

# The State of Consumption Today

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China has a well-deserved reputation as the land of the bicycle. Throughout the twentieth century, the streets of her cities were filled with literally millions of bikes, not only providing personal transportation but also serving as delivery vehicles—carrying everything from construction materials to chickens on their way to market. As recently as the early 1980s, few private cars were found on China’s streets.<sup>1</sup>

A visitor from the 1980s who returns to Beijing, Shanghai, or other Chinese cities today will hardly recognize them. By 2002 there were 10 million private cars, and growth in ownership was accelerating: every day in 2003 some 11,000 more cars merged into the traffic on Chinese roads—4 million new private cars during the year. Auto sales increased by 60 percent in 2002 and by more than 80 percent in the first half of 2003. By 2015, if growth continues apace, industry analysts expect 150 million cars to be jamming

China’s streets—18 million more than were driven on U.S. streets and highways in 1999. The emerging class of Chinese consumers is enthusiastically embracing the increased mobility and higher social status that the automobile now represents—millions wait months and take on significant debt in order to become pioneer members of China’s new automobile culture.<sup>2</sup>

The advantages of this development path are clear to the government officials who are encouraging it. Each new Chinese-made car provides two new jobs to Chinese workers, and the income they receive then stimulates other sectors of the Chinese economy. Moreover, the rush to meet demand is attracting massive investments by foreign companies—General Motors has spent \$1.5 billion on a new factory in Shanghai, while Volkswagen has committed \$7 billion over the next five years to increase its production capacity.<sup>3</sup>

China is of course following a well-blazed trail, albeit roughly eight decades after widespread use of the automobile first caught on in the United States. Yet China’s automobile

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Units of measure throughout this book are metric unless common usage dictates otherwise.

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story is tied to neither the Chinese nor the automobile. From fast food to disposable cameras and from Mexico to South Africa, a good deal of the world is now entering the consumer society at a mind-numbing pace. By one calculation, there are now more than 1.7 billion members of “the consumer class” today—nearly half of them in the “developing” world. A lifestyle and culture that became common in Europe, North America, Japan, and a few other pockets of the world in the twentieth century is going global in the twenty-first.<sup>4</sup>

The consumer society clearly has a strong allure, and carries with it many economic benefits. And it would certainly be unfair to argue that advantages gained by an earlier generation of consumers should not be shared by those who come later. Yet the headlong growth of consumption in the last decade—and the staggering projections that flow logically from that growth—suggest that the world as a whole will soon run smack into a stark dilemma. If the levels of consumption that several hundred million of the most affluent people enjoy today were replicated across even half of the roughly 9 billion people projected to be on the planet in 2050, the impact on our water supply, air quality, forests, climate, biological diversity, and human health would be severe.<sup>5</sup>

Despite the dangers ahead, there is little evidence that the consumption locomotive is braking—not even in countries like the United States, where most people are amply supplied with the goods and services needed to lead a dignified life. As of 2003 the United States had more private cars than licensed drivers, and gas-guzzling sport-utility vehicles were one of the best-selling vehicles. New houses were 38 percent bigger in 2002 than in 1975, despite having fewer people in each household on average. Americans themselves are larger as well—so much bigger, in fact, that a multi-

billion-dollar industry has emerged to cater to the needs of large Americans, supplying them with oversized clothing, sturdier furniture, even supersized caskets. If the consumption aspirations of the wealthiest of nations cannot be satiated, the prospects for corralling consumption everywhere before it strips and degrades our planet beyond recognition would appear to be bleak.<sup>6</sup>

Yet there are many reasons to be hopeful. Consumer advocates, economists, policy-makers, and environmentalists have developed creative options for meeting people’s needs while dampening the environmental and social costs associated with mass consumption. In addition to helping individuals find the balance between too much and too little consumption, they stress placing more emphasis on publicly provided goods and services, on services in place of goods, on goods with high levels of recycled content, and on genuine choice for consumers. Together, these measures can help deliver a high quality of life with a minimum of environmental abuse and social inequity. The key is to look critically not only at the “how much” of consumption, but also the “how.” (See Chapters 5 and 8.)

Consumption is not a bad thing. People must consume to survive, and the world’s poorest will need to consume more if they are to lead lives of dignity and opportunity. But consumption threatens the well-being of people and the environment when it becomes an end in itself—when it is an individual’s primary goal in life, for example, or the ultimate measure of the success of a government’s economic policies. The economies of mass consumption that produced a world of abundance for many in the twentieth century face a different challenge in the twenty-first: to focus not on the indefinite accumulation of goods but instead on a better quality of life for all, with minimal environmental harm.

## Consumption by the Numbers

By virtually any measure—household expenditures, number of consumers, extraction of raw materials—consumption of goods and services has risen steadily in industrial nations for decades, and it is growing rapidly in many developing countries. The numbers tell the story of a world being transformed by a consumption revolution.

Private consumption expenditures—the

amount spent on goods and services at the household level—topped \$20 trillion in 2000, up from \$4.8 trillion in 1960 (in 1995 dollars). Some of this fourfold increase occurred because of population growth (see Box 1–1), but much of it was due to advancing prosperity in many parts of the globe. These overall numbers mask enormous disparities in spending. The 12 percent of the world living in North America and Western Europe account for 60 percent of global private con-

### BOX 1–1. WHAT ABOUT POPULATION?

The United Nations Population Division projects that world population will increase 41 percent by 2050, to 8.9 billion people. Just as growing acquisition of appliances and cars can eliminate energy savings achieved by efficiency improvements, this increase in human numbers threatens to offset any progress in reducing the amount of goods that each person consumes. For example, even if the average American eats 20 percent less meat in 2050 than in 2000, total meat consumption in the United States will be roughly 5 million tons greater in 2050 due to population growth alone.

With 99 percent of global population growth projected to occur in developing nations, these countries need to consider carefully the twin goals of population stabilization and increased consumption for human development. The industrial world can help developing countries stabilize their populations by supporting family planning, education, and the improvement of women's status. And it can lower the impact of increased consumption by assisting with the adoption of cleaner, more efficient technologies.

But it would be a mistake to think of population growth as a challenge facing only poor nations. When population growth and high levels of consumption mix, as they do in the United States, the significance of the former balloons. For example, although the U.S. popula-

tion increases by roughly 3 million a year, whereas India's increases by nearly 16 million, the additional Americans have greater environmental impact. They are responsible for 15.7 million tons of additional carbon to the atmosphere, compared with only 4.9 million tons in India. Wealthy countries with expanding populations need to look at the impact of both their consumption and their population policies.

Other less discussed demographic trends mix with consumption in surprising ways as well. For instance, as a result of rising incomes, urbanization, and smaller families, the number of people living under one roof fell between 1970 and 2000 from 5.1 to 4.4 in developing countries and from 3.2 to 2.5 in industrial countries, while the total number of households increased. Each new house requires space and materials, of course. In addition, savings gained from having more people share energy, appliances, and home furnishings are lost when fewer people live in the same house. Thus a one-person household in the United States uses 17 percent more energy per person than a two-person household does. So even in some European nations and Japan, where total population is not growing much if at all, changing household dynamics should be examined as drivers of increased consumption.

SOURCE: See endnote 7.

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sumer spending, while the one third living in South Asia and sub-Saharan Africa account for only 3.2 percent. (See Table 1–1.)<sup>7</sup>

In 1999, some 2.8 billion people—two of every five humans on the planet—were living on less than \$2 a day, which the United Nations and the World Bank say is the minimum for meeting basic needs. Roughly 1.2 billion people were living in “extreme poverty,” measured by an average daily income of less than \$1. Among the poorest are hundreds of millions of subsistence farmers, who by definition do not earn wages and who seldom engage in money-based market transactions. For them, and for all of the world’s poor, consumption expenditures are focused almost entirely on meeting basic needs.<sup>8</sup>

Although most consumer spending occurs in the wealthier regions of the world, the number of consumers is spread a bit more evenly between industrial and developing regions. This is clear from research done by former U.N. Environment Programme (UNEP) consultant Matthew Bentley, who describes the existence of a global “consumer class.” These people have incomes over \$7,000 of purchasing power parity (an income measure adjusted for the buying power in local currency), which is roughly the level of the official poverty line in Western Europe. The global consumer class itself ranges widely in levels of wealth, but members are typically users of televisions, telephones, and the Internet, along with the culture and ideas that these products transmit. This global consumer class totals some 1.7 billion people—more than a quarter of the world. (See Table 1–2.)<sup>9</sup>

Almost half of this global consumer class lives in developing nations, with China and India alone claiming more than 20 percent of the global total. (See Table 1–3.) In fact, these two countries’ combined consumer class of 362 million people is larger than this class

**Table 1–1. Consumer Spending and Population, by Region, 2000**

Region	Share of World Private Consumption Expenditures	Share of World Population
	(percent)	
United States and Canada	31.5	5.2
Western Europe	28.7	6.4
East Asia and Pacific	21.4	32.9
Latin America and the Caribbean	6.7	8.5
Eastern Europe and Central Asia	3.3	7.9
South Asia	2.0	22.4
Australia and New Zealand	1.5	0.4
Middle East and North Africa	1.4	4.1
Sub-Saharan Africa	1.2	10.9

SOURCE: See endnote 7.

in all of Western Europe (although the average Chinese or Indian member of course consumes substantially less than the average European). Much of the rest of the developing world is not represented in this surge of new consumption, however: sub-Saharan Africa’s consumer class, the smallest, has just 34 million people. Indeed, the region has essentially been a bystander to the prosperity experienced in most of the world in recent decades. Measured in terms of private consumption expenditures per person, sub-Saharan Africa in 2001 was 20 percent worse off than two decades earlier, creating a yawning gap between that region and the industrial world.<sup>10</sup>

In addition to having large consumer blocs, developing countries tend to have the greatest potential to expand the ranks of consumers. For example, China and India’s large consumer set constitutes only 16 percent of

**Table I-2. Consumer Class, by Region, 2002**

Region	Number of People Belonging to the Consumer Class	Consumer Class as Share of Regional Population	Consumer Class as Share of Global Consumer Class <sup>1</sup>
	(million)	(percent)	(percent)
United States and Canada	271.4	85	16
Western Europe	348.9	89	20
East Asia and Pacific	494.0	27	29
Latin America and the Caribbean	167.8	32	10
Eastern Europe and Central Asia	173.2	36	10
South Asia	140.7	10	8
Australia and New Zealand	19.8	84	1
Middle East and North Africa	78.0	25	4
Sub-Saharan Africa	34.2	5	2
Industrial Countries	912	80	53
Developing Countries	816	17	47
World	1,728	28	100

<sup>1</sup>Total does not add to 100 due to rounding.  
SOURCE: See endnote 9.

the region's population, whereas in Europe the figure is 89 percent. Indeed, in most developing countries the consumer class accounts for less than half of the population—often much less—suggesting considerable room to grow. Based on population projections alone, the global consumer class is conservatively projected to hold at least 2 billion people by 2015.<sup>11</sup>

These numbers suggest that the story of consumption in the twenty-first century could be as much about emerging consumer nations as about traditional ones. In a 2003 Background Paper, the U.N. Environment Programme noted that boosting Asian car ownership rates to the world average would add 200 million cars to the global fleet—one and a half times the number of cars currently found in the United States. Concerns about the impact of developments like these suggest the urgency of pursuing alternative, sustainable paths to prosperity in the region. At the same time, worries about potential

increases in Asian consumption are misplaced if they obscure the need for reform in wealthy countries, where high levels of consumption have been the norm for decades. The early industrializing countries in Europe

**Table I-3. Top 10 National Consumer Class Populations, 2002**

Country	Number of People in Consumer Class, 2002	Share of National Population
	(million)	(percent)
United States	242.5	84
China	239.8	19
India	121.9	12
Japan	120.7	95
Germany	76.3	92
Russian Federation	61.3	43
Brazil	57.8	33
France	53.1	89
Italy	52.8	91
United Kingdom	50.4	86

SOURCE: See endnote 10.

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and North America, along with Japan and Australia, are responsible for the bulk of global environmental degradation associated with consumption.<sup>12</sup>

Consumption trends cover virtually every conceivable good and service, and these can be categorized in many ways. Of particular interest are fundamentals such as food and water; trends for these give a sense of whether basic needs are being met. Other consumer items indicate the degree to which life options are expanding for people, and how much more comfortable life is becoming.

In terms of basic needs, trends are mixed. Daily intake of calories has increased in both the industrial and the developing worlds since 1961 as food supplies have become bountiful, at least at the global level. Yet the U.N. Food and Agriculture Organization (FAO) reports that 825 million people are still undernourished and that the average person in the industrial world took in 10 percent more calories daily in 1961 (2,947 calories) than the average person in the developing world consumes today (2,675 calories). The existence of hunger in the face of record food supplies reflects the fact that food remains expensive for much of the world's poor relative to their meager incomes. In Tanzania, for instance, where per capita household expenditures were \$375 in 1998, 67 percent of household spending went to food. In Japan, per capita household expenditures stood at \$13,568 that year, but only 12 percent of that was spent on food. (See Table 1-4.)<sup>13</sup>

Not only do the world's wealthy take in more calories than the poor, but those calories are likelier to come from more resource-intensive foods, such as meat and dairy products, which are produced using large quantities of grain, water, and energy. (See Chapters 3 and 4.) People in industrial countries get 856 of their daily calories from ani-

**Table 1-4. Share of Household Expenditures Spent on Food**

Country	Per Capita Household Expenditures, 1998 (dollars) <sup>1</sup>	Share Spent on Food (percent)
Tanzania	375	67
Madagascar	608	61
Tajikistan	660	48
Lebanon	6,135	31
Hong Kong	12,468	10
Japan	13,568	12
Denmark	16,385	16
United States	21,515	13

<sup>1</sup>Purchasing power parity.

SOURCE: See endnote 13.

mal products, while in developing countries the figure is 350. Still, meat consumption is rising in the more prosperous regions of the developing world as incomes and urbanization rates increase. Half of the world's pork is eaten in China, for example, while Brazil is the second largest consumer of beef, after the United States. And meat is increasingly consumed as fast food, which is often more energy-intensive to produce. According to a recent marketing research study, the fast-food industry in India is growing by 40 percent a year and is expected to generate over a billion dollars in sales by 2005. Meanwhile, a quarter of India's population remains undernourished—a number virtually unchanged over the past decade.<sup>14</sup>

Clean water and adequate sanitation, which are instrumental in preventing the spread of infectious disease, are also basic consumption needs. As with most goods, access to water and sanitation is skewed in favor of wealthier populations, although this situation has improved for poorer people somewhat in the past decade. In 2000, 1.1 billion people did not have access to safe drinking water, defined as the availability of at least 20

liters per person per day from a source within one kilometer of the user's dwelling. And two out of every five people did not have adequate sanitation facilities, such as a connection to a sewer or septic tank, or even a simple pit latrine. People in rural areas suffer the most. In 2000, only 40 percent of people living in rural areas were using adequate sanitation facilities, compared with 85 percent of urban inhabitants.<sup>15</sup>

As incomes rise, people gain access to non-food consumer items that indicate greater prosperity. Paper use, for example, tends to increase as people become more literate and as communications links increase. Globally, paper use increased more than sixfold between 1950 and 1997 and has doubled since the mid-1970s; the average Briton used 16 times more paper at the end of the twentieth century than at its start. Indeed, most of the world's paper is produced and consumed in industrial countries: the United States alone produces and uses a third of the world's paper, and Americans use more than 300 kilograms each annually. In developing nations as a whole, in contrast, people use 18 kilograms of paper each year. In India, the

annual figure is 4 kilos, and in 20 nations in Africa, it is less than 1 kilo. UNEP estimates that 30–40 kilos of paper are the minimum needed to meet basic literacy and communication needs.<sup>16</sup>

Rising prosperity also opens access to goods that promise new levels of comfort, convenience, and entertainment to millions. (See Table 1–5.) In 2002, 1.12 billion households, about three quarters of the world's people, owned at least one television set. Watching TV has become a leading form of leisure, with the average person in the industrial world spending three hours—half of their daily leisure time—in front of a television each day. The TV offers viewers access to local news and entertainment, but also exposure to countless consumer products that are shown in advertisements and during programs. And the view emerging from the screen is increasingly global in scope. Of the 1.12 billion households with TVs, 31 percent subscribed to a cable television service, often exposing them to a global entertainment culture.<sup>17</sup>

Many of these conveniences were considered luxuries when first introduced but are

**Table 1–5. Household Consumption, Selected Countries, Circa 2000**

Country	Household Consumption Expenditure	Electric Power	Television Sets	Telephone Mainlines	Mobile Phones	Personal Computers
	(1995 dollars per person)	(kilowatt-hours per person)		(per thousand population)		
Nigeria	194	81	68	6	4	7
India	294	355	83	40	6	6
Ukraine	558	2,293	456	212	44	18
Egypt	1,013	976	217	104	43	16
Brazil	2,779	1,878	349	223	167	75
South Korea	6,907	5,607	363	489	621	556
Germany	18,580	5,963	586	650	682	435
United States	21,707	12,331	835	659	451	625

SOURCE: See endnote 17.

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now perceived to be necessities. Indeed, where societal infrastructures have developed around them, some of these consumer goods have become integral to day-to-day life. Telephones, for example, have become an essential tool of communication—in 2002, there were 1.1 billion fixed-lines and another 1.1 billion mobile lines. A significant percentage of the world's people, including the vast majority of the world's global consumers, now has at least basic access to telephones. Communications have also advanced with the introduction of the Internet. This most recent addition to modern communications now connects about 600 million users.<sup>18</sup>

A large share of consumer spending focuses on goods that are arguably unnecessary for comfort or survival but that make life more enjoyable. These purchases include everything from seemingly minor daily indulgences, such as sweets and soda, to major purchases, such as ocean cruises, jewelry, and sports cars. Expenditures on these products are not necessarily an indictment of the global consumer class, since reasonable people can disagree on what constitutes excessive consumption. But the sums spent on them are an indication of the surplus wealth that exists in many countries. Indeed, figures on consumer spending at the extreme undercut the perception

that many of the unmet basic needs of the world's poor are too costly to address. Providing adequate food, clean water, and basic education for the world's poorest could all be achieved for less than people spend annually on makeup, ice cream, and pet food. (See Table 1–6.)<sup>19</sup>

The growing frenzy of consumption during the twentieth century led to greater use of raw materials, which complements household expenditures and numbers of consumers as a measure of consumption. Between 1960 and 1995, world use of minerals rose 2.5-fold, metals use increased 2.1-fold, wood products 2.3-fold, and synthetics, such as plastics, 5.6-fold. This growth outpaced the increase in global population and occurred even as the global economy shifted to include more service industries such as telecommunications and finance, which are not as materials-intensive as manufacturing, transportation, and other once-dominant industries. The doubling of metals use, for example, happened even as metals became less critical to generating wealth: in 2000, the global economy used 45 percent fewer metals than three decades earlier to generate a dollar's worth of economic output.<sup>20</sup>

Fuel and materials consumption reflects the same pattern of global inequity found in

**Table 1–6. Annual Expenditure on Luxury Items Compared with Funding Needed to Meet Selected Basic Needs**

Product	Annual Expenditure	Social or Economic Goal	Additional Annual Investment Needed to Achieve Goal
Makeup	\$18 billion	Reproductive health care for all women	\$12 billion
Pet food in Europe and United States	\$17 billion	Elimination of hunger and malnutrition	\$19 billion
Perfumes	\$15 billion	Universal literacy	\$5 billion
Ocean cruises	\$14 billion	Clean drinking water for all	\$10 billion
Ice cream in Europe	\$11 billion	Immunizing every child	\$1.3 billion

SOURCE: See endnote 19.



final goods consumption. The United States alone, with less than 5 percent of the global population, uses about a quarter of the world's fossil fuel resources—burning up nearly 25 percent of the coal, 26 percent of the oil, and 27 percent of the world's natural gas. Add consumption by other wealthy nations, and the dominance of just a few countries in global materials use is clear. In terms of metals use, the United States, Canada, Australia, Japan, and Western Europe—with among them 15 percent of the world's population—use 61 percent of the aluminum produced each year, 60 percent of lead, 59 percent of copper, and 49 percent of steel. Use is high on a per person basis as well, especially relative to use in poorer nations. The average American uses 22 kilograms of aluminum a year, while the average Indian uses 2 kilos and the average African, less than 1 kilo.<sup>21</sup>

Meanwhile, the world's growing appetite for paper makes increasing demands on the world's forests. Virgin wood stocks destined for paper production, for instance, account for approximately 19 percent of the world's total wood harvest and 42 percent of wood harvested for "industrial" uses (everything but fuelwood). By 2050, pulp and paper manufacture could account for over half of the world's industrial wood demand.<sup>22</sup>

Consumption of raw materials such as metals and wood could, in principle, be largely independent of the consumption of goods and services, since many products could be remanufactured or made from recycled materials. But materials in most economies in the twentieth century did not circulate for even a second or third use. Even today, recycling provides only a small share of the materials used in economies worldwide. About half of the lead used today comes from recycled sources, as does a third of the aluminum, steel, and gold. Only 13 percent of copper is

from recycled sources, down from 20 percent in 1980. Meanwhile, recycling of municipal waste generally remains low, even in nations that can afford recycling infrastructure. The 24 nations in the Organisation for Economic Co-operation and Development (OECD) that provide data on this, for example, have an average recycling rate of only 16 percent for municipal waste; half of them recycle less than 10 percent of their waste.<sup>23</sup>

Meanwhile, the share of total paper fiber supply coming from recycled fiber has grown only modestly, from 20 percent in 1921 to 38 percent today. This small increase, in the face of far greater increases in paper consumption, means that the amount of paper not recycled is higher than ever. In light of FAO projections that global paper consumption will increase by nearly 30 percent between 2000 and 2010, the share of paper that is recycled is especially critical, and it will have a large impact on the health of the world's forests in coming years.<sup>24</sup>

## Disparate Drivers, Common Result

The global appetite for goods and services is driven by a set of largely independent influences, from technological advances and cheap energy to new business structures, powerful communications media, population growth, and even the social needs of human beings. These disparate drivers—some are natural endowments, others accidents of history, still others human innovations—have interacted to send production and demand to record levels. In the process, they have created an economic system of unprecedented bounty and unparalleled environmental and social impact.

The story starts with the consumer. Mainstream economists since Adam Smith have claimed that consumers are "sovereign" actors who make rational choices in order to max-

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imize their gratification. Instead, consumers make imperfect decisions using a set of judgments that are shaped by incomplete and biased information. Their decisions are primarily driven by advertising, cultural norms, social influences, physiological impulses, and psychological associations, each of which can boost consumption.<sup>25</sup>

Physiological drives play a central role in stimulating consumption. The innate desire for pleasurable stimulation and the alleviation of discomfort are powerful motivators that have evolved over millennia to facilitate survival, as when hunger leads a person to search for food. These impulses are reinforced by consumers' experiences. Products that have satisfied us in the past are remembered as pleasurable, bolstering the desire to consume them again. In consumer societies where food and other goods are abundant, these impulses are leading to unhealthy levels of consumption, in part because they are further stimulated by advertising. Indeed, recent psychological studies have revealed that these impulses can even be primed subconsciously, arousing a desire for increased consumption, as for a thirst-quenching beverage after a feeling of thirst is aroused.<sup>26</sup>

Consumption habits also have social roots. Consumption is in part a social act through which people express their personal and group identity—choosing the newspaper of a particular political party, for instance, or the fashions favored by a peer group. Social motivators can be insatiable drivers of consumption, in contrast to the desire for food, water, or other goods, which is circumscribed by capacity limits. In 1954, the average Briton, for example, could count on an ample material base—enough food, clothing, shelter, and access to transportation to live a dignified life. So the increased spending that accompanied a doubling of wealth by 1994 was likely an attempt to satisfy social and psychological needs.

Beyond the first pair of shoes, for instance, shoe ownership may not be about protecting a person's feet but about comfort, style, or status. Such desires can be boundless and therefore have the potential of driving consumption ever upward.<sup>27</sup>

Cornucopian stocks of goods, the product of huge increases in production efficiency since the Industrial Revolution, further stimulate humans' social and psychological proclivity to consume. Modern industrial workers now produce in a week what took their eighteenth-century counterparts four years. Innovations such as Henry Ford's assembly line slashed production time per automobile chassis from 12.5 hours in 1913 to 1.5 hours in 1914—and have been greatly improved since then. Today, a Toyota plant in Japan rolls out 300 completed Lexuses per day, using only 66 workers and 310 robots. Efficiency increases like these have reduced costs dramatically and fueled sales. This is perhaps most evident in the semiconductor industry, where production efficiencies helped to drive the cost per megabit of computing power from roughly \$20,000 in 1970 to about 2¢ in 2001. Such order-of-magnitude increases in computing power at greatly reduced prices have spurred the modern computer revolution.<sup>28</sup>

Globalization has also lowered prices and stimulated consumption. Since 1950, successive rounds of trade negotiations have driven tariffs on many products steadily lower, with real consequences for individual consumers: Australians, for example, pay on average A\$2,900 less for a car today because of tariff reductions that took effect after 1998. And the World Trade Organization's 1996 Information Technology Agreement has eliminated tariffs entirely for most computers and other information technologies, often reducing a product's cost by 20–30 percent. The eight rounds of global trade negotiations

since 1950 are credited as a major spur to economic expansion worldwide.<sup>29</sup>

A globalizing world has also allowed large corporations to look across national borders for cheaper labor—and to pay workers as little as pennies per hour. (See Chapter 5.) Export processing zones (EPZs), minimally regulated manufacturing areas that produce goods for global commerce, have multiplied in the past three decades in response to the demand for inexpensive labor and a desire to boost exports. From 79 EPZs in 25 countries in 1975, the number expanded to some 3,000 in 116 nations by 2002, with the zones employing some 43 million workers who assemble clothing, sneakers, toys, and other goods for far less than it would cost in industrial nations. The zones boost the availability of inexpensive goods for global consumers, but are often criticized for fostering abuses of labor and human rights.<sup>30</sup>

Meanwhile, technological innovations of all kinds have increased production efficiency, often by raising the capacity of people and machinery to extract resources. Today's "supertrawler" fishing vessels, for example, can process hundreds of tons of fish per day. They are part of the reason that communities of many oceanic fish have suffered declines on the order of 80 percent within 15 years of the start of commercial exploitation. Mining equipment is also more muscular: in the United States, mining companies now engage in "mountaintop removal," which can leave a mountain dozens of meters shorter than its original height. In addition, the capacity of hauling trucks increased some eightfold, from 32 tons to 240 tons, between 1960 and the early 1990s. And output per U.S. miner more than tripled in the same period. Finally, chip mills—facilities that grind whole trees into wood chips for paper and pressed lumber products—can convert more than 100 truckloads of trees into chips every day. These

advances in humanity's ability to exploit vast swaths of resources, and at lower cost, help supply markets with inexpensive goods—a prod to greater consumption.<sup>31</sup>

**In consumer societies where food and other goods are abundant, impulses are leading to unhealthy levels of consumption.**

Cheap energy and improved transportation have also fueled production, lowering costs and facilitating increased distribution. Despite a spike in oil prices in the 1970s, the inflation-adjusted price of oil was only 7 percent higher in the 1997–2001 period than in 1970–74, for example. And reductions in transportation costs have helped make goods affordable to more people. Air freight rates dropped by nearly 3 percent annually for most international routes between 1980 and 1993, which helps to explain why perishables such as apples from New Zealand or grapes from Chile are now commonly found in European and North American supermarkets. Expanded markets also allow companies to increase the division of labor used in producing and delivering goods and services and to achieve greater economies of scale, each of which further lowers the costs of production.<sup>32</sup>

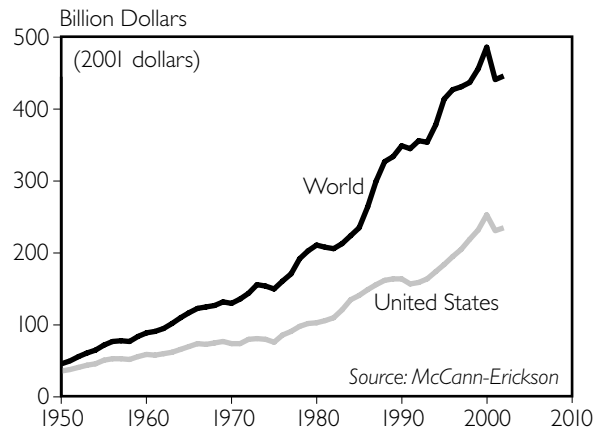
The unparalleled pace of these technological and transportation developments in the twentieth century led to increasingly rapid adoption of new products. In the United States, it took 38 years for the radio to reach an audience of 50 million people, 13 years for television to reach the same number, and only 4 years for the Internet to do the same. This has kept production lines humming in the information technologies industries, where Moore's Law—the rule of thumb that microprocessor capacity will dou-

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ble every 18 months—has prompted regular introductions of ever-more powerful computers and other digital products. The regular supply of new products, in turn, has prompted rapid turnover of these products in the last two decades—increasing consumption even further.<sup>33</sup>

Forces driving consumption are even found in the economic realities facing modern corporations. Most companies have substantial fixed costs—for heavy machinery, factory buildings, and delivery vehicles needed to produce and sell their products. Today's state-of-the-art semiconductor manufacturing plant, for instance, now costs around \$3 billion, a huge investment that must be paid for even when sales are poor. Fixed costs therefore represent financial risk. This danger can be reduced by increasing output and sales so that fixed costs are spread over a greater volume of products and a greater diversity of markets. Thus the ongoing pressure to cover fixed costs creates an urgency to expand production—and to find new customers to buy the steady output of goods.<sup>34</sup>

The need for new customers gives business a strong incentive to develop a host of new tools designed to stimulate consumer demand, many of which play on the physiological, psychological, and social needs of human beings. Advertising has perhaps been the most powerful of these tools. Today advertising pervades nearly all aspects of the media, including commercial broadcasting, print media, and the Internet. Global spending on advertising reached \$446 billion in 2002 (in 2001 dollars), an almost ninefold increase over 1950. (See Figure 1–1.) More than half of this is spent in the United States, where ads account for about two thirds of the space in the average newspaper, almost half of the mail that Americans receive, and



**Figure 1–1. Global and U.S. Advertising Expenditures, 1950–2002**

about a quarter of network television programming. But advertising is surging in the rest of the world as well. Non-U.S. advertising expenditures have risen three and a half times over 20 years, with emerging markets showing particularly rapid growth. In China, ad spending increased by 22 percent in 2002 alone.<sup>35</sup>

Advertising is increasingly targeted and sophisticated, as seen in efforts to place products in movies and television programs. In recent studies, more than half of the cases of new smoking among teenagers could be traced to their exposure to smoking in movies, for example. And despite a 1990 voluntary “ban” on product placements by the tobacco industry, in the United States actual placements have almost doubled, with 85 percent of the top 250 movies between 1988 and 1997 containing smoking. Indeed, smoking is three times more prevalent in the movies than in the actual U.S. population. With Hollywood earning perhaps half of its revenues from movie sales outside the United States, smoking in movies continues to shape global smoking patterns as well. And non-American studios increasingly serve as vehicles for

tobacco advertising. Some three fourths of the films produced between 1991 and 2002 by Bollywood (India's equivalent of Hollywood) included scenes with smoking.<sup>36</sup>

Innovative business practices have also helped boost consumer demand. The introduction of the credit card in the United States in the 1940s helped to increase total consumer credit almost elevenfold between 1945 and 1960. Today, heavy use of credit cards is promoted vigorously, since the profits of companies issuing the cards depend on having consumers maintain large monthly balances. In 2002, 61 percent of American credit card users carried an outstanding monthly balance, which on average was \$12,000 at an interest rate of 16 percent. (See Chapter 5.) At this rate, a cardholder would pay about \$1,900 a year in finance charges—more than the average per capita income (in purchasing power parity) in at least 35 countries.<sup>37</sup>

Credit is also spurring spending in Asia, Latin America, and Eastern Europe. In East Asia, the household share of total bank lending increased from 27 percent in 1997 to 40 percent in 2000. In several countries, major automobile manufacturers are expanding their product lines because of this explosion in credit lending. General Motors official Philip Murtaugh underlines the importance of credit in China: "Once we establish the type of comprehensive GM financing systems we have in the U.S., we expect to see a huge jump in purchases."<sup>38</sup>

Finally, government policies are sometimes responsible for priming the consumption pump. Economic subsidies, now totaling around \$1 trillion globally each year, can ripple throughout an economy, stimulating consumption along the way. The U.S. government, for instance, has subsidized suburban homebuilding since World War II with tax benefits and other enticements. Roomy suburban homes helped spur the consump-

tion of a wide array of consumer durables, including refrigerators, televisions, furniture, washing machines, and automobiles. Cars, in turn, require vast quantities of raw materials: a third of U.S. iron and steel, a fifth of the aluminum, and two thirds of the lead and rubber. And the spread of suburbs led to greater public spending for new roads, firehouses, police stations, and schools. The Center for Neighborhood Technology in Chicago found in the late 1990s that low-intensity development is about 2.5 times more materials-intensive than high-intensity development. Thus the decision to subsidize suburban homebuilding had a profound effect on U.S. consumption patterns in the last half of the twentieth century.<sup>39</sup>

## Problems in Paradise

In *Natural Capitalism*, their 1999 analysis of industrial economies, Paul Hawkins, Amory Lovins, and Hunter Lovins suggested that the United States generates a gargantuan amount of what the authors called "waste"—any expenditure for which no value is received. These outlays pay for a host of unintended byproducts of the American economic system, including air and water pollution, time spent idle in traffic, obesity, and crime, among many others. By the authors' calculations, this waste cost the United States at least \$2 trillion in the mid-1990s—some 22 percent of the value of the economy. The estimate can only be a rough one, but the analysis is useful in calling attention in a comprehensive way to the little-noticed underbelly of modern industrial economies. The environmental and social toll of industrial economies is becoming difficult to ignore.<sup>40</sup>

Indeed, the very existence of waste in the more traditional sense—from households, mines, construction sites, and factories—shows that industrial economies are defective

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in their design. In contrast to the goods and services produced by the millions of other species on our planet, which generate useful byproducts but not worthless waste, human economies are designed with little attention to the residuals of production and consumption. The impact of this design flaw is enormous, starting with the extraction process. For every usable ton of copper, for example, 110 tons of waste rock and ore are discarded. As metals become rarer, the wastes tend to increase: roughly 3 tons of

population, adds up to a lot of trash.<sup>42</sup>

Trends in resource use and ecosystem health indicate that natural areas are also under stress from growing consumption pressures. (See Table 1–7.) An international team of ecologists, economists, and conservation biologists published a study in *Science* in 2002 indicating that nearly all the world's ecosystems are shrinking to make way for humans and their homes, farms, malls, and factories. Seagrass and algae beds, the study says, are declining by 0.01–0.02 percent each year, tropical forests by 0.8 percent, marine fisheries by 1.5 percent, freshwater ecosystems (swamps, floodplains, lakes, and rivers) by 2.4 percent, and mangroves by a staggering 2.5 percent. It also cited large but harder to quantify annual losses of coral reefs, rangeland, and cropland. Only temperate and boreal forests showed a resurgence, increasing by 0.1 percent annually after decades of decline. Consistent findings of global environmental decline are found in the Living Planet Index, a tool developed by WWF International to measure the health of forests, oceans, freshwater systems, and other natural systems. The Index shows a 35-percent decline in the planet's ecological health since 1970. (See Figure 1–2.)<sup>43</sup>

One measure of the impact of human consumption on global ecosystems is provided by the “ecological footprint” accounting system, which measures the amount of productive land an economy requires to produce the resources it needs and to assimilate its wastes. Calculations done by the California-based group Redefining Progress show that Earth has 1.9 hectares of biologically productive land per person to supply resources and absorb wastes. Yet the environmental demands of the world's economies are so large that the average person today uses 2.3 hectares worth of productive land. This overall number masks, of course, a tremendous

**Nearly all the world's ecosystems are shrinking to make way for humans and their homes, farms, malls, and factories.**

toxic mining waste are produced in mining the amount of gold needed in a single wedding ring.<sup>41</sup>

Consumer waste is equally sobering, especially in wealthy countries. The average resident of an OECD country generates 560 kilos of municipal waste per year, and all but three of the 27 reporting countries generated more per person in 2000 than in 1995. Even in nations considered leaders in environmental policy, such as Norway, reducing waste flows is a continuing challenge. In 2002, the average Norwegian generated 354 kilograms of waste, 7 percent more than the previous year. The share of waste recycled also grew, but it has stalled at less than half of total waste generated. Meanwhile, Americans remain the world's waste champions, producing 51 percent more municipal waste per person than the average resident of any other OECD country. The glimmer of good news from the United States is that per person rates appear to have plateaued in the 1990s. Still, the high waste levels per American, coupled with continuing growth of the U.S.

**Table I-7. Global Natural Resource and Environmental Trends**

Environmental Indicator	Trend
Fossil fuels and atmosphere	Global use of coal, oil, and natural gas was 4.7 times higher in 2002 than in 1950. Carbon dioxide levels in 2002 were 18 percent higher than in 1960, and estimated to be 31 percent higher since the onset of the Industrial Revolution in 1750. Scientists have linked the warming trend during the twentieth century to the buildup of carbon dioxide and other heat-trapping gases.
Ecosystem degradation	More than half of Earth's wetlands, from coastal swamps to inland floodplains, have been lost, largely due to draining or filling for human settlements or agriculture. About half of the world's original forest cover is also gone, while another 30 percent of it is degraded or fragmented. In 1999, global use of wood for fuel, lumber, paper, and other wood products was more than double that in 1950.
Sea level	Sea level rose 10–20 centimeters in the twentieth century, an average of 1–2 millimeters per year, as a result of melting continental ice masses and the expansion of oceans due to climate change. Small island nations, though accounting for less than 1 percent of global greenhouse emissions, are at risk of being inundated by rising sea levels.
Soil/land	Some 10–20 percent of the world's cropland suffers from some form of degradation, while over 70 percent of the world's rangelands are degraded. Over the past half-century, land degradation has reduced food production by an estimated 13 percent on cropland and 4 percent from pasture.
Fisheries	In 1999, total fish catch was 4.8 times the amount in 1950. In just the past 50 years, industrial fleets have fished out at least 90 percent of all large ocean predators—tuna, marlin, swordfish, sharks, cod, halibut, skate, and flounder.
Water	Overpumping of groundwater is causing water tables to decline in key agricultural regions in Asia, North Africa, the Middle East, and the United States. The quality of groundwater is also deteriorating as a result of runoff of fertilizers and pesticides, petrochemicals that leak out of storage tanks, chlorinated solvents and heavy metals discarded by industries, and radioactive wastes from nuclear facilities.

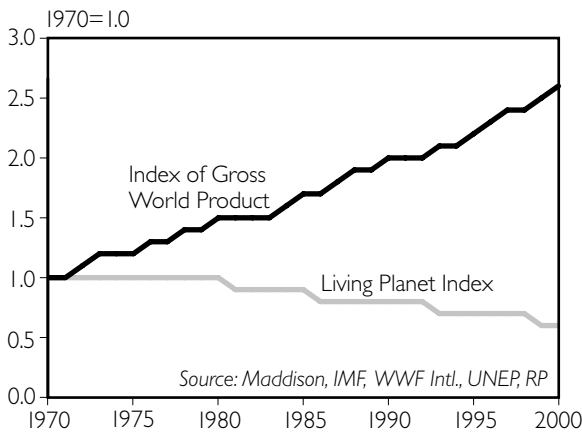
SOURCE: See endnote 43.

range of ecological footprints—from the 9.7 hectares claimed by the average American to the 0.47 hectares used by the average Mozambican. Footprint analysis shows that total consumption levels had already exceeded the planet's ecological capacity by the late 1970s or early 1980s. Such overconsumption is possible only by drawing down stocks of resource reserves, as when wellwater is pumped to the point that groundwater levels decrease.<sup>44</sup>

Aggressive pursuit of a mass consump-

tion society also correlates with a decline in health indicators in many countries. “Diseases of consumption” continue to surge. Smoking, for example, a consumer habit fueled by tens of billions of dollars in advertising, contributes to around 5 million deaths worldwide each year. In 1999, tobacco-related medical expenditures and productivity losses cost the United States more than \$150 billion—almost 1.5 times the revenue of the five largest multinational tobacco companies that year. Similarly, overweight

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**Figure 1-2. Changes in Economic Activity and Ecosystem Health, 1970–2000**

and obesity, generally the result of poor diet and an increasingly sedentary lifestyle, affect more than a billion people, lowering day-to-day life quality, costing societies billions in health care, and contributing to rapid increases in diabetes. In the United States, an estimated 65 percent of adults are overweight or obese, leading to an annual loss of 300,000 lives and to at least \$117 billion in health care costs in 1999.<sup>45</sup>

**The failure of additional wealth and consumption to help people have satisfying lives may be the most eloquent argument for reevaluating our approach to consumption.**

Overall “social health” has declined in the United States in the past 30 years as well, according to Fordham University’s Index of Social Health. This documents increases in poverty, teenage suicide, lack of health insurance coverage, and income inequity since 1970. And despite higher levels of consumption than in most other indus-

trial nations, the United States scores worse on numerous indices of development: it ranks last among 17 OECD countries measured in the U.N. Development Programme’s Human Poverty Index for industrial countries, for instance, which compiles indicators of poverty, functional illiteracy, longevity, and social inclusion.<sup>46</sup>

An OECD study has also documented disengagement from civic involvement in some industrial nations, especially the United States and Australia. In both countries, rates of membership in formal organizations have fallen, as has the intensity of participation in terms of meeting attendance and willingness to take on leadership roles. Meanwhile, informal social interactions—playing cards with neighbors, going on picnics, and the like—have also declined markedly in both countries, as have levels of trust among people and in institutions. The data on other prosperous countries are more encouraging, although early signs of social disengagement are evident. Organizational membership remains high in many European nations, but the level of involvement and of personal interaction has shown declines in some, and membership is often more transient than in the past. Even in Sweden, which appears to have strong social and community networks, signs of concern are appearing: political engagement is increasingly passive, and levels of trust in institutions are declining.<sup>47</sup>

Harvard Professor of Public Policy Robert Putnam has identified time limitations, residential sprawl, and high rates of television viewing as three features of American society that may explain a decline in civic engagement, together accounting for about half of the situation. All three are linked to high consumption: time pressures are often linked



to the need to work long hours to support consumption habits, sprawl is a function of car dependence and the desire for larger homes and properties, and heavy television viewing helps promote consumption through exposure to advertising and programming that often romanticizes the consumer lifestyle.<sup>48</sup>

Perhaps the most damning evidence that continued consumption is generating diminishing benefits is found in studies that compare the ever-rising level of personal wealth in rich countries with the stagnant share of people in these nations who claim to be “very happy.” Although self-reported happiness among the poor tends to rise with increased income, studies show that the linkage between happiness and rising income is broken once modest levels of income are reached. The failure of additional wealth and consumption to help people have satisfying lives may be the most eloquent argument for reevaluating our current approach to consumption.<sup>49</sup>

Disappointment in the ability of consumption to deliver lives of fulfillment is producing discontent among scholars, policymakers, and the public. A slew of books published in the 1990s documented dissatisfaction with societies organized around consumption. The titles tell the story: *The Overspent American*, *The Overworked American*, *An All-Consuming Century*, *Confronting Consumption*, and *The High Price of Materialism*, among others. Although the analyses differ, all these authors express the view that consumption-oriented societies are not sustainable, for environmental or social reasons.

Discontent with a commitment to high consumption was evident at the policy and grassroots levels as well. Several European governments are implementing or considering reforms to working hours and family leave benefits, for example. And some people in Europe and the United States are starting

to adopt simpler lifestyles. Slowly but steadily, people’s interest in recasting consumption in a supporting rather than the leading role is now evident.<sup>50</sup>

## A New Role for Consumption?

Despite the problems associated with a consumer society, and notwithstanding the tentative steps taken to shift societies to a less damaging path, most people in industrial countries are still on an upward consumption track, and many in developing countries remain mired in poverty. In order to advance the tentative interest in a new role for consumption, any vision will need to include responses to four key questions:

- Is the global consumer class experiencing a higher quality of life from its growing levels of consumption?
- Can societies pursue consumption in a balanced way, especially in putting consumption in harmony with the natural environment?
- Can societies reshape consumer options to offer genuine choice?
- Can societies make a priority of meeting the basic needs of all?

All things considered, are consumers benefiting from the global consumer culture? Individuals, the important arbiters of this question, might consider the personal costs associated with heavy levels of consumption: the financial debt; the time and stress associated with working to support high consumption; the time required to clean, upgrade, store, or otherwise maintain possessions; and the ways in which consumption replaces time with family and friends.

Individuals as well as policymakers might consider the seeming paradox that quality of life is often improved by operating within clear limits on consumption. Forests, for

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example, can be available to all indefinitely if they are harvested no faster than the rate of regrowth. Similarly, someone who adopts clear parameters of personal well-being—exercising daily and eating well, for example—is likely to have a higher quality of life than a person who consumes in an open-ended and unrestrained way. Indeed, the underlying premise of mass consumption economics—that unlimited consumption is acceptable, even desirable—is fundamentally at odds with life patterns of the natural world and with the teaching on moderation that is common to philosophers and religious leaders across many cultures and throughout much of human history.

**The underlying premise of mass consumption economics—that unlimited consumption is acceptable, even desirable—is fundamentally at odds with life patterns of the natural world.**

Second, is our consumption in balance economically, socially, and environmentally? In societies of mass consumption, laws and economic incentives often encourage people to cross key economic, environmental, and social thresholds. Banks and credit agencies urge consumers to take on heavy burdens of debt; businesses and individuals use forests, groundwater, and other renewable resources beyond their rates of renewal; and employers often reward workers for spending long hours on the job. Each of these excesses exacts a price in personal or societal well-being. Numerous imaginative ways for bringing consumption choices in better harmony with social and environmental needs—from legislation mandating levels of recycled content to product “take back” laws that make producers responsible for the products and waste

they create—are available.

Third, are consumers given genuine choices that help them to meet their needs? Clearly, mass consumption societies offer more products and services than any other economic system in human history. Yet consumers do not always find what they need. Consider transportation: safe and convenient access to just five transportation alternatives—walking, cycling, mass transit, car-sharing, or private cars—may offer more real options for getting people where they want to go than a choice of 100 models at a car dealership would. And where genuine choice is present, the most desirable choice may not be affordable, as happens with organic food in some countries. Governments need to reshape economic incentives and regulations to ensure that businesses offer affordable options that meet consumers’ needs. They also have a role in curbing consumption excess, primarily by removing incentives to consume—from subsidized energy to promotion of low-density development.

Last, can societies create a consumption ethic that gives priority to meeting the basic needs of all? Physical well-being—including sufficient access to healthy food, clean water and sanitation, education, health care, and physical security—is the foundation of all individual and societal achievement. Neglecting these basics will inevitably limit the capacity of many to realize their personal potential—and their ability to make meaningful contributions to society. In a world in which there are more people living on less than \$2 per day than there are in the global consumer class, the continued pursuit of greater wealth by the rich when there is little evidence that it increases happiness raises serious ethical questions.

Beyond the ethical imperative to care for all is a self-serving motive. Lack of attention to the needs of the poorest can result in

greater insecurity for the prosperous and in increased spending on defensive measures. The need to spend billions of dollars on wars, border security, and peacekeeping arguably is linked to a disregard for the world's pressing social and environmental problems. The same is true at the community level. Expenditures for private education, gated communities, and home alarm systems are just a few of the ways that failing to invest in the poorest comes back to haunt the wealthy. Meeting the basic needs of all, it

seems, is both right and smart.

Addressing these four questions would give consumption a less central place in our lives and would free up time for community building and strengthening interpersonal relationships—factors that psychologists tell us are essential for a satisfying life. By reorienting societal priorities toward improving people's well-being rather than merely accumulating goods, consumption can act not as the engine that drives the economy but as a tool that delivers an improved quality of life.