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*Recovery from Depression: Australia in an Argentine
Mirror: 1895-1913*

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**RECOVERY FROM DEPRESSION:
AUSTRALIA IN AN ARGENTINE MIRROR 1895-1913¹**

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The recovery from the 1890s depression in Australia was prolonged, and economic growth 1895-1913 was below that in the comparable settler economies of Argentina and Canada. Why? Australia's hesitant initial recovery is typically attributed to the imbalances in the economy resulting from the preceding boom, and its further delay to severe drought. Drawing on Argentine experience, it is suggested that additional factors need to be considered. Unlike Argentina, the unwillingness or inability of Australian governments to reschedule foreign debt or devalue the exchange rate exacerbated the slump. And the era of low-cost pioneer farming ended earlier than in Argentina (or Canada).

INTRODUCTION

In the 1890s a major international debt crisis originated in Argentina then spread to Australia, where similar unsustainable boom conditions had prevailed. The recovery in these two settler economies was, however, markedly different, with Argentina experiencing a slump in economic activity of lesser severity and shorter duration. From the mid-1890s, the recovery in Argentina ushered in a period of remarkable economic expansion that continued until 1913. Recovery in Australia, in contrast, was hesitant until 1904, then accelerated, but not to the rate sustained in Argentina. This paper asks why this contrast occurred, and why Australia failed over the two decades preceding the First World War to grow at rates observed not just in Argentina but also in Canada. For this was a period of buoyant conditions for exporters of natural resource intensive products and importers of labour and capital. Indeed, the years between 1895 and 1913 constitute perhaps the only period in its history during which the Australian economy failed to benefit strongly from a period of sustained prosperity in the world economy.

¹ An earlier version of this paper benefited from the comments of Barry Eichengreen, Kris Mitchener, Ken Sokoloff, Alan Taylor and participants in seminars at Berkeley, Flinders, La Trobe, Northwestern, Stanford and Vanderbilt and at the All-University of California Economic History Group conference at UCLA. The excellent research assistance of Erwin Cho, Greg Paterson and Chad Shirley is gratefully acknowledged, as is financial support from the Australian Research Council.

There are additional reasons for the significance of this topic. First, the literature on the 1890s depression in Australia has concentrated on the etiology of the slump phase rather than the unusually slow recovery. Indeed, the major study of the depression ends its analysis in 1897 just as the first signs of recovery appear². A second justification for this inquiry is that no study has compared the recoveries from the depressions of the 1890s in Argentina and Australia, although their economic histories are frequently compared in relation to other periods and themes.³

COMPARATIVE EVIDENCE

The economic crisis of the 1890s ushered in a long period of poor economic performance in Australia. Not until the 1940s was there a return to the per capita growth rates recorded in the late nineteenth century. What is unusual about the Australian experience is not that interwar growth was below that previously achieved, as this was true for all industrialized economies, but that the interruption dates from the 1890s. Real incomes at the outbreak of the First World War were only 14 per cent above their pre-depression peak in 1889.⁴ Thus for Australia the end of the long economic boom of the nineteenth century occurred in 1890 rather than 1914.

In this paper I adopt a comparative perspective in examining this anomalous period in Australia's economic history. International economic conditions after 1895 were especially favourable to the settler economies, and the experience of two of these, Argentina and Canada, provides an appropriate benchmark against which to appraise the much poorer performance of Australia. Like Australia, Argentina and Canada were natural resource rich, attracted substantial inflows of European labour and capital, and were heavily reliant on commodity exports for their development. Yet the experience of Australia between the upturn in the international economy after 1895 and 1913 was markedly different from that of the other two. As indicated in Table 1, the growth rates of both population and of aggregate GDP were higher in Argentina and Canada than in

² Boehm, *Prosperity*. An explicit treatment of the early phase of recovery in Victoria is that by Sinclair, *Economic Recovery*.

³ The recovery in Australia from the depression of the 1930s has been compared with that in a number of other economies, including Argentina and Canada (Gregory and Butlin, *Recovery*; Twomey, *Economic fluctuations*). Comparative studies of long-run economic growth in Argentina and Australia include those by Dingle and Merrett, *Argentina*; Duncan and Fogarty, *Australia*.

⁴ Based on real GDP per capita as reported in McLean and Pincus, *Living standards*.

Australia.⁵ Inspection of the sub-periods indicate that population growth was always lowest in Australia, as was aggregate GDP growth until after 1905. By 1905 Australian GDP was less than 20 per cent above its 1890 level, whereas Canada had achieved this in 1897 and Argentina in the following year. In Figure 1, the trend in aggregate GDP in all three countries from 1890 to 1913 shows clearly how Australia fell behind the other two in the early 1890s, and never caught up.

[TABLE 1 ABOUT HERE]

[FIGURE 1 ABOUT HERE]

Although a detailed comparison with both Argentina and Canada would be useful in an assessment of the Australian case, this paper focuses primarily on the similarities and contrasts in the Argentine and Australian economies. Whereas Argentine economic performance is generally compared unfavourably with that of Australia over the very long run, in the quarter century prior to 1914 it is Australia that performs relatively unimpressively. Considering the importance of population growth as a social objective in Australia, it is remarkable that whereas in 1890 the populations of the two countries were very similar (Australia 3.2 million and Argentina 3.4 million), by 1913 the population of Argentina had increased by 4.3 million (to 7.7 million) compared to an increase of just 1.7 million (to 4.9 million) in Australia. Over the same period there was rapid convergence by Argentina on Australia's higher level of GDP per capita – from 45 per cent in 1890 to 69 per cent by 1913.⁶

THE SYMMETRY HYPOTHESIS

There has been ample recognition in the literature that the Australian depression was both deep and prolonged.⁷ The explanations principally focus around the excesses of the preceding boom interacting with unfavourable external economic conditions. The former are variously enumerated as the degree of speculation in asset markets (including pastoral and urban land); the seriousness of the structural weaknesses in the unregulated

⁵ Alternative recent estimates of Australian GDP (Haig, New estimates) show a less severe decline in the early 1890s, but little difference in growth after 1895 from that reported in Table 1 and Figure 1. And it is this recovery period which is the principal focus of attention here. Between 1896 and 1911 (the end-year chosen because of a break in the base year of the Haig constant price series), real GDP rises by 77 per cent in the estimates used in this paper; the Haig estimates indicate a somewhat slower recovery of 61 per cent.

⁶ The GDP per capita estimates are in 1990 Geary-Khamis dollars, and reported by Maddison, *Monitoring*, pp.194 and 202. A very similar convergence in real wages occurs between the two countries: Argentine wages were 44 per cent of Australian in 1890 and 72 per cent in 1913. See Williamson, *Evolution*, Table A2.1.

⁷ The major interpretations of this period are provided by Boehm, *Prosperity*; Butlin, *Investment*; Hall, *Stock*.

financial sector; and the weakening of investment criteria in both the public and private sectors. The latter relate to a decline in the terms of trade, and the vulnerability of an economy that relied so heavily on continued foreign investment to a reduction in – or cessation of – capital inflow. As the preceding boom was spectacular, there is nothing surprising (in this view) about the ensuing slump being both severe and persistent. Hence a recurring theme in the literature is the size of the problem to be worked off – so great were the structural and financial difficulties that an early return to prosperity was not to be anticipated. Butlin refers to ‘structural imbalances’ and ‘disequilibrium’ in the economy, while Sinclair refers repeatedly to the need to work off the ‘excess capacity’ resulting from over-investment during the boom.⁸ And Boehm concludes his study of the depression by noting that ‘The recovery which began in 1895 had been severely checked, and its completion suspended, by the great drought of 1895 to 1903. ... But the major need had been for a period of monetary and real adjustments in the Australian economy to bring about the reduction or absorption of excess capacity and the liquidation of weak companies’.⁹

Before questioning the persuasiveness of what might be called this ‘symmetry’ hypothesis, some amplification is necessary of aspects of the depression relevant to later discussion. During the 1880s a major boom in land and property prices acquired a largely speculative character. The combination of declining returns in the pastoral industry, reliance on foreign capital inflow, property speculation, and a fragile banking structure provided a volatile mix. The Barings crisis in London, with its origins in Argentina, ignited this combustible material. British investors negatively reassessed the potential for further investment in the Australian economy. Heavily indebted woolgrowers faced falling prices and mounting evidence that they had advanced too far into the arid interior of the continent.¹⁰ Financial institutions were placed under extreme pressure as soon as sentiment turned with respect to rural and urban asset prices. The crisis in this sector occurred in 1893 with the failure or temporary suspension of many financial institutions.¹¹ It was not a quick catharsis: some reconstructed banks only survived until new pressures later in the decade brought them down.

Colonial government finances featured prominently in both the expansion of the pre-1890 period and the delayed recovery. The colonial governments were primarily concerned with achieving rapid development and settlement of their regions, and relied

⁸ Butlin, *Investment*, pp.407-23; Sinclair, *Economic recovery*, Chapter 1.

⁹ Bohm, *Prosperity*, pp.325-26.

¹⁰ Butlin, *Investment*, pp.166-180

¹¹ See Merrett, *Australian*.

heavily on immigration and funds raised on the London market to achieve this. To a certain extent development and export prospects justified this growth strategy. However, the nature of the governments' direct participation made the public finances vulnerable to any interruption to the process. Public investment was heavily oriented towards railways and urban infrastructure. And because public enterprises dominated the investment in and operation of the transport and other utilities, the debt-servicing burden was borne by taxpayers. Short of default on their overseas debts, colonial governments had no choice but to drastically reduce government expenditure in order to service their loans, but they thereby contributed to deflationary pressures in the economy.

According to this standard interpretation of the depression, economic recovery required major adjustments in the pastoral sector, banking, the urban property market, government finances, and household balance sheets. As none of these painful adjustments would be swift, it is not surprising in this view that the crisis of the early 1890s was severe, nor that an early and quick recovery did not materialise. However, an examination of Argentine experience during the same decade raises the possibility that a delayed and slow recovery should not be accepted as inevitable, and suggests an alternative perspective on the performance of the Australian economy both during the 1890s and thereafter.¹²

THE ARGENTINE COUNTER-EXAMPLE

The Argentine depression is often referred to as 'of 1890' or of 'the early 1890s', indicating that it was of relatively short duration. And 'crisis' is often used instead of depression, perhaps reflecting the political difficulties of the time, or because it was seen as largely financial in origin, for the proximate cause was the celebrated Barings collapse of 1890, with economic problems worsening the following year.¹³

¹² Butlin, *Some perspectives*, pp.281-82, briefly alludes to comparative experience: while 'the renewed rise in world primary product prices ... encouraged high boom conditions in such comparable areas as Canada and the Argentine, the early recovery experience in Australia was attenuated because of the scale of capacity established at the peak of 1889-91, the disruption of the financial system, the physical effects of overstocking in the pastoral industry and a long-term reduction in key areas in rainfall. ... After the drought, recovery was very rapid and the economy moved into boom conditions by 1909, activity remaining high until 1913.'

¹³ For accounts of the Argentine economy at this time see Ford, *Gold*, Chapter 8; Diaz Alejandro, *Essays*, Chapter, 1; Ferns, *Argentine*, Chapter 5; Marichal, *Century*, Chapter 6; Eichengreen, *Capital*, Chapter 7; della Paolera and Taylor, *Straining*, Chapters 3 to 6. A recent survey that includes material relating to the 1890-1913 period is della Paolera and Taylor, *New Economic*.

The boom preceding the crisis of 1890 shared several characteristics with the one occurring in Australia. These included an extension into new areas by the export-oriented rural industries (including wool-growing) facilitated by the construction of railways, and financed in part by the inflow of foreign capital primarily from Britain. High levels of immigration underpinned rapid population growth. By the late 1880s the land and railway booms had reached speculative proportions, inflation was rising, and there were serious problems in the banking sector. Falling export prices combined with the excessive rate of borrowing abroad led in 1890 to a crisis not only for the financial community but also the government. Its foreign debt servicing had soared to 60 per cent of export earnings.¹⁴ In the wake of the Barings collapse Argentina negotiated a rescheduling of its debts. Some improvement in economic conditions in 1892 was offset by a harvest failure in the next year - an event drawing attention to the role of climatic variability. The upturn in world prices beginning in 1895 heralded a return to prosperity: 'What remained of the depression had ebbed away by 1896'.¹⁵

From an Australian perspective, the most noticeable feature of the episode is the brief duration of the decline in aggregate economic activity (Figure 1). Real GDP declined dramatically in 1891 (by 11 per cent), but had recovered its 1890 level by 1893, and by the end of that decade was 25 per cent above the 1890 level. In contrast, Australian GDP initially fell somewhat more - 14 per cent - between its 1891 peak and 1893, but regained the pre-slump level only in 1898, four years longer than Argentina took to recover lost output levels, and exceeded that peak by 25 per cent only in 1906, hence taking six years more than did Argentina to reach the same benchmark. This faster initial recovery from the slump is surprising, as the indicators suggest the magnitude of the economic crisis in Argentina in the early 1890s was, if anything, greater than that faced by Australia. For example, the foreign debt-servicing burden of 60 per cent was much greater than in Australia (40 per cent in 1890).¹⁶ Argentina had already abandoned the gold standard. Its current account deficit by the end of the 1880s appears to have been far above the 11 per cent of GDP attained by Australia.¹⁷ And political instability in the early 1890s adds to the impression that the crisis was more serious than in Australia. But of the slumps that followed, the one in Argentina was less severe. And several explanations are offered in the literature for the relative brevity of the downturn in the Argentine economy.

¹⁴ Ford, *Argentina*, p. 141.

¹⁵ Rock, *The Argentine Economy*, p. 62.

¹⁶ Butlin, *Australian*, pp.411 and 413.

¹⁷ Taylor, *Argentina*, Table 9, p.178, reports a current account deficit to GDP ratio of over 15 per cent each year between 1886 and 1890.

Attenuating the impact of the financial crisis of 1890 on the real economy was the continued construction of railways previously contracted for and financed. Between 1890 and 1893 there was an increase of 4,707 kilometres of railway lines open, a 51 per cent expansion of the system. In Australia, by contrast, 2,083 kilometres were added to the railway system during the same years, an increase of only 14 per cent.¹⁸ This investment expenditure must have directly offset contractionary forces in the economy as well as working indirectly to assist the growth of exports. The extension of the railway network is thought to have stimulated the increase in grain cultivation, and a dramatic rise in wheat exports occurred in these years.¹⁹ Only in the mid-1890s did railway investment fall away sharply.

A second – and related – reason advanced for the shallow nature and short duration of the depression of the early nineties was the continued expansion of settlement and cultivation of the pampas.²⁰ The engine that had powered Argentine economic growth in the preceding decades had not run out of steam. As at 1890, a considerable area of land with agricultural potential was still to be brought into production. Also blunting the effect of the financial crisis, it is suggested, was the rapid diversification of the agricultural sector away from wool and hides into products that were to experience strong export demand - especially wheat and chilled beef.

Finally, a major reason for the milder depression experience in Argentina appears to have been the policies of the government, including the rescheduling of the foreign debt and the depreciation of the (paper) peso in the early 1890s. Argentina had left the gold standard in the early 1880s, thereafter operating a dual currency system.²¹ A gold peso was at most times approximately equal in value to the US dollar, and a domestic (paper) peso circulated at a discount. This 'gold premium' had already risen sharply in the late 1880s, and was 151 per cent on average in 1890. It rose to a peak of 287 per cent in 1891, remaining above 200 per cent until 1895. With the upturn in world prices, an improved financial situation, and with recovery underway, it then declined to a steady 127 per cent after the return to the gold standard. In Figure 2 this premium has been expressed as an index (the inverse of the premium to base 1882 = 100) to more clearly indicate the depreciation of the paper peso to the mid-1890s and its modest appreciation thereafter until the return to gold. Also shown in Figure 2 is a direct index

¹⁸ Argentine data are from Mitchell, *International Historical Statistics: The Americas*, p.546; Australian data are from Mitchell, *International Historical Statistics: Africa*, p.688.

¹⁹ Mitchell, *International Historical Statistics: The Americas*, p.523. By contrast, in Australia there was no trend increase in either wheat production or exports during the early 1890s: Vamplew, *Historical*, p.78 and Dunsdorfs, *Wheat-Growing*, p. 475.

²⁰ See Adelman, *Frontier*; Taylor, Peopling.

²¹ See della Paolera and Taylor, *Straining*.

of the exchange rate (in paper pesos per US dollar, also based to the period when Argentina was on the gold standard). In a small open economy, one effect of the exchange rate depreciation would be to cushion the real economy from the full consequences of the financial crisis.

[FIGURE 2 ABOUT HERE]

The foreign debt was rescheduled in two stages. In the wake of the Barings collapse the government negotiated a moratorium on some of the debt and raised fresh loans. The debt reconstruction proved insufficient, as after two years of continuing financial difficulties Argentina was again having trouble meeting its obligations, sparking a further round of debt re-negotiation. The second agreement with foreign creditors was worked out in 1893 and gave a substantial measure of relief to the national government thereby enabling it to take over the debt obligations of provincial governments who in turn had become heavily exposed during the preceding boom. The interest charges on a range of loans were lowered for a period of five years, and amortization repayments were delayed until 1901. This arrangement was successful in that the government was able to meet its obligations ahead of schedule, and so improved were macroeconomic conditions that the country went back onto gold in 1899 (though not at par), with large-scale British lending resuming shortly thereafter.

POLICY ROADS NOT TAKEN: DEVALUATION AND DEFAULT

Though part of the sterling currency area, and hence on the gold standard throughout, is there anything Australia might have done to provide some stimulus to exporters and producers of import-substitutes by creative fiddling with the currency as the Argentines did with their gold and paper pesos? And why did the Australians not follow the Argentine successes in 1891 and 1893 in obtaining debt-servicing relief in London by re-negotiations of their own?

There is very little discussion of these issues in the literature on Australia in the 1890s. The need to service the London debt seems to have been accepted as non-negotiable by those writing about the period as completely as it was by those responsible for policy at the time. Perhaps it is all a matter of kith and kin, as Lindert and Morton suggest in their survey of defaulting and non-defaulting governments since the middle of the nineteenth century: '[t]he imperial and Commonwealth tie presumably restrained Australian and Canadian temptation to avoid repayment'.²²

²² Lindert and Morton, *How sovereign*, p. 54.

With respect to the possibility of adjustment in the exchange rate, Pope seems alone in asking ‘why was there no switch in monetary regime in 1891?’ He advances three possible explanations. One he calls the ‘gold standard solidarity hypothesis’, pointing to the silence on the topic in parliaments, newspapers and even bank archives: ‘Australia was solidly part of Britain’s political and monetary system: to depart seems to have simply been unthinkable’.²³ A second he terms the ‘public choice view’, noting the sectional interests who stood to gain or lose by a decision to devalue. In theory, rural exporters and manufacturers of import substitutes would have benefited, but he sees no evidence that these groups canvassed the question. The third is termed the ‘institutional constraint’ hypothesis, referring to the absence in the 1890s of a federal government, federal bank, and federal note issue. The private banks issued their own notes (redeemable in sterling), hence ‘any dispute between commercial banks (British-based and locals) on devaluation against sterling might see the initiator’s vaults drained of gold as it devalued against Britain and other banks operating in Australia. The risks in the 1890s for an individual bank to devalue were great’.²⁴

The Argentine experience can be used to consider a thought experiment in which the Australian depression and recovery occurred under conditions in which the Australian pound was separated from sterling and devalued (or a dual currency created), and in which the colonies persuaded London to grant some debt relief. This exercise is speculative and does not take into account what may have been unconstitutional for British colonies with responsible government.²⁵ Also, free use is made of hindsight. Ex ante, the Australians may have thought that exchange rate fiddles, or threatening default, may have led to the arrival of the Royal Navy - as in Egypt in the 1880s. Or they may have thought the Argentines would pay a heavy price in the future for renegotiating their loans, and were Australia to follow suit the burden of the default premium on future borrowing was likely to be greater than the burden of the

²³ Pope, *Australia’s payments*, p. 207. Evidence that there occurred some discussion of the currency during this period is provided in Goodwin, *Economic Enquiry*, pp.197-209. However, it is conducted principally in the context of a debate over the merits of a bimetallic standard, not directly in terms of going off gold.

²⁴ Pope, *Australia’s payments*, pp.210-11. In thinking about ways in which the Australian banks may have been able to solve this co-ordination problem, it is instructive to note the institutional innovation devised in Argentina. A ‘Conversion Office’ (or currency board) was established there in 1890 to assist monetary policy during its economic and financial crisis: della Paolera and Taylor, *Straining*, pp.48-50.

²⁵ Perhaps we observe here an economic cost of the imperial connection. An independent – and united – Australia may have had the freedom in the 1890s to pursue more independent monetary and debt management policies in responding to its economic crisis.

deflationary policies necessary to avoid default. Ex post, the evidence is that the rewards to non-defaulters are, with some qualifications, hard to detect.²⁶

Devaluation

The Argentine currency arrangements were described earlier, and a measure of the extent of the depreciation shown in Figure 2. The magnitude of the decline in the paper peso is impressive. In a small export-oriented economy the stimulus to exporters' (farmers') incomes would have been considerable. Since the depreciation in the early 1890s coincided with a period of falling world commodity prices, the principal effect would have been to slow the decline in farm incomes (measured in paper pesos). Not only would these higher incomes directly offset the recessionary trends that followed the financial crises, but the more favourable prices farmers received would have encouraged a continued expansion in wheat production, consistent with the rise in wheat exports in these same years.²⁷ The depreciation, though raising the cost (in terms of paper pesos) of servicing the external debt, would also work to discourage imports and encourage domestic production of import substitutes. These stimulatory effects ended in mid-decade with the decline in the gold premium, and may partly account for the pause in wheat exports at that time (though there was also a pause in railway construction). The upturn in international commodity prices from 1896 then operated to offset the appreciation of the paper peso prior to the restoration of the gold standard in 1899, pressure for restoration coming partly from farmers who saw the dual currency system as denying them the full benefits of rising world prices.

The Australian terms of trade follow a pattern similar to that for Argentina, declining during the early 1890s, rebounding thereafter.²⁸ Thus a devaluation of the Australian currency (somehow devised) in the early years of the decade would, as in Argentina, have helped maintain farmers' incomes. The only non-farm export commodity of significance was gold, and gold producers were already receiving higher

²⁶ See Eichengreen, Historical.

²⁷ Fishlow, Lessons of the 1890s, p.39, says the export expansion which occurred was not a direct result of the exchange rate decline, but that the latter served to offset the decline in world commodity prices, thus muting the deflationary effect of the crisis.

²⁸ The decline is somewhat greater in Australia, but the rebound after the mid-1890s is correspondingly greater there. The terms of trade estimates for Australia on which these observations are based are from Bambrick, Australia's long-run. I am grateful to Jeffrey Williamson for granting access to unpublished Argentine terms of trade estimates in his 'Comparative History Database', Series ToT3.

'real' prices in the early 1890s.²⁹ With a devaluation of the currency the expansion in gold production in the 1890s presumably would have been greater.

Exports represented a significant share of Australian GDP at this time, rising in the first half of the 1890s from 20 to 28 per cent (the result of a decline in GDP and little change in export receipts). Across the decade (1891 to 1900) the average ratio was 25 per cent. A quite modest downward adjustment to the exchange rate could have had significant first round effects on the level of domestic income and demand via its impact on exporters' incomes, and further effects due to the stimulus to increased supply (hence exports). To support this qualitative prediction, it is pertinent to note that devaluation was a central element of anti-depression policies of the early 1930s. Studies of the impact of the devaluation of the Australian currency at that time show a significant offset to contractionary forces. For example, Valentine reports a simulation of his econometric model of the interwar Australian economy indicating that GDP would have been three per cent lower in 1932 without the devaluation (of over 20 per cent) against sterling.³⁰ Using a different approach, Eichengreen suggests that Australian GDP growth between 1929 and 1935 may have been more than 15 per cent higher than what would have occurred had it stayed on the gold standard.³¹ A broader study of a number of countries in the 1930s found significant benefits for the speed of recovery of those who left the gold standard and devalued their currencies by a substantial amount.³² The divergent experiences of Argentina and Australia in the 1890s are consistent with the results of these investigations of interwar evidence as well as with theory: other things equal, the devaluation in Argentina operated to mute the extent of the slump and shorten its duration.

Any attempt to formally estimate the effects of an Australian devaluation in the early 1890s would, however, have to consider certain features of the economy that might work against the expectation of an anticipated sizable stimulus. First, the prominence of Australia in the international market for wool suggests that the price-taker assumption may not be valid for this important export. Second, insofar as the fall in sheep numbers in the 1890s was due to death from drought rather than an indicator of poor financial returns in the industry, an increase in farm gate prices due to exchange rate devaluation could not be expected to slow the decline in flock size. And finally, the

²⁹ This is because (under the gold standard) the nominal price of gold was fixed while the general price level was falling - the implicit GDP deflator declines by 22 per cent between 1890 and 1894, turning up in 1896.

³⁰ Valentine, *The Causes*, Table 7.

³¹ Eichengreen, *The Australian recovery*.

³² See Eichengreen and Sachs, *Exchange rates*.

expansion in gold production during the depression arose not only from changed relative profitability in that industry but primarily from major discoveries in Western Australia that by the turn of the century accounted for half national gold output.³³ Thus any increase in returns to gold producers following a devaluation of the Australian currency might not have elicited a further dramatic short-run supply response.

This discussion of the (hypothetical) effects of devaluation in the early 1890s has focused to this point only on the stimulus to domestic aggregate demand resulting from an increase in exporters' income. However, devaluation would also stimulate a switch in expenditure towards domestically produced goods, hence encouraging an expansion in import-substituting manufacturing activity. For Argentina, Fishlow notes this was a period of industrial expansion.³⁴ Did Australia forgo a chance to boost industry? The evidence in Figure 3 suggests that the share of manufacturing in Argentina rose fairly steadily from around 13 per cent of GDP in 1895 to 22 per cent a decade later, remaining at that higher level to 1914. The Australian share of manufacturing was, in the early and mid-1890s, quite close to that of Argentina, but showed no tendency to rise after 1895: it drifted in a narrow range between 11 and 14 per cent of GDP through to the First World War. A recent analysis indicates the two influences at work in Argentina: 'The substitution of imports deepened in the 1890s – one of the periods with the most impressive industrial growth in Argentina – as a result of new tariffs generated by another economic crisis and the protection implied by the domestic currency devaluation'.³⁵ Argentina had not, however, abandoned its policy of relative openness. The higher tariff levels were most likely not above those in Australia: a comparison for 1913 suggests the two countries had very similar levels of protection at that time.³⁶ Thus both quantitative evidence and theory indicate that a boost to import-competing manufacturing in Argentina during the 1890s, resulting in part from the fall in the exchange rate, operated to reduce the depth and shorten the duration of the slump. Further, the impact of the lower exchange rate may have persisted. Although Argentina returned to gold in 1899, this occurred at a level well below par (see Figure 2). As noted, manufacturing there continued to increase its share of GDP. Adherence to the gold standard by the Australian colonies ruled out this possible source of stimulus in both the initial and later stages of economic recovery. It may thereby have delayed the

³³ The role of economic factors in the timing of gold discoveries and gold production levels in the period of the classical gold standard has been the subject of debate: see Eichengreen and McLean, *Supply*, for an evaluation of the issues.

³⁴ Fishlow, *Lessons of the 1890s*, pp. 39-40.

³⁵ Barbero and Rocchi, *Industry*, p.268.

³⁶ The estimates are cited in Diaz Alejandro, *Essays*, p.285.

diversification of the structure of the economy, leaving the country more vulnerable to the interruption to imports of industrial products that occurred in 1914.

[FIGURE 3 ABOUT HERE]

Default

Investigation of the long-run consequences of debt default indicates that there may be circumstances in which default would be the preferred policy. In a study of U.S. lending abroad in the twentieth century, Eichengreen concludes: ‘To say that default had costs is not to say it was necessarily welfare reducing. It may also have benefits in the form of the spur to growth and adjustment provided by a lightened debt burden. Comparisons of economic growth and structural change in defaulting and non-defaulting countries will be needed before welfare conclusions can be drawn’.³⁷ Eichengreen's argument suggests an obvious question for any comparative study of the Argentine and Australian struggles with their respective debt burdens in the 1890s: what were the economic consequences of the Argentine decision to default and of the Australian decision not to default? Peters notes that ‘[t]emporary relief from the service of the foreign debt enabled the [Argentine] government to husband its resources... By 1901 complete service had been resumed on the foreign debt, and the national credit was on a firmer basis than ever.’³⁸ Argentina had experienced what Fishlow calls a ‘developmental default’, whereby a ‘rapid investment in physical assets created temporary service burdens that exceeded capacity to pay’, and for which ‘[t]he appropriate remedy was time: time for exports to rise and to increase internal prosperity, imports, and governmental revenues’.³⁹ He proceeds to spell out the sequence of events: ‘Investment bankers helped provide that time in funding loans that consolidated debt and allowed for brief periods of reduced, or no, interest payments and amortization. With recovery, new loans would again flow, for the capital market bore no long-lasting grudge. In the interim there would be periods of export surplus and slowed domestic expansion. Development default was part of the long-swing pattern of peripheral expansion.’ Fishlow classes Australia and Canada as ‘developmental borrowers’ though non-defaulters, noting that in the depression of the 1890s ‘Australia met its obligations by compressing imports while it stayed on the gold standard. Argentina, with its

³⁷ Eichengreen, *The U.S.*, p. 149.

³⁸ Peters, *The Foreign*, p. 33.

³⁹ Fishlow, *Lessons from the Past*, p. 403.

inconvertible currency, partially sought to avoid the deflationary path by maintaining domestic demand and reducing debt-service charges'.⁴⁰

The Argentine experience may be used to consider the possible impact on Australia of a reduced burden of foreign debt servicing during the 1890s and after. The reduction in interest to be paid from 1893 to 1898, and the period over which the repayments of principal were to be delayed, are both known for Argentina. The figure typically quoted for the reduction in the interest rate is 40 per cent, although the percentage reductions varied according to the loan in question.⁴¹

Because there exist estimates of the annual sums Australian governments transferred to London in interest alone, it is possible to compute the reduction in foreign debt servicing charges had a program of debt rescheduling for Australia been agreed to on the same terms as those applying to Argentina. In Butlin's balance of payments estimates the item 'public debt interest due to non-residents' stood at £5.7m in 1890, rising to about £6.5m a year for most of the rest of the decade.⁴² The 1890 figure represents 20 per cent of export receipts in that year (that is, about half the total debt servicing ratio), and 2.8 per cent of GDP. Because exports rose the following year, the *public* debt-servicing ratio falls, and hovers between 15 and 18 per cent for the rest of the decade. As a proportion of GDP, however, the interest on foreign debt rises in the slump to a peak of 4.7 per cent in 1895, then declines to 3.6 per cent by 1900. Here, then, is an indication of the potential relief to be obtained by any reduction in the interest rates on British loans. A reduction of 40 per cent in the interest rates on all foreign loans to Australian governments in 1895 would have been worth £2.6m, or the equivalent of 1.9 per cent of GDP in that year alone. Had an agreement regarding interest rate relief been reached with Australia's creditors in London covering a number of years, similar to that reached for Argentina, the potential relief would be that much greater. Between 1893 and 1900, for example, foreign interest payments averaged 4.1 per cent of GDP, hence a 40 per cent reduction in these years would have averaged 1.64 per cent of GDP. This is the foregone annual relief to the deflationary pressures in the economy at this time.

This calculation relates only to interest rate relief on government debt held in London. It is likely that the total relief of an Argentine-style rescheduling could be

⁴⁰ Fishlow, *Lessons from the Past*, p. 405.

⁴¹ See Peters, *The Foreign*, pp. 46-7.

⁴² Butlin, *Australian*, pp. 413-14.

considerably above that indicated by the interest rate reduction considered in isolation.⁴³ However, it is difficult to determine the additional stimulus to the domestic economy that would have resulted from a moratorium on loan repayments. Before federation in 1901 the individual colonies raised funds on the London market, and an Australia-wide set of detailed and consistent estimates of the maturity dates and values of these loans does not exist. Some colonial-era sources do not fully separate loan conversions from new raisings in any year. In contrast, Hall's comprehensive series of total state and municipal new issues before 1914 excludes conversion loans.⁴⁴ Inspection of the information available for Victoria's overseas loans indicates that in 1893, the year of its bank crisis, that colony held £44.1 million in loans in London. However, its scheduled repayments during the next decade were few in number: £2.1 million in 1894, £1.5 million in 1899, and £3.0 million in 1901. Each of these was rolled over; but no additional new loans were raised during these eight years.⁴⁵ The key point is that Victoria felt it could not raise new loans in London during these years: it is in this sense that the market was deemed 'closed'. In such circumstances, what mattered for easing the deflationary pressures resulting from reduced government expenditure was less the maturity dates of existing loans than the unwillingness of the government (through a lack of creditworthiness) to return to the London market for further loans. But this is precisely why such assistance is arranged today for economies facing similar crises.⁴⁶ The comparison with Argentina draws attention to the speed with which the economic and financial situation there improved under very different monetary policies, permitting an earlier and more vigorous resumption of borrowing and return to rapid economic growth.

To illustrate the significance of a hypothetical debt renegotiation, it is worth looking at the condition of Victoria's public finances during this period. The size of the debt problem facing Victoria's government, and also the drastic reduction in government expenditure that occurred in the early 1890s in order to reduce budget deficits in the face of declining revenues and reduced ability to borrow, are shown in Figure 4. A protracted process of fiscal adjustment followed the onset of the crisis, which saw colonial government expenditure cut by 51 per cent between 1890 and 1896.

⁴³ For Argentina, Fishlow, *Lessons of the 1890s*, p.25, says the 1893 Romero agreements included suspension of amortization payments until 1901 (that is, for eight years).

⁴⁴ Hall, *London capital*, pp. 203-05.

⁴⁵ The data are reported in various issues of the *Victorian Year-Book*. For discussion of the context in which Victoria stayed out of the London market, and borrowed in the local capital market, see Hall, *Stock*, pp.201-21.

⁴⁶ See the discussion of the Mexican and East Asian financial crises of the 1990s in Eichengreen, *Capital*, Chapters 7 and 9 respectively.

This reduced the government deficit from 7.1 to 0.6 per cent of the colony's GDP. Had Victoria been able to obtain further loans throughout the 1890s of, say, £2.5 million per year (the average for 1883 to 1893), this would have represented the equivalent of more than 30 per cent of government expenditure in those years.⁴⁷ Alternatively, in any re-negotiation, the emphasis in the Victorian case may have been primarily on interest rate relief rather than a moratorium on the limited debt due for repayment during the nineties, with a rate reduction greater than 40 per cent being the better means to ease the deflationary pressure stemming from curtailing government spending.⁴⁸

[FIGURE 4 ABOUT HERE]

Estimates of total capital called on the London market by Argentina and Australia indicate that after 1900 the former pulled ahead of the latter, whereas the reverse had been true during the 1890s. Between 1900 and 1914, Argentina raised US\$1.18 billion compared to US\$554 million by Australia.⁴⁹ Following its shallower contraction and speedier initial recovery, Argentina clearly faced no serious obstacle to accessing international capital markets. How different would Australia's position have been had it, too, obtained debt relief and undertaken a currency devaluation?

THE ECONOMIC IMPACT OF DROUGHT

To this point we have considered factors that contributed to Argentina experiencing a shallower and shorter slump in the early and mid 1890s than did Australia. Hence, even had a vigorous and sustained recovery in the Australian economy commenced in 1896 with the upturn in international trading conditions, it had more lost ground to make up than did the Argentine economy. But a vigorous and sustained recovery in Australia did not occur after 1895.

Climate is one factor invoked to account for the prolongation of depressed economic conditions there. Early signs of recovery after 1895, associated with the upturn in world commodity prices in an economy heavily dependent on rural export industries, were accompanied by the onset of the worst droughts experienced in Australia since European settlement. A frequently quoted indicator of this natural calamity is the decline in the sheep population, which fell by almost half between 1892

⁴⁷ Hall, *London capital*, p.205; Vamplew, *Historical*, p.262.

⁴⁸ The persistence of these negative forces in the economy is underscored by the fact that Victoria's real GDP declined in seven of the ten years from 1890 to 1899: Sinclair, *Victoria's economy*, Summary table 2.

⁴⁹ Davis and Gallman, *Evolving*, pp. 526-27 and 700-01. This comparison possibly understates the total foreign capital raised by Argentina by amounts raised in markets other than London: see Davis and Gallman, *Evolving*, pp.715-17.

and 1903 (from 106 million to 54 million). Since wool had been the most important export during the 1870s and 1880s, the correlation is suggestive of causation. Indeed, when the drought finally passed, sustained recovery began - in 1904. However, wool production declined by much less than the fall in sheep numbers.⁵⁰ Then, in the recovery phase after 1903, wool production increased dramatically, the pre-depression peak being passed in 1907. Once price changes are considered, the economic impact of the drought is further moderated. When world commodity prices rose, the effect of the continued decline in wool production (until 1902) was attenuated, and with both prices and volumes rising, it is unsurprising that the industry quickly regained a crucial role in underpinning recovery in the economy.⁵¹

If drought is to be assigned a major role in an explanation of the delayed recovery, it is necessary to consider the broader effects of climate on the whole economy rather than focussing on the experience of the wool industry. Wheat production and exports were also adversely affected. But very rapid recovery is possible in grain output after the breaking of a drought. And the production of gold, the second most important export, was not impeded by the adverse climatic conditions. What is required to properly assess the impact of the drought at the turn of the century on the course of Australia's economic recovery is, first, an estimate of the extent to which rural output and exports were affected by drought rather than other factors, and second, an estimate of the reduction in aggregate economic activity due to the drought-induced component of lowered activity in the rural sector.

An indication of the magnitude of the first of these effects may be obtained from the analysis of McDonald.⁵² He constructed two variants of an index of drought severity from meteorological records for the period 1880-1910, by statistical division, weighted by proxies for the importance of pastoral, agricultural, and dairying and miscellaneous rural production in each in 1891. He then estimated an aggregate rural production function for the same period that included a drought index as an explanatory variable. For the period 1895 to 1911 the actual drought index in the production function was replaced with values that reflected years of average rainfall, and (counterfactual) rural

⁵⁰ Wool production peaked in 1892 at 289 million kg, but fell by just over one third to 185 million kg in 1902 (Vamplew, *Historical*, p.82).

⁵¹ The appropriate treatment of changes in the valuation of livestock in the GDP estimates of this period is relevant here. If the imputed value of increases or decreases in livestock numbers is removed from Butlin's estimates of GDP (see Butlin, *Australian*, p.62 and Tables 24 and 25), the effect is to lower GDP from 1891 to 1894, raise it from 1895 to 1903 (when the sheep numbers fell most sharply due to the drought), and lower it thereafter. During the nine years 1895-1903, removing the livestock valuation adjustment by itself raises GDP by an average of 3.2 per cent per year, and by a maximum of 7 per cent in 1902.

⁵² McDonald, *Impact*.

production was re-computed. Actual rural output was below drought-adjusted rural output by an average of 21 per cent from 1895 to 1900, but in the following three years the gap fell to an average of 44 per cent. When the drought ended in 1904, rural output returned to within 3 per cent of an average rainfall year: the effects of the drought on total rural output were expunged in one season.⁵³

A full assessment of the impact of the drought on the rest of the economy has not yet been undertaken, and awaits the development of a macro-econometric model for Australia during this period. All that is possible here is to substitute drought-adjusted rural production for the actual estimates from 1895, then add non-rural output (which has not been adjusted for the influence of the drought) to obtain an estimate of drought-adjusted GDP. The result is shown in Figure 5. This is obviously an approximation of the course of GDP had there been normal seasons. The downturn in the rural sector undoubtedly had some negative effects elsewhere in the economy. However, given the sequence of bad seasons, there would also have occurred offsetting adjustments as economic agents in the non-rural sector adapted to the persisting adverse conditions faced by farmers. Further, within the rural sector itself, farmers' responses to drought – such as accelerated product diversification or the introduction of new technology – would in many cases have had a positive impact on activity levels in the non-rural sector. The net effects on the non-rural sector are therefore difficult to judge a priori. The results of the more limited exercise undertaken here suggest that in the first phase of the drought, from 1895 to 1900, GDP was on average 5 per cent below its drought-adjusted level in each year. Only in the three years of severe drought between 1901 and 1903 is there a really dramatic impact on aggregate economic activity. In these years GDP was on average 13 per cent below the level associated with years of average rainfall. In 1904, however, the gap between the actual and counterfactual GDP estimates is less than one per cent.

[FIGURE 5 ABOUT HERE]

These are tentative and speculative exercises. A firmer conclusion about the impact of the drought on GDP at this time must await a fully specified model of the economy capable of estimating the counterfactual levels of activity that would have arisen if these years had been characterised by normal seasons. Only then will a determination be possible of the relative contributions of drought and of other factors to the failure of the Australian economy to recover more rapidly between 1895 and 1903.

⁵³ This exercise serves as a caution against the use of changes in sheep numbers as a reliable proxy for the impact of abnormal seasons on rural production.

COMPARING AGRICULTURAL (EXPORT) SUPPLY RESPONSES

With the lifting of the drought, and a decade having passed since the economic and financial collapse, a period of especially rapid growth might have been anticipated, especially in light of the continuing favourable conditions in the international economy. The metaphor of a growth ‘rebound’ or ‘catching-up’ phase is frequently used in discussion of the post-1945 era to indicate a putative benefit arising from a preceding period of depression and dislocation in the Australian economy. If this is apt in helping explain the strength of growth after 1945, why should the same not apply after 1903? As with the post-1945 boom, a period of especially vigorous growth might have been expected based on a return to high levels of export growth, of foreign investment, and of immigration. After all, the prosperity that dated from the mid-1890s in the comparable economies of Argentina and Canada was based on these sources, and their prosperity persisted until the First World War.

Economic growth in Australia did pick up during the decade prior to the outbreak of the war. Table 1 and Figure 1 show that aggregate growth rates 1905-14 were in fact comparable to those in Argentina. In this comparison the Australian economic performance looks respectable, but for the facts that there is no sign of a rebound effect (which would have put Australia on a higher growth path, at least for the medium term), and that Argentina had been growing much more rapidly than Australia for the previous decade. The comparison with Canada is even less favourable to the view that Australia turned in a respectable growth performance after 1903. Since we have argued that the comparison with Argentina has raised doubts that the severity and duration of the slump of the 1890s was inevitable given conditions in the economy in 1890, and that the economy-wide impact of the drought has yet to be reliably estimated and should not have persisted much beyond the return of normal seasons, the absence of a period of growth after 1905 more rapid than that of Argentina – and rather more like that of Canada – seems surprising.⁵⁴ Perhaps the explanation lies in the legacy of the policies pursued during the depression. Was the exchange rate still over-valued? Did

⁵⁴ The earlier reference to discussion in the literature of ‘excess capacity’ in the Australian economy resulting from the pre-1890 investment boom occurred in the context of an explanation as to why recovery did not occur earlier: in the view of these authors, this excess had to be worked off before a vigorous and sustained upturn would occur (for example, Sinclair, *Economic recovery*; Boehm, *Prosperity*). However, it might equally be argued that excess capacity would facilitate a period of especially rapid growth, once demand conditions improved, without the requirement of commensurate new investment.

fiscal stringency persist? Was there a continuing constraint on raising overseas loans until creditworthiness could be further improved?

However, there may have been other – and supply-side – factors at work. In the Argentine pampas, and in the south-eastern and south-western regions of Australia, the fertility of the soil and mean rainfall declined as the farming frontier moved inland from the coasts - though more rapidly in the case of Australia.⁵⁵ In the present context, the issue is more about timing, and whether, as at 1890, Argentina had an advantage over Australia due to its possession of a larger area of unexploited land suitable for agricultural production. In Argentina the continued construction of rural railways during the depression pushed the agricultural frontier further inland, as ‘[i]n the 1890s Argentina still possessed an enormous land reserve in the pampean region suitable for export production’.⁵⁶ But by 1913 the assessment had changed: ‘For some time past the best land had already been brought into production. What remained promised far more meagre returns to investors and pioneers alike’. Thus, Argentina was ‘[u]nable to continue its expansion geographically’.⁵⁷

What occurred in Australia seems at first sight to support the hypothesis that the agricultural frontier ‘closed’ earlier there. The geographical limit of pastoral settlement retreated after 1890, markedly so in some regions, under the dual impact of recession in the wool industry and drought.⁵⁸ However, the issue is whether the agricultural supply response to improved export conditions after 1895 was constrained in the Australian case because the remaining area suitable for bringing into cultivation was less than that in Argentina.⁵⁹

In 1891 the area planted to wheat in the two countries was similar at around 1.3 million hectares. However, while Australia brought an additional 1.6 million hectares into wheat production between 1896 and 1913, the Argentine expansion was far greater at 4.1 million hectares. Comparable data on the total area in cultivation is not available

⁵⁵ This contrast was noted by Diaz Alejandro, *Essays*, pp.35-36 in a comparison of Argentine and North American experience.

⁵⁶ See Rock, *Argentine*, p. 61.

⁵⁷ See Rock, *Argentine*, p. 70. The assessment of Adelman, *Frontier*, p.5, in relation to the wheat industries in Argentina and Canada is consistent with this: ‘if the 1890s saw the beginnings of large-scale settlement on the prairies and the pampas, the era of the open frontier of settlement was over by 1914.’

⁵⁸ The expansion of the wheat belt in Western Australia is something of an exception to this generalisation. However, note that between 1895 and 1913 this region accounted for only 17 per cent of the additional land brought into cultivation throughout Australia, and 14 per cent of the increase in wheat production (Vamplew, *Historical*, pp.74 and 78).

⁵⁹ Any attempt to assess this is hampered by a lack of data that are strictly comparable. Farm formation and increased cultivation can occur on the extensive frontier or as a result of the sub-division of existing rural properties through the conversion of grazing land to crop production. Acres in crop are variously defined to include sown grasses, fallow, root crops and horticultural activities as well as grain. The quality of land is not reflected in measures of its area. And Argentine data are fragmentary.

until 1913. In that year, Argentina had four times the Australian area of agricultural land under cultivation.⁶⁰ These simple measures suggest that Argentina had much greater potential to expand farm production under the prices and technology faced by the farmers in the two countries.

Another indicator of the expected future growth in agricultural production and exports is the extension of the railway system. We have noted earlier how the additions to the length of railway lines open was higher in Argentina than in Australia in the early 1890s, though construction of new lines fell away in the middle of the decade in both countries. After the turn of the century, railway construction in Argentina again greatly exceeded that in Australia – by 23 per cent between 1900 and 1904, by 74 per cent between 1905 and 1909, and by 72 per cent between 1910 and 1913. This evidence reinforces the impression of a greater attractiveness to foreign capital of Argentina than Australia at this time, since the railways were a major destination for these funds. More broadly, investment in railway construction, whether rural or urban, is a pointer to the superior growth prospects of the Argentine compared to the Australian economy. Partly this may have resulted from the different policy responses to the crises of the early 1890s, and partly to investors' perception that Argentina possessed the better prospects for expanding agricultural exports.

The economic expansion in both economies was marked by significant changes in the composition of exports. In the case of Argentina, this is associated with the declining importance of wool and hides, and the increased importance of wheat and chilled beef. Although the period 1895-1913 is one in which Australian farmers also moved away from their earlier product concentration (from wool towards meat, wheat and dairy production), it has been suggested that a slower rate of diversification occurred on Australian than Argentine farms. Indeed, Diaz Alejandro called into question the adaptability of Australian farmers: 'Argentine landowners, whose interests were mainly pastoral, showed more flexibility than those in Australia in taking advantage, with the help of immigrant tenants, of favourable circumstances in world grain markets'.⁶¹ What, beyond a run of poor seasons, discouraged the Australian farmer from moving more quickly into wheat after 1895? Was there entrepreneurial failure?

⁶⁰ Vamplew, *Historical*, pp.74-76; Mitchell, *International Historical Statistics: The Americas*, pp.152-53; della Paolera and Taylor, *New Economic*, CD-ROM Series AI.

⁶¹ Diaz Alejandro, *Essays*, p. 19. Davis and Gallman write of the 'flexibility displayed by the Argentine economy in permitting the relatively easy shift from pastoral to agricultural activities' at this time (Davis and Gallman, *Evolving*, p.706). Comparisons of the wheat booms in Canada and Argentina are provided by Solberg, *Prairies*; and Adelman, *Frontier*.

One possibility is that relative product prices simply did not encourage a more rapid switch in the product mix of Australian farmers. Inspection of the movements in the average prices of the two products is made difficult by the need to choose a representative unit price of each, to approximate the farm gate prices that the farmer actually received, and in the price volatility observed in both products. Nonetheless, the long-run trends in relative prices suggest that the price of wool was rising faster after 1895 than the average price of wheat. During the decade after 1895 there is not much difference, wool rising on average 7.1 per cent (compared to the average for the previous decade) and wheat on average rising 6.5 per cent. In the decade following 1905, however, wool prices increased on average by 15.9 per cent compared to an increase of just 5.5 per cent for wheat.⁶² On this evidence, the limited diversification into wheat, perhaps associated especially with risk reduction on mixed wheat-sheep properties, makes sense, as does the strong rebound in sheep numbers following the drought. To this point, Australian farmers seem to have been rational responders to movements in the relative product prices they faced.

However, additional reasons may be offered for the different supply response of Australian and Argentine farmers to the favourable international trading conditions between 1895 and 1913. Fundamentally the issue is one of the relative profitability both of expanding output, and of the choice between products.⁶³ In this perspective, the differences in product mix and supply responses between these countries are more likely due to differences in costs (including those associated with bringing additional land into production or converting grazing land to cultivation), as farmers in both faced the same world product prices and had access to the same production technology. That will be a more complex story than one focusing simply on when a frontier is deemed 'closed'.⁶⁴

Since wheat was so important to the boom in both the Argentine and Canadian economies during this period, and since we know from hindsight that the acreage devoted to wheat production in Australia continued to expand until 1931, this industry might hold some clues as to why there was not a more rapid expansion in production and exports after the drought lifted. At least in the assessment of Dunsdorfs, there were numerous negative influences restraining the expansion of wheat production in

⁶² Vamplew, *Historical*, p.223.

⁶³ One issue is thus whether the products into which Argentine farmers moved offered greater potential for export growth than the potential for growth faced by Australian farmers with their somewhat different output mix. Since wheat was important in both cases, the comparison principally comes down to chilled beef versus frozen meat and dairy produce.

⁶⁴ It is not clear that the term 'frontier' is sufficiently precise to be helpful in this discussion without more careful - and economic - definition. For an interesting formalization, see Findlay, *Factor*, Chapter 5, 'Trade, migration and the moving frontier'.

Australia between 1895 and 1913.⁶⁵ These included the need for further branch railway construction, the slow diffusion of bulk-handing methods of transport, cartel pricing by grain merchants, rising farmer indebtedness to these same merchants, the limited success of wheat growers in forming co-operatives, and falling real prices as nominal farm-gate prices were often rising less than the general price level. There were also offsetting productivity improving and cost-reducing changes occurring, including increased mechanisation, increased use of fallowing and mixed farming, and higher-yield wheat varieties that were more drought-tolerant and disease resistant. A full assessment of the suggestion that there was some 'failure' by Australian farmers at this time, relative to their counterparts in Argentina (or Canada), must await more detailed comparative analysis.⁶⁶

CONCLUSION

What I have called the 'symmetry' explanation of the severity and duration of the 1890s depression in Australia does not look as compelling when viewed from an Argentine perspective. This perspective also highlights the importance of distinguishing the phases of the recovery era and the major questions about each, such as why the initial slump was not quickly reversed; why the economy did not receive a stronger immediate boost from the upturn in the international economy after 1895; how significant was the effect on aggregate economic activity of adverse climatic conditions at the turn of the century; and whether more rapid growth might have been anticipated after 1903. Only an initial and speculative assessment of these questions has been made in this paper. Policies implemented by the Argentines with respect to their exchange rate and debt servicing, which alleviated the severity of their economic downturn in the early 1890s, were either unavailable to, or not tried by, Australian governments. The policies of maintaining the exchange rate and not seeking a re-scheduling of foreign debt payments also delayed recovery after 1895. This was due to the need to continue the deflation of the economy. Although drought at the turn of the century unquestionably had a negative impact on recovery, the magnitude of that impact needs more careful evaluation. Finally, the absence of a more vigorous economic rebound in the decade after the drought lifted also deserves further investigation, for the effects of drought seem to have been rapidly overcome. Perhaps the exchange rate remained over-valued. Perhaps the prolonged

⁶⁵ Dunsdorfs, *Wheat-Growing*, Chapter 5.

⁶⁶ Examples for how this might be undertaken include Solberg, *Prairies*, and Adelman, *Frontier*.

reconstruction of public finances, exacerbated by the absence of debt relief in the 1890s, reduced Australia's ability to resume foreign borrowing earlier or on a larger scale. And perhaps there is something in the frontier factor – that with the exception of Western Australia the era of low-cost agricultural development was over earlier in Australia than in either Argentina or Canada.

Table 1. Comparative growth indicators, 1890 to 1913 (percentage changes)

	Population			Aggregate Real GDP			Per Capita GDP		
	Australia	Argentina	Canada	Australia	Argentina	Canada	Australia	Argentina	Canada
1890-1913	55.3	121.6	59.7	87.8	188.2	201.2	23.0	30.1	87.7
1895-1913	40.2	89.1	51.9	100.5	161.5	183.3	46.2	38.3	86.3
1900-1913	30.0	62.4	44.0	62.3	124.6	118.1	28.1	38.3	51.5
1905-1913	21.3	41.5	27.2	57.3	47.5	58.6	31.8	4.3	24.5

Note: Percentage changes are based on end years of sub-periods.

Sources: Australia: CBCS, *Australian Demography*, 1949. McLean and Pincus, Living standards, Appendix Table. Argentina: della Paolera and Taylor, *New Economic*, CD ROM, series YZD. Canada: Urquhart, New estimates, Table 2.9.

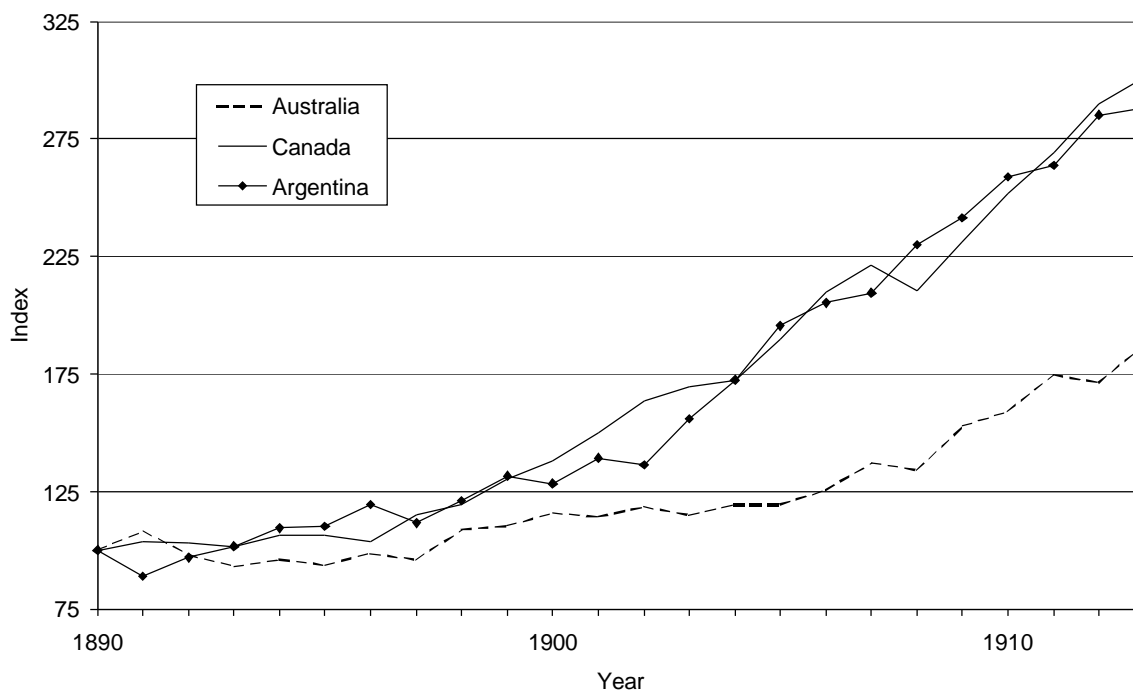


Figure 1. Comparative aggregate real GDP, 1890-1913 (1890 = 100)

Sources: Australia: CBCS, *Australian Demography*, 1949. McLean and Pincus, Living standards, Appendix Table. Argentina: della Paolera and Taylor, *New Economic*, CDROM, series YZD. Canada: Urquhart, New estimates, Table 2.9.

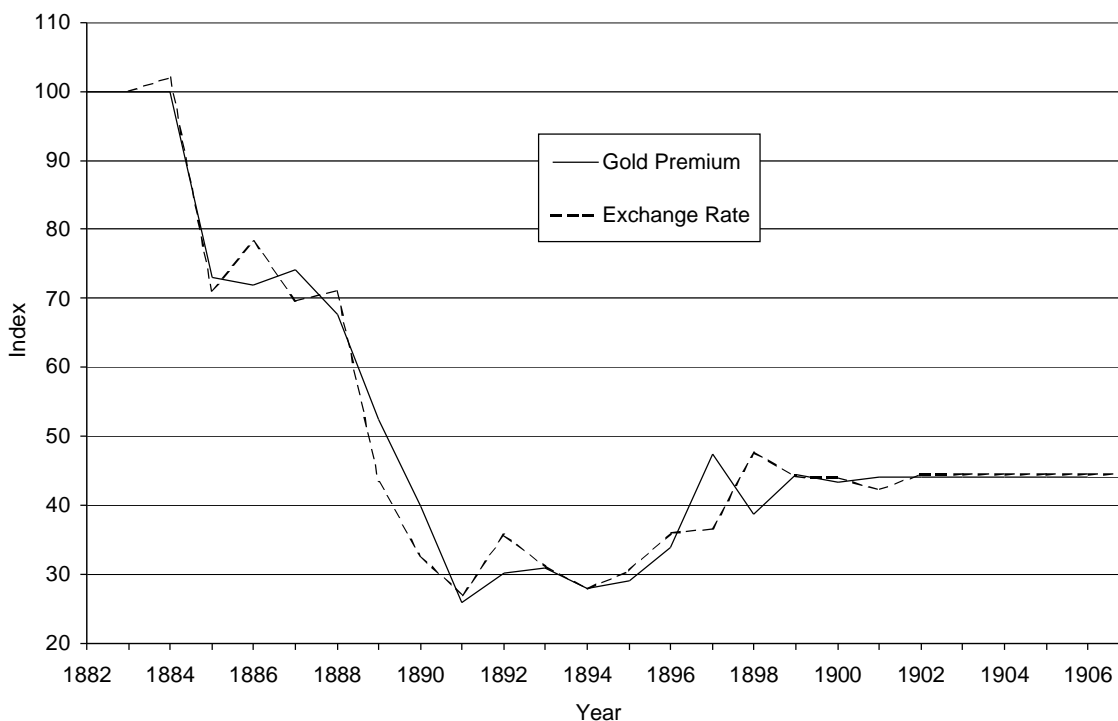


Figure 2. Argentina, exchange rate measures, 1882-1907 (1882 = 100)

Notes: The gold premium is the inverse of the price of gold in paper pesos. The exchange rate is pesos per US Dollar.

Sources: Gold premium: Cortes Conde, *Export economy*, Table 23. Exchange rate: della Paolera and Taylor, *New Economic*, CDROM, series EUST.

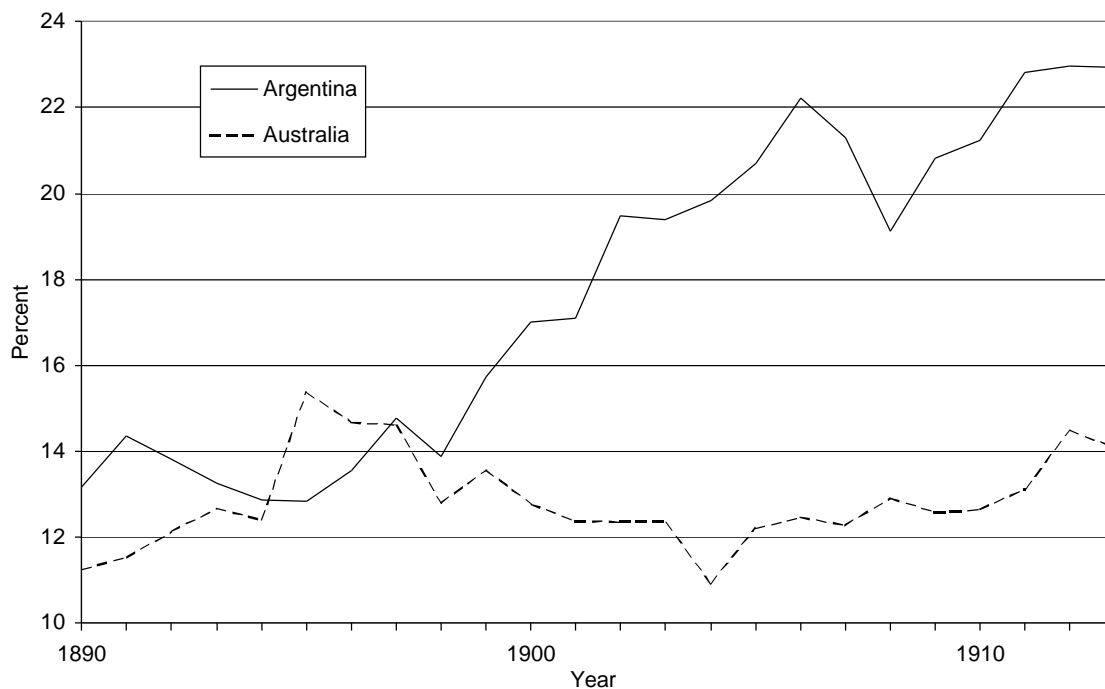


Figure 3. Argentina and Australia: shares of manufacturing in GDP, 1890-1913 (per cent)

Note: Based on constant price GDP estimates, as current price estimates for Argentina were unavailable.

Sources: Argentina: Cortes Conde, *Estimaciones*. Australia: Butlin, *Australian*, Table 269 and Butlin, *Investment*, p. 453.

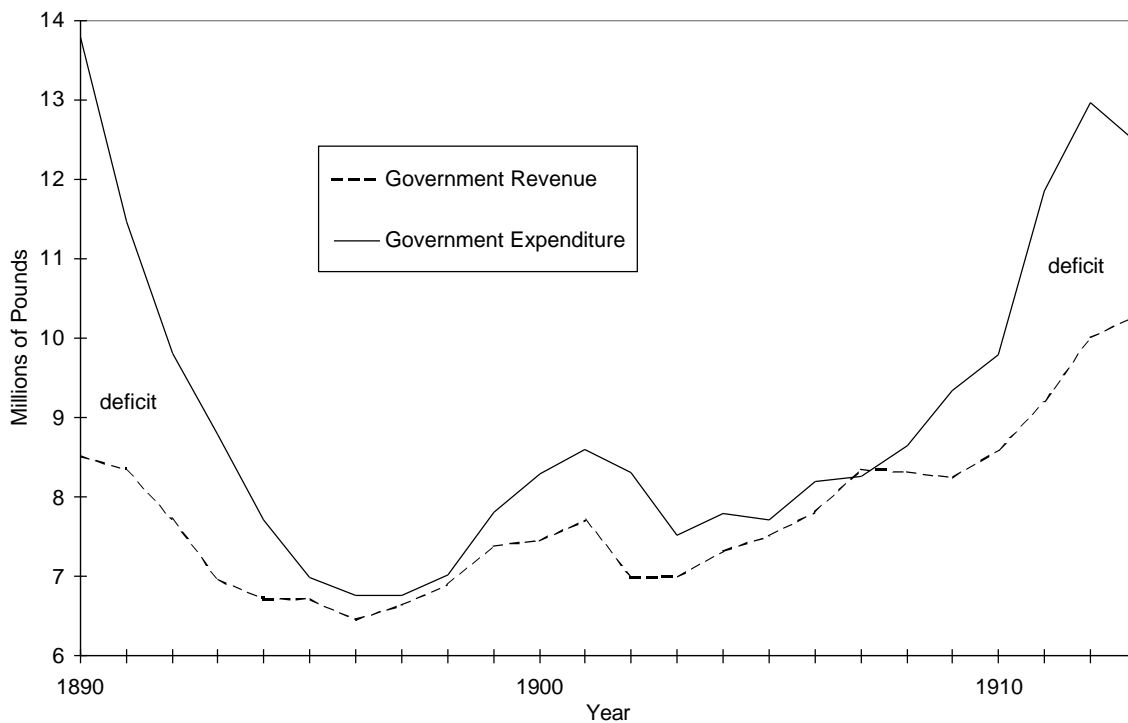


Figure 4. Victoria: government revenue, expenditure and deficit (millions of pounds)
 Source: Vamplew, *Historical*, p. 262.

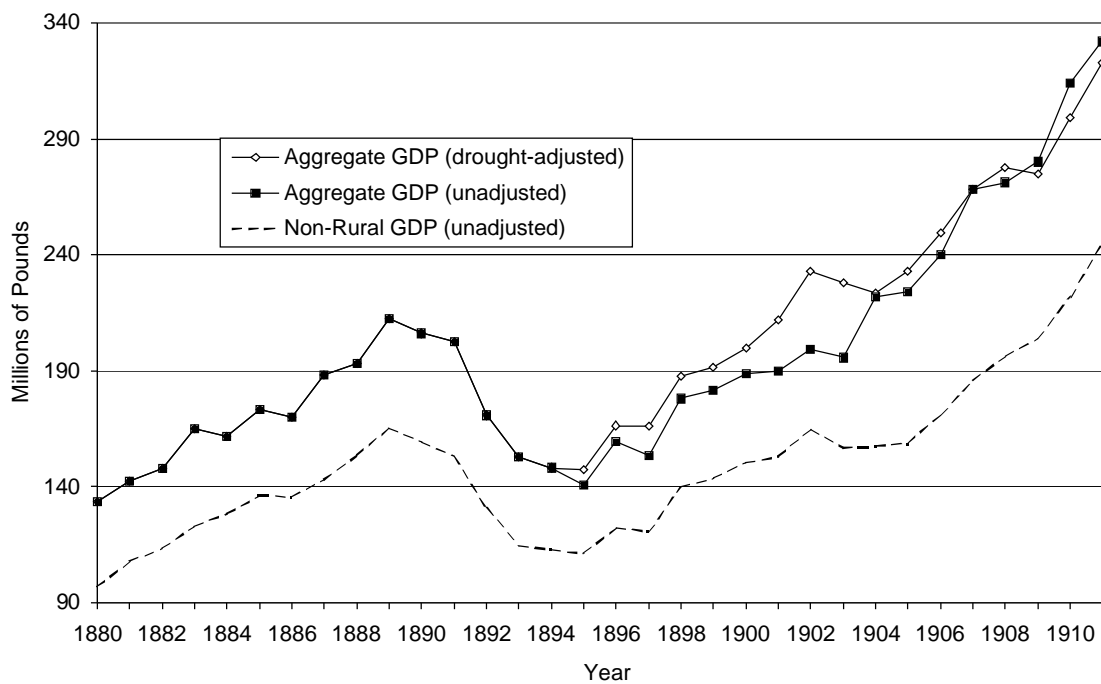


Figure 5. Australia: aggregate and non-rural GDP 1880 - 1911, and drought-adjusted GDP, 1895 - 1911, current prices
 Sources: Unadjusted series: Butlin, *Australian*, Table 2; Butlin, *Investment*, p. 453.
 Drought-adjusted series: see text.

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