

## CHAPTER 11

### WHAT CAN BE LEARNED FROM THE HISTORY OF DEVELOPED COUNTRIES?

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#### INTRODUCTION

Neoclassical economic theory on international trade holds that liberal trade policies maximize economic welfare. Mainstream development economists add that this is also true in a dynamic sense: such policies would help poor countries to acquire the skills and technology that they need to catch up with rich ones (World Bank 1993). Extending this to farm policy, many economists see agricultural trade liberalization as a pre-condition for pro-poor growth in least developed countries (Aksoy and Beghin 2004; Anderson and Martin 2005; Hertel and Winters 2005; Nash and Mitchell 2005).

This position is underscored by model studies that couple strong convictions with methodological weaknesses. For example, Anderson and Martin (2005) envisage large effects from poor countries reducing their agricultural tariffs. However, whether these are the 'welfare gains' they claim cannot be decided since the distribution among households is unknown<sup>1</sup>. Moreover, their comparative-static model cannot assess the impact on development. This latter is also true for Hertel and Winters (2005), even though these authors include the distribution issue. The few dynamic models that are being made tend to stress endogenous growth effects but ignore poverty traps that can make poor economies dual equilibrium systems. Furthermore, there are hardly any studies that point to the impact that tariff reduction in developed countries would have on the least developed countries specifically – a remarkable fact, for even standard models show that these countries

would lose rather than gain since their preferential access to developed country markets would be eroded (Panagariya 2005; Yu, this volume).

Meanwhile, economists who believe that agricultural trade liberalization would generally benefit least developed countries are faced with some realities that seem to belie this notion:

- Many developed countries did not liberalize their agricultural trade during the early stages of their industrialization but protected their farmers, and newcomers like Korea and Taiwan have followed their example. Neoclassical economists assert that agricultural protection harmed poor consumers and retarded growth (E.G. Diao et al. 2002b; Tracy 1989), but I will argue that this is not always clear.
- Most Asian developing countries with successful green revolutions stabilized or supported their agricultural prices at the time these revolutions occurred (Dorward et al. 2002). These cases include countries with rapid growth like Indonesia and Malaysia (Dawe 2001; Jenkins and Lai 1991; Timmer 2002). In Vietnam and Chile, where rapid growth was coupled with the liberalization of agricultural trade, this involved the removal of negative protection rather than reduction in positive protection (Benjamin and Brandt 2002; Valdés et al. 1991)<sup>2</sup>.
- Most least developed countries that are caught in stagnation have not protected their agriculture. Development economists blame their situation on 'urban bias' leading to over-taxation of farmers (Bates 1981; Ng and Yeats 1998; World Bank 1981). Yet a country like Kenya, which was praised for being relatively free from these bogeys (Bates 1989), also slipped into the morass, raising doubts about whether domestic factors offer a full explanation.

These anomalies do not refute the urgent need for reforming the multilateral system of agricultural trade, nor do they mean that all liberal reform is bad. However, they do suggest that the real world is more complex than the standard economic model. Rather than bombarding the public with model studies in a bid to confirm preconceived ideas, economists would do better to pay more attention to the empirical lessons told by actual history – the real laboratory of the social sciences. As a first step in this direction, in the next session, I will survey the historical experiences of developed countries with agricultural free trade or protection. I do not present a sophisticated quantitative analysis, but simply point out some major facts and conjunctures. Even if this does not allow me to make absolute statements on causality, it reveals a number of cases that cannot readily be explained by the standard model. In Section "*Experiences with agricultural free trade and protection*", therefore, I reconsider the issue of market failure in agriculture. In Section "*What does it mean for poor countries?*", I discuss policy implications for the least developed countries, focusing particularly on the situation in many countries in Sub-Saharan Africa.

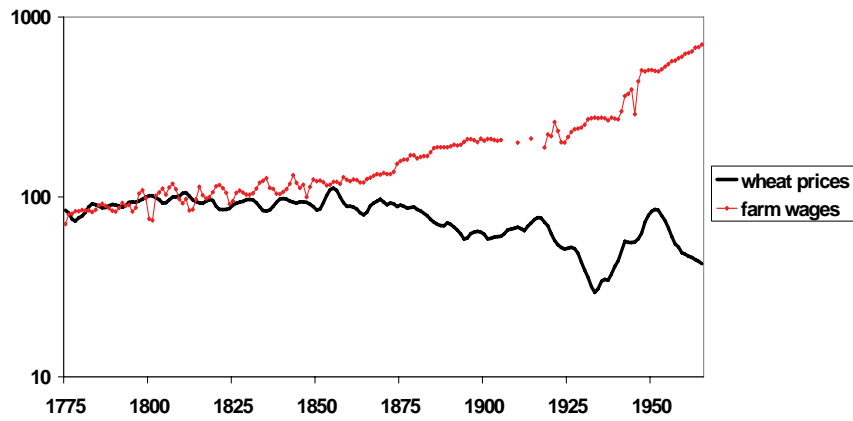
## EXPERIENCES WITH AGRICULTURAL FREE TRADE AND PROTECTION

*Evolution of agricultural trade policies since the Industrial Revolution*

The Industrial Revolution that started in Britain around 1800 and spread to Belgium and France after the Napoleonic Wars was followed by a period of international liberalization of agricultural trade. The protectionist Corn Laws in Britain were moderated in the 1830s and phased out in 1846-49. This was followed by a liberalization of agricultural trade policies in other countries, especially after the British-French trade treaty in 1860<sup>3</sup>. The subsequent events seem to support the accepted theory. In Britain, large farms bought new fertilizers, feeds, drainpipes and machines to innovate and intensify their production. In other places, British demand for food and farm-based materials stimulated the growth of farm export sectors. In the Southern US, cotton plantations flourished (Fogel and Engerman 1974), and the same was true of large grain farms in East Elbian Germany (Koning 1994 and literature referred to). More generally, agricultural growth interacted with industrial growth. The 'high farming' movement in Britain was coupled with new growth in railways and heavy industry. In Belgium and France, chain and demand linkages of agricultural growth stimulated the continuing of industrialization and – in the US and Germany – its dynamic take-off.

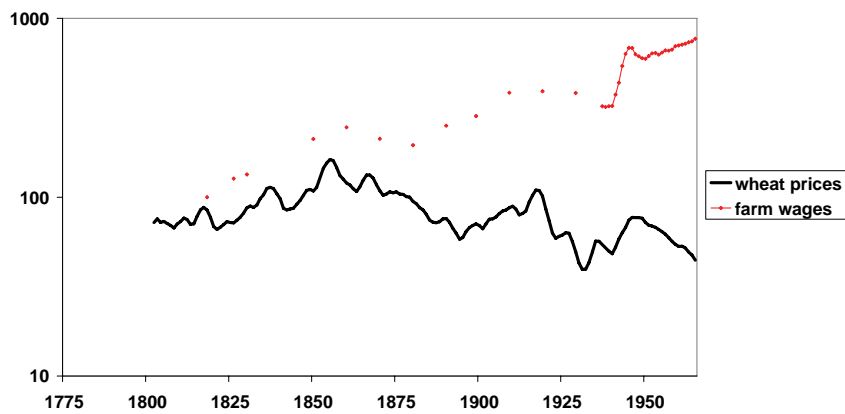
As Figures 1 a-b illustrate for England and the United States, during this episode buoyant demand led to high prices for agricultural products, while farm wages were still largely determined endogenously in rural labour markets. From the late 19th century, however, these conditions changed radically. On the one hand, railways and motor vessels brought new waves of reclamation, while the chemical industry produced cheap fertilizers that accelerated the increase in yields. On the other hand, electricity, internal combustion and artificial fibres led to minerals replacing farm-produced materials on a massive scale. Whereas the latter forces curbed the increase in the global demand for farm products, the former forces boosted the growth in supply, which led to recurrent falls in international agricultural prices (cf. Schultz 1945). Meanwhile, industrial concentration and serial production techniques that allowed a de-skilling of labour increased the industrial competition in labour markets. As a consequence, price declines in agriculture were no longer cushioned by adjustments in farm wages.

The resulting squeeze on farm profits provoked calls for government support from large and small farmers alike. They were backed by manufacturers who feared that rural stagnation would threaten their markets. Under this pressure, liberal farm policies gave way to government intervention, including protection (Koning 1994). According to the standard view, this response would have hampered pro-poor growth and solely been caused by political factors. In this interpretation, the problems of European farmers were caused by a shift in comparative advantage in grains to new countries. In a free market, European agriculture would have adjusted by shifting to livestock or releasing labour to industry (Tracy 1989).



Source: Own calculations based on data in Mitchell (1975, p. 191-5; 736; 1990, p. 737-41; 756-7)

**Figure 1a.** Real wheat prices (5-year moving average) and farm wages, England and Wales, 1818=100



Source: Own calculations based on data in Mitchell (1993, pp. 129-30; 696-8) and US Bureau of the Census (1976, pp. 207-9)

**Figure 1b.** Real wheat prices (5-year moving average) and farm wages, United States, 1818=100

*Could agriculture adjust in a free market?**Cases of successful adjustment*

One way to test the above view is to consider the experiences of countries that resisted protection. I will start with the cases that might be seen as supporting the accepted view.

- Most countries in Western Europe protected their farmers from the first fall in agricultural prices, in the late 19th century. However, Denmark, The Netherlands, and the white settler countries across the ocean did not. They weathered the 'agricultural crisis', and when international prices recovered after 1900, dynamic agricultural development resumed (Koning 1994). When prices collapsed again from the late 1920s, however, these countries did resort to protection. Two countries – the US and Denmark – tried to restore free market policies in the 1950s, but they returned to protection after a few years as a price decline later in the decade caused a significant fall in farm incomes. In Denmark, productivity growth was affected, and model studies suggest that the same would have happened in US agriculture had the policy been continued (Cochrane and Ryan 1976; Koning 1986).
- In South Korea and Taiwan, in the 1950s, production and productivity in agriculture increased while output prices were kept below world market levels rather than being supported. The price decline in the later 1950s entailed a slowdown, but in Taiwan agricultural growth resumed after 1960 without protection. South Korea introduced more supportive policies, however, and from the early 1970s, both countries had positive and increasing agricultural protection (Ban et al. 1980; Francks et al. 1999; Moon and Kang 1991).
- After 1984, New Zealand abandoned protection. Although the number of sheep strongly decreased and much marginal hill land went out of production, dairy and horticulture expanded. The adjustment was hailed as a success, not least because it was followed by an increase in productivity growth (Federated Farmers of New Zealand 2002; Johnston and Frengley 1994; Kalaitzandonakes 1994; Sandrey and Reynolds 1990; Sandrey and Scobie 1994). However, this increase was limited to horticulture and may have been due to pre-liberalization investments (Philpott 1994). In the livestock sector, productivity growth remained unaltered in spite of the massive release of marginal resources (ibid.; Lawrence and Diewert 1999; also cf. Cloke 1996; Gibson et al. 1992).

In all the above cases, one finds special advantages in the farm sector:

- The white settler countries around 1900 benefited from abundant fertile land that could be used for extensive export production thanks to new harvesting machines and the Transport Revolution (Koning 1994). Within this group, New Zealand retains especially favourable conditions for dairy and horticulture, with production costs in dairy farming of only half those in prominent dairy countries like the US, Denmark and The Netherlands (IFCN 2003).
- Around 1900, Denmark and The Netherlands were using intensive systems that were on the productivity frontier of European agriculture, while industrial

retardation moderated farm wages. In addition, their livestock systems were well developed and favourably located to supply the growing consumption centres in Britain and West Germany with animal and horticultural products, which were more price-elastic than products like grain (Koning 1994). It has been suggested that the rest of Europe could have followed this example (Tracy 1989). In reality, the international markets for livestock products were soon overstocked by the Dutch and the Danish and some favoured areas outside Europe. A few years after the fall in grain prices in the late 19th century, livestock prices also declined (Bairoch 1976).

- After WWII, South Korea and Taiwan too had low wages and a productive type of intensive agriculture. Before the war, agricultural development had benefited from large public investment in irrigation, research and infrastructure, and from protection at the outer borders of the Japanese Empire. After the war, farmers benefited from the large-scale redistribution of wealth resulting from land reforms, and from massive US aid (Francks et al. 1999).

The cases of the white settler countries around 1900 and New Zealand today are a reminder of the current situations of Cairns Group developing countries like Brazil. The cases of Denmark and The Netherlands around 1900, or Taiwan and South Korea after WWII, are a reminder of some favoured areas in developing countries that are close to urban or export markets and that have become pockets of agricultural intensification (the success story on Machakos District near Nairobi of Tiffen et al. 1994 comes to mind). The bottom line is that they were distinctly intra-marginal producers in the global farm economy. To throw some light on the wider evolutionary processes in today's least developed countries, however, it might be more relevant to consider a case where agriculture was closer to the margin but where the government nevertheless kept to free trade. Such a case is Britain between 1880 and 1930.

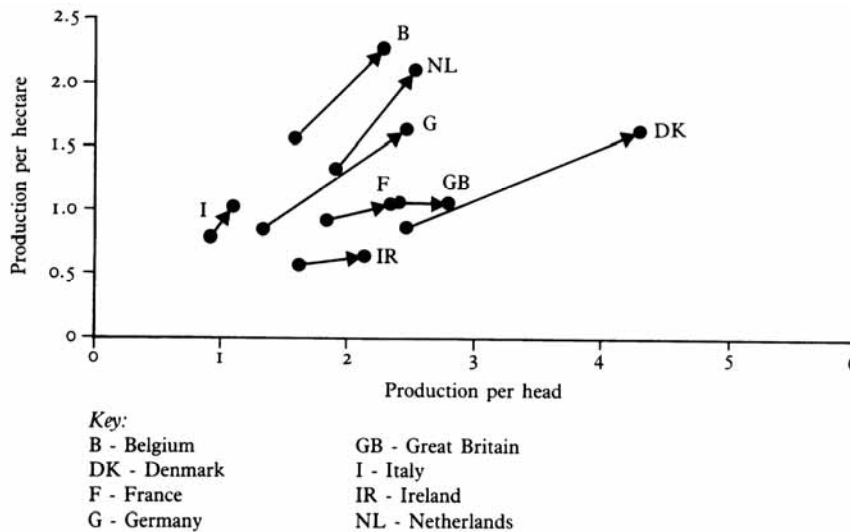
#### *Agricultural free trade and stagnation in Britain between 1880 and 1930*

When international agricultural prices started to fall around 1880, Britain possessed the most technically advanced agriculture in the world. However, strong industrial competition for labour had raised farm wages, and Britain no longer had a comparative advantage in farming. In spite of this, until 1930, a protectionist response was blocked by commercial interests that wanted to maintain the liberal international system and by trade unions that wanted cheap food. According to standard economic theory, free market adjustment might have involved a strong reduction or even total elimination of agriculture. However, if a farm sector managed to survive to some extent, it would see a recovery of profits and productivity growth. In reality, farm profits remained low and productivity stagnated throughout this period. This was not due to a technological ceiling, but to widespread neglect and a drop in investment in new capital goods (see Koning 1994 and literature referred to). Efforts to maintain soil fertility decreased. Two million acres of arable land were turned into grass, but much of it was badly managed. The maintenance of buildings and equipment was neglected, and drainage activity came to a halt. Although farmers bought self-binders to cut down on labour requirements,

the demand for more heavy machinery plummeted and Britain's leading position in steam plough construction was lost to Germany and the United States. Several studies agree that throughout this half century, productivity in agriculture stagnated (Koning 1994; O'Gráda 1981; Wade 1981; Van Zanden 1991). Figure 2 shows that by the eve of WWI, British agriculture had fallen far behind the European productivity frontier it had been part of, together with Denmark, The Netherlands and Belgium.

*Did agricultural protection hamper pro-poor growth?*

Besides asserting that free-market adjustment of agriculture is possible in spite of low world-market prices, the standard view claims that agricultural protection would hamper pro-poor growth. This makes it interesting to consider the cases where rapid economic growth coincided with high agricultural protection. The most important of these are Germany between 1880 and WWI, and South Korea and Taiwan from the 1960s.



Source: Van Zanden (1991).

**Figure 2.** The growth of agricultural productivity per head and per hectare in eight countries of Western Europe, 1870-1910 (in wheat units and 1870 prices)

*Germany between 1880 and WWI.* While Britain continued with agricultural free trade until 1930, Germany was the textbook case of protection. When international agricultural prices declined in the 1880s, it raised its farm tariffs sharply. Agricultural protection was moderated in the 1890s by liberal trade treaties, but restored at a high level after the turn of the century.

This policy has been blamed for many problems. While benefiting large grain producers, it would have hampered farm progress and economic growth while raising food prices for poor consumers and feed prices for small livestock farmers (e.g. Gerschenkron 1966; Kempter 1985; Puhle 1986; Rosenberg 1976; Schneider 1987; Tracy 1989). However, economic historians have since revised this view. Although in a static analysis, agricultural protection caused deadweight losses and reduced the buying power of non-farm groups, a dynamic approach shows up matters in a different light. The growth rate of productivity in agriculture was high for European standards (Helling 1966; Koning 1994; Perkins 1981; Van Zanden 1991). From its position far behind the European agricultural productivity frontier, Germany moved to a position close to it (see Figure 2). Even though the poor performance of protectionist France and Italy indicates that protection alone did not guarantee progress, the contrast between the rapid increase in farm productivity in protectionist Germany and its stagnation in free-trading Britain is remarkable. It suggests that more favourable prices may have facilitated investment and innovation in the former country. Of course, the benefits of higher output prices will at least partly have been capitalized in land prices. However, this did not remove the wealth effect for the majority of farmers who already owned their land or had inherited it on conditions that favoured successors. Given the limited mobility of many farmers, the relation of output prices to variable costs was more important than the relation of these prices to total costs. Besides, higher land prices strengthened the ability of these farmers to secure loans.

The idea that agricultural protection would have retarded overall economic growth is unconvincing. Germany was the fastest grower in Europe, and not because it was an advanced industrial country that could 'bear the burden'. When the policy was introduced in the 1880s, the heavy chemical and electrical industries were still in their infancy. Both Webb (1978) and Bairoch (1976) conclude that farm protection accelerated overall growth, allocational distortions being offset by a moderation of emigration and an increase in effective demand<sup>4</sup>.

The effect of agricultural protection on the poor has provoked considerable debate. Older assessments have strongly overrated the effect on the costs of living of working class households (Hentschel 1978). Moreover, because agriculture was relatively labour-intensive, agricultural protection will have increased the total demand for labour. This may well have pushed up the real wages of the working poor (Stolper-Samuelson theorem). The contention that agricultural protection hurt small livestock producers has also been refuted (Henning 1987; Moeller 1981; Webb 1982). Livestock production was likewise protected, partly by import restrictions that were justified as sanitary measures. Grain tariffs did not drive up feed costs, because livestock was fed with fodder produced on the farm and with feedstuffs such as oil cakes, which were imported duty-free. Besides, most small farmers were net sellers of grain, and therefore also benefited from grain tariffs.

#### *South Korea and Taiwan after the 1960s*

The discussion on agricultural protection in South Korea and Taiwan sounds like a repeat of that on Germany before WWI. Again, the policy is blamed for



complicating adjustment of farming structures, retarding economic growth, and harming poor consumers (e.g. Anderson et al. 1986; Beghin et al. 2003; Diao et al. 2002a; 2002b; Van Wijnbergen 1987; Vincent 1989). These contentions are mainly based on partial or general equilibrium model studies. However, the 'welfare losses' indicated by such studies do not allow any strong statements to be made on how poverty or GDP would have evolved over time had farmers not been protected. Indeed, it is quite conceivable that agricultural protection stimulated rather than hampered pro-poor growth. In pre-war Japan, rising rural incomes had been a crucial source of an industrialization that started with the production of simple goods for domestic consumption (Rosovsky and Ohkawa 1961; Ohkawa and Shinohara 1979), and this pattern was repeated in South Korea and Taiwan after WWII (Francks et al. 1999; Park and Johnston 1995). Until the mid-1950s, farmers benefited from American aid, large-scale redistribution of wealth by land reform, and high post-war world market prices that were continued through the Korean War. It allowed increases in farm production and farm incomes that became the driving force behind the development of import substitution industries in this phase. After the Korean War, agricultural prices declined and agricultural development stagnated, entailing a slowdown of industrial growth. This was one of the factors that prompted the governments of both countries to stimulate industrial exports, but the recovery of industrial growth in the 1960s owed as much to a new rise in rural incomes. In Taiwan, this was mainly due to the efficient investment of large amounts of American aid into agricultural infrastructure, research and extension under the aegis of the Sino-American Joint Commission on Rural Reconstruction (Thorbecke 1979). In South Korea, it was also due to the introduction of fertilizer subsidies, import protection, and a strong increase in rice prices paid by the government. This caused a significant improvement of the terms of trade for farmers, even if in real terms protection remained negative because of the overvaluation of the currency (Moon and Kang 1991). When, around 1970, agricultural growth slowed down again, both countries provided positive and increasing protection to their farmers. This was followed by new increases in farm output and incomes, and may well have caused the continuation of agriculture's contribution to the domestic demand pull for industrial growth, even if the relative importance of this contribution declined (also cf. Timmer 1995). As in Germany, it is unlikely that rapid growth was possible only because an advanced industrialization made it possible to bear the burden: especially in South Korea, agricultural protection started when heavy industry was still in its infancy (Francks et al. 1999). Finally, it would be exaggerating to state that protection has frozen agricultural structures. Especially Taiwan is a paragon of successful agricultural diversification. It is true that protection started in rice and, in South Korea, was coupled to government efforts to introduce a new high-yielding rice variety. However, the policy was soon extended to other farm products. Only feeds were less protected, to moderate the costs for domestic livestock producers.

The discussion on agricultural protection is related to that on industrial trade policies. Whereas advocates of 'industrial policy' point to the importance of infant industry protection in the successful industrialization of the two countries (Amsden 1989; Rodrik 1994; Wade 1990), proponents of open-market regimes emphasize the encouragement of industrial exports that facilitated the acquisition of modern

technology and skills (Berg and Krueger 2003; World Bank 1993)<sup>5</sup>. However, the precise relations between trade policies, exports and growth are far from clear (Edwards 1993). This leaves room for the hypothesis that agricultural protection, infant-industry protection and the encouragement of industrial exports have reinforced each other rather than conflicting with each other. Agricultural protection maintained the farm contribution to the domestic demand pull for industrialization. Domestic protection of industry prevented this effect from leaking away to other countries through increases in manufactured imports. Both together stimulated industrial growth, which facilitated the cross-subsidization of industrial exports as long as this was still needed to conquer the international markets. In this way, agricultural (and industrial) protection may well have contributed to the advantages of industrial exports that proponents of pro-market policies have emphasized.

#### POLICY FAILURE OR MARKET FAILURE?

For neoclassical economists, agricultural protection is a mere policy failure. They are convinced that agricultural protection *per se* causes a welfare loss. In their view, economic growth is only related to agricultural protection because higher per capita incomes allow bearing the burden (Anderson et al. 1986). According to these economists, the ubiquity of agricultural protection in developed countries would only be based on the superior political power of agrarian pressure groups – first landed elites, then agribusiness lobbies (Tracy 1989). Referring to Olson's logic of collective action, they explain that the decrease in the numbers of farmers has paradoxically strengthened their ability to organize themselves so as to enforce their interests (Anderson et al. 1986; Schmitt 1984; Senior Nello 1984). Consumers and tax payers, conversely, would be too numerous and heterogeneous to organize countervailing power.

This reasoning is not quite plausible. Two million farmers in the US and seven million in the EU remain too high a number to remove the free rider problem<sup>6</sup>. Moreover, other citizens are not entirely helpless in the face of the agricultural lobbies. In their capacity as workers, employers or voters, they forcefully promote their own interests, setting limits to the extent and government cost of agricultural protection. Besides, as Timmer (1995) has also remarked, nothing in the studies that postulate a causal direction from economic growth to agricultural protection (including diachronic cross-country regressions like Honma and Hayami 1986) contradicts a reverse causation.

Neoclassical economists stick to their explanation because they deny any special problem of low incomes in agriculture. They are convinced that the invisible hand of the market works, by and large, towards an equalization of the earnings of different sectors (Gardner 1992). Conversely, their classical predecessors highlighted the divergence between farm and non-farm earnings (Ricardo 1817). A scarcity of fertilizer combined with high transport costs that prohibited long-distance shipping of staple foods caused population growth to raise the price of farm products, thereby creating a rent for the owners of intra-marginal lands. From the late 19th century, these constraints were broken, but rather than equalizing farm and non-farm

incomes, it entailed a reverse divergence. While wages started to increase, the new abundance caused a decline in agricultural prices. In the neoclassical model, the resulting squeeze on farm profits should have prompted a corrective shake-out of small farms and an outflow of farm workers. In reality, limited economies of scale and inherent labour market imperfections weakened these reactions<sup>7</sup>. This was reinforced by an effect that the changes in prices had on farm structures. Rising wages reinforced the advantage that small farms derived from using family labour, while the profit squeeze hindered investment in large farms, thereby eroding their technical advantage. Throughout the western world, large farms declined and family farms increased, increasing the share of self-employed workers who were prone to psychological adaptation to low incomes (Haagsma and Koning 2005). Rather than leaving a depressed sector, as neoclassical theory would predict, many farmers tightened their belts and increased their labour effort in an attempt to defend their incomes by raising their production. Industrial fertilizer, high-yielding seeds, and increased access to markets boosted the influence that these individual responses had on the global supply.

The upshot was the unremitting expansion of agricultural productive capacity that Ray and Harwood describe elsewhere in this volume. Technical progress, land development and reclamation became a treadmill that generated overproduction (see also Cochrane 1958). A balance between the growth in supply and in demand was only achieved when the treadmill squeezed its own fuel supply by reducing farm profits, and thereby investment. As a consequence, free market adjustment did not lead to the efficient equilibrium of neoclassical theory, but rather to a chronic semi-depression in agriculture. This explains the protracted stagnation of productivity growth in agriculture in Britain. Agricultural protection corrected this market failure, at least at the level of national economies. This was what allowed agriculture to increase its productivity and to play its role as a booster of growth in Germany, Korea and Taiwan.

To be sure, protection was not enough to achieve this result. Without the large-scale land reform and the huge investment in infrastructure and in agricultural education and research in these countries, farmers would not have been able to modernize their production to such an extent. (This is illustrated by the sluggish growth of farm productivity in protectionist Italy and France in Figure 2, whose experience may be repeating itself in cases like that of the Philippines, which Dawe describes elsewhere in this volume.) Moreover, agricultural protection caused new distortions in international agricultural markets, including the dumping of surpluses. The only way to prevent these distortions without sacrificing farm progress itself was adequate management of supply. This was envisaged by many proposals and quite some legislation between the 1930s and the 1980s, including the farm laws of the American New Deal, articles 11 and 16 of the GATT, and the production quotas for milk and other products that still exist in the EU and Canada (see, e.g. Benedict 1953; Cochrane and Ryan 1976; Henningson Jr. 1981). However, national egoism and agribusiness expansionism have thwarted most of these attempts. Rather than agricultural protection *per se*, this failure to couple protection to supply management is the real policy failure.

## WHAT DOES IT MEAN FOR POOR COUNTRIES?

Around 1900, Britain could afford to sacrifice its agriculture (Koning 1994). As the first 'workplace of the world', its industry had a strong export position. It was less dependent on the home market than the emergent industries of other countries. Also, the share of agriculture in the economy had decreased far more than elsewhere. It eased the absorption of agricultural workers and moderated the impact that low farm earnings had on domestic demand.

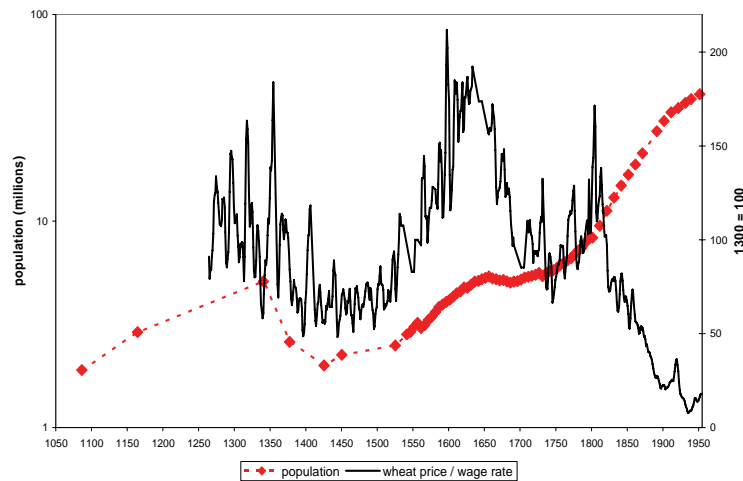
In least developed countries like those in Sub-Saharan Africa today, agriculture is stagnating while such mitigating conditions are absent. The effect on economic development is crippling. Poor farmers make poor markets for industry and services. By the same token, the domestic training school for competitive export industries is underdeveloped (cf. Porter 1990). Agrarian malaise leads to a mass exodus from agriculture, but because robust non-agricultural growth is lacking this leads to a proliferation of marginal activities and a jostling for jobs in the public sector.

Neoclassical development economists believe that agricultural stagnation is caused by domestic over-taxation of farmers (Bates 1981; World Bank 1981) or geographic disadvantage (UN Millennium Project 2005). Many blame high transaction costs, weak institutions and bad governance (e.g. Collier and Gunning 1999; Ng and Yeats 1998). They fail to see that these problems are largely a reinforcing feedback effect of stagnation itself. Lack of gainful employment makes people seek refuge in clientelist networks that fight over the distribution of scarce resources. It creates a political market based on the doling out of public sector jobs, which leads to inefficient government services and the undermining of democracy.

Where then should the deeper causes of the stagnation in these countries be sought? Many least developed economies are dual equilibrium systems. When faced with adverse conditions, they fall into a complex poverty trap. The low chain investment trap, soil degradation trap, and macro-economic trap indicated in the papers by Dorward and Kydd, Savadogo, and Ostensson elsewhere in this volume are elements of this. One might also add a low social capital trap: high individual discount rates make people opt for non-cooperative strategies that promise a higher short-term pay-out but that start a vicious spiral of conflict and distrust that hampers productive cooperation in the future (cf. Ostrom 1998).

Pre-industrial European societies were also dual equilibrium systems. 'Agricultural revolutions' alternated with periods when soil degradation and stagnation led to Malthusian crisis (Abel 1978; Grigg 1980; Slicher van Bath 1963). In the former, population growth induced a moderate rise in agricultural prices that stimulated investment and innovation for sustainable agricultural intensification. The resulting growth fuelled the demand for manufactures and services, and strengthened the fiscal base of the state. This upward movement only halted when the techno-institutional capabilities for further adjustments in agriculture were exhausted, so that continued population growth sent agricultural prices skyrocketing. The result was a squeeze on the demand for non-farm goods, making poor farmers over-exploit their plots in an effort to minimize their dependence on food markets, and pushing society into a downward spiral of soil degradation, food insecurity and social disruption, finally ending in demographic stagnation or collapse.

This pre-industrial dynamic was hinged on the endogenous relation between population and agricultural prices (see Figure 3). However, the agricultural treadmill in the world's main farming areas has broken this nexus. It depresses the prices of agricultural products also in regions it bypasses – the more so when industrial countries allow their farm policies to distort world markets. As a consequence, population growth in today's low-income economies fails to provide the price incentives that drove agricultural revolutions in pre-industrial societies, pushing these economies into the poverty trap even though the technical possibilities for sustainable agricultural intensification are far from depleted. Whereas pre-industrial societies fell into crisis when an agricultural revolution was exhausted, in today's low-income economies a similar revolution is nipped in the bud.



Sources: Population: 1086-1540, Hatcher (1977) and estimates by various authors mentioned in Coleman and Salt (1992, (1992, Table 1.1); 1541-1800, Wrigley et al. (1997); 1801-1954, HMSO (1993). Wheat prices: 1264-1315, Rogers (1866); 1316-1770, Beveridge (1929); 1771-1954, average gazette prices in Mitchell (1990, pp. 756-757). Wages: building wage rates in Phelps Brown and Hopkins (1956).

**Figure 3.** Population and ratio between wheat price and wage rate in England, 1086-1954 (population in millions; wheat price / wage ratio as 5-year moving average, 1300 = 100)

A common objection to this argument is that high internal transport costs limit the influence of international prices on the domestic prices of food crops. However, high transport costs are partly an endogenous factor. Low world market prices have favoured investment in infrastructure that facilitates import rather than internal transport, so that 'price bands' in more remote areas are larger than they otherwise would have been. Indeed, anecdotal evidence suggests that world market prices have had a considerable influence on the evolution of low-income economies. During those decades of the 20th century when international prices were more favourable, agriculture in Sub-Saharan Africa showed considerable dynamism. Conversely,

decades with low prices were coupled to stagnation and soil degradation (Koning 2002; Koning and Smaling 2005; Munro 1976). More research on this issue is urgently needed.

How could low-income countries stop themselves from being pushed into a poverty trap by low prices? A first condition is a strong improvement in infrastructure, farm research and the marketing of farm products. Indeed, the increase in public investment needed for this may require generous debt relief and increases in development aid, as Jeffrey Sachs and others are asserting (UN Millennium Project 2005). However, if price ratios remain too unfavourable to allow farmers to invest, more roads and research may bear little fruit and international transfers of means may leak away, as so much development aid has done in the past. In many situations, therefore, supportive price policies may be needed. Many low-income countries in Sub-Saharan Africa have become net importers of food crops, so they could simply protect their farmers through protective tariffs<sup>8</sup>. Ideally, these should be applied at the outer border of regional custom unions with internal free trade to balance national surpluses and shortages, and to allow specialization according to comparative advantage. The tariff revenue could be used for infrastructural projects that could also be used as employment projects to compensate the increased cost of living for poor consumers. Of course, the tariffs should not be too high.

Isn't agricultural protection a regressive taxation of poor consumers? In the first round, yes – like it was in Germany, Japan, Korea and Taiwan, and like the price rises that drove agricultural revolutions in pre-industrial societies also raised the price of bread for the poor. However, if higher prices were to allow investment that raises the demand for labour in and outside agriculture, the net effect for poor consumers may still be positive.

Doesn't agricultural protection raise the price of labour, food being a wage good? To some extent, yes – like it did in the above-mentioned cases, where moderate rises in food prices nevertheless led to effects that fuelled non-farm growth. If protection were to allow agriculture to play its role as an engine of growth, the effects on market demand, skills and social capital may compensate the effect on wages. Empirical research should indicate the size of the tariffs that would achieve an adequate balance between agricultural growth and wage costs.

Doesn't protection provoke the unproductive use of resources for rent seeking? No – because small farmers are too remote from political power to make powerful agricultural lobbies to be feared in poor countries. Doesn't the experience with import substitution industries show that protection breeds inefficiency? No – for the atomistic structure of agriculture ensures more competition between producers. Higher prices do not lead to less but to more efficiency: more innovation, better fertilization of land, and better use of labour – certainly as long as the development of manufacturing remains disappointing (Koning et al. 2001; Reardon et al. 1997; Reardon et al. 1999).

Tariff protection in low-income countries is no panacea. The farm policies of developed countries should also be reformed, as Badiane rightly remarks in this volume. The current substitution of direct payments for price support in the US and the EU is just a shift from one form of nationalistic protectionism to another. In the

light of the above analysis, the solution is not multilateral liberalization, but multilateral regulation of the export and import volumes of developed and upper-middle-income countries. However, neither is likely to materialize in the medium term, which makes tariff protection in least developed countries all the more urgent. For this reason, the time has come to lift the taboo on this issue. Empirical research of the effects of price policies should take the place of ideology-based models. Poverty reduction and sustainable growth are too important to be sacrificed to the dogmas of economists.

#### NOTES

- <sup>1</sup> See Jongeneel and Koning (1999), who show that the hypothetical compensation principle that underlies standard welfare economic models cannot reveal actual welfare gains.
- <sup>2</sup> Such a move, which also improved price ratios for farmers, heralded the shift to agricultural protectionism in various countries. There are signs that Chile and Vietnam are following suit (see Hachette and Del Pilar Rozas 1993; Nguyen and Grote 2004).
- <sup>3</sup> In the United States, farm tariffs were raised again after the Civil War, but the effective level of agricultural protection remained modest.
- <sup>4</sup> Bairoch (1976) reached similar conclusions for many other West-European countries. In France, his analysis has been criticized for being global and imprecise. Nevertheless, a critic like Asselain (1985) does not deny that agricultural free trade contributed to the deceleration of growth in that country in the 1870s-80s, and admits that agricultural protection may have been a factor in the recovery in the 1890s.
- <sup>5</sup> These issues are less relevant for agriculture, where infant industry problems were less important and exports less important and less knowledge-intensive.
- <sup>6</sup> Olson's own remarks on the subject are much more nuanced. He does not speak of farmers having superior power, but of modern communication allowing farmers to catch up finally with urban groups that have long been influential (Olson 1985).
- <sup>7</sup> Such imperfections included efficiency wages that introduced entry barriers to industrial labour markets (Akerlof and Yellen 1986) and periodic industrial mass unemployment that locked workers into farming, who were subsequently fixed by the decline in opportunity costs over their lifetime (cf. Johnson and Quance 1972).
- <sup>8</sup> A more complex situation would arise if custom unions were to move from being net importers of food crops into net exporters of food crops. Least developed countries have no means to support their farmers through export subsidies or direct payments as developed countries do. The best solution would be a multilateral system of managed trade, in which developed countries (and in a later phase, middle-income countries) would restrict their exports and increase their imports to make room for LDC exports while improving the international prices of agricultural products. Such a system could simply be introduced by imposing maximum quotas on the exports (imports) of developed countries and minimum quotas on imports. These quotas should start from a historical base and could be made tradable between countries to increase flexibility. Of course, although it would technically be quite feasible, the political probability of such a system is low in the medium term. In its absence, least developed countries can only fall back on trade boards with monopoly powers (and on unilateral cartel arrangements for tropical export crops, but this is a difficult road to travel). However, all this is very much for the long term, since most lower-income countries will not become exporters of food crops in the near future.

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