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### Marxian economic thought

The core of the Marxian ‘critique of political economy’, and its differentia specifica from other currents in economics, may however be encapsulated in a few sentences. The chief and almost exclusive object of analysis is capital understood as a social relation of production, marked by two features: exploitation within a monetary commodity-economy, and an inner and systematic tendency to crises. The theoretical instrument employed by Marx to show the link between money and exploitation as well as the endogeneity of crises is the theory that value has its exclusive source in abstract labor as activity – namely, the living labor of the wage worker.

#### 1. Capital as a social relation of production

According to Marx, the capitalist social relation may be defined as the historical situation where the ‘objective’ conditions of production (i.e., the means of production, including ordinary resources other than labor) are privately owned by one section of society, the capitalist class, to the exclusion of the other, the working class. Separated from the material conditions of labor and hence unable independently to produce their own means of subsistence, workers are compelled to sell to capitalist firms the only thing they own, the ‘subjective’ condition of production (i.e., their labor power), against a money wage to be spent in buying wage goods. Labor power is the capacity for labor: it is the mental and physical capabilities set in motion to do useful work, producing use values of any kind, and it is inseparable from the living body of human beings. The labor contract between the capitalists and the wage workers presupposes that the latter are juridically free subjects (unlike slaves or serfs), and hence that they put their labor power at the disposal of the former only for a limited period of time. The owners of the means of production, the ‘industrial capitalists’, need an initial finance from the owners of money, the ‘money capitalists’, not only to buy the means of production among themselves (which, from the point of view of the capitalist class as a whole, amounts to a purely ‘internal’ transaction), but also and primarily to buy workers’ labor power (which, from the same point of view, is its only ‘external’ purchase). The commodity-output belongs to the industrial capitalists, who sell it to ‘merchant-capitalists’ who, in turn, realize it on the market.

Marx assumes that industrial capitalists initially have at their disposal the money they need, and that they sell the output on the market without intermediation (for a classic survey of Marxian Economics, see Sweezy 1942; for more up-to-date perspectives, cfr. Harvey 1982; Foley 1986). The capitalist process in a given production period may be summarized in the following terms. The first purchase on the so-called labor market is the opening act, and it enables capitalist entrepreneurs to set production going. Firms look forward to selling the commodity product on the output market against money. The receipts must at least cover the initial advance, thereby closing the circuit. Two kinds of monetary circulation are involved here. Wage workers sell commodities,  $C$  (which, in this case, cannot but be their own labor power) against money,  $M$ , in order to obtain different commodities,  $C'$  (which, in this case, cannot but be the commodity basket needed to reproduce the workers, arising out from prior production processes and owned by capitalists). Thus, wage-earners are trapped in what Marx calls ‘simple commodity circulation’, or  $C-M-C'$ . On the other hand, capitalist firms buy commodities in order to sell, hence the circulation appears to be an instance of

M-C-M'. More precisely: 'money capital' (M) is advanced to purchase commodities (C), which are specified as the means of production (MP) and labor power (LP). MP and LP are the constitutive elements of 'productive capital', and their joint action in production gives rise to 'commodity capital' (C') to be sold on the market and transformed back into money (M'). Once expressed in this form, it is clear that capitalist circulation has meaning only in so far as the amount of money at the end is expected to be higher than the money advanced at the beginning of the circuit – that is, if  $M' > M$  and the value advanced as money has been able to earn a surplus value, consisting in gross money profits (which firms will actually share with financiers, merchant-capitalists, land-owners and rentiers). M-C-M' is the 'general formula of capital', because capital is defined by Marx as self-expanding value. The class divide between capitalists and wage workers may therefore be reinterpreted as separating those who have access to the advance of money as capital, money 'making' money, from those who have access to money only as income.

The main question addressed by Marx in the first volume of *Capital* is the following: how can the capitalist class get more out of economic process more than they put in? What they put in, as a class, is money capital, which represents the means of production and the means of subsistence required for the current process of production. What they get out is the money value of the commodity output sold on the market at the end of the circuit. From a macroeconomic point of view, it is clear that the 'valorization' of capital cannot have its origin in the 'internal' exchanges within the capitalist class, i.e. between firms, because any profit one producer gains by buying cheap and selling dear would transfer a loss to other producers. As a consequence, the source of surplus value must be traced back to the only exchange which is 'external' to the capitalist class, namely the purchase of labor power.

Marx's reasoning is the following. In the capitalist labor process, the totality of wage-workers are at the same time reproducing the means of production employed and producing a net product. The net product is expressed on the market as a new value that is added to the value attached to the means of production and historically inherited from the past. This 'value added' is just the monetary expression of the labor time which has been objectified by wage-workers in the current period. The 'value of the labor power' for the entire working class is given by the labor contained in money wages, which is regulated by the (commodity-producing) labor-time required to reproduce the capacity for labor, and hence by the labor time required to reproduce the means of subsistence bought on the market. Accordingly, surplus value arises from 'surplus labor': the positive difference between, on the one hand, the whole of living labor spent in producing the total (net) product of capital and, on the other, the share of living labor which it is necessary to devote to reproducing the wages, which Marx labels necessary labor.

### The labor theory of value

Marx's tracing back surplus value to surplus labor may be better understood looking at the special way he develops and overturns the labor theory of value originally formulated by the Classical economists, Smith and Ricardo (cfr. Napoleoni 1975; the best introductions to Marx's value theory are still Colletti 1972 and Rubin 1973). The starting point of the reasoning is that capitalism is a generalized commodity economy, and, therefore, the analysis of exchange as such is given priority relative to the analysis of capitalist exchange. In exchange as such, individual producers are separate and in competition with each other. The labor of these asocial individuals is immediately private and can become social only on the market. This happens only indirectly: each commodity is shown to be equal to other commodities in certain quantitative ratios, to have an 'exchange-value', in as much as it is exchanged with money as the 'universal equivalent'. Money is a special commodity with general purchasing power as a result of a historical process of selection and exclusion, sanctioned by the state. This equalization of products that takes place in the market is also an equalization of the labors producing them. Thus, labor is not social in advance, but only in so far as its true end-product will be money: 'generic' or 'abstract' wealth. Individual labor, which

is concrete labor producing an object with some utility for some other agent, a 'use-value', rather counts for the producer as its opposite, as abstract labor, as a portion of the aggregate labor whose ex-post socialization is represented in the money value of output (and, therefore, in a portion of the concrete labor that produces the money commodity). Nevertheless, though it is only through money that private labor becomes social labor, it is not money that renders the commodities commensurable. On the contrary, commodities have exchange value because, even before the final exchange on the commodity market, they have already acquired the ideal property of being universally exchangeable, so that they have the 'form of value'; this property, so to speak, grows out from objectified labor as the 'substance of value'. Money is nothing but 'value' made autonomous in exchange, divorced from commodities and existing alongside them: and as such it is the outward representation of abstract, indirectly social labor.

This qualitative analysis of exchange as such has a quantitative counterpart. The 'magnitude of value' of a unit-commodity is determined by the 'socially necessary' labor-time needed for its production. In a particular branch of production each commodity of a given type and quality is sold at the same money price. Hence, the magnitude of value is ruled not by the individual labor-time actually spent by the single producer (i.e. by its 'individual value') but by the labor-time that has to be expended under normal conditions and with the average degree of skill and intensity of labor (i.e. by its 'social value'). The magnitude of value is also inversely related to the productive power of the direct labor producing the commodity. Commodity values are necessarily manifested as money prices within exchange. The quantity of money that is produced by one hour of labor, in a given country and in a given period, may be defined as the 'monetary expression of labor': the value of a commodity multiplied by the monetary expression of labor gives the so-called 'simple' or 'direct' price.

At this point Marx defines the relative exchange value between two commodities as the ratio between their simple prices, and this is therefore proportional to the ratio between their 'absolute' or 'intrinsic' values. On this outlook, it is always possible to translate the 'external' measure of the magnitude of each commodity's value in money terms (ideally anticipated by producers before exchange) into the 'immanent' measure in units of labor-time. Note, however, that value is not identical with price defined as any arbitrary relative ratio between commodity and money contingently fixed on the market. Value expresses a necessary relation with the (abstract) labor-time spent in the production of commodities. To be effective in regulating market prices, value implies a coincidence between individual supply and demand. In that case the spontaneous allocation of the private labors of the autonomous, independent producers affirms itself a posteriori on the market as a social division of labor. Regardless of the divergences between individual supply and demand, 'price' is the money-name taken by the commodities and the labor it expresses may then differ from the socially necessary labor contained in the commodity. The whole mass of the newly produced commodities is seen by Marx as a homogeneous quantity of value whose monetary expression is necessarily equal to their total money price. Thus, the divergence between values and prices simply redistributes among producers the total direct labor, i.e. of the content hidden behind the form of value taken by the net product.

This argument, which is expressed most clearly in the opening pages of *Capital*, moves from exchange value to value, from value to money, and from money to labor. It may be attacked on several grounds. Böhm-Bawerk failed to notice the essential monetary side of Marxian value theory and looked only at what he saw as a linear deduction in the direction exchange value-value-abstract labor. He then observed, quite reasonably, that abstracting from specific use-values does not mean abstracting from use value in general, and that because an exchange value is attached to non-produced commodities, it follows that the common properties that allow for exchange on the market and that are hidden behind the notion of value are utility and scarcity. A more recent and sympathetic criticism stresses that, while the connection of value to money is convincing, less so is the idea of an absolute value grounded in an expenditure of labor before selling the product on the commodity market. Marx himself shows that the social equalization among labors is effected only

when the commodity is actually sold in circulation, and that the labor time of concrete labors in production is heterogeneous and hence non-additive. Some Marxians have also argued that values regulate prices only in a 'simple commodity economy', where workers own the means of production and where income is entirely distributed as wages. This simple commodity economy should be seen either as the historical precedent of capitalism or as a fictional economy providing a first, imperfect approximation to the analysis of capitalism. Since in capitalism the competitive prices that act as centers of gravity for market prices are 'prices of production' (embodying an equal rate of profit) which generally diverge from simple prices, and since the 'transformation' of the latter into the former is problematic, this has become a third reason to attack Marx's value theory.

The origin of surplus value

All these positions ignore that for Marx commodity exchange is general only when the capitalist mode of production is dominant - that is, only when workers are compelled to sell labor power to money as capital, i.e. as self-valorizing value. As a consequence, labor is for him the content of the value-form because of a more fundamental sequence going from money(-capital) to (living) labor to (surplus-)value. The private 'individuals' distinct and opposed on the commodity market where they eventually become socialized through the metamorphosis of their products into money, are now to be interpreted as the collective workers organized by particular capitals in mutual competition.

Let us initially assume that capitalist firms produce to meet effective demand, and let us take the standpoint of the total capital articulated in different industries. The methods of production (including the intensity and the productive power of labor), employment and the real wage are all known. Marx proceeds by the method of comparison. The labor power bought by capital has, like any other commodity, an exchange value and a use value: the former expresses 'necessary labor', which is given before production; the latter is 'living labor', or labor in motion during production. If the living labor extracted from workers were equal to necessary labor (if, that is, the economic system merely allowed for workers' consumption), there would be no surplus value and hence no profits. Though hypothetical and capitalistically impossible, this situation is meaningful and real, since a vital capitalist production process needs to reintegrate the capital advanced to reproduce the working population at the historically given standard of living. In this kind of Marxian analogue of Schumpeter's 'circular flow' relative prices reduce to the ratio between simple prices, and are proportional to values.

But the living labor of wage workers is inherently not a constant but a variable magnitude, whose actual quantity is yet to be determined when the labor contract is bargained, and that will materialize only within production proper. The length of the working day may be extended beyond the limit of necessary labor, so that a surplus labor is created. Indeed, the control and the compulsion by capital of workers' effort guarantee that this potential extension of social working over and above the necessary labor day actually takes place. In this way what may be called 'originary profits' emerge. Marx assumes that the lengthening of the working day is the same for each worker, so that originary profits are proportional to employment. Their sum is total surplus value. So as not to confuse the inquiry into the origin of the capitalist surplus value with that into its distribution among competing capitals, Marx sticks to the same price rule, i.e. 'simple prices' proportional to the labor embodied in commodities. He can then subtract from the total quantity of living labor that has really been extorted in capitalist labor processes and objectified in the fresh value added the smaller quantity of labor that the workers really have to perform to produce the equivalent of the wage-goods.

The comparison Marx makes is not between a situation with petty commodity producers, whose wage exhaust income, and a situation where capitalists are present and making profits out of a proportional reduction in wages. It is rather between two actually capitalist situations, where the determining factor is the 'continuation' of the social working day (holding constant the given price rule). An implication of the price rule adopted by Marx is that the labor-time represented through the value of the money wage bill is the same as the labor-time necessary to produce the means of

subsistence bought on the market. If the real consumption of the working class determines the bargaining on the labor market, and firms' expectation about sales are taken to be confirmed on the commodity market, then the process of capital's self-expansion is transparently determined by the exploitation of the working class in production, and this is simply reflected in circulation as money making profits. Of course, the possibility of surplus labor is there from the start, after the productivity of labor has reached a certain level. However, Marx's key point is that, because the special feature of the commodity labor power is that it is inextricably bound to the bodies of the workers, they may resist capital's compulsion. In capitalism there is creation of value only in so far as there is creation of surplus value, i.e. valorization; and the potential valorization expected in the purchase of labor power on the labor market is realized only in so far as the capitalist class wins the class struggle in production and make workers work (provided, of course, firms are then able to sell the output). This is the most basic justification for labor being the sole source of value. Value is nothing but 'dead', objectified labor (expressed through money) because surplus value - the real capitalist wealth - depends causally on the objectification of the living labor of the wage-workers in the capitalist labor process as a contested terrain: where workers are potentially recalcitrant, and where capital needs to secure labor to get surplus labor.

In capitalism, therefore, the generativity of surplus is an endogenous variable influenced by the social form taken by production as production for a surplus value to be realized on the market. With given technology and assuming that competition on the labor market establishes a uniform real wage, 'necessary labor' is constant. Surplus value is extracted by lengthening the working day. Marx calls this method of raising surplus value the production of 'absolute surplus value'. When the length of the working day is legally and/or conflictually limited, capital may enlarge surplus value by the production of 'relative surplus value', that is through technical change or by speeding up the pace of production with greater intensity of labor. Technical change, which increases the productive power of labor, lowers the unit-values of commodities. To the extent that the changing organization of production directly or indirectly affects the firms that produce wage-goods, necessary labor, and so the value of labor power, falls. This makes room for a higher surplus labor and thus a higher surplus value. Changes in production techniques leading to relative surplus value is a much more powerful way of controlling worker performance than is the simple personal control needed to obtain absolute surplus value. Moving from 'cooperation' to the 'manufacturing division of labor' to 'the machine and big industry' stage, a specifically capitalist mode of production is built up. In this latter, labor is no longer subsumed 'formally' to capital - with surplus value extraction going on within the technological framework historically inherited by capital - but 'really', through a capitalistically-designed system of production. Workers become mere attendants and 'appendages' of the means of production as means of absorption of labor power in motion. They are mere bearers of the value-creating substance. The concrete qualities and skills possessed by laborers spring from a structure of production incessantly revolutionized from within and designed to command living labor within the valorization process. Labor is now purely abstract, indifferent to its particular form (which is dictated by capital) in the very moment of activity, where it has lost the nature of the active element but has become the passive object of capitalist manipulation in the search for profit. This stripping away from labor of all its qualitative determinateness and its reduction to mere quantity encompasses both the historically dominant tendency to de-skilling and the periodically recurring phases of partial re-skilling.

A moment of reflection is needed to appreciate the special features of this unique social reality. Profit-making springs from an 'exploitation' of workers in a double sense. There is exploitation because of the division of the social working day, with laborers giving more (living) labor in exchange for less (necessary) labor. The perspective here is that of the traditional, 'distributive' notion of exploitation, which considers the sharing out of the quantity of social labor embodied in the new value added within the period. Its measure is surplus labor over and above necessary labor. This, however, is the outcome of a more basic exploitation of workers. Capitalist wealth arises from the use of their capacity to work: this use perverts the nature of labor, which is rendered abstract -

namely, 'pure and simple' because other-directed - already in production. The quantitative measure of this 'productive' notion of exploitation, which refers to the formation rather than the distribution of the fresh whole value added, is the entire social working day. From this second perspective, exploitation ends up to be identified with abstract labor. Marx shows that abstract labor reflects an 'inversion of subject and object' (or, more precisely, a 'real hypostatization'), which is deepened in the theoretical journey from the commodity-output market to the labor market to the production process. Within exchange on the commodity-output market, 'objectified' labor is abstract because, when represented in value, the products of human working activity appear as an independent and estranged reality divorced from their origin in living labor. The consequent 'alienation' of individuals is coupled by 'reification' and 'fetishism'. Reification, because in a commodity-capitalist economy production-work relations among people necessarily take the material shape of an exchange among things. Fetishism, because, as a consequence, the products of labor appear endowed with social properties as if these latter were bestowed upon them by nature. These characteristics reappear in a heightened light in the other two moments of the capitalist circuit. On the labor market, even human beings become the 'personifications' of the commodity they sell, labor-power or 'potential' labor. Within production, living labor itself or labor 'in becoming' - organised and shaped by capital as 'value-in-process', and embedded in a definite material organisation for the creation of use values which is specifically designed to enforce the extraction of surplus value - is the true abstract subject of which the single concrete workers performing it are the predicates. In this way, Marx's capital as self-valorising value is akin to Hegel's Absolute Idea seeking to actualize itself and reproducing its own entire conditions of existence: but it is subject to the limit that workers may resist their incorporation as internal moments of capital (see Chris Arthur, "Hegel's Logic and Marx's Capital", in Moseley 1993)

At this point, it is possible to understand that behind the anarchic 'social division of labor', carried out independently of one another by private producers, and effected a posteriori via the market, a different 'technical division of labor' within production is going on. In the latter, inasmuch as it is subjected to the drive of valorization, an a priori despotic planning by capitalist firms leads to a technological equalisation and social pre-commensuration of the expenditure of human labor power, tentatively anticipating the final validation on the commodity market (Reuten-Williams 1989). This process imposes on labor - already within direct production and before exchange - the quantitative and qualitative properties of being abstract labor spent in the socially necessary measure. The pre-commensuration of labor within production, in its turn, is subject to a monetary ante-validation expressed by the finance that the money-capitalists grant to the industrial capitalists. Once capitalism has reached its full maturity in large-scale industry, the subjection of wage-workers' living labor to capital and the consequent abstraction of labor in production must be seen as the foundation of the abstraction of labor in the exchange on the commodity-market.

#### Capital and competition

The outcome of the total valorization process may be quantitatively summarised with the help of a few definitions. Marx calls the part of the money-capital advanced by firms that is used to buy the means of productions 'constant capital' because, through the mediation of labor as concrete labor, the value of the raw materials and of the instruments of production is transferred to the value of the product. Marx calls the remaining portion of the money-capital advanced - namely, the money-form taken by the means of subsistence that buys the workers to incorporate them in the valorization process - 'variable capital', because when living labor is pumped out from workers' capacity to labor as abstract labor, it not only replaces the value advanced by the capitalists in purchasing labor power, but also produces value over and above this limit, and, so, surplus value. Constant and variable capital must not be confused with fixed and circulating capital: fixed capital is the capital tied up in plant and equipment lasting more than the chosen time-period; and circulating capital is the capital advanced for wages and raw materials, and it is only partially consumed within the period. The ratio of the surplus value to the variable capital is Marx's 'rate of surplus value'. It accurately expresses the degree of exploitation, this latter being interpreted as the

appropriation by capital of surplus labor within the social working day: the higher (lower) the ratio, the higher (lower) the hours the laborers spend working for the capitalist class relative to the hours they spend producing for their own consumption. A similar division between constant capital, variable capital and surplus value, may be detected within the value of the output produced by single capitals as components of total capital. On the other hand, capitalists naturally refer the surplus value to the total capital they advanced. Surplus value as related to the sum of constant and variable capital takes the new name of 'profit', and this new ratio is thereby known as the 'rate of profit'. Because it connects surplus value not only to variable capital but also to constant capital, the rate of profit obscures the internal necessary relation between surplus value as the effect to living labor as the cause. Profit increasingly comes to be seen as produced by the whole capital as a thing (either as money-capital or as the ensemble of means of production, including workers as things among things) rather than as a social relation between classes. Nevertheless, this fetishistic mystification is not mere illusion; on the contrary, it depends on the fact that, to exploit labor, capital has to be simultaneously advanced as constant capital, and that thereby wage labor is a part of capital on the same footing as the instruments of labor and the raw materials. From this standpoint, the rate of profit accurately express the degree of valorization of all the value advanced as capital.

Before going on, it is necessary to understand the crucial role and the different meaning of competition in Marx. Competition is, for him, an essential feature of capitalist reality. What all capitals have in common, the inner tendency of 'capital in general', is their systematic ability to make money grow. It is accounted for by the exploitation of the working class by capital as a whole. The nature of capital, however, is realised only through the inter-relationship of the many capitals in opposition to each other. This was already clear in the very definition of abstract labor and value. Socially necessary labor comes to be established through the ex post socialisation in exchange of dissociated capitalist-commodity producers. Therefore, the determination of 'social values' as regulators of production leading to some 'equilibrium' allocation of social labor - the 'law of value' - affirms itself on individual capitals only through the mediation of the reciprocal interaction on the market. Marxian competition is of two kinds (Grossmann 1977). The first is intra-branch (or 'dynamic') competition (this side of Marx's legacy was a powerful source of inspiration for Schumpeter). Within a given sector, there is a stratification of conditions of production, and firms may be ranked according to their high, average or low productivity. The social value of a unit of output tends towards the individual value of the firms producing the dominant mass of the commodities sold within the sector. This, of course, implies that a sufficiently strong shift in demand may indirectly affect social value. Those firms whose individual value is lower (higher) than social value earn a surplus value that is higher (lower) than the normal. There is, therefore, a permanent incentive for single capitals to innovate in search of extra-surplus value, whatever the industry involved. This provides the micro-mechanism leading to the systematic production of relative surplus value, independently of the conscious motivations of the individual capitalists. The new, more advanced methods of production increasing the productive power of labor are embodied in more mechanized labor processes. Thus, the 'technical composition of capital', i.e. the number of means of production relative to the number of workers employed, rises. This is represented by a growth in the ratio of constant capital to variable capital, both measured at the values ruling before innovation, what Marx calls the 'organic composition of capital'. But the 'devaluation' (the reduction in unit-values) of commodities resulting from innovation permeates also the capital-goods sector and may well result in a fall of the 'value composition of capital', i.e. of the value-index of the composition of capital measured at the values prevailing after the change.

The 'transformation problem'

The struggle to secure, if only temporarily, extra-surplus value expresses a tendency to a diversification of the rate of profit within a given sector. On the other hand, the second kind of competition, inter-branch (or 'static') competition, expresses the tendency to an equalisation of the rate of profit across sectors. Whereas intra-branch competition is enforced by accumulation, which

increases the size of capitals, inter-branch competition is enforced by the mobility of capitals of a given size. An apparent contradiction, however, comes to the fore. The rate of profit is the ratio of surplus value to the whole (stock of) capital invested: assuming, for the sake of simplicity, that all capital is circulating capital, and that the latter is anticipated for the whole period, if both the numerator and the denominator are divided by the variable capital, the rate of profit is a positive function of the rate of surplus value and a negative function of the (value) composition of capital. If, as Marx assumes, competition makes uniform both the length of the working day and the average wage, then the rate of surplus value is the same everywhere. In other words, the labor power bought by variable capital produces a value and a surplus value which is proportional to the labor time expended. But there is no reason to assume a similar uniformity in the compositions of capital. If 'normal' prices were equal to simple prices, then the rate of profit would in general diverge among branches of production: 'prices of production' including a profit equalised across sectors cannot be proportional to values.

Marx offers a solution to the problem in vol. III of *Capital*: 'prices of production' must be interpreted as 'transformed' simple prices that merely redistribute surplus value among capitalist commodity-producers. They are the prices of the capitalist outputs reached through the application to the capital advanced in each industry (still accounted in 'value' terms) of an average rate of profit. This latter is theoretically constructed as the ratio of the total surplus value to the sum of constant and variable capital invested in the whole economy. This 'value' aggregate rate of profit reflects the total abstract labor congealed in the surplus value over the total abstract labor congealed in capital. As such, it acts as the necessary intermediate bridge between simple prices proportional to values (highlighting the genesis of surplus value) and prices of production (representing the 'free' operation of inter-branch competition). The total surplus value resulting from the valorization process is now apportioned to individual capitals as a profit proportional to their amount. The profit accruing to a given capital, therefore, may be higher or lower than the surplus value produced by the labor power bought by its own variable capital if the (value) composition of that capital is higher or lower than the average. In Marx's transformation two equalities are respected: the sum of simple prices is equal to the sum of prices of production, and the sum of surplus values is equal to the sum of profits. Moreover, the 'price' and the 'value' rate of profit are identical. Once inter-branch competition is introduced into the theoretical picture, prices of production replace social values as the centres of gravity of effective, market prices.

A long debate developed from the attempt of subsequent authors to correct what seemed to be an 'error' recognised by Marx himself as present in his transformation. For, there appeared to be a double and inconsistent evaluation of the same commodities when considered as inputs (means of subsistence and elements of workers' subsistence) and as outputs. The former were computed at 'simple prices' and the latter at 'prices of production' (Foley 2000 provides an overview of the discussion; for a denial that there is any error in Marx's transformation, see the chapter by Andrew Kliman in Bellofiore 1998). The tradition starting with Dmitriev, Bortkiewicz and Tugan-Baranovski and reaching maturity with Seton and Steedman's reading of the Sraffa model of price determination abandons Marx's successivist method and frames the transformation in the setting of a simultaneous equation system. Taking the methods of production and the real wage as the data, it is possible to fix the prices of production, but in general the two equalities cannot be maintained together and the 'price' rate of profit deviates from the 'value' rate of profit. More damagingly, the labor theory of value appears to be redundant, since the values expressed by simple prices are known starting from the 'physical' configuration of production and of workers' subsistence, and this is the given from which the prices of production can immediately be determined, so that there is no need for a dual-system accounting. Rather than being a strength of his theory, as Marx thought, the derivation of prices of production from values (through simple prices) seems to end up in the dissolution of the foundation of the whole theoretical construction.

Among the various attempts to counter this negative conclusion, most forcibly put by Samuelson, three positions may be singled out. The first is represented by Duménil, Foley and Lipietz (cfr.



Foley 1986; but see also: Gerard Duménil, *De la Valeur aux prix de Production*, Economica, Paris 1980, and Alain Lipietz, 'The So-Called "Transformation Problem" Revisited', *Journal of Economic Theory*, vol 26, pp. 59-88, 1982; and the chapter by Desai in Bellofiore 1998). In Foley's version, the key point is a new interpretation of the value of money and of the value of labor power, which are assumed as the constants of the transformation. The 'value of money', i.e. the amount of abstract labor time the monetary units represent, is defined as the ratio of the total direct labor time expended in the period to the total money income – which, of course, is the reciprocal of the 'monetary expression of labor'. The 'value of labor power' is no longer defined as the labor embodied in a pre-determined commodity bundle consumed by workers, but as the labor represented in the equivalent going to the workers – namely, the given money wage translated into a claim on social labor being multiplied by the value of money. The purchasing power of this money wage, and, so, the labor embodied in the real wage, may change in the transformation from simple prices to prices of production, and workers' consumer choices are allowed to change. Given that the money value of income is postulated to be the measure of the additional value created by workers and that the value of labor power expresses the distribution of this additional value between capital and labor, variable capital is read as the labor 'commanded' in exchange by money wages (the 'paid' portion of living labor) and surplus value as the labor 'commanded' in exchange by gross money profits (the 'unpaid' portion of living labor). From this point of view, the two Marxian equalities are both respected, provided that the equality between the sum of simple prices and the sum of production prices is applied to the total new value added and not to the total value embodied in the commodity product (a point particularly stressed by Duménil and Lipietz); but the 'price' rate of profit may still vary relative to the 'value' rate of profit. A second position is articulated by Fred Moseley (see: "Marx's Logic in Capital and the 'Transformation Problem'", in Bellofiore 1998). In his view, the givens in the transformation are the value components (constant and variable capital, surplus value) interpreted as money magnitudes, which are taken to be the same whatever the price rule. This is tantamount to saying that also constant capital is to be thought of in terms of the labor-time represented in the equivalent: as the labor 'commanded' by the money advanced by firms to buy the means of production, rather than in terms of the labor embodied in these latter. Through this further re-reading, the two Marxian equalities are confirmed in their original version, with the 'value' and the 'price' average rate of profit being one and the same.

The third position (cf. Bellofiore-Finelli's chapter in Bellofiore 1998) is based on a reconstruction of Marxian theory within a non-commodity money approach, and on an initial differentiation between money capital (identified with the banking system) and industrial capital (identified with the whole firm-sector). It shares with the New Interpretation the view that the core insight of the labor theory of value is the identity between the net product coming out from the living labor of the wage workers evaluated at simple prices and at prices of production. But the third position derives a stronger claim on distribution from the clear separation between firms's monopoly access to money as capital and wage-earners access only to money as income. Indeed, this distinction means that, through its aggregate investment decision, industrial capital's macro-behaviour is able to set the real consumption goods which are left available to workers as a class, their freedom to choose as individual consumers notwithstanding (a point which was implicitly taken up again by Keynes in some chapters in his *Treatise on Money*, and extended by some Post-Keynesian writers and by the Circuit theory of money). As a consequence, the transformation of simple prices into prices of production means a redoubling of the value of labor power, with 'paid labor' (i.e., the labor-time equivalent expressed in the money-prices of the wage-goods bought in exchange) departing from 'necessary labor' (i.e., the abstract labor-time actually performed to produce those wage-goods). The rate of surplus-value of the first volume of *Capital* even after the transformation accurately depicts the outcome of the struggle over labor time in production proper, and hence the division between the total living labor expended and the share which has been undertaken for the reproduction of the working class. Since, however, prices of production redistribute the new value added among individual capitals in such a way that the producers of wage-goods may obtain a

higher or lower amount than actually produced by the labor-power they employed, the gross money profit/money wage rate is a different quantitative measure, a deceptive form of appearance in circulation obscuring the origin of surplus value from labor.

The new approaches see commodity-exchange at simple prices (proportional to values) or at prices of production as alternative price rules. The reasons for Marx's going from the former to the latter may be summarized as follows. Exchange at simple prices makes it transparent that labor is the source of value and surplus value. The redundancy criticism can be rejected once it is realised that the quantity of inputs other than labor and the quantity of output, i.e. the givens in the transformation, are subordinate to the actual use – namely, exploitation - of labor power in production. Value as objectified labor realised in money, and embodying surplus value and surplus labor, expresses capital's degree of success in constituting the fundamental capital relation, i.e. in winning its battle as total capital against the working class and thus becoming a self-valorising value. Although some partial treatment of intra-branch competition is required to understand why and how much living labor is 'pumped out' in capitalist labor processes, inter-branch competition - and therefore the redistribution of the new value added across sectors and the derivation of prices of production – is a secondary logical moment to be abstracted from at the beginning of the inquiry. Marx is here again adopting the method of comparison. The 'simple price' level of abstraction looks at single capitals as aliquot parts of capital as a whole, in the fiction that each of them is getting all the value that is produced in its individual sphere. The 'price of production' level of abstraction allows for capital mobility equalising the rate of profit across sectors, and each individual capital has to gain profits in proportion to the investments. This second level may be interpreted as a more concrete layer of the theory. The former, 'hypothetical' capitalism, is, however, by no means a first approximation in the sense of giving a preliminary, inexact picture: it rather truly reflects the living labor expended in the different branches of production, that is the hidden essence of the capitalist process. The more so if the 'value' subdivision of the social working day between the two classes is understood as invariant to the price rule.

#### Crisis theories

Another controversial area in Marxian political economy is the theory of crises (the best introduction is Colletti and Napoleoni 1970). According to Marx, 'accumulation' - i.e. the conversion of some portion of surplus value into additional (constant and variable) capital, to produce more surplus value - is a contradictory process, and crises are at once their necessary explosions and temporary solutions. The instability-prone nature of capitalism is already evident from its being a general commodity-exchange and monetary economy. For some of the separate and autonomous firms the anarchy in capitalist social division of labor may easily lead to an incomplete realization in circulation of the value potentially produced in immediate production. And the presence of money dissociates sales from subsequent expenditures, so that hoarding may break the smooth sequence of supply finding its own outlet on the market as the incomes paid to 'factors' of production are spent. Most of Marx's inquiry in the three volumes of *Capital*, however, is laid out on the assumption that commodities are sold on the market at their 'social values' (in vol. I and II) or at 'prices of production' (in vol. III) - something akin to Keynes' *General Theory* fulfillment of short-term expectations. Moreover, drawing on an original insight by Quesnay, Marx constructs in vol. II of *Capital* his 'schemes of reproduction' which demonstrate that a balanced growth path independent of the level of consumption demand is a theoretical possibility. Marx divided social output into two departments, the first producing capital goods and the second consumption goods (which may be subdivided in wage-goods and luxury-goods). The value output of both sectors is looked upon as the sum of its three component parts, i.e constant and variable capital and surplus value. In 'simple' reproduction, capitalists unproductively consume the entire surplus value, so that there is zero growth; in 'extended' reproduction, they more or less completely invest surplus value in new constant and variable capital, allowing for accumulation. What the schemes clarify is that each value component of the output is also a component of demand for its own or the other sector, so that equilibrium, which is always a chance, depends on some balance between intersectoral

trades. Against Malthus and Sismondi, Marx affirms that capital can expand over time without meeting a barrier in effective demand, because it is the mainspring of its own demand.

Nevertheless, against Ricardo and Say, Marx also states that, since equilibrium needs exchange in definite, 'right' proportions – and not only in value, but also in use value and money terms - a balanced long-run accumulation is not a guaranteed outcome, and it rather materializes by 'accident' (a point which was taken up again in the Harrod-Domar growth models).

The likelihood of departures from equilibrium because of the absence of planning, however, simply provides the 'possibility' of crises happening in a market environment. Marx is in search of an explanation for the 'necessity' of crises arising from the capitalist class relation itself. In his view, effective demand failures issue from a fall in investments, and this latter proceeds from a profitability crisis. Thus, the question shifts to that of understanding the systemic recurring causes for a profit squeeze. A first argument is described in the 'general law of capital accumulation' at the end of *Capital* vol. I. Assuming a constant composition of capital, a sufficiently rapid growth of the value invested exhausts the supply of labor-power and tightens the labor market. Wage increases outdo the rise in the productive power of living labor, the rate of profit starts falling, and then, as a consequence, accumulation and the demand for labor slow down. A more long-term solution to this difficulty, located in distributive struggles over the partition of the new value added, is the introduction of labor-saving, capital-intensive methods of production. For a given capital, mechanization reduces the share of variable capital and thereby the demand for labor: it displaces workers, replacing them with machines, to produce the same output. Theoretically, a rise in the rate of accumulation may enhance or reduce employment according to the relative weight of the two forces, the increase in the size of capital and the change in its composition. Through the cycle, the pace and structure of the accumulation of capital, which is the independent variable, constantly vary to reproduce an 'industrial reserve army' of potential workers ready to be included in the valorization process, and exerting a downward pressure on wages, which is the dependent variable. A permanent downward pressure on the real wage, i.e. an 'absolute' impoverishment of the workers, is among the possible outcomes. All the same, the normal situation is very different. Capitalist accumulation is propelled by the production of relative surplus value, which presupposes a positive dynamics of the productive power of labor. The real wage, then, has room for improvement (without impairing the tendency to a greater share of surplus value in the new value added going to the capitalist class) as long as the higher workers' consumption is expressed through a lower value of labor power. This is what Rosa Luxemburg called the 'tendency to a fall in the relative wage', i.e. a contraction in wages as a proportion of national income: a 'relative', not absolute, impoverishment. On the other hand, with trade-unions and a more militant working class, wage struggles can become partially independent from the labor market, break the tendential fall in 'relative' wage, and develop into an independent cause for capitalist crises.

Mechanization of production is also an autonomous drive for capital to control living labor and to remove workers from the point of production. If mechanization is a powerful lever to regulate both the exchange value and the use value of labor power, it nevertheless creates a further difficulty. The rise in the technical composition of capital is a factor contributing to the expulsion of workers, and so living labor from the productive process: but living labor is the exclusive source of value and surplus value. The consequent rise in the composition of capital brings into action the 'tendency of the rate of profit to fall'. This latter has been interpreted by some authors not only as a cause of cyclical crises but also as accounting for capitalism's 'long waves', and by others as the reason for a secular downward trend in profitability. There is some justification for this view. The application of greater quantities of constant (and especially, fixed) capital per unit of output is the most effective means to propel surplus value extraction from workers. Nevertheless, Marx clearly thought that the increase in the rate of surplus value could not compensate in the long run for the negative influence on the rate of profit of the higher (value) composition of capital, and so he downgraded it as a mere counter-tendency. Marx's strongest argument here is by appeal to an absolute limit to the surplus labor that may be pumped out from a given population. To understand what is involved here, it is

best to look at the composition of capital as an index of the ratio between, on the one hand, the dead labor embodied in the means of production and, on the other, the living labor expended in the period, that is as a proxy of constant capital divided by the sum of variable capital and surplus value. Assuming variable capital tending to zero, and thus the whole social working day objectifying itself as surplus value, the composition of capital becomes the reciprocal of the maximum rate of profit, which obviously can be seen as the ceiling for the upper movements of the actual rate of profit. Marx is suggesting that the numerator of the maximum rate of profit meets a 'natural' constraint in the amount of living labor that can be extracted from workers, while, on the contrary, its denominator is free to widen. At the ruling social values, individual capitalists are willing and/or forced to introduce more capital-intensive methods of production lowering unit costs to gain excess temporary profits, even though the longer-run effects of their behaviour force a 'devaluation' of commodities and depress the average rate of profit.

This notwithstanding, to deduce a 'law' of the fall in the rate of profit is invalid because progress in the productive power of labor accelerated by mechanization ends up reducing the values (and prices) of all commodities, and thereby also those of the means of production, i.e. of the elements of constant capital. It cannot be excluded a priori that the devaluation of constant capital might be strong enough to raise the maximum rate of profit removing the barrier to the actual rate of profit. Considering the actual rate of profit as both a positive function of the rate of surplus value and a negative function of the composition of capital, a parallel criticism is that there is no reason to deny that the rise in the rate of surplus value cannot offset the (possible, not necessary) rise in the composition of capital. Granting that, it must be stressed that Marx states the law with reference to the rise in the 'organic', and not in the 'value' composition of capital. The latter fully reflects the revolution in the values of constant and variable capital produced by mechanization, whereas the former measures inputs at their original values and automatically registers the increase in the 'technical' composition. With the growing importance of fixed capital in accumulation, the disagreement between the two estimates of the composition of capital signals a potentially widening gap between the stock and flow profit rate, which the normal course of accumulation is unable to stabilize and that sooner or later imposes a dramatic, sudden readjustment through periodic crises. It is interesting to observe that the higher the rate of surplus value soars, and thereby the more the tendency for the rate of profit to fall is repressed, the more likely the system is to run into a third type of crisis, i.e. 'realization crises'. Some Marxists have indeed suggested that the rate of profit falls because actual or expected effective demand is insufficient for the system as a whole to buy commodities at their full value (including the average rate of profit). Two conflicting positions have been dominant in this group of theories. One approach (e.g., Hilferding) to the problem stressed that 'disproportionalities', i.e. sectoral imbalances between supply and demand, were an impending feature in a spontaneous, chaotic market economy. If excess supply persistently affects important branches of production, this can spread into other sectors and easily degenerate into a 'general glut' of commodities. This kind of difficulty, however, depends on the speed of price-and-quantity adjustment to disequilibrium, and may disappear in more 'organised' form of capitalism. Some of its proponents (e.g., Tugan-Baranovski) even ended up endorsing the view that, being 'production for production's sake', capitalism encounters no true barrier to effective demand and can be stable on a balanced growth path. The other approach (e.g., Rosa Luxemburg), sometime wrongly labelled 'underconsumptionist', maintains that net investment could not compensate for insufficient consumption forever, since the long-term profitability of new machine-goods depended on future outlets, and these latter were less and less predictable with a decreasing share of consumption in total demand. This argument, though perfectly sound, apparently contradicts the reproduction schemas, which shows that in principle the demand for capitalist output originating from within the capitalist sector is sufficient to clear the market. The same reproduction schemas, however, prove that the equilibrium intersectoral trade proportions required for expanded reproduction are precarious and unsteady. An increasing extraction of relative surplus value - which is needed to

overcome the tendency for the rate of profit to fall, and which strengthens the tendency for the relative wage to fall - shifts them continuously and worsens the odds of their being met for long. For some of their supporters, these kinds of realization crisis are of increasing severity and lead to a final breakdown, when the 'external' factors mitigating them (such as net exports to non-capitalist areas) are exhausted. Other writers in the same tradition, as Kalecki, objected that the insufficiency of effective demand may be solved by what are dubbed 'internal' net exports, such as governments' budget deficits financed by the injection of new money (and something of the kind was already hinted in Luxemburg's original argument under the heading of military expenditures on armaments). A similar role may be played by the unproductive consumption coming from 'third persons' drawing their incomes from deductions from total surplus value. To be compatible with a smooth accumulation of capital, these 'solutions', call for the continuation of the pressure on living labor. This confirms the role of the rate of surplus value as the pillar of capitalist development, and of the outcome of the class struggle within the capitalist labor process as the crucial determinant of its dynamics. The only ultimate barrier to capital's self-expansion, if there is one, is the potential opposition of the working class within the valorization process.

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