sequently became a standard topic in public finance and macroeconomic theory. The Ricardian equivalence theorem ascribes to David Ricardo (1772–1823), the English economist, the view that taxation and public borrowing constitute equivalent forms of financing public expenditure. The rationale behind this view is that the government is expected at some future time to redeem its debt. If one now supposes a closed economy, the repayment of debt will take place via increased future taxation, which means that, on the basis of the rational expectations hypothesis, individuals increase their savings through buying the bonds that have been issued by the government. The amount of savings, in other words, matches the size of the public deficit and therefore the interest-rate remains the same. This means that there is no crowding-out effect of private investment from public expenditure and the overall demand remains the same together with the other real variables of the economy.

A similar mechanism operates in the case of an open economy, where the redemption of public debt takes place via the sale of assets to international institutional agents. Such a possibility raises, once again, the question of limited future government income, hence the inevitable future increase of taxation. Consequently, Robert Barro in the early 1970s and the new classical economists argued that either method of financing public expenditure, that is, through taxation or borrowing, leads to the same final results. The theorem has been used to argue against government intervention in the economy through fiscal policy because it suggests that the government cannot achieve anything quite different from the free operation of market forces. Monetary policy has similar effects; for example, if government expands the money supply, the public does not increase its expenditures but rather its savings in order to meet the future tax obligations. In short, Ricardian equivalence became a necessary weapon in the armory of the new classical economics in their defense of "free market."

The truth, however, is that Ricardo, to whom this theorem is attributed, repudiated the notion of equivalence between the two ways of financing government expenditure. He reasoned that taxation falls on current incomes and primarily reduces current consumption and only secondarily saving. By contrast, borrowing falls entirely on savings, which for Ricardo and classical economists are identical to investment. As a consequence, public borrowing diminishes the investable product and has detrimental effects on the economy's capacity to accumulate capital.

The empirical evidence from various countries does not lend support to the Ricardian equivalence in its pure form, although there is some evidence that saving rates follow government spending—that is, it has been observed that the personal saving rate increases in the case of deficit spending and decreases in the case of government surpluses. It is very hard, however, to show a direct one-to-one relationship here. A usual criticism of the Ricardian equivalence theorem is that real-life situations are characterized by uncertainty regarding future income and also tax liability, which prevents individuals from behaving in accordance to rational expectations. Furthermore, Ricardian equivalence does not hold in cases where the growth rate of the economy exceeds the rate of interest.

SEE ALSO *Policy, Fiscal; Policy, Monetary*

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RICARDIAN VICE

The term *Ricardian vice*, which refers to the English economist David Ricardo (1772–1823), was coined by Joseph A. Schumpeter in his *History of Economic Analysis* (1954). It was intended to highlight Ricardo's alleged habit of introducing utterly bold assumptions into an already oversimplified representation of the economy and treating these as givens when in fact they are unknowns. In Schumpeter's words, Ricardo's "fundamental problem" was that he "wanted to solve in terms of an equation between four variables: net output equals rent plus profits plus wages" (Schumpeter 1954, p. 569). Operating with this perspective, Ricardo was bound to treat three of the variables as constants. Schumpeter also deplored Ricardo's alleged habit of "piling a heavy load of practical conclusions upon a tenuous groundwork" (Schumpeter 1954, p. 1171). Two examples serve to illustrate what Schumpeter considered to be Ricardo's inadmissible way of reasoning. The first is Ricardo's famous suggestion, made in 1819, that the whole of the British national debt accumulated during the Napoleonic Wars could be repaid in a few years by means of a tax on property (Ricardo 1951–1973, vol. 5, pp. 38, 271). Such a tax, Ricardo argued, would not diminish total wealth and would also not unduly hurt the propertied classes, because the capital value of the current taxes levied on them to cover interest charges and amortization was equal to the lump-sum property tax suggested.

This proposal became known as *Ricardo's equivalence theorem.* The second example is Ricardo's view that the burden of a tax on wages or on goods consumed by workers will not be borne by workers (e.g., Ricardo 1951–1973, vol. 1, p. 203). Both conclusions are the logical consequence of the underlying premise that workers are paid a subsistence wage that cannot be changed. As Schumpeter opined, Ricardo's theory of wages amounted to taking wages as fixed at the "subsistence" level (Schumpeter 1954, p. 665).

These criticisms elicit two remarks. The first concerns the way Ricardo reasoned. Apparently his critics have not taken seriously his statement that "in all these calculations I have been desirous only to elucidate the principle, and it is scarcely necessary to observe, that my whole basis is assumed at random, and merely for the purpose of exemplification. The results though different in degree, would have been the same in principle. … My object has been to simplify the subject" (Ricardo 1951–1973, vol. 1, pp. 121–122). Hence, while it is true that Ricardo frequently employed bold cases to "elucidate" the principle at hand and draw attention to what he considered the most important aspects of the problem under consideration, he certainly did not seek to prevent his readers from trying out less restrictive assumptions and investigating their implications, nor did he himself abstain from doing so. Some later commentators rightly praised him for having heralded an approach in economics that requires a clear statement of the assumptions on the basis of which certain propositions are taken to be valid within a given analytical context. This is now considered an indispensable prerequisite of scientific communication. Therefore what Schumpeter considered a vice, others took to be a virtue.

As regards the analytical core of Ricardo's argument, it would be wrong to take Ricardo to have been a strict follower of the Malthusian concept of a subsistence wage. While he used this concept in some contexts for the sake of simplicity, in others he explicitly stressed the historical and social dimensions of the "natural wage" and warned that it must not be mistaken for a minimum required for physiological subsistence (see, e.g., Ricardo 1951–1973, vol. 1, pp. 96–97). He took into account the possibility that workers might receive a share of the social surplus product and maintained that the rate of profits is inversely related to "the proportion of the annual labour of the country devoted to the support of the labourers" (Ricardo 1951–1973, vol. 4, p. 49).

This brings us to the second observation, which concerns the fact that the "standpoint … of the old classical economists from Adam Smith to Ricardo has been submerged and forgotten since the advent of the 'marginal' method," as Piero Sraffa remarked perceptively (Sraffa 1960, p. v). By the turn of the nineteenth century it was no longer understood that the classical economists had advocated a theory of income distribution that was fundamentally different from the marginalist one. The marginalist approach sought to determine the rate of profits and the wage rate in terms of the relative "scarcities" of the respective factors of production, *capital*, and labor and thus on the basis of the economy's given initial endowment of the factors. (With heterogeneous capital goods the amount of *capital* in given supply can be expressed only as a sum of value, which spoils the symmetry between the factors with [homogeneous] labor given in terms of its own natural unit.) The classical economists, on the contrary, determined the rate of profits for the system of production in use in terms of the "social surplus" left over after all used-up means of production and wage goods consumed by workers at a given wage rate have been deducted from gross output levels. Hence, whereas the marginalist authors treated profits and wages symmetrically, the classicals treated them asymmetrically. This asymmetric treatment was unimaginable to the marginalist authors, who therefore felt entitled to accuse the classical authors of treating as a constant what is a variable—that is, the wage rate. Schumpeter's incomprehension was in fact anticipated by major marginalist authors, such as William Stanley Jevons and Léon Walras (see Kurz and Salvadori 2002, pp. 390–395). However, to treat wages as a given in one part of classical theory is a priori no less admissible than to treat the capital endowment as a given in one part of marginalist theory. As Sraffa (1960) has shown, the classical approach to the theory of value and distribution can be formulated in a coherent way that allows one to determine the unknowns (one of the distributive variables and relative prices) in terms of the givens, without depending on bold assumptions, such as the existence of a subsistence wage.

In light of these considerations and granting the fact that Ricardo based some of his arguments on highly simplified analytical constructions, it appears to be somewhat problematic to speak of "Ricardian vice." One can only wonder whether it would be more appropriate to speak of "Schumpeterian incomprehension."

SEE ALSO *Economics; Economics, Neo-Ricardian; Long Period Analysis; Marginalism; Napoleonic Wars; Ricardo, David; Schumpeter, Joseph Alois; Sraffa, Piero; Surplus; Taxation; Wages; Walras, Léon*

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Heinz D. Kurz

RICARDO, DAVID

1772–1823

David Ricardo was born into a prolific Sephardic Jewish family in London on April 18, 1772. His father was a well-to-do stockbroker. David, already "when young, showed a taste for abstract and general reasoning" (Ricardo 1951–1973, *Works*, vol. 10, p. 4). At the age of fourteen he joined the business of his father. When at the age of twenty-one he married Priscilla Ann Wilkinson, a Quaker, his parents broke with him. Ricardo then began a highly successful career as a stockjobber. He made a fortune on the occasion of the Battle of Waterloo (June 18, 1815) by betting on a defeat of the Napoleonic troops.

CAREER AND WRITINGS

Ricardo's interest in political economy was ignited by Adam Smith's *Wealth of Nations* (1776), and it was amplified by economic events at the time, especially the Bank of England's suspension of the convertibility of bank notes into gold in February 1797 and inflationary tendencies during the Napoleonic Wars. In 1809 Ricardo anonymously published his first article, "The Price of Gold," in the *Morning Chronicle*. One year later he published the pamphlet *The High Price of Bullion, a Proof of the Depreciation of Bank-Notes*, which swiftly made him known in learned and political circles. The famous Bullion Report to the British House of Commons reflects his influence, and Ricardo became a major contributor in the Bullion controversy. (The controversy unrolled after the Bank of England in 1797 had suspended convertibility of its notes into gold. The Bullionists, including Ricardo, argued that the ensuing increase in money supply would lead to rising prices, whereas the Anti-Bullionists maintained that the money supply was driven by the "needs of trade" reflected by the real bills presented to the Bank for discount. The Bullion Report was strongly influenced by the monetary theorist Robert Thornton, a Bullionist.) In several letters to the *Morning Chronicle* and in a pamphlet titled *Reply to Mr. Bosanquet's "Practical Observations on the Report of the Bullion Committee"* (1811), he defended the Bullion Report. In his hands, the quantity theory of money became a powerful weapon against the Bank of England's inflationary expansion of money circulation, which, while beneficial to a few, was detrimental to the interests of the nation at large.

Eventually, Ricardo came to know James Mill (1773–1836) and Thomas Robert Malthus (1766–1834). Mill incessantly urged Ricardo to write down his ideas and publish them. With Malthus, Ricardo engaged in many controversial discussions until the end of his life. It was Malthus's relentless criticism that forced Ricardo to rethink his positions and develop what he considered "a very consistent theory" (*Works*, vol. 7, p. 246).

Probably prompted by a move before Parliament to restrict the corn trade in early 1813, Ricardo started to investigate the impact of the accumulation of capital on the rate of profits. This resulted in March 1814 in some "papers on the profits of Capital," which unfortunately have never been found, and in February 1815 in the publication of his *Essay on the Influence of a Low Price of Corn on the Profits of Stock; Shewing the Inexpediency of Restrictions on Importation.* The *Essay* was eventually to grow into his magnum opus, *On the Principles of Political Economy and Taxation*, published in April 1817. The book sold out in a few months. A second, substantially revised edition came out in 1819, and a third, carrying the new chapter "On Machinery," in 1821. Ricardo's "principal problem" in this work was to determine the "laws" that regulate the distribution of the product between the three classes of society—landowners, capitalists, and workers (*Works*, vol. 1, p. 5).

By late 1815 Ricardo had decided to withdraw from the Stock Exchange and invest his money in landed estates—a move supported by his theory of rent, according to which, in an "improving society," ever larger parts of the soil of a country would become scarce and rise in price. In February 1816 Ricardo published some *Proposals for an Economical and Secure Currency*, in which he put forward anew his "ingot plan." The plan suggested a return to the gold standard by making bank notes convertible into gold ingots rather than coins. This practice would allow Britain to continue to use paper as the actual means of payment and it would curb the huge profits of the Bank of England (a private institution until 1946), which in Ricardo's view ought to accrue to the public rather than to the bank's directors. In 1821, with the resumption of cash payments by the Bank of England, Ricardo's plan was implemented.

In 1819 Ricardo became a member of Parliament by buying the seat of Portarlington, Ireland. He participated in many debates, mostly on monetary and financial matters. He became famous for his suggestion in 1819 to