

BACK TO AGRICULTURE?

Malthus (1817 and 1826), Torrens (1815) and Ricardo (1822) on International Trade and Structural Change

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Abstract: Malthus's main economic argument against free corn trade in his *Essay on Population* concerned the issue of structural change triggered by international trade. Malthus claimed that, in the long-run, agricultural countries will develop their domestic industrial sectors and cut both their corn exports and their imports of foreign industrial goods. We critically assess Malthus's views and compare them with Torrens (1815) and Ricardo (1822). We argue that the weak point of Malthus's reasoning lies in his inability to perceive that an international trade-induced structural change process is at work both in agricultural and manufacturing countries. Moreover, we show that, notwithstanding the broad similarity of their conclusions, Torrens and Ricardo followed two analytically different paths.

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1. Introduction

In Salvadori and Signorino (2015 and 2017a), two of us have reconstructed Malthus's protectionist food policy proposals in various editions of his *An Essay on the Principle of Population* (henceforth *Essay*) and in the 1815 pamphlet *Grounds of an Opinion*, assessing them against the backdrop of

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Ricardo's counter-arguments. In this paper, we focus on Malthus's main *economic* argument against free corn trade, *i.e.* structural change triggered by international trade: we reconstruct and assess it in its mature form as it appears in the fifth (1817) and sixth (1826) edition of his *Essay* and compare it with Torrens's (1815) and Ricardo's (1822) relevant views on the subject. We defer the analysis of other relevant contributions by Malthus, Torrens and Ricardo to future work (but see Salvadori and Signorino 2015 and 2017a).

According to Malthus, agricultural countries will *in the long-run* develop their domestic industrial sectors and, consequently, cut both their corn exports and their imports of foreign industrial goods. That is the main theoretical reason why Malthus supported a protectionist food policy: in his view, food protectionism was, among the available options, the *most effective* way for a manufacturing country endowed with a large and not-yet-fully cultivated territory – such as Great Britain – to achieve food self-sufficiency on average harvest years. Malthus argued that Great Britain would thereby become independent both of the variable economic fortunes of foreign trading countries and the unpredictable interruptions of international trade flows caused by a sudden outbreak of war.

Historians of economic thought have extensively investigated the disagreement between Malthus and Ricardo over corn trade policy. Our intended contribution to existing literature may be summarized as follows. First, we claim that the weak point of Malthus's chain of reasoning lies in his inability to provide compelling economic arguments to deny that a mirror-like process of structural change is at work *also* in manufacturing countries. Granted our interpretation, it is possible to solve an apparent conundrum within Malthus's thought and make sense of the reason why Malthus, who accepted what was then considered orthodox international trade theory, *i.e.* free trade, could believe that British agriculture ought to be regarded as an exception. Second, we show that, unlike Malthus, Torrens and Ricardo did analyze the phenomenon of structural change triggered by free international trade as a symmetrical process at work *both* in agricultural *and* manufacturing countries. Our comparative

analysis of Torrens and Ricardo on international trade-induced structural change brings together the sparse hints of their views on the subject and assesses them in a comprehensive way. Third, we argue that, although Torrens and Ricardo reached broadly the same conclusions as concerns the long-run prospects of British agriculture in a free trade scenario, they made use of two different theoretical models. Torrens debunked the views of food protectionists by generalizing to the case of industrial countries the same Smithian ‘competition of capitals’ argument employed by Malthus to support his plea for restrictive Corn Laws; Ricardo based his free corn trade position on a generalization of his own diminishing returns growth model to the case of agricultural and manufacturing countries that swap their surplus production. Moreover, we argue that Ricardo failed to notice that the theory of differential rent, based on the different fertility of the various plots of land, may be used to demonstrate further results than those he actually reached. We refer to the fact that, in a free trade scenario, a former industrial and corn-importing country may become a corn-exporting country at a later stage of the worldwide process of capital accumulation. In a nutshell, we claim that Ricardo failed to analyze the whole of the analytical consequences deriving from the fact that differences in land fertility do not only exist within a given country but also among the various trading countries. Thus, we clarify an analytically interesting issue concerning the relationship among international trade, structural change and economic growth within Classical economics.

2. Malthus (1817 and 1826)

Since the second edition of his *Essay* (1803) Malthus raised several arguments, some related to pure economic theory, others pertaining to geo-political and military issues, to support his plea for food protectionism. In particular, we refer to *i*) the big country argument, *ii*) the national security argument and *iii*) the structural change argument (Salvadori and Signorino 2017a). In regard to the first argument, Malthus claimed that in the case of poor domestic harvests, large and densely populated countries are unlikely to find abroad a foreign corn supply able to compensate their substantial food

gap. On the second argument, Malthus argued that too heavy a dependence on foreign corn supply would give foreign agricultural countries excessive bargaining power, especially during times of war. Finally, turning to the third argument, Malthus warned that as soon as agricultural countries develop their domestic manufactures they will cut both their corn exports and their imports of foreign industrial commodities, thus provoking severe hardship to corn-importing and manufactures-exporting countries.

These three arguments were reiterated and developed by Malthus in the subsequent editions of the *Essay*. In particular, in Book III of the fifth (1817) and sixth (1826) edition, Malthus devoted Chapters 8 and 9, 'Of the Agricultural System' and 'Of the Commercial System', respectively, to assessing the pros and contra of two polar cases of unbalanced growth patterns: the case of an agricultural country that, on average, does not produce domestically most of the industrial goods it consumes and that of a manufacturing country that, on average harvest years, feeds most of its population by imports of foreign corn. Obviously, in these two cases of unbalanced growth, international trade plays a crucial role. By contrast, in Chapter 10, 'Of Systems of Agriculture and Commerce Combined', Malthus analyzed the case of a country which, though open to international trade, produces on average both the amount of food required to feed its own population and the industrial goods it consumes. Therefore, in the specific case of balanced growth analyzed by Malthus, long-run growth does not depend in any significant way on international trade. These three chapters are closely intertwined and constitute the analytical backdrop from which Malthus derived his corn trade policy proposals in the following Chapters 11 and 12, 'Of Corn-Laws. Bounties upon Exportation' and 'Of Corn-Laws. Restrictions upon Importation', respectively.

An educated guess is that Malthus's arguments were designed to gain a significant share of the politically engaged members of the British educated classes since they perfectly fit the case of a corn-importing and manufactures-exporting country endowed with a large and not-yet-fully cultivated territory such as early nineteenth century Great Britain (see Hollander 1997, p. 179). Be that as it may,

of the three arguments against free corn trade mentioned above, structural change is the theoretical issue on which Malthus lavished most of his analytical care. Malthus's views concerning the relationship between patterns of growth and international trade may be summarized as follows. He acknowledged that a process of unbalanced growth in a corn-importing and manufactures-exporting country may, *in principle*, continue "till the lands of all the nations with which it trades are fully cultivated" and that such an event will come true only "at a great distance" of time (*Essay*, III.ix.1). Yet, he warned that, *in practice*, a few causes are "constantly in operation" that may halt the growth process of such a country and provoke the onset of the stationary state long before the ultimate limit of a full exhaustion of cultivable lands worldwide (*Essay*, III.ix.2). In particular, Malthus stressed that agricultural countries will, *in the long run*, develop their own domestic industrial sectors and, consequently, reduce their imports of foreign industrial goods:

A nation which is obliged to purchase from others nearly the whole of its raw materials, and the means of its subsistence, is not only dependent entirely upon the demands of its customers, as they may be variously affected by indolence, industry or caprice, but it is subjected to a necessary and unavoidable diminution of demand in the natural progress of these countries towards that proportion of skill and capital which they may reasonably be expected after a certain time to possess. It is generally an accidental and temporary, not a natural and permanent division of labour, which constitutes one state the manufacturer and the carrier of others. (*Essay*, III.ix.13)

What in Chapter 9 was presented simply as a 'reasonable' scenario, in the following chapters becomes almost certainty. In fact, Malthus claimed that "According to all general principles, it will finally answer to most landed nations, both to manufacture for themselves, and to conduct their own commerce" (*Essay*, III.x.14) and, even more trenchantly, "It is an unquestionable truth that it must answer to every territorial state, in its natural progress to wealth, to manufacture for itself, unless the countries from which it had purchased its manufactures possess some advantages peculiar to them besides capital and skill" (*Essay*, III.xii.9).

The key to Malthus's argument is the slow but steady fall of the agricultural rate of profits that allegedly takes place in agricultural countries. Such a fall is caused by the ongoing process of capital accumulation in their domestic agricultural sector driven by the foreign demand for domestic corn. Accordingly, in corn-exporting countries capital investment in domestic industrial sectors will become progressively more profitable than capital investment in the domestic agricultural sector. Such international trade-induced change in relative profitability of capital investment among different sectors of the same economy is the main trigger of the structural change process which, Malthus argued, will most likely take place within agricultural countries open to international trade.

The process of structural change within an agricultural country entails large negative economic externalities for the growth prospects of a manufacturing country that, on average harvest years, feeds its own population by substantial imports of foreign corn. In Malthus's view, formerly agricultural countries now steadily heading toward industrialization will progressively cut *both* their corn exports and their imports of foreign industrial goods. Corn exports will be reduced because domestic production of corn will be progressively addressed towards the domestic market, while imports of foreign industrial goods will be reduced because of import-substitution: that is to say, domestic demand for industrial goods will gradually be supplied by the booming domestic industrial sectors. Malthus went so far as to claim that, short of superior technology, "a purely commercial state must be undersold and driven out of the markets by those who possess the advantage of land [*i.e.* formerly agricultural countries]". (*Essay*, III.ix.13).

As far as economic theory is concerned, the structural change argument outlined above is the main analytical reason why, in Malthus's view, the process of capital accumulation within a manufacturing country cannot *permanently* be based on international trade. In particular, in the long-run an industrial

country cannot rely on steady foreign food imports to feed its own population.² Accordingly, countries whose growth process does not basically depend upon international trade have much better chances to defer the onset of the stationary state to an indefinite future.³ To put it briefly, for Malthus balanced growth *coupled with* food self-sufficiency on average harvest years is the most effective way to achieve *and* preserve long-run prosperity:

A country, in which in this manner agriculture, manufactures, and commerce, and all the different parts of a large territory, act and re-act upon each other in turn, might evidently go on increasing in riches and strength, although surrounded by Bishop Berkely's wall of brass. Such a country would naturally make the most of its foreign commerce, whatever might be the actual state of it; and its increase or decrease would be the addition or removal of a powerful stimulus to its own produce; but still the increase of this produce, to a very considerable extent, would be independent of foreign countries; and though it might be retarded by a failure of foreign commerce, it could not either be stopped or be made retrograde. (*Essay*, III.x.12; see also III.x.16)

² In the same vein in Chapter 12 Malthus wrote that "An extensive foreign trade in corn beyond what arises from the variableness of the seasons in different countries is rather a *temporary* and *incidental* trade, depending chiefly upon the different stages of improvement which different countries may have reached, and on other accidental circumstances, than a trade which is in its nature permanent, and the stimulus to which will remain in the progress of society unabated" (*Essay*, III.xii.9, emphasis added). It hardly needs to be stressed that, as concerns the role of international trade as a main driver of long-run growth, the turn from Malthus to Ricardo is a 180-degree one. As an example, in *The Funding System* (1820) Ricardo wrote that "The richest country in Europe is yet far distant from that degree of improvement [when the land of a country is brought to the highest state of cultivation], *but if any had arrived at it, by the aid of foreign commerce, even such a country could go on for an indefinite time increasing in wealth and population, for the only obstacle to this increase would be the scarcity, and consequent high value, of food and other raw produce.* Let these be supplied from abroad in exchange for manufactured goods, and it is difficult to say where the limit is at which you would cease to accumulate wealth and to derive profit from its employment" (*Works* IV, p. 179, emphasis added).

³ Another argument emphasized by Malthus to support his strict preference for food self-sufficiency is that international trade flows may suddenly be interrupted by the outbreak of war. Malthus claims that a country that on average harvest years grows its own food "is necessarily exempt from those violent and distressing convulsions of property which almost unavoidably arise from the coincidence of a general war and an insufficient home supply of corn" (*Essay*, III.xii.31).

Malthus was aware that, in some specific circumstances, a manufacturing country is obliged to have recourse to foreign corn supply in order to feed its existing and, *a fortiori* increasing, population. He referred to countries *i*) lacking an extensive agricultural territory (see *Essay*, III.xii.4), *ii*) whose soil and climate conditions are such as to provoke unpredictable and substantial variations in domestic corn harvests (see *Essay*, III.xii.5), *iii*) whose lands are mostly barren and unproductive (see *Essay*, III.xii.6) *iv*) whose agricultural territory has been fully cultivated while its population is still increasing (see *Essay*, III.xii.19). Luckily, none of these four conditions apply to the British Isles, Malthus maintained. Therefore, for Malthus, the degree of openness to international trade in the specific case of Great Britain is a genuine political decision. Malthus was aware that a powerful theoretical argument is playing in favour of free international trade. Accordingly, he addressed those readers who acknowledged that balanced growth may not be a spontaneous outcome of a free market economy and that, consequently, were not hostile to the view that, when specific circumstances apply, it must be deliberately pursued by means of a protectionist food policy:

to those who do not at once reject all inquiries on points of this kind, as impeaching a principle which they hold sacred, the question, whether a balance between the agricultural and commercial classes of society, *which would not take place naturally*, ought, under certain circumstances, to be maintained artificially, must appear to be a most important practical question. (*Essay*, III.xii.2, emphasis added)

Malthus devoted Chapter 11 and, particularly, Chapter 12 of Book III to persuading his readers that state protection of British agriculture was, among the available policy options, the most effective in order to achieve the target of balanced growth coupled with food self-sufficiency on average harvest years. In his view, a food protectionist policy “can *always, without difficulty*, be put in execution, and be made *infallibly* to answer their express purpose of securing, in average years, a sufficient growth of corn for the actual population” (*Essay*, III.xii.1, emphasis added).

Malthus's structural change argument is interesting to assess: it brings to the fore the existence of economic feedbacks between long-run growth and international trade and calls for a dynamic framework as the best suited to deliver a policy-oriented analysis of the gains from trade. Yet, in our view, Malthus's proposal of food protectionism as the most effective policy to achieve the goal of balanced growth for a manufacturing and large-landed country is vitiated by his inability to follow his own chain of reasonings up to its logical consequences. Malthus focused on what may happen in a typical agricultural country; while he failed to consider that a mirror-like structural change mechanism is likely to be in action also in a typical industrial country. Such a failure could be justified if Malthus had analyzed some specific economic mechanism at work within industrial countries and capable of preventing such a international trade-induced process of structural change. But we were unable to find anything in this regard within Malthus's text.⁴ In a nutshell, our criticism of Malthus is as follows: let us assume that Malthus is right in arguing that within an agricultural country, as soon as the agricultural rate of profits falls, the likely reaction of agricultural capitalists is to redirect their capital investment from their domestic agriculture towards their underdeveloped industrial sectors. By the same token, it must be allowed that within an industrial country, as soon as the industrial rate of profits falls, the likely reaction of industrial capitalists is to redirect their capital investment from domestic industrial sectors towards their underdeveloped agricultural sector. *Provided that no economic argument is adduced to deny that such a symmetrical mechanism of capital reallocation is in action in any trading*

⁴ A referee has remarked that Malthus progressively became more sympathetic with the view that the competitive forces at work in a free market economy would spontaneously foster an equilibrating process between agriculture and manufactures: see, in particular, Book I, Chapter III, Section III, 'Of The Causes Which Tend To Raise Rents In The Ordinary Progress Of Civilized And Improved Societies', of Malthus's *Principles of Political Economy* (1836, 2nd ed.). Such a view is in line with Hollander's claim that Malthus "as early as 1824 withdrew his support for the prohibitory Corn Laws" (Hollander 1992, p. 650). Though an analysis of structural change triggered by international trade within Malthus's *Principles* is beyond the scope of this paper, we acknowledge the referee's remark as a valuable suggestion for future work.

country, be it agricultural or industrial, the inevitable conclusion is that, as far as economic theory is concerned, a food protectionist policy such as that advocated by Malthus is not required in order for a manufacturing and large-landed country to achieve a balanced growth path. Free market mechanisms will do the job. At best, a well-timed policy of corn trade restrictions may be advocated as a means to speed up the ongoing process of structural change if, for whatever reason, free market mechanisms are deemed to operate too slowly; but not to determine whether structural change takes place or not within a free market economy.

3. Torrens (1815)

In the previous section we have argued that the logical weakness besetting Malthus's argument lies in his failure to provide compelling economic arguments to deny that international trade triggers a mirror-like process of intersectoral reallocation of capital and labor also within industrial countries. Yet, in the international trade literature before Malthus (1817) the analysis of an international trade-induced structural change within an industrial country was not lacking. We refer to the analysis of the effects that international trade displays on the growth patterns *both* of agricultural *and* industrial countries carried out by Robert Torrens in Part I, Chapter II, 'On the Influence of the external Trade in Corn; on the Subsistence, Wealth, and Prosperity, I. of the Country that permanently exports; II. Of the Country that permanently imports Grain' in his book-length pamphlet, *An Essay on the External Corn Trade* (1815).

In the chapter in question Torrens started from quite a conventional static gains-from-trade analysis based on absolute advantages. Torrens maintained that free international trade between an agricultural country, such as Poland, and a manufacturing country, such as Great Britain, is mutually advantageous since, in the former, the natural price of corn (cloth) is lower (higher) than in the latter. Both countries' wealth increases if they swap their surplus production (see Torrens 1815, pp. 38 and 42). The most

original aspect of Torrens's analysis concerns the discussion of the growth dynamics of trading countries in a regime of free trade. Torrens maintained that free international trade triggers a process of structural change *both* in the agricultural *and* in the industrial country. In his view, *both* countries *spontaneously* shift from a short-run unbalanced to a long-run balanced pattern of growth in response to the increased capital accumulation fostered in both countries by free international trade.

With regard to the agricultural country, Poland, Torrens argued that the short-run effect of free international trade is an increased accumulation of capital in its agricultural sector. In a no-trade regime, capital accumulation in the Polish agricultural sector would be limited by the domestic demand for food since Polish farmers would cultivate no more than the amount of land required to supply their own market. By contrast, in a free trade regime, Polish farmers would put more land under tillage to supply *both* the domestic *and* the foreign demand for Polish corn: "The foreign demand [for corn] *creates* the surplus [of corn] it removes" (Torrens 1815, p. 39, emphasis added). Hence, for Torrens, free trade *at first* pushes an agricultural country towards an unbalanced pattern of growth: in a free trade regime, the rate of growth of Polish agriculture is not only higher than the rate of growth of Polish agriculture in the no-trade regime; but it is also higher than the rate of growth of Polish manufactures. On the other hand, Torrens argued that international trade provokes *also* a long-run effect on the economic dynamics of the agricultural country. The international trade-induced accumulation of capital and growth of wealth will, in fact, speed up the process of development of Polish manufactures:

It is only by the acquisition of additional capital that, without breaking up the old, new channels of industry can be opened; and it is by an unrestricted commerce, leaving labour and stock to find their most beneficial employment, that production is best increased, and capital most rapidly accumulated. Hence, *perfect liberty to export the produce of the soil accelerates the period of manufacturing prosperity in an agricultural country*. In such a country, when capital begins to exceed what can be beneficially vested in the soil, it will seek other employment, and invest itself in the working up of the raw material. (Torrens 1815, p. 43, emphasis added)

Torrens went as far as to claim that a process of import substitution will take place within the formerly agricultural economy: Polish manufactures, thanks to a cheaper cost of production than foreign manufactures, will progressively undersell foreign manufactures within the Polish market. Hence, according to Torrens, “perfect freedom in the foreign corn trade ..., by allowing labour and stock to take the direction most profitable to them, is *the best and most powerful means* of increasing wealth and accumulating capital, and, consequently, of *ultimately* accelerating that manufacturing prosperity to which ignorance has imagined it to be inimical” (Torrens 1815, pp. 44-5, emphasis added). The obvious consequence of Torrens’s analysis is that, in the long run, an agricultural economy will *spontaneously* develop its own domestic industrial sectors, thus achieving a pattern of balanced growth without any specific policy intervention.

Thus far, Torrens’s analysis of the process of international trade-induced structural change within an agricultural country closely trailed that provided by Adam Smith (see *WN*, IV.ix.22-23). Moreover, it is in no way different from the analysis that Malthus will develop two years later in the 1817 edition of his *Essay*. Yet, unlike Smith and Malthus, Torrens analyzed also the other side of the coin, that is, the process of international trade-induced structural change within an industrial country. He underlined that a mirror-like dynamic process is at work also in an industrial country such as Great Britain. The relevant passage is worth being quoted in full:

Nor would such an importation of corn, allowing labour and capital to take their most beneficial direction, be *ultimately* injurious to the interests of [British] agriculture. On the contrary, that direction of national industry which is most beneficial to national wealth must, *in the long run*, be most friendly to agricultural improvement. As in a country which cultivates cheaper than her neighbours, a free exportation of corn occasions an accumulation of capital, which, exceeding what can be beneficially employed upon the soil, flows out into other channels, and occasions the establishment of manufactures; so, *in a country which can manufacture at a cheaper rate than her neighbours*, the free importation of corn will occasion a more rapid accumulation of capital, which, exceeding what

can be beneficially directed to working up the raw material, will seek other employment, and extend cultivation throughout the country. (Torrens 1815, pp. 48-9, emphasis added)

Torrens believed that thanks to free international trade, an industrial country will *at first* concentrate its own capital and labor in those sectors where it enjoyed an absolute advantage, *i.e.* the industrial sectors, while feeding its own population mainly by foreign corn imports. Thanks to the trade-induced efficiency gains in the intersectoral allocation of British capital and labor, the rate of growth of British wealth in a free trade regime would be higher than in a no-trade regime. Thus, in the short run, free international trade will push Great Britain towards a pattern of unbalanced growth, a pattern obviously specular to that followed by Poland. Torrens acknowledged that, in the short run, low profits in the British agricultural sector (caused by the free importation of cheap foreign corn) and high profits in the British industrial sectors (stimulated by the foreign demand for British industrial goods) will induce British capitalists to invest heavily in the latter sectors while only the most fertile plots of British land will be cultivated:

While manufacturing and commercial profits continue to be higher than those which could be obtained by the cultivation of inferior lands, such lands will be neglected and labour and capital will be directed to the more profitable occupation of fabricating commodities with which to purchase the necessary supply of corn from the foreign grower. (Torrens 1815, p. 50)

Yet, as much as in the case of the Polish growth pattern, Torrens emphasized that the long-run features of British growth are going to be quite different from those characterizing the short-run. In particular, he denied that *ultimately* only the most fertile plots of British land will be put under tillage in a free trade regime. For Torrens, the trade-induced growth of British wealth will be beneficial *also* to British agriculture: as the rate of profits in British industrial sectors gradually falls, it will *pari passu* pay to extend the margin of cultivation to the less fertile plots of British land previously left uncultivated:

In the progress of prosperity, however, this process is, in some measure reversed; manufactures and commerce have a reaction on the soil, pour back upon it the labour and capital which they at first appeared to take away, and at last, enable a territorial state to attain a much higher degree of agricultural improvement, than that to which without their powerful stimulus, she would have been capable of attaining. For *the increase of wealth, the accumulation of capital, and the competition among capitalists, lowers the interest of money, and reduce the rate of manufacturing and commercial profit, until it no longer exceeds what can be obtained by reclaiming inferior lands. Capitalists, therefore, cease to be induced by the prospect of greater gains to leave such lands neglected.* (Torrens 1815, pp. 50-1, emphasis added)⁵

Thus Torrens debunked the most politically powerful argument raised by the British supporters of food protectionism, *i.e.* the prediction that, in a free trade regime, British agriculture will inexorably be doomed to a fate of irreversible decay and misery. By contrast, the main implication of Torrens's analysis is that the agricultural sector of an industrial country open to free international trade will *spontaneously* start to grow in the long run: "At length cultivation ascends the hills and scales the mountains, and the country wears the aspect of a universal garden" (*ibidem*). That is the reason why Torrens openly declared his stark opposition to bounties upon domestic corn exports and restrictions upon foreign corn imports. In his view, such policy measures were not only unnecessary but also positively harmful: they hampered an efficient intersectoral allocation of British capital and labor, thus slowing down the overall growth performance of the British economy, in general, and the long-run prosperity of its agriculture, in particular (see Torrens 1815, pp. 52-3).

Granted our reconstruction of Torrens (1815), it appears that Torrens developed a generalization of Smith's analysis of international trade-induced structural change. Torrens founded his own analysis on the Smithian 'competition of capitals' argument to justify his prediction that in a manufacturing

⁵ The same argument is restated by Torrens in a later chapter of his pamphlet. We refer to Part III, Chapter II, 'On the Effects which a free external Trade in Corn would produce; I. Upon the Supply of Subsistence; II. Upon the Agriculture; III. Upon the Commerce; and IV. Upon the Finances of the Country': see Torrens (1815, pp. 295-6 and 303).

country, open to free international trade, the rate of profits in the industrial sectors will ultimately fall and, consequently, it will ultimately pay to extend the margin of cultivation to those less fertile plots of land initially left uncultivated because of foreign corn imports. As we have shown in the previous section, Malthus made use of the same Smithian argument; but he ostensibly confined its validity to agricultural countries, failing to analyze what the very same argument entailed for the growth prospects of industrial countries.

Obviously, the Smithian ‘competition of capitals’ argument as an explanation of the long-run tendency of the rate of profits to fall as capital accumulates is untenable within an economic theory, such as Ricardo’s, in which Say’s Law of Markets holds. As is well-known, within Ricardo’s model of growth and distribution, it is the scarcity of fertile land that, ultimately, causes the rate of profits to fall as capital accumulates and population grows, provided that workers do not change their normal consumption patterns, no technical progress in agriculture takes place and the importation of foreign corn is banned (Kaldor 1955-6 and Pasinetti 1960; see also Fiaschi and Signorino 2003 and 2006 and Salvadori and Signorino 2017b). Accordingly, in the following section, we show that Ricardo utterly ignored the Smithian argument employed by Malthus (and Torrens) and founded on the dynamics of international commodity prices his claim that, in a free trade regime, formerly uncultivated less fertile plots of British land will gradually be put under tillage. Thus, although Torrens and Ricardo reached broadly similar conclusions on the long-run, steady-state, equilibrium of British agriculture in a free-trade regime, the analytical paths they followed were basically different.

4. Malthus-Ricardo 1815-6 correspondence on Malthus’s new edition of the *Essay* and Ricardo (1822)

The Corn Laws passed on 10 March 1815 were much more in line with the corn policy suggestions of Malthus in *Grounds of an Opinion* than with those of Ricardo in the *Essay on Profits*. His political

victory notwithstanding, Malthus did not lose interest in corn policy issues and, on 1 October 1815, he sent a letter to Ricardo where he informed his friend about his intention to work on the fifth edition of his *Essay* (subsequently published in June 1817). It is worth stressing that in this letter, Malthus alluded merely to those chapters of Book III where he intended to provide the mature version of his thought concerning the assessment of balanced versus unbalanced growth and free versus restricted corn trade (see Malthus to Ricardo, October 1, 1815, *Works* VI, p. 289).

A few days later, Ricardo mentioned Malthus's intention to publish a new version of his *Essay* in his correspondence with James Mill and Hutches Trower. These two letters clearly reveal that Ricardo had quite a few reservations concerning Malthus's analysis of the growth prospects of agricultural and manufacturing countries and his endorsement of mercantilist corn trade policies. Ricardo hoped that Malthus would provide a "radical amendment" of some of his doctrines on political economy. Unfortunately, in these letters Ricardo did not detail the causes of his disagreement with Malthus (see Ricardo to Mill, October 24, 1815 and Ricardo to Trower, October 29, 1815, *Works* VI, p. 314 and p. 317).

Before the end of 1815, the issue of corn trade policy in the planned fifth edition of the *Essay* resurfaced in the Malthus-Ricardo correspondence. Malthus was afraid that a proper treatment of the subject would take up too much space while a summary statement would result obscure. He was even wondering whether to eliminate the issue altogether (see Malthus to Ricardo, December 28, 1815, *Works* VI, p. 146). Ricardo replied a few days later, in January 1816. From this letter, a few interesting elements on Ricardo's thought can be inferred. In particular, it emerges that Ricardo *i*) was acquainted with the second, 1803, edition of Malthus's *Essay* (though, in the letter, he wrongly referred to it as the first), *ii*) was deeply interested in the growth issue of agricultural *versus* manufacturing countries and *iii*) had already discussed the subject several times with his friend Malthus. Moreover, Ricardo lamented that though he had detailed his reasons for disagreement in their private discussions, he found

no significant modifications of Malthus's treatment of the subject in a subsequent edition of the *Essay* (between the second 1803 and the fifth 1817 edition, Malthus' *Essay* went through two further editions in 1806 and 1807):

The edition which I have of your work is the first, and it is many years since I read it. When you wrote to me that you were looking over the chapters on the Agricultural and Manufacturing systems, with a view to make some alterations in them, I looked into those chapters and saw a great deal in them which differed from the opinions I have formed on that part of the subject. At your house I observed that in a subsequent edition you had altered some of the passages to which I particularly objected, and in the chapters as you are now writing them it appeared to me that there was only a slight trace of the difference we have often discussed. (Ricardo to Malthus, January 2, 1816, *Works* VII, p. 2)⁶

To the best of our knowledge, neither in his surviving letters nor in his printed works did Ricardo elaborate a full-fledged criticism of Malthus's views concerning the relationship among long-run growth, structural change and international trade between agricultural and manufacturing countries. Yet, in the final section of his last published contribution on corn trade issues, *On Protection to Agriculture* (1822), Ricardo provided a hint that could be deployed as basis for such a criticism:

Before I conclude, it will be proper to notice an objection which is frequently made against freedom of trade in corn, viz., the dependence in which it would place us for an essential article of subsistence on foreign countries. This objection is founded on the supposition that we should be importers of a considerable portion of the quantity which we annually consume. In the first place, I differ with those who think that the quantity which we should import

⁶ Sraffa noted that "As Empson points out (in quoting this passage, *Edinburgh Review*, Jan. 1837, p. 495), 'what is here called the first edition is evidently the edition of 1803', that is to say, the second, in which the discussion of the 'agricultural and commercial systems' appears for the first time (Bk. iii, Chaps. viii– ix)": see *Works* VII, p. 2 fn. A referee suggested that a possible explanation for Ricardo's mistake is the fact that the first, 1798, edition of Malthus's *Essay* was published anonymously and its economic content was negligible. Accordingly, the second, 1803, edition was most probably the first that aroused the interest of Ricardo *qua* economic theorist.

would be immense; and, in the second, if it were as large as the objection requires, I can see no danger as likely to arise from it. (*Works IV*, pp. 264-5)

To be sure, in the passage quoted above Ricardo's primary polemical target was the national security argument frequently raised by British protectionists (see de Vivo, 2015). Yet, to demonstrate the fallacy of such an argument, Ricardo additionally sketched the basic elements for a refutation of a Malthus-like structural change argument.

To make the issue of British national security a compelling argument in the public debate between free *versus* restricted international corn trade, its supporters were bound to assume that, in a free-trade regime, Great Britain would *permanently* import a substantial amount of foreign corn on average harvest years. Accordingly, the free-trader Ricardo focused on such an assumption to criticize the national security argument and its food protectionist policy implications. Ricardo's criticism unfolds in two steps. First, he provided arguments to deny that, in a regime of free trade, Great Britain would *permanently* import a substantial amount of foreign corn on average harvest years. Second, he claimed that *even if* Great Britain became regularly a large corn-importing country, its national security would not be endangered by a potential cut of corn exports by foreign agricultural countries. With regard to the second part of his criticism, Ricardo basically reiterated the same line of reasoning already developed seven years before in his *Essay on Profits* (see Salvadori and Signorino 2015). In what follows, we concentrate on the first step only. Ricardo contested the 'substantial importation argument' by means of an insightful blend of empirical elements, drawn from the Report of the 1821 Agricultural Committee, and economic analysis.⁷ The empirical element of Ricardo's reasoning concerned the different fertility of the various plots of lands in foreign agricultural countries coupled with rising transport costs; the analytical element concerned the dynamics of the international price of corn and the

⁷ The Report of the 1821 Agricultural Committee was presented to the House of Commons on 1 April 1822; while Ricardo's pamphlet was published seventeen days later.

comparative profitability of investment in domestic agriculture *versus* domestic manufactures. Ricardo argued that it pays a manufacturing country to import foreign corn whenever the sum of the price of foreign corn (transport costs included) is lower than the price of home-grown corn. In any country, the market price of corn is regulated by the cost of production on the marginal, no-rent, plot of land, that is, the least fertile plot of land which it is necessary to cultivate, given the demand for corn. In corn-exporting countries, the overall demand for corn is the sum of domestic *and* foreign demand. Hence, the domestic price of corn in corn-exporting countries, say Germany and Poland, is not independent of manufacturing countries' demand for foreign corn, say Great Britain. To supply both domestic demand *and* the British demand for foreign corn, German and Polish farmers are obliged to extend the margin of cultivation to plots of land that are *both* increasingly less fertile *and* more distant from German and Polish ports. Accordingly, the more corn Great Britain imports from Germany and Poland, the more the German and Polish production-*cum*-transport costs of corn rise. This is the crucial element that British supporters of food protectionism have neglected and that Ricardo did emphasize: the former have implicitly assumed that the price of foreign corn is not functionally dependent on British demand for foreign corn, *as if* foreign corn were produced in a regime of constant costs. By contrast, Ricardo asserted that corn is *universally* produced in a regime of increasing (production-*cum*-transport) costs *both* in Great Britain *and* in Germany and Poland. Hence, according to Ricardo's reasoning, the price of foreign corn is bound to rise in response to a growing British demand for foreign corn. It follows that the comparative profitability of domestic production of corn *versus* foreign corn is not so substantial as supporters of restricted international corn trade were pushed to believe:

From all the evidence given to the Agricultural Committee, it appears that no very great quantity could be obtained from abroad, without causing a considerable increase in the remunerating price of corn in foreign countries. In proportion as the quantity required came from the interior of Poland and Germany, the cost would be greatly increased by the expenses of land carriage. To raise a larger supply, too, those countries would be obliged to have recourse to an inferior quality of land, and as it is the cost of raising corn on the worst soils in cultivation requiring

the heaviest charges, which regulates the price of all the corn of a country, there could not be a great additional quantity produced, without a rise in the price necessary to remunerate the foreign grower. *In proportion as the price rose abroad, it would become advantageous to cultivate poorer lands at home*; and, therefore, there is every probability that, under the freest state of demand, we should not be importers of any very large quantity. (*Works IV*, p. 265, emphasis added)

The gist of Ricardo's analysis in the passage quoted above has not only a static element, but also a dynamical one since the dynamics of the international price of corn in a regime of free international trade will *ultimately* and *spontaneously* induce British capitalists to allocate their own resources into the British agricultural sector, thus increasing the domestic production of corn and making Great Britain slowly but steadily less dependent on foreign corn imports to feed its population. The main implication of Ricardo's analysis is that, in the free corn trade scenario, British long-run imports of foreign corn on average harvest years will be sensibly less than those estimated by the British supporters of food protectionism. Thus, Ricardo dismissed the gloomy prophecies concerning the irreversible decay of British agriculture, should British ports be freely open to foreign corn, as theoretically groundless.

Ricardo's analysis of the long-run equilibrium of the agricultural sector of an industrial and large-landed country in the free corn trade scenario is indeed a remarkable achievement. Yet, as much as Malthus, Ricardo was unable (or unwilling) to push his own theoretical argument up to its logical consequences. On the one hand, he acknowledged that, within an industrial country, those less fertile plots of land initially abandoned because of the competition of cheap foreign corn could be put back under tillage at a later stage of capital accumulation. On the other hand, he failed to notice that the theory of differential rent based on the different fertility of the various plots of land may be used to demonstrate a further and much stronger result. We refer to the fact that, in a free trade scenario, a former industrial and corn-importing country may become a corn-exporting country at a later stage of

the worldwide process of capital accumulation. In a nutshell, Ricardo failed to analyze the whole of the analytical consequences deriving from the fact that differences in land fertility do not only exist within a given country but also worldwide, among the various trading countries.

To help readers' grasp of this point, let us assume, for the sake of simplicity, that there are only two trading countries, E and P (to help readers' memory, E and P may stand for England and Poland in the first two decades of the nineteenth century as described by Malthus, Torrens and Ricardo), two qualities of land (high and low) and two commodities, one agricultural (corn) and one industrial (cloth). Both countries have a large territory but E is endowed with only a limited extension of high-quality land, the rest of its land being of low-quality; while the opposite situation holds in P . As soon as free trade is established between these two countries, given the international prices of corn and cloth, it is convenient for E to cultivate only its high-quality plots of land and feed its population mainly by importing corn from P . Corn imports from P are obviously paid by the exports of cloth to P . Accordingly, at first, E is a typical industrial and corn-importing country; while P is a typical agricultural and cloth-importing country.

As worldwide capital accumulation goes on and both countries' population increases, a time arrives when, in order to feed the world population, the cultivation of low-quality land is required. When this happens, world production of corn increases more rapidly in that country endowed with the larger extension of low-quality land, *i.e.* E . This effect may be so strong that E may even become a corn-exporting country. Obviously, such a result cannot hold if the two qualities of land are uniformly distributed among the two trading countries, *i.e.* if E and P have the same high to low quality land ratio.⁸

⁸ In another contribution we have developed a mathematical model of a Ricardian world economy to show formally this result. Interested readers may request the working paper to the correspondent author.

5. Final remarks

In this paper we have analyzed the relationship among international trade, structural change and economic growth in Malthus (1817 and 1826), Torrens (1815) and Ricardo (1822). In his *Essay* and in the 1815 pamphlet *Grounds of an Opinion* Malthus addressed international trade policy issues and elaborated quite a few arguments, ranging from economics to geo-politics, to support food protectionism. In this paper, we have focused on Malthus's most interesting economic argument, *i.e.*, international trade-induced structural change and the long-run growth prospects of an industrial country that heavily depends on foreign corn imports to feed its own population. To put it briefly, Malthus claimed that, in the long-run, agricultural countries will develop their domestic manufactures and cut both their corn exports and their imports of foreign industrial goods. That was the main economic reason why Malthus tried to persuade his readers that a food protectionist policy was the most effective way for the British economy to head towards a balanced and international trade-independent pattern of growth. In the *Essay* Malthus never considered that international trade triggers a structural change process *both* in agricultural *and* industrial countries. By contrast, that was the gist of Torrens's and Ricardo's opposition to food protectionism in *An Essay on the External Corn Trade* (1815) and *On Protection to Agriculture* (1822), respectively. Accordingly, we have reconstructed and assessed Torrens's and Ricardo's views on the subject. Moreover, we have shown that, though Torrens and Ricardo reached broadly similar conclusions as concerns the long-run equilibrium of British agriculture in a free-trade scenario, they followed two different analytical routes: Torrens generalized the Smithian 'competition of capitals' argument employed by Malthus to the analysis of free trade among agricultural and an industrial country; while Ricardo generalized his model of growth and distribution among trading countries endowed with plots of land characterized by different fertility and transport costs. Finally, we have argued that the theory of differential extensive rent may be used in a free international trade setting to derive further analytical results than those actually reached by Ricardo.

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