Ricardo's Essay on Profits and the Emergence of a Rational Economic Methodology

Aaron McGowan, Senior Sophistor

In this paper, Aaron McGowan presents an assessment of the economic epistemology demonstrated by David Ricardo in his 1815 Essay on Profits. The Essay, which argued against the Corn Laws, introduced a higher level of analytical discussion into the field of political economy. While later economists would criticise Ricardo's models for lacking an empirical basis, this future discourse was concerned with measurable economic quantities – the tools Ricardo worked to introduce. While Ricardo's Essay should not be interpreted as a linear progression in economic thought, it is a notable example of the introduction of deductive methodology to economic reasoning

Introduction

The idea of a 'turning point' or 'revolution' in economic thought presents a challenging epistemological question before one even begins to reference the works of a specific individual. As a body of knowledge, economics does not exist in a static state of known and unknown information where progress is the success of thinkers in lessening the divide between these two positions. Economies change and evolve over time as political and natural forces dictate. However, this does not invalidate the idea of progress in economic understanding. An objective economic reality does exist. The economist must dismiss postmodernist suggestions that there is no correct economic methodology or that theories are simply subjective while remaining conscious of the dynamic nature of his field of study. Ricardo's early works display an attempt to maintain this balance through the introduction of a rational, quantitative methodology to political economy. While Ricardo's model in the Essay lacks much of the dynamic sophistication familiar to theorists writing after the Marginal Revolution, it is nonetheless a notable example of how political economy turned from a focus on moral philosophy to uphold its findings against claims of subjectivity and against fundamental changes in the nineteenth-century economy.

To assess Ricardo's contribution to economic thought, Section 2 begins by defining a set of criteria to understand how challenges to prevailing theories can occur. Section 3 builds on this to determine how Ricardo's Essay broke away from the moral philosophy of Adam Smith. Ricardo's quantitative, deductive development of Classical ideas justifies his status among those who altered the course of economics. In this vein, Section 4 proceeds by assessing Ricardo's Theory of Distribution and his dichotomy between rent and profits as an early stage theoretical model, intended to make simplified economic predictions in response to policy decisions. Finally, Section 5 concludes.

The Dynamics of Change in Economic Thought

The frontispiece of Denis Diderot and Jean d'Alembert's eighteenth-century catalogue of the Enlightenment, the Encyclopédie, personifies Reason as a noble lady unveiling Truth (Outram, 1995). This image of reason cutting through ignorance exemplifies the ultimate standard for economic thought. However, the path to this realisation is populated with debate over methodology and assumptions, which confuse any attempt to define a singular theory of what constitutes a revolution in economic thought. In the early nineteenth century, a theory could rarely be judged by its empirical power alone simply because the resources necessary to do so did not exist. Yet, one should not dismiss early economics as an era of thought lacking any revolutionary moments. On the contrary, this paradox illustrates the importance of separating actuality from potentiality in the study of economic thought. Many early thinkers, including Ricardo, made their contributions through well-reasoned theories which, although lacking in an empirical base, would provide the theoretical and methodological foundations on which later schools could build. Thus, a realistic first condition for classifying a detour in economic thought can be established by focusing not on a theory's initial empirical contribution alone but on its capacity to challenge prevailing consensus by introducing what Schumpeter termed a "pre-analytic cognitive act" – locating a problem which could eventually be determined by later, more empirically adept, schools (Roncaglia, 2005).

Furthermore, a new theory can pose a challenge to consensus by introducing new methods of analysis to older or more established schools. The development of economic thought is not unidirectional. Ricardo demonstrates this, taking inspiration from David Hume to formulate his new theory of profit determination while still challenging the philosophical methodology of Smith's 1759 work, The Theory of Moral Sentiments (Roncaglia, 2005). Drawing on a more modern illustration, the emergence of the New Keynesian School in response to the Lucas critique exemplifies this application of new methodological assumptions. The nominal rigidities of the old Keynesian macroeconomic model remained intact but were turned towards a greater foundation in micro-based concepts of individual optimisation (Snowdon & Vane, 2005). Thus, the second suggested criteria for classifying a turning point in the history of economic thought is the introduction of new methodological tools. Focusing on locating an economic problem rather than empirically proving its existence and the introduction of new methodological innovations therefore provides a basic framework for analysis in a period where many of the benchmarks of modern economic theory did not exist.

The Break from Moral Philosophy

One of Ricardo's most significant contributions to economic thought was to detach the subject from the moral philosophy favoured by Adam Smith. Smith's method of inquiry was first clearly demonstrated in The Theory of Moral Sentiments (1759). While Smith was not isolated from the influence of the philosophes and their metaphysical applications of Newtonian physics, he found himself unable to reconcile theories of human action in economic affairs to any mechanical or mathematical system. Instead, Moral Sentiments demonstrates Smith's understanding of man's actions as driven by 'passions' and 'interests' (Roncaglia, 2005). Even the idea most often associated with Smith – the role of self-interest in economic decisions – could be described by altruistic factors such as a concern for the feelings of others rather than selfishness alone (Smith, 1759). Thus, an a priori element of Smith's thought centres on the role of the individual acting according

> Were it possible that a human creature could grow up to manhood in some solitary place, without any communication with his own species, he could no more think of his own character, of the propriety or demerit of his own sentiments … than of the beauty or deformity of his own face. (Smith, 1759)

to some natural determination of their 'passions' (Linden, 1969). In this epistemology, such 'passions' were determined largely by the individual's environment.

As the above quote from Moral Sentiments illustrates, Smith saw human action as a product of society and ultimately, moral philosophy – the force he saw as driving human behaviour. Ricardo's Essay challenged this methodology, introducing a more logical, mechanical approach to the dynamics of economic interaction. Unlike Smith, Ricardo demonstrated a limited tolerance for questions of 'sentiment'. In fact, the empirical approach of the Essay suggests the influence of an earlier Scottish philosopher – David Hume. Ricardo avoided moralist interpretations of economic interactions, arguing that the scope of human morality was likely unknowable (Cremaschi & Dascal, 1996). This form of "Humean Scepticism" permeates the Essay as Ricardo demonstrates a cautious approach to moral behaviour. Thus, to strengthen his analysis, Ricardo adopts a methodology that is value free, a methodology that does not rely on moral knowledge. A clear example of this approach is Ricardo's description of no-arbitrage profit equalization. Central to the Essay's description of how profits are eroded by increases in

> …when the profits on agricultural stock, by the supposition, are fifty per cent the profits on all other capital, employed either in the rude manufactures …. will be also, fifty per cent, (Ricardo, 1815)

rent is the assumption that profits, or returns to capital, in one sector will equal the returns to capital in another sector in the long-run.

Ricardo derives this dynamic in logical, deductive terms. A deductive approach formulates a general statement or hypothesis and proceeds to derive logical conclusions from this assumption. In Ricardo's case, the assumption is the no-arbitrage condition – the theory that no difference in fundamental return or profits can exist simply due to a misallocation of resources. If profits in manufacturing were fifty percent, then any greater return on capital in agriculture would lead capitalists to re-allocate their resources until profits in both sectors were equalised (Cremaschi & Dascal, 1996). Supporting this theory is not an assumption on the moral behaviour of man but an understanding of rational action. According to Samuel Hollander, this form of Ricardian thought reflected an "approximation to contemporary business reality" and the actual behaviour of capitalists in early nineteenth-century Britain (Hollander, 1987). Having worked for over thirty years on the London Stock Exchange, Ricardo was far better positioned to understand the rationale of the markets than Smith or his contemporaries (Roncaglia, 2005). Thus, Ricardo's methodological process was based not on assumptions regarding man's moral behaviour but an understanding of the realities that governed business decisions.

A Dynamic Model for Profit Analysis

Post-1817 opinion recognised this Ricardian shift in methodology. After Ricardo's death, the logical abstractions demonstrated in the Essay and his other works became a frequent target of criticism with Simonde de Sismondi describing them as "speculations" and Jean-Baptiste Say complaining that such methods suffered from weak empirical foundations (Hollander, 1987). However, many of these criticisms were excessive and while his methods did break from those in the Wealth of Nations, Ricardo was consistently aware of the limitations of his approach. His parliamentary colleague Lord Brougham believed Ricardo spoke as "if he had dropped from another planet", yet, Ricardian models were both innovative and comprehensible enough to offer a limited yet useful predictive power.

The core of the Essay comprises of a dynamic model illustrating the effects of population and economic growth on rents and profits. Ricardo was concerned not simply with understanding overall welfare or accumulation but with the distribution of profits. The Essay demonstrates this by modelling a steady-state economy producing wheat with plentiful agricultural land (Ricardo, 1815). Given this, Ricardo performs a simple calculation of profits which can be described by equations 1.1 and 1.2 below. Identifying capital employed as both fixed in buildings and implements and "circulating" in labour $K(\alpha, w*L)$, profit ($\prod$) is determined from the residual value (v) by calculating the initial value of wheat (V) after these "outgoings belonging to cultivation" have been deducted.

$$v = V - K(\alpha, w*L) \qquad 1.1$$

$$\prod = vK(\alpha, w * L) * 100 \qquad 1.2$$

Profits can then be calculated as a percentage return on the capital invested (1.2). Introducing growth into this model, Ricardo describes how increasing population pressures are likely to raise the value of wheat (V) in the market while putting downward pressure on wages (w) as labour becomes less scarce. Provided productive land is still abundant, this dynamic increases profits to capitalists. Even in its preliminary stages, this model is a clear demonstration of Ricardo's deviation from earlier economic methodology as he focuses on the proportional returns to factors of production rather than gross output. Nevertheless, quantity and cost factors remain exogenous as Ricardo follows Smith's assumption that outputs will be subject to the "natural course of things" and do not need identification within his model (Kurz, 2017). While this limitation has been used to demonstrate the "Ricardian Vice" of creating overly-simplistic models, this view is based on dubious grounds of historical teleology. It is hardly challenging to critique Ricardo's model with the hindsight of the marginal revolution – nowhere does the Essay provide first order conditions for profit maximization or allow a game theoretical scenario for the determination of output. However, such criticism is asinine. As described in Section 2, Ricardo's model satisfies the conditions for introducing new methodological tools and the foundations of a dynamic model of analysis on which later more quantitatively adept economists could build (O'Brien, 1981).

This becomes clear as Ricardo introduces the rent-profit dichotomy. Postulating a growing economy, where wheat is produced solely within domestic borders and there are no advances in agricultural technology, increasing population growth is likely to bring into cultivation land which has a higher capital input requirement for a given output quantity. Ricardo rationalised this within a simple framework. If land surrounding the original settlement has become scarce, to sustain a growing population, agricultural lands further away must be cultivated thus incurring a higher capital requirement in the form of horses and labourers to transport wheat (Ricardo, 1815). Here, wages are assumed to be constant as a comparative static analysis is applied where only capital requirements are increased. This additional capital lowers the profit on a given quantity of wheat in the distant lands as rent emerges. Providing a numerical example, Ricardo states that on original land, initial capital has a value of 200 bushels of wheat and nets a residual value (v) of 100 bushels at a 50% profit. However, with a 10 bushel equivalent rise in capital costs, this return declines as capital now accounts for 210 bushels, resulting in a 90 bushel residual value as market prices are assumed constant. Therefore, returns on the newly cultivated land are 43%. Assuming no-arbitrage, the producer must face the same profit opportunity on the nearby and distant lands. Thus, as the original land returns a profit of 50%, rent of

7% will be paid on this land to reduce profits to 43%. The wheat farmer on the distant land will therefore receive the same net profit as if they were to cultivate the original land and pay rent. Rent therefore acts as an equalizer for profit rates across capital intensity differences. Under this dynamic, rent and profits invariably oppose each other.

> ....in a progressive country, rent is not only absolutely increasing, but that it is also increasing in its ratio to the capital employed on the land. (Ricardo, 1815)

> ...at a later period, every accumulation of capital will be attended with an absolute, as well as a proportionate diminution of profits" (Ricardo, 1815)

Rent emerges in this model as land well-adapted to cultivating wheat cannot be procured at the same rate of capital intensity on an increasing scale. As a solution to this rent-driven profit erosion, either the variable costs of labour (wages) must fall, allowing the farmer to cultivate the distant land at the same profit level and compensate for the increased transport costs, or new market access must be provided such that the need to cultivate the distant land never arises in the first place. It is on this latter point that Ricardo hinges his opposition to the Corn Laws which proposed tariffs and import restrictions on grain in Britain. Thus, the Essay presented a new model explaining potential economic outcomes in a deductive framework. While Ricardo's approach remains largely logical rather than empirical, his methodology drove a shift in economic thought where debate over policy was determined not by discussions on man's moral incentives but a rational, more mechanical model of action and consequence.

Conclusion

Under the framework presented in this paper, Ricardo altered the course of economic thought towards a more mechanical method of analysis. Even if the Essay demonstrates a 'Ricardian Vice' of oversimplification and lacks an empirical base, the tools presented by Ricardo were to form the very language of criticism for later thinkers. Thus, Ricardo provided the epistemological foundations for a more quantitative form of economic thought – a legacy that directed economics towards the discipline recognisable to scholars today.

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