# Chapter I.

Influence Of The Progress Of Industry And Population On Values And Prices.

§ 1. Tendency of the progress of society toward increased Command over the powers of Nature; increased Security, and increased Capacity of Co-Operation.

In the leading countries of the world, and in all others as they come within the influence of those leading countries, there is at least one progressive movement which continues with little interruption from year to year and from generation to generation--a progress in wealth; an advancement in what is called material prosperity. All the nations which we are accustomed to call civilized increase gradually in production and in population: and there is no reason to doubt that not only these nations will for some time continue so to increase, but that most of the other nations of the world, including some not yet founded, will successively enter upon the same career. It will, therefore, be our first object to examine the nature and consequences of this progressive change, the elements which constitute it, and the effects it produces on the various economical facts of which we have been tracing the laws, and especially on wages, profits, rents, values, and prices.

Of the features which characterize this progressive economical movement of civilized nations, that which first excites attention, through its intimate connection with the phenomena of Production, is the perpetual, and, so far as human foresight can extend (1), the unlimited, growth of man's power over nature. Our knowledge of the properties and laws of physical objects shows no sign of approaching its ultimate boundaries: it is advancing more rapidly, and in a greater number of directions at once, than in any previous age or generation, and affording such frequent glimpses of unexplored fields beyond as to justify the belief that our acquaintance with nature is still almost in its infancy.

Another change, which has always hitherto characterized, and will assuredly continue to characterize, the progress of civilized society, is (2) a continual increase of the security of person and property. Of this increased security, one of the most unfailing effects is a great increase both of production and of accumulation. Industry and frugality can not exist where there is not a preponderant probability that those who labor and spare will be permitted to enjoy.

One of the changes which most infallibly attend the progress of modern society is, (3) an improvement in the business capacities of the general mass of mankind. I do not mean that the practical sagacity of an individual human being is greater than formerly. What is lost in the separate efficiency of each is far more than made up by the greater capacity of united action. Works of all sorts, impracticable to the savage or the half-civilized, are daily accomplished by civilized nations, not by any greatness of faculties in the actual agents, but through the fact that each is able to rely with certainty on the others for the portion of the work which they respectively undertake. The peculiar characteristic, in short, of civilized beings, is the capacity of co-operation; and this, like other faculties, tends to improve by practice, and becomes capable of assuming a constantly wider sphere of action.

[This progress affords] space and scope for an indefinite increase of capital and production, and for the increase of population which is its ordinary accompaniment. That the growth of population will overpass the increase of production, there is not much reason to apprehend. It is, however, quite possible that there might be a great progress in industrial improvement, and in the signs of what is commonly called national prosperity; a great increase of aggregate wealth, and even, in some respects, a better distribution of it; that not only the rich might grow richer, but many of the poor might grow rich, that the intermediate classes might become more numerous and powerful, and the means of enjoyable existence be more and more largely diffused, while yet the great class at the base of the whole might increase in numbers only, and not in comfort nor in cultivation. We must, therefore, in considering the effects of the progress of industry, admit as a supposition, however greatly we deprecate as a fact, an increase of population as long-continued, as indefinite, and possibly even as rapid, as the increase of production and accumulation.

§ 2. Tendency to a Decline of the Value and Cost of Production of all Commodities.

The changes which the progress of industry causes or presupposes in the circumstances of production are necessarily attended with changes in the values of commodities.

The permanent values of all things which are neither under a natural nor under an artificial monopoly depend, as we have seen, on their cost of production. (1.) But the increasing power which mankind are constantly acquiring over nature increases more and more the efficiency of human exertion, or, in other words, diminishes cost of production. All inventions by which a greater quantity of any commodity can be produced with the same labor, or the same quantity with less labor, or which abridge the process, so that the capital employed needs not be advanced for so long a time, lessen the cost of production of the commodity. As, however, value is relative, if inventions and improvements in production were made in all commodities, and all in the same degree, there would be no alteration in values.

As for prices, in these circumstances they would be affected or not, according as the improvements in production did or did not extend to the precious metals. If the materials of money were an exception to the general diminution of cost of production, the values of all other things would fall in relation to money--that is, there would be a fall of general prices throughout the world. But if money, like other things, and in the same degree as other things, were obtained in greater abundance and cheapness, prices would be no more affected than values would.

As regards the precious metals, it is to be said that since 1850 there has been a vast increase in their amount, and probably in greater proportion than the need arising from increased transactions. This is certainly true of silver; and it is admitted to be true of gold as late as about 1865. It has been asserted by Mr. Goschen that since then, especially since 1873, gold has not existed in a quantity that would permit it to keep its former proportions to commodities, and that it had appreciated. An appreciation, of course, would show itself in lower gold prices. On the other hand, gold has, as I think, not appreciated. Prices, even in the collapse of credit after the panic of 1873 down to 1879, were not quite so low as in 1845-1850, as is seen by the following table taken from the London "Economist"--2,200 indicating the price of a given number of articles in 1845-1850, as the basis of the table with which the prices of other years are compared:

Year. Index numbers. 1845-1850 2,200 1857, July 1 2,996 1858, January 1 2,612 1865 3,575 1866 3,564 1867 3,024 1868 2,682 1869 2,666 1870 2,689 1871 2,590 1872 2,835 1873 2,947 1874 (Depression) 2,891 1875 (Depression) 2,778 1876 (Depression) 2,711 1877 (Depression) 2,723 1878 (Depression) 2,529 1879 (Depression) 2,202 1880 2,538 1881 2,376 1882 2,435 1883 2,343

But the progress of society, particularly in the direction of improved and cheapened processes of manufacturing, has vastly lowered the cost of a great number of articles of common consumption. The process has been already seen in the diminished charge for railway transportation (see Chart No. V). Moreover, the years of a depression are exactly those in which there is always a forced economy, and generally form a period in which cheapening goes on at its best. Hence, if prices have had a tendency to fall, owing to the lowered cost of production consequent on improvements--and if they are not, as a rule, lower than in 1850--it shows that they are still supported by the high tide of the great gold production of this century. And even the access to more fertile land in the world has acted to prevent an increase in the prices of agricultural products such as would offset the fall of manufactured goods. That is, the fact that prices have not fallen as much as might be expected, indicates that the gold has prevented the lower costs due to the progress of industry from being fully seen.

Improvements in production are not the only circumstance accompanying the progress of industry, which tends to diminish the cost of producing, or at least of obtaining, commodities. (2.) Another circumstance is the increase of intercourse between different parts of the world. As commerce extends, and the ignorant attempts

to restrain it by tariffs become obsolete, commodities tend more and more to be produced in the places in which their production can be carried on at the least expense of labor and capital to mankind. (3.) Much will also depend on the increasing migration of labor and capital to unoccupied parts of the earth, of which the soil, climate, and situation are found, by the ample means of exploration now possessed, to promise not only a large return to industry, but great facilities of producing commodities suited to the markets of old countries. Much as the collective industry of the earth is likely to be increased in efficiency by the extension of science and of the industrial arts, a still more active source of increased cheapness of production will be found, probably, for some time to come, in the gradually unfolding consequences of Free Trade, and in the increasing scale on which Emigration and Colonization will be carried on.

From the causes now enumerated, unless counteracted by others, the progress of things enables a country to obtain, at less and less of real cost, not only its own productions but those of foreign countries. Indeed, whatever diminishes the cost of its own productions, when of an exportable character, enables it, as we have already seen, to obtain its imports at less real cost.

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§ 3. --except the products of Agriculture and Mining, which have a tendency to Rise.

Are no causes of an opposite character, brought into operation by the same progress, sufficient in some cases not only to neutralize but to overcome the former, and convert the descending movement of cost of production into an ascending movement? We are already aware that there are such causes, and that, in the case of the most important classes of commodities, food, and materials, there is a tendency diametrically opposite to that of which we have been speaking. The cost of production of these commodities tends to increase.

This is not a property inherent in the commodities themselves. If population were stationary, and the produce of the earth never needed to be augmented in quantity, there would be no cause for greater cost of production.(295) The only products of industry which, if population did not increase, would be liable to a real increase of cost of production, are those which, depending on a material which is not renewed, are either wholly or partially exhaustible, such as coal, and most if not all metals; for even iron, the most abundant as well as most useful of metallic products, which forms an ingredient of most minerals and of almost all rocks, is susceptible of exhaustion so far as regards its richest and most tractable ores.

When, however, population increases, as it has never yet failed to do, then comes into effect that fundamental law of production from the soil on which we have so frequently had occasion to expatiate, the law that increased labor, in any given state of agricultural skill, is attended with a less than proportional increase of produce. The cost of production of the fruits of the earth increases, *cæteris paribus*, with every increase of the demand.

Mr. Cairnes has made some essential contributions to the discussion of changes of value arising from the progress of society:(296) "When a colony establishes itself in a new country, the course of its industrial development naturally follows the character of the opportunities offered to industrial enterprise by the environment. These will, of course, vary a good deal, according to the part of the world in which the new society happens to be placed; but, speaking broadly, they will be such as to draw the bulk of the industrial activity of the new people into some one or more of those branches of industry which have been conveniently designated 'extractive.' Agriculture, pastoral and mining pursuits, and the cutting of lumber, are among the principal of such industries." To these pursuits apply "that law of Political Economy, or, more properly, of physical nature, which Mr. Mill has rightly characterized as the most important proposition in economic science--the law, as he phrased it, of 'diminishing productiveness.' It may be thus briefly stated: In any given state of the arts of production, the returns to human industry employed upon natural agents will, up to a certain point, be the maximum which those natural agents, cultivated with the degree of skill brought to bear upon them, are capable of yielding; but, after this point has been passed, though an increased application of labor and capital will obtain an increased return, it will not obtain a proportionally increased return; on the contrary, every further increase of outlay--always assuming that the skill employed in applying it continues

the same as before--will be attended with a return constantly diminishing.... What I am now concerned to show is the manner in which, with the progress of society, the law in question affects the course of normal(297) values in all commodities coming under its influence.

"The class of commodities in the production of which the facilities possessed by new communities, as compared with old, attain their greatest height, are those of which timber and meat may be taken as the type, and comprises such articles as wool, game, furs, hides, horns, pitch, resin, etc. The circumstance which most powerfully affects the course of values in the products of extractive industry, and in the commodities just referred to among the rest, is the degree in which they admit of being transported from place to place--that is to say, their *portableness*--depending, as it does, partly on their durability and partly on their bulk." It is found that, taking timber and meat as a type--one possessing portableness in a vastly greater degree than the other--in the early settlement of a new country, the portable article, like timber, at once rises in price "to a level lower than that prevailing in old countries only by the cost of transport"; on the other hand, perishable articles like meat are "confined for a market, if not to the immediate locality where it is produced, at least to the bordering countries; and, being raised in new countries at very low cost, their value during the early stages of their growth is necessarily low. But, as population advances, and agriculture encroaches on the natural pasture-lands originally available for the rearing of cattle, still more as it becomes necessary to cultivate land for the purpose of pasture, the cost of meat constantly rises." As population increases there will be an increased demand for dairy-products, eggs, small fruits, fresh vegetables, milk, etc., and thereby it becomes more profitable to employ land near populous centers for such perishable products than for the products of large farming. Almost every one, who knows the high prices of butter, eggs, and vegetables in large cities as compared with their prices in country districts, is familiar with the phenomena which illustrate this principle. Moreover, as a denser population settles on our Western prairies, now given over to ranches and vast pasturing-grounds for cattle--since cattle in general require a large extent of land--the cost of meat will rise. The prices of perishable articles, therefore, will rise without any limit except that set by increasing numbers, and can not be kept down by the force of competition from other distant places, as is the case with such easily transportable things as timber and wool. What has been said of the transportableness of meat, however, is to be modified somewhat by the introduction of improved processes of transporting meat in refrigerator-cars; but there still exist commodities of which meat was only taken as a type.

No tendency of a like kind exists with respect to manufactured articles. The tendency is in the contrary direction. The larger the scale on which manufacturing operations are carried on, the more cheaply they can in general be performed. As manufactures, however, depend for their materials either upon agriculture, or mining, or the spontaneous produce of the earth, manufacturing industry is subject, in respect of one of its essentials, to the same law as agriculture. But the crude material generally forms so small a portion of the total cost that any tendency which may exist to a progressive increase in that single item is much overbalanced by the diminution continually taking place in all the other elements; to which diminution it is impossible at present to assign any limit.

It follows that the exchange values of manufactured articles, compared with the products of agriculture and of mines, have, as population and industry advance, a certain and decided tendency to fall. Money being a product of mines, it may also be laid down as a rule that manufactured articles tend, as society advances, to fall in money price. The industrial history of modern nations, especially during the last hundred years, fully bears out this assertion.

In regard to manufactures, as opposed to raw products, it is to be remarked "that, as the course of price in the field of raw products is, on the whole, upward, so in that of manufactured goods the course is, not less strikingly, in the opposite direction. The reasons of this are exceedingly plain. In the first place, *division of labor*--the first and most powerful of all cheapeners of production, but for which there is in extractive industry but very limited scope--finds in manufacturing industry an almost unbounded range for its application; and, secondly, it is in manufacturing industry also that *machinery*, the other great cheapener of production, admits of being employed on the largest scale, and has, in fact, been employed with the most signal success. It

follows at once from these facts, taken in connection with the further fact that industrial invention does not take place *per saltum*, but gradually--one invention ever treading on the heels of another--and that its advance seems to be subject to no limitation; it follows, I say, from these considerations, that that portion of the cost of manufactured goods which properly belongs to the manufacturing process must, with the progress of society, undergo constant diminution.... In all the great branches of manufacturing industry the portion of the cost incurred in the manufacturing process bears in general a large proportion to that represented by the raw material, while the influence of industrial invention, in reducing this portion of the cost, is, as every one knows, great and unremitting in its action."

As has been said, "the two great cheapeners of production are division of labor and machinery, and the degree in which these admit of being applied to manufacture is mainly dependent upon the scale on which the manufacturing process is carried on. Those manufactures, therefore, that are produced upon a large scale are the sort of manufactures in which we may expect the greatest reduction in cost; in which, therefore, the fall in price, with the progress of society, will be most marked. But the manufactures which are produced upon the largest scale are those for which there exists the largest demand--that is to say, are those which enter most extensively into the consumption of the great mass of people. They are also, I may add, those in which a fall in price is apt to stimulate a great increase of demand. All the common kinds of clothing, furniture, and utensils fall within the scope of this remark; and it is in these, rather than in the commodities consumed exclusively or mainly by the richer classes, that we should, accordingly, expect to find the greatest marvels of cheapening." But the articles of common consumption are those in which "the amount of manufacture bestowed upon them bears a smaller proportion to the raw material than is the case with the more elaborate manufactures. Such coarser manufactures, therefore, would feel the effects of the advancing cost of the raw material more sensibly than the refined sorts. Nevertheless, it can not be supposed to compensate the advantages due to the causes I have pointed out which fall to the share of the commoner sorts. It is in this class of goods that the most remarkable reductions in price have been accomplished in the past, and it is in them, probably, that we shall witness in the future the greatest results of the same kind."

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§ 4. --that tendency from time to time Counteracted by Improvements in Production.

Whether agricultural produce increases in absolute as well as comparative cost of production depends on the conflict of the two antagonist agencies--increase of population and improvement in agricultural skill. In some, perhaps in most, states of society (looking at the whole surface of the earth), both agricultural skill and population are either stationary, or increase very slowly, and the cost of production of food, therefore, is nearly stationary. In a society which is advancing in wealth, population generally increases faster than agricultural skill, and food consequently tends to become more costly; but there are times when a strong impulse sets in toward agricultural improvement. Such an impulse has shown itself in Great Britain during the last fifteen or twenty years [before 1847]. In England and Scotland agricultural skill has of late increased considerably faster than population, insomuch that food and other agricultural produce, notwithstanding the increase of people, can be grown at less cost than they were thirty years ago; and the abolition of the Corn Laws has given an additional stimulus to the spirit of improvement. In some other countries, and particularly in France, the improvement of agriculture gains ground still more decidedly upon population, because though agriculture, except in a few provinces, advances slowly, population advances still more slowly, and even with increasing slowness, its growth being kept down, not by poverty, which is diminishing, but by prudence.

Moreover, the cheapened cost of transportation has admitted to England and the Continent the wheat supplies of our Western States at a low price even after having been carried to transatlantic markets. New methods of getting food-supplies from foreign countries act equally with improvements at home.

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§ 5. Effect of the Progress of Society in moderating fluctuations of Value.

Thus far, of the effect of the progress of society on the permanent or average values and prices of commodities. It remains to be considered in what manner the same progress affects their fluctuations.

Concerning the answer to this question there can be no doubt. It tends in a very high degree to diminish them.

In poor and backward societies, as in the East, and in Europe during the middle ages, extraordinary differences in the price of the same commodity might exist in places not very distant from each other, because the want of roads and canals, the imperfection of marine navigation, and the insecurity of communications generally, prevented things from being transported from the places where they were cheap to those where they were dear. The things most liable to fluctuations in value, those directly influenced by the seasons, and especially food, were seldom carried to any great distances. In most years, accordingly, there was, in some part or other of any large country, a real dearth; while a deficiency at all considerable, extending to the whole world, is [now] a thing almost unknown. In modern times, therefore, there is only dearth, where there formerly would have been famine, and sufficiency everywhere when anciently there would have been scarcity in some places and superfluity in others.

The same change has taken place with respect to all other articles of commerce. The safety and cheapness of communications, which enable a deficiency in one place to be supplied from the surplus of another, at a moderate or even a small advance on the ordinary price, render the fluctuations of prices much less extreme than formerly. This effect is much promoted by the existence of large capitals, belonging to what are called speculative merchants, whose business it is to buy goods in order to resell them at a profit. These dealers naturally buying things when they are cheapest, and storing them up to be brought again into the market when the price has become unusually high, the tendency of their operations is to equalize price, or at least to moderate its inequalities. The prices of things are neither so much depressed at one time, nor so much raised at another, as they would be if speculative dealers did not exist.

Mr. Mill uses the term "speculative" in a different sense from that which is customary in this country. Merchants who buy outright and store up grain are not speculators in the sense in which the word is used with us; but those gamblers who purchase, "for future delivery," grain which they never see, and which they sell in the same way, are here known as speculators.

It appears, then, that the fluctuations of values and prices arising from variations of supply, or from alterations in real (as distinguished from speculative) demand, may be expected to become more moderate as society advances. With regard to those which arise from miscalculation, and especially from the alternations of undue expansion and excessive contraction of credit, which occupy so conspicuous a place among commercial phenomena, the same thing can not be affirmed with equal confidence. Such vicissitudes, beginning with irrational speculation and ending with a commercial crisis, have not hitherto become either less frequent or less violent with the growth of capital and extension of industry. Rather they may be said to have become more so, in consequence, as is often said, of increased competition, but, as I prefer to say, of a lower rate of profits and interest, which makes capitalists dissatisfied with the ordinary course of safe mercantile gains. The connection of this low rate of profit with the advance of population and accumulation is one of the points to be illustrated in the ensuing chapters.

Mr. Cairnes also adds some investigations as to the fluctuations of value: "Hitherto I have examined the derivative laws of value in so far only as they are exemplified in the movements of *normal* prices. It will be interesting now to consider whether it is possible to discover in the movements of *market* prices any corresponding phenomena.

"Taking manufactures first, it is evident at once that, as regards conditions of protection, the circumstances of the case are such as to secure, in general, (1.) great rapidity and great certainty in bringing commodities to market. A deal table may be made in a few hours, a piece of cloth in a few weeks, and a moderate-sized house in a month or little more. Tables, cloth, and houses may be produced with certainty in any quantity required. It results from this that it is scarcely possible that, under ordinary circumstances, the selling price of a product of manufacture should for any long time much exceed its normal price. (2.) The nature of manufactures is, in general, such as to fit them admirably for distant transport. Any considerable elevation of price, therefore, is

pretty certain to attract supplies from remote sources. (3.) Further, considered in their relation to human needs, I think it may be said of manufactured goods, that either the need for them is not very urgent, or, where it happens to be so, substitutes ... may easily be found. From all these circumstances it results that an advance in the price ... either attracts supplies, or deters purchasers, ... preventing any great departure from the usual terms of the market.

"Turning now to the products of agricultural, pastoral, or, more generally, 'extractive' industry, we find the circumstances under which this class of goods is brought to market in all respects extremely different from those which we have just examined, and such as to permit a much wider margin of deviation for the market from the normal price. Here the period of production is longer, the result of the process much more uncertain, the commodity at once more perishable and less portable, and human requirements in relation to it are mostly of a more urgent kind: (1.) The shortest period within which additions can be made to the supply of food and raw material of the vegetable kind is in general a year, and, if the commodity be of animal origin, the minimum is considerably larger. (2.) Again, the farmer may decide upon the breadth of ground to be devoted to a particular crop, or upon the number of cattle he will maintain; but the actual returns will vary according to the season, and may prove far in excess or far in defect of his calculations. These circumstances all present obstacles to the adjustment of supply and demand, and consequently tend to produce frequent and extensive deviations of the market from the normal price. Nor are the other conditions of the case such as to neutralize the influence of such disturbing agencies. (3.) The nature, indeed, of some of the principal agricultural products fits them sufficiently well for distant transport, and so far tends to correct fluctuations of price. But, on the other hand, (4.) the relation of these products to human wants is such as greatly to enhance that tendency to violent fluctuation incident to the conditions of their production. More especially is this the case with the commodity, whatever it may be, which forms the staple food of a people. For observe the peculiar nature of human requirements with reference to such a commodity. They are of this kind, that, given the number of a population, the quantity of the staple food required is nearly a fixed quantity, and this almost irrespective of price. Except among the poorest, increased cheapness will not stimulate a larger consumption; while, on the other hand, all, at any cost within the range of their means, will obtain their usual supply. The consequence is that, when even a moderate deficiency or excess occurs in the supply of the staple food of a people, in the one case (*a*), the competition of consumers for their usual quantum of food rapidly forces up the price far out of proportion to the diminution in the supply; in the other (*b*), no one being inclined to increase his usual consumption, the competition of sellers, in their eagerness to find a market for the superfluous portion of the supply, is equally powerful to depress it."