CHAPTER 9

Classics Today: Smith, Ricardo, Marx

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9.1 Introduction

The interest of the modern reader in the key authors of classical economics should not be of a purely historical nature. The reasons for this claim are manifold. In this piece, we are trying to shed light on some of them, all related to the fact that the classical approach to studying an economic system in motion under a cumulative process of division of labour offers a superior starting point for analysing salient properties of capitalist market economies. We discuss three thinkers, each of whom offered an original and unique combination of ideas and concepts—and whose

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very different backgrounds and characters as individuals, scholars and political beings need not be stressed here. What we want to emphasize is rather the unity in their theoretical approach and their common concern with studying the dynamic evolution of a market system with inherently changing technological conditions, taking into account the existence of distributional conflicts that are not resolved in the domain of competitive markets. It is these aspects, we submit, that the modern reader will have difficulties finding in the contemporary mainstream economic literature, and that make it worthwhile to study the contributions of the classical authors today.[1]

9.2 Adam Smith

Adam Smith is considered a pioneering figure by different currents of economics, including modern mainstream economics. Indeed, the tradition of classical economics as inaugurated by Adam Smith put forward a number of ideas and concepts making perfect sense to readers educated in the principles of modern mainstream economics. It may suffice to mention a few exemplary topics developed by Smith in an eloquent and persuasive way:

- Interdependence and unintended consequences;
- Emphasis on free trade and exchange;
- The role of incentives in socio-economic mechanisms;
- The private-property market economy as a sphere of specific interest with a logic of its own.

And over and above all:

- The proposition that all this can and ought to be studied in a systematic way by the new economic science.

If interested in history, modern economists will moreover find the 'philosophical history' of the period from the fall of the Roman Empire to the rise of cities and trade (Smith [1776] 1976, hereafter *WN*, III) stimulating, as it is used to illustrate the unplanned effects of institutional arrangements on the economy and the repercussions on the institutions

themselves. The key message of Smith's critical discussion of the theoretical foundations and economic policy views of the mercantile system and physiocracy is easy to grasp. The same applies to the more general critique of unnatural interventionism. Smith's enlightened counter-project (the legally ordered competition in the system of natural liberty of *WN*, IV.ix) appears as a plausible and forceful expression of economic liberalism.

By contrast, Smith's in-depth discussion of the practical role of the scientific 'system' inaugurated by himself as 'the science of the legislator' belongs to a *second group* of Smithian insights, tenets, topics, and agenda: the topics of that second group may be expected to have some superficial appeal to modern economists, even though upon closer inspection some gaps between Smith and the understanding of the modern mainstream become evident. That is, some aspects and implications of the Smithian view are not particularly close to pertinent aspects of mental models in the economic mainstream. In addition to the (i) mentioned vision of the practical-political role of economics, (ii) Smith's recurrent talk about 'the wretched spirit of monopoly', (iii) the antecedents of behavioural economics which nowadays are highlighted by some authors, this second, more ambivalent group of topics notably includes (iv) the endogenous developmental ('growth') potential of specialization processes and the theory of the division of labour, which (according to Stigler 1976, p. 1210) 'almost no one used or uses'.

However, there is a *third group* of tenets where the discontinuity is still more marked. They include discussions of price, value, distribution, scarcity and class. Smith's pertinent writings may be considered under *two aspects: first*, they include some of the most prominent instances of flawed reasoning and unsatisfactory theorizing in Smith's oeuvre, as diagnosed by Ricardo and subsequent authors in the classical tradition, as well as (from a quite different background with different main thrust) by Whiggish readers viewing Smith as an early and rude forerunner of modern economics. As those 'flaws' have been widely discussed in the literature, there is no point in reiterating them here—also because the discontinuity between Smith and the moderns may be seen under a *second* aspect, which is less widely discussed and more interesting in that it offers some insights regarding characteristic weaknesses of mainstream economics implied by two related features: (i) the way in which distribution is located within the theoretical architecture; (ii) scarcity-theoretic reductionism, connoting inter alia the conceptualization of labour (and capital) as just another case of a scarce resource.

Before sketching some of the specificities of Smith's theorizing rendering it incongruous to deeply entrenched mental models, a remark is in order. Theorizing in the neoclassical tradition is not in general committed to disregard the importance of distribution, and it may develop specific models in order to accommodate contextually relevant properties of labour and capital markets which are not captured in the canonic scarcity-theoretic framework, such as efficiency wage models enriched by politico-economic perspectives or Zingales's (2017) political theory of the firm. However, there is a certain tendency to treat the canonic case as a theoretical (and sometimes practical) ideal or benchmark. Inter alia, this is conducive to the dominant modelling strategies where distribution gets out of sight.[2] The more far-reaching and deeper implications come to the fore in a perceptive passage from Abba Lerner's (1972, p. 259) AEA-presidential address. According to Lerner, the domain of economics is related to the solution of political problems in a peculiar way: '… the solution is essentially the transformation of the *conflict* from a political *problem* to an economic *transaction*. An economic transaction is a solved political problem. Economics has gained the title of queen of the social sciences by choosing *solved* political problems as its domain' (italics by Lerner).

In a nutshell, this summarizes a powerful vision of a rigorously depoliticized, aseptic kind of pure economics. Unfortunately, this vision could prove an illusion, not least because its translation in applied contexts tends to end up in technocratic approaches including a bunch of problems of their own. Nonetheless, most modern mainstream economists do not feel obliged to engage in scrupulous disquisitions such as those accompanying Smith's case for the science of the legislator, which (for systemic reasons) does not and cannot provide unambiguous recipes guaranteeing success on the great chessboard of human society (see, e.g., Smith [1759] 1976, VI.ii.2, 16–18). In their view, such disquisitions seem all the less necessary in view of the ever-improving econometric/experimental toolboxes progressively eliminating the drawbacks of ill-conceived technocratic policy interventions. Smith certainly would stress pertinent caveats: the protagonist of the 'system of natural liberty' believed that a meticulous discussion of the limits of 'systems' applied in politics is indispensable.

To be sure, theorizing in the neoclassical tradition can do better than that. From Walras's *économie sociale* to Solow (1990) and beyond, its best protagonists knew that distribution matters and that for 'factor markets' further considerations beyond the scarcity-theoretic framework may be

relevant. However, some of the architectonic features of Smith's theory (which mutatis mutandis are also relevant for the subsequent classical tradition) determine the way in which key aspects such as the role of distribution are located within the theoretical framework such that they appear centre stage. A framework as the one sketched by Lerner is preparing the ground for eventually getting issues such as distribution out of sight, creating a situation in which they have to be brought back in 'from the cold', as Tony Atkinson (1997) put it.

The rest of this section focuses on the third group of Smith's tenets: *those which are difficult to grasp, given these architectonic properties of modern mainstream economics.* Three related moments of Smithian economic progress are the increasing division of labour, the expansion of markets, and the accumulation of capital. In and beyond this economic context, largely spontaneous processes of specialization and division of labour (introduced at the beginning of the *WN* as an overarching theoretical perspective) are characteristic for the specific thrust of his oeuvre: his philosophical writings already deal with social, cognitive and normative division of labour. The phenomenon of the economic division of labour and its welfare effects had long been known at Smith's time. Therefore, it is sometimes argued that Smith's original argument in this context is only the extraordinarily strong weight attributed to the division of labour among the driving forces of growth. This assessment is wrong for two reasons: (1) It fails to recognize the decisive progress Smith has made in the conception of firm-specific and societal division of labour and specialization as a process with dynamically increasing returns to scale and cumulative causation, a process whose progression is *limited only by the extent of the market.* Little of these dynamic elements can be seen in Smith's immediate predecessors, while Rae, Babbage and Marx built on them in the nineteenth century. (2) Smith does not place the discussion on the division of labour at the beginning of his treatise without reason. The purpose of this is to specify the general problem setting of the new science (as also advertised in the long title of the *WN*): The systemic environment to be explored with regard to 'the nature and causes of wealth' is a growth process with interdependent, co-developing subsystems including the politics, government and family-based reproduction. The early drafts of the *WN*, which demonstrate Smith's preoccupation with economic problems in the early 1760s, already provide a good

illustration of how Smith uses these complex process-related interdependencies to establish the central systemic role of competitive-market coordination and price-based incentives, making coordination in great societies possible by exonerating people from cognitively and psychologically excessive demands on their agency. Morally coded coordination of expectations is inexpedient and dispensable in the core of the economic system: the price mechanism ensures that we are not dependent on the moral virtues or goodwill of the butcher, baker or master brewer for our meal, but can rely on their self-interest. Following the discussion of the basic structure of the coordination problems of the economy based on the division of labour and the role of unplanned and unexpected effects and feedbacks, the early draft formulates price and wage theory as the primary research agenda. Here, another central concept of Smith's political economy comes to the fore: competition. This is also the linchpin of the regulatory mechanism of the system of natural liberty, which however requires sustained political effort combatting the 'wretched spirit of monopoly'.

Issues of allocation theory are dealt with in a development-related framework: Smith is interested in the conditions of a growing economy. It follows that Smith's thought *cannot be seen as a prelude to the modern scarcity-theoretical view of allocation problems.* In the following sketch, we restrict ourselves to highlighting reasons for this incongruity without invoking further issues of a critical discussion of Smith's value theory.

Forms and causes of division of labour as well as their relation to market-based coordination are discussed in the first three chapters of the *WN*. The differentiation of a specific good as money and of relevant institutions (Chapter 4) results as a co-evolutionary process of the progressive division of labour. This motivates Smith's inquiry into the laws governing exchange relations. However, Smith does not immediately turn to the determination of relative prices: following the chapter on money, he finds it necessary to correct mercantilist misjudgements, according to which a larger money supply expresses higher welfare and dynamic prosperity, an issue already dealt with by David Hume (1752) in his essay 'Of Money'. This challenge motivates the introduction of labour as the 'ultimate and real' standard of value, leading to the much-criticized labour theory of value. After the appropriation of land and the accumulation of stock, the determination of the relative exchange ratios follows the natural recompense of labour (wages), capital (profit) and land (rent). Smith's three-component theory of price corresponds to a sociological perspective based on three classes (workers, capitalists, landowners) with three

different types of income, stressing *institutional* features (property) and *accumulation*. The natural price to be derived from adding-up these three components is the centre of gravity, the equilibrium to which market prices under competitive conditions constantly tend. Market prices never remain below natural prices for long periods of time, whereas there are institutional circumstances (e.g., monopolies) that may stabilize them above natural values for longer periods of time or permanently.

But how are the natural rewards determined? At the centre of Smith's wage theory is a socioculturally extended family reproduction wage influenced by demographic feedbacks in the long term, supplemented by a variety of considerations that anticipate compensating wage differentials as well as elements of efficiency wage theory (cf. Sturn 1990). In particular, the latter, together with socio-demographic considerations, are integrated into his considerations that economic growth, increases in labour productivity and higher wages are mutually dependent. The profit rate, too, albeit with a different sign, is related to the dynamic conditions of the economy, namely the increase or decrease in the wealth of society (*WN*, I.ix.1): the larger the increase in the capital stock, the smaller the profit rate tends to be due to the intensifying competition among capital owners, which Smith tries to explain with a questionable partial-analytical analogy to the decline of sectoral profit rates when the stocks of many rich merchants are turned into the same trade. Similar to compensating wage differentials, Smith also discusses differences in profit rates caused by different risks, etc. Notice that Smith's theory as sketched so far does not envisage perspectives abstracting from distributive considerations. Quite to the contrary, it is suggested that there is no unique rate of wages or profits determined by allocative considerations. However, certain patterns of wages and profits are associated with the progressive, regressive or stagnant condition of the economy. The rent is derived from an institutional fact, namely private ownership of land (considered as a distributional norm: *WN*, I.vi.8). Scarcity is not systematically incorporated here. In the notorious passages claiming that rents participate in the composition of commodity prices in ways other than wages and profits, as high and low wages and profits are the causes of high or low prices, whereas high or low rents are their effect (*WN*, I.xi.a.8), no coherent scarcity-theoretic explanation of rents becomes visible. This is not even the case in Smith's detailed discussion of Bordeaux wines, where a high price results from the interplay of a specifically high effective demand with land of a specific quality making it uniquely suitable for

the production of Bordeaux wine (*WN*, I.xi.b.31). When Smith then introduces the term pair scarcity/plenty in the justification of diamond prices, he explicitly stresses the socio-psychological function of scarcity with regard to the conspicuous consumption of the rich (*WN*, I.xi.c.31). For Smith, a natural price system is not one that efficiently regulates the use of scarce resources. This is partly conditioned by his diffuse conceptualization of scarcity—and partly by his alternative view: prices are part of the conditions of reproduction/development of the system. In a development-related context, price systems support income distributions, which reflect the respective socio-economic positions and powers of the different social classes. Insofar prices are signals; they are signals for the adjustment of self-interested individual actions to pertinent development paths, not indicators of relative scarcities in the modern sense.

9.3 David Ricardo

In the Preface of his *Principles*, Ricardo announced that he would 'advert more particularly to those passages in the writings of Adam Smith from which he sees reason to differ' (Ricardo 1951–73, vol. 1, p. 6). By implication, he thus made it clear that there was much in Smith's economic analysis with which he was in agreement. This included in particular also the following aspects. First, he shared with Smith the concentration on 'natural' or 'normal' prices in conditions of universal free competition and on the associated levels of the three distributive variables—wages, profits and rents. Second, he declared that all that concerns the distinction between 'natural' and 'market' prices had been 'most ably treated' in the *Wealth of Nations* (Ricardo 1951–73, vol. 1, p. 91). Third, he appreciated Smith's recognition of the inherent dynamism of the modern economic system and fully endorsed his view of the overwhelming importance of dynamically increasing returns that emanate from the social division of labour. This latter aspect has often been lost sight of because of the great emphasis that Ricardo put on diminishing returns in agriculture and its impact on the general rate of profits. However, passages like the following one clearly indicate that Ricardo agreed with Smith in attributing an important role to an always deeper social division of labour:

> The natural price of all commodities, excepting raw produce and labour, has a tendency to fall, in the progress of wealth and population; for though, on one hand, they are enhanced in real value, from the rise in the natural price of the raw material from which they are made, this is more than counterbalanced by the improvements in machinery, by the better division and distribution of labour, and by the increasing skill, both in science and art, of the producers. (Ricardo 1951–73, vol. 1, pp. 93–94)

In order to focus attention on those Smithian topics which have been noted above as being particularly difficult to reconcile with the scarcity-related mental models prevalent in today's economic mainstream, we will concentrate in the following on the assessment of Ricardo's analysis of income distribution in the 'natural course of economic development', his treatment of dynamically increasing returns and his analysis of different forms of technical change.

9.3.1 Income Distribution

In the Preface of his *Principles,* Ricardo famously placed the problem of income distribution at centre stage, and insisted on the necessity of analysing this problem in the context of a *dynamic* economic system:

> The produce of the earth – all that is derived from its surface by the united application of labour, machinery, and capital, is divided among three classes of the community; namely, the proprietor of the land, the owner of the stock or capital necessary for its cultivation, and the labourers by whose industry it is cultivated.
>
> But in different stages of society, the proportions of the whole produce of the earth which will be allotted to each of these classes, under the names of rent, profit, and wages, will be essentially different; depending mainly on the actual fertility of the soil, on the accumulation of capital and population, and on the skill, ingenuity, and instruments employed in agriculture. (Ricardo 1951–73, vol. 1, p. 5)

Ricardo shifted the focus of political economy from the production of wealth to distribution, because he was convinced that the capitalist economic system entails definite 'laws' with regard to the development of income distribution. He sought to determine those laws by first concentrating attention on a growing economic system in which capital accumulates and the population increases, but in which all forms of technical progress are deliberately set aside. In this 'natural course' scenario

of economic development the rate of profits must decline, because the increasing difficulties in the production of food and necessaries imply that money wages must rise in order to prevent real wages from falling below the subsistence level (where the latter was defined not by minimal physiologically necessary requirements, but as formed by 'habits and conventions'). In his *Essay on Profits* (Ricardo 1951–73, vol. 4, pp. 9–42), Ricardo was able to show that rent did not enter into the determination of production costs at the agricultural margin by means of the theory of extensive differential rent. This had several important implications. First, by 'getting rid of rent', the analysis of the problem of distribution between wages and profits was considerably simplified. Based on the simplifying device of 'corn-ratio' reasoning, Ricardo was able to demonstrate the inverse wage-profit relationship, and thus to dispel the idea, occasionally present in Adam Smith's reasoning, that the wage rate and the rate of profit can be determined independently of each other. Second, he was able to dispel Smith's erroneous view—clearly a remnant of physiocratic thinking—that rent formed a component part of price and arose from nature's generosity. Third, he placed the explanation of rent on a new basis by relating it to the non-reproducibility of natural resources, which allowed the owners of such resources to extract a part of the surplus. With its focus on diminishing returns and the production conditions at the agricultural margin, the theory of differential rent was especially well disposed for converting it into an analysis based on marginalist reasoning. It could in fact be argued that 'the law of diminishing returns was the thin end of the wedge by which marginal analysis was introduced and generalized' (Bharadwaj 1986, p. 41) and that the 'marginal revolution' in economic analysis essentially consisted in little more than the extension of intensive rent theory, which Ricardo and the classical economists had applied to non-reproducible inputs like land only, indiscriminately to all 'factors of production', including a factor called 'capital'. It is no wonder, then, that today the 'Ricardian' theory of differential rent (besides the principle of comparative advantage in international trade theory and the so-called Ricardian equivalence theorem) is widely considered as one of Ricardo's main contributions to the development of economic analysis.

In his *Principles*, Ricardo then demonstrated in a more general framework that the general rate of profits is related inversely to the level of wages by adopting the labour theory of value. Today, it is clear that the latter can be dispensed with, and that the inverse wage-profit relationship, or constraint binding changes in the two distributive variables, must

rigorously hold true for an economic system *in a given state of technical knowledge*. However, in his *Essay on Profits* and in his correspondence with Malthus, Ricardo had maintained that this relationship must also apply in the presence of productivity-enhancing technical progress. In order to counter Malthus's criticism that in a technologically changing system rising commodity wages could well go together with a rise in the general rate of profits, Ricardo introduced the novel concept of 'proportional wages' in Chapter 1 of his *Principles* (Ricardo 1951–73, vol. 1, pp. 64–65). This ingenious device of expressing wages simply as a percentage of the value of the social product allows for a changing commodity composition of the wage basket, and even for entirely new products entering into it—features that render the concept particularly suitable for the analysis of a dynamically changing economic system. However, Ricardo believed—wrongly, as we now know (see Sect. 9.4 below)—that it would also allow him to demonstrate the inverse wage-profit relationship in conditions of changing technical environments.

9.3.2 Dynamically Increasing Returns

It has not been widely recognized that when Ricardo proposed to concentrate attention on the *proportional* distribution of income, this involved not only a novel conceptualization of wages that is congenial to an economic system incessantly in motion, but also a (partial) departure from Adam Smith's research focus. This becomes clear from the following passage in a letter to Malthus, who closely followed Smith in this regard:

> Political Economy you think is an enquiry into the nature and causes of wealth – I think it should be called an enquiry into the laws which determine the division of the produce of industry amongst the classes who concur in its formation. *No law can be laid down respecting the quantity, but a tolerably correct one can be laid down respecting proportions. Every day I am more satisfied that the former enquiry is vain and the latter only the true objects of the science.* (Ricardo 1951–73, vol. 8, pp. 278–279, emphasis added)

In Ricardo's view, the attempt to determine *endogenously* not only prices and income distribution, but also the size and composition of the social product and its development over time, that is, the levels of the quantities annually produced and consumed, was far too ambitious

and inevitably bound to fail. In order to ascertain relative prices and the proportional division of the annual product 'in different stages of society', quantities rather had to be taken as given magnitudes at a particular moment of time in the enfolding of the development process. With given quantities, reflecting the needs and wants of society at a given stage of social and economic development, the set of methods that are available to cost-minimizing producers could then be supposed to vary with the levels of the quantities produced. In this way, (firm-external) scale economies or increasing returns can be accommodated, and can be conceptualized as being dependent on, and varying with, the 'extent of the market'—as Smith had suggested. The inherent dynamism of the modern economic system was thus proposed by Ricardo to be captured in terms of a comparative static analysis, which shows the relative prices and the distribution of income corresponding to different levels of outputs. Dynamically increasing returns thus provide the connecting link between the two notions of 'effectual demand' (which Smith and Ricardo use in relation to the determination of prices) and 'extent of the market' (which they use in the determination of quantities). The idea in both Smith and Ricardo is that a greater 'extent of the market' allows for an increasing 'division of labour', that is, for an expanded set of methods from which cost-minimizing producers can choose. This leads to the introduction of improved production methods, which lower prices and raise real incomes, and thus increases the 'effectual demand'. This in turn implies that the 'extent of the market' increases still further, and so on.

9.3.3 Different Forms of Technical Change

In his *Principles*, Ricardo also provided a sophisticated analysis of different forms of technical change. Introducing the distinction between 'land-saving' and 'labour-saving' agricultural improvements, he showed that the impact of such improvements on rents depends both on the specific type of technical progress and on how it affects the cost differentials between the methods under consideration and those at the extensive or intensive margin. In addition, Ricardo also studied various other types of technical progress in order to evaluate their possible impact on income distribution, and even contemplated the case (which for him was a purely hypothetical one) of a fully automated production: 'If machinery could do all the work that labour now does, there would be no demand for labour. Nobody would be entitled to consume anything who was not a

capitalist, and who could not buy or hire a machine' (Ricardo 1951–73, vol. 8, pp. 399–400). In the chapter 'On Machinery', which he added to the third edition (1821) of his *Principles*, Ricardo also put forward an intricate analysis of a particularly important form of technical change: the replacement of labour by machinery.

By means of numerical examples based on a set of precisely specified hypotheses, Ricardo showed that 'the opinion entertained by the labouring class, that the employment of machinery is frequently detrimental to their interests, is not founded on prejudice and error, but is conformable to the correct principles of political economy' (Ricardo 1951–73, vol. 1, p. 392). Moreover, he explained the predominance of this particular form of technical progress—the substitution of machinery for labour—by demonstrating that it did not derive from some incidental technological trends but was rather induced by economic incentive mechanisms that are endogenously generated in an expanding economic system with limited amounts of lands. It needs to be stressed that Ricardo's machinery substitution argument is not identical with the standard capital-labour factor substitution argument: For Ricardo, wages and profits do not reflect relative scarcities, and capital is not considered as a single (and often ill-specified) 'factor of production'. Ricardo's argument is rather that in the course of economic development money, wages are bound to rise in order to keep the level of real wages constant in the face of rising food prices from diminishing returns in agriculture. With rising money wages, however, there are incentives for cost-minimizing producers to substitute long-lasting machines—or, more generally, technologies that are embodied in fixed capital—for labour-using methods requiring annual capital advances for *ante-factum* wage payments. The machinery substitution argument thus refers to the substitution of *fixed* for *circulating* capital: it is a substitution not of 'capital' for 'labour', but of one form of capital for another one. Ricardo further demonstrated that with higher money wages, a machine can be profitably introduced even if the *annual* gross produce is thereby reduced. This is so because fixed capital, as opposed to circulating capital, does not need to be replaced on an annual basis, and thus from the proceeds of a single year (Gehrke 2003). Accordingly, Ricardo concluded that the dominant form of technical change in a growing economic system that is subject to land scarcity will 'naturally' be of a labour-saving and gross produce-reducing form. What is driving the direction of technological change are not changing relative 'factor prices'

of capital and labour, as in modern (neoclassical) theories of induced technical change (Acemoglu 2002). The labour-saving bias is rather induced by the interplay of diminishing returns in the production of food and raw materials and the impact that rising money wages exert on the profitability of industrial production methods that use fixed capital.

9.4 Karl Marx

Marx stands on the shoulders of Smith and Ricardo and many others, especially Aristotle and Hegel, but repeatedly his body weighs heavily on them and is meant to somewhat diminish their greatness. He is keen to absorb everything that is convincing and valuable in their contributions and replace what he considers to be dubious or wrong. He does not always succeed in this endeavour and occasionally substitutes something flawed for something fundamentally correct. But in a number of respects he was able to improve our knowledge above and beyond where Smith and Ricardo had left it. This concerns in particular an analysis of the interdependence of economic industries in terms of a multi-sector analysis and an attempt to discuss the dynamics of the economy—its 'law of motion'—within such a framework.

9.4.1 Marx and Smith

Marx shares Smith's idea that the socio-economic system is possessed of properties that can be studied in a systematic fashion by political economy. He also subscribes to the Scotsman's view that the system is bound to transform itself from within, endogenously, from (using his concept) one 'mode of production' to another one. Marx puts forward a new version of the doctrine of the unintended consequences of human action. However, while Smith was optimistic that mankind was in principle capable of bettering its lot, but relegated the idea that a paradise-like state could be reached in the here and now to the world of pure fiction, Marx instead saw history as geared towards the establishment of a classless society, in which the exploitation of man by man would vanish and possessive individualism end: the high level of labour productivity then attained would make the scarcity of goods and distributive justice fade away. Marx shared Smith's view that capitalism developed the powers of social productivity within an incessantly growing social division of labour, with the emergence of an *R&D* sector as a part and parcel of this process. And

he saw more clearly a thing that Smith glimpsed only vaguely, namely, that the modern economy was subject to dynamically increasing returns and processes of cumulative and circular causation. The manufacturing industry turned out to be an engine of growth, which Marx understood well, being exposed to a much richer empirical evidence than Smith, who mistook it as essentially concerned with producing trinkets for the rich and not productivity-enhancing tools and machinery for the system as a whole.

Marx accuses Smith time and again of his blunders, contradictions, repeated superficiality and even vulgar point of view, and the classical economists in general for conceiving capitalism not as a transitory, but as a permanent system, viz. the subtitle of *Capital*, 'A Critique of Political Economy', meaning, of course, classical political economy from William Petty to David Ricardo. Marx's 'law of the falling tendency of the general rate of profit' was supposed to do away with this view and establish 'scientifically' the evanescent nature of the capitalist mode of production.

As Schumpeter ([1942] 2008, p. 162) insisted, Marx's neglect to study carefully socialism and identify both its potentialities and the dangers to which it is exposed from within, is among the 'most serious shortcomings' of his analysis. Apart from incidental remarks, Marx does not investigate the political, sociological, juridical and institutional prerequisites that have to be met in order to avoid the danger of the system degenerating to one form or another of despotism; he does not discuss in sufficient depth and breadth the means and ways of centrally planned production and allocation of productive resources, the role of democratic political structures and of the rule of law, the features of a system of incentives capable of effectively replacing the profit-loss scheme of capitalism and so on. In several of these regards, he could have benefited from Smith's analysis in *The Wealth of Nations*, but also in the *Theory of Moral Sentiments*, especially as regards the latter's sophisticated anthropology, his knowledge about the light and dark sides of man, which must not be forgotten when building a new society. The hope that new people ideally suited for the new society will emerge he considered as utterly naive. Smith's 'science of the legislator' sought to answer the age-old question of what constitutes a society that allows, and preserves, the 'good life' of all of its citizens. Smith approached the question in a sober and pragmatic way, leaving the distribution of property and wealth untouched. He refrained from engaging in utopian plans and focused attention on what he felt was

both reasonable and feasible, his main concern being the improvement of the living conditions of the 'labouring poor'.

The desire to establish not just a better, but a genuinely good society was the driving motive behind the socialist movement, whose main intellectual architect was Marx. Yet, as the proverb says, the opposite of well meant is occasionally badly done. Not having seriously investigated the opportunities and dangers of such a project and not having taken effective precaution to exploit the former and avoid the latter, is to a large extent responsible for its failure. But ignoring Smith's insights cannot only be blamed on Marx and his followers. The profession of modern economists can be accused of not taking seriously, for example, Smith's warnings about contagion, herd behaviour and the ensuing instability of the financial system and its impact on the 'real' part of the economy.

9.4.2 Marx and Ricardo

While Marx held Smith (wrongly) in relatively low esteem, he thought very highly of Ricardo, his numerous criticisms notwithstanding. He praised Ricardo's 'scientific impartiality and love of truth' (Marx 1954, p. 412) and the 'honesty which so essentially distinguishes him from the vulgar economists' (Marx 1959, p. 555). Yet despite all the praise he ushered upon Ricardo and the many insights and concepts he adopted from him, in some important respects he parted company with Ricardo, keen to demonstrate his own originality. This concerned first and foremost the theory of value and the 'law' of the falling tendency of the rate of profits.

Marx studied the law of motion of modern society in terms of an input-output system developed in his theory of simple and extended reproduction in volume 2 of *Capital*.[3] He had access to much larger empirical evidence than Ricardo, which showed impressively that capitalism revolutionized continually the system of production from within. How to grasp the technological dynamism of capitalism and its implications for the long-term trend of the general rate of profits?[4] Marx felt that this was possible by starting from the premise that abstract labour was the source and measure of value.

He praised Ricardo for rejecting Adam Smith's view that the domain of the labour theory of value was exclusively the 'early and rude state of society' prior to the appropriation of land and the production and accumulation of produced means of production. But he criticized Ricardo for not having succeeded in determining the general rate of profits and

'prices of production' in conditions of free competition in a consistent way in terms of what he dubbed the 'law of value'. Ricardo had indeed adopted the labour theory of value as a makeshift solution that approximated, or so he thought, the correct prices of production, but despite many advances into the field he lacked a coherent theory. Marx sought to make good the lacuna in terms of that 'law', which, while not valid with regard to single commodities, applied, he surmised, to the sum total of commodities employed and produced during a year.

We know today that Marx's solution cannot generally be sustained and that normal prices and the general rate of profits can be determined without any recourse to labour values (see Sraffa 1960). We also know that for a given real wage rate, the general rate of profits is determined exclusively with regard to those industries producing wage goods and industries directly or indirectly producing means of production needed in the production of wage goods, whereas other industries (producing luxuries, for example) don't matter. This Ricardo had already grasped well, but not so Marx, who wrongly criticized his respective view. When Marx identified labour to be the sought 'common third' of two commodities that are exchanged for one another at a given rate, he insisted that exchange values do not contain any 'atom of use value'. However, this flies in the face of his statement that the value of a particular type of labour power resolves itself in the value of a certain 'sum of means of sustenance' (Marx and Engels 1976–2012, II/10, p. 156) needed to support the worker and his family, that is, a certain basket of use values. The values of the different types of labour power employed in the economy therefore presuppose the knowledge of the values of commodities. The latter, however, presuppose the knowledge of the former. In short: the two have to be determined simultaneously. The data on the basis of which this can only be done are the data describing the social metabolism under consideration, that is, the production of commodities by means of commodities, as a famous book title has it. These data suffice to determine the system of prices in the case of an economy that is just capable of reproducing itself, the no-surplus case, and the system of prices and the general rate of profits in the case in which the system produces a social surplus that is appropriated at a uniform rate of return on capital in conditions of free competition.

As regards the 'law of the falling tendency of the rate of profits', Marx insisted that it was the most important law of political economy because it showed conclusively that capitalism was not an eternal, but a transitory mode of production. He also insisted that commodities are produced by

means of commodities and rejected the view entertained by Ricardo, who, for simplicity, envisaged production as a unidirectional process of finite duration leading from a series of dated labour inputs to a final output. In Marx's reproduction schemes, this is reflected by a 'constant capital' needed in each line and at each stage of production. The important implication of this is that the maximum rate of profits of the system, R, which corresponds to a real wage that is hypothetically nil, is finite and not infinite: even with vanishing wages and thus a vanishing 'variable capital', the rate of profits would have an upper limit given by the inverse of the 'organic composition of capital' of the system as a whole. The organic composition, k, is equal to the ratio of 'dead' (C) to 'living labour' (L):

$$k = \frac{C}{L} = \frac{1}{R}.$$

The actual rate of profits, r, is instead given by:

$$r = \frac{M}{C + V} = \frac{M\ /L}{(C\ /L) + (V\ /L)} = \frac{1 - \omega}{(1\ /R) + \omega} = \frac{R(1 - \omega)}{1 + R\omega}.$$

M/L is the ratio of surplus value to total labour employed, which translates into the share of profits in the social product, which equals unity minus the share of wages, $1 - \omega$.

According to Marx, the long-run trend of the rate of profits thus depends on two magnitudes, instead of only one, as Ricardo had wrongly contended: in addition to the share of profits, it also depends on the organic composition of capital or its inverse, the maximum rate of profits. The second determinant reflects the circular flow character of production in the modern economy. The capacity of the economic system to generate a surplus product over and above what is being used up in production is expressed by R.[5]

It cannot come as a surprise, then, that Marx focused attention on what happens to k and therefore R as the system is affected by technological change and the corresponding reorganisation of the labour process. Differentiating r partially with respect to R gives:

$$\frac{\partial r}{\partial R} = \frac{1 - \omega}{(1 + R\omega)^2} > 0.$$

If the maximum rate of profits happens to fall (rise) and if proportional wages (the rate of surplus value) remains constant, the actual rate

of profits is bound to fall (rise). The question regarding the long-term development of profitability thus boils down to how technological change will affect R. In other words, which form of technical progress can be expected to dominate capitalist development?

In Ricardo's chapter 'On Machinery', added to the third edition of the *Principles* (1821), Marx found the clue to an answer that apparently appealed to him. Ricardo had argued that the introduction of machinery involves a substitution of the fixed part of constant capital for direct labour, or variable capital (using Marx's concept). Accordingly, the capital-output ratio will increase together with labour productivity (see Ricardo 1951–73, vol. 1, Chapter 31). Ricardo identified a particular variant of this form as being especially detrimental to the interests of labourers: it is the production and introduction of machinery that reduces society's 'gross produce'. Such a reduction of the gross produce means, however, that total employment (L) is bound to shrink, giving rise to (additional) unemployment. This kind of progress Marx took to be the form congenial to the capitalist mode of production: it was characterized by an increase in the organic composition of capital and a refilling of the 'industrial reserve army of the unemployed', which kept workers' aspirations at bay.

Marx sought to underpin the 'law' under consideration in terms of this form of technological progress. As the formula of the rate of profits shows, contrary to Ricardo's doctrine, the general rate of profits can fall, even if the rate of surplus value (proportional wages) remains constant. This is necessarily the case, when the organic composition of capital rises (see Marx 1959, pp. 212–213). However, Marx's argument is not conclusive. He was aware of the fact that a rising labour productivity implies falling (labour) values of means of production and means of subsistence of workers. For a given length of the working day, this implies a rising rate of surplus value and it also implies a stunted increase in the organic composition of capital. The overall impact of this on the rate of profits is not immediately clear. But we know from Sraffa (1960) and Okishio (1961) that the rate of profits will remain constant, if technical change affects only the production of luxuries (or of 'non-basics' in Sraffa's case), and it will rise, if it affects means of subsistence of workers or means of production needed directly or indirectly in their production (or 'basics').

9.5 Concluding Remarks

This chapter argues that while modern mainstream economics has adopted, but variously narrowed some of the ideas contained especially in the works of Adam Smith and less so in the works of David Ricardo and Karl Marx, its historical development involved a growing distance and even opposition to the concerns, methods and analytical approaches of the classical economists. This implied a remarkable loss of the huge analytical potentialities offered by the classical economists, which has only gradually and rather incompletely been made good in recent times, viz., for example, the rise of behavioural economics, the attempt to understand economic development and growth in terms of multi-disciplinary studies and the view that the financial sector is unstable. The crises of the first decades of the twenty-first century request the economics profession to reconsider its doctrines, abandon views that can no longer be sustained, return to views that can or create new ones appropriate to the current situation. The elaboration of modern versions of some of the viewpoints of the classical economists appears to us to be a promising way out of the impasse.

Notes

1. This chapter has many points of contact with the important contributions of Annalisa Rosselli dealing with the classical authors and especially Ricardo, which the reader will easily recognize. We see our chapter as a tribute to her very fine work in the field under consideration and our long friendship and cooperation with her.
2. The assumption of quasi-linear preferences as a modelling strategy (which makes life easier by eliminating complications caused by wealth-effects) is just the tip of an iceberg.
3. We now know, thanks to the MEGA^2 edition (Marx and Engels *Gesamtausgabe*, 1976–2012) that Marx even developed a system with six interrelated sectors in order to study the properties of the system that is exposed to technological change, see Gehrke (2018).
4. The fact that Marx did not succeed in preparing volumes 2 and 3 of *Capital* for the printer indicates inter alia that he got doubts about parts of his argument—doubts that Friedrich Engels brushed aside in his edition of the two volumes by a judicious selection of manuscripts he included and by occasionally interspersing remarks without telling the reader.

5. In linear multi-sector analysis, it is related to the dominant eigenvalue of the matrix of coefficients of produced means of production, see Kurz and Salvadori (1995, Chapter 5).

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