

Deployment of the Labor Force

Nonetheless, new or growing firms have often found no sufficient supply of labor presenting itself to them, and have had to rely on subcontractors for labor, or develop their own recruitment agencies, or locate themselves specially where labor was available.

After the end of the slave trade a form of recruitment of coolies from abroad, usually for plantations and mines, was devised in "contract labor." In return for free transport and perhaps a cash advance, the coolie agreed to work in a given undertaking for a term of years. Large numbers of Chinese and Indians migrated, particularly to the East and West Indies, under these arrangements. The contract laborer's condition varied widely in practice, as did the extent of the protection that he came to be afforded by public regulation, but his contract could be enforced in a way that brought it near slavery; and even when his term was up, he might be held in bondage for debt.

Where recruitment is difficult in the underdeveloped countries today, many businesses pay subcontractors a lump sum for the labor of a gang, whose members' own pay comes from the subcontractor; or, though they pay the workers themselves, they leave recruitment and discharge in the hands of their foremen, the sirdars or *maistrys*. In either case there is a "squeeze": the gangmaster pays out less than he receives; the foreman takes bribes from workers desperately in need of jobs. But if that need is so great, why cannot firms recruit directly? It looks as though they could pay their workers more while reducing their own labor costs, simply by cutting out the middleman, or transferring engagement and discharge to their own employment office; but, despite some endeavors, generally they have not yet done so. Why? For some firms the reason lies in their having to work in places where there is an insufficient supply of labor locally, or their having to

bring labor from a distance to meet a seasonal peak in the work load: the coffee plantations of south India and the tea gardens of Assam use local recruiting agents to bring bands of workers with them from their own districts—perhaps hundreds of miles away—and take charge of them on arrival. Again, where the managers are expatriates or, though nationals, do not speak the local tongue, they have to rely on foremen who do.

But the system prevails even where these things are not so. The basic reason may be found in the poor quality of the available labor, and its lack of adaptation to the factory. Underfed, accustomed to underemployment, unfamiliar not only with machinery but also with the continuity of attention it demands, this labor will work only in fits and starts unless it is under close control. So the foreman has to be held responsible for getting the work out, and must be armed with the power to hire and fire. Managers cannot take that power back from him until they have workers to employ who will perform their tasks under supervisors who have no such whip hand.

This explanation may be supported by the limited use made of the subcontracting of labor in more developed countries. It was once common in mining, as in the "butty system" in Britain; it is used in some "labor only" contracts in building; and under full employment it is extending in catering. The problem in mining was to provide effective supervision of scattered groups whose tasks were hard. In building, the "labor only" contract has been used in practice to get a higher rate of output—for example, in bricklaying—than could be obtained under normal supervision. The shortage of labor in catering, and the high turnover of what there is, has made it worthwhile for institutions in which catering is only

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ancillary to pay specialists to bear the responsibility of maintaining a staff. The common elements are a need to give first-line supervision more driving power, and a lack of staying power, in both senses of the term, in the workers. These seem to be the reasons that induce or compel management to delegate recruitment and discharge.

Even where long years of economic development have formed a labor force habituated to steady work in industry, some firms do not rely for recruitment solely on what the market can offer from day to day, but develop their own agencies and programs. Industries planted in undeveloped countries may have to send far afield for their technicians and craftsmen, and governments have long taken a hand in this, welcoming religious and political refugees who brought their trades with them, offering weavers land for settlement, or—as in fifteenth-century Spain and even earlier in southern India—exempting the immigrant craftsman from taxation. When Britain had a technical lead in the early days of its Industrial Revolution, its skilled men were sought overseas—so much so that from 1782 to 1824 they were forbidden by law to leave the country. As science is increasingly applied to industry, firms come to need technical specialists of kinds not provided through the broad channels of professional training, and must seek them either at the few schools that exist for them (at certain university laboratories, for example) or in younger recruits of a caliber to warrant the firm's paying for their perhaps lengthy training, which may include general education. A wider inducement lies in a growing awareness of the productivity of talent and training, not in technicians only but in managers generally, that leads firms to send out their scouts, make the prospects they offer known in the schools, and generally try to tap ability at the source, and

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program its development. Even for unskilled labor, full employment leads firms to send its prospectors far afield to find new sources.

An alternative is to take the job to the worker, and locate new plants where those sources are. Gaining access to less restricted or cheaper labor has long been a motive promoting the dispersion of industry. In medieval Europe industry moved into the countryside to be able to hire men who were not journeymen under the restrictions of the guilds, and to take advantage of the peasant's seasonal lack of work; and again in France in the eighteenth century, manufacturers were bypassing the wage rates for which journeymen held out in the established textile centers, by setting looms up in the countryside where there was unemployment or underemployment. Similarly in Japan before modern industrialization set in, a growth of rural industry was promoted by the restrictions of the guilds in the towns and the lower wages due to the lower cost of living and the plentiful supply of partially occupied labor in the country: the silk industry, once the virtual monopoly of the artisans of one district in Kyoto, spread out through the villages. When much later, in the interwar years, this industry fell on evil days, munition factories were set up in the countryside. The movement of industry into the southern United States, and especially the displacement of much textile output from New England, provides a counterpart. More generally, the sheer unavailability of further supplies of labor in established centers in recent years of full employment has forced firms to place new plants where labor was available, even though the location imposed higher costs in other ways. The main reserve of labor now consists of women as yet occupied only in the home, and these can go out to work only if jobs are provided close at hand. Their numbers vary with the industrial structure of the dis-

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trict: a smaller proportion of the women will already be going out to work in a mining than in a textile district, and in Britain the mining districts of Yorkshire, for instance, have attracted light industry because they could offer more women recruits than the adjacent towns which were woolen textile centers.

UNDEREMPLOYMENT AND UNEMPLOYMENT

Despite all the adjustments between applicants and vacancies that we have been considering, some part of the labor force generally remains unengaged. There may be underemployment, or outright unemployment.

One form of underemployment arises when the work load fluctuates seasonally, as in cereal cultivation. The farmer who specializes in cereals is busy when he is ploughing and sowing and harvesting but has little to do in between, so that he is not employed for all the working hours that he could readily put in during the year. But the number of men occupied in this kind of cultivation could not necessarily be reduced without loss of output, so that we can speak of underemployment only if we can assume the possibility of employment in some other line of output during the slack season. In the rice fields of China and Japan one such possibility has been found in a winter migration, of the peasants' sons at least, into the towns, and into such industries as mining, lumbering, and brewing. A better remedy is to bring in industries that either, like sericulture, can be dovetailed with work in the fields, or provide a separate and more continuous occupation for members of the farming family who otherwise would be occupied only at the times of seasonal pressure. During the Second World War "subsidiary occupations" were bringing the Japanese peasantry about twice

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as much income as did agriculture. "In many parts of the country," it has been said of the United States, "farming is becoming a part-time occupation. In 1955, only one in every four families living on a farm supported themselves solely from agriculture."¹¹

Whether there is much seasonal fluctuation or not, there may also be underemployment on the land when more persons share the cultivation of a given area of land than would suffice to raise the same output from it if each put in a normal annual sum of working hours. The picture is familiar of rural overpopulation, with a growing number finding a subsistence from the same family holding and sharing as much work as its limited acreage allows to be done. Yet how much underemployment there is, by the strict criterion of the possibility of withdrawing labor without loss of output, remains a matter of some controversy. For technique adapts itself to the relative plenty and scarcity of the factors of production: holdings, for example, will be subdivided, and draught animals given up; a withdrawal of labor, without an immediate change of technique, would then cause a fall in output. The case can be important for the emergent economies, for it means that they cannot draw a labor force from the countryside to man their new industries while raising the agricultural surplus available to feed the towns, unless at the same time they improve the technique of agriculture.

Though farming methods are adapted to absorb more labor, if population goes on rising there will be an overspill. Some of this enters into the casual and intermittent employment of coolie and badli, and makes up that semidestitute mass of labor in the towns where, as Tawney remarked of China, there is "no sharp division between the workers and

11. Ginzberg, *Human Resources: The Wealth of a Nation*, p. 48.

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the workless":¹² the same could have been said of as much as a quarter of the labor in the cities of Britain before 1914. In Japan we have already met the other outlet of the overspill: the service trades, where men can make jobs for themselves by setting up as shopkeepers and handymen—and wait for customers most of the day. Where they provide domestic service, they insist on demarcations of duty that result in more servants being used than there is work for. Though usually unorganized, they combine spontaneously to resist any reduction in the number over whom tasks are spread.

Short of emigration, help for the underemployed of this kind can come from economic development, to provide the equipment, direction, and training with which alone they can produce as much as an adequate standard of living would require them to consume. When in Italy about 1950 there were nearly two million unemployed, it was reckoned that there were even more underemployed, and a main object of the Vanoni plan was to take up some of this slack.

In outright unemployment, a man who expects to be in full-time work is not working at all because he cannot find a job. We can make an approximate distinction between causes general and particular. The general causes operate through the movements of aggregate effective demand, and affect many trades and regions at much the same time; the particular causes result in an excess of applicants over vacancies of a specific kind, at this specific point or that. But the distinction can be only approximate, because when the level of aggregate effective demand rises or falls it changes for different products in different degrees, and so alters the disparities point by point. We cannot say that the unemployment of certain men is part of general unemployment simply

12. Tawney, *Land and Labour in China*, p. 121.

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because a rise in aggregate demand would end it, for that rise might at the same time carry the demand for labor at other points well above the supply, and in that region, at least, be inflationary. A sufficient inflation will wipe out practically all unemployment; if aggregate demand, on the other hand, is kept down to the level at which the demand for labor does not more than match the supply in any part of the market, a volume of unemployment will probably remain such as we normally associate with a slump. But though in this way the workings of general and particular causes are intertwined, we can make a rough distinction between unemployment that can be removed by raising aggregate demand to a level at which local inflationary pressures are only just beginning to be felt, and that which then remains. This level will be higher in a country where the prevailing pattern of demand is closely congruent with current capacities than in one where there are structural disparities, and the rate of unemployment that remains when the level is reached will differ accordingly from one country to another. The numerical value of this rate will also vary with the way in which statistics of unemployment are compiled: but we may say that at present it seems to be about 1.5 per cent as unemployment is reckoned in the United Kingdom, and perhaps 4 per cent as it is reckoned in the United States. In our present study of deployment it is this residual unemployment with which we are mainly concerned.

It has four main components. First, at any one time some people are in the midst of changing jobs, and there may be some interval between the old job and the new, even though the possibility of finding a new one was never in doubt. When covered by insurance, this transitional unemployment raises few problems. Second, there are defects of personal quality that do not stand out enough to prevent a man from

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ever getting a job but generally prevent him from holding it for long, whether it is he who quits or the employer who cannot put up with him. With some people, again, illness recurs so frequently—it may be psychogenic—that they cannot keep at work for long. Some defects of mind or body are consistent with steady work if the right job can be found; but it seems that the sources of instability can be reached only in the clinic, if at all. A third component is due to fluctuations of demand in the short period—the irregular rush and pause of work in the docks, or the rhythm of the week, the month, and the natural and conventional seasons of the year. In the past this sort of unemployment has fused with the second because it was the poorest human material that had to take the most irregular work: since then, the disappearance of much of the supply has starved out much of the demand. Much has also been done in recent years, through the pressures of trade unions, public opinion, and, above all, full employment, to even the work load where that is possible, bring in complementary enterprises that will utilize labor in its off season, and keep men in steady employment even where the work load still fluctuates. But difficulties persist where the seasonal trade is regionally concentrated: British seaside resorts, for instance, are trying to attract light industry that will provide employment for some members of the family throughout the year and, if possible, be able to take on more during the winter.

There remains the fourth component, and it makes up the hard core: it is the unemployment that is caused jointly by a permanent withdrawal of demand, and the inability of some of those whose jobs have gone to find new ones. Falls in the demand for the product of particular industries and regions are inevitable in a world of change and international trade, and the cause to attack is the immobility of the victim.

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In British experience this arises in part from age, in part from a lack of adaptability and a sense of insecurity that make some men shrink from the unknown; but the greatest difficulty is the need to move to a strange place. If the general level of employment is not high, a man who moves to a new job may lose it before long and find himself with less support than if he were still out of work at home, whereas if the level is high, housing will be scarcest where jobs are most plentiful. Not many people choose to move to a strange neighborhood, once they are married and settled and have a family about them, and the ties of kin and neighborhood mean even more to those whose self-confidence has been undercut by their being discarded. So though public employment agencies can help many men to move by rehabilitation and retraining, by grants toward the cost of moving and help in housing at the destination, those who use the aids will mostly be in the categories which are generally mobile. The remainder may be numerous. Public policy can help them to find jobs only by amplifying or diverting those forces, already noted here, that direct new plants to available labor. The government may be able to locate some of its own activities in the regions of higher unemployment. Private enterprise may be pushed or drawn there, by refusal of permission to build where employment is already high, by forms of subsidy—such as the provision of capital, or of industrial estates with buildings ready to lease at low rents, and houses for the cadres that must be moved in—and by the directors' public spirit or wish to stand well with the government. These things may tilt the balance when the availability of labor, set off against the costs of transport to and from the site, do not leave it at much disadvantage with alternative locations. But, in general, the higher the rate of unemployment, the more remote will the locality be, and the higher

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will be the differential cost of operating there. The strong tendency of recent years to reduce and eliminate regional differentials in pay removes a former offset to costs of transport. It is hard to determine how far the gain of national product from using labor otherwise idle, and the gain to human welfare and self-respect through ending unemployment, can go in each particular case to offset the continuing loss of product through the dispersion and displacement of production that they require.

COMPULSION IN THE ALLOCATION OF LABOR TO JOBS

So far we have been considering the movements of workers to jobs and jobs to workers on the general assumption that people are free to make their own arrangements. In the expanse of human history this state of affairs is rare and recent. What work a man shall do has commonly been delimited or prescribed by custom and class interest. Rulers have conscripted men for specific tasks, and held them to particular callings as their life's work. Any plan for economic development implies changes in the deployment of the labor force, and governments that make such plans have put workers under various degrees of pressure and coercion. Let us now examine some of these constraints and directions.

One of the oldest is the rule that the son must follow his father's calling. In Homeric Greece the craftsman's calling was hereditary: masons, carpenters, smiths, and potters were known as *demiourgoi*—those who serve the people—and had something of the status and obligations both of public functionaries and of a hereditary priesthood. In this they have been compared with the caste of the Sudra in India. The Indian caste system itself is changing now under political and

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economic pressures, and it has never coincided entirely with division by occupation, but it has included some narrowly occupational castes—most children born into it have been precluded from entering certain callings, and some have been allowed to enter only one. A village of the Deccan, for instance, even in recent years, might have its *komtis* or traders, its *gollas* or shepherds, its *vaddars* or stoneworkers, and its untouchable *madigas*, who disposed of dead cattle, worked up the hide, and played the drums and pipes at ceremonies: and all these occupations were hereditary. We hear¹³ of one village that has gone without fish, although it needs the food and has a well-stocked lake, because it happens to have no fishing caste.

But one purpose of a hereditary system is to ensure that there shall be no such gaps; and the requirement that the son step into his father's place, which we have seen enforced by custom here, has been made a rule of law by heavy-handed governments that seek to keep up the output of industries without letting men earn enough to stay in them of their own free will. The Roman emperors laid obligations on the "colleges" of traders and manufacturers—the shipowners were required to devote three-quarters of their earnings to new construction, the butchers were fined if they did not keep up the supply of pork—and it followed that the members of these "corporations," now compulsory, were forbidden to leave their calling, and that their sons were required to follow them in it. Similarly, in the enterprises that the state itself conducted—whether these were the manufactures of vegetable oil and papyrus in Hellenistic Egypt or the workshops making arms for the Roman legions or the great factories of Byzantium—if the workers were forbidden to leave, and their sons were compelled to follow them in their trades,

13. S. C. Dube, *Indian Village* (Ithaca, New York, 1955), p. 85.

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we must suppose it was because the pay was not good enough to attract and retain a force of volunteers.

But the most widespread use of compulsion to keep a labor force together has been on the land. Rulers unable or unwilling to use the workings of the market and the self-interest of the farmer have always had a problem of the agricultural surplus—of deliveries, as it has come to be called: how can the farmer be made to produce more food than he needs himself, and hand it over for the support of the ruler, his fighting men and governors, and the folk in his towns? One way has been to plant men on the land, make them work for “the estate” as well as for themselves, and flog them if they try to run away. The Roman emperors, at a time when land was going out of cultivation while the plebs of the town needed corn, settled slaves, prisoners of war, debtors, and beggars on the state lands as *colons*. The Eastern Empire was to do the same, and here the colons included a class of settler that recurs in history, the heretic getting away from his orthodox persecutor. The colon was “tied to the soil,” but part of the soil was for practical purposes a holding of his own, and he could pass it on to his son; in return, he worked for so many days in the year on the acres that the overlord kept for his own use. There was a rough equivalence here, and an incentive for the colon; he gave his labor services to keep his holding. So the arrangement worked—better than slavery, the Roman owners of the great private estates found when they went over to it; and in various forms of serfdom it was to govern the deployment of the greater part of the labor force throughout Europe. It prevailed also in some form in Japan: here the *nago* held land, and was supplied with irrigation, in return for labor services that might amount to as many as two hundred days in the year. One variant, here as in Europe, was that the occupier paid a rent in kind—half or

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three-fourths of his rice crop, it might be—instead of giving day labor. The common elements were that he had land to work for himself, and that he was forbidden to leave it. As markets and manufactures developed, he did often see the chance of a better living in the town. The Black Death, which carried off perhaps a third of the labor force of England about 1350, increased that unsettlement, and a statute of 1388, endeavoring to contain it, provided “that he or she who is employed in labouring at the plough and cart or other labour or service of husbandry until they be of the age of twelve years shall remain thenceforward at that labour without being put to a mistery or craft.”¹⁴ In Japan the government tried to stop the peasant from moving into weaving by repeatedly forbidding merchants to buy silk in the villages, and from the sixteenth century onward it tried to keep the peasant tied to his holding under penalties of law.

Rulers have not only had the problem of squeezing out an agricultural surplus: in economies where they cannot raise much revenue by taxes in money they have also had to use forced labor for various public works and services. In Babylon from the earliest times there was a royal corvée for works of irrigation; in Japan we hear of eighty thousand men being assembled for such works in the eighth century A.D., and some were maintained by corvée until the Second World War. Roads have long been built and maintained, after a fashion, by the forced labor of those who live near them—whether under the direction of the legionaries of Rome or of the tribal chiefs of Uganda in our own day. Transport, too, has been provided by compulsion: in ancient China we hear of sixty thousand men being used for carrying grain to the

14. Statute of 12 Richard II, cap. 5, in A. E. Bland, P. A. Brown, and R. H. Tawney, *English Economic History, Select Documents* (London, Bell, 1914), p. 174.

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capital; in British territories in Africa the corvée was continued for carrying after it had been given up for other work. The Japanese port of Kobe was built in the fourteenth century by the forced labor, it is said, of fifty thousand men. There has often been conscription for military service, and this continues in democratic societies to our own day, alongside the provision of terms of service sufficiently attractive to maintain forces by voluntary enlistment. A cognate corvée is for military works. Japanese farmers were taken off the land to build castles. The English kings of the Middle Ages blended the corvée with the workings of the free market: craftsmen would be ordered, on pain of imprisonment, to proceed to the site of some castle, chapel, or palace the king was building, but when they arrived they were paid rather above the rate prevailing for free engagements.

Though we have seen compulsion used to keep men out of industry, it has also been used to get an industrial labor force together. When we hear of the workers for state manufactures being impressed, as in Hellenistic Egypt, we may surmise that the state was not paying enough to attract voluntary recruits. When the government of the Commonwealth in England in 1655 ordered young men and maids not to stay at home but "with all convenient speed betake themselves to service," it said explicitly that it did so because they were refusing to work at the rates of pay the authorities had fixed. Sometimes a labor force has been found by impressing vagrants: Justinian gave the vagabonds to the bakers of Constantinople; and an Act of 1606 in Scotland gave "power and commission to all masters and owners of coal-heughs and salt-pans to apprehend all vagabonds and sturdy beggars to be put to labour."¹⁵ When industries are introduced to a so-

15. R. P. Arnot, *A History of the Scottish Miners* (London, Allen and Unwin, 1955), p. 4.

society unaccustomed to them, they may find it hard to get labor, even in the midst of underemployment, and governments have used or delegated various forms of compulsion to bring labor in. Down to the seventeenth century the English government tried from time to time to apply the principle that any unoccupied person must take work offered, or go to the stocks or the house of correction. In France in the eighteenth century manufacturers were given the exclusive right to collect labor, possibly by force, in one district, and children and paupers were drafted into industry from orphanage and almshouse. In parts of Africa, under European administration, the imposition of taxes to be paid by the native in money had as one of its objects and effects the bringing in of labor to earn the wherewithal by a spell of wage earning. Of Portuguese East Africa in 1960 it was reported that "every male African over 18 is compelled to work for at least six months in the year,"¹⁶ on the ground that this is the only way to habituate him to the work and rewards of industrial development; he could not be compelled to work for a particular private employer, but found his job through a contractor, who recruited up-country and provided transport.

As the modern course of economic growth took its rise, from the eighteenth century onward, governments in the growing economies generally gave up the attempt to restrict and direct the movements of labor. Many did continue to act indirectly on the deployment of jobs by protecting particular industries, and one motive of protecting agriculture was to keep manpower on the land, perhaps as a source of sturdy soldiers. But to act directly on the deployment of applicants was another matter: it ran contrary to contemporary reliance on personal initiative and to the principle of per-

16. *The Times* (London), June 21, 1960.

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sonal freedom, and in times of growing population and rapid economic change it was in any case impracticable.

In time of war, however, countries normally averse to the direction of labor have had to push through vast changes in the size and deployment of their labor force within two or three years. In the Second World War, for instance, the employed labor force of the United States grew from 47 to 64 million; and in the United Kingdom 10 million people—as many as half the whole prewar working population—learned new jobs in industry or the armed forces. Changes of that extent and speed could not have been made without intervention by government.

In the United States, however, that intervention was to control jobs rather than men. There was, of course, a draft for the armed forces, and the national employment service helped in many ways to bring job and applicant together; but otherwise the applicant was left free to take jobs and leave them, and it was the pattern of jobs that the government molded. It did so by issuing contracts for war needs, cutting back supplies of materials for nonessential products, and locating new plants where labor was available. Without having been directed to do so men and women moved into the new deployment because they wanted to help the war effort, they could take jobs only where jobs were going, and earnings on war work were raised by piece rates and overtime to levels that a widely effective control of wages prevented other employments from matching.

The United Kingdom went further, and brought pressures to bear on particular men and women. One reason was that the employed labor force as a whole could be increased by well over a third in the United States, but by less than a sixth in the United Kingdom, which therefore had to do more to ensure that what manpower there was went where it

was most needed, and that everyone who could work did work. There were three further motives: the control of hiring reinforced the other means of restricting unessential activities; when many people had to suffer hardship it was fair that no one should escape doing his bit; and the movements of wages could be left to the normal processes of bargaining, as in fact they were, only if raising wages would not serve to draw labor in. The principal means of control were: a general registration of potential as well as actual labor; an obligation on employers to report hiring of personnel to the employment exchange, which could withhold its consent; an obligation on workers already in essential employments to remain there unless specially permitted to leave; and a power vested in the Minister of Labour to issue directions to particular men and women to take up particular work. This power of direction, however, was not used in practice to move civilians as troops are moved, but only to bring the rare recalcitrant into line with the general willingness to move, over not too wide a range, under guidance. Granted the willingness and the guidance, the main influence on deployment remained the availability of a not too uncongenial job that could be taken without too great a displacement; and the supply of labor with which the planners of the war effort had to reckon was not a total of bodies but a congeries of particular capabilities, preferences, and ties of locality. As such, however, the labor supply became the ultimately scarce resource, on whose allocation depended the whole balance of strategy. In the early stages of planning, the obstacle to the extension of this form of output or that was some limitation of existing equipment or supplies of materials; but in time it became the marginal loss of other outputs that switching manpower into that extension would involve. "At the end of the war, the manpower budgets were the main force in de-

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termining every part of the war effort from the numbers of the R.A.F. heavy bombers raiding Germany to the size of the clothing ration."¹⁷

It may well be inferred that any government administering a comprehensive economic plan, albeit in time of peace, will need equally to budget its manpower and apply some sanctions to carry the budget through, but this is not so. There may, it is true, be a stage of "military communism," in which a revolutionary government treats the whole labor force as subject to mobilization. Again, where the prospects of construction newly fire the popular imagination, there may be a general readiness to work wholeheartedly at whatever tasks are prescribed, and an overwhelming disapproval of the non-conformist: "all one can suggest," an observer of China in 1960 has remarked, "is that the distinction between directed labour and voluntary labour can hardly matter any more in a country where the pressures are so great. Society is indeed strong."¹⁸ Where—as in China again—men are used to working not on their own account but as members of a family or tribe or village, they may take their part in whatever tasks are allotted to that cooperative without feeling themselves forced. We do not know whether such lack of awareness of a separate self will not recede as education and the standard of living increase, or whether collective work will prove compatible with high productivity, which seems to require a greater division of labor and a separating of particular persons for recruitment into particular jobs. We know at least that when central economic planning has been adopted by societies with a greater initial tincture of individualism, after the first years of crisis and devotion men have shown that

17. W. K. Hancock and M. M. Gowing, *British War Economy* (London, H.M.S.O., 1949), p. 452.

18. *The Times* (London), July 11, 1960.

they valued the freedom to choose jobs and leave them. Once that is so, constraints and compulsions on the deployment of labor do more harm than good to output and the fulfillment of the plan.

Probably this is why the planned economies of the Russian sphere have now tacitly abandoned most forms of the direction of labor and rely mainly on the same incentives and deterrents as guide the deployment of labor in the market economies. The Russian communists did not in fact set out to control labor, and freedom of engagement was inscribed in the statute book. In the 1920s the major practical problem was to stem the inrush of peasants to the towns; but about 1930, when the First Five-Year Plan brought inflation and widespread shortages of labor, controls were mounted to check excessive turnover and to mobilize manpower and steer it into essential tasks. It was made a grave offense to leave work without permission, and in 1938 work books were introduced that would show what previous jobs an applicant had held and left—a system of leaving certificates such as had been enacted by the English statute of 1388, already mentioned here, at another time of labor shortage and too high turnover. Unemployment benefit was ended, and the unemployed had to take whatever job was offered them in whatever place. Kulaks joined political prisoners in labor camps. The Commissariat of Labor was empowered to comb skilled men out and reallocate them. Collective farms had to fill quotas of recruits for industry. The graduates of the factory trade schools had to go for three years where they were sent, and in the name of vocational guidance school leavers were sent where bodies were needed rather than where the work was most suitable for them. By the time of the Second World War the instruments of a thorough-going control of the deployment of labor had thus been brought into play, though

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they had not been coordinated under any central plan. The war itself brought a general mobilization. Yet in the years since then the controls have mostly lapsed. Those who receive a technical training must still go initially where they are sent, but otherwise since 1956 the worker has generally been free to leave if he gives two weeks' notice, and this implies that he will no longer be drafted into a job he would not take voluntarily.

The reason is far from being that there are no more shortages of labor; rather it must be that the fulfillment of the plan has been found to suffer less if managers are allowed to attract volunteers instead of being sent conscripts. The readiest attraction is higher pay, and though all rates of pay are prescribed centrally, managers have gone above them by setting loose piece rates, devising bonuses for time workers, and upgrading (the two lowest grades in the eightfold national classification have for some time been virtually uninhabited). The state banks cannot cash checks for wages in excess of the wages fund provided in the plan unless higher authority permits, but higher authority is concerned more with output than cost, and generally has permitted, though there are recurrent attempts to tighten the control. This sort of competition for labor has naturally resulted in a "wage drift" (between 1940 and 1953 basic wage rates rose by no more than a quarter, whereas the wages actually paid out doubled) and in a jumbling of the wage structure. When in 1955 the State Committee on Labor and Wages began to formulate more orderly differentials, it based them upon unpleasant or exacting condition of work, skill required, remoteness of location, and "relative economic importance." These are precisely those drawbacks of the job or scarcities of qualifications that set up differentials so as to maintain supplies of labor point by point throughout a free market.

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This is a strong case of a general experience. Though any partial or total plan for economic development implies some planned change in the deployment of labor, it does not seem practicable to promote that change by restraints and directions applied to the worker, except in such times of national peril or enthusiasm as for a while turn conscripts into volunteers. Controls can be applied effectively to stamp the shape of a plan on consumption or production, but the deployment of labor, it seems, must depend on inducements. There are two essential reasons: forced labor is sullen and careless, and the right man for the job and the right job for the man are more likely to be found by free choices than by posting orders. Where freedom is not an end in itself, it is still a necessary means to higher output.

5 THE FIXING OF RATES OF PAY: CONVENTIONAL AND MARKET FORCES

CONVENTIONAL FORCES

We come now to pay and its movements, and first to the forces that bear upon the rate of pay for any one job. These forces are many and various. In some countries the most prominent are the bargaining power that is applied in negotiations between employers and trade unions, or the authority of the state as that is exerted through minimum-wage laws or the arbitration of wage claims. These procedures we shall deal with in the next chapter. This one will survey forces that prevailed before collective bargaining or the modern forms of state regulation arose, and that still remain powerful today. They are the forces of convention and of supply and demand.

By convention we mean opinions about what is the right thing to do that are reinforced because most people agree in

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holding them. There is a general opinion that pay should be proportioned to deserts. The Bible says that "the wages of sin is death"; to pay a man out means to serve him right. Pay is not thought of as a price: "the price of any thing is as much as it will bring," but the pay of any man is seen as the recompense and reward due by society to his exertions and qualities. That a pound of apples should sell for more than a pound of potatoes we generally accept as a fact of the market—here are two different commodities, each with its price, and the fact that the unit for both is the pound weight does not make us wonder whether the difference in price is fair. But if we went back to the earnings that the growers derive from the prices, we should see some point in asking about fairness, for now we are dealing with human beings. When people consider how much a given man should be paid, they usually look not for the rate that will balance supply and demand in his part of the labor market but for the rate that will be fair, just, and equitable. One notion of the fair rate is that it shall be commensurate with the requirements of the work the man does: people try to arrive at it by comparing these requirements with those of other jobs whose rates they take as given.

But measuring work is exceedingly difficult. Sometimes the product can be measured—the number of yards of cloth woven, or of bricks laid. But that helps little, for the product is usually due to equipment and materials as well as labor; and in any case we cannot reduce cloth and bricks to a common unit. What is needed is a direct measurement of the effort and the abilities that the worker puts into the job. But we have no means of recording any but the merest muscular form of his exertion: we have no measuring rod for the ability, training, experience, and care that he is applying.

Nonetheless, the endeavor is made, if not to measure any

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one man's work by itself, at least to give a quantitative expression to the observed difference between one man's work and another's. This is done in two stages: in "job evaluation," comparison is made of the requirements of different jobs; but men have qualities over and above those they need to meet the minimum requirements of a job, and these personal qualities are assessed by "merit rating."

Job evaluation begins by drawing up a list of the qualities jobs require of those who are to do them; these qualities include the willingness to tolerate any unpleasant conditions of the job. Commonly there are five main headings: skill, training, and experience; responsibility; mental requirements; physical requirements; and working conditions.

Each of these will have its own components—responsibility, for example, may comprise responsibility for materials, for tools and equipment, for operations, and for the safety of others. To each component a certain range of points is assigned: responsibility for the safety of others might be given a range of from 0 to 20 points, for example, with the intention that a cashier's job should receive 0 points whereas a bus driver's would receive 15 and a locomotive engineer's the full 20. A panel of assessors now studies the jobs, and assigns to each component of a given job the number of points it seems to rate in comparison with the same component in other jobs. The points so assigned build up a certain total score for each job. Some way must now be found to turn points into cents. One way is to take the present rates for certain jobs as bench marks: if the rate for the turner is \$2.50 an hour and that for the laborer \$1.75, and if the turner's job scored 410 points and the laborer's 260, then the difference of 75 cents might be equated with that of 150 points, at the rate of two points to a cent, so that a job that scored 300 points would be held worth \$1.95.

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Merit rating proceeds in the same way, except that the list is now of personal qualities like reliability, energy, and cooperativeness, and it is the individual workers and not jobs that are assessed. The outcome is a plus rate which a given worker can receive as the recompense of his personal merits, in addition to whatever is the rate for the job he is doing.

It is a basic assumption of job evaluation that the varied requirements of each job can be combined and expressed as a single total, at least for the purpose of comparing one job with another. Some of the early economists accepted this assumption in an extreme form, and treated different kinds of work simply as embodying different quantities of a common stuff of labor—if the laborer received only two-thirds of the mason's rate, that was because his input of work, measured in a common unit, was also two-thirds.

There may be more in an hour's hard work [said Adam Smith] than in two hours' easy business; or in an hour's application to a trade which it cost ten years' labour to learn, than in a month's industry at an ordinary and obvious employment. But it is not easy to find an accurate measure either of hardship or ingenuity. In exchanging indeed the different productions of different sorts of labour for one another, some allowance is commonly made for both. It is adjusted, however, not by any accurate measure, but by the higgling and the bargaining of the market, according to that sort of rough equality which, though not exact, is yet sufficient for carrying on the business of common life.¹

“Skilled labour,” said Karl Marx, “counts only as intensified, or rather multiplied, simple labour, so that a smaller quan-

1. *Wealth of Nations*, Bk. I, chap. 5.

tity of skilled labour is equal to a larger quantity of simple labour.”² But this proposed conversion of different kinds of work to different quantities of a common kind will not really do. It may rest on circular reasoning—the laborer’s rate is two-thirds of the mason’s because he does only two-thirds as much “work” in an hour, and we know that he does two-thirds as much “work” because his pay is two-thirds. Or, as in job evaluation today, it may rest upon direct observation of the requirements of different jobs; but this observation cannot provide objective measurement—only subjective assessments that are private to each observer, even though at any one time some consensus prevails. Moreover the choices of the components to be assessed and of the range of points that can be allotted to each component are alike arbitrary. Different panels filling in the same form, or the same panel filling in different forms, will come out with different relative scores for the same jobs, and there is no means of establishing which outcome is better.

Nonetheless, job evaluation is only a painstaking application of the way in which people do continually think and argue about relative pay. Its use persists and extends because it does systematically what otherwise will be done confusedly. Firms find that it removes resented disparities and obviates disputes. In the Netherlands since the Second World War a National Standards Commission has carried out a nationwide job evaluation in a common form—first for the manual jobs, then the clerical—with the object of setting the rate for each job in its fair relation to every other.

Sometimes job evaluation aims at no more than ranking jobs in a hierarchy whose order should be followed by their rates of pay. Here it minglest in practice with another way of

2. *Capital*, trans. E. and C. Paul (London, 1930), Vol. 1, Pt. I, sec. 2.

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thinking that, if stated as an abstract principle, is quite contrary—namely, the assumption that far from being reducible to common terms, different jobs have inherently different statuses, some superior, some inferior, and that the structure of pay should conform to this structure of esteem. Though the social stratification of Western societies is changing, jobs do have a ranking by status that corresponds fairly closely to their ranking by pay. A recent tabulation³ for Britain provides seven groups of occupations:

1. Professional and high administrative
2. Managers and executives
3. Inspectors, supervisors, and other nonmanual—higher
4. Inspectors, supervisors, and other nonmanual—lower
5. Skilled manual and routine nonmanual
6. Semiskilled manual
7. Unskilled manual

Public opinion generally accepts such a table as hierarchical: a given group is thought of as standing higher or lower than another. Generally a group is ranked according to the difficulty of attaining the proficiency that the jobs in it require—whether because the proficiency depends on qualities of mind and character that are inherently rare, or because it can be acquired only through exacting training and long experience. The hierarchy of pay does not, it is true, conform to this hierarchy of esteem completely. There is much overlap and the overlap may run over more than one group—a good many semiskilled manual workers, for instance, earn more than some skilled workers; and some of the semiskilled may be earning more than a good many clerical or technical workers.

3. D. V. Glass, ed., *Social Mobility in Britain* (London, Routledge and Kegan Paul, 1954).

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But the maxima of the groups do seem to be arranged one above the other: the highest pay attainable by an unskilled manual worker is generally below that attainable by a semi-skilled, the highest for the semiskilled is generally below that for the skilled, and so on up the table.

This agreement in ranking is widely felt to be just. With some possible exceptions such as the priesthood, it is held that a given occupation should be paid less than those of higher and more than those of lower status. One basis of this belief is the sense that if the world's work is to be carried on, each man must stand in his due degree:

O! when degree is shak'd,
Which is the ladder to all high designs,
The enterprise is sick.

Nor, it is felt, can a man usually keep his rightful rung on the ladder if he is known to earn less than one whose rightful place is below him. One criterion for the fair wage is that it shall enable the recipient to keep up a position in the class to which his job assigns him. This criterion has even been set out in a wage-fixing statute by a Labor government in Britain: the Agricultural Wages (Regulation) Act of 1924 required that the rates fixed should "enable a man in an ordinary case to maintain himself and his family in accordance with such standard of comfort as may be reasonable in relation to the nature of his occupation."

Since assessments of the requirements of a job or of the esteem due the man who does it can only be subjective, in practice they lean much on custom. What has long continued must have been long accepted, and what has been long accepted can hardly be unjust.

Custom is in fact a powerful and a distinct influence on

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rates of pay. It has set its imprint on the record of wages in earlier years. The wages of builders in southern England can be traced fairly continuously from the late thirteenth century to the present day: one striking feature is how often one and the same rate remains predominant year in, year out. "In many places," Adam Smith said, "the money price of labour remains uniformly the same sometimes for half a century together."⁴ For nearly forty years before *The Wealth of Nations* appeared, the predominant rate for the mason and the carpenter in southern England had been two shillings a day; from about 1412 onward it had stood at sixpence a day for a hundred and twenty years. Prices do not behave like that in a stock market or a wheat pit: we cannot suppose that supply and demand came into equilibrium year after year at just the same wage; the sameness must have owed much to custom.

Nor does custom help to settle rates of pay only when they are steady: when they are rising it still bears on differentials. Between 1412 and 1914 the rate for the mason and the carpenter rose fourteenfold, but at one end of the five centuries as at the other, and during almost all the settled periods in between, it was half as much again as the laborer's. There were local differences in England, and though other countries followed the same rule in some times and places they were far from following it in all. Yet the one simple ratio of three to two appears far too widely and too long for us to suppose that it was reached each time by an equilibration of market forces: it must have been what it was primarily because men were following custom.

The force of custom may show itself in such circularity of reasoning as has been mentioned already: the job that

4. *Wealth of Nations*, Bk. I, chap. 8.

once achieves high pay continues to stand high in esteem because the pay is proof that it deserves to. Equally, what costs little may be thought worth little. In Britain the First World War showed how well women could do many jobs that had been thought beyond them. Perhaps the trouble had been that the low rates for their work had been taken as a measure of their capacity: an economist with practical experience of fixing minimum rates in women's trades remarked that "if women's rates are assumed lower than men's by a significant margin, the women are put on to processes which are ill-paid as a market fact."⁵

One other consideration sometimes goes to make up the notion of the fair wage—the worker's needs. We do not usually think we should pay the butcher more for his meat because his wife has had another baby, but when we pay not for the products of work but for work itself we sometimes are ready to pay different sums to two workers doing one and the same job because their needs are different. Where family allowances are a charge on the employer, he usually makes the same absolute or proportionate contribution, in respect of each worker, to a fund from which the allowances are paid out: so the family man costs him no more than a bachelor. But in Japan it is not unusual to add directly to each man's wage an allowance based on the size of his family; and something of the same purpose is served by another allowance based simply on the worker's age. Boards or courts fixing minimum wages have often based their award solely on a calculation of what income a family needs to maintain itself at a level the social conscience will sanction. This is the principle of "the living wage." The Australian arbitrator Mr. Justice Higgins, in his famous Harvester Judgment of 1907,

5. D. H. Macgregor, in a memorandum submitted to the Royal Commission on Equal Pay, 1944-46: Appendix IX to the Minutes of Evidence.

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defined the living wage as one sufficient to meet "the normal needs of the average employee regarded as a human being living in a civilized community." A widely accepted justification, if not reason, for paying men more than women for the same work, is that men usually have more dependents. When decisions about wages are centralized—as they have been in one way by the solidarity policy of the Swedish trade unions, and in another by political processes in France—the fixing of a fair wage is seen as the making of a due allowance, and wage settlements appear not so much as the pricing of factors of production as the means to a tolerable distribution of the national income.

THE SUPPLY SCHEDULE OF LABOR

We have been discussing people's ideas of fairness as forces bearing upon rates of pay, but evidently these forces do not have the field to themselves. No matter how strong and unanimous the opinion that a certain rate was fair, the rate could not persist if it was so low that the labor force melted away, or so high that employers would no longer hire. Evidently there is a supply price below which a given labor force will cease to be fully available, and a demand price above which it will cease to be fully engaged. Let us examine these in turn.

The supply price confronts any management that is setting out to increase its labor force. There are various ways of recruiting that will bring in more applicants at the going rate, but if these are not enough the management will commonly consider one way or another of offering more. For several reasons those who are next on the list of potential recruits will be available only at a higher rate of pay. They may live farther away, and need the higher rate to offset the cost and

trouble of the journey. They may already be in jobs that pay more than those the first recruits had left. They may be capable of doing the work offered only if they will first make the effort and bear the loss of earnings involved in training for it. They may need higher pay to offset what they, more than the first recruits, feel to be unattractive features of this kind of employment. Each of these obstacles is likely to take the form not of a single cliff but of a continuous if irregular gradient, so that if a given improvement in the offered terms enables the firm to bring in a certain further number of recruits, a bigger improvement would bring it yet more, and so on. We have noted four of these gradients—one in space, from nearer in to farther out; one in alternative opportunity, from lower present pay to higher; one in proficiency, from immediate readiness to a need for protracted training; and one in taste for the work, from liking to aversion.

The combined effect of these gradients is that successively larger numbers of workers will generally be available for a given kind of work in a given place only at successively higher rates of pay. This is expressed by a supply schedule or curve for labor, positively inclined. Our view of its components enables us to see some of the factors that will decide whether in a given instance it will be elastic or inelastic. A plant in a small town, for instance, will find few potential workers living beyond a short distance of its gates; whereas one in a big city is accessible to many more, by reason of both the density of population and the availability of public transport. The rates of pay for different jobs in any one locality, though they vary widely, commonly cluster around a modal value: so an employment that is at present paying a little below the rates in that cluster can, by a small rise, bring its own rate up to that already being received by a larger additional number of workers than if it started some way above

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or below the mode. But there may be some potential workers for whom the pay provided by alternative opportunities is at present nil, because they are unemployed: insofar as accessible workers are out of work, the supply curve will be virtually of perfect elasticity. In a society, again, where the standard of living is high, education is extensive, and parents generally want to see their children get on, it will be easier to find young people qualified and willing to undergo a given training than in a society where most children are required to earn as much as they can as soon as they can. Maintenance men, who use the same training in a number of different industries, are likely to be in more elastic supply to any one plant than workers whose training is specific to that plant's own processes. Or, to take an example of the fourth gradient, the number of workers available can usually be added to more easily for clean work in normal hours than for jobs that mean getting dirty or working broken hours or night shifts.

The practical import of the supply schedule is often very different in the short run and the long. Where the work to be done and the proficiency required are much the same in one employment as another, a rise in the rate one firm offers may bring a quick response—especially in an industry like building, where many wage earners change employers from time to time in any case, and do not regard a move as taking a plunge. But any period of training means a lag, and for some professions it is long: if a rise in the pay of doctors, for instance, is to call forth a greater supply, it must influence the entrant's course of study as much as ten years before he is ready to practice. The response, moreover, is not merely deferred but is likely to be weakened, because what is offered is not higher pay here and now, but a prospect that terms not less favorable than today's will be offered in ten years' time.

When relative pay is lowered, the difference between the response in the short run and the long is likely to be greater still, for even those who in the nature of their own work would not find it hard to fit in elsewhere may be loath to leave the familiar surroundings in which they feel secure; and others have acquired a proficiency for which there is no ready market outside. The rate needed to attract labor in the first place is higher than that needed to retain it once it has settled in. Much of a firm's labor force is likely, for this reason, to be captive; the firm is a monopsonist in the short run; and the sanctions that check a relative fall in its rates are those less of the supply price than of the unrest that a sense of injustice will bring. This sense is aroused most acutely by the sight of higher rates being paid to certain types of labor only because their supply reacts more sharply. The skilled men are reluctant to go, but it makes less difference to the laborers where they work, and if the firm is to keep them it must pay them more. The long-service men stay put, but the rates they are getting will no longer attract an adequate supply of new entrants, so the rates of juveniles must be raised. But it seems an outrage that those who stand low in the scale of esteem, the laborers and the callow youths, should get a rise which those who stand high are denied. So the sense of justice makes the market more perfect, and ensures that all rates will be raised by much the same as those on which the reaction of supply has made itself felt promptly. That reaction, moreover, is not absent elsewhere, but only slow: drivers on the railroads have attained their positions of responsibility through long years of service; they have prestige and a distinctive way of life; yet when their pay has remained for years below that generally received by men of their standing elsewhere, they have been known to leave the railroad.

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The supply schedule helps to explain some regional differences. The levels of pay prevailing in different regions of one country have been observed to vary inversely with the natural rate of growth of population there. In the eighteenth century, and very likely for long before, the natural rate of growth was negative in the towns of Britain; Adam Smith remarked that wages were higher in the towns than in the surrounding countryside, and generally decreased as the distance from London increased—"Eighteen pence a day may be reckoned the common price of labour in London and its neighbourhood. At a few miles distance it falls to fourteen and fifteen pence. Tenpence may be reckoned its price in Edinburgh and its neighbourhood. At a few miles distance it falls to eightpence, the usual price of common labour through the greater part of the low country of Scotland."⁶ In our own day, rates of pay in Ontario range from 10 to 20 per cent above those in comparable employments in Quebec; and in the United States, rates in the southeast have been 30 per cent and more below those on the Pacific Coast. In country districts where birth rates are higher, or death rates, especially among infants, are lower, many children grow up who can find no work on the land, and the supply price of labor to local industry and the local town is lower than in the regions that can man up their growing industry only by immigration.

One distinct aspect of supply remains to be noticed. So far, we have considered the supply of labor as constituted by the number of persons available, but we have also to think of the supply of work: this requires us to consider the effort that a given number of workers will put in within the year in response to a given rate of pay. Those paid by

6. *Wealth of Nations*, Bk. I, chap. 8.

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the hour can vary the number of hours worked; those paid by results can also vary the intensity of effort within the hour. The main issue of principle can be seen if we confine ourselves to variations in hours: at a higher rate of pay per hour, will men choose to work more hours or less? The higher rate makes two differences, which pull against each other. On the one hand, it means that when the worker has put in, say, forty hours in a given week he has already earned more than he would have earned at a lower rate, so that he has less need for a further dollar. On the other hand, a forty-first hour will now bring him more in dollars: any one dollar means less to him, but he can get more of them. On balance, will he have more inducement to work the forty-first hour, or less? There seems to be no reason why the balance should generally come down on one side rather than the other. One would expect that it would come out differently for different people, especially for those with differing family responsibilities; and that for any one man it would vary with the standard of living he has attained. It seems likely that those who are consciously advancing their standard of living to a higher level will respond to a higher rate of pay by working longer hours if they can, but that those who have attained a level of consumption with which they are content will prefer to advance it modestly, if at all, while enjoying more leisure. The two types may be found alongside one another. We know, at least, that over the last hundred years and more the wage earners of the developed economies have used the rising real return to their labor to reduce their hours of work progressively, from sixty a week or more to forty, but that many among them remain very ready to do more work in exchange for a more than proportionally increased weekly wage.

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THE DEMAND SCHEDULE FOR LABOR

We have seen how the rate of pay fixed for a particular kind of labor has its effects on the number of applicants. It also affects the number of vacancies: just as there is a supply schedule, so there is a demand schedule.

To trace this connection between the rate of pay for a particular kind of work and the quantity of it that employers in the aggregate will wish to hire, let us ask how employers will react to a rise in the rate. This rise we must suppose to occur by itself, not as part of a general upward movement of pay and prices, but as an isolated event at a time when other economic variables are not changing. It must also be a cause and not an effect—that is, it must not be a response to a shortage of labor and the pull of demand, but must impinge upon employers at a time when they are not trying to take on any more of that kind of labor at the going rate—we might suppose, for instance, that an agency of government empowered to fix minimum rates of pay decides on social grounds to raise a particular minimum. In such a situation the variation of one thing at a time enables us to trace that variation's consequences. In the present case, what will they be?

If the labor concerned is direct labor—that is, if a fixed amount of it is required at any one time for each unit of product—then employers can at first do little else than accept the higher cost for the same number of workers as before: that number is fixed by the flow of orders they have coming through their workshops. But the rise in costs will generally have to be covered by higher selling prices. In any one instance, it is true, the employers might have profit margins wide enough to stand some paring, or they might have means

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at hand to improve their methods and keep their unit costs down despite the rise in wages; but there can be no counting on such cushions being there, and even when they are, they can absorb one push but not one push after another. Short of fortunate coincidences, then, the selling prices of the products must go up. But in the conditions we are supposing, this is a rise in relative prices, and usually buyers will react to it by taking less of what is now relatively dearer. Sales will be down: there will be less work coming through the shops and fewer jobs for the workers whose pay has gone up—very likely for some others too.

Beyond this first upset lies the possibility of a full adjustment. Though a fixed amount of this kind of labor is needed for each unit of output, and it has to be combined in fixed proportions with other factors that are similarly required, those proportions will generally be different for different products. In the economy as a whole, less of one factor of production can be used in combination with each unit of another, if the output of products that use relatively more of the first is contracted and the output of those that use relatively less is expanded. For any one kind of cake it may be necessary to use a fixed amount of fat with each pound of flour, but a baker issued with less fat than before, relative to his supply of flour, can use his whole supply of both by making more of the kinds of cake that use less fat. This he would have an incentive to do if he were buying his supplies and the price of fat rose relative to that of flour. The same tendency would appear if each kind of cake were made by a different baker: the bakers who made the kinds that used less fat would find their costs going up less and would have to raise their prices less, so that their outputs would not be reduced as much as the others'. This effect is general. A rise in the relative price of one factor of production tends to re-

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distribute resources away from the lines of output that use more of this factor in combination with a given amount of the others, and toward the lines of output that use less. A higher relative pay for one kind of labor tends to reduce the amount of that labor employed in the economy as a whole, even though in each separate line of output the proportion in which the factors are combined is fixed rigidly by the nature of the process performed.

But of course there is often no such rigidity. Given time, the process may be changed. At present, excavation may be done by digging, one man, one spade; if the laborers' pay goes up, it is no use trying to keep down the rise in cost by using fewer laborers and more spades, but it may be possible to use less labor and more capital by going over to mechanical excavators. Even in the short run, moreover, there are many kinds of labor whose relative input can be varied: in the workshop the number of machinists required may be fixed by the size of the output, but there is room for changes in the complement of maintenance men or supervisors; and beyond the workshops are the offices. Generally, any kind of labor whose pay is reckoned part of overhead costs because it does not vary directly with output can, by the same token, be employed in greater or smaller amounts even in the short run. In all these cases, whether the change can be made quickly or only after some time, there is the possibility of varying the amount of one kind of labor that is used to make a given amount of one particular product.

Here again a rise in the relative pay of that kind of labor tends to reduce the relative amount of it employed. The immediate reason is that at the new rate of pay some reduction in the input of that labor will lower costs by more than it lowers output. Underlying this is a relation of great generality—the relation between the input of labor of a given

kind and the difference made to output by a unit increase in that input. A firm now has sixteen typists in its office: it could make do with fifteen, and if it wanted a seventeenth it could engage her, so why does it employ sixteen, neither more nor less? There can be only one answer: that though these things are not susceptible of more than a rough estimate, having sixteen typists instead of fifteen makes a contribution to the working of the firm, and ultimately to the output it can achieve with given total outlay, that fully offsets the addition it makes to cost; whereas having seventeen instead of sixteen would not. This answer in turn implies that, at least within the range we are considering, successive increments of input make successively smaller contributions to output. This must be generally so. If it were not so, we could raise all the food the world needs from one acre of ground by putting enough labor to work on it. For each piece of land, in given conditions of agricultural technique and with given equipment, there will be a certain input of labor that will maximize the output of corn per man; and if we raise the input of man-hours by 5 per cent beyond that, the crop will be increased, but not by as much as 5 per cent. The marginal product falls with rising relative input.

This relation holds for all the factors of production, and it sets the terms on which the employer can arrive at the most economical pattern of production—the one that will yield a given output for the lowest possible total cost. The combination of factor inputs for which the total cost of a given output will be a minimum is reached when the employment of the marginal increment of each factor adds to total cost an amount that is just covered by what it adds to proceeds. The employer will not have arrived at that adjustment as long as he can save a dollar by reducing the input of one factor while maintaining output by using more of another

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factor for an additional cost of less than a dollar. When he has used up all these possibilities of getting the same output for a lower total cost, the increment of output per dollar of expenditure will be the same at the margin of each factor input. If man-hours of one kind are being hired at \$2.00 each, and those of another at \$2.50, then the inputs must have been adjusted so that what the marginal man-hour of the first kind adds to output is four-fifths of what that of the second kind adds: the marginal physical products of the different factors must be proportionate to their unit prices.

But this principle of proportionality need not be grasped by the employer and consciously applied: because it is the mathematical implication of the principle of cost minimization, employers do in fact act upon it implicitly if they only try to minimize cost. Nor need we even suppose that they are all vigilant to do this, or that if they were they would have the needed knowledge. What the effect of marginal adjustment will be can often be only a matter of judgment. Good managers do have good judgment. But good or bad, vigorous or lethargic, adaptable or conservative, managers come under the test of results. Monopolies can remain inefficient; but to the extent that competition is effective, the firms that are nearer the minimum cost adjustment will do better than the rest, even if they have got there only by accident. Even where it leaves room for substantial differences between firms, competition still checks aberrancy: it eliminates firms that wander too far away from the minimum cost adjustment, or forces them to reorganize. But to the extent that firms are kept at that minimum, albeit within a certain tolerance, the marginal physical products of the factors they use will be proportional to the marginal costs of hiring those factors. It follows that a rise in the unit cost of one factor puts pressure on them to reduce the relative input of it.

When we discussed the supply schedule of a particular kind of labor, we found four gradients which make that price rise with input. We have now discussed the two gradients that make the demand price fall with input. First, as the input of any one kind of labor rises relative to other resources, the outputs of the kinds of products it helps to make rise relative to other kinds, and their relative price will be depressed; so even if each successive increment of input added as much to physical output as the one before, it would add less to the proceeds. But second, it never in fact does go on adding as much, at least past a certain point: the marginal physical product falls as input rises. The demand price that employers are willing to pay for n units of a certain kind of labor cannot long or far exceed the difference that is made to proceeds by having n units instead of $n - 1$; and as input rises, this difference falls for two reasons—a physical unit sells for less, and the increment of physical output is smaller.

This account of the demand schedule partakes more of the nature of abstract analysis, of “classroom economics,” than did that of the supply schedule. There it was possible to argue directly from certain facts of everyday observation. Here, though the argument is equally based on observation, the facts are not as clear-cut; they admit of more qualification or exception, and their application to the demand schedule can be reached only by a chain of reasoning. The unwillingness of buyers to take more of a given line of output except at a lower relative price; the possibility of varying the relative inputs of different factors in making one kind of product or group of products; the impossibility, nonetheless, of going on raising output by increasing indefinitely the relative input of one factor alone; the tendencies of employers to work toward the combination of inputs that will yield them a given output at the lowest possible total cost, and of competition

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to eliminate or reorient those who stray far from that combination—these are the basic observations. Evidently they do not appear entirely on the surface of things, nor are they likely to figure explicitly in the first answers employers give to the economist's questions about their decisions. Yet enough instances appear of them and of their implications, especially where we make comparisons over a wide span. Thus, to follow one line for a moment, the plentiful supply of labor relative to equipment in India explains both why civil engineering there is carried on with a host of hand tools, baskets, and panniers—where the West uses graders, bulldozers, and drags—and why the earnings of the multitudes who work in that way are so low. Some textile mills in India have equipment as advanced as any in the West, but the plentiful relative supply of labor gives them an advantage in using silk-screen printing rather than methods that use more equipment per unit of labor. The opposite condition, a relative plenty of natural resources, appeared in the settlement of the American continent: a carpenter migrating from London to New York in the mid-eighteenth century would about double his real wage; and within the continent, later on, "the frontier territory of Minnesota in 1850 paid rates 70 per cent above more settled Iowa, Missouri, and the East North Central region."⁷

But instances of this kind depend on more factors than they serve to illustrate, and as demonstrations, to say the least, they lack rigor. Perhaps that has been provided for marginal productivity analysis only by the experiments of agricultural chemists on the response of plants to various

7. S. Lebergott, "Wage Trends, 1800–1900," in *Trends in the American Economy in the 19th Century*, Studies in Income and Wealth, 24, National Bureau of Economic Research (Princeton University Press, 1960), p. 452.

Pay: Conventional and Market Forces

combinations of imputs of different fertilizers. Yet if we are in doubt as to how much weight our basic observations will bear, we can ask of each in turn whether its opposite is possible. We need not fear that we are only working through one of those exercises in deduction from hypotheses, where the interest is in the ingenuity of the thought and not in the realism of its starting point. Though we are far from being able to predict the speed and extent of the reaction to a change in the relative rate of pay for a given kind of labor, we can be sure that it exerts a pressure toward a change in the input; and that in general the higher the relative rate at which a given kind of labor is available, the smaller will the quantity demanded tend to be.

THE WHY AND WHEREFORE OF DIFFERENTIALS

We have surveyed a variety of forces that bear on particular rates of pay—forces of convention and of the market, the sense of equity, and the pressures of supply and demand. To those who are in daily contact with the actual fixing of rates of pay it is the conventional forces that are the most apparent. The arguments used about pay are mainly ethical: a wage is claimed because it is fair and just, a differential defended because it is right and proper. There is reluctance to admit that supply and demand are fixing a rate even when they do so most obviously. A recent Royal Commission in Britain thought it “necessary to re-emphasize that the failure of supply to meet the demand for policemen” underlay the whole of their inquiry into policemen’s pay; “crime is prevalent, there are not enough policemen to check it, and the broad conclusion is inescapable, namely that police pay must be improved in order to attract more recruits to the service and retain them in it.” But the Commission was careful to preface those statements with a defense against

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the charge of inhumanity: "the disputation of economists upon the validity in particular circumstances of the law of supply and demand, the principle of fair comparison or any other principle governing pay may lead to conclusions which in human terms and in their practical application leave something to be desired."⁸

This prominence of the conventional forces has led some observers to believe that they are in fact paramount—that the rates for different jobs are what they are only because people think that is what they ought to be. The inference follows that if people changed their minds, the rates could change too, and in particular that if only people would accept equal pay as right it would also be feasible.

Suppose surgeons and engineers began to be paid no more than porters and street-cleaners. What would happen? We cannot appeal to the direct test of experience, but we can see what kinds of reactions are probable. On the one hand, the costs and prices of products and services would be changed: some would become cheaper and others dearer. The buyers' reactions to this would create unfilled vacancies in some occupations, and throw men out of work in others. But there would also be shifts in the supply of labor to different jobs. Men would withdraw from occupations in which the relative pay no longer seemed to compensate for the disadvantages, and line up to enter others where the balance between pay and drawbacks had now swung the other way. In particular it is likely that the number of recruits to some of the occupations formerly more highly paid would begin to fall off. It is true there are some people, such as medical missionaries, who complete an exacting training for the sake of the service they can render and not for the exiguous stipend;

8. Interim Report of Royal Commission on the Police, Cmnd. 1222 (1960), par. 148.

and there are some artists who would rather paint in poverty than make a comfortable living in work they like less. But common observation suggests that these people are exceptional. If doctors got no more than street-cleaners, some people would still become doctors, for the sake of the interest of the work and its evident usefulness; but can we believe that the same number would put up with the arduous training, the long years of sustained mental effort as students in which they earn little or nothing, if there were no more pay for them at the end than they could have begun to earn six or seven years before? If not, we must allow that there is a supply schedule to their occupation, and that their pay cannot fall below a certain level without beginning to move down the schedule, reducing the numbers coming forward. When the pay is no more than enough to maintain present numbers, it will still bring to not a few a surplus over their own supply prices; but it has to cover the marginal supply price.

It is significant that the Soviets, who might have tried equal pay, adopted instead under Stalin in 1931 a conscious policy of widening the gap between the higher- and the lower-paid jobs. By 1956 supply schedules had shifted, and Mikoyan could proclaim a change of plan. "In the period," he said, "when we were conducting the industrialization of a peasant country, such a gap was natural since it stimulated a rapid formation of cadres of highly skilled workers which the country greatly lacked. Now, when we have a highly skilled and highly cultured working class replenished each year by people completing seven- and ten-year schools, the gap, although it must remain, will be diminished."⁹

9. Quoted here from M. Yanowitch, "Trends in Soviet Occupational Wage Differentials," *Industrial and Labor Relations Review*, 13 (1960), 166.

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These considerations about the likely reactions to the abolition of differentials are reinforced when we ask why differentials are greater in some countries than in others.

A high differential for skill usually goes with restricted access to the means of acquiring it. In underdeveloped economies this access is restricted in various ways: only a part of the children get any schooling at all; because most families are poor they cannot afford to maintain their sons and daughters through years of further education and technical training; barriers of caste, tribe, race, or tongue obstruct entry. Some of these factors may act to keep differentials high within the advanced countries too; in particular, a rate of population growth high enough to get ahead of the growth of the equipment with which qualified labor works will result in a relatively high proportion of unqualified entrants; or the immigration of the untrained may take the same effect, and this may be why the differential for skill was higher in the United States before 1914 than in most other advanced countries. Generally, however, development fosters and in turn is fostered by the extension of education and technical training; there come to be more homes that give the child a literate and knowledgeable company in his early years, and that can afford to pay and wait while he trains; exclusiveness diminishes when newcomers of many types mingle in the centers of growth, and when the struggle for a job of any kind becomes less intense.

The relative strength of the conventional and market forces is also illuminated by the way in which differentials have changed. The conventional forces generally operate to maintain what is customary and accepted; but what stands out in the record of Western countries in the last half-century is the extent to which differentials have narrowed. We have seen how the number of clerical, administrative, and tech-

nical workers has risen meanwhile, both because of a relative expansion of private and public services and because within industry itself there are now more men and women in the office for every hundred at the bench. Yet with this has gone a fall in the white-collar worker's relative pay. The most apparent reason for the ability to attract and retain larger numbers at lower relative pay is a shifting of the supply schedule by the increased public provision for education, and the increased ability of families to take advantage of it—far more children of manual workers have been getting the education that is the prerequisite for the white-collar occupations. In the same way, more of them than before have become capable of training for the skilled manual occupations. The effect on the differentials for skill has been enhanced during the last twenty years of full employment by an extension of training within industry itself. Firms have filled vacancies in the higher grades by upgrading, so that their unfilled demand has extended more for the lower grades than for labor as a whole, and the relative pay of those grades has been pulled up accordingly.

In sum, differences in pay seem to owe less to the conventional than to the market forces. It may even be that instead of opinions about what is fair having shaped the pay structure, it is the structure that has shaped the opinions. It is to the supply schedules of labor for different jobs that the pay structure seems to owe its main proportions.

But this is not to say that the relative pay for each occupation is never higher than it has to be to maintain present numbers. One possible reason for a gap between the pay and the marginal supply price lies in the slowness of the reaction of supply, but this can account for a divergence in either direction. Two other reasons make it more likely that the current pay will be the higher. One is the possibility that the

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supply curve for some occupations is very steep in the region of the present margin, by reason of the rare abilities required or the limitation of training opportunities. Demand may bid up the pay, but the rise will call forth few additional entrants, or none, even in the long run. If that has happened, as is likely in a growing economy, a reduction of the pay would set up an excess of demand but would hardly reduce the supply; and the surplus of the actual pay over the marginal supply price is a rent where the inelasticity of supply is due to natural scarcity, and a monopoly gain where it is due to organized restriction of entry. The second reason is that the supply schedule is much more effective in raising pay than in lowering pay that has come to be above it. In the first case, there will be unfilled vacancies; in the second, only a waiting list of applicants. The employer's inducement to change the rate is greater in the first case; the resistance he will meet with is greater in the second.

Gaps between the current rate of pay and the marginal supply price leave a field for the conventional forces to govern. The case last noted, of an extension of supply failing to reduce relative pay, is of wide significance in developing economies. Better education and higher standards of living extend the supply of labor to the higher paid jobs. Some of this extension of supply will be matched by an independent extension of demand, but there is still likely to be an increment of supply for which jobs can be opened only by a fall in relative pay. Conventional forces, which include the graduate's sense of his own dignity, resist that fall. We have seen that the relative pay of white-collar workers in Western countries has in fact fallen, but whereas the cause lies in social changes that have been going on continuously, the actual movement was concentrated in periods of general rises in pay,

when a relative fall required only a slower rise than in other jobs. We do not know what the pay structure would be like if those who are qualified for a given occupation but find no vacancy in it were able and willing to bring the pay down by offering to work for less. The ultimate change might be much greater than any made by the entrants available here and now, for the number who acquire the qualifications for an occupation is likely to rise with the visible extent of the openings in it.

THE PERSONAL DISTRIBUTION OF EARNINGS: THE LOG-NORMAL

The rates of pay for jobs that we have been studying confront workers with a range of opportunities for earning. How much any one worker earns in a year depends on the rate of pay for the job he has taken and also on how much he himself gets done in it—on his personal output, for instance, if he is a pieceworker, or on how many days he works. When actual individual earnings are reported, they prove to fall into a common pattern from which we can learn something about the labor market.

This pattern is the log-normal distribution. When the figures are first reported—let us suppose they are of annual earnings—they are likely to be grouped by intervals whose boundaries might be at, say, \$3,000, \$3,100, \$3,200, and so on. When we draw the corresponding histogram, we find it is skewed, with a mode that comes relatively low in the range—if the lowest earnings were near \$3,000 and the highest near \$10,000, we should probably find the mode under \$5,500; the grouping below it would be compact, and a long tail would extend into the upper reaches. But suppose that we regroup the data between boundaries set not at equal

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absolute intervals, as in our example, but so as to mark successive proportionate rises of the same extent—say, of 5 per cent, with boundaries at \$3,000, \$3,150, \$3,307.50, and so on, up to \$9,675.30 and \$10,159.10—we now find a symmetrical outline of the familiar bell-shaped kind. The change in the intervals amounted to taking equal logarithmic intervals, and when that leads to a curve with the properties of the normal curve of error, we call the distribution log-normal.

The personal distribution of earnings commonly does prove to be log-normal, whether the earnings are those of different workers in the same kind of job or cover a wide range of occupations and industries. In this respect earnings resemble some other social and economic quantities—personal estates, customers' bank deposits, firms' profits, the numbers of employees firm by firm and industry by industry, the populations of cities, the numbers of members in trade unions—all of which have been found to have log-normal distributions. For earnings, the form of the distribution can persist through great changes in the labor market: in Britain, for instance, the distribution of the weekly earnings of industrial wage earners had much the same form in 1960 as in 1906, save that the spread in 1906 was rather wider—and this despite profound social and industrial changes, the upheavals of two great wars, and an elevenfold rise in average earnings. Evidently processes of some generality and persistence are at work.

Statistical theory suggests what they are. It shows how a log-normal distribution will appear if the size of each member is the joint product of a number of influences which are independent of one another and each of which tends to raise or lower the size by a given *proportion* of its present amount. The counterpart of this for the distribution of earnings is (1) that the size of each worker's earnings depends on a num-

ber of influences, such as his intelligence, the training he has had, his health, his age, the size of the family he has to support, and the like; (2) that these influences are independent of one another, so that the more intelligent do not also comprise all the more healthy, and so on; and (3) that a given intensity of any one influence takes the same proportionate effect on different workers' earnings whether those earnings are high or low—that if a certain degree of ill-health lowers the laborer's earnings by 10 per cent, for example, it will lower the craftsman's earnings by 10 per cent too. The assumption of independence evidently goes too far, and the fact, for example, that high intelligence and intensive training often go together may account for the higher earnings being sometimes more numerous than a strictly log-normal distribution would allow. But the assumptions need not be rigorously satisfied for the general effect to appear. That earnings are so often distributed log-normally points to the amount of each worker's earnings as being the outcome of a large number of influences which all tend to raise or lower earnings in the same proportion wherever they are present in given strength. In that case the fact of inequality, and its extent, lie beyond the reach of particular acts of policy. These acts change a few out of the many influences, and they may affect the fortunes of particular persons, but the pattern of the aggregate will persist.

This may appear more clearly if we think of the influences that bear on each man's capacity as giving him a certain potential output in each of a number of different jobs. (It is possible to imagine the arrangements of piecework applied generally, so that different men will earn different amounts in the same job according to the output of which each is capable.) Men will now distribute themselves between jobs by each moving toward the job in which the combination of

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the rate for the job with his own particular output in it offers him the highest earnings. The movement takes its own effect on the relative rates for different jobs, and these relative rates are also being changed meanwhile by shifts in technique and in consumers' demand; but the changing pattern of rates of pay per unit of output job by job impinges only as one among many influences on the assortment of earnings within the potential of any one man, and will not prevent the ultimate distribution of earnings from continuing to take the log-normal form. This would still be so even if some authority decreed rates of pay job by job so as to equalize average earnings in all jobs. One economist has concluded from his analysis of the log-normal distribution of earnings "that whatever the rates of remuneration which either rational choice or irrational prejudice allocate to the units of output in different occupations, such scales of relative rewards exercise no more than a superficial distorting effect upon a basic pattern. This underlying pattern is independent of the subjective feeling of consumers and of entrepreneurs and is determined by objective facts. It depends, in other words, upon the varying relative effectiveness of human abilities when faced with different kinds of productive problems."¹⁰

10. A. D. Roy, "Some Thoughts on the Distribution of Earnings," *Oxford Economic Papers*, new ser. 3 (1951), 135.

6 THE FIXING OF RATES OF PAY: COLLECTIVE BARGAINING AND PUBLIC REGULATION

THE ORIGINS OF COLLECTIVE BARGAINING

We have been studying various forces that bear on the rate of pay, but in many countries the actual rate is commonly fixed by a collective bargain and seems clearly to depend upon the bargaining power the parties can apply. What is bargaining power, and how much difference does it make?

Since the worker seeks to acquire it by belonging to a trade union, we may gain some insight into it by considering the needs that the trade union meets. From the end of the eighteenth century until the present day, in one country after another, trade unions have arisen wherever modern methods of transport and manufacture have impinged on a traditional economy. It seems likely that the new methods bring with

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them new needs or an intensification of old ones. They also bring with them, it is true, some necessary conditions of unionism that may not have been present before—workers who are not isolated but able to keep in touch with one another; a sufficient number who are educated, so as to be able to provide leaders and administrators, or educated outsiders ready to serve; and real wages that are high enough to enable the member to keep up his dues. It is also true that a spurt of industrial development has often been associated with inflation or with war, which itself is inflationary, and men feel more need of a means of pressing wage claims when the cost of living is rising, or are more likely to think that the trade union gives them value for their money when rises are frequent than when pay remains unchanged for years together. But there is also reason to think that trade unions take their rise with industrialism because the changes that industrialism brings in men's working lives make them more conscious of a need to stand together.

Some of these changes affect the personal relation between employer and employed. As firms become bigger, the wage earner no longer works alongside his employer, may cease indeed to see much of him or have any access to him. At the same time, the proportion of the wage earners who can hope to become employers themselves necessarily declines: there is a growing class of permanent wage earners, who cannot identify the employer's prospects with their own and can seek betterment only through raising wages. The pattern and mood of the day's work also change: instead of enjoying the spontaneity of the man who works on his own account or in a small group, and the alternation of spells of indulgence with days of long hours and intensive effort, the factory worker must keep regular hours, maintain a prescribed pace, and take the foreman's orders. Meanwhile, there is a loss of

security. Markets are no longer so well insulated by distance: the local worker feels the competition of goods, or other workers, coming in from outside; his own job may depend increasingly on his product finding buyers in markets far away. The fluctuations of such trade break up the protection he has enjoyed through the observance of customary rates of pay, and expose him to cuts in time of slump, with the corresponding need to press claims vigorously when times permit.

But besides these losses of personal contact, freedom, and security, there are other changes that bear more directly on his ability to influence his rate of pay. At all times, if he makes his own bargain with a prospective employer and does not think the terms offered him are good enough, his remedy is to hold out for better. If the employer sticks to his first offer, the outcome depends on which can hold out the longer; though, if he and the employer are near enough of one mind on what that outcome would be, they will settle for terms that seem to each as good as he could hope to get in the end. In several ways industrial development impairs the wage earner's ability to hold out. For one thing, he is now likely to have fewer resources to live on while he is out of work. In the earlier community he was more likely to have had a settled home with a family around him that had other sources of income, and often some land to cultivate; but the labor that comes in to the first mines and factories seldom has such roots in the ground nearby. Migrant labor had always had this disability, that when it reached the place where the job was going it had little means of support with which to bargain about the pay, and that may be why such labor has been so conscious of the need for a trade-union rate, whether it be the masons of fifteenth-century England with their "yearly congregations and confederacies," the wool combers of eight-

eenth-century England, or the sheepshearers of Australia in more recent years. The labor force of early industrialism is not usually migrant in this sense, but it is commonly uprooted, and lacking in means of support while it is out of a job. "A landlord, a farmer, a master manufacturer, or merchant," wrote Adam Smith, "though they did not employ a single workman, could generally live a year or two upon the stocks which they have already acquired. Many workmen could not subsist a week, few could subsist a month, and scarce any a year without employment. In the long run the workman may be as necessary to his master as his master is to him; but the necessity is not so immediate."¹

The rise of industrialism also tends to reduce the alternatives open to a worker who does not think a particular offer good enough: when the average size of the firm rises relative to the whole labor force of a region, the number of alternative employers within any one worker's knowledge and reach generally falls. In particular regions there may be a thickening up that more than offsets this: in the industrial conurbations the average worker is in effective touch with more alternative offers of employment than in the small town, even though what firms there are in such towns are smaller. But save for these effects of local concentration, the rise in the average size of the firm is a movement in the direction of oligopsony and monopsony in the labor market.

Industrialization, moreover, generally goes with a growth of population, and there are often times when the applicants increase faster than the vacancies. The growth of population may have set in first, as in Western Europe in the eighteenth century and Asia in the twentieth; or the opportunity of spreading over a rich hinterland may call forth large fami-

1. *Wealth of Nations*, Bk. I, chap. 8.

lies, as in North America; or industrialization itself may bring with it improvements in hygiene and changes in custom that upset the old balance between deaths and births. More jobs are being offered year by year, and in the now advanced countries the trebling and quadrupling of population over the last 150 years has been matched by a trebling and quadrupling of jobs. But it would have been amazing if the match had been exact year by year. Besides times of labor shortage there have been times when it was the jobs that were scarce, and it is these times that have burned themselves into the minds of workers conscious of the swarms about them, the pressure on housing, and the streams of migrants. Even though decade by decade the jobs did in fact keep pace with the applicants in the national aggregate, there have generally been regions where the applicants were in continual excess, or would have been but for migration. But migration heightens the sense of inability to stand out alone; the emigrant sees himself as surplus to requirements at home, and arrives homeless to look for a job among strangers.

If the changes we have been noting had been the only forces at work, the lot of the wage earner would have been harder even than it has been. In fact, though the new forces were powerful, there were others at work to protect the wage earner in his bargain. Sometimes the force of custom was strong, or a neighborhood's sense of the subsistence to which a man was entitled and which in common decency the employer could not deny him; this meant that the pressure of growing population showed itself from time to time in a fringe of complete unemployment rather than in a Dutch auction bringing down the wage of those employed. The better workman, too, did not feel the full force of the pressure of numbers. If all men were interchangeable units of labor supply, the labor market would tend to fluctuate like

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a corn market: an excess of one applicant or one vacancy would move the rate in all hirings. But in fact the employer distinguishes between man and man, especially in a neighborhood where each man has his local repute: even when many men are out of work, the good workman may be assured of his job and a ready welcome from another employer if he falls out with his present one.

In discussing the pressure of numbers, moreover, we have already noticed how the rapid and sustained growth of population in the nineteenth century did not bring a cumulation of unemployment, but in the long run the number of jobs rose as much as the number of applicants. This came about through surges of demand that brought actual competition between employers for labor. In the rising phase of the trade cycle there were more jobs available in industry: in the north of Britain that showed itself where the supply and demand for labor met most visibly—in the “mop fair” for farm servants, in which the prevailing rates of the year’s engagements went up in a year when the mines and factories were busy. Particular industries in a phase of rapid expansion sent out their recruiting agents. The growth of some occupations was great enough, even within a rapidly growing aggregate, to bring a relative contraction of the supply to others, and domestic service was an example of an extensive occupation—in Britain before 1914 there were more workers in it than in engineering—in which the competition of employers for a short supply raised relative pay.

These forces sheltered the wage earner from the downward pressures of competition when he made his bargain, and sometimes brought competition in on his side to get him better terms. They alone explain why, despite the pressure of growing numbers entering the labor markets of most Western countries in the nineteenth century, money wages on balance

rose. They help to explain why by far the greater part of the wage earners did not join a trade union. But that these things are felt to need explanation reminds us of the prevailing disabilities of the wage earner. Especially where industrialization was concentrated locally, many wage earners had reason to believe that they could not bargain each man for himself. To do that, they would have to be able to refuse a job on the terms first offered. Sometimes they could; but too often they knew that if they held off, either another man would take the job or they themselves would be starved out before the employer had lost much.

The remedy was to stand together. They looked to the trade unions they formed to give them bargaining power, which is the power to change offered terms by withholding consent.

ANALYSIS OF BARGAINING POWER

Bargaining power in that sense is confined to the actual process of negotiation, and can be exerted only because terms are negotiated and not announced. There are many dealings in which the buyer or seller does simply announce his terms, and leave it to the other party to take them or leave them. That is so, for instance, in much Western retailing, as distinct from secondhand dealings in the West, or the bazaar in Asia. But it also appears in the labor market, even where collective bargaining is the general rule: an employer advertises a vacancy at a fixed rate of pay, or the members of a profession take what work is given to them at a standard scale of fees. These announced prices and rates of pay are fixed only for the time being, and as supply and demand shift they too will be changed; but at any one time they will not be changed as the result of a negotiation. When negotia-

tion is accepted, it takes place, just as the announced price is fixed, within a certain setting of supply and demand that prescribes limits to the range of possible outcomes. But within those limits the actual outcome depends greatly on bargaining power. This power derives not from the setting but from the loss that one party can impose on the other by withholding its consent to a settlement in the course of negotiations within a given setting.

Each party will commonly enter negotiations with an approximate target. We might ask employers and trade unionists separately, "Suppose the other side notified you of its complete willingness to accept whatever terms you named, what would these terms be?" The answer would provide starting points for the choice of targets. Sometimes these starting points would be far apart, but they would not be the product of mere wishful thinking—for the employers could not go below the rate that they reckoned just high enough to attract and retain the labor force they required, and the trade unionists could not go above the rate that they reckoned just low enough to keep at least the greater part of their members employed. The clearer the requirements of the market—that is, the more competitive the markets in which the employers sell their products and hire their labor—the more likely it is that the two starting points will be close together: there are instances of negotiation in which a sequence of claims, rebuttals, and concessions only provides an approach through an accepted ritual to the outcome both parties have foreseen. But generally the parties have reason to believe that their starting points will lie some way apart. There is, for one thing, a natural bias on each side, the easier to indulge when so much about the future is uncertain in any case: the trade unionists will rate the risk of a given wage imperiling employment lower than the employers do, and the employers

will see less risk of a given wage failing to retain the labor force. But bias apart, there can be a difference in the nature of things between the wage that is just low enough to maintain employment and that which is just high enough to maintain the labor force. In the competitive conditions already mentioned the difference will be small. But to the extent that the demand for the product is inelastic, the wage can be pushed up without much falling off in employment; and to the extent that the supply of labor to the particular employers is inelastic, the wage can be pushed down without much falling off in the labor force. Each party, then, in considering its own starting point, must have regard for the fact that the other's is somewhat removed. The fact of bargaining colors the approach to it. In choosing its own target—the rate that it really means to get—each party must move some way toward the center.

Even so, a gap remains. The task of negotiation is to close it. The first method is argument, and here the trade union can help its members by providing skillful advocacy. Even a horse trade proceeds by appeals to reason. The parties to collective bargaining have their consciences too, and can be moved—despite themselves, it may be—by an appeal to the emotions. The parties to a major negotiation commonly find themselves more influenced by public opinion than an outsider might credit. They may also be susceptible to pressure from government. All in all, much depends upon the skill with which a case is presented. Besides that, there is the specific skill of the negotiator, which is basically, perhaps, the ability to sense the other party's real sticking point, so that he himself neither struggles for more nor settles for less than he can really get.

If negotiation closes the gap, as most often it does, the skills of the advocate and negotiator can have done much to

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decide what the terms shall be on which agreement is reached. If negotiation fails to close the gap, then unless bargaining goes over into arbitration the only resort is to the test of endurance. The negotiators themselves may be put to that test, as they sit on day after day and long into the night. Or they may adjourn, and leave it to their constituents to see which side can hold out longer through a strike or lock-out—we may use the word stoppage to cover both.

How bargaining power works can be envisaged as follows. The longer a stoppage has gone on, the harder both sides will generally find it to carry on, for the pressure of some of the losses cumulates, and the resources from which each day's fresh losses can be met will be dwindling. The terms on which each side is willing to settle rather than stay out longer will therefore become more and more favorable to the other side as the stoppage goes on, until a day comes when the convergence is complete and both sides are willing to call the stoppage off on the same terms. If at the outset both held the same expectation of the endurance of both, they would also agree in foreseeing the convergence, and would be willing to settle before any stoppage began for terms they regarded as all they could hope to get in the end. But a side might overestimate its own endurance or underestimate the other's. In that case it would be willing to settle straightaway only for terms less favorable to the other side than that side would expect to get after a stoppage, if its expectations were realistic—and the gap would be still wider if the other side too were overhopeful. So a stoppage there would be. But as it went on, the expected outcomes would be found to be unattainable after all, and each side would become willing to give increasingly favorable terms to the other rather than hold out longer. This willingness might well not be proclaimed, and it is one func-

tion of the conciliator to find out how the two sides really feel and reveal their common ground.

This account is abstract. In practice a stoppage is not merely a test of endurance but also, in its way, a continuance of negotiations, which serves to galvanize some elements in them—especially the influence of public opinion. The parties may be moved by considerations less rational than the balance of the cost of going on against the cost of conceding better terms: like countries at war for a strip of desert, they may set the vindication of a right, or the planting of a flag, far above all reckoning of the cost; or they may refuse a concession that would bring them an immediate balance of gain because they feel it would have been wrung from them at the pistol's point. Particularly if between them they are ruining their own industry, neither may want to surrender to sabotage. It is not even clear that the willingness to make concessions will always increase as a costly struggle drags on; greater suffering may generate only grimmer determination. Yet the account we have given does serve to lift out of the welter of events the specific influence on the ultimate settlement of the costs of withholding consent.

For the trade unionists those costs are made up first and foremost of the loss of income for themselves and their wives and children. Many trade unions help their members to meet this loss by issuing strike pay, and unions have often provided this benefit and no other. But there are also many unions, even in Western countries, that have no strike pay; and strikes do sometimes occur and are sustained by workers who are not unionized at all. In these cases leaders can do much to maintain resistance by holding demonstrations of solidarity, collecting funds, and organizing relief.

For the employer the immediate cost of a stoppage is the

loss of the profit, if any, that he could have made by working on the terms for which he could have settled, together with the charges he must incur to keep his plant and cadres intact although not working. Beyond them is the loss, less easy to quantify but often graver because it may continue for years to come, that is inflicted by the impairment of customers' good will and the diversion of trade to competitors. The extent of the costs that a stoppage will impose on an employer varies with the state of his trade. Monday's newspaper must come out on Monday or never be produced at all; but the annual total of most kinds of output can be made up at various times within the year; and when this total will in any case be below capacity, a stoppage of some weeks may not reduce it but only enable it to be produced more economically. During the stoppage, moreover, the employer may be able to keep his customers supplied out of stocks which he is in any case glad to get down. It is otherwise when he is working to capacity: a stoppage then does mean an irrecoverable loss of profitable production and the disappointing of customers. For these reasons the bargaining power of the trade union has sometimes been virtually identified with the state of the employer's order book. But the connection is not complete or invariable. When demand runs high, a stoppage means disappointing customers, it is true, but there is also less fear of their being satisfied elsewhere and staying away. In prosperous times firms have the resources with which to tide them over a stoppage, whereas in depression a firm whose cash position is tight may be acutely embarrassed by any loss of sales. So the state of demand and the extent of the embarrassment a firm will suffer from a stoppage do not always vary together. When demand runs strongly, it is true, the rate of pay that would be arrived at in a perfectly competitive market for the factors of production is higher, and the limits

within which negotiations about pay take their own effect are lifted accordingly; but bargaining power will not necessarily push the settlement nearer the upper limit in good times than in bad. In bad times, for instance, when the limits have shifted downward, the repugnance felt to a cut generates in the trade unionists a specially strong will to hold out.

So far, however, the discussion has assumed that the prices employers receive for their products are fixed independently of the settlements made for pay: if once we remove this assumption and allow that a higher settlement may be covered by a rise in prices that would not have come about otherwise, then bargaining power, as the power to change offered terms by withholding consent, does vary with the state of the market. If in a softer market environment employers have less fear of losing business through putting their prices up, the cost to them of meeting a claim will be smaller, and the cost of a stoppage will loom correspondingly larger. But the market environment in this sense depends not on the state of demand alone but on the extent of competition. This in turn depends in part on the area covered by the collective bargain, a question to which we now turn.

THE BARGAINING AREA

In countries where collective bargaining is the predominant way of adjusting rates of pay, the areas covered by the typical bargain differ widely. In Scandinavia, Western Germany, the Netherlands, and the United Kingdom, for example, the typical area is that of the single industry. In France, on the other hand, collective bargaining is predominantly regional; and in the United States more than four-

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fifths of the collective agreements in existence in a recent year had been negotiated with single employers. Why these differences?

Those who are used to industry-wide bargaining are apt to put the question in the form, how can any other system work? For industry-wide bargaining meets needs of both trade unionists and employers. The trade unionist on the defensive, fending off a cut, feels the need to hold the line throughout the industry, lest his own employer be undersold by another who has succeeded in reducing wages. But equally when he is pressing for a rise, the trade unionist may be told in good faith that it can be granted only if all competing firms are going to have to pay it. To have a common front throughout an industry also accords with the unionist's desire for solidarity, and his sense that it is only fair to have one and the same rate for the job wherever it is done. The employer who is sensitive to price competition sees the same advantage as the trade unionist in putting a floor under it by enforcing a common minimum rate of pay: associated employers have encouraged and helped trade unions to bring the nonassociated into line. Employers no less than trade unionists are sensitive to their flanks when they are on the defensive: if the unions are pressing claims, and gaining ground firm by firm, the employers are likely to unite for mutual defense. It is an immense relief to any one employer to know that he is now unlikely to be struck unless all his competitors are struck too; and it is an economy of time and effort for him to have the negotiations conducted by the officers of his association. In practice, moreover, he is likely to keep more executive discretion in his own hands: the industry-wide agreement can of its nature contain only simple and general provisions, yet the associated employer has met his obligation to negotiate by putting himself under it, and

what it does not include is left to his "prerogatives of management."

Nonetheless, by no means all collective bargaining has widened out to cover whole industries. The reasons are partly matters of geography and history. Where a number of firms in one industry are concentrated in one region, especially if they are relatively small and closely competitive with one another, one agreement for all is likely. Such regional agreements are made in the United States, for example, in the clothing trades, and in building. But in a vast country such as the United States the parts of one industry in different regions may be separated from one another by differences of outlook and sympathy as well as space. Even in Britain "industry-wide" does not always include Scotland with England and Wales. Much also depends on how collective bargaining took its rise. In the United States it rose in a community where employers had a strong sense of their own independence, a sense that was reinforced by legal sanctions against their combining, albeit combination for collective bargaining was formally exempt. The great extension of collective bargaining, moreover, came from 1933 onward, when the trade unions advanced plant by plant, helped by legislation which gave them bargaining rights not with any two or more employers together but with only one employer at a time. Multi-employer bargaining requires centralization of funds and an effective national executive in the trade union: if, as in France, the members are capable of militant action from time to time but do not remit regular dues, the power of the union resides in the branch and finds its natural arena locally.

There are also some tactical advantages in bargaining with the single employer. Industry-wide agreements are likely to be held back by the capacity to pay of the less profitable sec-

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tion: by bargaining with single employers the trade unionists can get most from those who can give most. But the employer may gain from that too: if he is in difficulties, and can convince the trade union that these are not within his own power to overcome, he can settle for less; if he is prosperous, he commonly likes to be known as one who pays high. In negotiating with one employer at a time, the trade union has the opportunity to support a strike of a part of its membership with the whole of its funds: it can concentrate its thrust on a narrow front, and if it breaks through there, it can fan out by requiring other employers to concede no less. If it strikes one employer, it leaves his competitors at work. But the employer who has confidence in his own abilities will risk that for the sake of being able to make his own bargain in his own way and not having to trammel himself with other men's doubts and difficulties.

In the event, the outcomes of collective bargaining in areas of different size prove to be less divergent than might be expected. The differences of working are more apparent than real. Where bargaining is with the single employer, there may also be pattern bargaining, and agreements that are formally independent may in fact be coordinated by the trade union. Nor can a union make free use of its power to strike employers one at a time: the weapon has too much recoil—the greater the pressure on the employer, the greater the danger to the prospects of those who expect to go on working for him; and in any case experience has shown that if the tactic is pressed home, the employers will associate. Multi-employer bargaining, on the other hand, is consistent with not a little local flexibility: especially in a rising labor market, actual earnings will often rise above the industry-wide rates, and the differences may in effect be negotiated firm by firm. For these reasons it seems likely that insofar as the prices at which

firms sell are beyond their effective power to vary merely as a result of the bargain, the coverage of the bargain makes little difference to the outcome: the firms' capacity to pay is given independently and multi-employer bargaining does not seem likely to use it up more or less fully than bargaining with one employer at a time. But we have already noticed the possibility of raising prices solely as a result of the bargain. When this is present the coverage does make a difference. Multi-employer bargaining alone gives each employer an immediate assurance that his competitors will all have to pay the same minimum rates as he, or increase their costs by the amount of the same rise in rates. It is likely that multi-employer bargaining will do more to keep rates up when the pressure on them is downward, and more to raise rates whenever employers are not restrained from passing on the rise in higher prices.

The second effect has received special attention in recent years. The restraint may be absent in any one industry because employers have got into the habit of keeping in step with one another—they follow one of their number as price leader, or, whoever moves first, the rest generally follow—and there is not enough competition from abroad, or resistance from consumers, to prevent them from raising prices in that way. But employers are much more widely able to raise prices to cover rises in pay in the conditions of full employment that have prevailed in the Western European countries since the Second World War. In almost all those countries money incomes, both pay and profits, have risen faster than the real national product, so that prices have risen, often at the cumulative rate of 5 or 6 per cent per annum. Economists analyzing this inflation have attributed much of it to the pull of an excessive monetary demand. But the course of events since 1952 has convinced many of them that another process has

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been at work—that costs have assumed a capacity for self-propulsion, that rises in pay have taken the initiative, and rises in prices and the expansion of the monetary circulation have been the effect of rises in pay and not their cause. This process of “cost push” is seen to be capable of continuing in the absence of any excess demand. Its essential conditions have been twofold. First, there has been a frame of mind among employers that makes them expect that prices will go on rising, and that higher prices will continue to prove compatible with selling all that can be made. Secondly, the coverage of the collective bargain has been tacitly extended from the industry to the whole economy in the sense that an “annual round” of wage settlements has become an accepted institution—settlements coming at much the same time are made for much the same amount. This spontaneous coordination extends beyond the bounds of each separate industry the assurance that other firms’ costs are being raised equally; it makes employers the more ready to negotiate rises; and it strengthens their belief that the authorities will permit, and if need be promote, a commensurate expansion of the monetary circulation. In the Netherlands down to 1959, and in Sweden since 1956, the amount of the general rise has been the subject of a central agreement, though industries have continued to bargain separately.

The institutions of voluntary collective bargaining were worked out in a world where the restraints against raising selling prices were stronger than they have been in the Western European countries of late. Inflation originally due to demand pull has been perpetuating itself through collective bargaining by cost push. The adaptation of collective bargaining to a world of full employment is a major unsolved problem of our time.

EFFECTS OF COLLECTIVE BARGAINING
ON THE PAY STRUCTURE

If these are the workings of collective bargaining, what has been their effect on the structure of pay? Does the record suggest that they have made particular wages or salaries higher or lower relative to the rest?

At the outset it is clear that collective bargaining has made numerous changes in the pay structure because of precepts and tactics that the trade unions have applied. The most general precept of trade unions is that differences of pay, though proper between occupations, are wrong within them: there should be one and only one rate of pay for a given job, irrespective of who does it and where it is done. Basically this rule of "the rate for the job" is a precept of the tactics of defense: if the market is pressing down on rates of pay, a cut accepted at one point will mean competitive undercutting until everyone has to come down. But equally, when the union is pressing for a rise in one sector, it may find that the charge can be borne only if competitors elsewhere are made to bear it too. These tactical considerations are reinforced by the thoughts that the strength of the unionist lies in solidarity, but differences of pay are divisive; and that two rates of pay for the same job cannot both be fair.

By applying this principle of "the rate for the job," trade unions have helped to bring about marked changes in wage structures. They have set their face against different men of a given occupation being paid at different rates within the same plant, save for such differences as are based systematically on some objective feature of a particular operation, such as the complexity of the equipment used for it, or of a particular man, such as his seniority. Trade unions have also

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worked to reduce differences between the rates of pay for a given occupation in different plants within one region. These have commonly been wide, even between plants that are close neighbors. The first effort of the union is to enforce a common minimum, and this will mean raising the relative rate of pay in the lowest-paying plants. After this, the continuing higher rates in some plants provide arguments for raising the others again; but the claim will be tempered insofar as these other plants are inescapably high-cost plants in other respects—because of location, for example—or are subject to severer competition in their particular product market, so that leveling pay up would threaten loss of jobs there. Generally unions have to accept a rate that is within the capacity of the more constrained sector of the industry, and subordinate the principle of uniformity to the advantage of getting more where more can be got.

The same conflict of considerations has entered into the policy of the unions toward regional differences. On the one hand they have tried to reduce them, and their efforts have been reinforced by the tendency to give the same absolute rise to all regions in times of rising prices, and by the willingness of employers, when they negotiate centrally for several regions, to agree to some leveling up of rates at a time when they would not agree to a general rise. In a number of countries a big change has been brought about in this way since 1914. In that year, for example, the rates for the building craftsman and the engineering fitter in central London were about double what they were only three hundred miles away, in Cornwall: by mid-century these differences and others like them had almost wholly disappeared, save for a continuing “cost of living allowance” for London and sometimes for certain other cities. But on the other hand, when

unions have negotiated separately with the employers of different regions they have met with more resistance to raising the lower rates, and the precept of leveling has had to make room for that of advancing wherever one can: the lower rates of some regions do not always forbid a further rise in the others.

The trading relations between different regions of one country in some ways resemble those between different countries, but trade unions in the higher-wage countries have not been able to do much to enforce "the rate for the job" internationally. They have lent general support, directly and through the International Labour Organisation, to the causes of trade unionism and labor legislation in the countries where wages are low. Their international Trade Secretariats try to coordinate action, and the unions of one country have often given help to those of another when battle is joined. But seldom have unionists acted as the American glassworkers did in the 1880s: seeing their own wages imperiled by their employers bringing in European glassworkers under contract to work at lower rates, they sent out delegates who formed some of the glassworkers of England, Belgium, and France into branches of their own American union. The more usual reaction of unionists to competition from the products of low-paid labor has been to demand a tariff "to equalize costs and make competition fair."

The purposes that unions bring to bargaining comprise not only the enforcement everywhere of one rate for each job, but also the fixing of what seem right and proper differences between the rates for different jobs. Sometimes here too the aim has been to level up. The Swedish congress of trade unions, it has been observed, "has followed a generally egalitarian line, a policy of whittling away gradually at almost

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every sort of wage differential,”² and this has included a deliberate holding back of the wages of pulp and sawmill workers in 1937 so that the loggers might get more. International comparisons suggest that greater centralization of bargaining usually goes with smaller wage differentials between industries. But more usually the changes in these differentials have not been an object of policy as much as the changing by-product of the endeavor of the unions in each industry to do as well as they can for themselves, and, at the least, keep up with some other industry that stands close to them.

The differentials between occupations, however, and especially the differential for skill within any one industry, have been very much an object of union policy. There seems to be a clash of interests here: if the rise of the total wages bill that an industry can bear at a certain time is given, the differential for skill cannot be widened or contracted without one or the other of the parties to it getting less than they could have got otherwise. But the clash is felt only if skilled and unskilled are distinct groups: when the unskilled can look forward to becoming skilled, a widening of the differential means a brightening of prospects. Cotton piecers expect to become spinners; men entering steelworks as laborers may rise to be in charge of a furnace: in such cases it is not usually a strong purpose of the lower paid to raise their pay relative to the higher rates. But when there is little movement between grades, the clash is there and is generally felt, whether the grades belong each to its own occupational union or all to an industrial one. It is bound to be stirred up even by the formulation of a wage claim: out of a given rise in the whole cost of labor to employers, the lower paid will get a bigger share if all rates are raised by the same absolute amount, and

2. L. G. Reynolds and C. H. Taft, *The Evolution of Wage Structure* (New Haven, Yale University Press, 1956), p. 247.

the higher paid if they are all raised by the same percentage.

But beyond these effects of trade-union precepts and tactics at particular points, the question remains whether the trade union does generally and inherently get its members higher pay than they would have otherwise.

The record gives no clear answer. In fact it cannot give one, because the presence or absence of trade unionism is only one of many differences that enter into any comparisons of pay in different employments, whether we take different parts of the same industry or different industries, occupations, or regions. In the United States, for instance, the most highly unionized industries in recent years have also been industries with a relatively large amount of capital per worker, a high degree of concentration of output in a small number of firms, and a high rate of technical progress. The wages they pay are in fact relatively high, and in recent years have risen more than the average. How much of this is due to their being highly unionized, or to unions of given strength being able to achieve more in the setting this kind of industry provides, or to factors that have nothing to do with unionism? The often observed absence of association between the strength of unionism and the level of pay is equally inconclusive. In 1892, for instance, when differences in the degree of unionization were greater in Western countries than they are now, Alfred Marshall observed:

trade unions have been stronger in England than on the Continent, and in America; and wages have been higher in England than on the Continent, but lower than in America. Their strength in England was partly due to that force of character, which was the chief cause of the excess of English over Continental wages. Their weakness in America was partly due to the very

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causes that made the wages of the American working man so high; viz. his restless enterprise, his constant opportunities of bettering himself by changing his abode and his occupation, and the abundance of land on which he could settle as an independent owner. The highest wages of all that the world has known have been in some parts of California and Australia; but they were due to causes which excluded the action of Unions.³

If pay has risen as fast in nonunionized occupations as in unionized, that may be only because market forces have operated more strongly to raise pay in the former, and if unions had been strong in them, pay would have risen even more; or because the unionized sector did take the lead but pulled the other after it, through the strength of men's attachment to customary parities or the desire of employers to forestall the union organizer.

Yet though we have no controlled experiments and cannot generalize from aggregates, the study of particular phases and industries, with the local comparisons and contrasts they throw up, suggests some lessons of experience. There are two respects in which trade unions do appear to have a differential effect upon the pay for particular jobs.

One is that when they come into action for the first time, they raise the rate of pay relative to other rates; and in subsequent movements it retains, though very likely it does not improve on, this higher ranking. In this impact effect we may well have the measure of the bargaining power of trade unionism. Until the union is formed, the employer may be able to get the labor he needs at a rather lower rate than he would in fact be willing to pay without having to offer fewer

3. *Elements of Economics of Industry*, Bk. VI, chap. xiii, par. 18.

jobs. There is generally some zone of inertia between an upper point at which the rate of pay clearly begins to cut back the number of jobs offered, and a lower at which it clearly begins to cut back the number of workers offering themselves. This zone will be larger, the less elastic the demand for labor and the supply. The demand for labor is inelastic when the buyers' demand for the product is inelastic, or when labor both accounts for a small part of total costs and cannot easily be replaced by other factors. The supply of labor is inelastic when workers cannot readily move to alternative employments, because there are few other jobs for which they are qualified, or there are few such jobs near by and the workers find it hard to move; or because employers agree not to compete for labor. As long as workers make their own bargains and cannot hold out for more than they are offered, the rate of pay may stay near the lower point set by the reaction of supply. It may even be that this reaction is negligible, and the rate is set only by the custom and opinion of the neighborhood or by "the fodder basis," the bare bodily needs of the worker. In all such cases a trade union will be able to raise the rate of pay substantially without adverse effect upon the numbers employed—such seem to have been the effects, for example, of the two waves of unionization of the unskilled in Britain, in 1888–91 and 1910–13. Elsewhere, where the zone may be smaller or the actual rate not so near the lower boundary, the bargaining power of the trade union still has room to raise pay when it is first brought to bear.

The inelasticity of demand also allows trade unions to push up the rates of pay of particular groups who may be relatively highly paid already. Where elaborate equipment is operated by small teams, as in newspaper printing and the process industries such as oil refining, the teams' pay is a small part of the total cost of production, so that a substan-

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tial rise for the operator means only a small percentage rise in cost. More widely, this can hold for particular specialists, such as maintenance men, even when they are working in firms whose labor costs as a whole are a high proportion of all costs. In such cases a trade union may be able to push the rate of pay up above the supply price of labor to the job. In the process industries the trade union also has an advantage of bargaining power, in that even a short stoppage is extremely costly to the firm, and the whole training and impulse of management is to avoid it.

A second respect in which a differential effect of trade unionism has been seen is in a stronger resistance to cuts in time of depression. What we know of the movement of wages in times before the rise of modern trade unions shows some cuts in times of bad trade, particularly in employments depending on distant markets, but a remarkable absence of trends descending for ten or twenty years together as a counterpart to the many rising trends. It has been noted that workers who seem incapable of combining to press for a rise will spontaneously unite to refuse work at less than the customary rate, even when jobs are scarce. The "elbow joint" or ratchet effect does not depend upon trade unions. But they do seem to strengthen it: notably in the Great Depression of 1929–32 in the United States the fall in rates of pay was less in the unionized sector than elsewhere. An important use of the elbow joint appears when excess capacity or ease of entry in a price-competitive industry leads to a price war, and firms try to live with cut prices by cutting wages: a union will put a higher and stronger floor under that sort of competition. This has proved one of the strongest inducements to employers to accept and sometimes even foster trade unionism.

The impact and ratchet effects made themselves particu-

larly felt in the rhythmic alternation of good and bad trade that ran through most Western economies from the time of their industrial revolutions until the Second World War. In phases of rising activity the demand curves for particular kinds of labor, especially in the construction and export industries, shifted outward. That might lead quickly to an extension of employment, and employers competing for recruits would raise rates of pay all around. But this effect might follow only slowly if at all, and meanwhile the employer's capacity to pay would be above the prevailing rate. This is the situation that lets a trade union take its impact effect when it begins to bargain, and an established union can take a similar effect when the situation arises in a boom. It can shake the branch as soon as the fruit is ripe: a claim backed by its bargaining power can obtain a rise that otherwise would have come only later if at all. When demand falls, it is the ratchet effect that comes into play. Employers are put under an immediate pressure to cut costs, and one or another of them is likely to take the lead in cutting rates of pay if he can deal with his own work people separately and especially if he can deal with them individually. A trade union can defer a cut, or stave it off altogether, both because it can back its resistance with the threat of a strike and because it can offer each employer an assurance that the rates his competitors pay will be kept up too. The pattern of stoppages in the trade cycle bears these expectations out—a large number of short stoppages in the recovery and boom; in the recession only a few, but those protracted.

Yet it is still hard to tell what the net effect of the trade union has been in the course of the trade cycle. When there is a settled procedure for bargaining, negotiations are not reopened before a fixed term, and employers meanwhile pay no more than the agreed rates: then collective bargaining may

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bring a rise later than individual bargaining would have done. In recession, employers who have no trade unions to deal with may still be restrained from cutting rates by respect for custom and for the good opinion of the neighborhood and especially of the work people themselves, and by their expectation that any cut they make will only be matched, and very likely more than matched, by their competitors. It is better then not to break the line and start the rush. At least in an industry like building, whose prices need not fluctuate with supply and demand in a produce market, we have seen how the record shows a remarkable absence of falls in rates of pay through centuries before trade unions of the modern kind were there to hold the rates up. In sum, it well may be that the rise of pay from end to end of a sequence of trade cycles has been no greater under trade unionism than it would have been without it. But the average rate of pay over the whole span may still have been higher under trade unionism, because this made the rises come rather earlier, and the cuts come later or not at all—as Marshall put it, because the trade union can “make economic friction act for the workman instead of against him.”⁴

CAN THE TRADE UNIONS WIN A LARGER SHARE OF NATIONAL INCOME?

It may be urged that even if these are the only effects that are brought out clearly by the record, we must not for one moment suppose that they are the only effects actually present. In the eyes of their most active members, trade unions have existed primarily to win a larger share of the product for pay and leave a smaller one for profit: has this

4. *Elements of Economics of Industry*, Bk. VI, chap. xiii, par. 5.

aim been merely delusive? Two considerations suggest that for the most part it has been.

The first is the observed stability of the distribution of the product between pay and profit. We shall be discussing this more fully in the next chapter (pp. 207 ff.); here we need notice only that it appears in a number of countries and persists through the changes of many years. The statistics, it is true, have their margin of error, which generally becomes wider the farther back we go, and is in any case wide enough to cover some substantial variations in the relative sizes of the components. It is also true that some changes in distribution do appear on the face of the record from time to time. Yet what is remarkable when the records of many countries are assembled and compared is the lack of agreement on particular changes, and the extent of agreement on a trend that shows little or no change. In particular, there is often a marked stability in the division between profit and pay as a whole (taking wages and salaries together) of the value added by a particular group of industries. This division varies with the state of trade, the share of profit generally dropping sharply in depression; particular industries, moreover, have their peculiarities; but if we compare a group of industries in years of a similar level of activity, the division of the total value added is generally very steady. This is so despite changes of other kinds meanwhile—in particular, big rises in pay. The implication is that the profit margin in the selling price is in practice not generally compressible by wage rises.

The second consideration sets out some grounds for expecting this to be so. When rates of pay are raised, there can in principle be three kinds of effect. First, the rise in pay per man may only offset a reduction in labor cost per unit of output that is being brought about by rising productivity. In this case, if selling prices and the numbers employed are

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not changed, total profits will rise in the same proportion as total pay. Second, the rise in pay may raise labor cost per unit of output, and this will be accompanied by a rise in selling price not merely equal in absolute amount to the rise in unit labor cost but proportional to it. In this case again there will be no change in the relative sizes of total pay and total profit. In the third case, too, the rise in pay raises unit labor costs; but here the selling price is unchanged, and the higher unit labor cost is offset by a reduction in the profit margin. Evidently two or three kinds of effect may be present together—a rise in pay may be partly offset by higher productivity and partly covered by a higher selling price, yet still leave something to be found out of the profit margin—but the three cases can be set out separately for analysis. The second seems to be a special one, yet it corresponds with what has frequently happened in practice, especially in recent years. In the first case real wages go up but, as in the second, there is no change in the division of the product. Only in the third does the trade union that pushes through a rise in pay raise pay relative to profit. What prevents this from occurring more often in practice?

There is this obstacle at the outset: if accepting a certain pay claim will reduce the employer's profit for as far ahead as he can see, he will weigh that prospective loss of profit against the cost to him of a strike, and the greater the prospective loss, the more likely he will be to take the strike. Conceivably this reckoning could operate at any level of profit. But in practice the employer is likely to accept the general opinion that high profits can and should be shared, and raising pay has in any case its own attractions for him. Only when the rise would cut into a profit that would generally be reckoned no more than normal, adequate, or reasonable is the employer likely to prefer the cost of a strike to the loss of

profit that conceding the claim would mean. Just what level of profits is normal, adequate, and reasonable no one can say but everybody knows: a consensus prevails which no group of experts could formulate in agreed terms but which practical men apply to particular cases. Very likely the consensus shifts from time to time. Whether it moves on its own, or only follows after the facts of the market, we do not know; but at any one time there is a level of profit that employers feel themselves justified by general consent in defending. Below this level again is another that marks the minimum of subsistence for a firm: at anything less, the shortage of finance will drag it further down, or the proprietors will extricate as much capital as they can, to use it on better terms elsewhere. At this lower level, resistance is likely to be stronger still, for what is at stake is survival.

Experience seems to show that trade unions do not generally take the offensive and press a claim when its enforcement would only cut into a profit already no more than is generally reckoned adequate. That will be most unmistakably the state of affairs when there is already unemployment among a trade union's members, and it may be this rather than the expectation of resistance that inhibits action. The trade union needs also to be satisfied that there is no possibility of offsetting higher pay either by higher prices or by greater efficiency, a rare situation in the West in recent years. But where these possibilities really are precluded, and profits are already by prevailing standards no more than adequate, it does not seem that trade unions in practice seek to raise pay by a transfer from profit. As always where there is conflict, a party may feel that it must fight regardless of the cost, and one trade union may risk losses when it feels impelled by considerations of prestige or strategy to keep up with others; it may also be intransigent in opposing a cut even when the

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present rate can be maintained only by a reduction of profit that it would not take the offensive to enforce. But generally trade unions do not try to raise pay by transfer from profit beyond a certain limit. This is so even where, as in some European countries, many trade unionists regard all and any profit as an abuse: they still cannot abolish it by bargaining.

Beyond the immediate upshot of a struggle, moreover, lies the employer's reaction through the days ahead. We have singled out the case in which there is no present possibility of raising selling prices or increasing efficiency. Situations in real life are less clear-cut, and claims that can initially be met only out of a profit already no greater than is thought adequate can in practice be pushed through. But time will bring changes and openings. The employer will take any opportunity that offers to edge his prices up or lower his costs without lowering his prices; if he can do that at all, it will be by small changes that are made while rates of pay go on unchanged. What the bargain fixed was pay, but these other matters remain within the employer's control. If they give him the chance to restore his profit, he can take it.

Trade-union pressure on profits, indeed, always works under this far-reaching limitation, that collective bargaining controls only rates of pay and not costs or prices. It is only where the market holds selling prices down that pushing up the rate of pay will raise pay by transfer from profit, but it is there that the employer's resistance is strongest. Elsewhere some possibility is open that a rise in pay can be followed by a restoration of the profit margin, through lowering unit costs relative to prices or simply by raising prices. The greater the ease of raising prices, the less reason employers have to resist a claim for higher pay, but equally less is the prospect that pay will rise relative to profit. Where the claim would

have to come out of profit, it will not get far; where it goes through readily, it will not come out of profit.

The last sentence may serve to sum up the probable reasons for the observed stability of the division of the product under collective bargaining, but that stability is far from absolute, and the argument must find room for the possibility that where prices and their relation to costs are externally controlled, trade unions can obtain a higher share of the product. They may be able to squeeze profit when they have something to press profit against. From the end of the American Civil War onward, great improvements in transport by land and sea were bringing different regions into closer competition with one another at the same time that increasing supplies of primary products lowered their prices in industrial markets: in what contemporaries came to call the "Great Depression" (1873–96), prices tended downward for a quarter of a century, and to sellers of industrial products any raising of prices must have seemed perilously contrary to the trend of the times. The interwar years in some important respects were similar. When employers generally expect that they will be harmed by competition if they raise their prices or miss any opportunity of getting them down, the market environment is hard; and though employers will be tough bargainers, the bargain will really be about the distribution of the product.

But when the market environment is soft, employers can back away and ride the punch; in the simplest case, they can raise prices in the same proportion as pay. The strongest case of this is presented by the years of inflation under full employment in Western countries since the Second World War. Here in country after country pay has risen at a rate equivalent to, say, doubling every ten years; but profits have

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risen in much the same proportion. We have already noted the possibility that in this soft-market environment the effects of trade-union pressure are to be seen not in any change in the distribution of the product but only in a general rise of costs and prices.

THE POWER OF TRADE UNIONS TO ALTER DISTRIBUTION BETWEEN SECTORS

The discussion of the last section was concerned with the factor distribution of income between pay and profit. There remains the possibility that trade unions affect the distribution of the national product between different sectors—for example, that they raise the share of a highly unionized industry as a whole, taking its pay and profit together; or that they raise the incomes of particular groups of workers at the expense of all the rest of the community, including other workers.

One leading possibility appears as a continuation of our discussion of the raising of prices to cover higher pay. We saw that this raising was easier in some periods than others: it may also be easier in some industries than in others. An industry's prices will be beyond its own power to fix to the extent that it is under competition from outside, whether from the same product made in other regions or from other products that the buyer will turn to as substitutes and alternatives. The prices charged by some industries, particularly public utilities, are under public regulation. Competition within an industry itself limits the power of any one employer to fix his own prices to the extent that the product is standardized, and firms are numerous and of similar size. On the other hand there are industries that afford some latitude for the fixing of prices to all employers if they keep in step, or even

to each employer separately. An industry may be sheltered from outside competition by the nature of its product, or by tariffs and quotas; the demand for its product within the sheltered market may be inelastic. In an industry like building, most of the output is adapted to the needs of particular sites and customers, and though employers compete by tender, they will all be likely to submit higher estimates when rates of pay are raised for them all. Where one firm is bigger than the rest, it may be able to change its prices with some confidence that the others will follow it; or there may be no one leader but a number of employers who adopt the practice of moving their prices up or down together, whether or not they are organized to discuss and administer the moves. According as the circumstances of a given industry approach these, the employers in it will be able to agree to rises in pay in the expectation of being able to cover them by higher prices without harming their businesses. If trade unions are as strong in the sheltered as in the unsheltered industries, and in the oligopolistic as in the more perfectly competitive, they are likely to raise pay and prices more in the sheltered and oligopolistic. We cannot tell in a general way how this change in the terms of trade between different sectors of the same economy will affect aggregate income and employment in each; it need not much affect the division of the product in either; but we do know that it will raise the relative real pay of as many workers as retain jobs in the sectors that raise their relative prices.

Here the initiative has been taken by a relative rise in pay, and any reduction in the numbers employed has been only an effect of that; but a restriction of numbers may also be enforced directly by the trade union. This is the well-known practice of the limitation of entry to a trade. It takes three forms. One is the requirement that certain kinds of work

shall be done only by those having certain qualifications. This may be perfectly reasonable—indeed the government may enforce requirements of this kind to protect the public—but the effect becomes merely restrictive when kinds of work are included that could be done efficiently by some who lack the stipulated qualification. The second form is the negative counterpart of the first: certain workers are debarred from doing work that they are capable of doing. Women have long suffered from such exclusions: the principle has been accepted that this or that is “not women’s work” although in fact women could perfectly well do it; and where men and women have been working alongside one another there has been an invisible but well understood line on the floor of the shop that divides men’s work from women’s. Similar sweeping exclusions are maintained in multi-racial societies. The third form of limitation is restriction of training. Conceivably a trade union of unskilled men could keep down the number allowed to work in a certain place or occupation—the number of street porters, for instance, in a Chinese town—but the modern instances are not important. If a trade union can seize and hold the exclusive right to do certain work, then even if no training is required it can still restrict entry by charging high initiation dues; but this again has not occurred widely. It is the training of the skilled worker that has provided the most frequent opportunity and means to restrict entry. Access to professional schools may be restricted by the charging of fees over and above the cost of instruction, or by the outright limitation of the number of places. Access to training on the job may be restricted by (1) onerous conditions of apprenticeship, including longer periods of training or more severe trade tests than are really necessary; (2) excluding certain types of applicant, as, for example, entrants over a certain early age; and, above all, (3) enforcing quotas

that limit the number of entrants to a fixed total or to a certain proportion of the number of journeymen.

In all these forms of limitation, the conscious motive may be only to "prevent the market being flooded"—that is, to prevent pay being lowered through an extension of supply and through undercutting by those who habitually work for less—and to safeguard job-holders from unemployment. It is difficult to maintain any training scheme without regulation of the numbers passing through it, and such regulation is consistent with an increase in the number of qualified workers. But in some cases the limitation of entry to a trade has the purpose of keeping up higher relative pay by creating a scarcity; and whether intended or not, that is always bound to be its tendency.

THE REGULATION OF WAGES

We have been dealing so far in this chapter only with collective bargaining, but in the whole ecology of pay the place of collective bargaining is restricted. It is predominant only in those countries of northwestern Europe and North America to which the nineteenth century brought economic individualism and economic growth. Australia and New Zealand inherited that tradition, and collective bargaining continues in them, but their predominant method of regulating pay is by arbitration. That is also the predominant method in India. Throughout the countries in which the influence of the Roman Catholic Church on social policy has been strong, particularly in southern Europe and in Latin America, the predominant method is by law and administrative decree. In the Soviet world the level and structure of pay are part of the national plan, and the rate of pay for each job is prescribed in a comprehensive schedule.

Though these other methods extend widely, their working does not need extensive further treatment: the essentials have already been brought out in the discussion of collective bargaining. The main question for all methods of fixing pay is what latitude they enjoy—that is, what the reactions will be to a given rate, and within what limits a rate must lie if it is not to have undesired consequences. Reactions and limits are imposed by the conventional and market forces, and the setting these provide for pay-fixing is essentially the same wherever the worker is free to take and leave jobs. Custom and opinion differ in their content and still more in their effectiveness, but the basic constraints that a lower rate reduces the number of applicants and a higher rate reduces the number of vacancies exist wherever the labor force is not captive and the amount of output disposed of is not independent of its cost. Those who fix rates of pay in different ways may well strike the balance of advantage for a given rate differently, but the expected reactions that enter into the balance will be much the same. How far, for instance, can an intervention raise the pay of some low-paid workers without throwing too many of them out of work altogether, or merely transferring income to them from others no better off than themselves? The answer will be the same whether the intervention comes by the unionization of these workers for collective bargaining, by an arbitral award, or by a minimum-wage law. The circumstances that decide whether a given rise in pay will come out of profit, for example, or will result in higher prices, are much the same, however the rise is made to occur. It is a function of the prices of products and of the factors of production to reconcile two ultimate freedoms—that of people as producers to move their resources into the most attractive of the available employments, and that of people as consumers to lay out their purchasing power on

the most attractive of the available products. In any economy that leaves those two freedoms substantially unimpaired, there are market forces that bear upon rates of pay and circumscribe pay-fixing, whatever its procedure.

Nonetheless, different procedures have had their particular purposes. Collective bargaining, it may be said, was developed by communities that relied mainly on the workings of the market, in order to meet some deficiencies in the market's functioning: the workers who needed it most were those who benefited least from the competition of employers for labor and were least able to compare bids before they closed their deal. Where the market did fulfill the functions of bringing a range of potential sellers and buyers into touch with one another and equilibrating supply and demand, the community was disposed to accept the rates of pay the market arrived at. Other communities have felt otherwise. We have seen how the first question about a rate of pay is often not whether it balances vacancies and applicants but whether it is fair; and how the notion of fairness remains influential even in communities that have accepted the individualist principle of the right of each man to make the best use he can of his own resources. In communities that have never accepted that principle, the notion of fairness is naturally more influential still. The teaching of religion and morality is generally that a man should have not what he can get but what he ought to have. During the strike of the Ahmedabad textile workers in 1918, Mahatma Gandhi wrote:

Pure justice is that which is inspired by fellow feeling and compassion. We in India call it Eastern or ancient justice. Where there is no place for fellow feeling or compassion, it is known as devilish or Western or modern justice . . . There was a time in India when serv-

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ants did not ask for higher wages when there was a dearth of servants, and masters did not reduce wages when the supply was plentiful . . . But in most public activities of the West at present there is no place for feeling or mercy. It is considered just that a master pays his servant as he finds convenient. It is not considered necessary to think of the servant's requirements. So also the worker can at will make a demand, irrespective of the employer's financial condition, and it is considered just.⁵

That wages should be regulated by justice rather than by supply and demand is also part of the teaching of the Roman Catholic Church, set out in the encyclicals *Rerum Novarum* (1891), *Quadragesimo Anno* (1931) and *Mater et Magistra* (1961). The employer's part, according to *Rerum Novarum*, is not merely to pay what is agreed upon: "more imperious and ancient than any bargain between man and man is an underlying dictate of natural justice, namely that remuneration ought to be sufficient to support a frugal and well-behaved working man." *Quadragesimo Anno* enlarges this to the principle that "the wage paid to the working man must be sufficient for the support of him and his family." Free competition, it also stated, cannot be "the guiding principle of economic life . . . the public institutions of the nations must be such as to make the whole of human society conform to the needs of the common good, that is, to the standard of social justice."

Those who believe that wages should first and foremost be fair prefer regulation to collective bargaining even when collective bargaining is doing well for the worker. But in

5. M. H. Desai, *A Righteous Struggle* (Ahmedabad, Navajivan Publishing House, 1951), pp. 46-47.

some countries it has been a sufficient reason for imposing regulation that collective bargaining has not been and hardly could be developed. The impact of industrialism on a peasant or tribal society creates the same needs as trade unions have grown up to meet in the West; but in the emergent economies the growth of unions is impeded by the illiteracy of the workers as well as by their poverty and their reluctance to settle in the towns. The remedy is to regulate wages by decree, or, as in India, to provide a system of compulsory arbitration which enables a trade-union spokesman, however little strength he has behind him, to take an employer to court and get a binding award. A further reason for making arbitration compulsory in these societies also commends itself to the employers: the strikes that would otherwise occur from time to time would too often flare up in violence.

The regulation of wages also appeals to those whose aim is the coordinated administration of the economy in the public interest. These are the planners, and they will say that you cannot make a five-year plan and not plan wages. In Britain, Sidney and Beatrice Webb did more than anyone to make the functions of trade unions understood, and it was Beatrice Webb who coined the very phrase "collective bargaining": yet for them it was compulsory arbitration that was "the more excellent way." "I cannot believe," wrote Sidney Webb, "that a civilised community will permanently continue to abandon the adjustment of industrial disputes—and incidentally the regulation of the conditions of life of the mass of its people—to what is, in reality, the arbitrament of private war."⁶ Under socialism the "present competitive determination of wages" would be superseded "by their assessment by public authority on the basis of the

6. Memorandum appended to Report of the Royal Commission on Trade Disputes and Trade Combinations, Cd. 2825 (1906).

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Standard of Life necessary for full efficiency.”⁷ The structure of pay would be made up of a national minimum and, mounted on that, a differential for each occupation, assessed according to its particular requirements. Each differential must contain “a supplement for scarcity,” sufficient to offset the costs of training and any deterrent aspects of the job and to attract “more than common skill,” together with “a supplement for the necessary expenses of the professional status,” to cover “personal habits and a method of life more costly than the standard prescribed as the universal minimum” when that method of life is necessary for “the fulfilment of particular functions.”⁸

It is in agreement with this train of thought that rates of pay in the centrally planned economies have been centrally scheduled. In Babylonia about 2000 B.C. the code of Hammurabi prescribed the wages for agricultural workers, both permanent and seasonal; for ten kinds of craftsmen; for herdsmen and boatmen; for architects, doctors, and veterinary surgeons. In the 1950s rates of pay were officially prescribed throughout Russian industry by a schedule differentiating rates according to grade of labor, zone, and industry: “If Ivan Sidorov is deemed to be in Grade IV, in the central zone, in the automobile industry, then his earnings would be laid down in the appropriate wages regulation, where it is stated that persons of his grade are to earn, let us say, 500 rubles a month.”⁹ We have already seen that the differentials for the higher grades were widened under the First Five-

7. S. and B. Webb, *What Syndicalism Means*, Supplement to *The Crusade* (London, 1912), p. 152.

8. B. Webb, Minority Report, *War Cabinet Committee on Women in Industry*, Cmd. 135 (1919).

9. Alec Nove, “The State and the Wage-Earner,” *Soviet Survey*, 26 (1958), 28.

Year Plan to stimulate the supply of skill and, when that supply had risen, decreased again.

These various purposes of pay regulation have their influence on the ways in which regulation works, and there are some lessons of experience to be noted.

It is to enforce a minimum that governments have most often intervened of late. Often their aim has been to help only those who are worst off. One method is to enforce a single national minimum—as has been done by the Fair Labor Standards Act since 1938 in the United States; by the S.M.I.G. (*Salaire Minimum Interprofessionnel Garanti*) prescribed by the government since 1950 in France; and by the basic wage which has been awarded from time to time since the 1920s by the Commonwealth Court of Arbitration or (latterly) the Arbitration Commission in Australia. The last is an example of a minimum which, though intended originally only to safeguard the weakest, has become in practice a floor on which most of the country's wage structure stands, so that when it is raised, most other rates go up too. The American law, though equally general in form, has affected few other than the relatively small number of wage earners whose current rates were lower than the statutory rate at the time of its first application. When the object is only to help particular groups, an alternative method is to define the groups and to set up for each a board with statutory authority to fix minimum rates in dollars and cents from time to time. This has the advantages of flexibility, both in treating different groups separately and in being able to change the rate without fresh legislation; and of enabling spokesmen of employers and workers as well as of the community at large to be brought into the discussion and determination of the rate. The Australian state of Victoria developed the statutory tripartite wage board in the 1890s;

the United Kingdom followed this example in 1909 in its Trade Board Act, from which has developed a system of Wages Councils that fix minimum rates today for a fifth of all British wage earners. A similar method has been applied by the minimum wage laws of particular states in the United States.

When it was proposed to remedy the poverty of low-paid workers simply by requiring their employer to pay them more, the objection was raised that this would only throw them out of work altogether. The employer of that sort of worker was generally a man of small means, often a subcontractor who gave the work out but also took part in it himself: he could pay more only if he got a higher price for the product. But the prices of products, it was said, are what the market will bear, and at a higher price less will be sold. The argument would have been more weighty had not trade unions already shown that some rates of pay could be pushed up without apparent detriment to employment. When statutory rates were enforced, it was found that they could often do the same. The reason lay not in any formal fault in the argument from supply and demand but in the practical importance of a possibility that lay within the argument but was not brought out—the possibility that both demand and supply might be inelastic. Where the ill-paid work was only a small part of the total cost of production, or the price of the immediate product was substantially raised by distributors' margins before the product reached the final buyer, or the final buyer himself could not react sharply to a rise in price, there the demand for the work was highly inelastic. That might have been so without the workers being ill-paid: a drop in their rate of pay would have been checked not through its creating unfilled vacancies but through its reducing the number of applicants, as workers went off to

jobs where they could earn more. But for some workers no such movement was possible, because few alternative employments lay within their reach and they lacked the knowledge and resources to go farther afield: so the supply of their labor was highly inelastic, and their pay could fall without limit short of the barest subsistence. But the same circumstances that permitted the rate to fall permitted it to be raised.

Minimum-wage regulation has therefore shown its effectiveness. But this must not be exaggerated. The application of the United States federal minimum wage to the lace-makers of Puerto Rico came up against an elastic demand, and the reaction on employment was sharp. In many cases the effects on employment may have been really adverse, but they were mingled with those of other changes: in particular, the kind of labor affected has often been working on hand processes that are in the course of supersession by the factory, and we cannot tell how much, if at all, the minimum wage has accelerated their contraction. Employers no longer allowed to offset inefficient methods by low wages are put under pressure to improve their methods, but that means using fewer workers for a given output. Where minimum rates are set by boards trade by trade, the boards are likely to be conscious of these reactions, and feel their way year by year. They will then only be doing the work of collective bargaining and availing themselves of that latitude which, as we have seen, allows trade unions to keep wages somewhat higher than they would be otherwise over a run of years.

The use of arbitration to regulate wages has often been unintended—the original purpose had been only to supplement the procedures of bargaining by a means of peaceful settlement in the last resort. But compulsory arbitration will not stay in the last resort. Negotiators, knowing that however much they concede in bargaining they are still liable to be

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taken to court, will prefer to make no concession at all, lest that shift the starting point of arbitration against them: so the bargaining becomes unreal, the parties merely state their cases with declamation and intransigence, and the decision rests with the court. Weak unions will in any case expect to get more from the court than from bargaining. Even where genuine bargaining continues, an awareness of what the court would be likely to award sets a lower limit to the agreement. Where relations are confused and strikes bring riots, the employers may prefer to go to court, because "it does give a settlement." It is therefore understandable that where compulsory arbitration has been instituted, except as an emergency measure in time of war, it has become the main regulator of the whole pay structure.

The arbitrator is likely to bring to bear the layman's views about what is proper, commensurate, and just. His bias will be toward raising pay, for though his awards have statutory backing they can be rejected in practice, and they can be more effectively rejected by the workers than by the employers, for sanctions are much harder to apply against the workers: if he wants his awards to be reckoned sound because they prove acceptable, he must feel for the lowest rate that the workers are likely to be willing to tolerate, and take care not to go below that. But he will also have regard for the capacity of the employers to pay, and through this will implicitly take some account of the effects of a rate of pay on the number of jobs available. His wish to make his awards consistent with one another will involve him in some job evaluation. But save insofar as this leads him to new findings, he is likely to feel that equity calls for the maintenance of customary differentials, and he is not likely to initiate great changes in the pay structure. He may change it in another sense, by resisting movements that would otherwise come

about under market pressures, but these movements may still reassert themselves through employers paying "overaward rates" where demand runs higher. The arbitrator's effect on the general level of pay in money is another matter. One means to consistency is to generalize a rise, so that one test case decides the amount of an "annual round." Each particular award gains in acceptability to the extent that it is only part of a general movement, and employers have a corresponding assurance of being able to cover it by higher prices. A system of compulsory arbitration therefore promotes the rise of the general level of pay in money.

The object of much administrative pay-fixing, on the other hand, has been to hold rates of pay down. The public regulation of wages that was common in Europe before the rise of individualism had as one of its objects the assigning to each occupation of its due degree, and the repressing of any tendency of the workers "to get above themselves." "Because a great part of the people," said an English ordinance of 1349,¹⁰ "and specially of the workmen and servants has now died in this plague, some, seeing the necessity of lords and the scarcity of servants, will not serve unless they receive excessive wages"; and the ordinance went on to forbid employers to give, or workers to receive, higher wages than had prevailed before the plague. A French ordinance at this time of the Black Death attempted not to prevent the rise of wages but to limit it to one-third. In Florence the woolen manufacturers abolished freedom of wage contract and set up a committee to fix wages.

In more recent years the need to check the rise of costs and prices under excess demand during the Second World War and under full employment since has brought instances of

10. The Ordinance of Labourers. Quoted here from Bland, Brown, and Tawney, *English Economic History, Select Documents*, p. 164.

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the administrative regulation of maximum wages. In the United States the Economic Stabilization Act of October 1942 required pay and prices to be held at the levels they had then reached, and the National War Labor Board was empowered to veto any change in wage rates. After the outbreak of war in Korea in 1950 a statutory order forbade any rise in rates of pay in the United States pending authorization by Stabilization Boards set up for wages and salaries. In the Netherlands, at the end of the Second World War, employers and trade unionists instituted a national wages policy of which one object was to regulate the movement of the general level of wages in the interests of the orderly development of the economy, and a Board of Mediators was given statutory power to validate collective agreements—in effect, pay could be raised only with the Board's permission, and it was an offense for employers to pay more than the permitted rates.

The lesson of experience is that maximum-wage regulation is exceedingly hard to enforce. In minimum-wage regulation the workers generally want to comply, and if enforcement is needed it is only against certain employers; but a maximum wage is something both parties want to evade—the workers, obviously, to earn more; but also the employers, to retain their labor. Evasion, moreover, can take many forms. Wage books can be in perfect order, but the hours of overtime can be inflated; workers can be promoted to higher-paid grades; various benefits such as free transport and free meals can be added to the stipulated wage. In both war and peace employers and trade-union leaders may accept the need to adhere to a national plan; but those employers who want to raise their output may be unable to recruit without offering more, and once bidding has begun others will find their labor force melting away. Maximum-wage regulation is therefore unlikely to succeed without effective control of the deployment

of labor. The United Kingdom, which did have such control during the Second World War, dispensed with wage regulation.

Experience has shown that the administration of rates of pay through a centrally planned schedule is not wholly impracticable, but only if it allows deviations and is prepared to follow as well as lead. One overriding condition is that there shall be no independent trade unionism or political source of opposition. Given this condition, the only reactions that decide the viability of a particular rate are those of workers choosing and changing jobs and of managers trying to fill vacancies and raise output. As long as the number of vacancies does not exceed that of applicants in the aggregate, an entirely arbitrary schedule of job rates could survive: there would be a line, perhaps invisible, of applicants for jobs whose rates were above the current supply price of labor to the job, but the excess supply would not increase the number of vacancies by reducing the rate, and those not lucky enough to get in would simply have to take some other job, if they were to have a job at all. The deployment might make a poor match of workers' qualifications to job requirements, but jobs would be filled. It is otherwise if aggregate vacancies exceed applicants: there will be some jobs now that cannot be filled unless the terms are made more attractive. Russian experience shows that this brings the ingenuity of managers into play to evade the schedule. For pieceworkers this was not difficult: though attempts were made at the center to enforce common minimum norms of performance, most piece rates have in practice to be set job by job, and managers had only to set a loose rate to ensure that the pay envelope would be big enough to attract and retain the desired kind of labor. For timeworkers evasion was less easy, but something could be done by artificial upgrading—in a number of indus-

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tries no one was left in the two lowest grades—and by contriving bonuses. These things not only pulled the actual structure of earnings away from the official schedule but brought distortions and anomalies into it, and also brought about a creeping and unplanned rise in the general level of money pay, of a kind familiar in Western countries under full employment. The endeavor has since been made to prune some of the anomalies, and also to restore the connection between the schedule and actual earnings, but to do this Mahomet has had to go to the mountain, and it is the schedule that has had to be adjusted to the facts of the market.

7 THE GENERAL LEVEL OF REAL PAY

VARIATIONS IN REAL WAGES IN UNDEVELOPED ECONOMIES

When money wages are compared with the prices of the things wage earners generally buy, we get a measure of real wages. For a refined measure of that kind we need a broadly based average of actual earnings, and an index number of the cost of living based upon a wide sample of family budgets and embracing a wide range of outlay, from house-room to haircuts and from bread and meat to movies and motoring. Such particulars are available only for recent years, and if we are to look farther into the past we must be content with a rougher measure, in which some more or less representative rate of pay is compared with the cost in the produce market, not the retail shop, of an assortment of some of the staples of consumption—the bread grains, for example, meat, cheese, beer, candles and firewood, canvas, and woolen cloth.

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The basketful of such things that a representative day's wage will buy in Western economies today is probably five or six times as big as it was before the Industrial Revolution. A ratio and contrast of the same magnitude stands between present-day real wages in the Western and the underdeveloped economies. Before the Industrial Revolution such glimpses as we catch of real wages show some big ups and downs but no progressive trend. How can we account for these movements and variances?

There is evidence that the dominant influence on real wages in the earlier stages of Western economies was population pressure, and it remains dominant in some underdeveloped economies today. The familiar Malthusian connection between population and the standard of living runs through diminishing returns in agriculture: save as technique advances, a greater number can raise more food from a given area only under penalty of getting less per man. But a growth of population in some countries had little power to raise the output of food at all. We have seen that the wage earners were commonly a small part of the whole occupied population. But it was a part that expanded rapidly when population grew, for the other occupations—on the land, and among the small masters of the workshops—did not take up more manpower readily: the landless men could fill no niche in the established order, but became an overspill, with only their hands to offer for hire. More children were growing up in the villages than could inherit their fathers' holdings; the younger sons must find what work they could with loom or forge in the cottage, or take themselves off to seek employment in the towns. If they found jobs, they would be producing personal services or workshop manufactures, the output of which would be increased. They would need to exchange most of it for that part of the output of foodstuffs and

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raw materials that was sold off the farm. But this agricultural surplus would not grow much. The technique of the times and the forms of landholding did not allow many more men to be used either to work the cultivated area more intensively or to break in the waste; when more cloth or pans or planks were given in exchange for a sack of corn the real income of the farmers rose, but that imparted no effective stimulus to raise the output of farming as a whole. So the terms of trade between the workshop and the farm turned against the workshop: a day's work in loom-loft or forge or saw-pit commanded less food in exchange. As population grew, the wage in terms of food was forced down more than the output of food per head of the whole population.

In southern England we can trace the variations on this theme from the end of the thirteenth century, insofar at least as the wages of mason and carpenter are a guide to wages generally. The first movement is in reverse. In 1349–50 the Black Death carried off, it is thought, about a third of the manpower of the country; the land and equipment, no smaller than before in the aggregate, were now half as big again per worker; real wages rose. It may be because the plague recurred that the rise went on, but through the fifteenth century real wages traversed a plateau that was high even by recent standards: the same crude measuring rod applied throughout makes the real wage of the building craftsman higher then than it was ever to be again in southern England until 1880.

But by 1520 a great change had set in. In the rest of that century the craftsman's money wages were to double, but the prices of basic consumables rose fourfold. This extraordinary impoverishment, moreover, did not afflict the wage earners of England alone: reckonings of the same kind show the building craftsman suffering to very much the same extent at this

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time in France and Alsace, in Münster, Augsburg, and Vienna, and in Valencia. In all these places, and in the region of Stockholm too, the records show that the terms of trade between workshop and farm turned against the workshop. Generally the prices of manufactured products like bricks, iron, lead, and cloth rose in much the same proportion as the craftsman's money wage, but farm produce rose twice as much. About 1600 the man who brought to market a bag of nails he had made in order to exchange it for corn was getting half as much corn as his predecessor would have gotten a hundred years before. The generality of this effect suggests a general cause, and the most probable is a growth of population.

At least the same effect of falling real wages appears again in southern England at a time when we know from more direct evidence that a rise in population was setting in. For about a hundred years after 1650 real wages had been recovering, not fast or steadily but on the whole progressively: about 1750 they turned down again, and within the half-century (if we measure them by prices at wholesale) they fell by a third. What is writ large in the records of pay and prices can be watched as it goes on in the microcosm of one English village.¹ Before 1750 few villagers had come to the overseers of the poor for relief, and those that did often had means of support and only needed a helping hand—a widow whose spinning wheel needed replacement, an orphan boy who could get a place in a farmer's house if he could have his clothes provided. But in 1752 for the first time a workless man was relieved; by the end of the century the annual cost of relief had risen from under a hundred to nearly three

1. Tysoe in Warwickshire. The particulars here are taken from M. K. Ashby, *Joseph Ashby of Tysoe, 1859–1919* (Cambridge, Eng., Cambridge University Press, 1961).

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thousand pounds, and forty men or so were "roundsmen"—workless men who were sent the round of the farms to pick up jobs for a pittance, but had their bread money made up by a dole. The picture of rural overpopulation and debilitation has its counterparts in the underdeveloped countries of more recent years.

But the growth of population from 1750 onward saw a new possibility open. The growth was rapid in Ireland as well as in Britain—probably in both islands the population doubled in less than a hundred years. In Ireland the food for more and more stomachs was found by subdividing holdings and growing more potatoes, until disease destroyed the crop of 1846. Then famine and pestilence killed hundreds of thousands, and a great emigration of the remainder began: by the end of the century the population of 1846 had been halved. In Britain it was otherwise: revolutionary methods in agriculture had enabled much more food to be raised from the acre, and many acres hitherto waste to be brought under cultivation; revolutionary methods in transport and industry enabled increasing numbers to produce manufactures and export them in exchange for food grown overseas. Population continued to grow, but productivity was rising too. By 1850 it was productivity that was taking the lead. A bigger output of manufactures per head now meant more food per head. International trade made the density of population in the one island irrelevant to the standard of living its workers could attain, save in time of war.

The forces that underlie this story have renewed their interplay in the emergent countries of our own day. A rise in population sets in for reasons little connected with the beginnings of economic growth: the most usual is the reduction of the death rate by the withdrawal or extirpation of some disease. There follows pressure on the food supply, and a fall in

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real income that may be concentrated on an overspill of landless men, or may be more diffused if the structures of the family and of land tenure allow the work and produce of the farm to be shared by increasing numbers. If industries are developed to absorb the overspill, the real incomes of those who work in them depend upon the size of the agricultural surplus: unless that rises, the expansion of industrial employment may be compatible only with a worsening of the terms of trade between workshop and farm, and the endeavor to keep wages up relative to peasant incomes may only stop the expansion of industrial employment. The rise of productivity in industry, even the setting up of the most efficient plants the advanced countries can design, provides no way out unless the products can be exported in exchange for food. But granted the opportunity to exchange manufactures for food on constant or improving terms, at home or abroad, a rising population can provide itself with a rising income per head, and real wages can rise as industry expands and productivity advances with technique and organization.

FLUCTUATIONS OF REAL WAGES

The dependence of real wages on the terms of trade between workshop and farm has set its mark upon their fluctuations until recent times.

Up to the late eighteenth century the staple foodstuffs were seldom moved long distances, within countries or between them, simply because they were too costly to transport by wagon and pannier and sailing ship, or could in any case not be preserved during the journey. Men depended for most of their food on the crops grown within a few miles of them. They were therefore exposed to all the vicissitudes of the local harvest, and could be famished while there was plenty

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only fifty miles away. But better transport would still not have availed when the harvest failed throughout a whole region. Then there was just less to eat everywhere: but it was the wage earner who had to tighten his belt most. Those to whom the crop belonged could take what they wanted at the source, subject only to their need to sell some part for cash; the others were rationed by price. But the wage earner had only a small margin out of which to raise his outlay on food, and it was not then the practice to vary money wages with the cost of living. For centuries in England the highest year's price of corn in any decade was commonly not less than double the lowest. At some times this would have meant a meager subsistence in the lean years and an ample diet in the fat ones; at others, what was no more than enough at the best of times dropped below the level of subsistence in the hard times.

The consumption of a great part of the labor force of the world still varies from year to year with the harvest. The remedy, that of making good a shortage in one place by fetching more from another, is open only to those whose standard of living is already high, for what they find it cheaper to import would still be dear to the worker in an under-developed country even if it could be delivered at the same price to him there.

Up to the present day the movements of real wages have been influenced by another sort of fluctuation in the availability of primary products. We have seen how an adverse movement of the terms of trade between workshop and farm provided the lever with which population pressure pressed real wages down: but these terms of trade have changed for other reasons. Since the early nineteenth century, when international markets for some of the staple foodstuffs and raw materials began to form, the prices of these primary prod-

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ucts have moved in alternating phases of some twenty to twenty-five years. Until 1848 they tended downward; then on balance they rose until the end of the American Civil War, or perhaps until 1873 and the breaking of the boom after the Franco-Prussian War. They fell next, substantially, through the years termed the "Great Depression," until the mid-1890s. From then until the First World War they rose again; in the interwar years they came down; from the late 1930s they lifted sharply until 1951 and the end of the Korean Conflict. The movements of other prices show some sympathy, so that the price level as a whole reveals what Kuznets has designated "secondary secular fluctuations." But for the present purpose what is important is that the swings of the prices of primary products have generally been wider than those of other prices, so that the quantity of primary products that a given cargo of manufactures would command in exchange has generally risen during the phases of falling primary product prices, and conversely.

This brought a corresponding fluctuation in the rate of rise of real wages. The movement of money wages, as it can be traced in a number of Western countries from the middle of the nineteenth century, shows some sympathy with that of the general price level: money wages rose substantially in the periods of rising general prices, and more slowly, sometimes hardly at all, in the other periods. But they moved with the prices of manufactures rather than with those of primary products: hence real wages, insofar as primary products entered into them, rose faster in the periods when the prices of those products were falling, even though money wages rose slower then. The old relation between workshop and farm was now appearing in the international market. The changes in relative prices marked changes in the relative rate of growth of supplies. The periods of falling prices

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of primary products were those in which these products were becoming more abundant. The steelworker can be thought of as having been paid by being given part of the steel he had helped make: how big a real wage that brought him depended greatly on how much grain and meat he could barter it for from time to time.

But the extent to which primary products make up the real wage has declined as the real wage has risen. The scanty records of household budgets down to the end of the eighteenth century suggest that outlay on foodstuffs used to make up not less than 60 per cent of wage earners' total outlay. For British wage earners just before the First World War the proportion was still put at 60; but budgets collected in the 1950s have brought it down to 35. In the budgets of urban wage earners and clerical workers in the United States in 1953 the proportion was just over 30 per cent.

SUBSISTENCE WAGES WHERE ENTERPRISE IS NOT EXPANSIVE

Evidently the steelworker's real wage also depended on how much steel he received. This in turn may be considered to depend on two factors: the output of steel per worker, and the share of this that he retained. If this formulation is not merely an identity, it suggests that the wage depends in practice both on the size of the output and on certain forces that decide how this will be divided, and that a rise in the output will generally bring a rise in the wage. But that begs a question. In much of the world's history the laborer has earned no more than will keep him and his family alive, and in some places that is still so today. We do not have to look far for a possible reason why the wage is no higher: there is population pressure, and a margin of hungry job-

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seekers is always there to be taken on at a subsistence wage. The demand for labor may extend, but that will not raise the wage. Higher productivity offers a way out from population pressure only if there is some assurance that this pressure will not still keep wages down. The level at which they stick need not be a bare subsistence: custom, or the social conscience, or a tacit agreement of the workers themselves, may set a higher minimum. Yet as long as there are always more men standing ready to take a job at the one unchanged rate, the effect will be the same—output per man may rise, but the real wage will not.

How likely is this to occur in practice? We can readily envisage situations in which it will. Suppose, for instance, that a tropical island is devoted almost entirely to growing sugar, and that the industry is organized in estates which provide the only considerable channel of employment for wage earners on the island. Malaria used to be endemic, but now modern insecticides have suppressed the mosquito, and population is rising. The increment is bound to provide a supply of laborers ready to fill any vacancy at the going wage. It may be that their competition for jobs pulls that wage down, and the lower wage makes it worth the estates' while to take more men on: but unless this goes so far that the whole increment has been absorbed for the time being, the possibility remains of getting more workers without having to offer more. As long as this is so, an increase in the profitability of the industry will extend the demand for labor, but not raise the wage. The price of sugar may rise in the world market, and this will raise the average value product per worker, but the part retained by the worker will be a constant absolute amount. It is not necessary to postulate any zone of inertia in the matching of the demand for labor with the supply: the workers may always be getting the full demand

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price for the number employed, yet except insofar as more are employed (if more are), the workers still have no part nor lot in the rise of the real income of the island. That rise will be concentrated on the profits and rents of the estate owners.

This situation is possible, but it depends on two conditions that are not widely found in practice. The first is the horizontal supply curve of labor. This may actually be present less often in the emergent than the advanced economies. In some emergent economies when more children survive they can be absorbed within the family, through which they have access to land, and are assured of a subsistence within the way of life and locality in which they have grown up. In that case the supply of wage earners to industry can be extended at any one time only if recruits can be attracted from successively better supplied households and remoter villages. It is in the advanced economy, where the family is less extensible and the land is completely taken up already and worked with economy of manpower, that the man without means of support save by wage earning is more likely to be found. The capacity of traditional societies to absorb increments of population varies from region to region and is bound to have its limits everywhere. But when it is extended to the limit of great impoverishment, the effect may be a check to the growth of population rather than an extrusion of manpower—debilitation does not make a labor supply.

A horizontal supply curve of labor is often precluded by another circumstance: men differ in their aptitudes, and the kind of man who will make a useful wage earner may be in limited supply even when nondescript labor is plentiful. Men differ in their bodily strength, their education, and their attitude to work, in an emergent even more than in an advanced society. The supply of footloose labor for irregular

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and temporary employment is one thing; that for steady work, with the household settled near the factory, quite another. These considerations help to account for the distinction between permanent and temporary workers in Indian mills, and the permanent workers' getting wages well above the level of incomes in the villages. It is possible for more coolies to be always available at the going wage, while the supply curve of more qualified labor is inclined positively.

The second condition responsible for the outcome in the island is that the supply of enterprise was inelastic. When the profits of sugar-growing rose, the estate owners did not bring more land under cultivation and recruit labor to work on it, for virtually all the land was under cultivation already; and for the same reason the high rate of return could not attract competitors from outside. But we also tacitly assumed that the funds which high profits made available for new investment did not induce the estate owners, or enterprisers who borrowed from them, to develop new activities—to set up a factory for utilizing by-products of the sugar cane, or build a hydroelectric plant in the hills, or create a tourist industry. That could well be: the estates might be owned by patrician families, with a traditional way of life, glad enough to draw more money from the accepted source but looking down on other ways of making it. More generally, the incomes that provide the main potential source of funds for investment in an economy may be concentrated in the hands of a group—landowners, or merchants, or employers in an established industry—who are traditionalists and not innovators, who like sumptuous living but also like to take things easy, and do not judge one another by their success in expanding their activities and fortunes. To the extent that this is so, a rise in the rate of return will not stimulate enterprise, and so extend the number of jobs to be filled and

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bid up wages, but profits can rise while wages remain at a customary level.

For rising productivity to enable a growing labor force to find work at rising rates of pay, enterprise must be responsive to the rate of return. There must be a supply price of capital and enterprise such that, as long as the current levels of productivity and pay offer a return to investment above that supply price, new investments will be undertaken and new jobs created. When the supply of enterprise is elastic in this sense, a lag of pay behind productivity will bring an extension of the demand for labor. However fast population is growing, there cannot be a jobless overspill unless, at the current levels of productivity and pay, the rate of return is so low that all extension of enterprise is checked. As long as the rate of return is high enough to allow enterprise to extend at a greater rate than population, pay will rise.

REAL WAGES AND OUTPUT: THE CAPITAL-OUTPUT RATIO

In the Western economies whose population has been growing during the past hundred years, pay has in fact risen. The labor force has grown often at the rate of 10 per cent or more each decade, and though a fluctuating rate of unemployment has been severe at its worst, there has been no cumulation of excess labor: over spans in which the number of applicants has doubled, the number of vacancies has about doubled too. But meanwhile pay also has risen, not of course merely in money, but essentially in real terms. There are some countries whose statistical records enable us to trace the general movements of wage rates and prices, and compare wages with other components of the national income, from some time in the last half of the nineteenth cen-

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tury. These records indicate a rise between the early 1860s and the eve of the Second World War that amounted to multiplication by 2.5 or more in France, the United Kingdom, and the United States, and by more than 5 in Sweden. The indications are not comprehensive and cannot be exact, but they do serve to establish orders of magnitude.

Above all, they establish beyond all doubt the fact that real wages have risen greatly. This is evidence that the supply of enterprise has in fact been elastic, that investment and promotion and development have gone on fast enough to outpace the rise in population and to extend the demand for labor faster than the supply. The state of affairs that Marx observed in Western Europe in the 1840s gave him grounds to expect that as time went on real wages would be held down to the subsistence level or even forced below it, while profits rose. This expectation has not been fulfilled. Despite an ever-increasing supply of labor, real wages have risen with the general rise in productivity.

We can go further than that. The two rises have followed roughly parallel trends: the proportionate share of the product accruing to employed labor has not changed widely or cumulatively.

Before looking at the evidence we must clear up some questions of formulation. Wages themselves are only one part of the return to labor as a factor of production in its most comprehensive sense: there are also salaries, and the earnings of those who do not work under a contract of employment. These last, the self-employed, comprise professional men like lawyers, doctors, and consultants, with craftsmen who do repair and contract work, and—often the most numerous—small shopkeepers and farmers. The incomes in this “sector of unincorporated enterprise,” as the statisticians term it, are mixed, in that some part of them must commonly

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be imputed to the equipment, stock-in-trade, or land owned by the worker; but with few exceptions, the greater part is a return to labor. The share of the national product that goes to any one group of workers will naturally depend, among other things, on their relative numbers. Generally, in the course of recent economic growth, the relative number of salary earners has risen, and that of the self-employed has fallen. The first change tends to lower the share of wages, the second to raise it, but neither necessarily marks a change in the wage per wage earner relative to the rates of return per unit of other factors of production. But one way of eliminating the effect of shifts in relative numbers is suggested by the identity:

$$\frac{\text{Share of wages}}{\text{in national income}} = \frac{\text{Number of wage earners} \times \text{Average wage}}{\text{Number of occupied persons} \times \frac{\text{Average national income per occupied person}}{}}$$

The two elements farthest to the right make up by themselves a wage-income ratio whose observed movements provide a compact indication of the behavior of wages as the return per unit of a factor of production, relative to other such returns. When the records allow, a similar ratio may be calculated for wages and salaries taken together.

The course of the wage-income ratio can be followed in several countries through much of the past hundred years. It shows some sharp cyclical movements, and probably also some gradual changes persisting through longer periods; it also shifts through the two great wars. But in comparison with the other changes that have taken place meanwhile, with the growth of population and output, the transformation of technique, the rise of new industries and occupations and the decline of old, the impacts of war, the doubling and redoub-

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ling of price levels—in comparison with these expansions and upheavals, the trend of the wage-income ratio is conspicuous for its stability. In Sweden, to take a strong example, the average money wage-rate in 1913 was 3.5 times what it had been in 1861; the national income in money, reckoned per head of the occupied population, had been rising meanwhile along a trend of nearly 2.5 per cent a year; and the standard of living had risen to an extent indicated by a trebling of the real wage-rate. Yet the wage-income ratio was no different in 1913 from what it had been in 1861. Those happen to be two years when the ratio was at a cyclical low point, and there had been five intervening years when it had been more than 15 per cent above that. Yet the trend is level: if money income per occupied person was rising along a trend of nearly 2.5 per cent a year, so were money wage-rates.

For the 1950s we have records from a number of countries that enable us to combine wages with salaries, and compute the ratio of average pay per employee of all kinds to average income per occupied person. Within agriculture the pay-income ratio generally differs a good deal from that in the rest of the economy, and the relative size of the agricultural sector also differs from country to country, so it is the pay-income ratios for the rest of the economy, exclusive of agriculture, that can be compared most closely. In eight countries for which estimates have been made—Australia, France, the Netherlands, New Zealand, Sweden, the United Kingdom, the United States, and Western Germany—the pay-income ratios in 1950–57 all lie fairly near the common level of 0.75, and save for a decline in the Netherlands and a rise in Sweden the movements from year to year are small. This similarity between different economies in the same decade reinforces the impression of stability made by the absence of

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upward or downward trends from one decade to another within one country.

It seems, then, that real pay has risen in the course of economic growth because the forces that determine the rates of return to the various factors of production have raised the return to labor in much the same proportion as the returns to productive factors generally. But if we try to give that conclusion more precision we come up against a further complication. We have made allowance for changes in the numbers of other types of occupied persons working alongside the average wage earner: we have yet to allow for changes in the amount of capital he works with. The amount of capital per man varies widely. It rises in the course of economic growth. In the United Kingdom, for example, it may have about doubled between 1870 and 1914. It is very different between countries at different levels of productivity: the amount of capital per worker in manufacturing was reckoned to be about 2.5 times as great in the United States as in the United Kingdom in the 1950s. But unless the rate of return to capital falls when the quantity of capital per worker is, say, doubled, the total amount allocated to capital out of the output per worker must also be doubled. Can this leave the worker with as big a proportion of the product as before?

It can, on condition that when the capital per worker is doubled, the output per worker doubles too. Let us take a simplified case in which labor consists solely of the one category of "workers," and the product is divided exclusively between wages and profit. Suppose that, when output per worker in unit time was \$100, capital per worker was \$350, and that at 10 per cent, capital received \$35 while the other \$65 of the output went to wages. Over a span within which the purchasing power of the dollar remains unchanged, the amount of capital per worker rises to \$700: then at 10 per

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cent, as before, capital receives \$70. But if meanwhile the output per worker has risen to \$200, wages can amount to \$130, and the division of the product remains as before, while real wages have doubled. It is useful to put the identity in general terms. If the quantity of capital is C , and the annual output or product is P , then the capital-output ratio (c), as it is usually termed, is C/P . If this ratio is a constant over time, we can write:

$$C \equiv cP$$

Suppose also that the rate of return on capital is r , so that total profit is rC . Then total wages will be $P - rC$, and the share of wages in the output will be

$$\frac{P - rC}{P} \equiv 1 - rc.$$

Evidently the division of the output will be steady if r and c are both steady, or if their changes offset one another.

What do we know of their actual behavior? Our knowledge of r is necessarily obscured by the errors in the available estimates both of aggregate profit and of the total capital on which it is earned; in international comparisons there may also be differences of coverage. What estimates we have indicate sharp cyclical changes, among others, but little sign of any progressive rise or fall in the rate of return on risk capital as a concomitant of economic growth. We should be surprised to find this rate of return, on the average of any decade and of any large assortment of concerns, higher than 15 per cent or lower than 5 per cent. As for c , the evidence again has its margin of uncertainty, and as far as it goes it indicates changes from time to time that have sometimes been big. But we can take a range of from 3 to 4.5 as representative of the values of c generally indicated: that is, if we

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include in capital not only equipment but building, stocks, and work in progress, then this total stock of capital has generally come out as equivalent to between three and four and a half years' current output. If improvements in technique and management result in output per man rising faster than capital per man—that is, if the capital-output ratio is reduced—then comparative stability in the rate of return to capital will go with an increased share of pay in the product. A recent study, for instance, indicates that over the span 1919–57 capital per man in the United States (excluding governmental activity and income from abroad) was increased by a factor of about 1.5, whereas output per man was increased by about 2.5; that is, the capital-output ratio was reduced by a factor of about $1.5 \div 2.5$ or 0.6—actually, it seems, from about 4.5 to 2.6.² Around 1919 the share of labor of all kinds in total income was given (allowing for rounding off) by

$$1 - rc = 1 - 0.06 \times 4.5 = 0.72 \text{ approx.}$$

That is, the average rate of return on capital was about 6 per cent, and pay made up 72 per cent of total income. By 1957 the expression had become (again with rounding off)

$$1 - rc = 1 - 0.07 \times 2.6 = 0.81 \text{ approx.}$$

The rate of return on capital has gone up, from 6 to 7 per cent in the round figures used here, or, more nearly, by a tenth, so that the total compensation of the capital with which the average man was working will have risen by a factor of 1.5×1.1 or 1.65, against the multiplication of his output by about 2.5. This implies that real pay per man rose more than output per man; in fact, it was raised by a factor of about 2.8. The share of labor in the product was also

2. J. W. Kendrick, *Productivity Trends in the United States* (Princeton, National Bureau of Economic Research, 1961).

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thereby raised. Initially, we may write—in terms of the division of output *per man*,

$$\text{Share of labor (72)} + \text{Share of capital (28)} = \text{Output (100)}.$$

Multiplying 72 by 2.8, and 28 by 1.65, we get $202 + 46 = 248$, that is, the original output raised by the already-mentioned factor of about 2.5. The share of labor has risen from 72 to over 81 per cent.

The record of a number of periods and countries thus composes a picture of the distribution of the product during economic growth, in which variations such as we have just studied occur around a central tendency of considerable uniformity. As the quantity of capital per worker is increased, the accompanying advance of technique prevents the product per unit of capital from falling, so that the product per worker rises in the same proportion as the quantity of capital per worker. As long as this is so, a stable rate of profit implies a stable share of pay in the product, and conversely. In fact, there has been such stability: if far from complete, it has nonetheless been pervasive.

But we must recognize that our account of the central tendency has been merely descriptive: it has not solved problems, only posed them. Why has the supply of enterprise apparently been sufficiently elastic to prevent the rate of profit from rising progressively despite the growth of population? Why has the rate of return on risk capital been in the region of 10 per cent rather than, say, 25 per cent? The capital-output ratio seems to owe its relative stability to a balance between the lowering of output per unit of capital by decreasing returns to investment under constant technique and the raising of output per unit of capital by technical advances. Has this balance been merely adventitious, or does it mark an equilibrium of forces? In the presence of a certain rate of

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growth of population, maintenance of the central tendency requires a certain rate of investment, which requires a certain rate of saving. Why should it be just this rate of saving that comes out of the current distribution of income? In the preceding chapter we discussed the factors that help fix a given rate of pay, and argued that marginal productivity was one of them. But what assurance is there that the levels of pay implicit in the central tendency will not be above or below the marginal product of labor?

These questions have not been neglected. The theories of capital and interest, and of risk, enterprise, and profit have tackled some of them. They all enter into the theory of growth, and economists who have constructed models of growth have shown how possible answers can be combined. These analyses are highly germane to the explanation of the observed movements of wages and salaries. Yet they belong to realms of discourse beyond the scope of this book. Here we can take up only the question that belongs most closely to the economics of labor—what relation is there between the fixing of rates of pay by the macroeconomic process we have just been discussing and the tendency to equality between pay and the marginal product in microeconomic adjustments?

THE COBB-DOUGLAS FUNCTION

The formal theory of distribution shows that there need be no conflict. All the activity of an economy can be regarded as being carried on in one great enterprise that combines the services of a number of broadly classified factors of production—in the simplest and most abstract case just two, labor and capital. The enterprise has a single composite product. Various combinations of the productive factors can

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be used to make it, and to each set of inputs there corresponds a certain output. These relations are summarized in a production function, which shows how much product will be yielded by any set of inputs of the factors. If each factor is remunerated at a rate equal to its marginal productivity, a certain aggregate payment will be allotted to it: but why should these payments in the aggregate exactly distribute the whole product, neither more nor less? Formal theory has shown that they will do this if the production function is of such a kind that changing all the inputs in a given proportion will make the same proportionate change in output. If output is reckoned in physical terms, this seems only what is to be expected. One production function of this kind is the Cobb-Douglas. Let there be two factors of production, labor and capital, whose inputs are L and C , and let the quantity of product they yield be P . Then the Cobb-Douglas production function is of the form

$$P = a L^k C^{1-k}, \quad (0 < k < 1).$$

As long as the technical conditions relating inputs and outputs are of this form, the marginal productivity of a factor will be a constant proportion of its average productivity, whether the relative input of that factor is large or small. The marginal productivity of labor, for instance, will be a constant proportion of the output per worker. If the factor is paid according to its marginal productivity, the total payment to it will be a constant proportion of the whole product.³ In each case, this proportion will be k .

$$3. \frac{dP}{dL} = a k L^{k-1} C^{1-k} = k \frac{P}{L}$$

$$L \frac{dP}{dL} = k P$$

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From recent statistical materials we can assign a magnitude to k . We have seen how the payment accruing to labor in its most comprehensive sense comprises not only wages and salaries but a large part of the incomes of the sector of unincorporated enterprises. The statistics of national income now brought together by the United Nations for a large number of economies show that this sector varies widely in its relative size from one economy to another, with corresponding inverse variations in the shares of wages and salaries in national income. But when we add these forms of income together, we get a great deal of uniformity. Out of twenty-five countries for which we can do this through 1950–57, in sixteen the total share of labor so reckoned lies between 81 and 87 per cent. These sixteen include economies very different from one another in other respects—the United States and Ceylon, for instance, Sweden and Brazil, the United Kingdom and Japan. Some deduction is due for the return to capital included in the mixed incomes of the sector of unincorporated enterprises. We do not know how much. But perhaps a round figure of 75 per cent will give the order of magnitude of the share of labor in its most comprehensive sense. This is the sort of value we can assign to k .

Doing so, we can say that as long as the aggregate production function is of the Cobb-Douglas type, and the technical relations that it expresses remain unchanged, the marginal productivity of labor will be three-quarters of the average output per worker, and if the rate of pay for labor as a whole is equal to its marginal productivity, its total pay will be three-quarters of the national income. These proportions of three-quarters remain unchanged whatever the inputs and however great or small the amount of capital per worker. In these conditions, therefore, the fixing of pay by forces that check divergences between pay and marginal productivity is

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consistent with the observed behavior of pay as a share in the product.

But the conditions include unchanging technical relations. What happens when these relations change? We have seen how a progressive improvement in technique is implied by the observed absence of any progressive rise in the capital-output ratio as the quantity of capital per worker has risen. But if this is the form that technical progress has taken, it can leave the internal or distributive properties of a Cobb-Douglas production function unchanged.⁴ For then the function changes over time, so that a given historical increase in the quantity of capital per worker is associated with an equal proportionate increase in the output per worker, and it can change in this way by a progressive rise in its constant term a , without any necessary change in k . Improvements in technique of this kind raise the total output yielded to a given set of factor inputs, but not the proportionate division of the output between the factors.

This is far from establishing what relations have actually underlain the observed course of events, but it does show that a progressive technical advance is not necessarily inconsistent with stability in the distribution of the product between the factors of production, when the forces determining factor prices act to check divergences between those prices and the corresponding marginal productivities.

4. We have $P = aL^kC^{1-k}$, or $\frac{P}{L} = a\left(\frac{C}{L}\right)^{1-k}$, and this is required to

change its form over time so that if $\frac{C}{L}$ is varied meanwhile in the proportion λ , $\frac{P}{L}$ will vary in the same proportion. But this will be so if a changes to $a\lambda^k$.

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THE RATE OF RISE OF REAL PAY: DYNAMIC PROCESSES

As far as the central tendency holds, the rise of real pay depends on that of productivity in the whole economy. If productivity rises faster or slower from time to time, so will real pay. But the central tendency does not hold completely—it marks out a trend, about which the actual course of events describes its variations, so that real pay rises now slower and now faster than productivity. There are two kinds of reasons for variations in the rate of rise of real pay.

It is probably with the first that we are confronted in the slower rise of productivity in the thirty years from the 1880s to the First World War than in the thirty or forty years before. An index of real wages made by deflating average money wage-rates by the cost of living shows a point of inflection in the mid-1890s in a number of countries, with a slower rise afterward, or even little rise at all on balance for nearly twenty years, down to 1914. This calculation depends a great deal on the prices of foodstuffs and raw materials in the world markets, and it fixes the point of inflection in the mid-1890s because it was then that these prices ended a twenty-year fall and set off on a rising course. Statistics of output suggest that the slowing down in growth came earlier and more gradually. Its underlying causes seem to have been the working out of the impact effects of the techniques of iron, steel, and steam. In 1880, to take one example, the tonnage of British shipping under sail had been half as great again as that under steam, but by 1883 the steam tonnage drew level, and by 1895 it was more than twice as great. Replacing a sailing ship by a steamship made a great advance in productivity at one bound. When that had been achieved, further advances depended on improvements in the steamship. These

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were made, but took only gradual effect. The example may serve to typify the great gains brought more widely by the building of the railroads and the application of steam power to machines of iron and steel, and likewise the pause that followed. Great new technical developments lay ahead: electricity, the internal combustion engine, the man-made fibers, the new chemical industry, a new agricultural revolution. Many of these were in the early stages of application before 1914, but as yet they had not risen far enough to replace the flood tide of innovation that was ebbing as they rose. Meanwhile there was no such slackening in the growth of population. Because of previous changes in the age and marital structure of the population, the entrants to the labor market may increase faster or slower than the population as a whole, and in Britain they were particularly numerous in the opening years of the twentieth century. In the United States a similar effect was produced by very high rates of immigration.

If this reading of history has the gist of the matter in it, it reminds us that there is at no time an assured balance between the rate of growth of the labor force and of the forces we have comprised under the title of the extension of enterprise. No doubt reactions run from each to the other. It has been remarked that some of the periods of most rapid growth in productivity have been periods of rapid growth in population too, and the growth in population may stimulate enterprise in several ways—by increasing the number of those who have to strike out on a line of their own, by holding down real wages relative to output per head, and by diffusing a general sense that increases of capacity will be warranted. Conversely, a rise in productivity may stimulate the growth of population—regionally by encouraging immigration and generally by lowering the death rate or promoting earlier marriages. But such reactions take time, and many other

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forces are at work. At any one time the current rate of growth of the labor force on the one hand and of technique, equipment, and enterprise on the other must be substantially independent of one another. As the balance between them sways, so the rate of rise of real pay will vary.

We noticed that it will also vary by reason of distributive changes. The internal proportions of the central tendency are not immutable. With a given rate of rise of output per worker, the real wage may rise now somewhat faster, now somewhat slower, or within a year or two it may be displaced in either direction.

The immediate means is a changed relation between money rates of pay and the selling prices of final products. Much of the present argument has dealt directly with real pay, whereas in the actual world real pay emerges only from the relation between money rates of pay and prices which themselves are set, at least proximately, by separate decisions. If the central tendency is to hold, and real pay is to move parallel to output per head, prices and money rates of pay stand in a necessary relation to each other. If either takes a particular course, the other must adapt itself to it, so that the quotient of the two will yield the required real pay. If output per head is rising at 3 per cent a year, and real pay is to move parallel to it, then if money pay rises by 5 per cent a year, prices must rise by about 2 per cent, and if money pay does not rise at all, prices must fall by about 3 per cent.

But the ease with which prices and money rates of pay can be raised depends on factors that are partly common to both and partly distinct. A strong light is thrown on the common factors by full employment. This swells the membership and funds of trade unions, but when the trade unions are strong everywhere, they are the more likely to

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succeed in wage claims because each employer has an assurance that labor costs are going to be raised all around, and prices are likely to follow. In the same conditions, employers are the more ready to agree to rises in money pay because they anticipate little disadvantage from raising their prices. But some factors are distinct. Trade-union vigor has undergone changes from time to time over and above those that go with the level of employment. Resistance to wage cuts is spontaneously stronger than support for wage claims. Public policy may be exerted more or less powerfully to hold or raise money wages. Prices, for their part, may be pressed down by more competition from other regions. Monetary and fiscal measures that change the flow of effective demand take their effect on the markets for final products before this gets through to the labor market. Once any trend of the price level has set in, it reinforces itself by the expectations that it forms in employers' minds: to raise the price of one's own product seems dangerous, however good the particular case for it, when price reductions are the acknowledged order of the day, but harmless when everybody is doing it.

It is by the momentary conjunction of such factors as these that some of the observed variations of the relation between real pay and productivity seem to be explained. We have already seen something of the possibilities, in our discussion of what the bargaining power of the trade union can do to reduce the profit margin. Generally, when the resistances to price-raising are weak, pressures that would push money rates of pay up will have much their own way, but they will carry prices up with them and will not gain at the expense of profit margins. But when the resistances to price-raising are strong, the possibility does exist of a stronger pressure raising money pay relative to prices—that is, raising real

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pay relative to productivity. A strong case appears when market forces are actually pressing prices down: the inherently dogged resistance to cuts is then likely to make any reduction in money pay smaller than the contemporary reduction in prices. These different conjunctions are found in the rising and falling phases of the trade cycle, but perhaps they may also be traced in the secondary secular fluctuations we noticed earlier: a distributive shift in favor of pay is less likely when the long-term trend of the price level is upward. A striking instance is the remarkable constancy of the division between pay and profit in the Western economies through the years of full employment after the Second World War.

There remains one other possibility, which is suggested by a marked rise in the wage-income ratio in several countries between 1914 and 1924. Money incomes of all kinds generally rose rapidly during the First World War and in the postwar boom, and then dropped back. But other incomes dropped back more than wages, so that the wage-income ratio rose—in France, Germany, the United Kingdom, and the United States perhaps by as much as a fifth, in Sweden by as much as two-fifths. Moreover, this seems to have been not a fluctuation but a lasting displacement of the prevailing level. One contributory cause has been the reduction by rapid inflation of the relative size of incomes that are fixed in terms of money or can be adjusted only slowly: in particular, the share of rent is likely to have been generally reduced. But for Britain, at least, the record suggests another possibility—that the average rate of return on risk capital was reduced. The way in which this could have come about we have already suggested: in the slump that followed the postwar boom profits were caught between the hammer of deflation and the anvil of labor's resistance. But the effect

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persisted, at least until it was overlaid by the Great Depression that set in during 1929. The persistence may only have marked a lag in the reaction of the supply of risk capital to a reduction in the rate of return on it. But it also raises the question whether there may not be a conventional element in the rate of return used to guide decisions on pricing and on the claims of proposed investments. At any one time a consensus may prevail on what rates of return are "attractive," "reasonable," or "inadequate." War, inflation, and deflation break the consensus up: the old bench marks are lost, and when a new consensus forms, it may be about a new level. But whatever the explanation, a displacement of the general level of the return to risk capital evidently carries with it the possibility of a shift in the general level of real pay.

Here as elsewhere, however, the static relations of distribution are entwined with the dynamic relations of growth. The displacement that makes a rise in real pay possible today may slow down the rise tomorrow. If the required rate of return on risk capital were really conventional and nothing more, then a reduction of the rate the consensus accepts would not reduce the supply. But though a reduction of the actual rate fails to generate sufficient pressure to restore current profit margins, it may still reduce new investment, either because the reward no longer seems worth the trouble or because existing profits do not provide enough funds for plowing back. In that case the rate of growth of the economy would be slowed down. Unhappily there seems to be no equilibrating mechanism here. The initial maladjustment is a particular rise in pay relative to profits, and the effect is that real pay is lower than it would have been otherwise on the aggregate of a run of years. The corrective would be a reduction in money pay relative to prices, but there seems to be no way in which a slower rate of growth of the economy

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tends to bring this about, save insofar as the restraint of development leaves more men without jobs, and this in turn exerts a restraining influence on wage claims.

THE CENTRAL CONTROL OF TOTAL PAY

The dynamic processes we have been considering include a feedback from the aggregate of current changes in pay to the particular changes made job by job. Some aggregates are matters only of statistical summation: the day's total of road accidents can be reckoned up, for instance, without the accumulating total having affected what happened at any point during the day. But even where each rate of pay is negotiated separately, the aggregate of pay is not just a total we may add up if we choose, but forms part of the system of economic forces. An analogy is provided by commodity markets: the total quantity of butter sold day by day is made up by many transactions that appear independent, but if it proves to differ from the total supply reaching the market there will be a rise or fall of stocks, and a change in price that will come back to the shops and affect subsequent purchases. One housewife may now find herself constrained to buy less, because others have been buying more. In much the same way, the cumulated change in pay as a whole forms part of the circuit that governs the changes in pay job by job.

Nonetheless, until recently the total of pay was not itself an object of policy in the Western economies. Persons and unions took action to raise or lower particular rates of pay, and governments intervened to restrain or reinforce such action or initiate it themselves; but it was no one's business to act upon the sum total of pay. As governments came to take increasing responsibility for economic affairs, they became concerned with aggregates such as the balance of payments,

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the quantity of money, effective demand, and the level of employment. But not until the coming of full employment, during the Second World War and the years since, did the total of pay generally present itself as an object of policy.

It did so then because the course of particular negotiations began to contribute to a rise in money incomes greater than that in the real product, and checking inflation was seen to require the restraint of particular rises within bounds set by the permissible increase in the total. Two ways of achieving this have been tried. One is to leave negotiations to follow their various existing procedures, but prescribe certain "guidelines," which though they allow some differentiation in special circumstances will ensure, if generally observed, that the total rise in pay will not exceed the anticipated total rise in the available real product. The other way is to coordinate negotiations explicitly. A major step, which has been taken in the Netherlands, Denmark, and Sweden, is to arrange that the principal collective agreements shall all have the same date of expiry: the total effect of a year's new settlements is now not a consideration that can appear only after the event and as the year goes on, but demands attention at the outset of all negotiations. A natural further step is to conduct an initial negotiation centrally and reach a framework agreement, laying down a pattern to be observed in the particular negotiations that follow. Such an understanding between the national organizations of employers' associations and trade unions was reached in the Netherlands through the Foundation of Labor from the end of the Second World War down to 1959, and in Sweden since 1956 has been expressed in agreements running for two years at a time. But no procedure has been wholly successful: the problem of controlling the rise of pay in the aggregate without assuming control of its movements in detail remains unsolved.

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It has called for new policies and improvised procedures in the Western economies, because they had developed institutions only to adjust particular rates separately, and had been content to let the whole be arrived at simply as the sum of the parts; but in the Soviet world it has been the whole that has been fixed first, and the institutions of central planning have been available to do this. Whereas in the West the share of labor in the product has largely been left to be settled by market forces, in the Soviet Union it has been a direct object of policy and has been intended to be settled by authority.

In principle, the procedure has been simple. The product is to be divided between what is paid out to workers on the one hand and what is used in the public sector on the other—in investment, social services including education, the administrative work of government, defense, space research, and the like. The division is made in two ways. The more direct is to budget for a certain total bill of wages and salaries, and keep this total down so that consumption by households may be kept down. But however big wages and salaries are in money, the real income available to households can be kept down by taxation and by higher prices—which amount to much the same, for the main tax is on turnover. The second way of adjusting the share of labor is therefore to finance the public sector by taxes that raise an industry's value product at market prices above its wage bill. In the event, should the monetary purchasing power accruing to households prove greater after all than the output, at market prices, assigned to them, then the safety valve is a rise in prices. The major determinant of the share of labor is thus the direction of resources, through the production programs, toward households on the one hand and the public sector on the other.

The political authority that sanctions the plan thereby ap-

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proves or imposes a particular division of the product and general level of real pay. It may have been at times that certain programs in the public sector were pushed as far as possible, subject only to maintaining the existing level of real pay; or even that this level was deliberately lowered somewhat to release more resources for such programs. At other times a need to reduce discontent and encourage workers by more tangible rewards may have been politically paramount. But in whatever way the decision was reached, it would fix the size of the total wages fund for the period of the plan. The planners must then allocate this fund among the different branches of activity, according to the output scheduled for each and the labor required for that output. No doubt it would have been from budgets prepared branch by branch that the overall plan was compiled in the first place, and when the basic decisions had been taken at the highest political level the task of the planners would be only to make adjustments in the allocations already envisaged. But in principle the whole is fixed before the parts, by a centralized decision concerning the total real income to be made available to labor.

What is at issue may be illustrated by the simplified accounts for the Soviet Union in 1955 that appear on the next page. Out of the total product of 1100 bns. (as reckoned here), 218 bn., or about a fifth, were saved; of the remaining 882 bn., 215 bn. were absorbed by government, and the remaining 631 bn. went to consumption by households. This consumption was largely financed by the allocation of 588 bn. to wages and salaries.

But under this planning procedure, just as under the income policies of the Western economies, there has been difficulty in practice in keeping the payments of wages and salaries man by man within the intended bounds. The Soviet

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	<i>Government</i>	<i>Enterprises and Farms</i>	<i>Households</i>	<i>Total Economy</i>
	<i>Expenditure</i>	<i>Receipts</i>	<i>Expenditure</i>	<i>Receipts</i>
(Billions of rubles)				
<i>INCOME ACCOUNT</i>				
Gross product	120	902	78	1100
Wages and salaries	120	468	588	
Social transfers	60	22	60	
Taxes and profit deductions	488	436	52	
Purchase and repayment of state bonds	12	31	31	12
Subsidies	77	77	-	
Balance = gross disposable income	392	53	655	1100
	661	661	738	1100
	979	979	738	1100
<i>INCOME USE ACCOUNT</i>				
Gross disposable income	392	53	655	1100
Consumption	251	631	882	
Balance = gross saving	141	24	218	
	392	655	1100	1100
	392	53	655	1100

Source: Adapted from *U.N. Economic Bulletin for Europe*, May 1957, Table I, p. 91.

Union, having retained few controls on the movement of labor between jobs, has found it hard to combine the central planning of the wage fund with the play of supply and demand in the labor market. We have seen how managers competing for labor have outrun their allotted funds. Be-

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tween 1947 and 1956 no general rise in money wage rates was planned, but the actual rise averaged some 27 per cent. Here as in the West the result has been an undesired rise in the prices of consumers' goods.

SUPPLEMENTARY ELEMENTS OF REAL PAY

Up to now we have treated real pay simply as the physical quantity of a representative assortment of goods and services that can be bought by the sum of money that constitutes a wage or salary. But in many employments and economies the worker is not recompensed simply by a pay packet. His material well-being depends on more than the size of the basketful his pay will buy.

There are in fact three elements to be comprised in any full account of what he gets in return for his work. The first is what the employer hands over to him individually. This is part of the cost the employer incurs if he employs an extra unit of labor, and avoids if he does not; and it is actually remitted to the worker (save for taxes or agreed contributions deducted at the source) and is not merely made available to him in the way of an amenity of which he may or may not choose to avail himself. The sum due may include not only payment for work done or for time spent at work but also for time taken to travel to and from work; for permitted absence, whether for sickness, a national holiday, or days of unemployment within a guaranteed week; and for time taken off within the nominal hours of the working day —tolerated tardiness at the start, time for washing up at the close, breaks for refreshments. Generally payment is due at the end of the period paid for, but some may be deferred, such as allotments to holidays with pay and pension funds; and in India a substantial part of annual earnings commonly

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consists of a bonus declared, or negotiated, once or twice a year. The greater part is reckoned in money, but sometimes part is transmitted in kind, through the provision of meals, or fuel and other household supplies, and of lodging or a house free of rent or at a reduced rent.

The cost of a particular worker to his employer often also contains a second element: for each worker he employs, or each increment of his wages bill, the employer makes a contribution to an insurance fund or a fund for social benefits. He may be obliged to do so by law, or may have set up a scheme of his own volition or in agreement with the trade unions. The insurance funds may cover industrial injuries, sickness, medical treatment, and unemployment. The funds for social benefits exist especially to provide family allowances: part of each man's wage is withheld by his employer and remitted instead to a national fund which is paid out to married men according to their family obligations; in effect, within a given wages bill the bachelors are made to transfer part of their earnings to the married, and the parents of small families to those of large ones. Thus in France in 1955 a married unskilled worker, if he had two children, received half as much again as an unmarried one, and if he had five children, 2.4 times as much. This element is evidently part of the pay received by workers as a whole, though how much of it goes to any one worker does not depend on the work he does.

The outlay some employers incur on behalf of their workers contains a third element, in the form of benefits and amenities made available to the workers generally, though not allocated periodically or in fixed amount to any one of them. Some of these benefits consist of payments of money —such as “severance pay,” or compensation for discharge on grounds of redundancy—which are paid out to particular

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workers, but are made only occasionally and are not provided for by regular allocations attached to wage payments. But the greater part of the outlay is for amenities such as canteens, recreation rooms, sports grounds, and clubs. Some amenities are to be regarded only as improvements in working conditions—air conditioning in offices, for example, or pit-head baths for the miner: they add to the balance of advantage in a particular job, but the worker avails himself of them only insofar as he is doing that job, and they are not a part of his consumption out of working hours. But the amenities with which we are concerned here are enjoyed out of working hours, and are of a kind on which the worker would be spending his own money if they were not provided by the firm. What the firm spends on them we can therefore regard as part of the cost of labor to it. But how far they should be reckoned part of the pay workers receive is uncertain. They may provide one man with what he would otherwise spend much on, and another may not use them at all. Because they do not give the workers the freedom that a cash payment carries with it to choose what form one's consumption shall take, they seem likely to be worth less to the average worker than they cost the firm.

The real wage is made up of all three elements: what the worker receives in money and kind, what is paid on his behalf to funds, and what use he makes of the amenities made available to him.

Since the First World War the second element has grown, for three reasons: in times of inflation the immediate needs of workers with families to feed have been met in this way without as great a rise in pay having to be given to all; public policy has approved in principle of some socialization of the wage, or has used employers' contributions as part of the finance of social insurance; and as real wages have risen,

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trade unions have found increasing room in their claims and agreements for "fringe benefits." But a general tendency has impinged in different ways on different countries. Some finance social insurance by contributions from workers, employers, and the taxpayer, some from a payroll tax, some from general taxation. Where a general system has been set up by law, as in Great Britain, a smaller part of the contributions appears as a cost of labor than where, as in the United States, more has been left for the trade unions to negotiate with the employer. Differences between countries also arise from the sheer size of the provision that is made. In many European countries it is large. In France, for example, in employments within the general scheme of social charges, paid-out wages and salaries amounted in the 1950s to rather less than three-quarters of total labor costs, and the difference was made up of allocations to workmen's compensation, social insurance, and, above all, family allowances. Within a single country industries differ by tradition, or according to the nature of their work, in the extent of the difference: against the proportion of three-quarters just mentioned for France generally, that on the French railroads has been put at little more than half, by reason of the extent of holiday pay, medical services, housing allowances, free travel, and the like. A European survey⁵ of the extent of all benefits and charges other than the money payments currently transmitted to the worker for hours actually worked found that in the 1950s these other elements of labor cost amounted to from 40 and 50 per cent of the paid-out wage in Italy and Yugoslavia, from 30 to 40 per cent in Austria, France, Greece, and Turkey, from 20 to 30 per cent in Belgium and Western

5. I.L.O., *Labour Costs in European Industry*, Studies and Reports, new ser. 52 (1959).

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Germany, and between 10 and 15 per cent in Denmark and the United Kingdom.

The development of various forms and channels of remuneration reveals two features which differentiate the contemporary contract of employment in many countries from a simple payment for a piece of work done, and which enter into the rise of the standard of living of the worker without taking much effect on the measurable real pay.

The first is that employment confers status. The domestic worker of the eighteenth century, working in his own cottage, with his own equipment, and in his own time, was a subcontractor rather than a wage earner. The first workers in the mill lacked the freedom that detachment had preserved and were subordinated to the requirements of the firm, but without becoming members of it. Yet as the provisions of the contract of employment have been expanded, the worker has attained rights as well as duties: safeguards against arbitrary treatment, limitations on the power of the employer to dismiss him, benefits accruing by reason of continued association and not of particular work done. Such provisions have their analogies within the family and the state, and impart to employment something of the status that belongs to membership of a community.

The second feature is that the contract of employment has been used as part of the administrative machinery of social benefits and social insurance. The extent to which this has been done varies more widely from country to country than the extent of social benefits and social insurance themselves. These may be administered not only through employment but through voluntary societies and through government itself or the agencies it sets up; and they may be financed not only by employers' and workers' contributions but by voluntary subscriptions and the general fund of taxation. The lines

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may be drawn in various places between what the worker is paid for particular pieces of work, is allotted as a member of a productive association, and is entitled to as a citizen. This makes it difficult to compare the levels of real pay in different countries, or measure the rise of real pay in any one.

There is, however, one further component of the rise of real pay that is in a way measurable—the increase of leisure. To call leisure part of pay may seem sophistical, and certainly it is not part of the cost of labor to the employer. If the working week is simply reduced by an hour without raising the hourly rate, one cannot say that pay has risen, even though the workers may prefer the new arrangement. But at least in recent years a reduction in hours has usually been negotiated only when the hourly rate has been raised enough at the same time to keep up weekly money pay, and then the extra leisure constitutes the rise. The miner who took a shift off used to be said to be “buying daylight”: when workers negotiate a reduction in weekly hours from 42 to 40 without loss of pay—that is, with a 5 per cent rise in the hourly rate—we can think of them as first getting the 5 per cent rise on all 42 hours, and then using the whole rise to buy two hours of leisure. In any case we cannot compare the real wages of two workers by looking only at the quantities of goods and services their money earnings will buy, without regard to how long they have to work to get the money.

The general rise in the real return to labor in the developing economies during the last hundred years and more has in fact been taken out partly in the form of more leisure. One way in which more leisure could have been enjoyed was through fewer members of the household going out to work at all. When the head of the house earns little, the wife often has to go out to work too, and the children have to earn what they can in part-time work before they leave school,

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and begin full-time work as soon as the law allows. As the head comes to earn more, this pressure is relieved. At higher levels of pay, too, preparation can be made for earlier retirement. For these reasons we might expect rising real pay to bring a falling participation rate: a lower proportion of the population of working age will be gainfully employed. But this has not happened: the records of a number of countries show that the participation rate has been remarkably steady. Probably this means not that the factors that lower it have not been operative but that they have been offset by others. Among these may well be the release of women from household duties by a reduction in the size of the family and the mechanization of domestic work. More women have had the education to fit them for nonmanual jobs, and more jobs both manual and nonmanual have been opened to women. It may well be also that the place of poverty in making people add all they can to family income has been taken by the opportunity a higher standard of living gives of rising higher still—of acquiring a better house, for instance, or a car.

Though the opportunity to enjoy more leisure does not seem to have been generally used to lower the proportionate number of persons who go out to work, it certainly has been used to lower the number of hours the average person works in the year. Before the Industrial Revolution the hours we hear of were long everywhere, savagely long by modern standards, not less than twelve hours a day in summer and ten in winter, and that for six days a week. Such hours can have been made supportable only by a leisurely pace of work, a good many tolerated breaks, and sometimes also a good many days of festival. The early factories brought added reasons for working long hours: in some places to make full use of intermittent water power while it was available, and more generally to spread the costs of mill and machinery

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over as big an output as possible. But the bringing of workers together in factories also gave an opportunity of regulation that was lacking before, and it was used at first on grounds of humanity to protect women and children from the exhaustion of long hours. Meanwhile, as collective bargaining grew up, it began to regulate hours as well as wages. The clerical worker, much more highly paid relative to the manual laborer then than now, took out some of his advantage in shorter hours, which are still widely accepted as belonging naturally to his occupation. But in Britain some manual workers were able to negotiate the 9-hour day and 54-hour week about the middle of the nineteenth century. That was to remain standard practice down to the First World War, save only for the adoption of earlier stopping times on Saturday. But meanwhile employers had begun to discover the inefficiency of long hours, and by 1890 some were introducing the 8-hour day. It was that day, and the 5½-day week, that characterized the interwar years, though in France and the United States the 40-hour week was adopted as a palliative for the unemployment of the 1930s. Since the Second World War the 40-hour week has become typical of industrial practice in the Western countries. The Soviet Twenty-Year Plan of 1961 promised a transition within the next ten years to the week of 36 hours completed in either six days or five.

Meanwhile annual holidays with pay, which were usual in a modest way for clerical workers before 1914 but had made only a sporadic appearance for manual workers, have become the general practice, and have been widely extended to not less than two weeks, besides certain days of national holiday.

The reductions of working hours have been achieved not gradually but in particular jumps, separated by long periods

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of little change. When the jumps have come, no doubt there has been an element of fashion in them. Yet there is no reason to doubt that the reductions have marked a decision about the alternative uses of resources: rather than use all their increased command of resources to get more goods and services, people have chosen a smaller increase of goods and services together with some increase of leisure. No doubt more extensive education has increased the demand for leisure by developing the capacity to enjoy it. But also, goods and leisure are complementary: it is useless to have more amenities unless one has time to enjoy them, and such enjoyment depends a great deal on equipment, especially for housing and travel. It is therefore likely that for some time in the future, as in the past, the rise of real pay will take the form both of more leisure and of more goods and services.