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Socialism Kills

The Human Cost of Delayed Economic Reform in India

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Executive Summary

As the world approaches the 20th anniversary of the fall of communism, it is worth investigating the costs borne by countries like India that did not become communist but drew heavily on the Soviet model. For three decades after its independence in 1947, India strove for self-sufficiency instead of the gains of international trade, and gave the state an ever-increasing role in controlling the means of production. These policies yielded economic growth of 3.5 percent per year, which was half that of export-oriented Asian countries, and yielded slow progress in social indicators, too. Growth per capita in India was even slower, at 1.49 percent per year. It accelerated after reforms started tentatively in 1981, and shot up to 6.78 percent per year after reforms deepened in the current decade.

What would the impact on social indicators have been had India commenced economic reform one decade earlier, and enjoyed correspondingly faster economic growth and improvements in human development indicators? This paper seeks to estimate the number of “missing children,” “missing literates,” and “missing non-poor” resulting from delayed reform, slower economic growth, and hence, slower improvement of social indicators. It finds that with earlier reform, 14.5 million more children would have survived, 261 million more Indians would have become literate, and 109 million more people would have risen above the poverty line. The delay in economic reform represents an enormous social tragedy. It drives home the point that India’s socialist era, which claimed it would deliver growth with social justice, delivered neither.

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India was greatly influenced by the Soviet Union.

Introduction

As the world approaches the 20th anniversary of the fall of communism, many analysts will recount the failure of Soviet policies that gave the State a commanding role in production, and discouraged foreign trade and investment as imperialist traps. Similar policies were also adopted by developing countries like India, which were socialist and not communist. India was greatly influenced by the success of the Soviet Union in building up its economic strength in the 1930s, even as Western countries plunged into the Great Depression.

India gained its independence in 1947. For the first three decades after India embarked on socialist planning in 1950, such policies yielded annual GNP growth of 3.5 percent and per capita growth of 1.49 percent. In the 1960s and 1970s, the four East Asian tigers (Korea, Taiwan, Singapore, and Hong Kong) achieved 7–8 percent annual GNP growth. Later, the mini-tigers of the Association of Southeast Asian Nations (Thailand, Malaysia, and Indonesia) also achieved 7–8 percent growth. So India's socialism made it an economic laggard in Asia. India's share of global exports fell from 2.2 percent at its independence in 1947 to 0.45 percent by 1985, but socialists viewed this as a success of self-sufficiency rather than a disastrous loss of the gains of trade.¹

India experimented with creeping economic reform in the 1980s, but the reforms became mainstream policy only after India's balance of payments crisis of 1991.² The fall of the Soviet Union that same year helped convince Indian politicians that more socialism could not be the way out of India's crisis, and Deng Xiaoping's successful market-oriented reforms in China showed that economic liberalization could yield major dividends. The Indian reform process was gradual and fitful, but its cumulative impact enabled India to become a miracle economy in 2003–2008, averaging almost 9 percent annual GNP growth, and more than 7 percent annual GNP growth per capita. This improved both incomes and social indicators.

How different would living standards and social indicators have been if India's reform process had begun one decade earlier? This paper estimates how many children would have been saved from death by lower infant mortality; how many more Indians would have become literate; and how many more people would have risen above the poverty line. Obviously, such counterfactual estimates cannot be precise. But they do give an idea of the human tragedy inflicted on the weak and poor by misguided policies.

The Case for Simple Estimates

History tells us that even tiny changes can have large, unanticipated effects. Pascal famously said that if Cleopatra's nose had been shorter, the history of the world would have been different. That is, she would not have been so beautiful;³ Mark Anthony would not have fallen in love with her; the civil war between Mark Anthony and Octavius would not have occurred; and so the whole of Roman history, and ultimately world history, would have been different. However, the theory of Cleopatra's nose has never stopped economists or historians from raising "what if" questions, and attempting to answer such questions on the basis of broad assumptions.

For instance, Amartya Sen, Nobel laureate in economics, has popularized the notion of "100 million missing women" on account of gender discrimination in developing countries.⁴ He has also done much to popularize the estimate that almost 30 million Chinese died because of Mao's blunders during the Great Leap Forward in 1958–61.⁵

It is worth quoting Sen's methodology for his estimate of "missing women":

To get an idea of the numbers of people involved in the different ratios of women to men, we can estimate the number of missing women in a country, say, China or India, by calculating the number of extra women who would

have been in China or India if these countries had the same ratio of women to men as obtained in areas of the world in which they receive similar care. If we could expect equal populations of the two sexes, the low ratio of 0.94 women to men in South Asia, West Asia, and China would indicate a 6-percent deficit of women; but since, in countries where men and women receive similar care, the ratio is about 1.05, the real shortfall is about 11 percent. In China alone this amounts to 50 million missing women, taking 1.05 as the benchmark ratio. When that number is added to those in South Asia, West Asia, and North Africa, a great many more than 100 million women are missing. These numbers tell us, quietly, a terrible story of inequality and neglect leading to the excess mortality of women.⁶

Now, such a methodology is obviously simplistic and open to objections. It does not control for a host of possible other influences on female mortality. Stephen J. Dubner and Steven D. Levitt, the well-known authors of *Freakonomics*, have highlighted an alternative explanation that was first put forward by Emily Oster, an economist at Chicago University.⁷ She suggested that the high proportion of male births in Asian countries may be due not so much to female foeticide (and other forms of gender discrimination) as to hepatitis B infections of mothers.⁸ Other scholars, like Monica Das Gupta, say Oster is guilty of gross exaggeration: the chances of a second child in China being male are far higher if the first child is a daughter than if it is a son, and this suggests selective foeticide rather than hepatitis B.⁹ A separate careful review of Sen's analysis by demographer Ansley Coale suggests that the number of missing women might be 60 million, not 100 million.¹⁰ Besides, several factors other than gender discrimination could affect the proportion of boys and girls born in any society. Hence any estimate of "missing women" is fraught with uncertainties.

Nevertheless, such estimates carry weight. Sen's analysis highlights, in simple language, the enormity of social disasters that can flow from gender discrimination. The key issue is not the precision of the data, but the magnitude of social disaster. Sen's estimate has been used in debates around the world, and his phrase "missing women" has become standard lexicon in gender discussions.

In the same spirit of inquiry—but without implicating Sen—I seek to estimate the number of "missing children," "missing literates," and "missing non-poor" in India. Infant mortality, illiteracy, and poverty have multiple causes, and it is difficult to quantify the impact of each cause. This leads to estimation uncertainties, as in Sen's exercise on missing women. Nevertheless, I make attempts to estimate the social impact of slow GNP growth arising from delayed economic reform.

Methodology¹¹

GNP growth in India was slow until 1980, but accelerated after economic reforms began in 1981 and gathered strength in 1991 when the reforms deepened.¹² India's per capita GNP growth was only 1.49 percent in the three decades from 1950 to 1980. In this period, socialism was the avowed policy of the government, the peak income-tax rate rose to a record 97.75 percent, several industries were nationalized, and the government sought to capture the commanding heights of the economy.

Mild economic liberalization helped per capita GNP growth accelerate to 2.89 percent per year in the 1980s. Per capita GNP growth accelerated further to 4.19 percent after substantial liberalization in the 1990s, and to 6.78 percent after 2001. What would have happened if the reform process had started earlier? When India achieved 3.5 percent growth in the 1950s, this was hailed by many economists as a tripling of the growth rate achieved in the final half-century of the British Raj. Socialists claimed this was vindication of India's economic strategy, which was inward-looking and

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public-sector dominated. However, in the 1960s, the East Asian tigers (South Korea, Taiwan, Singapore, and Hong Kong) grew at twice India's rate, showing the superior outcomes of economic policies that were outward-looking and private-sector friendly. Hence, India had every reason to commence economic liberalization by 1971, a decade before the process actually began.

This paper considers what would have happened if reforms had begun in 1971. It projects an early-reform, high-growth scenario in which the per capita GNP growth rate in each decade would have been as high as that actually achieved one decade later. That is, this scenario envisages that the trend per capita GNP growth rate actually achieved in the 1980s (2.89 percent per year) would have been achieved in the 1970s; the trend rate actually achieved in the 1990s (4.19 percent per year) would have been achieved in the 1980s; and the trend rate actually achieved in the early 21st century (6.78 percent per year) would have been achieved in the 1990s. I assume no further acceleration of growth for the 21st century. These conservative assumptions stay well within the limits of what, at the time, was achievable.

We can now pose the question: what would have happened to the three key parameters—the infant mortality rate, literacy rate, and poverty head-count ratio—had economic reform started a decade earlier?

From official Indian data, I calculate the elasticity of each of these three parameters with respect to per capita GNP (or the rate of change of each variable with respect to change in per capita GNP), and based on these elasticities, I then estimate how different things might have been had reforms come one decade earlier with accompanying income and social improvements. Specifically, I estimate the following in a high-growth scenario

- (a) How many infants would have died in each year from 1971 to 2008;
- (b) How many people would have become literate in each year; and
- (c) How many people would have risen above the poverty line each year.

The difference between these high-growth estimates and the actual outcomes then constitutes the “missing” people.

Per Capita Growth, Assuming Earlier Reform and Faster Growth

As a first step, I estimate per capita GNP in a fast-growth early-reform scenario, using the methodology explained in the earlier section. In this scenario, the growth rate in each decade is taken to be the one actually achieved in the next decade. Table 1 gives the details. With fast reform, per capita GNP in 2008 would have been 54,460 rupees (Rs) (\$1,089) against the actual outcome of Rs 28,970 (\$579) at 1999–2000 prices.¹³ For 2001–2008, the table assumes 6.78 percent growth, the rate actually achieved in 2001–2006. GNP growth per capita was faster (7–8 percent) in the years 2005 to 2007. But I assume an average of 6.78 percent for the decade, recognizing that the global recession will slow growth for the rest of the decade.

The Impact of Early Reforms on Infant Mortality

India's infant mortality rate (IMR) dropped from 132 per thousand births in 1971 to 53 per thousand in 2008. Over this 37-year period, the elasticity of IMR reduction with respect to the growth of per capita GNP was -0.82. That is, for every 1 percent increase in GNP per capita, IMR declined 0.82 percent. Based on this elasticity, I estimate infant mortality in a fast-growth, early-reform scenario (see Table 2). That allows us to calculate, year-by-year, the extra number of infants who died because of delayed reform. The cumulative number of infants who died because of delayed reform works out to 14.5 million. This can only be described as a human tragedy on a monumental scale.

Table 1
Estimate of GNP per Capita in a Fast-Reform Scenario

	Per capita population (millions)	GNP, Rs (hundreds)	Decadal average annual growth	Fast-reform, fast-growth scenario	Fast-reform scenario: per capita GNP, Rs (hundreds)
1971	548	85.8	1.49% for 1971–1980	2.89% for 1971–1980	85.8
1972	562	83.6			88.2
1973	575	85.5			90.8
1974	589	84.7			93.4
1975	602	90.3			96.1
1976	616	89.6			98.9
1977	629	94.2			101.8
1978	643	97.3			104.7
1979	656	90.2			107.7
1980	670	94.5			110.9
1981	683	97.8	2.89% for 1981–1990	4.19% for 1981–1990	115.5
1982	700	98.1			120.3
1983	716	103.6			125.4
1984	732	105.1			130.6
1985	749	107.2			136.1
1986	765	109.5			141.8
1987	781	110.7			147.7
1988	797	119.0			153.9
1989	814	123.7			160.4
1990	830	127.3			167.1
1991	846	126.5	4.19% for 1991–2000	6.78% for 1991–2000	178.4
1992	865	130.6			190.5
1993	883	135.5			203.5
1994	901	141.4			217.3
1995	919	148.7			232.0
1996	938	157.8			247.7
1997	956	161.9			264.5
1998	974	169.3			282.5
1999	992	176.9			301.6
2000	1010	180.8			322.1
2001	1029	187.7	6.78% for 2001–2006	6.78% for 2001–2008	344.0
2002	1047	192.3			367.3
2003	1065	205.5			392.2
2004	1083	217.4			418.8
2005	1102	234.7			447.2
2006	1120	254.0			477.6
2007	1138	273.7			510.0
2008	1156	289.7			544.6

Sources: Central Statistical Organization, Government of India; and Office of the Registrar-General and Census Commissioner.

Note: Per capita GDP is at 1999–2000 constant prices. Population is recorded in the census once in ten years, on a calendar-year basis. GNP is measured on a fiscal-year basis from April 1 to March 30. The data in the table for any listed year, say 1971, refer to population for the calendar year 1971 and per capita GNP for 1971–72. Figures have been extrapolated by simple averaging for years in between censuses/NSSO surveys.

Table 2
India's "Missing Children"

	IMR/1000	IMR/1000 with high growth	Infants born (millions)	Extra infant deaths due to delayed reform (millions)	Cumulative extra infant deaths due to delayed reform (millions)
1971	132		20.2		
1972	139	129	20.5	0.2	0.2
1973	134	126	20.8	0.2	0.4
1974	126	123	21.1	0.1	0.4
1975	140	120	21.4	0.4	0.9
1976	129	117	21.7	0.3	1.2
1977	130	114	22.0	0.3	1.5
1978	127	112	22.3	0.3	1.8
1979	120	109	22.6	0.3	2.1
1980	114	106	22.9	0.2	2.3
1981	110	103	23.2	0.2	2.4
1982	105	99	23.3	0.2	2.6
1983	105	96	23.5	0.2	2.8
1984	104	92	23.7	0.3	3.1
1985	97	89	23.9	0.2	3.3
1986	96	86	24.1	0.2	3.5
1987	95	83	24.2	0.3	3.8
1988	94	80	24.4	0.3	4.1
1989	91	78	24.6	0.3	4.4
1990	80	75	24.8	0.2	4.6
1991	80	71	25.0	0.2	4.8
1992	79	67	25.0	0.3	5.1
1993	74	63	25.1	0.3	5.4
1994	74	60	25.2	0.4	5.7
1995	74	56	25.3	0.5	6.2
1996	72	53	25.4	0.5	6.7
1997	72	50	25.5	0.6	7.2
1998	72	47	25.5	0.6	7.9
1999	70	45	25.6	0.6	8.5
2000	68	42	25.7	0.7	9.2
2001	66	40	25.8	0.7	9.9
2002	60	38	25.9	0.6	10.4
2003	59	36	26.0	0.6	11.0
2004	58	34	26.1	0.6	11.7
2005	58	32	26.1	0.7	12.4
2006	57	30	26.2	0.7	13.1
2007	55	28	26.3	0.7	13.8
2008	53	27	26.4	0.7	14.5

Source: Office of Registrar General and Census Commissioner.

Note: Some totals may not add up due to rounding. Total infants estimated from population and birth data.

The Impact of Faster Growth on Literacy

India holds a census every 10 years that yields definitive data on the literacy rate, defined as the proportion of those above the age of six who can read and write. I extrapolate from this census data to get literacy rates and the absolute number of literate people for the years in between censuses, and for the period after the 2001 census.

The elasticity of literacy improvement with respect to per capita GNP growth from 1971 to 2008 was 0.56. That is, for every 1 percent increase in GNP per capita, literacy improved by 0.56 percent. Applying this elasticity to the high-growth scenario, it is possible to estimate the literacy rate and number of literates in each year. This exercise suggests that earlier reforms and faster growth would have taken India to virtually 100 percent literacy by 2007, and made an additional 261 million people literate by 2008 (see Table 3). That is a huge figure, larger than the population of all but a few countries in the world.¹⁴

The fast-growth scenario assumes a uniform elasticity over the entire period. In fact, elasticity is volatile, thanks to lags and leads and the impact of many factors other than GNP growth. Actual literacy elasticity in the 1970s was higher than the average elasticity in the fast-growth scenario. That explains why Table 3 shows the number of literates falling in the 1970s in a fast-growth scenario. The low-base effect is evident: growth from a small base can look more rapid than growth from a large base, but that can prove misleading when other parameters are considered. In the decade 1971–1981, literacy improved from 37 percent to 46 percent, an increase of 9 percentage points, or 94 million literates. In the decade 1991–2001, literacy improved from 52.2 percent in 1991 to 64.8 percent in 2001, an increase of 12.6 percentage points, or 206 million literates. In terms of parameters like percentage-point increase and increase in the number of literates, the 1990s were clearly better for literacy than the 1970s.

Impact of Faster Growth on Poverty Reduction

The National Sample Survey Organization of India conducts household surveys every five to six years to assess the poverty head-count ratio (the proportion of people below the poverty line). I estimate the ratio for the years between surveys using simple averaging. In the time period being considered, the elasticity of the poverty head-count ratio with respect to per capita GNP growth was -0.68. That is, for every 1 percent growth of GNP per capita, poverty declined by 0.68 percent. By applying this elasticity to the higher-growth scenario, it is possible to calculate the extra number of people who would have risen above the poverty line had economic reforms begun a decade earlier (see Table 4).

Table 4 shows that delayed reform kept an additional 109 million people below the poverty line. Note also that while the poverty head-count ratio declined steadily through the years, the population also increased, and, in consequence, the absolute number of poor was virtually unchanged after more than three decades (it was 309 million in 1971 and 298 million in the survey of 2004). Had India benefited from earlier reforms and faster growth, the number of poor might have declined very substantially, from 309 million in 1971 to 197 million in 2004, and further to 174 million by 2008. This would have meant a huge decrease of 135 million in the absolute number of poor people between 1971 and 2008.

Are the Estimates Plausible?

I use a very simple methodology to estimate the fast-growth counterfactual. It does not, for instance, assume any change in population with faster growth. In fact, saving babies from death would increase the population, other things remaining constant. On the other hand, faster growth would also have improved female literacy and prosperity, two factors that tend to diminish the total fertility rate and hence,

The number of infants who died because of delayed reform can only be described as a human tragedy on a monumental scale.

Table 3
India's "Missing Literates"

	Literacy rate (%) for 6 + age group	No. of literates (millions)	Literacy rate with fast growth, %	No. of literates with fast growth (millions)	Additional literates if earlier reform (millions)
1971	37.0	156			
1972	37.9	164	37.6	163	-1.32
1973	38.8	173	38.2	170	-2.67
1974	39.7	182	38.8	178	-4.05
1975	40.6	191	39.4	185	-5.45
1976	41.5	200	40.1	193	-6.87
1977	42.4	210	40.7	201	-8.30
1978	43.3	219	41.4	210	-9.74
1979	44.2	229	42.0	218	-11.80
1980	45.1	239	42.9	227	-12.63
1981	46.0	250	43.7	237	-12.40
1982	46.6	260	44.7	249	-10.51
1983	47.2	270	45.8	262	-8.38
1984	47.9	281	46.8	275	-5.97
1985	48.5	291	47.9	288	-3.29
1986	49.1	302	49.1	302	-0.31
1987	49.7	313	50.2	316	2.97
1988	50.3	325	51.4	331	6.58
1989	51.0	336	52.6	346	10.53
1990	51.6	348	53.8	362	14.83
1991	52.2	359	55.8	384	24.85
1992	53.5	378	57.9	409	31.48
1993	54.7	397	60.1	436	38.99
1994	56.0	416	62.4	464	47.45
1995	57.3	436	64.7	493	56.93
1996	58.5	456	67.2	524	67.51
1997	59.8	477	69.7	556	79.25
1998	61.1	498	72.4	590	92.24
1999	62.3	520	75.1	626	106.56
2000	63.6	542	77.9	662	122.29
2001	64.8	565	80.9	704	139.54
2002	66.1	588	83.9	746	158.38
2003	67.4	611	87.1	790	178.92
2004	68.6	635	90.4	837	201.27
2005	69.9	660	93.8	885	225.52
2006	71.2	685	97.3	936	251.81
2007	72.4	710	100.0	981	271.23
2008	73.7	736	100.0	997	261.00

Source: Office of Registrar General and Census Commissioner.

Note: The literacy rate is the proportion of people above 6 years of age who can read and write. Literacy rates are projected onward from 2001 at the average change in 1991–2001. Figures may not always add up due to rounding.

Table 4
India's "Missing Non-poor"

	Headcount ratio (%)	No. below poverty line (millions)	Head-count ratio with fast growth (%)	Number below poverty line with fast growth (millions)	Number of fewer poor people with fast growth (millions)
1971	56.3	309			
1972	55.6	312	55.2	310	2
1973	54.9	316	53.9	311	5
1974	54.0	318	53.0	312	6
1975	53.1	320	52.0	313	7
1976	52.2	321	51.0	314	7
1977	51.3	323	50.0	314	9
1978	50.2	323	49.0	315	8
1979	49.0	322	48.0	315	7
1980	47.9	321	47.1	315	6
1981	46.8	320	45.7	312	8
1982	45.6	319	44.4	311	8
1983	44.5	318	43.1	309	10
1984	43.1	315	41.9	307	8
1985	41.7	312	40.7	305	7
1986	40.3	308	39.5	302	5
1987	38.9	304	38.4	304	3
1988	38.4	306	37.3	298	8
1989	37.9	308	36.3	295	13
1990	37.4	311	35.2	292	18
1991	36.9	313	33.6	284	28
1992	36.5	315	32.0	277	38
1993	36.0	318	30.6	270	48
1994	35.2	317	29.1	263	55
1995	34.4	317	27.8	255	61
1996	33.7	316	26.5	248	67
1997	32.9	314	25.3	242	73
1998	32.1	313	24.1	235	78
1999	31.4	311	23.0	228	83
2000	30.6	309	21.9	222	87
2001	29.8	307	20.9	215	92
2002	29.0	304	19.9	209	95
2003	28.3	301	19.0	203	98
2004	27.5	298	18.1	197	101
2005	26.7	294	17.3	191	104
2006	26.0	291	16.5	185	106
2007	25.2	287	15.7	179	108
2008	24.4	282	15.0	174	109

Source: National Sample Survey Organization. Figures may not always add up due to rounding.

Delayed reform kept an additional 109 million people below the poverty line.

reduce the population. I do not attempt to factor in the many virtuous cycles in social outcomes that could arise from rapid growth. For instance, rising incomes increase the demand, even from the poor, for education and health care from the private sector to supplement the very inadequate public services. Any reform process is replete with lags and leads, unanticipated twists and turns, and other complicating factors. Rapid GNP growth increases tax revenue and hence helps increase public spending on health and education, improving literacy and infant mortality (despite much waste in public spending). My limited aim in this paper is to demonstrate the magnitude of the social tragedy flowing from delayed reform.

Do the estimates look plausible? In the fast-growth scenario, the infant mortality rate falls from 132 per thousand births in 1971 to 27 per thousand births in 2008, compared with the actual achievement of 53 per thousand births. The fast-growth projection represents a reduction in the IMR of 80 percent over 37 years. By way of comparison, South Korea reduced its IMR from 90 per thousand births in 1960 (when its reforms began) to 6 per 1000 in 1995, a reduction of 93 percent over 35 years. My projected trends of both per capita GNP growth and IMR reduction in India are far lower than what South Korea actually achieved. So, the figure for “missing children” appears conservative.

The fast-growth estimates for literacy are based on a uniform elasticity of literacy to per capita GNP of 0.56 over the entire period. This is by no means fast. In fact, the actual pace of literacy improvement was faster than this between 1971 and 1986. Only in the years after 1986 does the high-growth scenario yield higher literacy rates. So, these estimates look quite conservative. They imply that India could have achieved virtually complete literacy by 2007 with earlier reforms.

Finally, the fast-growth estimates show the poverty rate declining from 56.3 percent in 1971 to 15.0 percent in 2008, against the recorded 27.5 percent in the 2004 survey and projected achievement of 24.4 percent in 2008.¹⁵ Even economists who emphasize that

growth alone is not enough, such as Joseph Stiglitz, agree that where redistribution mechanisms exist (as is the case in India), fast growth will reduce poverty.¹⁶ Hence, the fast-growth estimates look plausible.

I make no claims to great precision, but I do claim plausibility. Economists are familiar with the enormous power of compound interest, so they should not be surprised that faster GNP growth over 35 years would have yielded far better social outcomes than actually experienced.

Conclusion

India has suffered a major human tragedy because of its prolonged experiment with socialism, and its delay in introducing economic reforms that accelerated growth. The most horrifying consequence has been 14.5 million “missing children.” Almost as bad are the 261 million “missing literates” and 109 million “missing non-poor.”

This exercise is, by intention, a simple one. It is best seen as a first step in more detailed research on counterfactual scenarios. Models based on different assumptions might yield numbers for “missing children” that are higher or lower by several million, but these will, in any case, reflect an enormous human tragedy. Demographer Ansley Coale has revised Sen’s estimate of “missing women” from 100 million to 60 million, which is a big drop. Yet that has not reduced the importance or relevance of Sen’s original paper. If another analyst reworks my exercise in great detail and concludes that socialism killed “only” 11 million children and not 14.5 million, the point will still stand that delays in economic reform exacted a horrible toll.

The bloody history of the 20th century had no shortage of vicious tyrants who willfully killed millions. This was not the case in India, where socialist leaders were regarded, even by their critics, as benevolent and well-meaning. India’s socialists genuinely wanted to end the poverty and high infant mortality associated with the British Raj, and believed

that their ideology would rapidly achieve this aim. And yet these well-intentioned policies unwittingly killed millions of children. Verily, the way to hell is paved with good intentions.

Notes

Indicus Analytica helped prepare the tables in this paper. I wish to record my appreciation for its data gathering and number crunching.

1. Swaminathan S. Anklesaria Aiyar, *Escape from the Benevolent Zookeepers* (New Delhi: Times of India, 2008), p. 9.

2. See Arvind Panagariya, *India, the Emerging Giant* (New York: Oxford University Press, 2008), and "The Triumph of India's Market Reforms: The Record of the 1980s and 1990s," Cato Institute Policy Analysis no. 554, November 7, 2005.

3. A recent coin discovery in Egypt bearing Cleopatra's face has raised a new controversy: perhaps she was not really beautiful after all.

4. Amartya K. Sen, "More than 100 Million Women Are Missing," *New York Review of Books*, December 20, 1990.

5. Amartya K. Sen, "Democracy as a Universal Value," *Journal of Democracy* 10, no. 3 (July 1999): 3–17.

6. Sen, "More than 100 Million Women Are Missing."

7. Stephen Dubner and Steven Levitt, "The Search for 100 Million Missing Women," *Slate*, May 24, 2005.

8. Emily Oster, "Hepatitis B and the Case of Missing Women," *Journal of Political Economy* 113, no. 6 (2005): 1163–1216.

9. Monica Das Gupta, "Can Biological Factors like Hepatitis B Explain the Bulk of Gender Imbalance in China? A Review of the Evidence," *World Bank Research Observer* 23, no. 2 (2008): 201–17.

10. Ansley Coale, "Excess Female Mortality and the Balance of Sexes in the Population: An Estimated Number of Missing Females," *Population and Development Review* 7, (1991): 517–23.

11. The statistical analysis in this paper is based on data from government sources. Data are not always available for every year: in such cases, the missing values were filled in using simple trend analysis. India has a per capita GNP series at con-

stant prices with base year 1999–2000 (Central Statistical Organization, Government of India). Data for earlier years have noncomparable base years. I have made them broadly comparable in the following manner: the percentage change between two years was estimated using the series for which data were available for those two years, and on the basis of this percentage change the series with the base of 1999–2000 was estimated for earlier years as well. The annual growth trend for each decade was estimated by taking a trend over the concerned period (this is conducted in Microsoft Excel using the "logest" command). The Census of India provided the population of India as of the first week of March of the first year of every decade (1991, 2001, and so on). Population in intervening years was calculated by first estimating the annualized percentage decadal growth, and using this growth estimate to increase the population every year on a compounded basis. A similar estimation strategy was used to estimate the population above age six (the literacy rate in India refers to people above age six). The Head-Count Ratio is the percentage of the population below the poverty line, as defined by the Planning Commission of India, Government of India. These figures are available at roughly 5-year intervals. (Note: there was some controversy about the poverty estimates for the fiscal year 1999–2000, so they have not been used in this analysis.) The HCR in intervening years was estimated using a linear-growth model based on the percentage of people below the poverty line. The elasticity of poverty to GNP per capita growth is estimated as the trend percentage change in HCR for the period 1971 to 2008, divided by the trend growth in per capita GNP for the same period. Elasticity of literacy and infant mortality were similarly estimated, as trend growth in the literacy rate and infant mortality rate as a ratio of trend growth in per capita GNP.

12. The fact that economic reform began in India in 1980 rather than 1991, and yielded large productivity gains in the 1980s, is now established in the academic literature. For example, see Dani Rodrik and Arvind Subramanian, "From 'Hindu Growth' to Productivity Surge: The Mystery of the Indian Growth Transition," National Bureau of Economic Research Working Paper 10376, March 2004.

13. India's exchange rate was extremely volatile in the last year, ranging from 47 rupees to 52 rupees to the U.S. dollar. My dollar estimate of GNP per capita assumes an exchange rate of 50 rupees to the dollar.

14. The actual decline in literacy in the 1970s was exceptionally fast—even faster than the decline in my high-growth scenario—and was followed by much slower growth in the 1980s. Because of this,

my model gives negative numbers for literacy improvement for initial years in the table, followed by rapid improvement later on.

official estimates have been challenged by scholars like Surjit Bhalla. I ignore that debate and use the official data.

15. Major controversies abound over the appropriate way of estimating poverty in India, and the

16. Joseph Stiglitz, *Globalization and its Discontents* (New York: WW Norton, 2002).

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