

CHAPTER III

WORLD POPULATION GROWTH

Prior to the late eighteenth century, there was no spectacular increase in world population. In fact, human population can be said to have crawled at a snail's pace, through and most of the time. Situations eventually changed. After the Industrial Revolution, there was an acceleration in the growth of world population. The fruits of the Revolution - new utilisation of scientific knowledge about plants and livestock, extraordinary improvements in transportation, progress in medicine and sanitation - had allowed man to cope with famines and epidemic diseases, the two principal causes of high death rates. With a reduction in death rates, the traditional balance of high fertility and high mortality, ranging between 35 and 50, and between 30 and 40 per thousand, respectively, was thus upset. This imbalance therefore led to accelerated population growth.

In England and Wales, the cradle of the Revolution, death rates had fallen sharply from 30.0 in 1751 to 11.6 per thousand in 1950. (Table 2.1A) Together with the general mortality decline, infant deaths had also been reduced. Infant death rates in Great Britain had dropped from 145 in 1800 to 35 per thousand in 1950. (Table 2.1B) In other industrialised societies of Europe, and of the new European settlement in Northern America and Oceania, similar trend prevailed. For instance, the death rates of France were about 12.7 per thousand in 1950 while those of Germany, Denmark, Netherlands, and Norway were less than 10.0 per thousand in 1950. In Canada and the United States, the death rates were around 9.0 per thousand in 1950. As in the case of Great Britain, the general mortality decline in these industrialised countries was also accompanied by a drastic reduction in infant mortality. In France, infant mortality had declined from 149 in 1800 to 53 per thousand in 1950. The Revolution thus led to a great reduction in infant as well as adolescent mortality.

Hence, "the Industrial Revolution made gains possible in regard to what Savory calls 'normal death', that is, death in normal times. Progress in medicine and sanitation, better nutrition, and higher levels of living have practically eliminated many diseases and reduced the incidence of many others. The 'normal' death-rate has been pushed down and in industrial societies it tends to be below 15 per thousand."¹

¹Cipolla, Carlo M., The Economic History of World Population, Great Britain, 1965 P. 67-68.

	1731	1738	1751	1761	1768	1771	1781	1788	1795	1801	1808	1811	1818	1825	1831	1838	1845	1851	1858	1865	1871	1878	1885	1891	1898	1905	1911	1918	1925	1931	1938	1945	1951	1958	1965	1971	1978	1985	1991	1998	2005	2011
1731	1738	1751	1761	1768	1771	1781	1788	1795	1801	1808	1811	1818	1825	1831	1838	1845	1851	1858	1865	1871	1878	1885	1891	1898	1905	1911	1918	1925	1931	1938	1945	1951	1958	1965	1971	1978	1985	1991	1998	2005	2011	
1731	1738	1751	1761	1768	1771	1781	1788	1795	1801	1808	1811	1818	1825	1831	1838	1845	1851	1858	1865	1871	1878	1885	1891	1898	1905	1911	1918	1925	1931	1938	1945	1951	1958	1965	1971	1978	1985	1991	1998	2005	2011	
1731	1738	1751	1761	1768	1771	1781	1788	1795	1801	1808	1811	1818	1825	1831	1838	1845	1851	1858	1865	1871	1878	1885	1891	1898	1905	1911	1918	1925	1931	1938	1945	1951	1958	1965	1971	1978	1985	1991	1998	2005	2011	
1731	1738	1751	1761	1768	1771	1781	1788	1795	1801	1808	1811	1818	1825	1831	1838	1845	1851	1858	1865	1871	1878	1885	1891	1898	1905	1911	1918	1925	1931	1938	1945	1951	1958	1965	1971	1978	1985	1991	1998	2005	2011	

Date: 2007-10-04

Date: 2007-10-04

SOURCE:- Cipolla, The Economic History of World Peasants, Great Britain, 1860-1914.

TABLE 2.13

BIGEAD MORTALITY (TOTAL INFANT DEATHS PER THOUSAND LIVB BIRTHS)
IN SELECTED COUNTRIES, 1930, 1938 AND 1950

	1930	1938	1950
Sweden	290	95	22
New Zealand		147	26
Denmark		88	27
Norway		126	32
Switzerland		159	32
Great Britain		145	35
Finland		135	42
Austria	290	149	55
Ireland		155	55
Denmark		102	47
Germany		207	55
Austria		221	65
Italy		165	65
Spain		195	69
Western Europe (average)		148	45
New Zealand		75	23
Australia		97	34
United States		122	55
Canada		41	

TABLE 2.1D

INFANT MORTALITY (TOTAL INFANT DEATHS PER THOUSAND LIVE BIRTHS)
BY SELECTED COUNTRIES, 1800, 1900 AND 1950

	1800	1900	1950
Japan			60
China			61
Mexico			95
India		200	137
Chile		264	153

Sources—Cipolla, The Economic History of World Population,
 Great Britain, 1955, p. 85

On the contrary, birth rates, even though affected by the Revolutions, took a longer time to fall. The time lag, thus, caused a veritable population explosion. Now, let us assess the result of this explosion. In 1750 the total world population ranged somewhere between 800 and 750 million people (Table 2.3). In 1850 it was between 1,100 and 1,200 million. In 1900 it was around 1,600 million. In 1950 it was in the neighbourhood of 2,400 million. The average annual rate of growth was about 0.7 per cent in 1750-1900 and about 1 per cent in 1900-50. This is the first round of world demographic explosion, centered mainly in the European countries which were undergoing economic development.

A characteristic feature of this demographic explosion is the growing relative importance of the 'European stock' until the first half of the twentieth century. Professor Huntington refers the European stock as the "white or Saxonian" population of the earth. Their relative importance can be illustrated by the following figures:-

TABLE 2.2

THE RELATIVE IMPORTANCE OF EUROPEAN STOCK, 1800-1950²

YEAR	EUROPEAN STOCK	WORLD POPULATION
1800	200 millions	920 millions
1950	700 millions	2,400 millions

² Ibid., p. 103-104

ESTIMATES OF WORLD POPULATION BY NATIONS, 1900-1950

Billion Population in Millions

Year	Population		Current Population Estimates, Q
	Estimated Population	Actual Population	
1900	1728	1696	1800
1910	1845	1800	1910
1920	1975	1927	2020
1930	2112	2077	2150
1940	2257	2227	2319
1950	2400	2368	2476
1960	2546	2500	2650
1970	2690	2645	2800
1980	2828	2775	2975
1990	2960	2900	3100
2000	3091	3030	3200
2010	3211	3140	3300
2020	3327	3250	3400
2030	3440	3360	3500
2040	3550	3470	3600
2050	3660	3580	3700
2060	3770	3690	3800
2070	3877	3800	3900
2080	3975	3900	4000
2090	4072	4000	4100
2100	4169	4100	4200
2110	4266	4200	4300
2120	4363	4300	4400
2130	4460	4400	4500
2140	4557	4500	4600
2150	4654	4600	4700
2160	4751	4700	4800
2170	4848	4800	4900
2180	4945	4900	5000
2190	5042	5000	5100
2200	5139	5100	5200
2210	5236	5200	5300
2220	5333	5300	5400
2230	5430	5400	5500
2240	5527	5500	5600
2250	5624	5600	5700
2260	5721	5700	5800
2270	5818	5800	5900
2280	5915	5900	6000
2290	6012	6000	6100
2300	6109	6100	6200
2310	6206	6200	6300
2320	6303	6300	6400
2330	6400	6400	6500
2340	6497	6400	6500
2350	6594	6500	6600
2360	6691	6600	6700
2370	6788	6700	6800
2380	6885	6800	6900
2390	6982	6900	7000
2400	7079	7000	7100
2410	7176	7100	7200
2420	7273	7200	7300
2430	7370	7300	7400
2440	7467	7400	7500
2450	7564	7500	7600
2460	7661	7600	7700
2470	7758	7700	7800
2480	7855	7800	7900
2490	7952	7900	8000
2500	8049	8000	8100
2510	8146	8100	8200
2520	8243	8200	8300
2530	8340	8300	8400
2540	8437	8400	8500
2550	8534	8500	8600
2560	8631	8600	8700
2570	8728	8700	8800
2580	8825	8800	8900
2590	8922	8900	9000
2600	9019	9000	9100
2610	9116	9100	9200
2620	9213	9200	9300
2630	9310	9300	9400
2640	9407	9400	9500
2650	9504	9500	9600
2660	9591	9500	9600
2670	9688	9600	9700
2680	9785	9700	9800
2690	9882	9800	9900
2700	9979	9900	10000
2710	10076	10000	10100
2720	10173	10100	10200
2730	10270	10200	10300
2740	10367	10300	10400
2750	10464	10400	10500
2760	10561	10500	10600
2770	10658	10600	10700
2780	10755	10700	10800
2790	10852	10800	10900
2800	10949	10900	11000
2810	11046	11000	11100
2820	11143	11100	11200
2830	11240	11200	11300
2840	11337	11300	11400
2850	11434	11400	11500
2860	11531	11500	11600
2870	11628	11600	11700
2880	11725	11700	11800
2890	11822	11800	11900
2900	11919	11900	12000
2910	12016	12000	12100
2920	12113	12100	12200
2930	12210	12200	12300
2940	12307	12300	12400
2950	12404	12400	12500
2960	12501	12500	12600
2970	12698	12600	12700
2980	12795	12700	12800
2990	12892	12800	12900
3000	12989	12900	13000

ESTIMATES OF WORLD POPULATION IN MILLIONS

Estimated population in millions

	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300
Europe	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380
America	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Asia	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380
Africa	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Oceania	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

ESTIMATES OF WORLD POPULATION BY REGION 1850-1960

Series estimates and dates	Estimated Population in millions						
	World Total	Africa	Northern America	Latin America	Asia (excluding USSR)	Europe and Asiatic USSR	Oceania and Europe Settlement
Carre-Saunders, estimates ^a	1171	96	36	33	741	274	2
1850	1171	96	36	33	741	274	2
1900	1608	180	81	68	916	493	6
1947	2216	177	136	126	1069	530	10
UN's estimates ^b	1834	186	184	184	1164	132	784
1920	1834	186	184	184	1069	530	10
1930	2008	208	204	204	1216	152	963
1940	2216	177	177	177	1173	679	21
1950	2406	197	186	186	1272	694	13
1960	2635	212	200	200	1335	735	23

J. Williamson's "Studies in American Demography" (1960) p. 46

b. Carr-Saunders, "World Population" (1936) p. 48

c. UN, "Demographic Yearbook, 1949-50" (1960) p. 10

Sources - UN The Determinant and Consequences of Population Trend New York 1963. p. 11

From the above table, we can thus estimate that the Chinese or European population was about 22 per cent of the world's population in 1850 and about 35 per cent in 1950. After 1950, the European stock, however, began to decline substantially.

The Industrial Revolution, which had caused the first world demographic explosion, thus constituted a turning point in the history of world population. But now, the first round is over. The western countries have reached the demographic equilibrium of industrial type - with low death - and low birth rates. In North America, for instance, birth rates and death rates are about 25 per cent and 9 per cent, respectively (Table 2.4). Birth rates are low because the people in the developed countries know and practice birth control. Death rates, on the other hand, have been lowered because they have acquired the technical capacity to control disease. As a result of the equilibrium, the rates of population growth in the west are thus reduced. The population grows at the rate of 1% per cent annually in North America and at the rate of 3 per cent annually in Europe (Table 2.4).

Even though the demographic explosion in the industrial societies has disappeared, its disappearance does not retard the growth of world population. The world population still continues to increase, in fact at a more accelerating rate. The average annual rate of growth has increased rapidly from about 1.8 per cent in 1950-59 to 2.1 per cent in 1960-69 and it is now increasing much faster than ever. In other words, more than 90 million individuals are being added to the world population every year. The total world population today is over 3,000 million.

The acceleration in the growth of world population now is due to the fact that we are facing the rapid round of world demographic explosion, with the underdeveloped world as the centre. The population explosion or the so-called rapid upsurge in population,³ which occurs in the underdeveloped countries in the result of a dramatic enlargement of the "demographic gap". This gap is caused by the aftermath of the fall of the death-rate, combined with the fact that some of the "underdeveloped" countries are not prepared for the cultural changes that the Industrial Revolution implies (especially in regard to birth control)...."

³A definition made by Douglas Greenwood and Associates, in The McGraw-Hill Dictionary of Modern Economics, United States, 1955.

⁴Cipolla, Carlo R. op. cit., p. 69

Region	Population in millions 1950 (estimated)	Growth (%)		Population Growth (rates %)
		1950	1955	
World	3,652	35	38	2.0
Africa	356	47	55	2.2
North Africa	68	45	55	2.2
Tropical & South America	1,256	48	57	2.1
America	455	38	43	2.1
North America	159	35	39	2.0
Middle America	46	44	55	2.7
South America	290	42	49	2.3
Asia	2,673	41	48	2.0
South West	77	43	52	2.6
South Central	959	41	46	2.1
South East	224	41	51	2.0
East	639	40	49	2.0
Europe	417	29	31	0.8
North & West	342	32	34	0.7
Central	139	29	31	0.9
Southern	246	21	19	0.9
Oceania	27	24	29	2.4
Total	3,654	35	38	2.0

Source: *Review of Economic History of World Population, Great Britain*, 1955, p. 105.

In underdeveloped countries, the fall in death rates is not the product of economic development but the outcome of the application of modern methods of disease control, including vaccination, chemotherapy and administration, control of insect vectors and elementary improvements in hygiene. These modern methods of disease control which have been adopted recently from the west, thus reduce death rates. It has been observed that the underdeveloped areas are experiencing more rapid declines than did their predecessors. Why is it so?

"In Europe knowledge of disease control was slowly developed... In the underdeveloped countries, the accumulated knowledge of two centuries is suddenly available and death rates have fallen much faster than they ever did in Western Europe. In Ceylon, to quote an extreme but sobering case, the malaria mosquito has been wiped out by DDT and deaths fell from 22 to 12 per thousand in the seven years from 1949 to 1956 (immediately after spraying with DDT the death rate fell from 20 to 14 per thousand in the single year 1946-47), a fall which took seventy years in England and Wales. In Mauritius a fall from 27 to 15 deaths per thousand, which took hundred years to achieve in England and Wales, also came about in the seven years."⁵

The death rates in underdeveloped countries are thus very low (table 2.5). For instance, in 1956, they were 9.9 per thousand in Puerto Rico, 11.7 per thousand in Costa Rica, and 15.7 per thousand in Chile. These death rates are expected to decline further.

Hence, the precipitous decline in mortality, unaccompanied by measurable change in fertility accelerates the annual rates of natural growth in these underdeveloped countries. The rates of growth in these countries range between 2 per cent and 2.5 per cent per year (Table 2.4) For most cases, the rates centre around 3 per cent. The population increase of Rhodesia, for example, is even more than 3 per cent per year.⁶ In Philippines, Thailand, Taiwan, Korea, Ceylon, and Central America, the average rates of population growth are definitely more than 2 per cent. As the mortality decline is more rapid in the underdeveloped countries, their rates of population growth are higher than those experienced by the industrial countries in their early years of economic development. In 1850-51, the average natural increase in Ceylon, Costa Rica, El Salvador, Malaya, Mauritius, Puerto Rico, Taiwan and many others were around 27.5 per thousand per year. In England and Wales, however, the figure was not more than 15 per thousand in 1850-51 (table 2.6)

⁵ F.D.P., World Population and Rehabilitation, London, 1956, p.12

⁶ See Monthly Statistical Bulletin of the Statistics of Malaya, February, 1956, Kuala Lumpur.

ESTIMATED NATURAL MIGRATION IN AND OUT CONSEQUENCE OF MATH 1960-60.

AMERICA AND AFRICA 1960-60

Country	1950		1955		1960		1965		1970		1975		1980		1985		1990		1995		
	In	Out																			
Argentina	-1.2	-1.3	-1.2	-1.4	-1.1	-1.3	-0.9	-1.0	-0.8	-0.9	-0.7	-0.8	-0.5	-0.6	-0.3	-0.4	-0.2	-0.3	-0.1	-0.2	-0.1
Bolivia	-0.5	-0.6	-0.5	-0.6	-0.5	-0.6	-0.4	-0.5	-0.4	-0.5	-0.4	-0.5	-0.3	-0.4	-0.2	-0.3	-0.1	-0.2	-0.1	-0.2	-0.1
Brazil	-0.8	-0.9	-0.8	-0.9	-0.8	-0.9	-0.7	-0.8	-0.7	-0.8	-0.7	-0.8	-0.6	-0.7	-0.5	-0.6	-0.3	-0.4	-0.2	-0.3	-0.2
Chile	-0.5	-0.6	-0.5	-0.6	-0.5	-0.6	-0.4	-0.5	-0.4	-0.5	-0.4	-0.5	-0.3	-0.4	-0.2	-0.3	-0.1	-0.2	-0.1	-0.2	-0.1
Colombia	-0.5	-0.6	-0.5	-0.6	-0.5	-0.6	-0.4	-0.5	-0.4	-0.5	-0.4	-0.5	-0.3	-0.4	-0.2	-0.3	-0.1	-0.2	-0.1	-0.2	-0.1
Ecuador	-0.5	-0.6	-0.5	-0.6	-0.5	-0.6	-0.4	-0.5	-0.4	-0.5	-0.4	-0.5	-0.3	-0.4	-0.2	-0.3	-0.1	-0.2	-0.1	-0.2	-0.1
El Salvador	-0.5	-0.6	-0.5	-0.6	-0.5	-0.6	-0.4	-0.5	-0.4	-0.5	-0.4	-0.5	-0.3	-0.4	-0.2	-0.3	-0.1	-0.2	-0.1	-0.2	-0.1
Greece	-0.5	-0.6	-0.5	-0.6	-0.5	-0.6	-0.4	-0.5	-0.4	-0.5	-0.4	-0.5	-0.3	-0.4	-0.2	-0.3	-0.1	-0.2	-0.1	-0.2	-0.1
Honduras	-0.5	-0.6	-0.5	-0.6	-0.5	-0.6	-0.4	-0.5	-0.4	-0.5	-0.4	-0.5	-0.3	-0.4	-0.2	-0.3	-0.1	-0.2	-0.1	-0.2	-0.1
Mexico	-0.5	-0.6	-0.5	-0.6	-0.5	-0.6	-0.4	-0.5	-0.4	-0.5	-0.4	-0.5	-0.3	-0.4	-0.2	-0.3	-0.1	-0.2	-0.1	-0.2	-0.1
Nicaragua	-0.5	-0.6	-0.5	-0.6	-0.5	-0.6	-0.4	-0.5	-0.4	-0.5	-0.4	-0.5	-0.3	-0.4	-0.2	-0.3	-0.1	-0.2	-0.1	-0.2	-0.1
Panama	-0.5	-0.6	-0.5	-0.6	-0.5	-0.6	-0.4	-0.5	-0.4	-0.5	-0.4	-0.5	-0.3	-0.4	-0.2	-0.3	-0.1	-0.2	-0.1	-0.2	-0.1
Peru	-0.5	-0.6	-0.5	-0.6	-0.5	-0.6	-0.4	-0.5	-0.4	-0.5	-0.4	-0.5	-0.3	-0.4	-0.2	-0.3	-0.1	-0.2	-0.1	-0.2	-0.1
Uruguay	-0.5	-0.6	-0.5	-0.6	-0.5	-0.6	-0.4	-0.5	-0.4	-0.5	-0.4	-0.5	-0.3	-0.4	-0.2	-0.3	-0.1	-0.2	-0.1	-0.2	-0.1
Venezuela	-0.5	-0.6	-0.5	-0.6	-0.5	-0.6	-0.4	-0.5	-0.4	-0.5	-0.4	-0.5	-0.3	-0.4	-0.2	-0.3	-0.1	-0.2	-0.1	-0.2	-0.1

Source - UN, Data, International Migration and Consequences of Population Trends, 1968, p. 26

NATURAL INCREASE FOR (DIFFERENT) PERIODS, DEVELOPED AND UNDERDEVELOPED COUNTRIES

Countries	Average natural increase per 1000 per year				
	1735-59	1800-49	1880-99	1890-1919	1940-49
Industrial					
England & Wales	-	10.2	12.7	6.5	6.5
Denmark	2.8	8.5	12.2	10.9	10.9
Norway	6.6	9.3	14.0	9.0	9.0
Sweden	6.6	8.1	11.8	6.9	6.9
Switzerland	-	-	7.9	7.0	7.0
Average	6.0	9.0	11.7	8.1	8.1
Underdeveloped:					
Barbados	-	-	-	14.7	18.6
Seychelles	-	-	-	19.9	27.8
Costa Rica	-	-	-	27.6	37.3
Cyprus	-	-	-	19.6	20.2
Egypt	-	-	-	16.1	26.0

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Interest rates in percent per year

Interest rates in percent per year

Interest rates

Interest rates in percent per year

NATURAL INCREASE FOR DIFFERENT PERIODS DIVIDED AM UNDEVELOPED COUNTRIES

Countries	Average natural increase per 1000 per year				
	1960-64 per cent	1960-69 per cent	1960-74 per cent	1960-79 per cent	1960-84 per cent
Average	21.3	27.8	21.3	27.8	21.3

SOURCE: Maxima, Economic Development, Allentown, 1963 p.165

TABLE 2.7

PERCENTAGE OF WORLD POPULATION IN EACH OF 8 MAJOR AREAS 1930-50

Area	1930	1935	1940	1945	1950
World Total	100	100	100	100	100
Newly Developed Areas	22.6	22.7	22.8	22.8	22.6
Russia	17.6	17.6	16.5	15.6	14.2
Soviet Union	8.3	8.6	8.5	7.1	7.2
Northern America	6.2	6.5	6.3	6.6	6.7
Canada	0.5	0.5	0.5	0.5	0.5
Less Developed Areas	67.4	67.3	68.2	70.2	71.4
East Asia	28.7	28.6	27.6	27.2	26.3
South Asia	25.2	25.5	25.6	27.7	28.7
Africa	7.7	7.9	8.5	8.8	9.1
Latin America	4.3	5.2	5.7	6.5	7.1

SOURCE—UN, Provisional Report on World Population Prospects as Assessed in 1950, New York, 1951, p. 35

As a result of the second population explosion, the population of the underdeveloped regions is becoming relatively important. According to table 2.7 their population was about 67.4 per cent in 1950, 68.7 per cent in 1960, and 71.4 per cent in 1970. Since the population of the underdeveloped countries is increasing their share in the total world population, the percentage for the developed countries has decreased. It has fallen from 31.8 per cent in 1950 to 28.6 per cent in 1970. The growing relative importance of the people of the developing countries and the decreasing relative importance of the developed which are the characteristic features of the second phase of the world demographic explosion.

Finally, we may note that the unprecedented rates of population growth in the underdeveloped countries, which caused the world demographic explosion, are likely to increase further. The expected rates would not only result in the increase in numbers but also would aggravate the present population problem. A recent United Nations report stated that the growth of world population during the next 25 years.... is at the very heart of our existence. G.P. Shaw writes of "the three problems which stand in our way--famine, overpopulation, the gap between rich and poor".⁷ The world population growth thus poses a threat to human survival.

⁷ Macmillan, Hugh, op.cit., p.3