target should have some 'stretch' built-in and (iv) by 2030 it is reasonable to think \$2 will represent extreme poverty (noting that the \$1/day poverty line in 1990 became \$1.25/day in 2005).

In addition, there has been some discussion of the inclusion of a measure of income inequality within the MDGs. As the Goals are set at the global level, and given that the great majority of income inequality worldwide is accounted for by variation in average incomes across countries, this would amount to a Goal calling for income convergence. It might be better to have an explicit convergence target in the Declaration --that progress in goal areas should be more rapid in groups and countries that are currently furthest behind. There are various other proposals for including inequality - the details and merits of which are discussed by Melamed (2012):

- Country level gini coefficient targets
- Weight progress on all indicators using equity criteria (See Vandemoortele and Delamonica, 2010).
- Specific targets for the poorest groups (see CIGI, 2011).
- Universal targets (see (Aryeetey et al., 2012)).

The original MDGs had multiple goals related both to health inputs (water), particular diseases (HIV, malaria) and particular forms of mortality (maternal, child). For the sake of continuity, some of this overlap might continue into the second round of the MDGs not least because none of MDGs were to eradicate these forms of poverty – rather to reduce them by various proportions. However commentators have seen the health area as one where simplification might be a virtue. Life expectancy might provide a more suitable overall health target, although a special focus on child mortality might remain in addition because of the Declaration's specific focus on the vulnerable.

Again, the original MDGs had overlapping education goals. The goals also suffered from being input measures rather than measures of learning. This does suggest the advantage of

¹² ILO (2011)

adding a goal related to learning outcomes. Given the focus of the MDGs on the most disadvantaged, an appropriate indicator might be basic numeracy and literacy. One issue with such a measure is that current literacy statistics are largely derived from a calculation which assumes children who have completed primary education are literate –an assumption that appears empirically untrue. This increases the complexity of setting a realistic target, a topic returned to later in the paper. At the same time, to ensure goal language relevant to more developed countries, a goal covering secondary education and outcomes might be an additional candidate.

The existing gender equity goals are narrowly focused on education. At the same time, reductions in earnings disparity or share in non-agricultural workforce appear unsuitable global goals because of their limited applicability to majority rural societies. Women's representation in parliamentary bodies is open to the challenge that some countries have reserved seats for women in parliament but that this poorly reflects overall levels of gender equity. A potential goal that may be both politically acceptable and reflects the underlying status of women and girls in a society is the demographic gender balance under the age of five.

In the area of infrastructure, beyond water, the original MDGs focused on improving the lives of 100 million slum dwellers by 2020. It is unclear why slum-dwellers should be prioritized over the rural poor, and the goal was under-specified, regardless. A goal focusing on sufficient energy access to provide basic lighting and healthy cooking may be an attractive option –this is the focus of the UN Sustainable Energy For All Initiative, which seeks (inter alia) to ensure universal access to modern energy services. This is also an area where advances in off-grid electricity technology may allow for rapid rollout of electricity in a manner akin to mobile telephone rollout in the first decade of the Twenty First Century. With regard to communications infrastructure, the last ten years of mobile signal rollout suggests that the goal of universal access to modern communications is plausible by 2030 – something we examine further in the section on targets.

The MDGs may provide the opportunity to set a UN goal for global emissions of greenhouse gasses, taking advantage of the fact that the declaration will not be a legally binding commitment on the behalf on signatories. The UN Sustainable Energy For All Initiative suggests reducing global energy intensity by 40% and increasing renewable energy use globally by 30% by 2030. Additional goals might cover forest area and biodiversity, where the 2010 Nagoya Conference of the Parties to the Convention on Biological Diversity set goals covering sustainable management of agriculture, fisheries and forests as well as subsidies harmful to biodiversity and species extinction.

With regard to language on rich country support for development, beyond the duty-free, quota-free language from the original MDGs, it is unclear that specific language on tariffs or subsidies could be agreed upon, given the failure of the Doha round to make progress in this area. More generally, the original MDG process suggested the difficulty of tying particular groups of countries to specific policy reforms as part of a declaration that was to be

universally accepted regarding aspirations for global progress. Given that the original MDG process built on the back of ten years of UN summits, while the process for any follow-up MDGs will be an accelerated consultation largely taking place between 2013 and 2015, it appears even less likely that an updated set of goals would include much in the way of binding policy commitments.

For example, in order to tie ‘Goal Eight’ language on global partnerships more closely to the other goals (and allow third parties to know if it is being adhered to), it might be possible to imagine Cash on Delivery mechanisms where donors pre-commit to provide financing to countries which out-perform previous historical rates of progress and are on track to reach their MDG target, as it might be.¹³ At the same time, it is not yet clear that cash on delivery could work across MDG target areas, nor are actual costs of achieving those targets available, nor is the suitable level for outside payments towards meeting those agreed upon targets. Under those circumstances, specific target language on cash on delivery appears inappropriate. Similarly, in a situation where the development needs, number and size of fragile or stagnating economies worldwide (or in Africa) a specific target of the percentage of resources flowing to fragile states or Africa in 2030 appears over-restrictive.

From the discussion in Table 2, we propose a list of potential goal areas where numerical targets could be set:

1. Poverty: \$2/day, malnutrition
2. Health: Life expectancy, child mortality
3. Education: Literacy, secondary education
4. Gender: Population disparity under the age of five
5. Sustainable Development: Forest area; alternative energy as a percentage of total, GHG emissions, species extinction
6. Peace: Military expenditure as % GDP
7. Infrastructure: Access to mobile signal, access to improved energy sources
8. Development: Duty Free Access, Aid 0.7%

It is worth emphasizing at this point that other goal areas could and should be included in any update to the Millennium Declaration, even if numerical targets may not be plausible or widely accepted, using language that is as specific as possible (we propose some such language later in the paper). Furthermore, we repeat the caveat that we see this list as part of an effort to feed a discussion of the next round of MDGs rather than in any way a perfect

¹³ And why do we have MDG indicators at all?

proposal for the framework and coverage of any follow on MDGs.

3. WHAT TIME FRAME?

Vandemoortele & Delamonica (2010) note that the Millennium Declaration does not in fact mention the baseline year –and that this was intentional because world leaders could not agree on such a baseline. 1990 was selected by “the architects of the MDGs... based on historical trends at the global level” –as part of a follow-up “Road Map” exercise (See Manning, 2009 for detailed history).

Thus while the Goals were based in large part on internationally agreed targets set at UN conferences, the imposition of a standard 1990 baseline and 2015 completion date considerably altered the ambition of some goals compared to those international targets.

Pogge (2010) suggests that the MDGs were made less ambitious than previous international commitments at a global level by choosing a 1990 baseline and by using percentages rather than the absolute number of disadvantaged people (see table 3). The Rome Food Summit refers to halving the “proportion” whereas the Millennium Declaration refers to halving the “number”. Given that the world population will have increased by 120% between 2000 and 2015, a reduction of the number of poor to 60% of what it was in 2000 is enough to cut the proportion in half. Thus the Millennium Declaration is actually offering a 40% cut and the MDG itself given the population growth and the baseline amounts to just a 27% cut.

Table 3. Pogge's comparison of hunger target setting

	World Food Summit	Millennium Declaration	MDGs
Baseline year	1996	2000	1990
Baseline number of Poor (mill)	1,656	1,665	1,813
Promised poverty reduction by 2015	50.00%	40.40%	27.00%
Target for 2015	828	993	1,324
Required annual rate of reduction	3.58%	3.39%	1.25%

Adapted from Pogge (2010, p. 3).

Meanwhile, Vandemoortele and Delamonica's claim that the architects of the MDGs used rates of historical progress to set targets is surprising, because this would entail using very patchy analysis to make trendline predictions. Manning reports that the percentage of countries with at least two data points since 1990 for a short list of MDG indicators only reached 71% in 2008. With better data, perhaps we would have set an earlier baseline date, and could be declaring broader success in 2015. The challenge was surely exacerbated by having to choose a single start year. Setting an earlier year would have made the poverty MDG target even less of a stretch goal even while it may have made some other targets more plausible to accomplish. And setting a start year too early would have made a mockery of the various international fora where the targets were first laid out.

To summarize, the MDG architects had to walk a tightrope between ambitious targets set at UN conferences and practical targets that could plausibly be met and were politically palatable, all on the basis of weak and missing data. Under these constraints, the MDG baseline of 1990 performed well. At the same time, the combination of data problems and the almost immediate pressure to adopt global targets as country targets (see below) made the Goals more ambitious than many framers intended (see discussion in Kenny and Sumner, 2011). This is an important lesson for any new round of MDGs –which should specify a baseline year prior to an updated declaration –or set goals that are independent of a baseline year.

So what are the options on time frames? One could take a 15 or 25 year time line based on the basis of MDG 1.0 being 2000 vs 2015 or 1990 vs 2015. That could mean a new time line of 2015 vs 2030 or 2015 vs 2040. However given the actual data availability in 2015 will largely date to 2010 or near after that time point (perhaps 2011-2013) it makes sense to

retain the fifteen year ‘operational period’ of the original MDGs but anchor the new MDGs to a date for which we actually have a full(ish) dataset as the baseline to assess systematically progress towards – in short 2010 as the baseline and 2030 the target line.

4. SETTING TARGETS

The original targets were set at a global level, largely based on global declarations. They were set divorced from any strong understanding of potential country-level rates of progress based on historical experience. Countries have now been repeatedly assessed as to being on track or off track to meet the MDGs. As noted in a companion paper (Kenny and Sumner 2011), moving from a global to a country level has a dramatic impact on the ambitiousness of targets. Whereas a global goal sets a target for (population weighted) *average* country progress, a country-level goal sets a target for *minimum* progress. For example, a goal to reduce child mortality by two thirds at the global level suggests that the average rate of progress at the country level (weighted by population) is a two-thirds reduction. Give or take (assuming equal population distribution) half of countries will see slower than two thirds progress, and half of countries will see faster than two thirds progress. If the Goal is reset as a universal country target, *all* countries are expected to reduce mortality by at least two thirds –obviously a harder target to reach. Any second round should learn from this experience, and make clear that global goals should not be interpreted as necessarily attainable at the country level for every country.

Klasen & Lange (2011) have set out a method for predicting under-five mortality, primary completion, and gender equality in education using past performance.¹⁴ Here we set out a simpler but similar approach across a wider range of indicators. Existing analysis of global patterns of change in development indicators suggests that simple models based on cross-country experience of transition to high levels of health and education can predict change at the country level with considerable accuracy (Kenny and Sumner 2011, Casabonne & Kenny, 2011). Country-level forecasts based on such models provide the baseline for expected progress to the goal end-point, for education, health and other development outcomes.

There remain risks of forecasting using historical data, of course. The outlook over the next 15 to 25 years may be one of ‘shifting vulnerabilities’ or multiple, interacting and compound stressors and crises as a result of the ‘perfect storm’ or ‘long crisis’ thesis of the interaction of demographics, climate change, food and energy prices, and resource scarcity (see for

¹⁴ Klasen and Lange’s (2011) empirical model is based on the assumption that progress towards high levels of human development follows an s-shaped (logistic) path, similar to Clemens, 2004 and Clemens, et al., 2007. The main difference between their modeling of the historical trend of progress in child mortality and primary completion rests in the specification of their indicator, which is log-normalized, and the period between lags, which in their model is 5 years. Furthermore, the authors estimate their model using country fixed effects. In estimating the transition speed of the indicator as the rate of change in the indicator per annum, they obtain similar results to our model in terms of the high levels of variation in the indicator explained by the model (r-squared above 0.80)

discussion (Beddington, 2009; (Evans, 2010); Evans, et al. , 2010).¹⁵ The world of today looks considerably different from the world from which the historical data on trends for forecasting is being drawn –it has many more middle income countries, new donors, stuttering industrial economies and so on. These are all likely to have an impact on future rates of change in indicators of broad-based development.

Furthermore, this approach does not work for all Goal areas. Casabonne & Kenny (2011) demonstrate that income growth rates are far too volatile to predict on the basis of past trends, which implies that poverty reduction will not be amenable to a naïve forecasting approach. With literacy, there is insufficient data to make a forecast based on past trends. With some environmental variables, especially regarding climate change, any forecast based around ‘business as usual’ trendlines will be grossly inadequate to provide a meaningful target to respond to the challenge faced.

4A. SETTING INCOME POVERTY TARGETS

For poverty forecasts, rather than a model based on historical experience, we use IMF Growth projections data and make the assumption of static inequality. It is important to note the caveats that attach to such an exercise. Historical experience suggests growth rates across countries are both volatile and very hard to predict over 15 year periods. The record of forecasts over naïve projections based on past growth rates is limited, and growth rates over consecutive fifteen year periods are very weakly correlated (see Kenny and Williams, 2001, for a review of the evidence). Furthermore, global poverty outcomes depend considerably on growth projections for individual countries (China and India in particular); the evolution of income distributions within each country; any re-evaluation of PPPs and changes in population growth (see discussion in Kanbur & Sumner, 2011). Given that, the uncertainty attached to poverty forecasts is considerable.

The following analysis draws on the approach taken by both Moss & Leo (2011) and Santos and Sumner (2012) who set out three growth scenarios as follows: An optimistic scenario assumes that from 2009 to 2030 average incomes will grow at the forecasted average growth rate of the Gross Domestic Product based on PPP per capita estimates from the IMF’s World Economic Outlook (WEO) for the period 2009-2014. The moderately optimistic growth scenario assumes that from 2009 average incomes will grow at the forecasted average growth rate of the Gross Domestic Product (PPP) per capita for the period 2009-2014, minus 1% (as this is the average error historically observed in IMF growth projections as per Aldenhoff (2007)). Finally, a pessimistic growth scenario assumes that from 2009 the aggregate income of the poor will grow at half the forecasted average growth rate of the

¹⁵ The conclusion of the US National Intelligence Council Report (USNIC, 2008, p. xii), based on a widespread and large academic consultation, before the global economic crisis is sobering: ‘trends suggest major discontinuities, shocks and surprises’. That said one recent World Bank paper optimistically argues that growth will offset climate impacts on poverty: Skoufias, et al. (2011)

Gross Domestic Product based on PPP for the period 2009-2014, while population growth will remain at the forecasted rate. There is no theoretical basis for this as the lower bound possibility --in fact the reality could be much worse than this.

Using the growth forecasts to predict country change in average income between the latest survey and 2030, we use the World Bank's POVCALNET (which has data on current income distributions) to produce estimates of the proportion of country that would be in poverty in 2030 assuming the given income growth and static inequality.¹⁶

¹⁶ For each country we have 3 annual average growth scenarios developed from IMF WEO growth projections. We develop country GDP/capita forecast for 2030 for each country for each scenario. We use POVCAL to calculate 2030 poverty using the following technique to adjust PPP: $PPP(\text{forecast}) = PPP(2005) / ((2030 \text{ average GDP/capita}) / (\text{latest survey year average GDP/capita}))$. This provides a percentage poverty estimate which we combine with 2030 population predictions from the WDI to get absolute numbers below poverty for each country by each growth scenario and global and regional totals.

Table 4. Estimates of \$1.25 poverty in 2030

	Pessimistic	Moderate	Optimistic	Pessimistic	Moderate	Optimistic
	Number of \$1.25 poor (millions)	Number of \$1.25 poor (millions)	Number of \$1.25 poor (millions)	Poverty as % of world population	Poverty as % of world population	Poverty as % of world population
World	678.3	341.1	230.8	8.2	4.1	2.8
Region						
East Asia & Pacific	47.4	17	8.2	0.6	0.2	0.1
<i>China</i>	1.1	0.4	0.4	0	0	0
Europe & Central Asia	4.2	1.7	1	0.1	0	0
Latin America & Caribbean	28.6	23	15.5	0.3	0.3	0.2
Middle East & North Africa	11.8	4.7	2.3	0.1	0.1	0
South Asia	94.6	12.5	4	1.1	0.2	0
<i>India</i>	27.9	1.7	0.9	0.3	0	0
Sub- Saharan Africa	491.7	282.2	199.8	5.9	3.4	2.4

Sources: Data processed from Povcal (2011) and IMF WEO (2011) based on static inequality. Notes: As per Moss and Leo (2011) Optimistic scenario = average annual growth projection for 2009-2014 of IMF WEO for period 2010-2030; Moderate scenario = average annual growth projection for 2009-2014 of IMF WEO minus 1% for period 2010-2030; Pessimistic = half of average annual growth projection for 2009-2014 IMF WEO for period 2010-2030.

Table 5. Estimates of \$2 poverty in 2030

	Pessimistic	Moderate	Optimistic	Pessimistic	Moderate	Optimistic
	Number of \$2 poor (millions)	Number of \$2 poor (millions)	Number of \$2 poor (millions)	Poverty as % of world population	Poverty as % of world population	Poverty as % of world population
World	1,573.60	798.3	558	18.9	9.6	6.7
Region						
East Asia & Pacific	162.20	68.60	38.50	1.90	0.80	0.50
<i>China</i>	1.20	0.60	0.50	0.00	0.00	0.00
Europe & Central Asia	16.50	6.30	3.40	0.20	0.10	0.00
Latin America & Caribbean	67.30	52.00	36.20	0.80	0.60	0.40
Middle East & North Africa	43.40	19.80	11.00	0.50	0.20	0.10
South Asia	504.70	121.10	52.90	6.10	1.50	0.60
<i>India</i>	279.50	17.40	5.60	3.40	0.20	0.10
Sub- Saharan Africa	779.40	530.40	416.00	9.40	6.40	5.00

Sources: Data processed from Povcal (2011) and IMF WEO (2011) based on static inequality. Notes: As per Moss and Leo (2011) Optimistic scenario = average annual growth projection for 2009-2014 of IMF WEO for period 2010-2030; Moderate scenario = average annual growth projection for 2009-2014 of IMF WEO minus 1% for period 2010-2030; Pessimistic = half of average annual growth projection for 2009-2014 IMF WEO for period 2010-2030.

4B. DESCRIPTION OF DATA FOR NON-INCOME FORECASTS

For the non-income Goal targets that can be set using past trends to provide an accurate forecast, the data used to predict progress comes from the World Bank's World Development Indicators, the United Nations Statistics Division, and two independent studies. Table 6 lists the indicators with the time periods covered, the number of countries for which there is sufficient data to perform regression analysis, and any limitations (real or potential) related to the indicator itself or the measurement thereof. It is worth emphasizing a caveat: data weaknesses are considerable across the board and many indicators seem to follow such a predictable pattern over time precisely because the underlying data is in fact modeled.

Data for secondary completion and child mortality goes back to 1960, but since the regressions are used to predict historical progress in 20 year increments through 2030, the baseline year for these indicators is taken at 1970, and taken as 1990 for those indicators which do not have a reasonable number of data point prior to 1990.

Table 6. MDG 2.0 Indicators: Measurability and Limitations

Indicator	Source	Availability (countries)*	Availability (time-series)**	Limitations
Secondary Completion (% of population 25 and older)	Soto and Cohen (2010) ¹	95	1970-2010	Includes only 20 low income countries. Values are estimates.
Child Mortality Rate (number of deaths at age 1-4 years per 1,000 children surviving to age 1)	World Development Indicators (2011) ²	192	1970-2010	While true for most of the data, child mortality data in particular is said to be significantly underreported from 1960-1990. This would suggest that, given more reliable estimates for the 2000s, that the rate of change is actually under-reported. This would mean that our projections for 2030, based lower than expected rates of change, are actually over-reporting the levels of child mortality.
Maternal Mortality Rate (per 100,000 live births)	Hogan, Foreman, Naghaqvi, Ahn, Wang, Makela, Lopez, Lozano and Murray (2010)	181	1990-2010	Full time series of data is modeled, implying that predictions may be overly optimistic in terms of reliability.
Undernourishment (%)	World Development Indicators (2011) ²	175	1990-2010	
Life Expectancy at Birth	World Development Indicators (2011) ²	193	1970-2010	
Population Gender Disparity (0-4 yrs.)	United Nations Population Division	191	1950-2010	

Indicator	Source	Availability (countries)*	Availability (time-series)**	Limitations
Mobile Phone Subscriptions (per 100)	World Development Indicators (2011) ²	202	2000-2010	2000 is taken as the baseline year for mobile phone subscriptions, so predictions to 2030 must be based on 10 year periods of change, rather than 20.
Forest Area as % of Total	World Development Indicators (2011) ²	203	1990-2010	The percentage given in recent years can be deceiving, since it is commonplace for these numbers to increase in countries that have "discovered" forest land or reclassified land previously defined as non-forest.
Alternative Energy Use as % of Total	World Development Indicators (2011) ²	134	1970-2010	
Military Spending % GDP	World Development Indicators (2011) ²	134	1990-2030	

*The availability of countries refers to the number of countries for which a 2030 projection is possible, given data availability from 2007/2008/2009/2010 and back in 20 year periods. Global and developing weighted averages may be composed of a smaller number of countries

**Refers to data which is utilized in the regression analyses, not necessarily the data which is available from the source. Values for 2010 are estimates

1. Data is updated from "Growth and human capital: Good data, good results," Journal of Economic Growth (2007)

2. Data from the World Development Indicators is taken from the 15 December, 2010 release, downloaded January 2011

To perform time-series regressions using these indicators, in most cases estimates for 2010 were generated from preceding years to permit the use of regression coefficients to make forward predictions to 2030. Depending on the historical transition of the indicator itself, values for 2010 are extrapolated using a compounded growth rate, primarily manipulating data points from 2000 and 2009 (or 2007/2008, depending on the availability of data).

4C. DESCRIPTION OF METHODOLOGY

The purpose of making forecasts on this cross-country data is to aggregate country-level predictions to a global-level business as usual estimate of performance in 2030. An ordinary least squares (OLS) regression model is utilized, wherein a time series is constructed with lagged independent variables to predict (current and) future levels of the selected indicators.

Mathematically, each country indicator observation is regressed against the observation from twenty years in the past and the squared term of this past observation (to identify marginal effects). The estimation model takes the form of equation (1) below:

$$(1) \ Y_t = \beta_0 + \beta_1(Y_{t-1}) + \beta_2((Y_{t-1})^2) + \mu$$

where Y_t is the value of the indicator at any time t (excluding the base year) and Y_{t-1} is the 20-year lag observation. The squared term is entered to capture curvature in the historical path. β_1 and β_2 are the regression coefficients, μ is the error term, and β_0 the constant, which can be conceptually understood as the global trend in the indicator. What the model provides is coefficients on 20-year periods of change, which can then be utilized to make out-of-sample predictions for 2030 (from extrapolated 2010 data). Where an indicator is taken in the log form, the term associated with the β_2 coefficient is dropped.

One benefit of this simple lag regression model (versus traditional linear models) is that a full set of time-series data points is not needed. The average 20-year change (captured by the β_1) is applied to all countries for which an “endline” data point is available. This allows us to calculate an average state of progress on each indicator with a larger number of countries, even if these are not included in the regression equation which provides the forecast coefficients.

4D. RESULTS AND ROBUSTNESS CHECKS

In figures 1-10 (in Annex III), actual values for 2010 are plotted against their predicted values from the lag regression described above. Each point represents the coordinates for an actual versus predicted value of the indicator under consideration. A point on the line represent a perfect prediction. Given the number of observations on or near the line, it is

clear that simple models work for many development indicators.¹⁷ Having said that, it is worth noting that, particularly with regard to countries which had some of the highest rates of mortality in 1990, progress on child and maternal mortality has been more rapid than would be expected on the basis of the model.¹⁸ This provides some optimism that progress going forward could continue at a rate more rapid than a ‘business as usual’ forecast based on past trends.

The results for applying this time series model to the child mortality rate from 1960-2009, the secondary completion rate from 1970-2010, and forest area as a percentage of total land area from 1990-2010 are promising. The models explain more than 90% of the variation in the indicators at time t , and the lagged independent variables and constant are both statistically significant (Annex I contains the regression output). High levels of variation can also be explained for the maternal mortality rate, life expectancy at birth, and to a lesser extent, alternative energy use as a percentage of total energy use.

¹⁷ Predicted rates for secondary education completion are cut-off at 1.0 since countries with high initial completion rates could have predictions greater than 100% completion.

¹⁸ For example, there are almost 0 datapoints to the right of the line in the case of initial CMR in 1990 being above 80.

Table 7. Potential MDG Targets for 2030: Population Weighted Global Averages (OLS Estimates)

Indicator	Population weighted averages			2030 high	Proposed goal in the declaration language
	2010	2030 low	2030 mid		
Secondary Completion (% of pop. 25 and older) (n=95)	30.00	38.60	42.24	45.87	50% increase
Child Mortality Rate (per 1,000) (n=190)	42.63	20.73	23.99	27.78	50% decrease
Maternal Mortality Rate (per 100,000 live births) (n=180)	163.76	89.07	111.98	140.83	50% decrease
Undernourishment (%) (n=174)	13.66	9.47	11.67	13.87	Less than one in ten undernourished
Life Expectancy at Birth (n=191)	69.36	60.67	72.86	87.50	75 years (approx. 8% increase in average life expectancy)
Population Gender Disparity (0-4 yrs.) ¹ (n=191)	0.925	0.933	0.936	0.939	Halt and reverse pop. gender disparities
Mobile Phone Subscriptions (per 100) (n=200)	101.07	158.61	208.64	274.45	Ensure universal access to communications technologies
Forest Area as % of Total (n=201)	26.65	21.68	24.85	28.02	Halt and reverse global trend towards deforestation
Alternative Energy Use as % of Total (n=134)	5.99	7.18	8.66	10.15	Double the renewable share of global energy production
Military Spending % GDP (n=134)	2.31	1.31	1.72	2.14	33% decrease

Source: Authors' calculations using World Bank, Hogan et al. (2010), Soto & Cohen (2010) and UN Data (2011)

*Projections are based on middle ground predictions using an entire sample of countries and 95% C.I.s. Low and high predictions are calculated as one s.e. from the middle ground prediction

1. Population gender disparity is reported as the total number of girls ages 0-4 divided by the total number of boys ages 0-4

Table 8. Potential MDG Targets for 2030: Population Weighted Rates of Change 2010-2030 (OLS Estimates)

Indicator	Global Population Weighted Averages			
	Expected Progress under pessimistic scenario	Expected Progress under middle ground scenario	Expected Progress under optimistic scenario	Proposed goal in the declaration language
Secondary Completion (% of pop. 25 and older)	28.7%	40.8%	52.9%	50% increase
Child Mortality Rate (per 1,000)	-34.8%	-43.7%	-51.4%	50% decrease
Maternal Mortality Rate (per 100,000 live births)	-14.0%	-31.6%	-45.6%	50% decrease
Undernourishment (%)	1.5%	-14.6%	-30.7%	Less than one in ten undernourished
Life Expectancy at Birth	-12.5%	5.0%	26.2%	75 years (approx. 8% increase in average life expectancy)
Population Gender Disparity (0-4 yrs.) ¹	0.8%	1.1%	1.5%	Halt and reverse pop. gender disparities
Mobile Phone Subscriptions (per 100)	56.9%	106.4%	171.5%	Ensure universal access to communications technologies
Forest Area as % of Total	-18.7%	-6.8%	5.1%	Halt and reverse global trend towards deforestation
Alternative Energy Use as % of Total	19.7%	44.6%	69.4%	Double the renewable share of global energy production
Military Spending % GDP	-7.6%	-25.5%	-43.5%	33% decrease

Source: Authors' calculations using World Bank, Hogan et al. (2010), Soto & Cohen (2010) and UN Data (2011)

*Projections are based on middle ground predictions using an entire sample of countries and 95% C.I.s. Optimistic/pessimistic predictions are calculated as one s.e. from the middle ground prediction
1. Population gender disparity is reported as the total number of girls ages 0-4 divided by the total number of boys ages 0-4

Tables 7-8 above provide the global population weighted¹⁹ averages for 2030, and the corresponding percentage change in the indicators from 2010-2030, based on the forward predictions from the OLS regressions. Figures 11-20 in Annex III show the transition paths that these indicators would follow at the global level, accounting for upper and lower bounds of progress for 2010-2030. The upper and lower-bound estimates are *not* the global five percent confidence intervals. They are the population-weighted average of the lower and upper bound confidence intervals at the country level. As such, these pessimistic/optimistic outcomes are better viewed as the extreme bound of likely outcomes in 2030.²⁰

The results in table 7 suggest that by 2030, assuming a business as usual scenario, approximately 27% of the world population aged 25 and older will have obtained secondary completion, the child mortality rate will have dropped to approximately 24 per 1,000, the maternal mortality rate will have decreased to approximately 112 deaths per 100,000 live births, and life expectancy at birth will have increased to nearly 73 years.

The predictions for mobile phone coverage likely provides an artificially large number since such a great deal of expansion occurred in the 2000s, and the expectation is that the rate of growth will diminish over time. Nonetheless, we can safely predict that the world will see more than 100 more subscriptions per 100 people at the global level, and most of this is due to growth in the developing world. In turn, this suggests a goal of universal access to basic information and communications technologies is plausible.

The simple model regarding forest area suggests that there is still deforestation (understood here as the proportion of total land area classified as forest), but the rate over the 20 year period is low enough such that one could imagine the possibility of a global halt of deforestation at the aggregate level, and perhaps an increase in the proportion over time (as suggested by the optimistic estimate).

Other indicators are less promising (as well as more problematic to predict). For example, the model suggests undernourishment will have only dropped 15% from the global average of approximately 14% to 12%. Population gender disparity will remain almost unchanged in global weighted average terms. Lastly, military expenditures as a percentage of GDP are expected to decrease from 2.3% to 1.7% from 2010 to 2030 under a business as usual scenario.

¹⁹ Population data for weighted averages comes from the UN (2011)

²⁰ Our proposed goal language purposely falls somewhere in between the middle ground and optimistic scenarios, since the MDGs are designed to be stretch goals.

Table 9. Potential MDG Targets for 2030: Population Weighted Global Averages (non-OLS estimates)

Indicator	Aggregation method	Population Weighted Averages		
		2010*	2030 (linear)	2030 (compounded)
Secondary Completion (% of pop. 25 and older) (n=95)	Sample average	30.00	39.77	44.49
	Aggregated Average	30.00	39.25	50.14
Child Mortality Rate (per 1,000) (n=189)	Sample average	59.28	26.71	38.26
	Aggregated Average	42.63	8.62	28.77
Maternal Mortality Rate (per 100,000 live births) (n=179)	Sample average	163.76	86.21	111.13
	Aggregated Average	163.76	71.93	143.40
Undernourishment (%) (n=174)	Sample average	12.93	5.30	8.13
	Aggregated Average	13.66	4.25	15.86
Life Expectancy at Birth (n=189)	Sample average	69.40	73.84	74.14
	Aggregated Average	69.35	73.94	74.66
Population Gender Disparity (0-4 yrs.) ¹ (n=193)	Sample average	0.925	0.906	0.906
	Aggregated Average	0.925	0.909	0.911
Mobile Phone Subscriptions (per 100) (n=194)	Sample average	88.60	176.99	36,629.42
	Aggregated Average	100.93	199.59	4,099,924.00
Forest Area as % of Total (n=173)	Sample average	30.15	28.90	28.95
	Aggregated Average	26.57	25.37	26.85
Alternative Energy Use as % of Total ² (n=133)	Sample average	8.67	8.58	8.58
	Aggregated Average	6.11	7.16	12.29
Military Spending % GDP (n=102)	Sample average	2.65	1.62	1.91
	Aggregated Average	2.28	1.00	1.89

Source: Authors' calculations using World Bank, Hogan et al. (2010), Soto & Cohen (2010) and UN Data (2011)

*The number of countries for which there is data could be smaller for this second set of projections, since data points for 1990 and 2010 are needed. Data points can be missing in the projections from the OLS regressions

1. Population gender disparity is reported as the total number of girls ages 0-4 divided by the total

number of boys ages 0-4

2. Iceland and Paraguay dropped because of artificially high percentages

Table 10. Potential MDG Targets for 2030: Population Weighted Rates of Change 2010-2030 (non-OLS estimates)

Indicator	Global Population Weighted Averages				Proposed goal in the declaration language
	Expected Progress sample average (linear)	Expected Progress sample average (compounded)	Expected Progress aggregated average (linear)	Expected Progress aggregated average (compounded)	
Secondary Completion (% of pop. 25 and older)	33%	48%	30.8%	67.1%	50% increase
Child Mortality Rate (per 1,000)	-55%	-35%	-79.8%	-32.5%	50% decrease
Maternal Mortality Rate (per 100,000 live births)	-47%	-32%	-56.1%	-12.4%	50% decrease
Undernourishment (%)	-67%	-37%	-68.9%	16.1%	Less than one in ten undernourished
Life Expectancy at Birth	6%	7%	6.6%	7.6%	75 years (approx. 8% increase in average life expectancy)
Population Gender Disparity (0-4 yrs.) ¹	-2%	-2%	-1.7%	-1.5%	Halt and reverse pop. gender disparities
Mobile Phone Subscriptions (per 100)	100%	41241%	97.8%	4061993.7%	Ensure universal access to communications technologies
Forest Area as % of Total	-4%	-4%	-4.5%	1.1%	Halt and reverse global trend towards deforestation
Alternative Energy Use as % of Total	-1%	-1%	17.1%	101.0%	Double the renewable share of global energy production
Military Spending % GDP	-39%	-28%	-56.4%	-17.4%	33% decrease

Source: Authors' calculations using World Bank, Hogan et al. (2010), Soto & Cohen (2010) and UN Data (2011)

1. Population gender disparity is reported as the total number of girls ages 0-4 divided by the total number of boys ages 0-4

Tables 9-10 above serve as a simple robustness check of the OLS forecasts. We use global forecasts of progress based on aggregated country-level linear and compound forecasts as well as forecasts based on global average data. In all cases, we use data points from 1990 and 2010 (trended from 2008/9 data). The first row for each indicator represents a forecast based on population-weighted global averages from 1990-2010.²¹ This is broadly the approach that Vandermortele and Delamonica (2010) suggest was followed to derive the baseline year for the first set of MDGs. The second row represents the average of country-level forecasts, which are aggregated as population-weighted averages post-forecast for 2030. That is to say, each country has its own forecasted values (linear and compounded) for 2030, and these are aggregated using population weights. The aggregated averages are the closest parallel to the OLS estimates of Table 7, which are also aggregated from country forecasts using population weights.

The results in Table 9 above are slightly higher for most indicators than the OLS estimates in Table 7 when considering the compounded growth only (the two notable exceptions being the rate of undernourishment, the population gender disparity). Compounding mobile subscriptions is difficult given the magnitude of change from 2000-2010 in the number of subscriptions at the country level; the projections for 2030 clearly demonstrate the problem of making valid predictions of such a rapidly changing indicator. On the other hand, when applying a linear growth rate, the projections fall on either side of the OLS projections; there does not seem to be a clear tendency above or below. These results generally confirm that the OLS projections are reasonable, and can be accepted with a certain amount of reliability.

4E. OTHER NON-INCOME FORECASTS

There is a growing consensus around the idea of a Millennium Learning Goal, which garners legitimacy from a strong focus in the UNESCO-sponsored Jomtien Declaration of Education for All on the quality of learning.²² However, there is inadequate cross-country data on learning to forecast plausible outcomes in 2030 (Birdsall & Kenny, 2012 forthcoming). Given that, we utilize a potential aspirational target of universal basic literacy and numeracy amongst primary school graduates, combined with language aimed at more advanced countries regarding a broader range of skills.

The scientific community has agreed that, to assure global temperature change does not exceed 2°C, a reverse in the GHG emissions trend would need to occur by 2020. Clearly this is a considerable departure from business as usual and invalidates a targeting approach based

²¹ The values in this first set of rows named sample averages for 2010 can in fact represent two different averages. For WDI datasets, these values are “world” values published in the WDI (without formulas) and meant to represent a global population weighted value for a sample of countries that the World Bank chooses. Where the dataset is not from the WDI, this value represents a population weighted value based on a sample of all of the countries for which data is published. Since the three datasets that are not from the WDI have no country missing values, these two methods –ours and the World Bank’s –should in theory be the same.

²² Filmer, et al. (2006)

on historical trends. The reversal in emissions is nonetheless one of the goals we propose, based on the fact that the Cancun Climate Change Conference agreed that climate change should be limited to 2°C or less.²³ It is worth noting that, by the time of the 2015 MDG summit, parties to the Kyoto Protocol agreed in Durban that they would have agreed a globally binding treaty to come into force in 2020. If this agreement does emerge, it may provide stronger language for an environment development goal –as might the 2012 Rio+10 Summit.

Similarly, based on historical patterns of change, alternative energy use as a percentage of total energy use is expected to increase nearly 3% at the global level between 2010 and 2030. This result is completely inadequate if significant climate change is to be avoided. Given this, we use forecast estimates based on data from the U.S. Energy Information Administration (EIA) and the International Energy Agency (IEA), regarding the share of renewable sources in electricity production and the share of renewable sources in total energy production under a range of scenarios.²⁴ For example, the EIA's International Energy Outlook (2010) suggests that by 2035, 13.5% of all energy should be renewable under its 'reference case'. Similarly, energy for electricity generation should grow from 18% renewable in 2007 to 23% renewable in 2035 under that case.

The IEA provides (in addition to a current policies scenario) estimates for two stretch scenarios –the New Policies Scenario and the 450 Scenario, the latter of which represents the most dramatic reduction in GHG emissions, required to assure a limit in the increase in the global average temperature to 2°C. The IEA's World Energy Outlook (2010) suggests that the share of renewable and nuclear sources in total energy production under that scenario should represent between 22% and 38% of the total in 2035, more than double our model predictions. In terms of energy for electricity generation, the report estimates that anywhere from 45% to more than half of total electricity generation should come from renewable or nuclear sources.²⁵

With regard to biodiversity, the Nagoya Conference of the Parties to the Convention on Biological Diversity agreed that the extinction of known threatened species should be prevented, that areas under agriculture, aquaculture and forestry as well as all fish and invertebrate stocks and aquatic plants should be managed sustainably by 2020, and that incentives, including subsidies, harmful to biodiversity should be eliminated, phased out or reformed. In the tradition of the original MDGs, we add this language to the strawman environment goal.

²³ UNFCCC (2010)

²⁴ It is important to note that our indicator, alternative energy use, captures all energy use, whereas the IEA and EIA distinguish between an indicator that captures only energy utilized for electricity production and total energy separately.

²⁵ Estimates correspond to EIA and IEA reports for 2010. Estimates may have changed slightly in 2011 reports.

A set of targets for 2030 to address energy access is implausible using our forecasting techniques because of limited historical data. It is worth noting that Bazilian & Nussbaumer (2011) report on the basis of a small number of countries that it is possible to go from 40% household electricity access to ubiquity in as little as 20 to 30 years, although many countries now near universal access took considerably longer and many countries in the developing world are some distance from 40% access today. The IEA has estimated that it would cost \$36 billion per year to ensure universal access to electricity (grid or off-grid) and clean cooking facilities (LPG, biogas or advanced biomass) by 2030, but on current trends, the number of people lacking access to electricity would fall from 1.4 to 1.2 billion and the number relying on traditional biomass cooking would climb from 2.7 to 2.8 billion.²⁶ Given the large financing costs and the fact that extending access would require considerably more than financing alone, but based on the increasing cost-competitiveness of solar lighting,²⁷ we suggest a watered-down access goal of universal access to electric lighting and extended access to clean cooking technologies.

5. CONCLUSIONS

Debate will soon turn to a new set of MDGs. Taking the existing MDG model as a base, we outline potential goal areas based on a reading of the Millennium Declaration and extract a list of goals that might be acceptable to a gathering of world leaders in 2015. We attach targets to those goals where plausible, using simple forecast models where these work, basing target levels near the upper bound of the range of plausible outcomes given past trends in order to reflect the concept that the MDGs are designed to motivate better performance. We present these results as an input to a discussion on post-2015 MDGs that we believe should be broad-based and intensive over the next three years.

With that caveat, Annex II lays out some potential language for a UN document outlining a new set of Goals for development covering 2010-2030 which incorporates the goals we believe might be both politically plausible, amenable to change and accomplishable. The six paragraphs we would see as ‘goal language’ are the following:

XX. While recognizing countries will see differing rates of progress across different areas of development, and that countries will have different priorities for their own path to development, we resolve further:

- To ensure that, by the year 2030, the proportion of the world’s people whose income is less than two dollars a day or that is undernourished is below one in ten, and to expand access to decent work worldwide.
- To ensure that, by the same date, all children will complete primary school with a mastery of basic literacy and numeracy, to increase global secondary completion in the population 25 and above by 50 percent, and to accelerate

²⁶ IEA, 2010b

²⁷ Macharia, et al. (2010)

progress for all towards improved mastery of language, writing, math and science skills required a for productive role in national and global societies.

- By the same date, to have increased global average life expectancy to 75 years, reduced global maternal mortality to below one per thousand births and reduced global under-five child mortality to half its level in 2010.
- To have, by then, halted, and begun to reverse, trends towards greater population disparities in the number of girls and boys at age five in every country where such trends have been manifest and to have made broad-based progress on ensuring equality of opportunity regardless of gender, race, ethnicity or sexual orientation.
- By the same date, to have reversed the global trend towards deforestation, doubled the renewable share of global energy production, halted (by 2020) and reversed growth in global greenhouse gas emissions, ensured areas worldwide used for agriculture, aquaculture and forestry as well as all fish stocks are managed sustainably, and prevented the extinction of known threatened species.
- By the same date to have ensured universal access to basic information and communications technologies as well as to electric lighting; and extended access to transport, improved water and sewage facilities, networked electricity, and clean cooking technologies.

XX. We resolve in addition to ensure that progress towards these goals across and within countries is more rapid amongst those groups currently most disadvantaged –to promote a convergence in the national and global quality of life.

XX. We highlight the continued and central importance of economic growth and private sector development to improvements in the quality of life especially in the World's poorest countries alongside strong networks of social protection. With regard to broad-based progress in the quality of life we emphasize the following priority areas for action: food security; continued progress against infectious disease including malaria and HIV/AIDS; an increased commitment to tackle the scourge of non-communicable diseases and their causes including smoking and obesity; natural disaster risk reduction; and improvement in the quality of government service provision in the world's slums and rural areas;[...]

XX. We reiterate that civil and political rights including democratic and participatory governance, security and the rule of law are all ends of development in and of themselves as well as vital inputs to broad based progress. We celebrate the global trend towards reduced violent crime and conflict and reiterate our commitment to peaceful resolution of disputes between and within countries. We repeat our call for the elimination of weapons of mass destruction, particularly nuclear weapons and for countries to take concerted action to end illicit traffic in small arms and light weapons, especially by making arms transfers more transparent and supporting regional disarmament measures. We commit ourselves to further efforts to reduce the global

burden of violence in accordance with the Geneva Declaration on Armed Violence and Development.

XX. In order to assist in financing the achievement of these goals, we further resolve to reduce global military expenditure expressed as a proportion of global output by one third of its proportion in 2010 and to ensure that all high-income countries make progress towards the target of 0.7% of GDP in overseas development assistance, and to link assistance levels to rates of progress towards these goals in recipient countries. We reiterate the principles laid out in the Busan Declaration and elsewhere regarding the importance of coordination, transparency and the use of country systems to effective development assistance.

XX. We recognize that high-income countries share responsibilities towards global development that extend considerably beyond development assistance. These responsibilities include:

- Duty-free, quota-free access for the exports of the World's poorest countries;
- Further progress towards sustainable debt burdens amongst the World's poorest countries;
- Greater use of immigration as a tool of development, including ensuring the low cost of remittance flows;
- Ensuring those in greatest need worldwide are able to access technologies and ideas vital to their livelihoods in areas including health and agriculture;
- Taking financial and policy leadership in responding to the urgent need to protect the global commons (including climate, biodiversity, forests and fisheries); and
- Responding to the special needs of Africa and fragile states, in particular supporting country-led and country-owned transitions out of fragility through use of aid that is transparent, predictable and uses country systems.

We have written goal language in an effort to ensure global targets are not misconstrued as developing region or country targets. We have also included language regarding goals that appear of considerable interest to the international community but appear to us hard (as of yet) to quantify in a way that will be widely accepted: these areas include advanced learning outcomes, employment, civil and political rights and rich world commitments.

At the same time, Annex II also suggests a reporting mechanism that would allow global goals to gain traction at the local level. The proposed language suggests "We commit that all signatories will provide to the Secretary General, within eighteen months of this declaration, plans outlining national commitments towards meeting the global goals aspirations and responsibilities laid out in the declaration. We ask the Secretary General to issue a report on the basis of these plans regarding the extent to which aggregated national commitments are

sufficient to meet the goals, responsibilities and aspirations.” This is akin to the model adopted at the Cancun Climate Change Conference where the global 2°C climate change target was ‘matched’ with voluntary country-level commitments to reduce greenhouse gas emissions.

To emphasize: we see this potential list of MDGs as a straw man to assist discussion and debate, as well as to illustrate approaches to realistic goal- and target-setting. We believe the next three years should see an active and globally participatory debate over the need for and nature of any new set of MDGs –a discussion we much look forward to.

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Annex I: OLS Regression Estimates

Table A1: OLS Regression Output for MDG Targets

VARIABLES	(1) Sec. Complete	(2) CMR	(3) MMR	(4) Undernourishment	(5) Life Expectancy	(6) 0-4 Disparity	(7) Mobile Subscrip.	(8) Forest Cover	(9) Alt. Energy Use	(10) Mil. Expenditure
y_lag	1.88*** (0.063)			0.72*** (0.080)		0.40*** (0.036)		0.97*** (0.065)	1.24*** (0.140)	0.37*** (0.080)
y_lag_sq	-1.13*** (0.101)			-0.00*** (0.000)		-1.96*** (0.543)		-0.00 (0.001)	-0.01** (0.003)	-0.00*** (0.001)
ln_y_lag		1.10*** (0.017)	0.97*** (0.022)		0.79*** (0.022)		0.19*** (0.034)			
Constant	0.03*** (0.005)	- 1.11*** (0.072)	-0.34** (0.101)	2.37** (0.898)	0.97*** (0.091)	-0.02*** (0.001)	4.36*** (0.095)	0.73 (0.554)	2.09*** (0.417)	0.88*** (0.223)
Observations	190	330	181	175	376	582	186	175	240	102
R-squared	0.94	0.90	0.90	0.46	0.81	0.38	0.22	0.93	0.63	0.47
Adj. R-squared	0.94	0.90	0.90	0.45	0.81	0.38	0.22	0.93	0.63	0.46

Robust standard errors in parentheses

*** p<0.001, ** p<0.05, * p<0.10

Mobile subscriptions per 100 uses a 10 year lag rather than 20 year lag

Annex II: Draft Language for an Update to the Millennium Declaration

Continuing the Commitment to the United Nations Millennium Declaration

I. Values and principles

1. We, heads of State and Government, have gathered at United Nations Headquarters in New York from [X to X] September 2015, to reaffirm the values and commitments laid out in the United Nations Millennium Declaration, and to set new Goals for development progress to guide international efforts over the next fifteen years.

2. We reaffirm our faith in the United Nations and its Charter as indispensable foundations of a more peaceful, prosperous and just world and our collective responsibility to uphold the principles of human dignity, equality and equity at the global level. We remain determined to establish a just and lasting peace all over the world in accordance with the purposes and principles of the Charter. And we stand firm in our commitment to the fundamental values essential to international relations in the twenty-first century: freedom, equality, solidarity, tolerance, respect for nature and shared responsibility.

[....]

II. Sustainable development and poverty eradication

XX. We recognize the considerable global progress that has been achieved towards the Goals for development laid out in the Millennium Declaration. In particular we celebrate the global success in more than halving rates of absolute poverty worldwide, while recognizing that: progress has been less rapid than hoped at the global level in other areas; rates of progress varied considerably across and within countries; and too many men women and children worldwide remain leading lives of unconscionable deprivation.

XX. While recognizing countries will see differing rates of progress across different areas of development, and that countries will have different priorities for their own path to development, we resolve further:

- To ensure that, by the year 2030, the proportion of the world's people whose income is less than two dollars a day or that is undernourished is below one in ten, and to expand access to decent work worldwide.
- To ensure that, by the same date, all children will complete primary school with a mastery of basic literacy and numeracy, to increase global secondary completion in the population 25 and above by 50 percent, and to accelerate progress for all towards improved mastery of language, writing, math and science skills required a for productive role in national and global societies.
- By the same date, to have increased global average life expectancy to 75 years, reduced global maternal mortality to below one per thousand births and reduced global under-five child mortality to half its level in 2010.
- To have, by then, halted, and begun to reverse, trends towards greater population disparities in the number of girls and boys at age five in every country where such trends have been manifest and to have made broad-based progress on ensuring equality of opportunity regardless of gender, race, ethnicity or sexual orientation.

- By the same date, to have reversed the global trend towards deforestation, doubled the renewable share of global energy production, halted (by 2020) and reversed growth in global greenhouse gas emissions, ensured areas worldwide used for agriculture, aquaculture and forestry as well as all fish stocks are managed sustainably, and prevented the extinction of known threatened species.
- By the same date to have ensured universal access to basic information and communications technologies as well as to electric lighting; and extended access to transport, improved water and sewage facilities, networked electricity, and clean cooking technologies.

XX. We resolve in addition to ensure that progress towards these goals across and within countries is more rapid amongst those groups currently most disadvantaged –to promote a convergence in the national and global quality of life.

XX. We highlight the continued and central importance of economic growth and private sector development to improvements in the quality of life especially in the World's poorest countries alongside strong networks of social protection. With regard to broad-based progress in the quality of life we emphasize the following priority areas for action: food security; continued progress against infectious disease including malaria and HIV/AIDS; an increased commitment to tackle the scourge of non-communicable diseases and their causes including smoking and obesity; natural disaster risk reduction; and improvement in the quality of government service provision in the world's slums and rural areas;[...]

XX. We reiterate that civil and political rights including democratic and participatory governance, security and the rule of law are all ends of development in and of themselves as well as vital inputs to broad based progress. We celebrate the global trend towards reduced violent crime and conflict and reiterate our commitment to peaceful resolution of disputes between and within countries. We repeat our call for the elimination of weapons of mass destruction, particularly nuclear weapons and for countries to take concerted action to end illicit traffic in small arms and light weapons, especially by making arms transfers more transparent and supporting regional disarmament measures. We commit ourselves to further efforts to reduce the global burden of violence in accordance with the Geneva Declaration on Armed Violence and Development.

XX. In order to assist in financing the achievement of these goals, we further resolve to reduce global military expenditure expressed as a proportion of global output by one third of its proportion in 2010 and to ensure that all high-income countries make progress towards the target of 0.7% of GDP in overseas development assistance, and to link assistance levels to rates of progress towards these goals in recipient countries. We reiterate the principles laid out in the Busan Declaration and elsewhere regarding the importance of coordination, transparency and the use of country systems to effective development assistance.

XX. We recognize that high-income countries share responsibilities towards global development that extend considerably beyond development assistance. These responsibilities include:

- Duty-free, quota-free access for the exports of the World's poorest countries;
- Further progress towards sustainable debt burdens amongst the World's poorest countries;
- Greater use of immigration as a tool of development, including ensuring the low cost of remittance flows;
- Ensuring those in greatest need worldwide are able to access technologies and ideas vital to their livelihoods in areas including health and agriculture;
- Taking financial and policy leadership in responding to the urgent need to protect the global commons (including climate, biodiversity, forests and fisheries); and
- Responding to the special needs of Africa and fragile states, in particular supporting country-led and country-owned transitions out of fragility through use of aid that is transparent, predictable and uses country systems.

[....]

XX. We commit that all signatories will provide to the Secretary General, within eighteen months of this declaration, plans outlining national commitments towards meeting the global goals aspirations and responsibilities laid out in the declaration. We ask the Secretary General to issue a report on the basis of these plans regarding the extent to which aggregated national commitments are sufficient to meet the goals, responsibilities and aspirations. We request the General Assembly to review on a regular basis the progress made in implementing the provisions of this Declaration, and ask the Secretary-General to issue periodic reports for consideration by the General Assembly and as a basis for further action.

Annex III: Figures

Figure 1

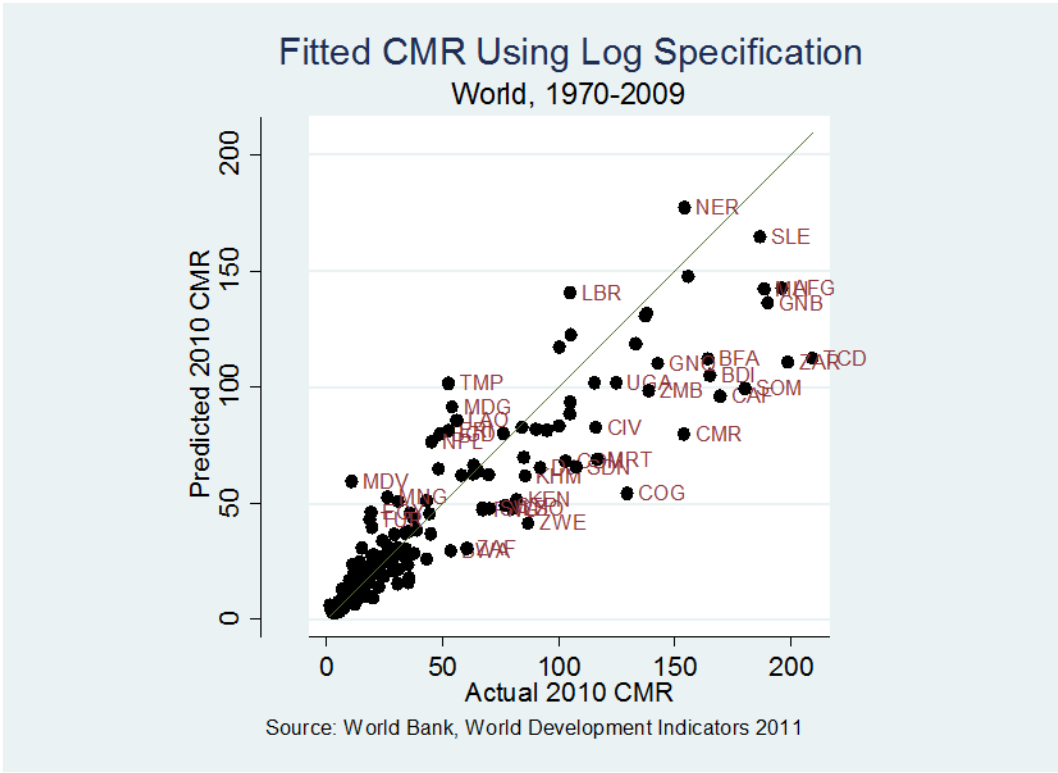


Figure 2

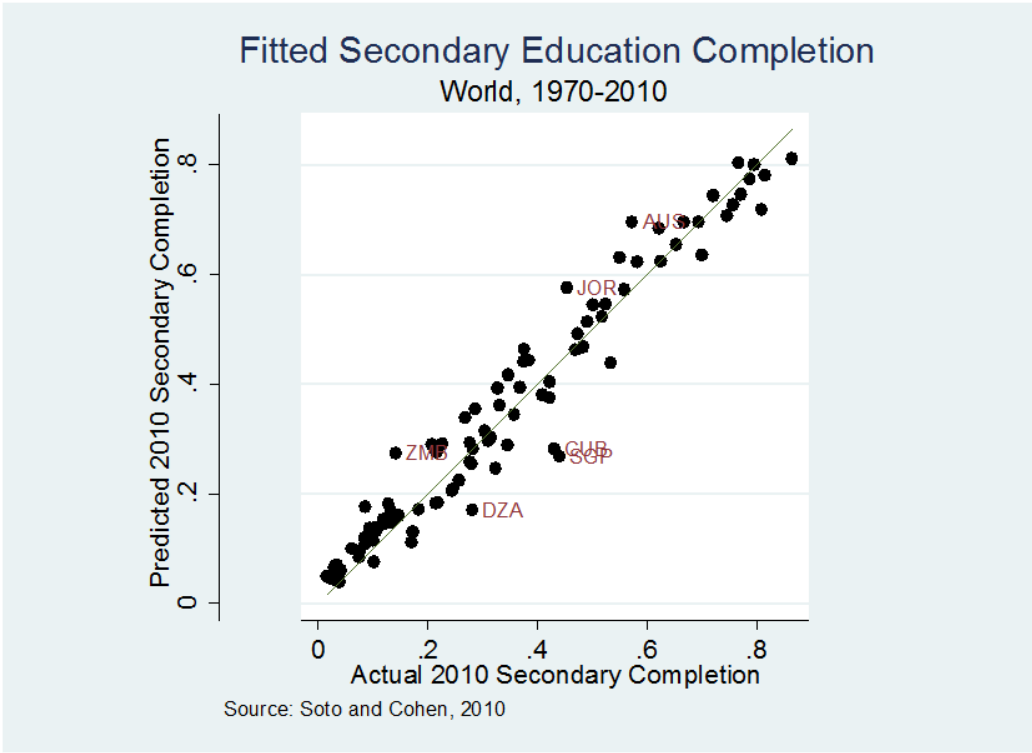


Figure 3

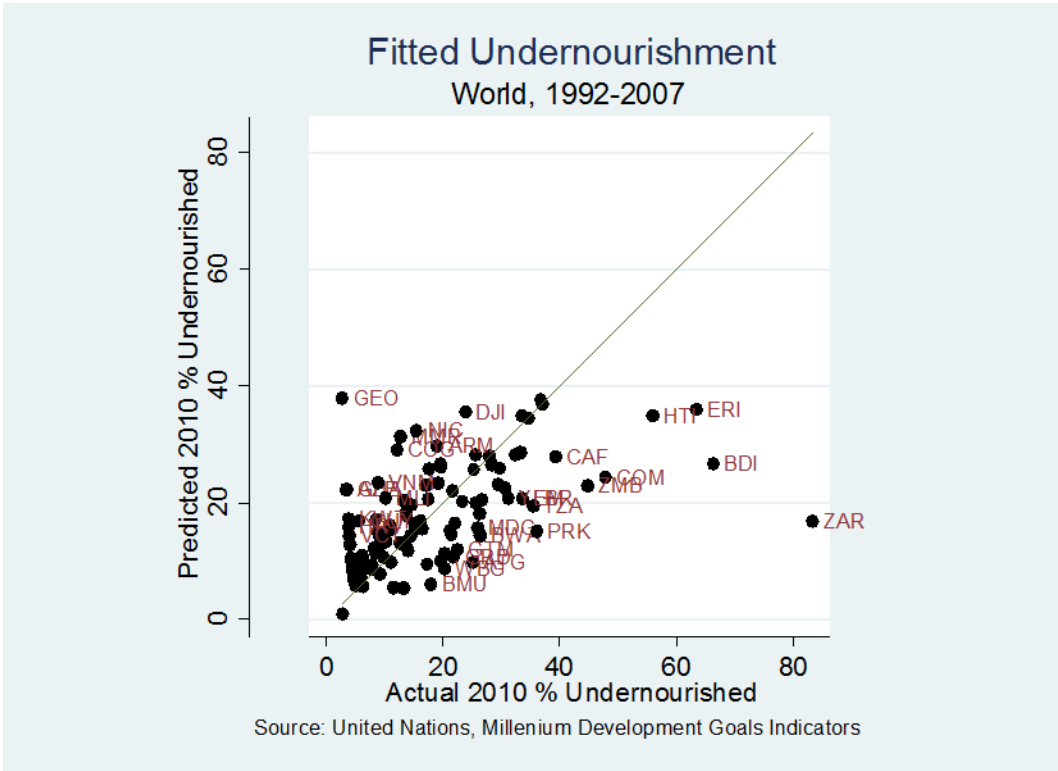


Figure 4

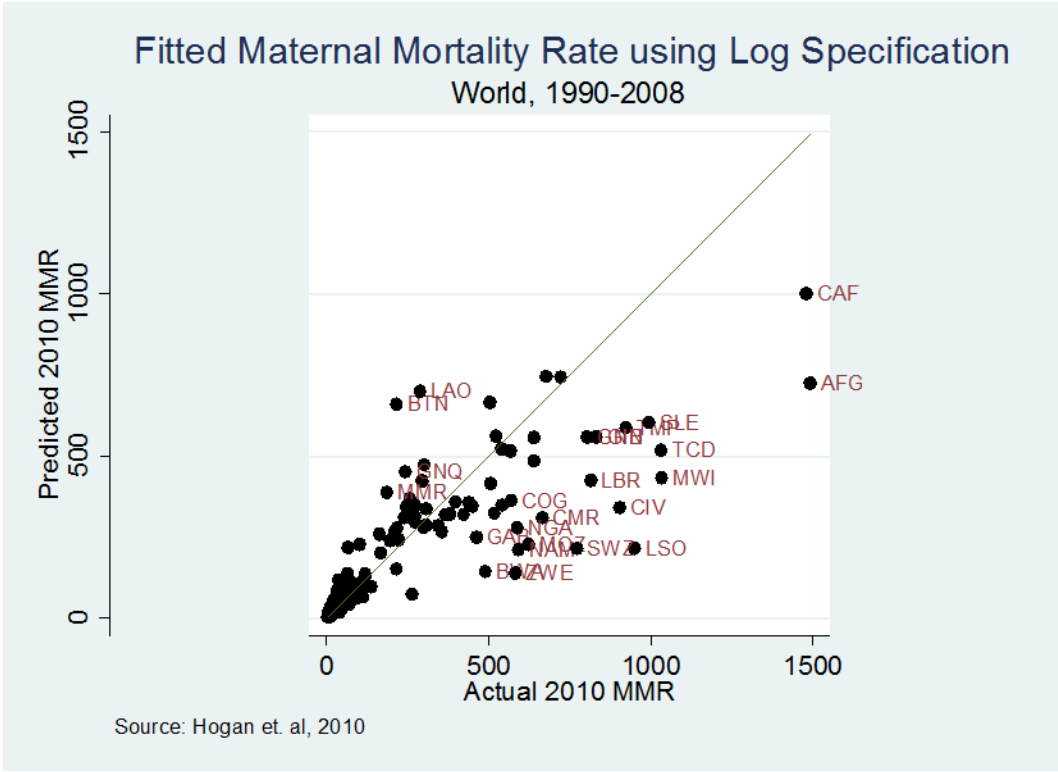


Figure 5

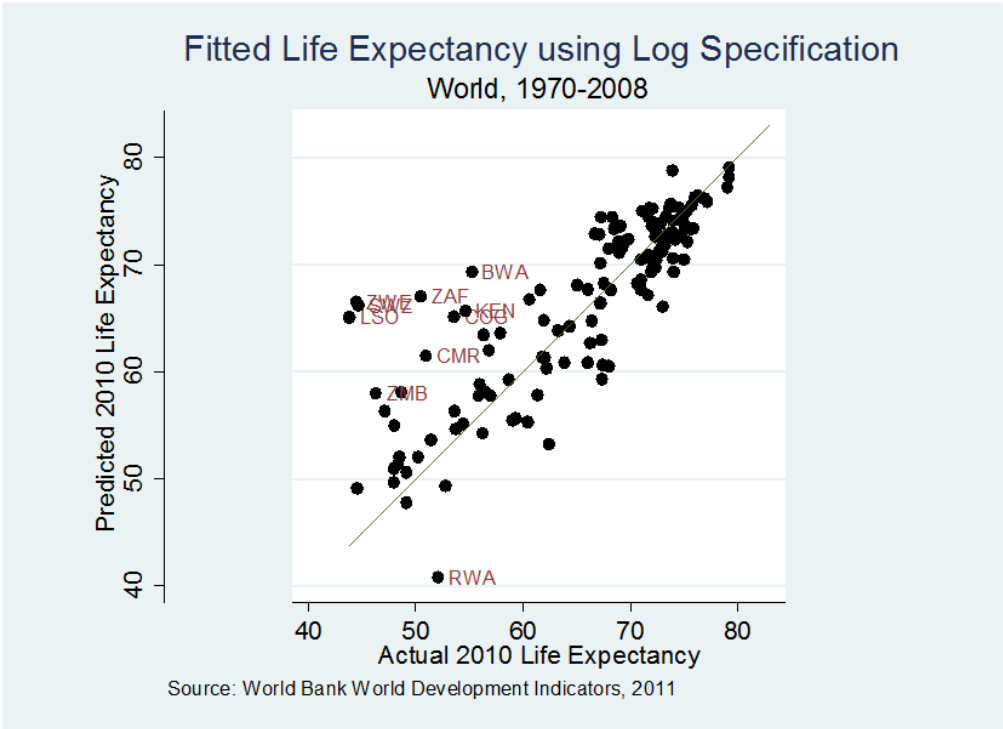


Figure 6

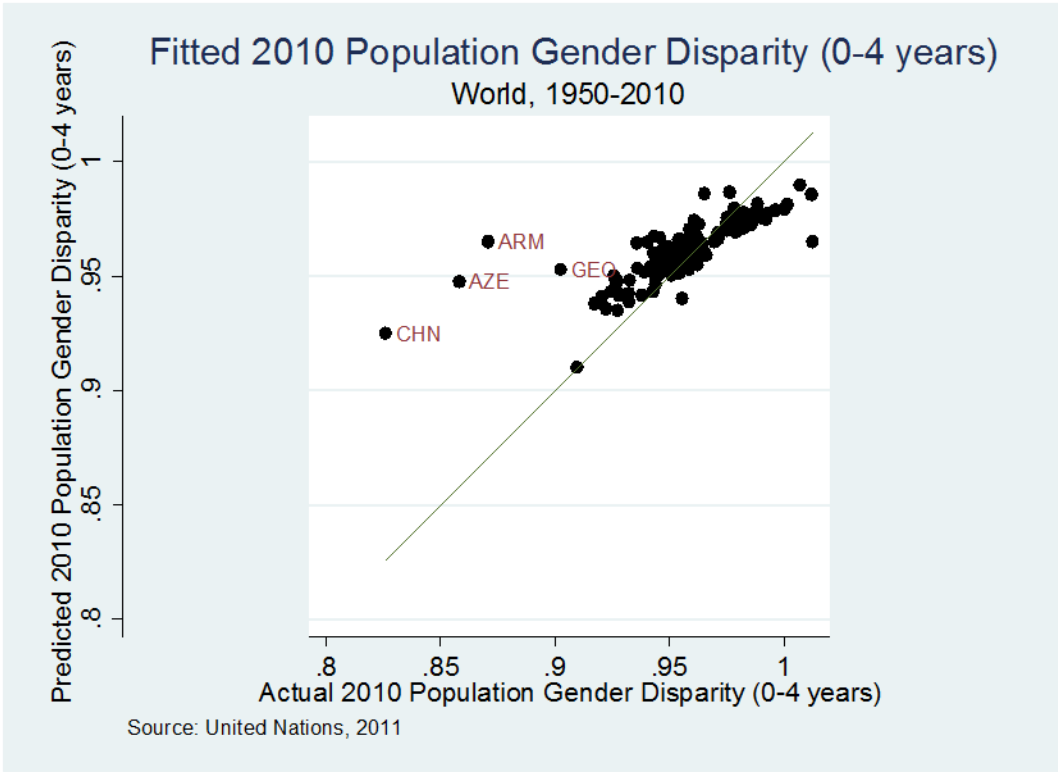


Figure 7

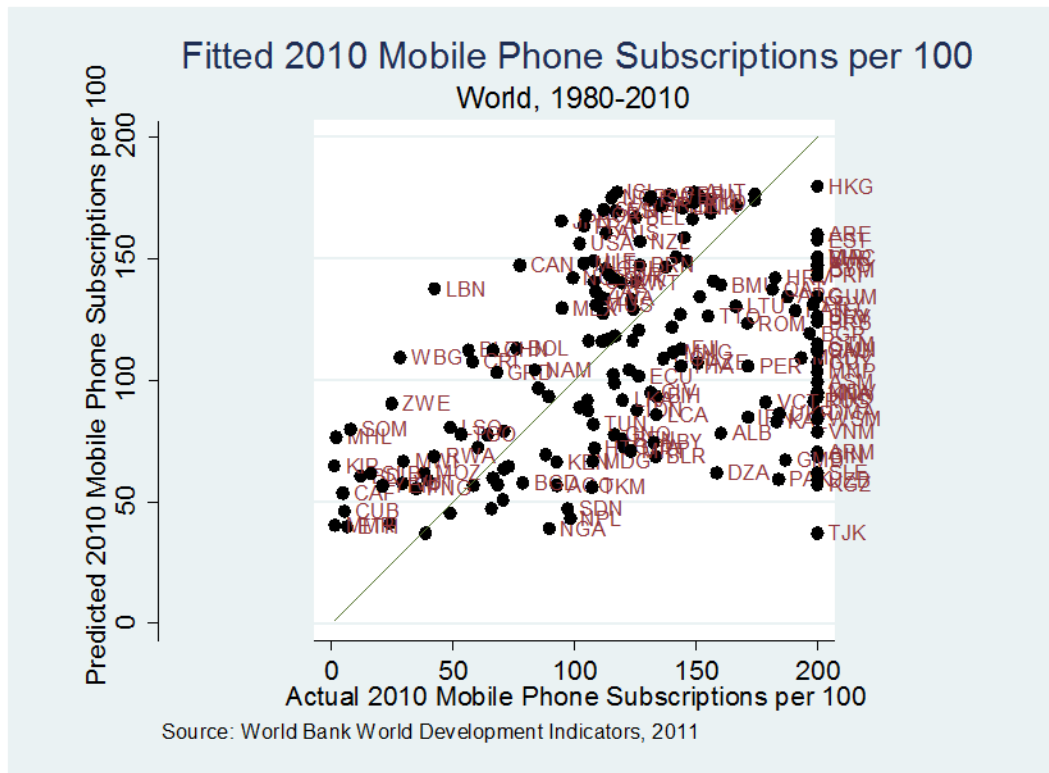


Figure 8

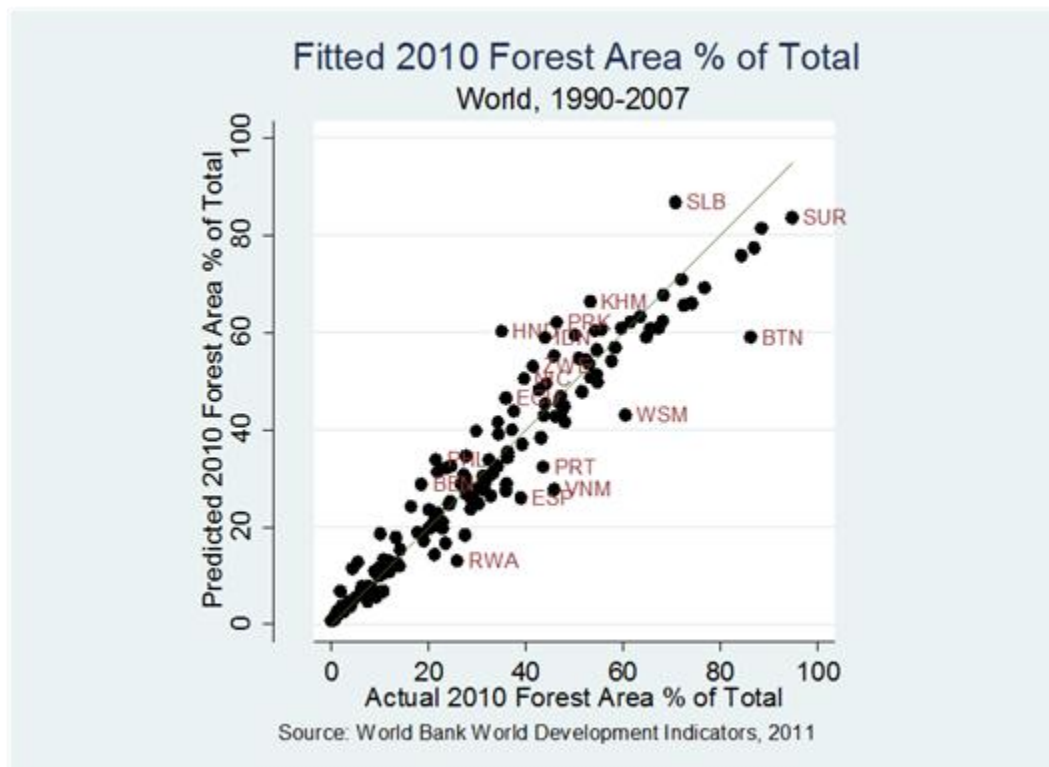


Figure 9

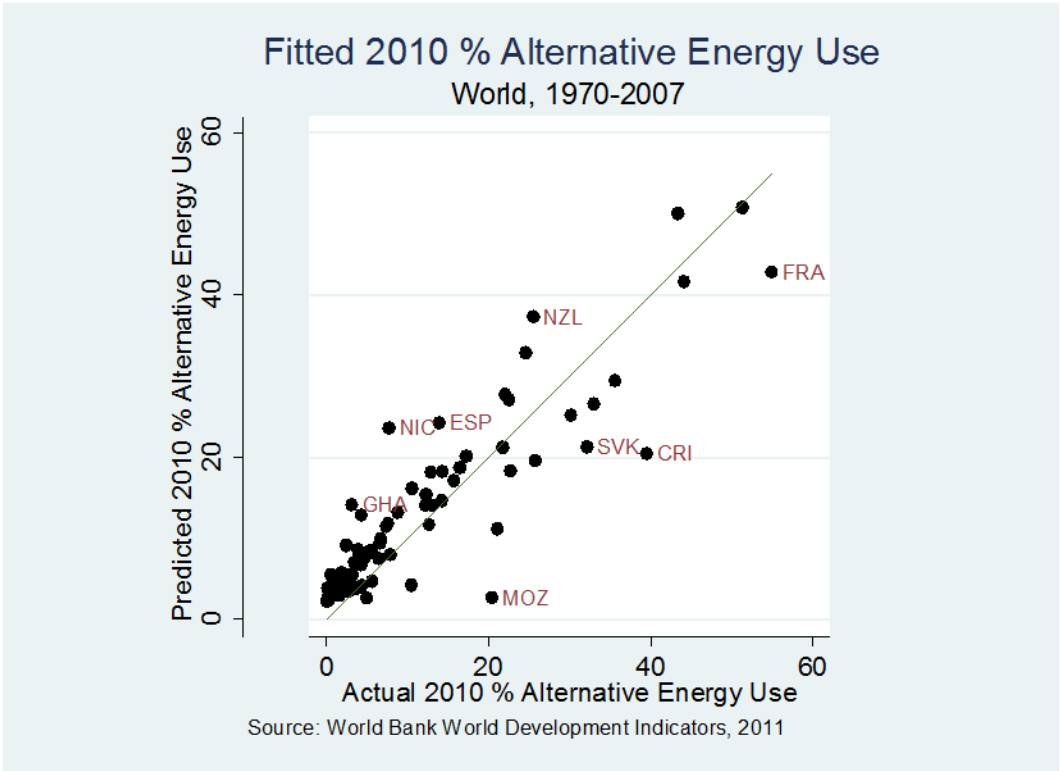


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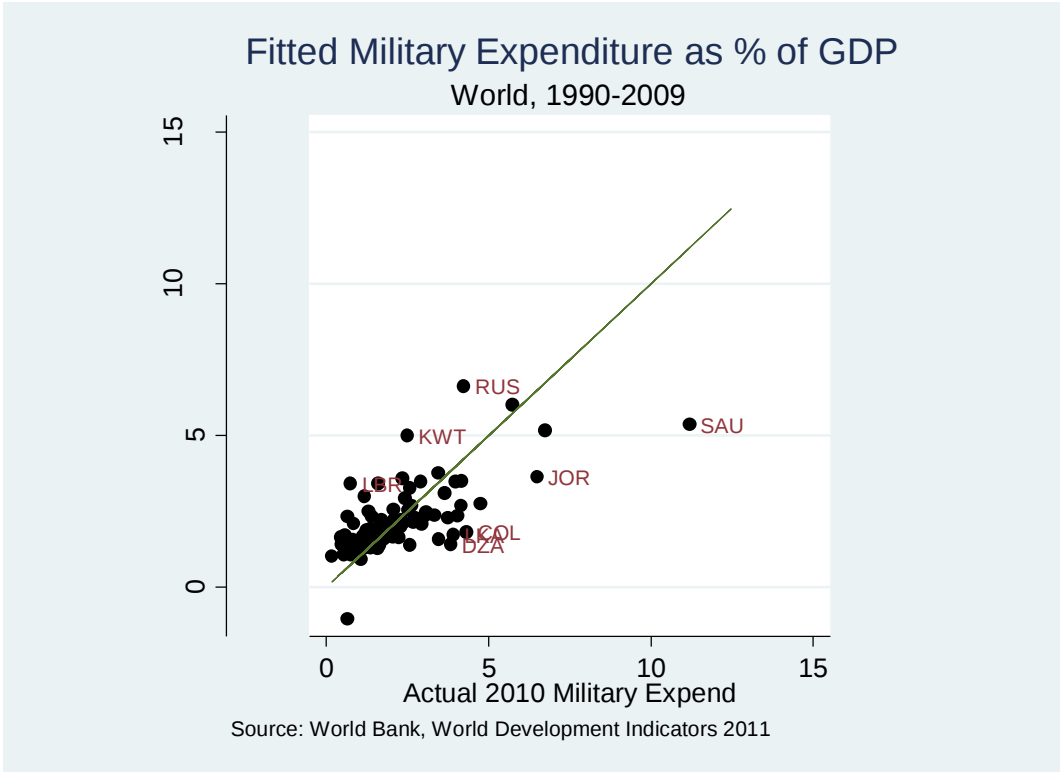


Figure 11

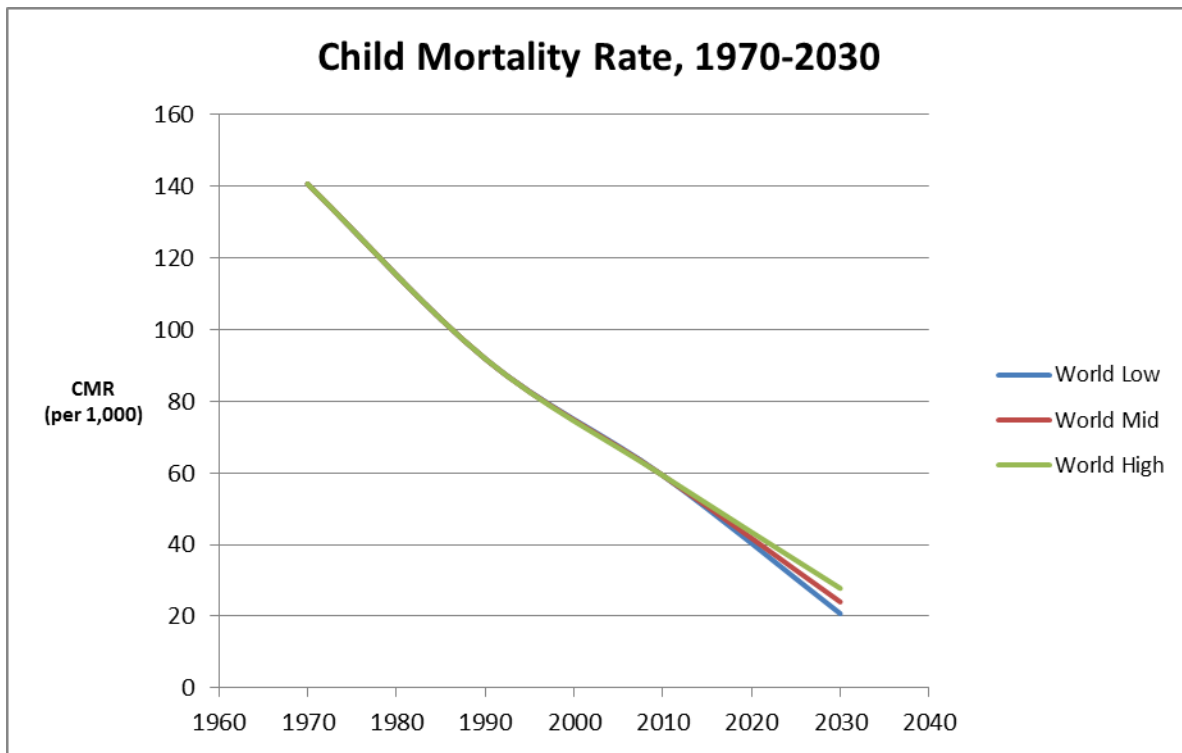


Figure 12

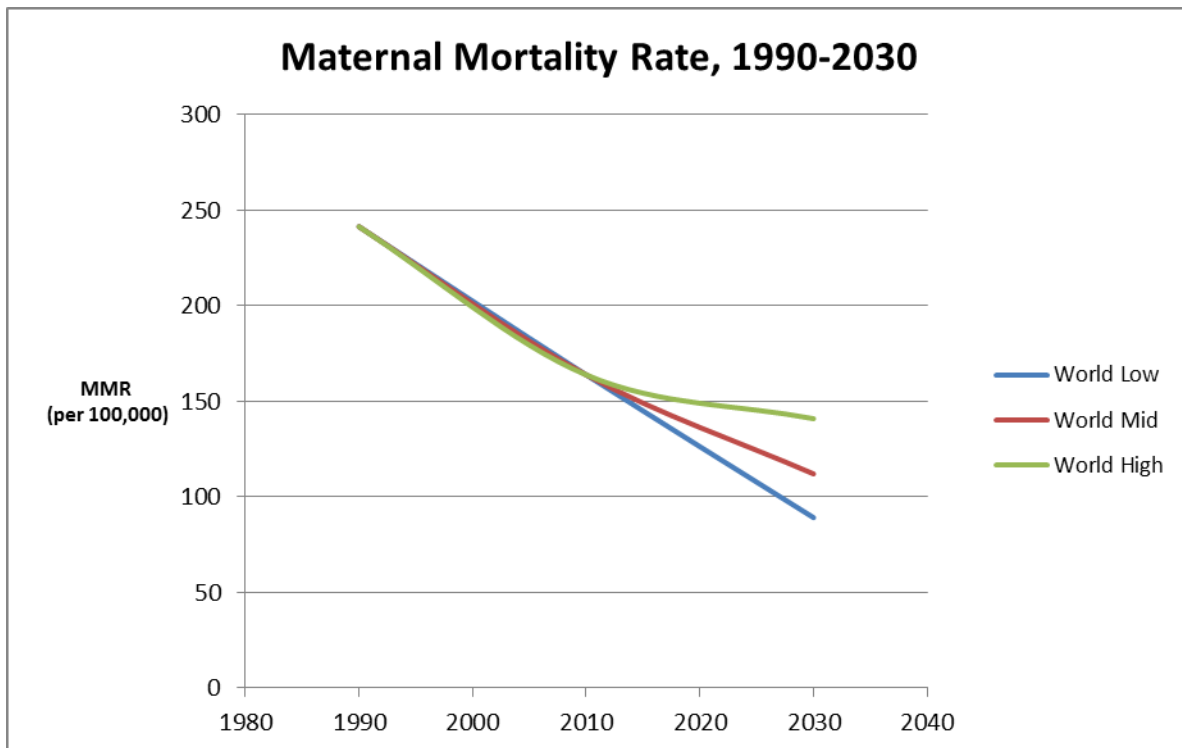


Figure 13

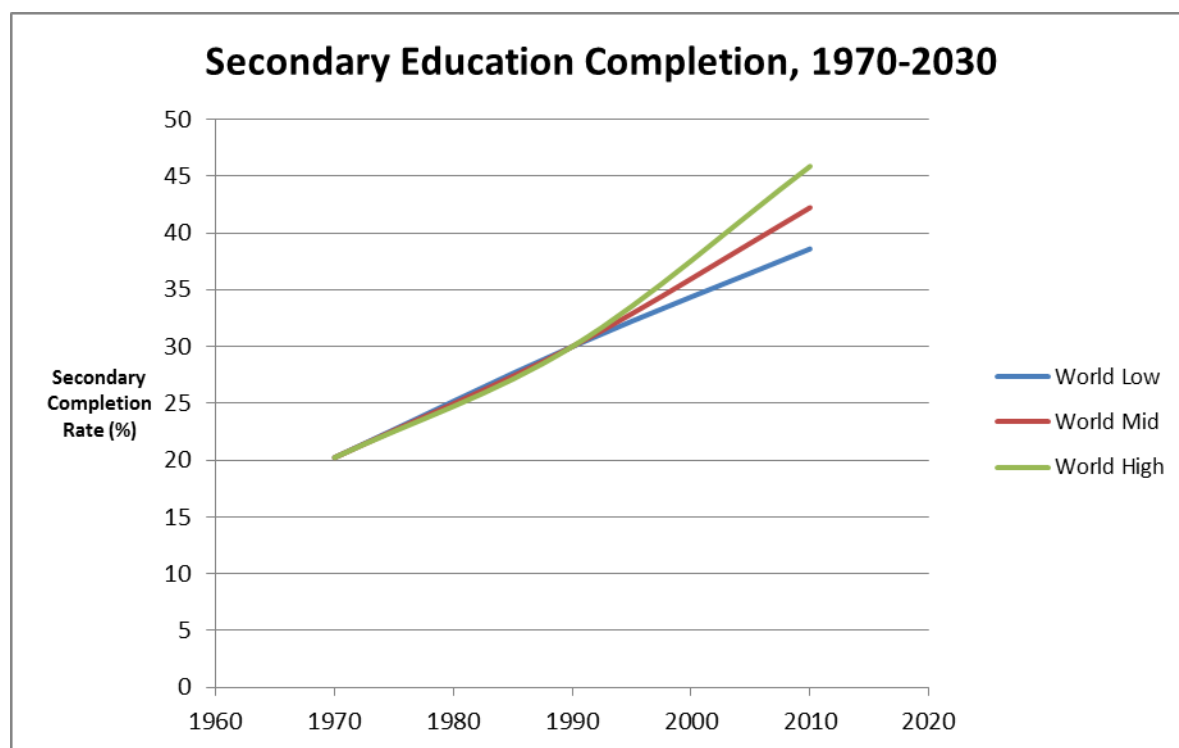


Figure 14

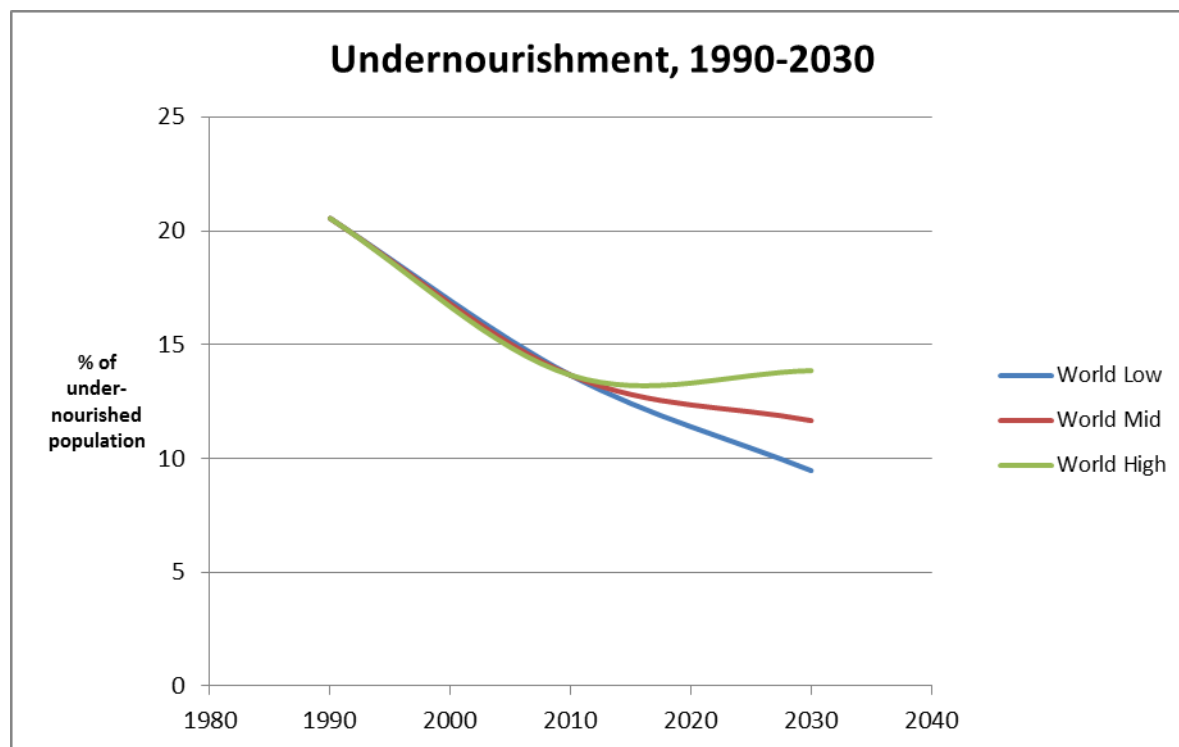


Figure 15

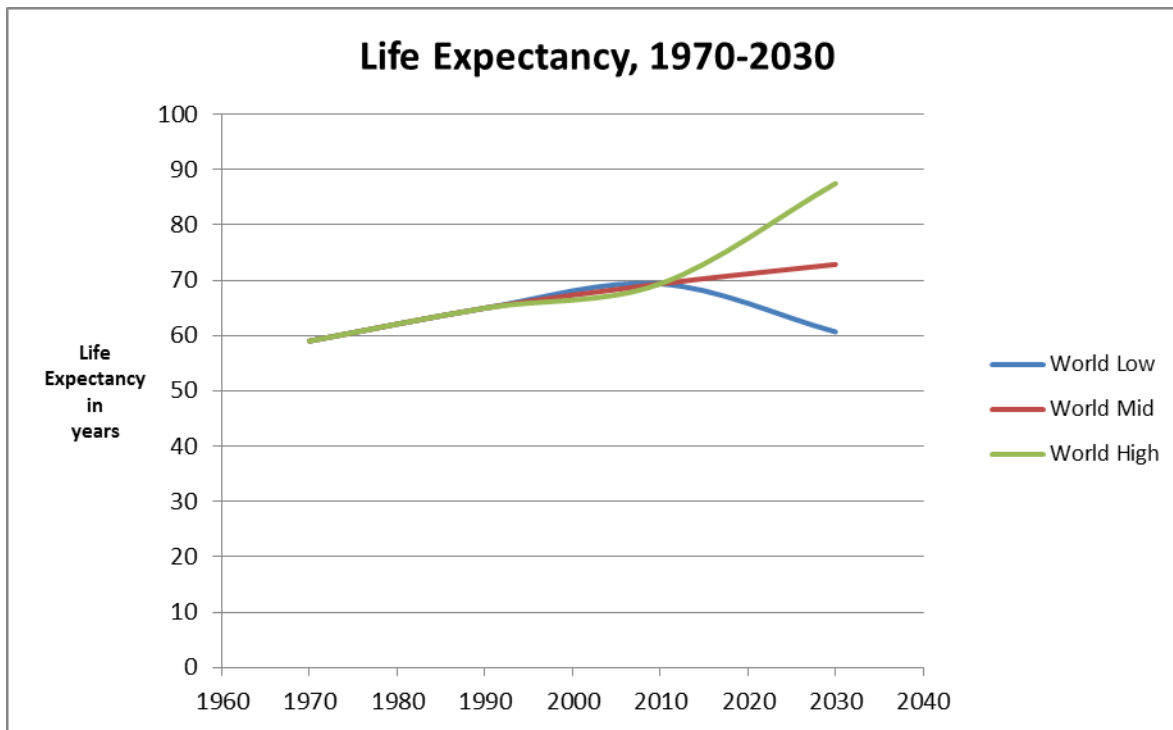


Figure 16

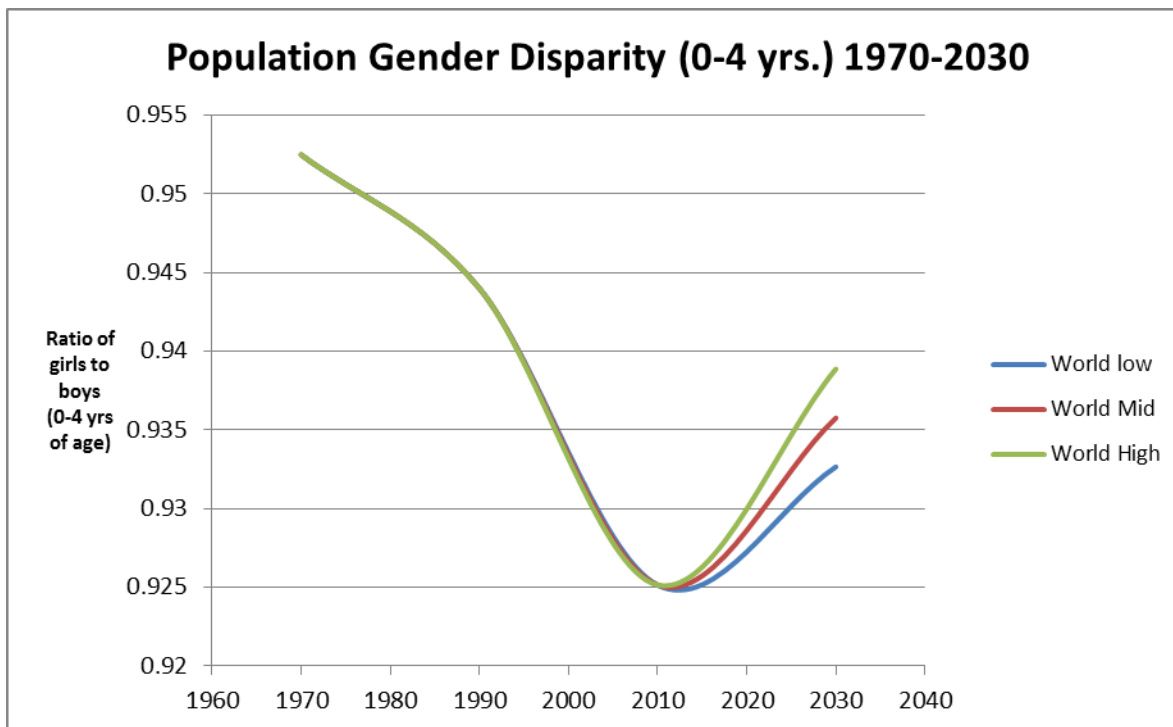


Figure 17

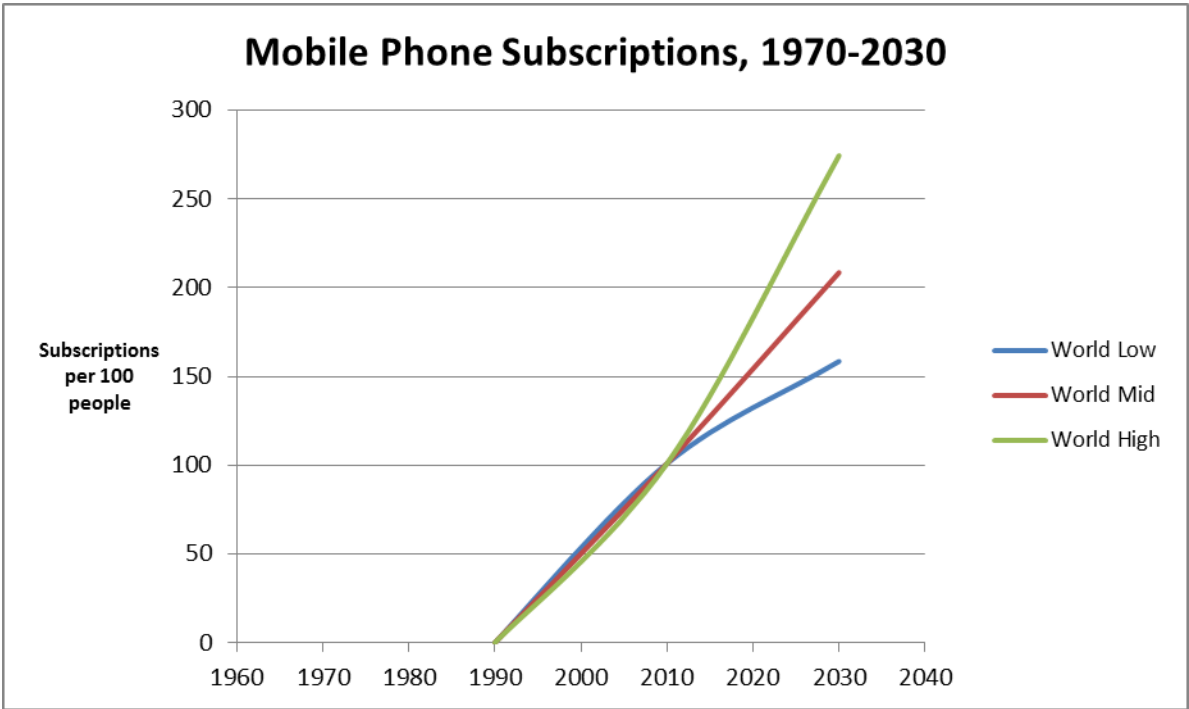


Figure 18

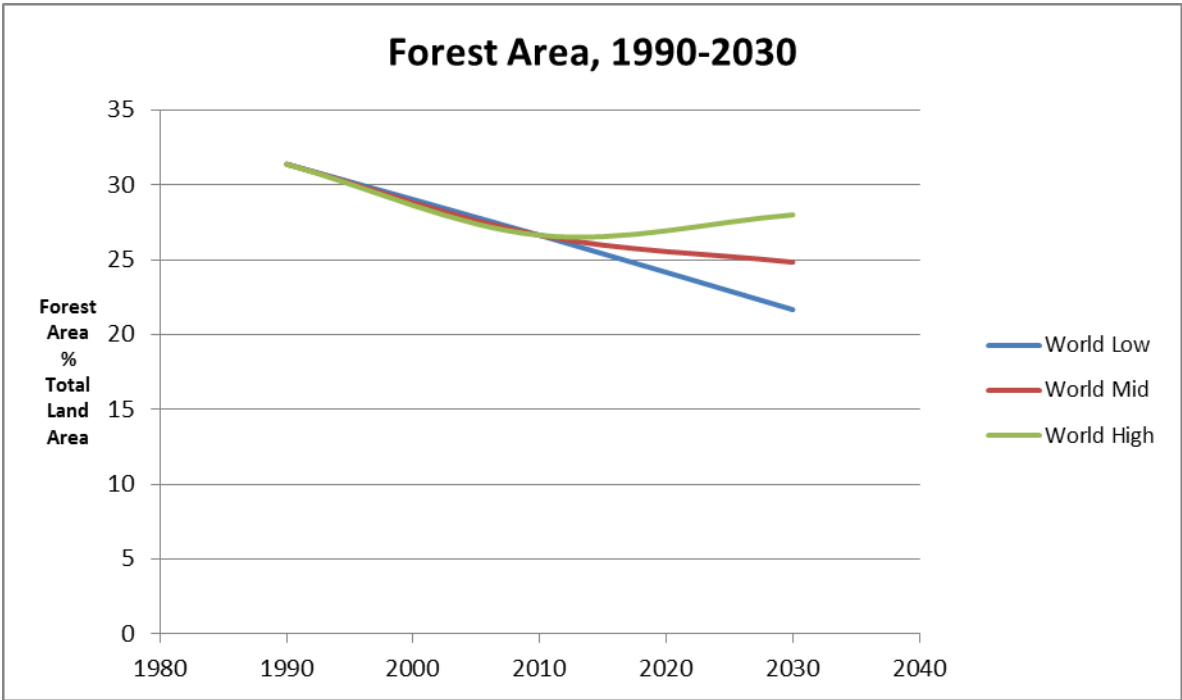


Figure 19

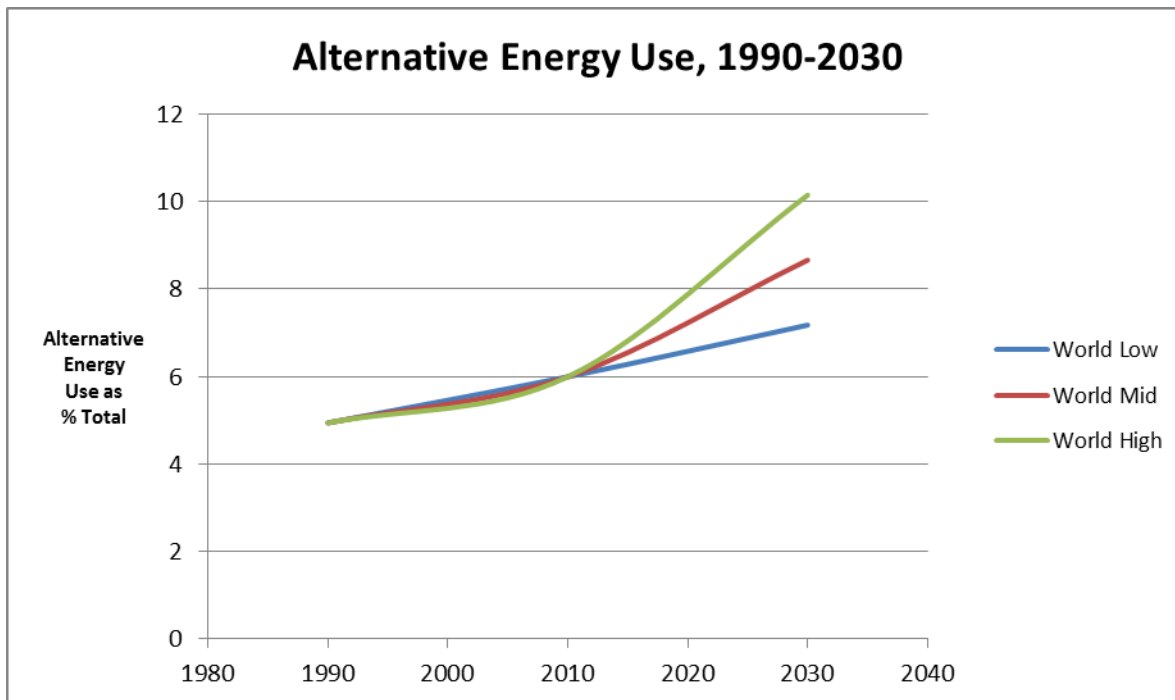
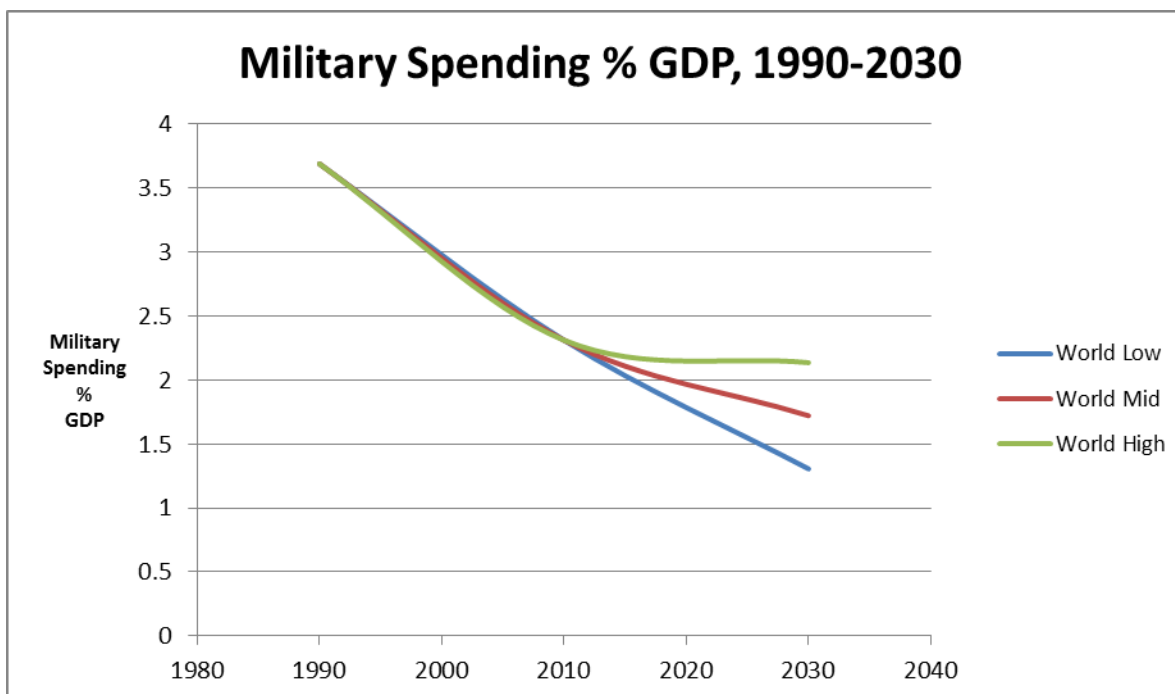


Figure 20



Annex IV: MDGs Targets for 2030 by Region and Income Group²⁸

Table A2. Potential MDG Targets for 2030: Population Weighted Global Averages by Region (OLS Estimates)

Indicator	Sub-Saharan Africa		South Asia		East Asia		Middle East & North Africa		Latin America & Caribbean		Europe & Central Asia	
	2010	2030 mid	2010	2030 mid	2010	2030 mid	2010	2030 mid	2010	2030 mid	2010	2030 mid
Secondary Completion (% of pop. 25 and older)	8.02	16.60	13.32	26.35	28.82	47.91	29.82	48.63	28.21	46.39	39.30	56.00
Child Mortality Rate (per 1,000)	122.21	66.31	65.58	33.66	23.06	10.77	29.82	14.32	20.14	9.25	17.48	8.26
Maternal Mortality Rate (per 100,000 live births)	517.61	307.90	279.08	174.18	69.68	45.06	67.93	45.26	63.13	40.51	35.50	23.55
Undernourishment (%)	25.74	17.55	22.05	16.63	10.29	9.40	7.14	7.48	8.57	8.28	6.28	6.85
Life Expectancy at Birth	52.68	59.44	64.82	69.80	72.68	76.43	71.03	74.92	73.80	77.35	69.93	74.23
Population Gender Disparity (0-4 yrs.) ¹	0.98	0.97	0.93	0.94	0.87	0.89	0.95	0.96	0.96	0.96	0.95	0.95
Mobile Phone Subscriptions (per 100)	75.54	205.44	87.24	208.37	85.10	207.47	124.59	210.18	124.43	210.87	172.29	213.43
Forest Area as % of Total	23.05	22.56	18.60	17.86	28.89	28.06	3.47	3.86	42.08	39.37	28.07	25.13
Alternative Energy Use as % of Total	2.91	5.60	2.80	5.54	4.57	7.67	1.08	3.38	10.68	14.19	9.14	12.08

²⁸ Country level estimates for 2030 are available online for public viewing at [insert web address]

Military Spending												
% GDP	1.57	1.46	2.73	1.87	1.79	1.53	3.26	2.09	1.51	1.43	3.18	2.01

Source: Authors' calculations using World Bank, Hogan et al. (2010), Soto & Cohen (2010) and UN Data (2011)

*Projections are based on middle ground predictions using an entire sample of countries and 95% C.I.s

1. Population gender disparity is reported as the total number of girls ages 0-4 divided by the total number of boys ages 0-4

Table A3. Potential MDG Targets for 2030: Population Weighted Global Averages by Current Income Group (OLS Estimates)

Indicator	LICs		LMICs		UMICs		All Developing countries		HICs	
	2010	2030 mid	2010	2030 mid	2010	2030 mid	2010	2030 mid	2010	2030 mid
Secondary Completion (% of pop. 25 and older)	8.36	16.98	22.18	37.82	29.63	47.97	21.59	36.14	72.51	77.29
Child Mortality Rate (per 1,000)	102.13	57.03	45.62	24.03	19.95	9.14	49.54	27.55	5.88	2.47
Maternal Mortality Rate (per 100,000 live births)	455.27	281.85	169.61	110.41	56.86	36.19	192.42	129.20	11.32	7.79
Undernourishment (%)	31.37	20.71	14.32	12.03	5.90	6.51	15.30	12.64	5.00	5.87
Life Expectancy at Birth	57.79	63.13	68.27	72.36	71.68	75.74	67.31	71.25	80.14	82.49
Population Gender Disparity (0-4 yrs.) ¹	0.97	0.97	0.90	0.92	0.96	0.96	0.92	0.93	0.95	0.95
Mobile Phone Subscriptions (per 100)	70.50	203.81	91.14	208.52	139.39	211.63	96.82	208.24	123.13	210.98
Forest Area as % of Total	22.88	21.95	22.88	21.87	34.50	32.06	24.90	23.50	35.91	32.94
Alternative Energy Use as % of Total	3.79	6.48	3.87	6.61	7.97	11.19	4.61	7.37	13.00	16.01
Military Spending % GDP	1.58	1.47	2.31	1.73	2.18	1.66	2.19	1.68	2.91	1.98

Source: Authors' calculations using World Bank, Hogan et al. (2010), Soto & Cohen (2010) and UN Data (2011)

*Projections are based on middle ground predictions using an entire sample of countries and 95% C.I.s

1. Population gender disparity is reported as the total number of girls ages 0-4 divided by the total number of boys ages 0-4