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J. S. Mill on "Derived Demand" and the Wage-Fund Theory Recantation

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It is inviting to regard J. S. Mill's formal arrangement of the *Principles of Political Economy*—the discussion of 'production,' 'distribution' and 'exchange' in separate books—as indicating a failure to define distribution in terms of the pricing of scarce factor services, or to appreciate the relation between factor pricing, the technical conditions of production and allocation. (Knight, 1956, 42; Schumpeter, 1954, 543) But Mill had reasons, which involve matters other than pure theory, for the decision to organize his work as he did—a concern to distinguish those economic relationships which do from those which do not vary between alternative societal organizations; an interest in comparative economic development; and a pedagogical concern for simplicity. It is certainly true that the formal treatment of production, distribution and exchange, in that order, left its mark on the substantive matter itself; serious confusions were created which a more satisfactory package from a theoretical perspective would probably have avoided. As an obvious example, placing the contrast between 'demand for commodities' and 'demand for labour'—the fourth fundamental proposition on capital—before either the analysis of distribution (particularly the wages-fund theory) or the analysis of exchange courted misunderstanding. Moreover, Mill's social preoccupations sometimes led him to bring the discussion of difficult technical problems to a close rather too hastily for the analytically conscientious reader. (Marshall, 1920, 824) Yet for all that, his position can be unravelled and it is clear that the organization of the *Principles* did not derive from any intention to divorce production and distribution from exchange in a technical sense. The general perspective is, in fact, one of a tight interconnection between these aspects of the economic problem (following the lines laid out by Ricardo).

As a typical instance of misdirected criticism we may refer to G. P. Scrope's objections to Mill's fourth fundamental proposition on capital—'demand for commodities is not demand for labour': 'Can Mr. Mill really believe that the labour spent by the whole building trade of London . . . has not been paid for by the vast sums of money for which these houses have been sold? Can he suppose that the builders have built them all out of their own pockets, instead of acting merely as intermediate agents between the working tradesmen and the purchaser, paying out with one hand what they receive with the other?' (1873, 120) This indeed was precisely the substance of W. S. Jevons's complaint that, according to the fourth proposition—which he rightly observed originated with Ricardo—capitalists 'maintain and pay for labor whether or not there is a demand for the commodities produced' and 'production goes on independently of the use to which the pro-

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duce is to be put.' (1905, 127)[1]

I shall show that there is nothing in the proposition which denies the validity of derived demand for inputs (imputation); on the contrary, Mill specifically stated his adherence to the imputation principle without, of course, providing a water-tight analysis thereof. In Section I, I present the evidence of Mill's acceptance of the concept of derived demand, evidence that proves essential for an appreciation of the fourth proposition on capital. This proposition, I show in Section II, was not designed to explain the return to labour at the industry level, and in no way conflicts with the principle of imputation. With this behind us, we will be in a position to consider formally aspects of the wages-fund doctrine. In Section III the doctrine is taken up in terms of Mill's conception of economic process. A picture emerges which is far removed from a simple agricultural economy wherein the wages fund may be interpreted as a (real) wage bill, made up of commodities sharply distinguished from 'luxury' goods, and 'predetermined' in magnitude at the commencement of the period of production. Mill (like Ricardo) did not take seriously the conceptual framework of an annual agricultural cycle governing the demand for labour, and allowed for rapid alterations in the flow of real wages.

This demonstration sets the stage for an attempt to clarify what must surely constitute one of the most difficult interpretive problems in the classical literature, Mill's famous recantation from the wages-fund theory in 1869. Section IV offers our interpretation of this most peculiar episode—Mill's new insistence upon a labour demand 'curve' of zero elasticity. His case, we shall argue, turns upon derived demand presuming zero elasticity of demand for final product in the short run—an argument pertinent at the industry level but extended too hastily to the economy as a whole.

[1]For an account of these and other criticisms see Thompson, 1975, 174–92. Thompson falls into the same trap as these early critics when he writes (188) that Mill himself was 'oblivious to the fact that without consumption there would be no demand for resource inputs, labour included.' For an accurate perspective see Schumpeter, 644.

I. The Principle of Derived Demand

I shall deal first with the pricing of inputs in particular industries although the classical economists paid far less attention to micro-economic problems of this order, than to the determination of the *general* wage rate. I shall demonstrate the presence in Mill's work of an appreciation of derived demand in the sense that the ultimate source of factor remuneration is in sales proceeds, and the motive for factor employment is the (expected) added revenue product. The argument is obviously not technically water-tight because a clear marginal principle is absent.

We encounter a brief suggestion of the relationship in question in Mill's reference in the *Principles* to 'the present system of industrial life, in which employments are minutely subdivided, and all concerned in production depend for their remuneration on the price of a particular commodity.' (CWIII, 455) The principle was further elaborated in a chapter dealing with indirect inputs of labour in lengthy processes of production: 'All these persons ultimately derive the remuneration of their labour from the bread, or its price: the plough-maker as much as the rest; for since ploughs are of no use except for tilling the soil, no one would make or use ploughs for any other reason than because the increased returns, thereby obtained from the ground, afforded a source from which an adequate equivalent could be assigned for the labour of the plough-maker. If the produce is to be used or consumed in the form of bread, it is from the bread that this equivalent must come.' (CWII, 31) It is presumably the expectation of future yield that provides the motive for the use of the input.

In the case of materials which are 'destroyed as such by being once used,' 'the whole of the labour required for their production, as well as the abstinence of the person who supplied the means of carrying it on, must be remunerated from the fruits of that single use.' By contrast, 'implements . . . being susceptible of repeated employments, the whole of the products which they are instrumental in bringing into existence are a fund which can be drawn upon to remunerate the labour of their construction, and the abstinence of those by whose accumulations that labour was supported. It is enough if each product contributes a fraction . . . towards the remuneration of that labour and abstinence, or towards indemnifying the immediate producer for advancing that remuneration to the person who produced the tools.' (*Ibid.*, 37, cf 32)

The general principle also covers workers involved in transportation of a product 'from the place of its production to the place of its destined use . . . its final consumption'; they too 'derive their remuneration from the ultimate product.'(CWII, 32–33) The wholesale and retail functions of the 'Distributing Class, whose agency is supplementary to that of the Producing Class' are similarly treated: 'the produce so distributed, or its price, is the source from which the distributors are remunerated for their exertions, and for the abstinence which enabled them to advance the funds needful for the business of distribution.' (*Ibid.*, 40) It is indeed in consequence of the 'increased utility' afforded by these functions that the product 'could be sold at an increased price proportional to the labour expended in conferring it.' (*Ibid.*, 48)

Although in the above citations the 'distributive' functions are formally separated from the strictly 'productive' it is quite clear that the process of production in any meaningful economic sense was envisaged as coming to an end upon sale to the final consumer. It is essential to note that this applies also to wage goods. For Mill distinguished labourers' accommodation from industrial structures which have what he termed a 'protective' function in production—'manufactories, warehouses, docks, granaries, barns, farm buildings devoted to cattle, or to the operations of agricultural labour'—on the grounds that the housing of workers is 'destined for their personal accommodation: these, like their food, supply actual wants, and must be counted in the remuneration of their labour.' (*Ibid.*, 38) Similarly, coal may be employed 'not only in the process of industry, but in directly warming human beings. When so used, it is not a material of production; but is itself the ultimate product.' (*Ibid.*, 35) The point at stake is an important one since the formal inclusion of wage goods within capital, to be discussed in the next section, may leave the impression that such commodities were envisaged as intermediate products reflecting a sort of 'production of commodities by means of commodities.' That 'the finished products of many branches of industry are the materials of others' (*Ibid.*, 36) was an irrelevant consideration in the case of workers' consumables which were treated on a par with all other final goods.

There is also to be found in the *Principles* (CWIII, 474) a passage of potential significance for Mill's intentions by his 'recantation' in 1869 of the wages-fund doctrine. It contains an observation drawn from Thomas De Quincey focussing upon the implications of the fact that input use is characterized by the properties of derived demand and joint demand. The perspective is one of micro-economics involving particular industries.[2]

II. 'Demand for Commodities is not Demand for Labour'

We turn next to the theory of distribution from a macro-economic perspective. To set

[2]Ricardo had never spelled out as clearly as did Mill adherence to the general notion of imputation in the context of the return to particular inputs but the evidence suggests that he did not reject J. B. Say's version of the doctrine. The greatest care must be taken in approaching the classical theorems on capital to keep this in mind. (See Hollander, 1979, 670–71).

the stage we must have in mind aspects of Mill's discussion of capital.

The formal definition of capital is that of 'a stock previously accumulated, of the products of past labour,' the function of which in production is 'to afford the shelter, protection, tools and materials which the work requires, and to feed and otherwise maintain the labourers during the process. These are the services which present labour requires from past, and from the produce of past, labour.' (CWII, 55) In the same context Mill also defined capital as 'wealth appropriated to reproductive employment'; and yet more generally, as 'whatever of the produce of the country is devoted to production.' (*Ibid.*, 57)

The first of Mill's four propositions respecting capital—all of which are part and parcel of Ricardian doctrine—asserts that 'industry is limited by capital':

"There can be no more industry than is supplied with materials to work up and food to eat. Self-evident as the thing is, it is often forgotten that the people of a country are maintained and have their wants supplied, not by the produce of present labour, but of past. They consume what has been produced, not what is about to be produced. Now, of what has been produced, a part only is allotted to the support of productive labour; and there will not and cannot be more of that labour than the portion so allotted (which is the capital of the country) can feed and provide with the materials and instruments of production." (*Ibid.*, 63–4)

It is not always clear whether Mill intended his proposition to relate solely to a dependency of productive employment upon 'circulating capital' (wage goods and materials). So it might appear but for the closing sentence which specifically refers also to fixed capital. In the latter case the 'dependency' of productive employment on capital has a dual implication unless we assume—and this is probably a fair attribution in the present context—constancy of the real wage rate so that circulating capital can be treated on a par with technological capital in its relationship to labour. The weight of emphasis, however, is such as to suggest a very general statement more concerned with circulating than with fixed capital, for which there were good reasons as we shall presently see.

The proposition on capital which primarily concerns us here is Mill's fourth which does not, strictly speaking, constitute a distinct proposition at all but is rather a direct corollary of the first. (Hayek, 1941, 433; Taussig, 1896, 219–20; Marshall, 1920, 828) Thus 'what supports and employs productive labour, is the capital expended in setting it to work, and not the demand of purchasers for the produce of the labour when completed'; the demand for commodities 'determines in what particular branch of production the [existing] labour and capital shall be employed.' (CWII, 78) Similarly, 'it is not the money paid by the purchaser, which remunerates the labour; it is the capital of the producer; the demand only determines in what manner that capital shall be employed, and what kind of labour it shall remunerate.' (*Ibid.*, 88)

Clearly the notion that demand for commodities is not demand for labour does not relate to the demand for *particular* kinds of labour or labour in *particular* industries. For Mill did not deny that a demand for a particular kind of commodity gives rise to a demand for labour to make that commodity; as we have seen: 'all concerned in production depend for their remuneration on the price of a particular commodity.' What Mill had in mind by the fourth proposition was *aggregate* wages: 'The general principal, now stated, is that demand for commodities determines merely the direction of labour, and the kind of wealth produced, but not the quantity or efficiency of labour, or the aggregate of wealth.' (*Ibid.*, 87)

Mill himself had difficulty in expressing his precise intentions. But one particular formulation reveals the essence of the matter and confirms the preoccupation with aggregative employment and earnings. I have in mind the criticism of those economists who argued 'as if a person who buys commodities, the produce of labour, was an employer of labour, and created a demand for it as really, and in the same sense, as if he bought the labour itself directly, by the payment of wages . . .' On the contrary, 'if by demand for labour be meant the demand by which wages are raised, or the number of labourers in employment increased, demand for commodities does not constitute demand for labour. I conceive that a person who buys commodities and consumes them himself, does no good to the *labouring classes*; and that it is only by what he abstains from consuming, and expends in direct payment to labourers in exchange for labour, that he benefits the *labouring classes*, or adds anthing to the amount of their employment.' (*Ibid.*, 80, italics added) Both Ricardo and J. B. Say were said to have fully appreciated this position; this is important, for the latter also went some way towards an appreciation of the theory of imputation, indicating thereby that there is no necessary conflict between this approach to distribution and the approach implied by the fourth proposition on capital since each pertains to a distinct area of discourse. (cf Hollander, 1979, 373–75)

III. The Wages Fund Theory and Economic Organization

It is usual to attribute to the classical economists a conception of economic activity which runs in terms of discontinuous output, so that advances out of past produce are required for the maintenance of current activity. The wages-fund theory is said to fall into this category of models. Contrasting with such conceptualizations are those which emphasize the continuity of production—synchronized activity.

There is, of course, no question that the time-consuming character of economic activity caught the eye of the classical economists, Mill among them (CWII, 33, 58–9) Their models imply the need for accumulated advances to tide over producers. Yet the fact is that many of Mill's utterances on substantive matters relating to capital, investment and production point towards a model much more consistent with synchronized activity. It is my impression that his formal accounts involving discontinuities were designed to bring to the fore as clearly as possible the time-consuming character of economic activity. But it must not be overlooked that synchronization economics does not gainsay this particular aspect (although it certainly tends to disguise its presence) since it remains true that the flow of current input is responsible for the flow of future production and decisions regarding the current use of input must be made on the basis of expectations regarding the future; similarly, it remains true that the current flow of output is the consequence of input use in the past. These facts, of course, only become conspicuous within the terms of the model when consideration is given to an expansion of capacity from period to period when the (real) proceeds of past activity prove inadequate to 'finance' the current flow of input. If what I have asserted is a legitimate representation of Mill's position—the evidence will presently be laid out—the greatest care is required in understanding what he had in mind by the wages-fund doctrine. To this matter we now turn.

It will be convenient to have before us that strong version of the doctrine wherein a specific annual wage bill is 'destined'—no more and no less—to be paid out to labour, upon which assumption the celebrated labour-demand curve of unitary elasticity is based. The most explicit statement is by Mill himself at the time of his retraction of belief in the doctrine in 1869. In his review of Thornton on labour Mill laid out what he conceived to be the received doctrine:

"The theory rests on what may be called the doctrine of the wages fund. There is supposed to be,

at any given instant, a sum of wealth, which is unconditionally devoted to the payment of wages of labour. This sum is not regarded as unalterable, for it is augmented by saving, and increases with the progress of wealth; but it is reasoned upon as at any given moment a predetermined amount. More than that amount it is assumed that the wages-receiving class cannot possibly divide among them; that amount, and no less, they cannot but obtain. So that, the sum to be divided being fixed, the wages of each depend solely on the divisor, the number of participants. In this doctrine it is by implication affirmed, that the demand for labour not only increases with the cheapness, but increases in exact proportion to it, the same aggregate sum being paid for labour whatever its price may be." (CWV, 643–4)

For Mill, this is a characteristicly ambiguous statement, since it is not specified whether the 'circulating capital' is in real or money terms. (Taussig, 1896, 230f) But it appears that the latter was intended, for while Mill found the rationale for this conceptualization of the labour market in the notion of a form of *discontinuous* production, reference is also made to 'the capitalist's *pecuniary* means':

"In the common theory, the order of ideas is this. The capitalist's pecuniary means consist of two parts—his capital, and his profits or income. His capital is what he starts with at the beginning of the year, or when he commences some round of business operations: his income he does not receive until the end of the year, or until the round of operations is completed. His capital, except such part as is fixed in buildings and machinery, or laid out in materials, is what he has got to pay wages with. He cannot pay them out of his income, for that he has not yet received. When he does receive it, he may lay by a portion to add to his capital, and as such it will become part of next year's wages-fund, but has nothing to do with this year's." (CWV 644; cf IV, 301)

Let us now gather evidence from Mill's *Principles* to evaluate the accuracy of this retrospective view. The picture which emerges bears little resemblance to that portrayed in 1869.

Statements relating to wage-rate determination in the *Principles* are relatively few and surprisingly ambiguous. The most important appears at the outset of the chapter On Wages and deals with the general return to labour (including service or unproductive labour):

"Wages, then, depend mainly upon the demand and supply of labour; or as it is often expressed, on the proportion between population and capital. By population is here meant the number only of the labouring class, or rather of those who work for hire; and by capital only circulating capital, and not even the whole of that, but the part which is expended in the direct purchase of labour. To this, however, must be added all funds which, without forming a part of capital, are paid in exchange for labour, such as the wages of soldiers, domestic servants, and all other unproductive labourers. There is unfortunately no mode of expressing by one familiar term, the aggregate of what has been called the wages-fund of a country: and as the wages of productive labour form nearly the whole of that fund, it is usual to overlook the smaller and less important part, and to say that wages depend on population and capital. It will be convenient to employ this expression, remembering, however, to consider it as elliptical, and not as a literal statement of the entire truth.

With these limitations of the term, wages not only depend upon the relative amount of capital and population, but cannot under the rule of competition be affected by anything else. Wages (meaning, of course, the general rate) cannot rise, but by an increase of the aggregate funds employed in hiring labourers, or a diminution in the number of the competitors for hire; nor fall, except either by a diminution of the funds devoted to paying labour, or by an increase in the number of labourers to be paid." (CWII, 37–8)

This is the most important formal statement of the principle of wage-rate determination in the entire work. Its crude inadequacies are such that it is hardly unfair to say that, from a theoretical viewpoint, we are scarcely carried beyond the assertion that 'wages are what wages are.' For it begs a host of questions, most important of which is the precise determination of the breakdown of aggregate capital between its components by reference to some kind of production function. Yet Mill evidently believed, and perhaps justifiably so, that the formulation sufficed for his purposes, basing upon it a veritable barrage of conclusions regarding labour policy. It is difficult to avoid the impression that the theoretical details relating to the demand for labour simply did not concern him deeply in this context; it was application, based upon a minimal theoretical structure, that was the major preoccupation, the intention being to demonstrate that the condition of the labouring class 'can be bettered in no other way than by altering that proportion [between capital and population] to their advantage; and every scheme for their benefit, which does not proceed on this as its foundation, is, for all permanent purposes, a delusion.' (*Ibid*, 343; cf354) It is pertinent that the larger part of the chapter cf. Wages itself, apart from two subsequent chapters on Popular Remedies for Low Wages, focuses upon the implications of the Malthusian population doctrine—labour supply—rather than the nature of the demand for labour. Thus a change in the cost of wage-goods works its effects upon wages first by impinging upon labour supply. There can be little question that Mill's primary concern was with issues of this order.

A second formal statement of the doctrine, again in the context of the equilibrating function of wage movements, is equally vague:

"Goods can only be lowered in price by competition, to the point which calls forth buyers sufficient to take them off; and wages can only be lowered by competition until room is made to admit all the labourers to a share in the distribution of the wages-fund. If they fell below this point, a portion of the capital would remain unemployed for want of labourers; a counter-competition would commence on the side of capitalists, and wages would rise." (*Ibid.*, 356).

This passage might be read as assuming a rigidly pre-determined wages bill; but it is also not inconsistent with a totally different version of the wages-fund theory wherein the wages bill is not a pre-determined sum but the equilibrium outcome of a market-clearing process (about which more below). Once again, there is too little theoretical detail to be sure of Mill's intention regarding strict analysis. The formulation served the purpose of an elementary exposition of the notion of an equilibrium wage rate designed to counter popular remedies for low wages (such as minimum-wage legislation) in which context precisely the extract appears.

Yet for all that there comes to light, upon closer examination of the qualifications allowed by Mill to the main statement, some profoundly interesting theoretical insights. I have in mind his qualifications in the present context to the 'law of markets.' Mill recognized the possibility of slack periods in particular trades when available capital is kept idle—a circumstance which could still be *formally* absorbed into the doctrine, for 'Capital which the owner does not employ in purchasing labour, but keeps idle in his hands, is the same thing to the labourers, for the time being, as if it does not exist.' (*Ibid.*, 338) More significant, the allowance is extended to the aggregate labour market:

"When there is what is called a stagnation . . . then work people are dismissed, and those who are retained must submit to a reduction of wages: though in these cases there is neither more nor less capital than before . . . If we suppose, what in strictness is not absolutely impossible, that one of these fits of briskness or of stagnation should affect all occupations at the same time, wages altogether might undergo a rise or a fall. These, however, are but temporary fluctuations: the capital now lying idle will next year be in active employment, that which is this year unable to keep up with the demand will in its turn be locked up in crowded warehouses; and wages in these several departments will ebb and flow accordingly: but nothing can permanently alter general wages, except an increase or a diminution of capital itself (always meaning by the term, the funds of all sorts, devoted to the payment of labour) compared with the quantity of labour offering itself to be hired." (*Ibid.*, 338–9)

Further allowances for excess capacity will be found in the formal discussion of capital

in the first Book. Thus 'a fund may be seeking for productive employment, and find none, adapted to the inclinations of its possessor: it then is capital still, but unemployed capital. Or the stock may consist of unsold goods, not susceptible of direct application to productive uses, and not, at the moment, marketable: these, until sold, are in the condition of unemployed capital.' (*Ibid.*, 57; cf.65)

Idle capital in these contexts apparently refers not only to unsold stocks of goods but also to money funds available for investment in wage payments or other disbursements. What is involved is a well-considered and fundamental qualification to the proposition that 'industry is limited by capital' (a matter already alluded to in the previous section) from which it is apparent that Mill intended to supplement the basic doctrine regarding aggregate employment by some function relating to the state of aggregate demand for final goods—or what is equivalent, some function of the net excess demand for money.

The significance of the qualification extends beyond its linkage of monetary and employment theory, important though this is. Most relevant is that the qualification points away from any notion of an aggregate sum of wealth, in real or money terms or both, *unconditionally* 'destined' for the payment of wages. In the light of all this it appears that the wages-fund doctrine was, as Mill himself put it in one of our foregoing citations, a theory relating to 'permanent' wages—assuming full equilibrium as far as concerns aggregate demand for commodities—and particularly relevant for an appreciation of the general problems of population or the inability to generate increased employment by protective measures.

There is much else pointing to this conclusion. What we have to say next is pertinent to the question of a strict *upper* boundary to the real wage bill (and *a fortiori* the money wage bill).

The function of capital, as we have seen, is 'to afford the shelter, protection, tools and materials which the work requires, and to feed and otherwise maintain the labourers during the process.' But Mill was very careful to specify that the fraction of capital whose function it is to fulfil the tasks of 'maintaining' labour need not actually take the form of stocks of wage goods:

> "What then is his capital? Precisely that part of his possessions, whatever it be, which is to constitute his fund for carrying on fresh production. *It is of no consequence that a part, or even the whole of it, is in a form in which it cannot directly supply the wants of labourers.*" (CW II, 56, italics added)

The reason for this position lies in the supposed flexibility of the system which permits, by exchange or by production, the easy and rapid generation of commodities suitable for workers' consumption.

Thus, a decision by a capitalist to increase investment implies a fall off in his demand for luxuries ('plate and jewels')—hitherto financed from the sale of his product (for example, iron goods)—and a corresponding increase in expenditure upon productive labour; this entails appropriate increases in money wages and accordingly in the demand by labour for food. (*Ibid.*, p57) What of expanded production of food to meet the new demand? Increased food supplies might, we are told, be obtained immediately by importation, presumably in exchange for the luxuries hitherto consumed by capitalists, or at least for goods produced by means of the resources made available by the reduction in luxury consumption. If increased importation is not possible, then 'labourers will remain for a season on their short allowance: but the consequences of this change in the demand for commodities, occasioned by the change in the expenditure of capitalists from unproductive to productive, is that next year more food will be produced, and less plate and jewellery. So that . . . without having had anything to do with the food of the labourers directly, the conversion by individuals of a portion of their property, no matter of what sort'—in this case stocks of iron goods—'from an unproductive destination to a productive, has had the effect of causing more food to be appropriated to the consumption of productive labourers.' True enough, in the absence of increased food imports it may take a 'season' for food supplies to be expanded, but there is little question that Mill intended to minimize the significance of any such delay. The ease of achieving expansions of the food supply explains the conclusion that what distinguishes capital goods from others

> "does not lie in the kind of commodities, but in the mind of the capitalist—in his will to employ them for one purpose rather than another; and all property, however ill/adapted in itself for the use of labourers, is a part of capital, so soon as it, or the value to be received from it, is set apart for productive reinvestment. The sum of all the values so destined by their respective possessors, composes the capital of the country. Whether all those values are in a shape directly applicable to productive uses, makes no difference. *Their shape, whatever it may be, is a temporary accident: but once destined for production, they do not fail to find a way of transforming themselves into things capable of being applied to it.*" (*Ibid.*, 57, italics added, cf., 67–68, 82–83; CW, IV, 266–7)

The less significant is the distinction between wage-goods and luxury-goods, of course, the greater the flexibility of the productive system and the ease of expanding the former at the expense of the latter. In point of fact the notion of a sharp distinction between the two categories broke down at an early stage in Mill's exposition, as is clear from the discussion of the 'unproductive' consumption of productive labourers. (CW II, 58) Workers normally earn a 'surplus' over subsistence requirements which can best be seen in terms of the case of increased investment with given labour supply. Assuming the workers to be 'already sufficiently supplied with necessaries' they now will 'become consumers of luxuries; and the capital previously employed in the production of luxuries, is still able to employ itself in the same manner: the difference being, that the luxuries are shared among the community generally, instead of being confined to a few.' (*Ibid.*, 68)

From all this there emerges a rather clear picture of Mill's vision of economic process in an advanced capitalist-exchange system. It is far removed from a primitive agricultural economy for which a rigidly interpreted wages-fund theory might be appropriate, namely one wherein workers consume a distinct class of commodities, produced in annual jets, and opportunities for carry over from period to period are limited. (For an alternative view see Ekelund, 1976) Workers are paid in money, not in kind, and enter the market to purchase commodities at retail like any other consumers; there is no distinction in this regard between consumption by labourers, capitalists or landlords. The 'wages fund' is thus expressed in money but has a real counterpart in the flow of wage goods currently made available at retail outlets. (Our reading is consistent with that of Taussig, 1896, p233)

The recantation of the wages-fund doctrine (1869) begins, we have seen, with a criticism of what Mill claimed to be received doctrine—his own original position, namely the technological inability, deriving from the discontinuity of the production process, to alter the magnitude of the wages bill (apparently even the 'pecuniary' wages bill) during the course of the 'year.' This criticism, I have argued, appears unjustified if directed against the position actually developed in the *Principles*, where there is little to suggest any such rigidity of the wages bill—in either money or real terms. Yet there is a sense in which the wages bill can be said to be 'predetermined'—the sense implied by any determinate solution to a problem of competitive pricing: The demand and supply curves must be stable for such solution to be meaningful, their stability reflecting investment plans by

capitalists and plans regarding work and leisure by labourers. It would seem that Mill erred in 1869 by confusing the two senses in his description of his original position.

IV. The Wages-Fund Theory: the Recantation Interpreted

Mill's precise position in 1869 concerning the wages-fund doctrine constitutes one of the most difficult problems in the history of economics. It is to this matter that we now turn.

After rejecting the case of unitary demand elasticity, Mill focused upon that of completely inelastic and apparently coincidental schedules of supply and demand where 'neither sellers nor buyers are under the action of any motives, derived from supply and demand, to give way to one another'; in this case, 'which the law of equality between demand and supply does not provide for, because several prices all agree in satisfying that law . . . the question between one of those prices and another will be determined by causes which operate strongly against the labourer, and in favour of the employer . . . nothing but a close combination among the employed can give them even a chance of successfully contending against the employers.' (CWV, 642–3)

Let us then trace out the argument made for zero elasticity of labour demand. The precise order of the argument must be carefully followed.

The case begins, as noted, with the account of the wages-fund doctrine in terms of a unitary elastic demand curve for labour as-a-whole—the theory was applied to aggregate wages. (supra, p12) At the next stage, however, Mill referred to the motives of an individual employer of labour in making what seems to be his *main* argument against the notion of unitary elasticity.

"Does the employer require more labour, or do fresh employers of labour make their appearance, merely because it can be bought cheaper? Assuredly, no. Consumers desire more of an article, or fresh consumers are called forth, when the price has fallen: but the employer does not buy labour for the pleasure of consuming it; he buys it that he may profit from its productive powers, and he buys as much labour and no more as suffices to produce the quantity of his goods which he thinks he can sell to advantage. *A fall of wages does not necessarily make him expect a larger sale for his commodity, nor, therefore, does it necessarily increase his demand for labour.*" (*Ibid.*, 644; italics added).

Mill's case thus relates to the *derived demand* for labour. Since a fall in wage costs does not 'necessarily' lead to expectations of greater final sales for the product it does not 'necessarily' lead to an increase in demand for the factor.

Now, whereas Thornton believed that commodity markets are typically characterized by totally inelastic demand—at least over significant ranges—Mill did not. Moreover, he had just written a few pages earlier that 'it is the next thing to impossible that more of the commodity should not be asked for at every reduction of price' (*ibid.*, 637), and the response of quantity demanded to price played an important role in Mill's general economics. But in the *Principles* Mill had alluded to the properties of 'derived' and 'joint' demand with regard to input use. These characteristics were the source of rigidities of production and consumption which tended to delay the fall of price to new cost levels (CW III, 474) It is not unlikely then that when Mill stated in 1869 that 'a fall of wages does not necessarily make [the employer] expect a larger sale for his commodity, nor, therefore, does it necessarily increase his demand for labour' he had in mind so short a period that an expansion of sales may not be taken seriously by employers who, in such an event, refrain from immediately increasing their demand for labour. This position does not, however, rule out expanded demand for an input when a longer period is allowed. And, indeed, in Part II of the review Mill recognized such reaction.

The logic of the argument, strictly speaking, is of the partial-equilibrium variety. It implies therefore a concern with a variation in the wages paid to a particular category of labour in a single industry, other wage rates and product prices held constant. Yet the wages-fund doctrine under attack involves the aggregate demand for labour, and suggests a concern with a variation in general wages. Mill was on dangerous ground when he (implicitly) shifted from the former to the latter context. In short he based his case for a zero elasticity of aggregate labour demand upon an argument not strictly applicable to that area of discourse. That he was, however, troubled by the issue is probable; for he himself raised the possibility that while the demand for labour by an employer in a particular industry may be totally inelastic upon wage reductions—a rendition suggesting a *partial* wage change—yet the capital released may be invested elsewhere in the system so that 'the whole of the wages-fund will be paying wages as before.' (CWV, 644)

No *direct* answer to the foregoing problem was given; but precisely at this juncture Mill denied the existence of a 'pre-determined' aggregate wages bill: 'Exists there any fixed amount which, and neither more nor less than which, is destined to be expended in wages?' The wages bill 'cannot exceed the aggregate means of the employing classes' (after allowance for their personal maintenance), but 'short of this limit, it is not, in any sense of the word, a fixed amount.' The capitalist is under no obligation to spend a specific sum upon labour; each employer (and therefore presumably *all* employers) can be obliged to spend more than expected on wages or may enjoy a windfall gain even during the brief period before old plans can be revised and new plans put into operation:

"In short, there is abstractly available for the payment of wages, before an absolute limit is reached, not only the employer's capital, but the whole of what can possibly be retrenched from his personal expenditure; and the law of wages, on the side of demand, amounts only to the obvious proposition, that the employers cannot pay away in wages what they have not got." (*Ibid.*, 645)

We are now in a position to draw the threads of the argument together. On close inspection it will be seen that there are two distinct aspects to Mill's case. First, the argument that in the very short run firms may not respond to a fall (or, presumably, a rise) in the wage rate, because of low expectations of increased (decreased) final sales. *This, in fact, was the only rationale offered for zero demand elasticity for an input*; and while the argument implies a partial wage change, it was clearly Mill's intention to make a case for zero elasticity of the *aggregate* demand for labour, in the short period, upon variation in *general* wages—a rather too casual extension.

In the event of zero elasticity a variation in the wage rate entails a variation in the total industry wage bill. The second part of Mill's case, which also applies to the short-run period, urges that such alterations in the wage bill are indeed conceivable, since the notion of a technical inability to vary its size is groundless.

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