Kuznets Waves: A Definition

The objective of this chapter is to propose an extension of the Kuznets hypothesis which I label the Kuznets wave or cycle (the terms will be used interchangeably), and which I believe is able to explain, in general terms, changes in inequality in the period prior to the Industrial Revolution, the subsequent period up to the Reagan-Thatcher revolution, and the most recent period. I shall argue that the modern historical era, the past five hundred years, is characterized by Kuznets waves of alternating increases and decreases in inequality.

Before the Industrial Revolution, when mean income was stagnant, there was no relationship between mean income level and the level of inequality. Wages and inequality were driven up or down by idiosyncratic events such as epidemics, new discoveries (of the Americas or of new trade routes between Europe and Asia), invasions, and wars. If inequality decreased as mean income and wages went up and the poor became slightly better off, Malthusian checks would be triggered: the population would increase to unsustainable levels and would ultimately be driven down (as the average per capita income declined) by higher mortality rates among the poor. This would push the poor back to subsistence level and raise inequality to its previous (higher) level. In the case of wars, when the mean income of a society is very low, there are only two possibilities: either most of the costs are borne by the rich and inequality decreases, or the income of the poor falls below the subsistence level, in which case population drops. It is not unreasonable to assume that, no matter how exploitative rulers were, and how indifferent to the fate of the poor, very few societies could afford the second solution. It is also a self-defeating policy, since a population decline means a reduction in the number of able-bodied males who could be pressed into the military. This is why the first solution would be preferable, and why we expect wars in preindustrial societies to have often led to a reduction in inequality.[5]

In a nutshell, for the period before the Industrial Revolution, I argue that inequality moved in Kuznets waves undulating around a basically fixed

average income level. Kuznets waves are related to but not the same as Malthusian waves. In a Malthusian cycle, higher mean income and lower inequality (with real wages going up) triggers a population increase among the poor that, in turn, reduces their wages, pushes inequality up, and checks further population growth. Unlike Malthusian cycles, however, Kuznets cycles can be driven by nondemographic factors, such as modest growth or an influx of gold, which at first increase the gap between landlords and traders on the one hand, and workers on the other, but then push inequality down as labor gets scarcer. Kuznets cycles may be thought of as a broad concept that subsumes Malthusian cycles in special cases where the "action" that drives inequality up or down takes place almost entirely through the change in the denominator (population).

With the Industrial Revolution and the sustained increase in the mean income, the situation changes and wages generally increase *pari passu* with income (or, during the Golden Age of Capitalism, even faster). There are two important implications of the Industrial Revolution for the behavior of income inequality.

First, inequality now can increase more than before because a higher total income allows a part of the population to enjoy much higher incomes without driving everybody else below the starvation point. Higher total income simply gives more "space" for inequality to increase, assuming that everybody must have at least a subsistence income. This idea underlies the "inequality possibility frontier" as defined by Milanovic, Lindert, and Williamson (2011): when the mean income is just slightly above subsistence and we "require" that population not decline, then the surplus above subsistence must be small, and even if entirely taken by the elite, it cannot result in huge inequality (measured across the entire population). This is because all but a tiny elite will have the same income. But as the mean income rises, the surplus above the subsistence level increases as well, and the possible, or feasible, inequality becomes greater. The inequality possibility frontier is a locus of *maximum feasible* inequality levels (measured by the Gini coefficient) that obtain for different values of mean income. The frontier is concave: maximum feasible inequality increases with mean income but at a decreasing rate. Figure 2.2 shows the

relationship: for a mean income level equal to subsistence, the maximum Gini coefficient is 0. It then gradually increases as mean income exceeds subsistence, and when it exceeds it by 15–20 times, the maximum Gini coefficient is close to 1 (or to 100 if expressed in percent).[6]
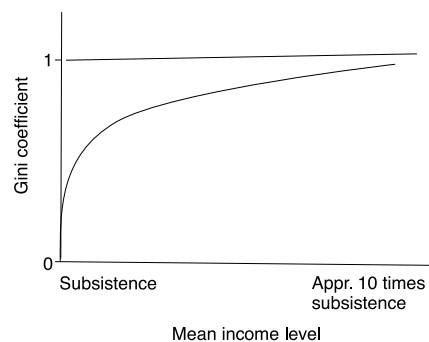

FIGURE 2.2. Inequality possibility frontier: the locus of maximum feasible Gini coefficients as a function of mean income level

This graph shows the maximum feasible inequality (measured by the Gini coefficient) for various levels of average per capita income. Maximum feasible inequality is defined as maximum inequality under the condition that no person has an income lower than subsistence.

Second, after the Industrial Revolution, inequality and mean income entered into a relationship that was absent before, when the mean income was fixed. I argue that a structural change (movement into a much more diversified manufacturing sector) and urbanization, along the lines proposed by Kuznets, drove inequality up starting from the time of the Industrial Revolution to a peak in the rich countries which occurred at the end of the nineteenth century or the beginning of the twentieth.

After that point, again as proposed by Kuznets, inequality decreased as the supply of more-educated labor and the demand for redistribution increased, and return on capital (which was always closely associated with higher inequality) went down.[7] This was a "benign" mechanism (resulting from economic and demographic forces) that reduced inequality. But there was also a "malign" mechanism (consisting of wars and revolutions) that pushed inequality down in the rich countries after World War I. I argue that it is the interplay of these two mechanisms (malign and benign) that explains the downward portion of the first Kuznets wave—the decline in inequality

that occurred throughout the rich world during most of the twentieth century and is often referred to as the Great Leveling. The downward movement was precipitated by a malign mechanism (the First World War), which itself, as we shall see later in this chapter, was the product of large domestic inequalities. The downward slide then continued thanks to the economic and social forces set into motion by the war. The combination of malign and benign forces, or war and welfare—the two ways by which inequality can be reduced in modern societies—will play an important role in our explanation of past, but also future, changes in inequality.[8]

The forces that drove inequality down after World War I had come to an end by the 1980s, the period around which we date the beginning of the second Kuznets curve for the rich countries (i.e., for postindustrial societies). The 1980s ushered in a new (second) technological revolution, characterized by remarkable changes in information technology, globalization, and the rising importance of heterogeneous jobs in the service sector. This revolution, like the Industrial Revolution of the early nineteenth century, widened income disparities. The increase in inequality happened in part because the new technologies strongly rewarded more highly skilled labor; drove up the share of, and the return to, capital; and increasingly opened the economies of rich countries to competition from China and India (the effects of which we saw in Chapter 1). The structure of demand, and thus of jobs, moved toward services, which in turn were staffed by less qualified and worse-paid labor. On the other hand, some service sector jobs, as in finance, were extremely highly paid. This widened wage, and ultimately income, distribution.[9]

In addition, pro-rich policies reinforced these trends. One could regard such policies as exogenous to the technological revolution and globalization, but that would be wrong. The new policies that started in the early 1980s were not driven so much by dissatisfaction with the performance of the welfare state (which was their original and ostensible rationale) as by the process of globalization, inherent in the information revolution. If dislike of a bloated welfare state had been the reason for reducing tax rates on high incomes and for taxing capital income at a lower rate than labor income (in a throwback to the period before the French

Revolution), then the size of the state would have been diminished and the process would eventually have come to a halt once the "government" was sufficiently reduced in size. But neither happened. The size of the welfare state, despite attracting much criticism during the Reagan-Thatcher era, and even later during the "New Labour" or the "new Democrat" eras of Tony Blair and Bill Clinton, did not change much.[10] The tax policies, however, remained in place. The reason why they did so was economic necessity. In the era of information technology and globalization, it is simply more difficult to tax mobile capital that, with freely accessible information and the global reach of banks and stock markets, can easily move from one jurisdiction to another.[11] In a reversal of the well-known adage of Karl Marx that "proletarians have no homeland," it could be said that in the present era, capital and capitalists have no homeland. Capital has thus become much more difficult to control and tax. This has exacerbated the increase in inequality.

A summary of the malign and benign forces that lower inequality in preindustrial, industrial, and postindustrial societies is shown in Table 2.1. The main difference between the two types of forces is that benign forces are lacking in societies with a stagnant mean income. It is only in growing economies that forces of rising education, greater political participation, and an aging population demanding social protection impart downward pressure on income inequality. In other words, it is not accidental that societies with higher (and growing) income are also societies that have a higher level of education and greater political rights and have gone through the demographic transition. Among the benign forces, I also list low-skill-biased technological change. I will have more to say about it at the end of this chapter, but this force is one, I believe, that has not been sufficiently explored and might hold some promise for the future. For historical reasons, we are used to thinking of technological progress as capital-driven, embodied in machines, and either complementing high-skilled labor (and thus raising the wage premium) and/or replacing low-skilled labor and thus producing the same effect of increasing the wage gap. We cannot exclude the possibility that some types of technological progress may enhance the productivity of low-skilled labor and thus be pro-poor. But it has been hard

to identify what these might be.

TABLE 2.1. Malign and benign forces that reduce inequality

Type of society	Malign forces	Benign forces
Societies with stagnant mean income	*Idiosyncratic events* Wars (through destruction) Civil conflict (state breakdown) Epidemics	
Societies with a rising mean income	Wars (through destruction and higher taxation) Civil conflict (state breakdown)	Social pressure through politics (socialism, trade unions) Widespread education Aging population (demand for social protection) Technological change that favors low-skilled workers

When it comes to malign forces, however, there is more similarity between preindustrial and modern societies because war and civil conflict play a role in both stagnant and expanding economies. The effect of wars on inequality in preindustrial societies probably varied depending on whether they were wars of conquest, like the ones prosecuted by the Roman Empire at its peak, which led to increased inequality through the creation of servile labor, or wars that resulted in state collapse and thus reduced inequality. In other words, in preindustrial economies wars could be either pro- or anti-inequality. In modern times, because of mass mobilization, destruction of property, and progressive taxation, wars are (or have been so far) inequality-reducing. However, as the nature of war changes and as wars begin to affect fewer people because of the formation of professional armies, the future effects of wars on inequality might change too.
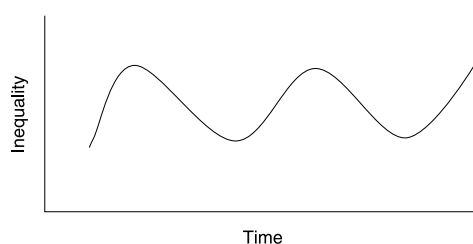
FIGURE 2.3. Expected pattern of changes in inequality over time, from the preindustrial through the postindustrial period

This graph shows regular cycles of inequality unfolding over time.

Another malign force, disease, has been more important in stagnant than in expanding economies. The massive epidemics that have destroyed so many lives in preindustrial societies and thus have often led to increases in real wages and declines in inequality have, luckily, been absent in more developed societies. Outbreaks of diseases like HIV/AIDS and Ebola have not had a demonstrable effect on reducing inequality in rich countries.

In a highly stylized way, what we expect to find when we consider inequality over time is a cyclical pattern, as shown in Figure 2.3.

But when we look at changes in inequality versus income per capita (where income is really a proxy for structural changes such as industrialization or the movement of people from rural to urban areas), we expect to find a pattern such as that shown in Figure 2.4.[12]

At low income levels (say, below $1,000 or $2,000 per year in 1990 international dollars), there would be both increases and decreases of inequality while the mean income is stagnant, resulting in a scrambled picture resembling a noise signal.[13] But with the first and second technological revolutions, we would expect to find a much clearer picture of rises and then declines in inequality with increasing income.
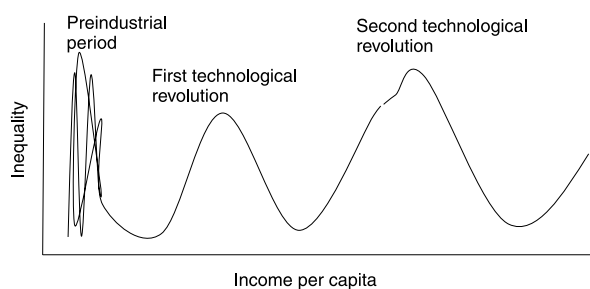

FIGURE 2.4. Expected pattern of changes in inequality versus income per capita from the preindustrial through the postindustrial period and into the future (dotted line)

This graph shows that the pattern of regular cycles of inequality unfolding over time (as shown in Figure 2.3) changes when inequality is plotted against mean income instead of time. Changes in inequality versus mean income are irregular in preindustrial societies but shift into regular cycles in industrial and postindustrial societies.

An interesting question to ask is what might happen if the growth rate decelerated and fell to zero, and the economy became stagnant, but at a much higher level of income than in stagnant preindustrial economies. It is not inconceivable that Kuznets cycles would continue to take place against the background of an unchanging mean income, producing a picture similar to the one we have for preindustrial economies.

In the next section, I discuss the movement of Kuznets waves before the Industrial Revolution. I shall, rather conventionally, set the middle of the nineteenth century as the borderline between preindustrial and modern times (for societies that underwent the Industrial Revolution at that time).[14] As in many similar works on inequality which operate at a high level of abstraction, I have to rely on relatively few pieces of evidence. Even so, the evidence is incomparably more abundant than when Kuznets was writing in 1955. We can chart probable movements of inequality over several centuries for a dozen countries. To this empirical substantiation of my claim I now turn.