

KEYNOTE ADDRESS: POVERTY, CLIMATE CHANGE, AND OVERPOPULATION*

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I. INTRODUCTION: THE HUMAN VERSUS ECONOMIC
MAGNITUDE OF WORLD POVERTY

About one-third of all human deaths are due to poverty-related causes: to relatively trivial, curable, treatable diseases from which virtually no one dies in any of the developed countries.¹ This death toll from poverty today dwarfs even the great catastrophes of the twentieth century, including the Second World War. In the twenty years since the end of the Cold War, there have been around 360 million such poverty-related deaths—about six times as many deaths as were due to the Second World War, even if you include the extermination camps, the gulags, and the deaths due to economic hardships.

So many deaths due to poverty-related causes constitute a huge human rights problem. The right to a minimally adequate standard of living—as formulated in Article 25 of the Universal Declaration of Human Rights² and elsewhere—is by far the most under-fulfilled of all of the widely recognized human rights.

This statement can be further illustrated by the fact that somewhere around a quarter of the world's population is living in life-threatening poverty. They appear in statistics such as the following: 1.02 billion people are chronically undernourished;³ 884 million lack access to safe drinking water;⁴ 2.5 billion lack access to improved sanitation;⁵ 2 billion lack access to essential

¹ WORLD HEALTH ORGANIZATION, GLOBAL BURDEN OF DISEASE: 2004 UPDATE 54–59, tbl.A1 (2008), *available at* http://www.who.int/healthinfo/global_burden_disease/GBD_report_2004update_full.pdf.

² “Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.” Universal Declaration of Human Rights, G.A. Res. 217A, art. 25, U.N. GAOR, 3d Sess., U.N. Doc A/810 (Dec. 10, 1948) [hereinafter Universal Declaration].

³ Food and Agriculture Organization of the United Nations, 1.02 Billion People Hungry (June 19, 2009), <http://www.fao.org/news/story/en/item/20568/icode>.

⁴ WORLD HEALTH ORGANIZATION & UNITED NATIONS CHILDREN'S FUND [UNICEF], PROGRESS ON DRINKING WATER AND SANITATION: SPECIAL FOCUS ON SANITATION 30 (2008), *available at* http://www.who.int/water_sanitation_health/monitoring/jmp2008/en/index.html.

⁵ *Id.* at 7.

medicines;⁶ 924 million lack adequate shelter;⁷ 1.6 billion lack electricity;⁸ 774 million adults are illiterate;⁹ 218 million children are child laborers;¹⁰ and 1.377 billion people reportedly consume less per month than could be bought in the U.S. for \$41 in 2005 dollars.¹¹

TABLE 1: THE MAGNITUDE OF GLOBAL POVERTY¹²

IPL in 2005 (int'l dollars, per person per day)	Poor People in 2005		Aggregate Shortfall from the IPL:			
	Number in Millions	Average Shortfall from the IPL	in % of 2005 gross world income		in % of 2005 global household income	in billions of dollars p.a.
			at 2005 PPPs	at current (2005) exchange rates		
\$1.25	1,377	30%	0.33%	0.17%	0.28%	\$76
\$2.00	2,562	40%	1.28%	0.66%	1.1%	\$296
\$2.50	3,085	45%	2.2%	1.13%	1.9%	\$507

⁶ Fogarty Center for Advanced Study in the Health Sciences, Strategic Plan: Fiscal Years 2000–2003, http://www.fic.nih.gov/about/plan/exec_summary.htm (last visited July 20, 2010).

⁷ UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME, THE CHALLENGE OF SLUMS—GLOBAL REPORT ON HUMAN SETTLEMENTS 2003, at vi (2003), available at <http://www.unhabitat.org/pmss/listItemDetails.aspx?publicationID=1156>.

⁸ UNESCO Institute for Statistics, Literacy Topic, <http://www.unhabitat.org/content.asp?cid=2884&catid=356&typeid=24&subMenuId=0> (last visited July 20, 2010).

⁹ UNESCO Institute for Statistics, Literacy Topic, http://uis.unesco.org/ev.php?URL_ID=6401&URL_DO=DO_TOPIC&URL_SECTION=201 (last visited July 20, 2010).

¹⁰ INTERNATIONAL LABOUR OFFICE, THE END OF CHILD LABOUR: WITHIN REACH 6 (2006), available at http://www.ilo.org/public/english/region/ampro/cinterfor/news/rep_ib.pdf.

¹¹ This is the World Bank’s official poverty line, most recently redefined in terms of daily consumption whose local cost is presumed to have the same purchasing power as \$1.25 had in the U.S. in 2005. Shaohua Chen & Martin Ravallion, *The Developing World Is Poorer Than We Thought, But No Less Successful in the Fight Against Poverty* 44 (World Bank Pol’y Research Working Paper No. 4703, 2008), available at http://www-wds.worldbank.org/servlet/WDSContentServer?WDSID=2010/01/21/000158349_20100121133109/Rendered/PDF/WPS4703.pdf.

¹² This table is reproduced from and further explained in THOMAS POGGE, POLITICS AS USUAL: WHAT LIES BEHIND THE PRO-POOR RHETORIC 70 (2010).

Let us now have a look at the economic magnitude of the poverty problem. Table 1 offers a set of surprising statistics about how small the economic poverty problem really is. However huge the world poverty problem is in human terms, economically speaking it is tiny. The World Bank counts the world's poor relative to various different poverty lines, which are currently denominated in international dollars of the year 2005.¹³ Let us choose the highest poverty line for which the World Bank provides data: \$2.50 PPP 2005, which is equivalent to a consumption expenditure of \$1,000 in the U.S. in 2010. We find that, relative to this line, 3.1 billion people—nearly half of humanity—were counted as poor in 2005; and we also find that these people fell short of the mark by 45% on average.¹⁴ And yet, the entire shortfall of all these people amounted to only 1.13% of world income, or about \$500 billion¹⁵—about two-thirds of the U.S. military budget.

The contrast I am trying to bring out is that the world poverty problem is, on the one hand, probably very much larger than you imagined in human terms, and yet, on the other hand, also much smaller than you imagined in economic terms.

II. THE RISE OF INEQUALITY

The reason for this surprising disparity between the human and the economic magnitude of world poverty is the enormous extent of economic inequality in the world today. You can see this in terms of wealth, where about 60% of the world's population holds less than 2% of global wealth, in contrast to the top 1% of the world's population, who hold 40% of global wealth.¹⁶ Because of these enormous inequalities, we are now at the point where the world is easily rich enough in aggregate to abolish all poverty. We are simply choosing to prioritize other ends instead.

What is the trend with regard to poverty? The nineteenth and twentieth centuries have witnessed a rapidly increasing gap between an industrializing North and a subordinate South. This trend, which has been the main driver of the persistence of poverty during those two centuries, has come to an end in the 1990s, largely because of very rapid economic growth in both China and India. Nevertheless, global economic inequality—defined as inequality among

¹³ International dollars are ordinary U.S.-dollars but converted at purchasing power parities rather than ordinary currency exchange rates.

¹⁴ Data on the World Bank's latest revision of the international poverty line is available in Chen and Ravallion, *supra* note 11.

¹⁵ Figures based on *id.* at 27, 42–46.

¹⁶ James B. Davies et al., *The World Distribution of Household Wealth* 47 (Dec. 5, 2006), <http://www.iariw.org/papers/2006/davies.pdf>.

households worldwide—continues to rise; and this rise is now driven no longer by increasing *international* inequality, but rather by increasing *intra-national* inequality. In many countries in the world today, domestic inequality is rapidly increasing; and this trend, in turn, increases global economic inequality. So the global poor are subject to two countervailing trends: along with everyone else, they benefit from increasing global average income; but they are also hurt by increasing global inequality. These two factors combine to explain the persistence of poverty at very high levels.

TABLE 2: EVOLUTION OF VENTILE SHARES OF GLOBAL HOUSEHOLD INCOME¹⁷

Segment of World Population	Share of Global Household Income in 1988	Share of Global Household Income in 2002	Absolute Change in Income Share	Relative Change in Income Share
Richest Ventile (95–100%)	42.87	48.80	+5.93	+13.8%
New Four Ventiles (75–95%)	46.63	42.78	-3.85	-8.3%
Second Quarter (50–75%)	6.97	5.44	-1.53	-22.0%
Third Quarter (25–50%)	2.37	2.06	-0.31	-13.1%
Poorest Quarter (0–25%)	1.16	0.92	-0.24	-20.7%

You can see in Table 2 how global income inequality has developed over this latest and ongoing globalization period, and specifically how various ventiles (1/20ths) of the world's population have fared. If you rank the world's population by income and then divide them into twenty equal-sized segments, you find that only one of these ventiles has substantially increased its share over these fourteen years, and that's the top ventile. This top segment managed to add fully 6% of global household income to its share during the

¹⁷ Data kindly supplied by Branko Milanovic of the World Bank in a personal communication, Aug. 19, 2009 (on file with author).

period, raising its share from 43% to 49%. The second ventile had a tiny gain, all other eighteen ventiles lost ground. The loss at the bottom, in the poorest quarter, is especially significant: the share of global household income going to the poorest quarter of the world's population shrank by over 20%. Today, the poorest quarter of humanity has been reduced below 1% of global household income, the poorest two-fifths below 2%, and the poorest half below 3%.

TABLE 3: CHANGES IN WORLD POVERTY¹⁸

Period:	1981–	1984–	1987–	1990–	Relative to path of	1993–	1996–	1999–
Poverty Line	2005	2005	2005	2005	diluted MDG-1	2005	2005	2005
\$1.00 PPP 2005	–42%	–34%	–29%	–32%	86% ahead	–29%	–21%	–24%
\$1.25 PPP 2005	–27%	–24%	–20%	–24%	40% ahead	–23%	–17%	–19%
\$2.00 PPP 2005	1%	–2%	–3%	–7%	59% behind	–9%	–9%	–11%
\$2.50 PPP 2005	13%	8%	5%	0.45%	103% behind	–3%	–5%	–7%

What is happening in regard to world poverty is somewhat obscured by the fact that the World Bank has chosen an absurdly low international poverty line of \$1.25 PPP 2005 per person per day.¹⁹ If you look, in Table 3, at how the number of poor has evolved over various periods in this latest globalization era, you find that the evolution is highly sensitive to the level of the poverty line. If you choose a low poverty line of \$1 a day (PPP 2005) or the World Bank's currently preferred line of \$1.25 a day, you find considerable declines in the number of poor. But if you use a higher poverty line, like \$2 or \$2.50 (PPP 2005), you find that the number of poor has stood still or has actually slightly increased. This observation is highly significant in regard to the first Millennium Development Goal (MDG-1): "to halve poverty by 2015." If we use the very low poverty line the World Bank prefers, we will very easily achieve this goal. If we use higher poverty lines, such as \$2 a day or \$2.50 a day, we will get nowhere near achieving that target. Relative to a poverty line of \$2.50 per day, the reported number of poor has actually *increased* slightly

¹⁸ Chen & Ravallion, *supra* note 11, at 44–45.

¹⁹ To qualify as poor by the World Bank's standard in the United States in 2010, you would have to live on less than what \$500 can buy for the entire year.

during the first fifteen years of the twenty-five year period (1990–2015) that MDG-1 is focused on.

III. POVERTY, ECOLOGY, AND POPULATION

Let's now look at an argument that is very commonly made against the effort to eradicate poverty, namely that doing so will have great ecological costs in terms of overpopulation. The argument combines two correlations. First and foremost, there is a correlation between poverty and population. Reductions in poverty increase the human population, since those who escape extreme poverty will tend to enjoy longer lives. Since children under five make up half of all poverty deaths, the longevity effect is substantial. Moreover, children who survive will reproduce, thereby compounding the problem. Consequently, poverty eradication will lead to overpopulation. Proponents of this view admit that poverty is deplorable, but at least it has the advantage of controlling population growth. And this of course is true—eighteen million people die from poverty-related causes each year. Obviously this has a dampening effect on population; these people are dead. The effect is all the larger, given that half of those who die from poverty-related causes are children under the age of five, and so human beings who, because they die early, will never reproduce.

The second correlation relates the size of population and ecological burdens. The more people who live on the planet, the larger, other things being equal, ecological burdens will be. That's a simple consequence of the fact the ecological footprint per person does not vary, at least not significantly, with population size. If you put these two correlations together, you find that fighting poverty will lead to both overpopulation and increased ecological damage. Though they may not say it out loud, many see this as a reason against fighting poverty.

Let us next look at some benefits of fighting poverty that might counteract these costs. First and foremost, there is a correlation between poverty and ecology that goes in the other direction. Although very poor people do less ecological harm per person than the affluent, they do more ecological harm per unit of income. This is primarily because poor people cannot take care to consume in an ecologically sustainable manner. They often have to use up the last available firewood because they need it for survival. And they must consume essentially all of their income. They cannot afford to save income like wealthier people can. These factors suggest that as poverty is eradicated, as people become more able to save, more able to show concern for the environment, their ecological footprint per unit of income will decrease. And this brings out an ecological benefit of a less radically unequal income

distribution: income increases for very poor people add less ecological burden than equal decreases for more affluent people subtract.

TABLE 4: TOTAL FERTILITY RATES²⁰

	1950–1955	1980–1985	2005–2010
Australia	3.18	1.91	1.83
Japan	3.00	1.75	1.27
Portugal	3.04	2.01	1.38
East Asia	5.42	2.53	1.72
Equatorial Guinea	5.50	5.79	5.36
Mali	6.23	6.56	5.49
Niger	6.86	8.05	7.15
Sierra Leone	5.52	5.71	5.22

A second, and far more important, point is that the correlation between poverty and population is not as clearly opposed to poverty eradication as we have been led to believe. Amartya Sen was the first to publicize in a seminal essay in the *New York Review of Books* that there is a very high correlation between poverty and total fertility rates.²¹ The total fertility rate is the rate of children per woman, averaged over a population; and it declines dramatically with declining poverty in this population. We can see this from both diachronic and synchronic data.

Diachronically, we can look back to 1955, the first year for which we have decent data about total fertility rates (Table 4). Since that time, the total fertility rate has declined dramatically, for example in East Asia from 5.42 to 1.72. There were similar declines in many other countries (as diverse as Portugal and Australia), where increasing affluence went along with very

²⁰ United Nations Population Division, World Population Prospects Population Database: The 2008 Revision, <http://esa.un.org/UNPP/> (last visited July 20, 2010) [hereinafter World Population Prospects 2008].

²¹ Amartya Sen, *Population: Delusion and Reality*, N.Y. REV. BOOKS, Sept. 22, 1994, at 61, available at <http://www.nybooks.com/articles/archives/1994/sep/22/population-delusion-and-reality/>.

dramatic fertility declines. On the other hand, total fertility rates are unchanged or even rising in countries where poverty remains quite high. Equatorial Guinea, Mali, Niger, and Sierra Leone had no substantial decline in total fertility rates.

Confirming evidence also emerges from a synchronous examination—that is, from comparing total fertility rates today in areas where poverty persists to areas where severe poverty has declined or has basically disappeared. The fifty least developed countries today have an aggregate total fertility rate of 4.39. On the other hand, ninety-five of the richer countries have reached total fertility rates below two—portending future declines in population²²—and the aggregate total fertility rate of the developed countries stands at 1.64.²³

Thinking narrowly about the near future, we find that eradicating poverty has the immediate effect of increasing the human population. But if we expand our horizon to the medium term, poverty eradication has the effect of greatly reducing total fertility rates, and thereby greatly reducing what the world's population will be twenty to thirty years down the road. In fact, one of the most effective things we can do to control population growth for the Twenty-First Century is to eradicate poverty, and thereby to enable people rationally to reduce their total fertility rates dramatically. This makes perfect sense. The main reason for high fertility rates among the poor is simply that people do not know whether they will have surviving offspring, given the great poverty in which they live. Surviving offspring are their only security for old age; who else will take care of them if they ever become unable to work? For these, quite understandable, reasons, extremely poor people have many children and, equally rationally, reduce their rate of reproduction if their incomes improve. Paradoxically, poor people have a much higher rate of reproduction despite the fact that they also face dramatically higher child mortality than the more affluent.

IV. INSTITUTIONAL FACTORS

Independent of the effects that poverty eradication has on overpopulation, there is also a clear moral imperative to stop poverty. This moral imperative is reinforced by the fact that, as things are now, we are not merely failing to eradicate poverty, but we are also contributing to its persistence. We contribute by designing and imposing global institutional arrangements that foreseeably and avoidably increase the socioeconomic inequalities that cause

²² See Central Intelligence Agency, *The World Factbook*, <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2127rank.html> (last visited July 20, 2010).

²³ World Population Prospects, *supra* note 20.

poverty to persist. Today, the persistence of poverty and the increase of socioeconomic inequality are substantially driven by global institutional arrangements that are designed by the more powerful governments for the benefit of their most powerful industries, corporations, and citizens. The persistence of poverty is an unintended but known side effect.

Among the institutional factors that contribute greatly to poverty are the following:

- Trade rules allow affluent countries to continue to protect their markets—with tariffs, quotas, anti-dumping duties, export credits and huge subsidies to domestic producers—at the expense, for example, of potential agricultural and textile exports from developing countries;
- A lax environmental protection regime allows affluent countries to go on causing the lion's share of pollution without bearing any of the cost this pollution imposes on much poorer populations;
- Rules that allow illicit funds to be secretly transferred into Northern bank accounts deprive poor countries of large amounts of tax revenues and facilitate massive embezzlement of their public funds; and
- Rules that entitle any person or group exercising effective power in a poor country—regardless of how it came to power and regardless of how badly it governs—to borrow in the name of its people and to sell the people's natural resources greatly enhance the staying power of corrupt and oppressive rulers and encourage coups as well as wars and civil wars motivated by capturing the rights that come with might.

These global institutional arrangements keep resources cheap for our consumption; but they also deprive members of poor populations of their natural resources and strengthen their oppressors—rulers who often have no democratic legitimacy whatsoever and pay little attention to the interests of the people they govern. These arrangements conspire to produce increasing global inequality and the persistence of poverty, despite healthy improvements in global average income.

Article 28 of the Universal Declaration of Human Rights holds that “[e]veryone is entitled to a social and international order in which the rights and freedoms set forth in this Declaration can be fully realized.”²⁴ Such an

²⁴ Universal Declaration, *supra* note 2, art. 28.

order does not now exist. It would be quite possible, though, to arrange global institutions in such a way as to protect poor people from poverty; that is, to improve their standard of living considerably. Such an improvement is entirely feasible—on average, global income now is high enough to eradicate poverty completely at little cost to the rest of us. Recall from Table 1 that the aggregate shortfall of the 3.1 billion human beings living below the most generous poverty line maintained by the World Bank (\$2.50 PPP in 2005 dollars) amounts to just over 1% of world income.

V. ADVERSARIAL SYSTEMS: COMMON DRIVERS

So far I have tried to show that the conflict that many people see between our concern to eradicate poverty on the one hand, and our concern to avoid overpopulation and ecological burdens on the other hand, is more apparent than real. We can, in fact, make common cause of overcoming poverty and ecological burdens and overpopulation. Now, I want to elaborate on the common drivers of poverty and ecological harm.

Consider competitive or adversarial systems, such as the real economy, financial markets, politics, international relations, the courts, academic research, the media, and so on. When properly framed, all of these adversarial systems can be highly efficient. Here, “proper framing” means that the personal rewards competing players seek from the system must be closely aligned with socially desirable outcomes. This, in turn, means that the rules of the game must be appropriately designed so as to achieve these socially desirable outcomes and that the rules must be administered in a transparent and impartial way so that compliance with them is effectively policed.

Adversarial systems have a general problem. Very simply, reward-focused players in such systems have two different ways of benefiting. One is to do what the system announces it will reward, do it well, and then be rewarded. The other, more pernicious, way is to try to influence either the rules of the system or their impartial application. The availability of this second mode tends to make adversarial systems themselves the objects of the competition. The strongest players often find it in their interest to spend substantial resources not just on trying to do well under the terms of the scheme as it is, but also on trying to influence in their own favor the terms of the scheme or their application.

When players successfully influence the rules of the game and their application, competitive adversarial systems can lose much of their effectiveness, for two reasons: resources are diverted from the purpose the system was meant to serve toward efforts to undermine its rules or their application and, insofar as such efforts succeed, the degree to which the system serves its social purpose is diminished.

The seemingly obvious way to solve this problem is to create meta-rules that penalize certain efforts to modify the rules or their application. But such protective meta-rules are themselves only rules and, as such, vulnerable to efforts to modify or take advantage of them. Once rules that forbid certain conduct are put in place, players will be rewarded for successfully exploiting those rules. For example, in soccer, the game is disrupted by the commission of fouls. Players who commit certain defined fouls are penalized by the award of a penalty kick to the opposing team, which increases the opposing team's chance of scoring. Knowing these meta-rules, players learn how to fall in spectacular ways in order to fool the referee into believing that a foul was committed, thereby garnering for the exploitative player's team an undeserved penalty kick.

Another way in which one might attempt to avoid this problem is by having a moral culture of honor and team play. This culture would involve a moral commitment, widespread among the participants, that it simply is not acceptable to influence the rules or their applications in one's favor. To be effective, this moral commitment must be ingrained in the culture and internalized by many of the players, especially those who have a role in formulating or applying central system rules. Such moral commitments work within certain small-scale contexts, but in more large-scale contexts and as the rewards become larger, such moral commitments are very hard to sustain. Once some players diverge from the moral norm, the rot quickly spreads. A player will say that there is much less of a moral reason for her to make sacrifices for a moral commitment when others do not. Where the rewards are high, players will tend to relate to the rules in a self-interested way. And they will then also seek to "de-moralize" prescriptions that hinder their pursuit of rewards, and to "moralize" prescriptions advantageous to themselves. A culture of public-spirited commitment to fair play and the public good is very difficult to maintain when the stakes are high.

The long-term tendency of high-stakes adversarial systems is for money to become the preeminent, universal reward. Money penetrates outward from the economy to affect the academic world (through grants and endowments) and the media (through advertising). More importantly, politics and international negotiations among politicians and rulers are affected to an increasing extent by private players who seek to influence the rules and their application in their own short-term interest. Such regulatory capture is the underlying problem that drives both ecological damage and the persistence of poverty. In both cases there is a collective action problem, where powerful players find it in their interest to influence the rules and their application in their own favor, in ways that then produce as a side effect ecological harms and harms to the world's poor.

To summarize, I diagnose the root problem here as one of self-aggravating regulatory capture. As the rich become richer relative to the poor, as socioeconomic inequalities increase as a result of successful efforts to capture rules and their application, the rich have increasing incentives to try to influence the rules in their favor, and also increasing capacities to mobilize the expertise and lobbying power to do so successfully. The result is a vicious inequality spiral. As the relative position of wealthy corporations and individuals improves, these actors are increasingly able to shape the rules of the system in their favor. These tendencies exist nationally, and even more so internationally, where governments negotiating international trade agreements, for example, will be under heavy pressure from their strongest industries and corporations. The poor, even if they make up a large majority of the population of a country, lack the means, the expertise, and sufficient incentives to mobilize to counter the influence that more powerful actors are exerting on their government's negotiating position. International treaties and agreements are, therefore, largely shaped by relatively few players who are influencing their own government, and others, to shape the rules in their own favor. This is disastrous for both the environment and for poverty eradication.

VI. THE EFFECTS OF INEQUALITY

Data on inequality in the United States provide evidence for the regulatory capture phenomenon I have described. During the last economic expansion in the U.S. (2002–2007), average per capita household income grew by a healthy 16%. But if you look at how that 16% growth was distributed, you find that average income among the top 1% of the income hierarchy increased by 62%, while average income among the remaining 99% increased by a dramatically more modest 7%. There were, in essence, two economies: one at the very top, achieving very substantial growth, and one at the bottom, with only modest growth. The top percentile captured fully 65% of the real per capita growth of the U.S. economy during that 2002–2007 expansion. This phenomenon is not new. It was more dramatic under Bush than during the Clinton economic expansion (when the top percentile captured “only” 45% of real growth), but it essentially goes back to the late 1970s, when inequality bottomed in the United States.²⁵ Ever since that time economic inequality has been excessive,

²⁵ Emmanuel Saez & Thomas Piketty, *Income Inequality in the United States, 1913–1998*, 118 Q. J. ECON. 1 (2003). The cited figures are calculated from Table 1. The tables and figures contained in this article are continuously updated at <http://elsa.berkeley.edu/~saez> (last visited July 20, 2010).

and it has now exceeded the level of inequality prevailing at the previous peak in the late 1920s, just before the Great Depression.

Examining this rise of inequality in the last thirty years, we see that it is heavily concentrated at the very top. From 1978 to 2007, the greatest gains, by far, were in the top percentile, which over this period scored a 2.6-fold increase in its share of U.S. household income—from 8.95% to 23.50%. Even within this top percentile, the gains were by no means uniform, but again top-heavy: the top 0.1% achieved a 4.6-fold increase in its relative share (from 2.65% to 12.28%) and the top 0.01%—14,000 tax returns, 30,000 people—scored even a 7-fold increase in its relative share (from 0.86% to 6.04% of U.S. household income).²⁶ If I am right about the phenomenon of regulatory capture, then it certainly has had a profound influence on the economic distribution in the United States.

FIGURE 1: KUZNETS CURVE

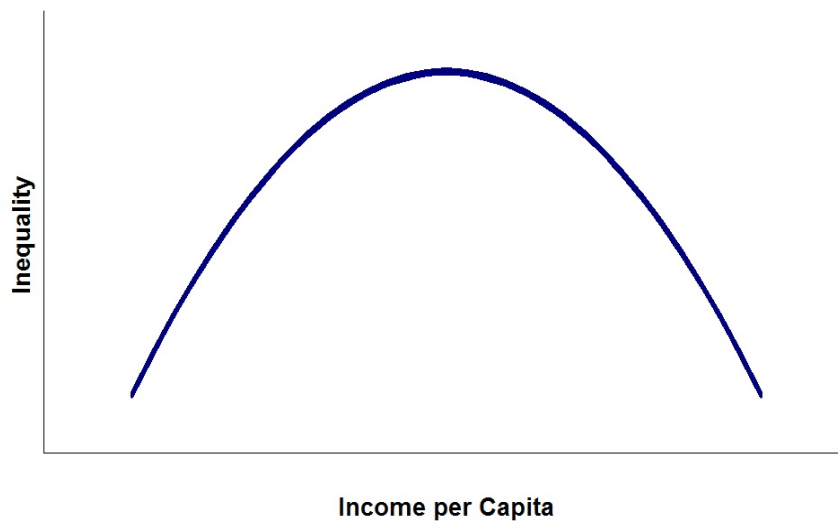


Figure 1 shows what economists once called the Kuznets Curve. The curve represents Kuznets's claim: as countries industrialize, economic inequality will increase sharply, followed by a gradual decline in inequality. Basically,

²⁶ Saez & Piketty, *supra* note 25, tbl.A3.

economists were telling us, “Don’t worry about excessive inequality. It’s perfectly normal, perfectly healthy, and it will eventually disappear.” The United States did indeed, for a time, conform to this claim, with economic inequality peaking in the late 1920s and continuously declining to a bottom reached in 1977. But it has since come back, and economic inequality now exceeds the peak that was reached in the 1920s. The Kuznets Curve is a nice story, but not empirically accurate.

VII. INSTABILITY CAUSED BY REGULATORY CAPTURE

The instability that we have witnessed during the global financial crisis is a further problem caused or exacerbated by the ability of private agents to capture parts of the emerging national and global institutional architecture. The problem here is that different, very powerful, players are interested in different parts of the overall system of rules. They are not all equally interested in every part of it; different industries and firms are interested in specific parts. Some industries (entertainment, software, pharmaceuticals, and agribusinesses) are, for instance, especially interested in intellectual property rights. Other industries have special interests in other parts of the rule architecture. In such situations, powerful lobbies will make concessions in areas where they have less at stake in exchange for getting their way in areas they are most interested in influencing. Such private “purchasing” of rules or their application entails disregard of externalities imposed upon weaker and future participants, who are unable to fend for their interests. It also entails incoherence in the whole scheme of rules, because its various components are shaped by sets of players with diverse special interests. Both phenomena exemplify the structure of collective action problems. The strongest players are impelled, by their self-regarding interests, to seek influence in ways that are detrimental and dangerous to themselves collectively (and more so, of course, to weaker players). In the long run, even the rich and mighty must expect greater costs from manipulation efforts by other strong players than benefits from their own such efforts. Even the strongest are worse off in the long-run than they would be if they all abandoned their competitive efforts to manipulate in their own favor the rules and their application. But how can they?

VIII. A PROPOSAL: AN ECOLOGICAL IMPACT FUND

I will conclude with some remarks about how we can do something in common to promote poverty eradication and ecological protection. Assuming that regulatory capture, as I have described it, is a major driver of these two undesirable phenomena, what can we do to initiate lasting change?

My hypothesis is that we can proceed based on an interest that even very powerful agents share with us, namely the interest in reducing the influence that private agents can have on the design of consequential global and national rules. We share this interest when important players individually have more to lose from the damage caused by rule manipulation by other powerful players than they have to gain from their own successful manipulation efforts. In these cases, even powerful players have an interest in reducing the extent to which agents like themselves can influence global and national rules. We may be able to do more toward safeguarding our environment and protecting poor people worldwide by thinking about structural reform ideas that appeal to the generic interest in stability that we share even with the most powerful agents in the system.

My idea for collaborating with the powerful for ecological protection is to reform the intellectual property architecture for green technologies. The reformed system would reward innovators of green technologies not as is the case now, through patent-protected markups, but instead by offering an alternative reward that is conditioned on the ecological benefit of their invention. Consider the system as it now stands: an innovator creates a new technology that can decrease humanity's ecological footprint in some way. In order to recoup the cost of her investment, the innovator is granted a patent—the legal authority to maintain a temporary monopoly over the supply of the innovation. The innovator is then expected to cover her research and development costs by charging a high markup over the cost of production. But there is something profoundly irrational about rewarding innovators for socially valuable technologies through a markup that all but guarantees that the innovation will be underutilized. In those cases of innovation where you can measure the value of the invention in respect to a socially important purpose, it makes much more sense to at least offer the innovator the opportunity to sell the innovation at the lowest feasible cost of production, and then be rewarded for the innovative effort on the basis of the benefit that the use of that invention brings. So this is my proposal: a reward fund, sponsored by governments, that would offer to pay innovators on the basis of the ecological benefit of their invention on condition that they are willing to give up their patent-protected markups. Modeled after my similar proposal for health, we can call this the Ecological Impact Fund (EIF).

FIGURE 2: PATENT-PROTECTED MONOPOLY PRICING

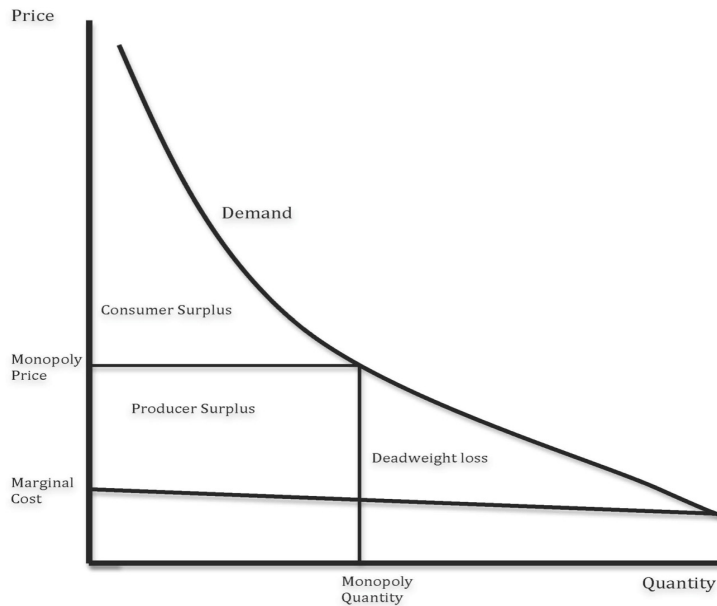


Figure 2 makes the same point in economic terms. An innovator receives a time-limited patent on his invention and can choose what price to charge for it without concern for direct competition in the market. The profits that the innovator makes are needed to recoup his research and development expenses. The profit is here given by the producer surplus. Innovators will try to set the monopoly price at such a level as to maximize the producer surplus (markup multiplied by sales volume). This will lead, predictably, to a large difference between the marginal cost of production and the monopoly price. This large difference in turn will lead to enormous deadweight losses. Deadweight losses arise when mutually advantageous transactions at prices between the cost of production and the monopoly price cannot be consummated because they would undermine the monopoly price that is optimal for the seller.

The proposed Ecological Impact Fund would lower the price of the innovation to the lowest feasible cost. Everything above, up to the demand curve, now becomes consumer surplus. The consumer surplus would, then, expand to include also what Figure 2 shows as the producer surplus and the deadweight loss. Consumers collectively would be able to give more money

to producers than the latter are earning under the existing patent system and still also keep more money for themselves. This apparent miracle is possible because the gains from avoiding deadweight loss are here effectively divided up between consumers and producers. In this way, my proposed reform in how we pay for innovation can be designed to be win/win. It can be a triple win, actually, because benefits extend not only to sellers and buyers of green technologies, who realize financial gains, but also to all those suffering less harm from pollution—present and future human beings and the rest of nature.

The EIF would spur innovation not merely in large power plants and factories, but also in products that are widely used and needed by the poor, but currently neglected by private firms. The roughly 500 million traditional cooking stoves used by the poor, for instance, are well known to damage human health (through smoke inhalation) and the environment (through deforestation in the provision of charcoal and climate change from CO₂ emissions).²⁷ NGOs have worked for years to promote improved cooking stoves with only modest success. The creation of the EIF would shift the funding model for such green products from push funding, where governments and grant-making organizations decide who should receive funds, toward pull funding, where any innovator who believes she can profit has an incentive to pursue and then to promote a new product. Since our innovator is rewarded only for the actual ecological impact of her new cooking stove, she has a strong incentive to get the product into the hands of consumers and to ensure they know how best to use it. And she has an incentive to see to it that the cost of production is as low as possible, since the more units that are distributed, the larger her ecological impact reward will be. By closely aligning private rewards with publicly important outcomes, the EIF would succeed where the uncomplemented patent regime has failed.

²⁷ See ASHDEN AWARDS, STOKING UP A COOKSTOVE REVOLUTION (2010), available at http://www.ashdenawards.org/files/pdfs/reports/Cookstove_report_final.pdf.