

# Australian economic development in the nineteenth century

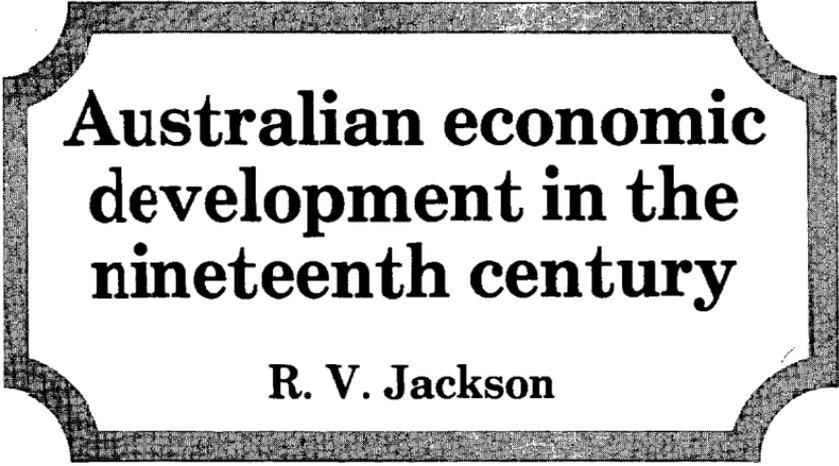
**R. V. Jackson**



This book was published by ANU Press between 1965–1991.

This republication is part of the digitisation project being carried out by Scholarly Information Services/Library and ANU Press.

This project aims to make past scholarly works published by The Australian National University available to a global audience under its open-access policy.



**Australian economic  
development in the  
nineteenth century**

**R. V. Jackson**

Australian National University Press  
Canberra 1977

First published in Australia 1977

Printed in Australia by Southwood Press, Marrickville, N.S.W for the Australian National University Press, Canberra

© R. V. Jackson 1977

This book is copyright. Apart from any fair dealing for the purpose of private study, research, criticism, or review, as permitted under the Copyright Act, no part may be reproduced by any process without written permission. Inquiries should be made to the publisher.

National Library of Australia

Cataloguing-in-Publication entry

---

Jackson, Robert Vincent

Australian economic development in the nineteenth century.

Index.

ISBN 0 7081 0336 7.

ISBN 0 7081 0337 5 Paperback.

1. Australia — Economic conditions — 1788-1900.

I. Title.

330.994

---

*Southeast Asia:* Angus & Robertson (S.E. Asia) Pty Ltd, Singapore  
*Japan:* United Publishers Services Ltd, Tokyo

**To Sharon**

# Preface

Historical work is invariably selective. One function of the historian is to simplify, to extract from the mass of accumulated experience the elements of a coherent and plausible view of one or other aspect of the past. Different historians choose different aspects for analysis. There are social, economic, political and countless other 'histories'. Unfortunately, no one has yet managed to fuse these various approaches so as to produce a wider—yet consistent and convincing—interpretation of the past. Individual works seem unable to escape the limitation of dealing in a partial way with no more than a small part of the history of a region or period.

The aim of this book is to give an account of Australia's *economic* experience from the beginnings of white settlement to about 1900. The end of the nineteenth century is a good date to stop for, as should become clear, the 1890s appears to have been a decade separating two distinct phases of economic development. The main focus of attention is the phenomenon of 'modern economic growth'. European exploitation of the Australian continent has been roughly contemporaneous with the emergence and spread over much of the world of a process of accelerated and sustained economic development. There is much that is uncertain in our knowledge of the past, but economic historians are sure of at least one central point: in the last two hundred years economic growth has taken place in many countries in a way that simply has no precedent. In countries directly involved in the process of modern economic growth, productive capabilities and the excess of per capita product over the bare physical necessities of life have expanded at a rate that cannot have been approximated in periods earlier than the second half of the eighteenth century. In the nineteenth century, people were acutely aware of this historical uniqueness of their times: 'progress' was held to be the distinguishing mark of the modern age. This book is about 'progress', its magnitude, characteristics and some of its implications.

The objective is to treat Australian economic growth in a way that makes it accessible to first or second year university students who have a minimum acquaintance with formal economics. This approach presents some problems, for economic historians have come to use with increasing freedom much of the technical apparatus of applied economics and statistics. As a consequence, a reasonable knowledge of the basic elements of the latter disciplines is needed to unravel a good deal of the

economic history that is now being written. The most illuminating large-scale work on the Australian economy in the nineteenth century to appear in recent years is N. G. Butlin's study of investment and growth in the period 1861-1900.<sup>1</sup> Butlin's work has altered many of our conceptions of the way the Australian economy developed in this period. Yet the experience of successive classes of economic history students confirms that Butlin's book is too hard to tackle without prior grounding in the general outlines of Australian economic development to 1900. And, unfortunately, since the publication of Butlin's work, no book has been written that provides the necessary orientation. One is forced to rely on interpretations that were published some decades ago or on more general books that skirt the issues raised by Butlin.<sup>2</sup> The present book has been written in the hope that it will provide a survey of Australian economic growth in the nineteenth century that takes account of important recent research, whilst also helping to prepare the way for people wanting to go on to a more detailed study of Australian economic development.

In a book such as this, compression and the need for clarity in exposition mean that much detail and many of the subtle variations in economic experience are lost. Two important casualties of this ought to be noted. First, there is no extended discussion of agriculture as Australians understand that term (that is, non-pastoral rural activity). Second, not much space is given to regional differences in experience. The latter omission, in particular, sometimes brings a misleading simplicity to the outline of economic development contained in the chapters that follow.

A substantial beginning on this book was made during six months' study leave granted by The Australian National University in the second half of 1975. Since then, I have discussed various drafts with Colin Forster, whose detailed consideration of each chapter has made the book better than it would otherwise have been. Helpful comments on individual chapters were made by Frank Birch, John Gagg, Graham Tucker and Les Witchard. Successive drafts of the manuscript were typed by Kathy Kendall and Helen Symes.

R. V. JACKSON

Canberra,  
December 1976

<sup>1</sup> *Investment in Australian Economic Development, 1861-1900*, London, 1964.

<sup>2</sup> An exception to this statement is W. A. Sinclair, *The Process of Economic Development in Australia*, Melbourne, 1976, which became available after the manuscript of the present book was completed. Sinclair's book is a general interpretation, incorporating much of his earlier work, that might be characterised as an extended treatment of the subject matter of Chapter 1, below.

# Contents

Preface *vii*

- 1 An outline of Australian economic development to 1900 *1*
  - 2 Population *28*
  - 3 Exports and the balance of payments *49*
  - 4 Transport *75*
  - 5 Urbanisation *92*
  - 6 Manufacturing and house building *112*
  - 7 Money and banking *130*
  - 8 Government and the economy *150*
- Index *173*

# Illustrations

## Plates

- 1 Gold miners in Queensland towards the end of the nineteenth century 10
- 2 Bullock transport, about 1875 60
- 3 Loading wool bales into the hold of the *Patriarch* 77
- 4 The Melbourne waterfront in about 1870 79
- 5 Inner Melbourne in about 1894 98
- 6 Some of the poor of Sydney in 1901 102
- 7 A brewery in Carcoar in the 1890s 116
- 8 Terrace housing near the centre of Sydney in the early 1870s 122
- 9 A selector's homestead, about 1875 123
- 10 An outback bank of the mid-1870s 139
- 11 The Oriental Bank, St Kilda 142
- 12 Railway building in the 1880s 162

## Figures

- 1 Exports, imports and population, New South Wales, Queensland and Victoria, 1845-60 9
- 2 Value of Australian exports, 1831-5 to 1886-90 12
- 3 Trends in gross domestic capital formation, Australia, 1863-89 16
- 4 Australian balance of payments, 1875-89 19
- 5 Components of Australian population increase, 1861-1900 33
- 6 Australian birth and death rates, 1861-1900 34
- 7 Age distribution of the Australian population, 1861 and 1900 36
- 8 Average freight charged on pressed greasy wool shipped from Sydney to Britain, 1810-1900 76
- 9 Government gross railway capital formation, Australia, 1860-1900 87
- 10 Increase in number of residential rooms and population, eastern Australia, 1861-1900 125
- 11 Australian exchange rate, 1835-1900 137

- 12 Cash balances as a percentage of deposits in Australian banks, 1837-1900 145
- 13 Public gross capital formation and public overseas borrowing, Australia, 1861-1900 160
- 14 Government gross revenue and expenditure, eastern Australia, 1881-96 168

#### Tables

- 1 Indicators of the economic structure of eastern Australia, about 1850 7
- 2 Annual rates of Economic growth in Australia, the United Kingdom and the United States, 1861-91 14
- 3 Economic growth in Australia, 1861-89 15
- 4 Indicators of Australian economic structure, about 1890 21
- 5 Australian population growth, 1790-1900 29
- 6 Components of Australian population increase, 1861-1900 33
- 7 Australian birth and death rates, 1861-1900 34
- 8 Indicators of population structure, eastern Australia, 1861 and 1901 36
- 9 Pastoral expansion in mainland eastern Australia, 1831-50 53
- 10 Hypothetical costs and returns of sheep farming in the 1840s 56
- 11 Pastoral expansion in Australia, 1861-91 63
- 12 Alternative estimates of the growth in the value of the Australian wool clip, 1861-91 67
- 13 Australian capital imports, 1861-90 68
- 14 Composition of Australian exports, 1888-90 and 1898-1900 71
- 15 Shipping cleared from New South Wales ports, 1861-1900 81
- 16 Australian railway mileage, 1860-1900 87
- 17 Share of urban in total population eastern Australia, 1841-1901 93
- 19 Share of urban in total population in Australia and other new countries, about 1900 94
- 19 Increase in urbanisation, Australia and the United States, 1840-1 to 1900-1 95

- 20 Percentage of total urban population in towns of specified size,  
Australia and the United States, 1900-1 97
- 21 Metropolitan population growth, eastern Australia, 1851-  
1901 99
- 22 Percentage of workforce in agriculture, Australia and other new  
countries, about 1890 106
- 23 Population structure and dependency rates, metropolitan and  
non-metropolitan areas, eastern Australia, 1851-91 109
- 24 Composition of manufacturing employment, New South Wales  
and Victoria, 1890 117
- 25 Indicators of housing standards in eastern Australia, 1851-  
1901 121
- 26 Deposits in Australian banks, 1820-1900 134
- 27 Deposits, advances and branches of major Australian banks,  
December quarter, 1890 140
- 28 Immigration into New South Wales, 1832-42 157
- 29 Public capital formation and overseas borrowing, Australia, 1861-  
90 161

# An outline of Australian economic development to 1900

In 1800 white settlements clung uncertainly to isolated spots on the east coast of Australia, their function the sordid task of keeping convicts transported from Britain. The interior was unknown. A hundred years later the resources of Australia's eastern third had been brought under control. Australians were rich by the material standards of the time and in possession of the full array of free political institutions that had come to characterise societies of British origin. The present chapter traces in outline the process of economic development that underlay this transformation of the Australian continent in the nineteenth century. Later chapters deal with the component parts of the Australian economy in more detail.

## I

The peculiar circumstances of the penal colony in the first decades of white settlement in Australia have attracted the attention of a number of historians. In addition, there are rich source materials for these years, because the early governors reported to London on almost every aspect of their administration and several of the colonists have provided first-hand accounts of local affairs. In consequence, the economic experience of the convict period could be narrated in great detail. However, this book will skim lightly over the period before the 1820s, principally because the economic experience of these early years is not very relevant to the theme of Australian economic growth in the nineteenth century: such growth as did occur before 1820 had little in common with later developments.<sup>1</sup>

The penal settlements were tiny, isolated communities. As late as 1820 there were less than 35,000 white people in Australia. In the absence of exports, the volume of domestic demand was too small to serve as a basis for economic development. Low productivity was unavoidable if the domestic economy had to produce the full range of goods and services needed to sustain the local population. Only through specialising in the production of a small number of export commodities could the early settlers achieve a high average level of real product per head.

It was a characteristic of other regions of recent white settlement also that domestic sources of demand were initially inadequate to sustain rises in real product per head, even where the population was much larger than in Australia. Thus the United States had nearly four million people

in 1790, yet the smallness of the domestic market meant that 'the outlook for rapid growth from domestically induced expansion did not appear promising'.<sup>2</sup> Prospects for growth through foreign trade were also unfavourable in the United States at that time. However, American growth prospects were radically improved by external events—first by the Napoleonic wars which stimulated the carrying and re-export trades, later by the rise of raw cotton exports. American economic growth was set in motion by increasing participation in international trade and by the occurrence of associated inflows of labour and capital to exploit American resources.

This American experience was one example of a more common phenomenon. Modern economic growth had originated in the old world, pre-eminently in Britain. The nineteenth century saw the gradual spread of the growth impulse to hitherto lightly settled regions. Many of the details of the way in which the growth process spread are little understood, but it is clear that the transmission typically involved a growing trade between industrialising nations and new regions that could provide them with food, raw materials and markets. Critical to the development of this trading pattern was the transfer of labour and capital from the industrialising nations to the regions of recent settlement. As a result, the nineteenth century was an era of voluntary mass migration and international capital flows on a scale unmatched before or since.

At one level of analysis, there are parallels between the economic experience of the convict settlements and this process of growth in new regions via international trade and factor flows. In Australia before 1820 the growth of demand for the output of the private sector was determined mainly by the growth of government demand for food and materials to provision the gaol. It has been argued that the sale of goods to the public sector in this instance was analogous to export activity in other regions of recent settlement, 'for in both cases the new region exported to a market whose demand was independently determined'.<sup>3</sup> Further, the sale of goods to the government store provided a major source of foreign exchange to the private sector, because the proceeds of sales were made available in the form of Treasury Bills drawn on London. The growth of factor supplies during the convict period also depended largely upon inflows of labour and capital, as in other new countries. The number of convicts sent to Australia was the principal influence upon the growth of population and labour supplies. British Treasury expenditure was the main source of capital funds.

However, such parallels as did exist between this situation and the economic growth of other new countries (or of Australia itself later in the nineteenth century) are probably illusory. The flow of convicts and capital to the penal colony was not a market response to economic conditions in Australia but the outcome of administrative decisions made in

Britain to meet British needs. This was not an international transfer of factors of production to exploit untapped economic resources useful in international trade. On the contrary, the apparent absence of such resources was presumably important to the success of the penal venture. Further, government demand lacked a crucial characteristic of export demand from the viewpoint of a newly settled region, because the amount of food demanded by the government was limited by the number of mouths it had to feed—that is, the colonists still had no access to a market significantly larger than that provided by the local population. Rapid as population growth sometimes was, an economy whose market activity was concerned almost wholly with supplying the basic needs of its own tiny population can scarcely be described as participating in the process of international trade and economic growth that was beginning to transform much of the western world.

This is not to say that the colonists were impoverished. Considering the punitive purposes of transportation, the early settlers (including the convicts) were remarkably well off once the hardships of the first half dozen years had been overcome. Average consumption standards were no lower—and may have been higher—than in Britain. This was made possible by the large amounts spent on the gaol by the British Treasury rather than by the productive efforts of the colonists themselves. The ratio of workforce to total population was nominally very high in eastern Australia (reflecting the demographic peculiarities associated with the convict system), but any favourable effects this may have had on consumption standards were counteracted by the low level of labour productivity. Here, the low productivity inherent in a lack of specialisation was almost certainly compounded by the unsuitability as labourers of the convicts who made up much of the workforce.

## II

It was from the 1820s, at the earliest, that the Australian settlements began to feel the impact of modern economic growth. As with other regions of recent white settlement, growth derived from an increasing involvement in the international economy. To share in the spread of economic growth, unsettled regions needed an appropriate resource base, for it was the profusion of resources relative to population in the new countries that underlay both the developing trading pattern and the large-scale transfer of labour and capital from the old world. The Australian resources that first caught the attention of outsiders were its fisheries: whaling and sealing provided important early exports. However, the fisheries were no more than a supplementary source of foreign exchange earnings before 1820. The markets for colonial produce remained circumscribed by the needs of the local population. The

Australian colonies were not to break through the constraints that were imposed by relying on the domestic market until the establishment of fine wool growing as a major export activity.

The period from the 1820s to 1851 has often been described, with justice, as Australia's 'pastoral age'.<sup>4</sup> Faced with a British market many times larger than the output of the infant Australian wool industry and having virtually free access to vast tracts of unused land, the pastoralists' expansion into the interior was extremely rapid. Wool exports multiplied two hundred times between 1820 and 1850 as wool growing emerged from insignificance to become a powerful source of economic expansion. The growth in export income from wool quickly broke the limitations inherent in the reliance on the domestic market. Whilst it is true that wool exports did not exceed foreign exchange earnings derived from sales to the government store and from British expenditure on the penal establishment until the second half of the 1830s, the growth of wool exports was the dynamic element increasing market opportunities for colonial producers well before this date. Further, it was the prospect of profit from fine wool growing that, directly and indirectly, induced the first quantitatively significant inflows of free immigrants and private capital into eastern Australia. By the 1830s the Australian colonies were no longer basically government undertakings with a private enterprise appendage. Wool had set eastern Australia on its first genuinely capitalist phase of economic development. The details of economic growth in these years have a peculiarly Australian flavour, but the story in outline—as the preceding paragraphs will have made clear—has much in common with the experience of other regions of recent settlement in the initial stages of integration into the international economy.

Some idea of the pace of aggregate economic expansion in Australia from 1820 to 1850 can be gained by looking in the first instance at the increase in population. The rate of population growth averaged nearly 9 per cent p.a. and by 1850 there were over 400,000 white people in eastern Australia. Total real product presumably grew even faster than population, leaving some margin for increases in product per head. How large this margin was it is impossible to say, for there are no reliable estimates of gross domestic product or of similar economic magnitudes for this period. Similarly, it is not possible to gauge with any pretence at accuracy the level of consumption per head, though it is reasonably certain that material living standards were, on average, higher than in Britain by 1850. This superiority in material living standards was established despite the virtual cessation of British government expenditure that had financed much of Australia's early well-being. By 1850 the level of labour productivity in Australia, underpinned by the continent's resource endowment, had undoubtedly risen significantly and probably exceeded the British level. At the same time, the ratio of workforce to total population remained high (though lower than in the

convict period), thus boosting further the level of per capita income in Australia relative to Britain.

Economic expansion brought with it congenial economic institutions. Particularly important in Australia was the rapid development of a money and banking system appropriate to a pastoral export economy. Also, by the 1840s the colonists had been given a considerable amount of political independence of London. In 1850 the eastern colonies were on the verge of substantially complete self-government and soon to gain written constitutions that reproduced the essentials of the British parliamentary system. Fundamentally, the convict system was, of course, destroyed. The convict heritage made for some peculiarities during the transition to a free enterprise economy but convicts left no lasting mark on the pattern of Australian economic development. The newly established colony of South Australia was free of transported convicts from the start, whilst in the rest of mainland eastern Australia convicts had become an insignificant fraction of the population by 1850. On the eve of the gold rushes, Australia may have been a more thoroughly capitalistic economy and society than either Britain or Europe. Comparing the regions of recent settlement in the nineteenth century with the old world and with Asia, J. W. McCarty has argued that 'the purely capitalistic elements of the parent society transferred themselves to an environment where they could grow unimpeded either by the heritage of the past, which was left behind in the migration, or by the presence of resilient peasant societies in the new land'.<sup>5</sup>

Economic growth in the nineteenth century was characterised not only by its new-found rapidity but also by its cyclical nature: in most regions boom alternated more or less regularly with depression. Australia was no exception before 1850. As early as the 1820s there was a clearly defined cycle, with economic activity rising to a peak in the middle of the decade and falling in the depressed years 1828-30. This early experience was dwarfed by the cycle of boom and depression in the 1830s and early 1840s. The 1830s saw an extremely rapid pastoral expansion accompanied by heavy capital inflow and free immigration. This was followed in the early 1840s by severe and relatively protracted depression in the pastoral industry and the economy as a whole.

Given the importance of international trade and factor flows to Australian economic growth in this period, it is natural to look for explanations of the cycle of boom and depression in the pattern of Australia's external economic relations. Also, given the small size of the Australian settlements, it is natural to assume that developments in Australia could have had little independent influence upon the course of these external relationships. This has been the view of a number of historians, who explain the onset of depression largely in terms of falls in export prices and capital inflow that resulted from changes in economic conditions in Britain.

This type of analysis is probably inadequate. S. J. Butlin, writing in the early 1950s, argued that part of the explanation of the depression of the 1840s was to be found in developments in Australia rather than Britain.<sup>6</sup> Wool prices were falling from 1836, yet the boom continued. Further, the drying up of capital imports from Britain was delayed until after 1840 and came, according to Butlin, as a direct response to falling profit opportunities in the pastoral industry. Falling pastoral profits were partly a reflection of lower wool prices, due to reduced British demand, but were also a result of developments in the pastoral industry itself. (This is discussed in more detail in Chapter 3, below.) Butlin's analysis raises the question of the extent to which the logic of internal economic relations could free the economy from the influence of external economic forces. Unfortunately, there is as yet no ready answer to this sort of question, for the boom and depression of the 1830s and early 1840s have been the subject of surprisingly little research. Butlin's account is the most satisfactory available. It is, however, a by-product of Butlin's work on money and banking and is, as its author insists, only 'tentative and preliminary'.

Whatever its origins, the depression of the 1840s was a serious interruption to economic expansion in the short run. The depression may also have marked an incipient longer-term slowing down in the pace of aggregate economic growth. Certainly, whilst recovery from the depression was in some sense complete, there was no early resumption of the headlong expansion of the 1830s. In the second half of the 1840s population growth, immigration, capital inflow and the growth of exports were all lower than before the depression. By 1850 the pastoral industry may have been coming to a kind of early maturity. Already it supplied well over half of the British market for imported wool and occupied much of the best pastoral land in eastern Australia. Much of the earlier pastoral growth had been based on increasing the Australian share of the British market. In 1850 the time was approaching when, on average, the supply of wool from Australia could no longer be expected to be able to grow significantly faster than British demand, because of market saturation. Thereafter, the rate of growth of exports must presumably have slowed unless other markets or other export commodities were found.

The economy of eastern Australia—or, perhaps more accurately, the set of substantially similar though separate regional economies—had begun to congeal into a distinctive structure by 1850. Some indicators of this economic structure are given in Table 1. The export sector was dominated, of course, by the pastoral industry. Two-thirds of the export income of New South Wales (which then included the present Queensland and Victoria) was accounted for by wool, whilst associated pastoral products brought in half the remaining export earnings. By 1850 exports of whale oil and sealskins—which had been larger than wool exports two decades earlier—had fallen to negligible proportions. The export sector

**Table 1** *Indicators of the economic structure of eastern Australia, about 1850*

	%
<i>Share of workforce, 1851</i>	
Shepherds and stockmen	20
Engaged in agriculture or horticulture	15
Engaged in commerce, trade or manufacturing	15
Mechanics and artificers	8
Domestic servants	13
Professional and educated persons	4
Labourers (unspecified)	15
Other occupations	10
	100
<i>Share of exports, 1848-50</i>	
Sent to Britain	82
Sent elsewhere	18
	100
Wool	67
Tallow	11
Livestock, salt meat, hides and leather	6
Whale oil and sealskins	2
Other exports	14
	100
<i>Share of total population</i>	
Metropolitan	29
Other urban	5
Rural	66
	100

*Notes and Sources:* The figures for occupations and exports refer to the present New South Wales, Queensland and Victoria. The urbanisation figures also include South Australia. Export figures are derived from the New South Wales *Statistical Register*. Remaining figures are based on census data for the various colonies.

relied heavily upon sales to the British market. Britain took nearly all the wool clip and, as Table 1 shows, bought over 80 per cent of the total exports of New South Wales. Despite the dominance of the pastoral industry in the export sector, the labour demands of the industry were fairly low. Only one-fifth of the occupied population worked as shepherds or stockmen. The underdeveloped agricultural sector accounted for a substantial part of total rural employment. Productive conditions in agriculture were, however, quite different from those in the pastoral industry, and New South Wales was at this time a net importer of grain. Agriculture was pursued with greater success in South Australia than in

the rest of the mainland. As a consequence, South Australia exported wheat to New South Wales. This, plus the working of copper deposits for export in the 1840s, meant that South Australia depended less than the rest of eastern Australia upon the pastoral industry as a source of export income.

There was, for a new country, a remarkably high percentage of the Australian population living in towns. A feature of the urban structure was the concentration of the urban population into the main port cities. Outside these metropolitan cities there were few towns and, as Table 1 shows, these accounted for only a small part of total population. Despite the high urban proportion, there was little manufacturing development before 1850. Here Table 1 is not much help, for the census data on which the table is based simply put manufacturing into the same category as trade and commerce. There is little doubt, though, that manufacturing employed an insignificant fraction of the colonial workforce. On the other hand, there was a considerable amount of commercial, financial and transport activity, so much so that tertiary activities in general must have accounted for a large part of productive effort. Again, the information on occupations in the censuses of 1851 is not very useful as a guide to the relative size of the services sector. Finally, it is worth noting that domestic service was still an important source of employment in 1851. This was particularly the case among women. Domestic service may have accounted for as much as 85 per cent of total female employment just before the gold rushes, though this figure is very uncertain as the available information upon total female employment is thought to be unreliable.

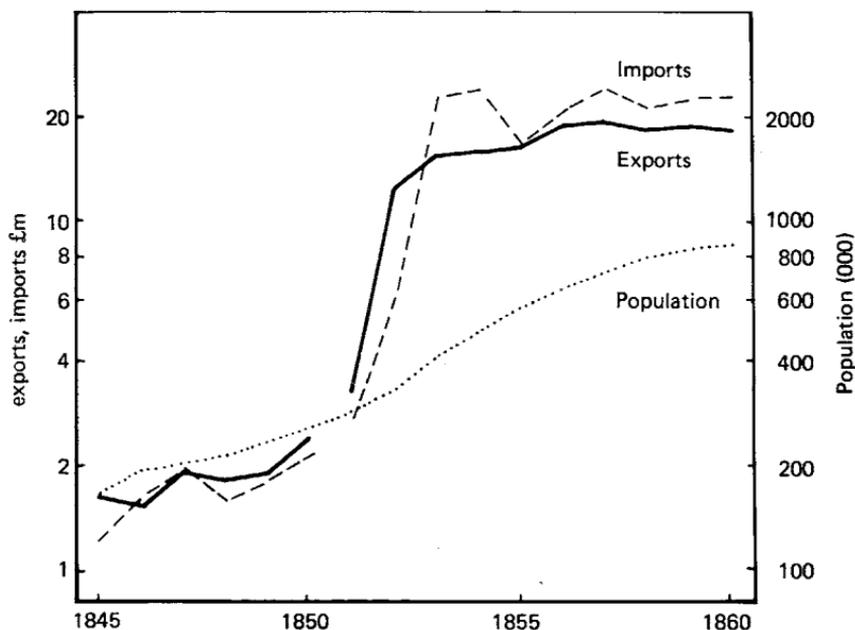
### III

The discovery and exploitation of large quantities of easily worked alluvial gold in eastern Australia brought a sudden, though temporary, increase in the rate of economic growth after 1851.<sup>7</sup> Figure 1 is useful in helping to trace some of the effects of the gold rushes. The figure shows the exceptionally rapid rise in export income that took place during 1851-3. The accelerated increase in exports in these years was the result entirely of the boom in gold mining. Indeed, it is likely that but for gold the rate of increase in exports achieved in the late 1840s may not itself have been sustained for very long. Some idea of the scale of the increase in export income associated with gold can be gained from the fact that, even if exports had continued to grow during 1851-3 at the same rate as in 1846-50, then export income in 1853 would have been less than one-quarter the amount recorded for that year.

The rapid rise in export earnings after 1851 can be viewed as an inflationary shock that was enormously large relative to the scale of the Australian economy. Suddenly, aggregate effective demand was very

much higher than it had been. Given the speed and the size of this increase in effective demand, there was no possibility, in the short run, of domestic output rising sufficiently rapidly to match the growth in demand, even if the rush for gold had not left other sectors short of labour. Given this, rising demand could be expected to lead to increased wages and prices and to increased imports. In fact, domestic inflation did occur and, as Fig. 1 shows, the response of imports to the growth in demand was as rapid as the transport and communications of the day would allow. By 1853 imports had already adjusted to the new level of export earnings.

**Figure 1** *Exports, imports and population, New South Wales, Queensland and Victoria, 1845-60*



Sources: Trade data from *New South Wales and Victorian Statistical Registers*. Population data from *Demography Bulletins*. The export and import figures for 1851-60 are slightly overstated.

After 1853, the rate of growth of exports declined and by the late 1850s both exports and imports had stabilised at a high level. News of the gold rushes had, however, enticed large numbers of immigrants to Australia. As Fig. 1 shows, the rate of population increase rose sharply from 1852. Population continued to increase at this faster rate for several years after exports had ceased to expand quickly. Although many newcomers went to the goldfields, where average yields were already falling, a large part of

the resultant increase in the workforce must have been available to other sectors. It needs emphasising that very severe labour shortages in the economy as a whole were confined to the first years of the gold rushes. Once the rate of population growth had risen, through immigration, labour shortages eased considerably. After 1854 there were even short periods of unemployment, though these were not typical. Wage rates remained much higher than in the 1840s. However, this was less an indication of excess demand for labour than a reflection of the high price levels still prevailing. From quite early in the gold rushes, much of the domestic sector was able to expand to meet the increased demand that had been generated by goldfields income. After 1853-4 the level of domestic activity must have been increasing much faster than exports. The growth in the domestic sector meant that by the end of the 1850s eastern Australia had made a substantial part of the economic adjustment to the once-for-all increase in export income.

The gold rushes relegated the pastoral industry, for the time being, from its position as Australia's chief export earner and principal source of economic growth to a more subordinate position in the economy. The growth of the export sector of the pastoral industry was severely checked. During the 1850s, many pastoralists turned their attention



1. Gold miners in Queensland towards the end of the nineteenth century. Primitive methods and simple equipment characterised alluvial mining, both during the gold rushes of the 1850s and in later decades. (By courtesy of the Mitchell Library, Sydney)

towards satisfying the expanded local demand for meat, encouraged by high meat prices and discouraged from expanding wool exports by the failure of wool prices to increase as quickly as labour costs. Wool had been displaced as a source of growth not only in the economy as a whole but also within the pastoral industry itself. This situation was not to last, for wool was to re-emerge as the leading Australian export in subsequent decades, though wool growing never again played so central an economic role as it had before 1850.

Though the increase in gold exports was concentrated into only a few years at the beginning of the 1850s, there was nevertheless a permanent increase in the scale of the Australian economy as a result of the gold rushes. Total population tripled in the 1850s. This increase in scale made possible such increases in the complexity of the economy—in particular, of the domestic sector—as were to take place after 1860. Yet the population of not much more than one million remained too small for domestic demand to serve as an adequate basis for economic growth. There was no prospect of anything like the self-sustaining, domestically oriented growth that emerged after the Civil War in the United States (with its close to forty million people and a balanced set of interdependent regional economies). At the same time, it is likely that by 1860 the increase in population had all but exhausted the scope for very rapid scale expansion in eastern Australia. The continent may have been large and mostly unpeopled but the volume of known economic resources (especially those useful in international trade) was not so vast as to be able to support continued aggregate growth at the average rates experienced between 1800 and 1860. There was no likelihood, barring further mineral discoveries, of population and economic activity continuing to increase for long at the rate of the late 1840s, let alone the rate of the 1850s.

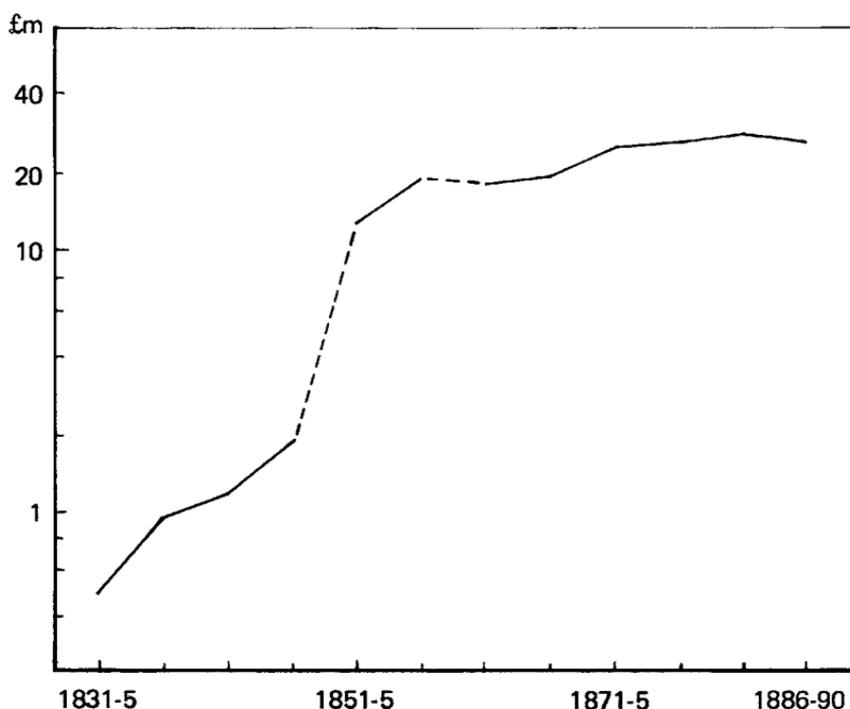
The gold rushes left Australians as probably the richest people in the world.<sup>8</sup> In 1860 real product and consumption per head were much higher than in Britain and probably higher than in the United States. To some extent, as in the period before 1850, the high level of product per head reflected the high ratio of workforce to total production. Hence, the level of product per worker was less remarkable, *vis-à-vis* other countries, than was the level of product per head. Further, some qualifications need to be made about average Australian living standards. The *distribution* of income may have been fairly uneven. And, vigorous as economic expansion had been in the 1850s, it had been unable to meet in a very satisfactory way the demands for housing and social overhead capital that arose out of the rapid growth of population itself. In 1860 Australia was a capital starved society. In addition, the economy was already experiencing some of the structural readjustments that were made necessary by the decline in employment and output on the goldfields as the easily accessible gold ran out. To the extent that it was based on a

extractive industry using a wasting asset, Australia's supremacy in material living standards was perhaps inherently precarious.

#### IV

In previous sections, the conditions of Australian economic expansion have been characterised broadly as follows. Australia, with its small population, lacked a domestic market large enough to serve as an adequate basis for economic growth. At the same time, the smallness of the population relative to available land and resources was a positive advantage in permitting the emergence of rapid growth through the expansion of exports and inflows of labour and capital from overseas. After the gold rushes, a central feature of Australian economic experience was a long-term decline in the ability to generate export growth. Wool exports resumed the growth that had been interrupted by the gold rushes, but the increase in wool proceeds was at times barely enough to

Figure 2 *Value of Australian exports, 1831-5 to 1886-90*



Sources: 1831-5 to 1856-60 as for Fig. 1; later data calculated from N. G. Butlin, *Australian Domestic Product, Investment and Foreign Borrowing*, pp. 410-11. Figures are annual averages for 5-year periods. Dashes indicate breaks in the continuity of the series.

offset the fall in gold exports. The reduction in the rate of export growth (which is shown in Fig. 2) had gone so far by the 1880s that, in value terms, exports ceased to increase at all. The 1880s was, however, a decade of high immigration and high capital imports. Aggregate economic growth was sustained until 1890 or so. During the phase of growth to 1890 there was a re-orientation of the economy away from the export sector. For a while, Australia seemed able to continue to expand even though the stimulus from the growth of the export sector was failing. Eventually, however, growth petered out and economic prosperity gave way to severe depression in the 1890s. This depression marked a turning point in the long-term growth of the Australian economy.

The period after 1860 is the first for which Australian economic historians have available to them reasonably detailed annual estimates of major economic aggregates. Estimates of Australian gross domestic product and capital formation, together with the industrial subdivision of these aggregates, were published by N. G. Butlin in 1962.<sup>9</sup> Because of inadequacies in the basic data upon which Butlin was forced to rely, and because of the sheer size of the undertaking itself, there are bound to be errors—some of them serious—in these estimates. Some specific instances where Butlin's estimates have been challenged will be referred to in later chapters. This chapter uses Butlin's estimates of total real product and capital formation as if they were substantially accurate, in the belief that these figures can help to increase our understanding of the process of Australian economic growth.

Taking Butlin's estimates of gross domestic product at their face value suggests an average rate of growth of real product of  $4\frac{1}{2}$  to 5 per cent p.a. in the thirty years after about 1860. Allowing for population growth of  $3\frac{1}{2}$  per cent p.a. leaves a margin for growth in product per head of about 1 to  $1\frac{1}{2}$  per cent p.a. There is no doubt that, in aggregate terms, Australian economic expansion was now proceeding much more slowly than before 1860. The earlier growth rates were, however, the result of an essentially pioneering expansion before 1850 and of exceptional conditions during the 1850s. Growth may have been slower after 1860 but had, essentially, a different quality. In Butlin's words, 'it was not until 1860, approximately, that a process of economic growth, sustained, large-scale, and complex, was begun'.<sup>10</sup> Even the reduced rate of aggregate economic growth was high by the standards of more mature economies. Table 2 contains estimates of the rate of economic growth in Australia, Britain and the United States in the period to about 1890. The table suggests that, in aggregate terms, Australia was growing about as fast as the United States and much faster than Britain. In terms of growth of product per head, however, Australian economic performance seems to have been less impressive. Australia increased its level of product per head at about the same rate as Britain but much more slowly than did the United States. Finally, at this level of analysis, the Australian economy

**Table 2** *Annual rates of economic growth in Australia, the United Kingdom and the United States, 1861-91*

	Real product (%)	Real product per head (%)
Australia, 1861-91	4.7	1.2
United Kingdom, 1861-91	2.2	1.3
United States, 1871-90	4.8	2.5

Sources: Australia: product from N. G. Butlin, *Australian Domestic Product, Investment and Foreign Borrowing*, p. 33; population from *Demography Bulletins*. United Kingdom: product from Phyllis Deane, 'New Estimates of Gross National Product for the United Kingdom, 1830-1914', *Review of Income and Wealth*, series 14 (1968), pp. 106-7; population from B. R. Mitchell and Phyllis Deane, *Abstract of British Historical Statistics*, London, 1962, p. 9. United States: Angus Maddison, *Economic Growth in the West*, New York 1964, pp. 201, 205.

seems to have expanded in a very stable fashion between 1860 and 1890. In both Britain and the United States these years, like the rest of the nineteenth century, were ones in which a marked trade cycle was evident. Hence growth was periodically interrupted by depression. In contrast, there was no serious economic depression in Australia as a whole in these thirty years, a circumstance that gives to the period 1860-90 a reputation as a phase of remarkably sustained economic expansion.

However, the picture of rapid and sustained economic growth taking place throughout the period 1860-90 is in some respects misleading. Whilst the rates of growth of both total product and product per head were reasonably well maintained until the end of the 1880s, this overall continuity of performance masks a deterioration in the rate of increase in productivity after the middle of the 1870s. In his pioneering account of Australian economic development between 1860 and 1890, N. G. Butlin noted that the annual growth in gross domestic product per member of the workforce fell from an average of 3.1 per cent during 1861-77 to 1.1 per cent during 1877-89.<sup>11</sup> Demographic shifts had caused the growth of product per worker to differ from the growth of product per head. After 1860 the ratio of workforce to population fell steadily as natural increase and a changed pattern of immigration combined to reduce the peculiarities of the post-gold age and sex structure of the Australian population. With the workforce growing more slowly than population, the rise in product per head seriously understated the growth in labour productivity. From some time in the 1870s, however, the workforce began to grow more quickly than population. Hence the growth of product per head now overstated the increase in labour productivity.

The changed productivity performance of the Australian economy after the middle of the 1870s was seen by Butlin as being consistent with a

**Table 3** *Economic growth in Australia, 1861-89*

	1861-75	1876-89
<i>Annual increase (%)</i>		
Gross domestic product	5.2	4.5
Population	3.5	3.5
Workforce	1.8	3.9
GDP per head	1.7	1.0
GDP per worker	3.4	0.6

*Sources:* Product from N. G. Butlin, *Australian Domestic Product, Investment and Foreign Borrowing*, p. 33; workforce derived from N. G. Butlin and J. A. Dowie, 'Estimates of Australian Workforce and Employment, 1861-1961', *Australian Economic History Review*, vol. IX (1969) and from Allen C. Kelley, 'Demographic Change and Economic Growth: Australia, 1861-1911', *Explorations in Entrepreneurial History*, 2nd ser., vol. 5 (1967-8); population from *Demography Bulletins*.

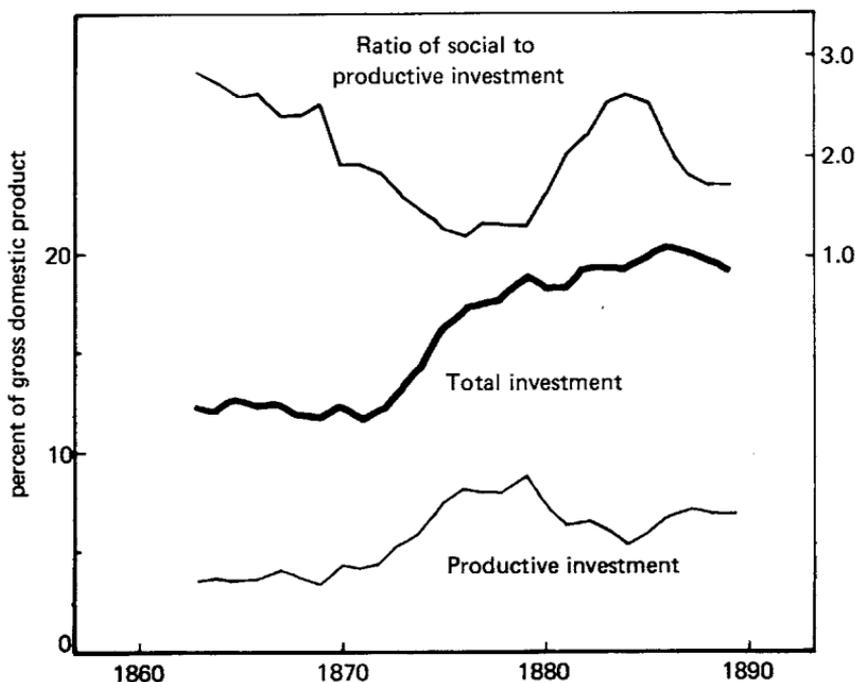
developing structural imbalance in the domestic economy that was undermining economic expansion and would lead eventually to the major depression of the 1890s. Butlin's figures, however, provide only qualified support for this sort of hypothesis. It is true that a substantial reduction in the growth of labour productivity is apparent, but even the reduced rate of productivity growth after the mid-1870s is a respectable performance. A growth of product per worker of 1.1 per cent p.a. is probably not too far removed from the average western experience of the last century or so. It is difficult to argue convincingly that this rate of growth of labour productivity is low enough to act as a signal that, in Butlin's words, 'heralded the appearance of powerful factors leading to the eventual cessation of expansion in 1889 and the catastrophic decline which touched bottom in 1895'.<sup>12</sup>

This is not to dismiss the deterioration in productivity growth after 1875 as an unimportant development. When Butlin made his original calculations he used workforce estimates that were, of necessity, crudely derived and that turn out to have been wrong. It is still not possible to describe annual changes in the size of the workforce with any certainty, but estimates that have been made since Butlin published in 1964 suggest that his calculations seriously understated the reduction in the rate of growth of labour productivity after 1875. Table 3 sets out some summary data on the two periods 1861-75 and 1876-89. There is a strong contrast between the two periods isolated in Table 3. During 1861-75, the economy was expanding very rapidly. Product growth averaged 5.2 per cent p.a. and product per head increased at 1.7 per cent p.a. Given the relatively slow rate of growth of the workforce at 1.8 per cent p.a., an annual increase in total product of 5.2 per cent meant that product per worker was rising at the extraordinarily rapid rate of 3.4 per cent each

year. After 1875, the rate of growth of total product slowed to an average of 4.5 per cent p.a. and the growth of product per head also slowed significantly. The most striking development, though, is the reduction in the annual rate of growth of product per worker from 3.4 per cent to 0.6 per cent. Demographic factors meant that the Australian workforce increased rapidly after 1875, but this rise in labour inputs was not accompanied by an acceleration in product growth. As a consequence, the rate of growth of product per worker fell sharply.

The fall in the rate of growth of labour productivity after the mid-1870s appears even more remarkable when viewed in the context of changes in the level of Australian capital formation. The middle panel of Fig. 3 shows the percentage of gross domestic product that was accounted for by gross domestic capital formation from the early 1860s to the end of the 1880s. Until the mid-1870s domestic capital formation equalled an average of 12-13 per cent of gross domestic product. This was a substantially higher fraction of total product going to domestic investment than was the case in, say, Britain at this time. From the middle of the

Figure 3 *Trends in gross domestic capital formation, Australia, 1863-89*



Source: Five-year moving averages calculated from data in N. G. Butlin, *Australian Domestic Product, Investment and Foreign Borrowing*, pp. 6, 16, 18 and 24. Social investment is defined as public investment plus residential investment.

1870s the investment ratio rose even higher until, by the late 1880s, about 20 per cent of gross domestic product was being devoted to capital formation. Thus the decline in the rate of growth of labour productivity after 1875 occurred at the same time as investment rates were booming. The conclusion seems inescapable that the investment boom of the 1880s was exceptionally ineffective in raising the output of the Australian economy.

Why should the investment of the 1880s have been so unproductive? Part of the answer to this question seems to involve changes in the composition of domestic capital formation. Some categories of investment—broadly 'social' investment, whether undertaken privately or by governments—are thought by their nature to be less productive than other types of investment in terms of their short-run impact on output potential. Here, one thinks of investment such as housing or the construction of urban water and sewerage systems. The available estimates of Australian domestic capital formation are detailed enough to allow some guesses to be made about shifts in the relative importance of social and productive investment in this period. The top panel of Fig. 3 shows that, on these estimates, the ratio of social to productive investment fell steeply from the early 1860s to the end of the 1870s and then rose just as steeply to the mid-1880s. After the late 1870s, rising social investment appears to have accounted for the whole of the increased share of gross domestic product going to investment. This was a reflection of rising government expenditure on rail construction, of the developing housing boom and, presumably, of the accelerated urbanisation of the 1880s (all to be dealt with in later chapters). What it meant was that, as the bottom panel of Fig. 3 shows, productive investment did not increase (and may have fallen) as a proportion of gross domestic product after the late 1870s. The distinction between social and private investment made in Fig. 3 is, of course, a rough one and may not be entirely appropriate. Nevertheless, at this level of disaggregation it seems that changes in the composition of investment tended to limit the effect of the investment boom of the 1880s on the growth of productive potential.

In addition, some of the explanation of the falling effectiveness of investment as a means of raising output lies in changing conditions *within* the major components of domestic capital formation. Here, there is evidence that there was a more or less serious tendency for *over*-investment to occur in each of the major avenues of capital formation in the 1880s. Between them the pastoral industry, house building and government railway construction accounted for about two-thirds of total domestic capital formation in the 1880s. In the period after 1860 the pastoral industry spread over much of inland eastern Australia. From at least the mid-1870s, this spread increasingly involved the utilisation of poorly watered land away from the main river frontages. By the 1880s the industry was taking up land that proved to be incapable, in the long

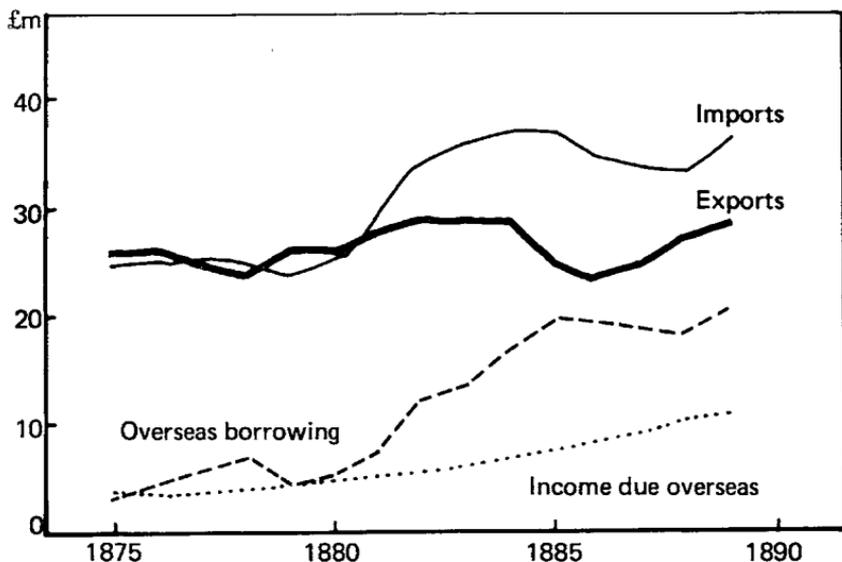
run, of sustaining a high level of pastoral activity. Much of the investment of that decade failed to yield, even in the short run, the high returns that had been typical in the 1870s when the industry was still expanding on to relatively well-watered grazing land. (See Chapter 3 for a discussion of pastoral expansion in this period.) Railway building may also have been less productive in the 1880s than earlier. In 1860 Australia had scarcely any railway track at all. In subsequent years government railway construction increased the effectiveness of inland transport. Presumably this contributed in some measure to the growth of output in this period. By the 1880s, however, new railway construction seems to have become less powerful as a means of generating output growth. Indeed, the railway investment of this decade may, for reasons outlined in Chapter 4, have had little effect at all on the growth of current output. Finally, it has been suggested that by the end of the 1880s the housing shortage of 1860 had been overcome to such an extent that there was now an excess supply of housing space in relation to population. This point is, however, in dispute (see Chapter 6). Further, even if over-investment in this sense did occur in housing, it is not clear how relevant this is to the point at issue. Housing investment has only a tenuous connection with growth in productive capacity, for housing is not an input in the productive process in the same sense as, say, investment in the pastoral industry. Hence, even if there was over-investment in housing in the 1880s, this need not imply that there was a quantitatively significant change in the effect of residential building on the productive capacity of the Australian economy.

If over-investment did take place in the major areas of capital formation, why did it occur? Most Australian economic historians have seen the answer to this question at least partly in terms of the volume of capital imports in the 1880s. In the 1870s the level of Australian overseas borrowing was relatively modest for a region of recent settlement. During 1871-80 total net capital inflow may have equalled about 15 per cent of the value of gross domestic capital formation and 10 per cent of the value of imports. Between 1881 and 1890 the average amount of capital inflow (almost wholly from Britain) was about seven times as large as in the 1870s, financed about half of domestic capital formation and was equal to half the value of imports. So large was the inflow of British capital in the 1880s that, according to Australia's first economic historian, T. A. Coghlan, the amount of capital imported exceeded the capacity of the various colonies to absorb it.<sup>13</sup> Given the level of population and resources, Coghlan thought there were insufficient sound and productive investment opportunities to use all the capital that was imported. As a result, surplus investible funds spilled over into speculative transactions or unjustified public works expenditure. On this view, then, over-investment in particular sectors of the Australian economy was a manifestation of a general over-supply of investible funds.

N. G. Butlin has suggested that the situation was more complex than this.<sup>14</sup> Butlin agrees that investment would not have occurred on the scale that it did had British capital not been so readily available. However, Butlin argues that, plentiful as British capital was, there was no *general* over-supply of investment funds, for over-investment in some sectors was accompanied by *under*-investment in others. For institutional reasons, and because of capital market imperfections, the growing volume of funds continued to be channelled into existing avenues of investment even when rates of return would have been higher in other sectors. In consequence, the over-investment that did occur in pastoral activity, in housing and in railway building could take place at the same time as other sectors of the economy—in particular, agriculture and manufacturing—were being starved of capital.

Whether over-investment in the leading sectors of capital formation was a symptom of a general over-supply of investible funds, as Coghlan thought, or a symptom of an essentially structural imbalance, as Butlin suggests, it seems clear that by the end of the 1880s the expansion of the Australian economy was precariously vulnerable. Nowhere was this more evident than in the pattern of overseas transactions. Figure 4 graphs some of the components of Australia's balance of payments between 1875 and 1889. Figure 4 brings out clearly the rise in overseas borrowing after 1880 and the consequent steady increase in the amount of investment

Figure 4 *Australian balance of payments, 1875-89*



Source: Three-year moving averages calculated from data in N. G. Butlin, *Investment in Australian Economic Development*, p. 28.

income due overseas. Rising external obligations, even on the scale of the 1880s, would have been an innocuous development had there been a commensurate increase in export income. However, even though much of the capital formation financed by overseas borrowing was notionally aimed at increasing exports, either directly (pastoral investment) or indirectly (railway construction), the value of export proceeds stagnated in the 1880s. Average exports during 1888-90 were only 13 per cent higher than in 1878-80. In contrast, the average value of imports was 50 per cent higher and the amount of investment income due overseas 150 per cent higher by the end of the 1880s than a decade earlier. By 1888-90 the amount of income payable overseas each year was equal to almost 40 per cent of export proceeds. A decade earlier the corresponding figure had been well under 20 per cent of exports. The balance-of-payments position that had emerged by 1890 was unstable, for the trends that were developing could not be sustained. Even if capital imports remained readily available, the stagnation of export income would sooner or later have imposed a check upon Australian economic expansion.

Table 4 contains some indicators of the structure of the economy in about 1890, a date that marked the end of nineteenth-century Australian economic expansion. Perhaps the major change that had taken place since the gold rushes was the fall in the relative size of the export sector. In the first half of the 1860s the value of exports had averaged well over 25 per cent of gross domestic product. During the 1850s the ratio of exports to total product must have been higher still, a situation that reflected the heavy reliance upon exports as a source of economic growth. By the second half of the 1880s, exports were equal to only 13 per cent of total product. The secular decline in gold mining after 1860 was basically responsible for this reduction in the export ratio. Within the export sector, wool had more or less recaptured the dominance of 1850, but the pastoral industry was now less important as a contributor to total product and as a user of labour than before the gold rushes. Rural pursuits in general (pastoral activity, agriculture, dairying and forestry) accounted for a smaller proportion of total employment in 1890-1 than in 1851—26 per cent as against about 40 per cent. By this time the rural sector was appreciably smaller relative to the economy as a whole than was typical of other regions of recent white settlement. (Chapter 5 develops this point further.)

Some of the fall in the share of the rural sector in total product and employment was made good by the rising importance of local manufacturing. The latter was of negligible proportions in 1850. By 1891, however, manufacturing had grown to account for 15 per cent of the total workforce. In Table 4, the share of manufacturing in gross domestic product is given as 11 per cent in 1891. The smaller share of manufacturing in total product, compared with its share in employment, is consistent with a general impression of Australian manufacturing as being a

**Table 4** *Indicators of Australian economic structure, about 1890*

	%
<i>Share of workforce, 1890-1</i>	
Rural	26
Mining	6
Manufacturing	15
Construction	14
Services	34
Other	5
	100
<i>Share of gross domestic product, 1891</i>	
Rural	25
Mining	6
Manufacturing	11
Construction	14
Services and other	44
	100
Exports (1886-90)	13
Imports (1886-90)	17
<i>Share of exports, 1886-90</i>	
Wool	66
Gold	14
Other	20
	100
<i>Share of total population, 1891</i>	
Metropolitan	36
Other urban	15
Rural	49
	100

*Sources:* Composition of workforce from N. G. Butlin and J. A. Dowie, 'Estimates of Australian Workforce and Employment, 1861-1961', *Australian Economic History Review*, vol. IX (1969) and from J. A. Dowie, 'The Service Ensemble', in Colin Forster (ed.), *Australian Economic Development in the Twentieth Century*. Shares of gross domestic product from N. G. Butlin, *Australian Domestic Product, Investment and Foreign Borrowing*. Trade figures from N. G. Butlin, *Investment in Australian Economic Development*. Urbanisation figures calculated from colonial censuses.

backward and inefficient sector at the end of the nineteenth century. There are, however, some difficulties with the available estimates of manufacturing product for this period and it is possible that manufacturing contributed a higher proportion of gross domestic product than Table 4 implies. (On this see Chapter 6, below.) Two points about manufacturing development to 1890 can, however, be made with confidence. First, manufacturing was one of the fastest growing sectors of

the economy between the gold rushes and 1890. Second, even at the end of this phase of growth, the manufacturing sector remained in some sense underdeveloped, for it relied wholly on domestic demand, suffered from import competition and was confined to fairly simple productive processes. There was little resemblance between Australian manufacturing development in the nineteenth century and the process of industrialisation that was transforming the economic structure of Britain, Germany or the United States.

The remaining sectors of the economy distinguished in Table 4—construction and services—were both oriented to the domestic market. Construction had been an important activity throughout the period of white settlement, a circumstance that reflected the need to provide a rapidly growing population with basic physical assets. In the early 1860s nearly 10 per cent of gross domestic product was directly attributable to construction. During the following period, the construction sector increased its share of total product still further as the investment booms in housing and railway building developed. By the late 1880s the sector's share of gross domestic product had climbed to an average of about 14 per cent. Like construction, services accounted for an exceptionally high proportion of productive effort in Australia. By 1890-1 about one-third of the workforce was already engaged in service activity, which is defined fairly narrowly in Table 4. The early development of the services sector in Australia—which may have been due to factors such as the high level of income per head and the early trend towards urbanisation—is a feature of nineteenth-century economic experience that so far has been too little studied.

It was noted in Section II of this chapter that even in 1850 a structural peculiarity of the Australian economy was the high proportion of the population (about one-third) living in towns. In subsequent decades the urban share increased still further so that by 1891 slightly more than half the people in eastern Australia were urban dwellers. The metropolitan cities continued to dominate the urban hierarchy, thus perpetuating an urban structure that was characteristically Australian. By 1891 Australia was well on the way to becoming a basically urban society. This somewhat precocious Australian urban development of the nineteenth century is discussed in detail in Chapter 5.

How well off had the long period of economic expansion to 1890 left the average Australian? By the standards of the old world, Australians were well fed, well clothed and well housed and, once these basic needs had been met, most people had something left for indulgences of one kind or another. Australian cities were spacious, healthy and free of large areas of extreme poverty. Material living standards were undoubtedly significantly higher than in Britain or Europe. Yet Australians were no longer better off in terms of measured income per head than everyone else in the world, as they had been at the end of the gold rushes. Since 1860

the rise in per capita product and consumption, though steady, had been outpaced by the growth of product per head in the United States, as Table 2 showed. Even before the onset of the depression of the 1890s, which was to reduce Australian living standards for some time, Australia had begun to fall behind the United States in the race to be rich.

## V

By about 1890 Australian economic expansion was, as noted in the last section, becoming increasingly unstable. In particular, the pattern of overseas transactions meant that the economy was vulnerable even to slight adverse movements in the balance of payments. As it was, the balance of payments was a source of severe deflationary pressures during the early part of the 1890s. Export income fell heavily, being reduced by 12-13 per cent between 1891 and 1894, mainly as a result of falling wool prices. Capital inflow, whose continued appearance had become essential to the maintenance of prosperity, was reduced even more than exports. In the first half of the 1890s new capital inflow averaged only one-quarter the amounts received in the late 1880s. Given the amount of income payable overseas on previous borrowing, and given the level of imports by the beginning of the 1890s, the falls in exports and capital inflow could scarcely fail to produce economic depression.

In real terms, Australian gross domestic product may have fallen by up to 20 per cent between 1891 and 1895. As population continued to increase (though at a less rapid rate than in the 1880s), the decline in product per head went further than this. By the mid-1890s per capita product had fallen to less than three-quarters of the peak levels of the 1880s. A contraction in economic activity on this scale inevitably involved heavy unemployment and steep declines in both real and money wages. It also produced considerable commercial and financial distress leading, in particular, to the collapse of many financial institutions and disarray among the banks. There is no doubt that the depression of the 1890s was much more severe and more protracted than any that Australia had previously experienced. Its impact on all aspects of Australian life was felt so keenly that historians have seen the 1890s as the source of fundamental changes in the country's political, social and cultural, as well as economic, history.

The fall in export earnings and capital inflow in the early 1890s was, of course, an important part of the explanation of the onset of depression. This is not to say, however, that events external to the Australian economy were the basic cause of the drastic decline in the level of economic activity. In this connection, N. G. Butlin has argued that the depression was the outcome essentially of the preceding pattern of *domestic* economic growth.<sup>15</sup> The disequilibrium in the balance of payments exerted its principal deflationary effects after 1891. However,

the behaviour of the available aggregate economic indicators—mainly gross domestic product and investment estimates—suggests that the peak level of economic activity may have been as early as 1888-9. If so, expansion had presumably ceased before the major fall in exports or capital inflow could have affected the economy. Moreover, the underlying disequilibrium in the balance of payments that rendered the economy so vulnerable to unfavourable external developments was, according to Butlin, largely a reflection of domestic structural imbalance. On Butlin's account, it was the misallocation of investment referred to in the previous section of this chapter that limited export growth, thus leading to a situation where export earnings were unable to cover rising external obligations and permit a normal growth in imports without a large and increasing capital inflow. This precarious balance of payments situation was therefore a *symptom* of internal disequilibrium rather than an independent factor in the depression. It is true that external conditions did change in ways that adversely affected both wool prices and the ability of Australians to borrow overseas, so that external changes significantly influenced much of what actually happened in the downswing during the first half of the 1890s. Nevertheless, Butlin would affirm that the essential reasons for the length and severity of the depression are to be found in the conditions of the preceding long-run economic expansion in Australia itself. The implication of Butlin's argument is that, even if external conditions had not deteriorated after 1890, the structural characteristics of the Australian economy ensured that major depression could not long be delayed.

This analysis is an important revision of earlier views of the origins of the depression of the 1890s. Like its predecessors, Butlin's account is open to criticism. For example, Butlin gives some weight to the notion that the peak level of domestic economic activity occurred in 1888-9, well before the fall in exports and capital imports. E. A. Boehm, using a wide variety of quantitative and qualitative indicators, has argued that the peak was reached much later than 1888-9 in all colonies except Victoria.<sup>16</sup> Here, though, the question of timing is not critical to Butlin's interpretation of the depression, for two main reasons. First, during the three decades after 1860 the Australian economy does appear to have experienced periodic economic cycles, though these were relatively mild and their existence does not conflict with the characterisation of this period as one of sustained and stable growth. Hence, even if the peak level of activity was in 1888-9, there is little in the experience of the period between 1889 and the first years of the 1890s to suggest that any recession that may have occurred was fundamentally different from earlier short-lived and mild recessions, such as that at the end of the 1870s. Second, identifying the proximate causes of the downturn in economic activity is less important than understanding the factors that produce a depression as long and as severe as that of the 1890s. Whether

the downswing was *initiated* by changes in external conditions or by internal developments may have little to do with the underlying circumstances that determined that, when the depression did occur, it should be so severe. Here, Butlin's reinterpretation of the depression of the 1890s has widened our perspective, shifting attention away from short-run influences and towards the long-run origins of economic stagnation.

Central to Butlin's analysis is the idea of domestic structural imbalance. If, as Butlin argues, there was no general over-expansion of the Australian economy before 1890 but rather over-investment in some sectors at the expense of others, it presumably follows that serious depression might have been avoided if investment had been distributed differently between industries. One problem here is that the available evidence does not unambiguously support this analysis. Certainly, there is much to suggest that over-investment did occur in the leading avenues of capital formation. However, our knowledge of investment opportunities in the sectors identified by Butlin as being deprived of capital (i.e. agriculture and manufacturing) is slight. Agriculture was, of course, a possible alternative source of export income the growth of which might have freed the economy from the balance of payments constraint that was emerging in the 1880s. In the present state of research, however, it is not known whether agricultural growth on the scale necessary to sustain aggregate economic expansion was a real possibility at this time. Nor is it clear that lack of investment itself was the main factor limiting agricultural expansion in the 1880s. Manufacturing was certainly a sector of low investment relative to output, but it is difficult to conceive of a structural shift to manufacturing serving as a viable base for rapid economic growth in the conditions of the nineteenth century. Manufacturing for export was out of the question and the domestic market was too small to allow manufacturing to develop as a genuine leading sector. In the absence of convincing empirical evidence that the neglect of investment opportunities in agriculture and manufacturing critically affected the growth potential of the Australian economy, it seems that Butlin's insights in this area must remain, for the moment, unconfirmed. In the present state of knowledge, it is not possible to judge confidently whether Butlin's views on structural imbalance are more appropriate than the older view that the economy as a whole was over-expanded by 1890.

Recovery from the depression was slow. The pre-depression peak in total real product does not appear to have been regained until 1900. In that year product per head was still about 15 per cent below the level of the late 1880s. Indeed, the indications are that the pre-depression level of product per head may not have been reached again until 1907-8. Such recovery as did take place in the 1890s involved a restructuring of the Australian economy. This restructuring was most evident in the balance

of payments. Wool exports fell, both absolutely and as a proportion of total exports, partly as a reaction to the previous over-expansion of the industry and partly as a result of drought after 1895. Some of the decline in wool exports was made up by the growth of other rural products such as meat, wheat, butter and sugar. More substantial was the re-emergence of gold as a major export. Gold mining had been a contracting industry since the late 1850s. In the early 1890s, however, gold discoveries in Western Australia almost certainly helped to ameliorate the depression in the eastern colonies by draining off some unemployed labour and by helping to bolster aggregate demand. Gold also affected markedly the trading position as reflected in the balance of payments for Australia as a whole. The rise in gold exports was a major factor in reversing, for the time being, the long-term decline in the ratio of exports to gross domestic product that had characterised Australian development since 1860. The attraction of gold was also responsible for most of such new capital inflow as did occur after 1893. Apart from the balance of payments, there were significant structural readjustments in the economy as a whole. With the cessation of positive economic growth, investment fell as a percentage of total product. In the second half of the 1880s, gross domestic capital formation had averaged about 20 per cent of gross domestic product. In 1899-1900, when the recovery was well under way, this figure was 12 per cent of gross domestic product. Net capital formation was, of course, much lower than this, though reliable estimates are not available. The main changes in the composition of total product were a rise in the share of mining and, to a smaller extent, manufacturing and a fall in the share of pastoral activity and construction.

Some of the structural changes of the 1890s were short lived. Mining resumed its secular decline in the twentieth century, as did the export ratio. Other structural changes, however, were forerunners of long-term changes in the shape of the Australian economy. Thus the pastoral industry and building and construction were never to recapture the share of total economic activity that had been theirs in the 1880s. The shift to manufacturing continued, slowly till World War II and quickly thereafter. In sum, the old sources of economic expansion were being replaced. And the new sources of expansion were, for the next half century, less powerful than the old had been. In the fifty years after 1890 total real product seems to have grown at an average rate of less than 2 per cent p.a. After allowing for population growth of about 1½ per cent p.a., this meant that product per head grew by less than half of one per cent each year.<sup>17</sup> The slowing down in per capita expansion contrasted strongly with the experience of other western countries, where previously attained growth rates tended to be maintained until the depression of the 1930s. Further, between 1890 and 1939 the Australian economy was beset with economic instability to a degree unknown in previous periods. From this it appears that the depression of the 1890s is a dividing line of

fundamental importance in Australian economic experience. Before 1890 Australia was characterised by rapid and sustained economic expansion. For fifty years after that date the outstanding features of the Australian economy were instability and slower rates of economic growth.

## NOTES:

<sup>1</sup> A recent account of the convict economy is G. J. Abbott and N. B. Nairn (eds.), *Economic Growth of Australia, 1788-1821*, Melbourne, 1969.

<sup>2</sup> Douglass C. North, *The Economic Growth of the United States, 1790-1860*, Englewood Cliffs, 1961, p. 18.

<sup>3</sup> J. W. McCarty, 'The Staple Approach in Australian Economic History', *Business Archives and History*, vol. IV (1964), p. 12.

<sup>4</sup> There is not, however, a good detailed review of the period's economic history. The most recent survey is W. A. Sinclair, *The Process of Economic Development in Australia*, ch. 3.

<sup>5</sup> 'Australia as a Region of Recent Settlement in the Nineteenth Century', *Australian Economic History Review*, vol. XIII (1973), p. 150.

<sup>6</sup> *Foundations of the Australian Monetary System, 1788-1851*, Melbourne, 1953, ch. 10. Butlin's work is the only exhaustive and definitive modern study of a major aspect of Australian economic development before 1850. The remarks quoted at the end of the paragraph are taken from p. 315 of Butlin's book.

<sup>7</sup> The 1850s have also been neglected by recent economic historians. The best accounts are by T. A. Coghlan, *Labour and Industry in Australia*, four volumes, London, 1918, vol. II, and B. Fitzpatrick, *The British Empire in Australia: An Economic History, 1834-1939*, 2nd ed., Melbourne, 1949, ch. IV.

<sup>8</sup> See N. G. Butlin, 'Long-Run Trends in Australian Per Capita Consumption', in K. Hancock (ed.), *The National Income and Social Welfare*, Melbourne, 1965.

<sup>9</sup> N. G. Butlin, *Australian Domestic Product, Investment and Foreign Borrowing, 1861-1938/39*, Cambridge, 1962. The first chapter of Butlin's companion volume, *Investment in Australian Economic Development*, summarises Butlin's interpretation of the period 1860-90 and is the basic source for this section.

<sup>10</sup> *Investment in Australian Economic Development*, p. 3.

<sup>11</sup> *Ibid.*, p. 14.

<sup>12</sup> *Ibid.*

<sup>13</sup> *Labour and Industry in Australia*, vol. III, pp. 1408 ff.

<sup>14</sup> *Investment in Australian Economic Development*, especially ch. VI. See also section V of this chapter, below.

<sup>15</sup> *Ibid.*, ch. VI.

<sup>16</sup> *Prosperity and Depression in Australia, 1887-1897*, London, 1971, ch. 3. Boehm's book is the most extended treatment of the depression of the 1890s.

<sup>17</sup> N. G. Butlin, 'Some Perspectives of Australian Economic Development, 1890-1965', in Colin Forster (ed.), *Australian Economic Development in the Twentieth Century*, London, 1970, contains a penetrating, though difficult, analysis of the retardation in Australian economic growth after 1890.

# Population

The onset of modern economic growth in the eighteenth and nineteenth centuries was generally accompanied by a population expansion that was more rapid and more sustained than at any previous period in history. Before the seventeenth century, Europe's population had sometimes risen, sometimes fallen, and no long-term trend towards population expansion was evident, save at very low rates. Some increase in the rate of European population growth occurred in the seventeenth century, but the most rapid acceleration dated from around the middle of the eighteenth century. Changed mortality and fertility conditions, closely associated with the transition to modern economic growth, had opened the first clear margin between birth and death rates. The European population about tripled between 1750 and World War I. This understates the increase in the population of European stock, for unprecedentedly large numbers of people left Europe in the nineteenth century for unsettled lands, mainly in North and Latin America. In the simplest terms, this redistribution of the European population was a response to differences in the ratio of population to economic resources in the old world and the new. In Europe, population growth pressed continually upon resources, though the primary focus of the pressure on resources shifted from Britain and north-west Europe to southern and eastern Europe as time passed. In the 'new' countries, on the other hand, the ratio of population to available resources was much lower. Whatever other factors underlay the wholesale international migration of Europeans in the nineteenth and early twentieth centuries, it represented in economic terms a relocation of population to permit a more efficient utilisation of known resources. And, whatever other effects may have flowed, this more effective exploitation of resources undoubtedly increased the material well-being of the white peoples of the world.

Australian population growth in the nineteenth century may be seen as part of the growth and redistribution of European population outlined above. As in Europe, population rose quickly because of high rates of natural increase. But in Australia population grew much more quickly than in Europe for, like other regions of recent settlement, Australia was a destination of migrants from the old world. The first two sections of this chapter outline the major trends in the growth and structure of the Australian population during the nineteenth century. The remaining two sections discuss some of the relationships between demographic change and economic growth in Australia to 1900.

**Table 5** *Australian population growth, 1790-1900*

	Population (000)	% increase p.a. in preceding 10 years
1790	2	—
1800	5	9.8
1810	12	8.3
1820	34	11.2
1830	70	7.6
1840	190	10.5
1850	405	7.8
1860	1146	11.0
1870	1648	3.7
1880	2232	3.1
1890	3151	3.5
1900	3765	1.8

*Source: Demography Bulletins*

## I

Table 5 outlines the growth of the Australian population between 1790 and 1900.<sup>1</sup> The table suggests that population growth during this period can be divided into two phases. Before 1860 the Australian population grew very rapidly indeed, though from a small base. The rate of population increase averaged over 9 per cent p.a. from 1790 to 1860 and in no decade did the rate of increase fall significantly below 8 per cent p.a. That is, the population at least doubled in every single decade for seventy years. After 1860, on the other hand, the rate of population growth fell sharply. During 1860-1900 the rate of population increase averaged 3 per cent p.a., never rising above 4 per cent p.a. in any single decade. This rate of population growth remained high by the standards of other countries, but the demographic experience was evidently of a nature quite different from that of the years before 1860.

Obviously, population expansion at the rates experienced in Australia before 1860 was bound to involve a large net inflow of population from overseas. Statistics of international migration are among the least reliable categories of demographic data. Nevertheless, the major trends in Australian immigration are reasonably well established. Between 1790 and 1860 about three-quarters of total population increase was the direct result of immigration. In no decade during this period does the direct contribution of immigration appear to have fallen significantly below two-thirds of total population increase.

Before the 1820s, 'immigration' was, of course, almost wholly a matter

of convict transportation. After 1820, however, significant numbers of free immigrants began to arrive. Between 1820 and the early 1830s these free immigrants averaged a little under one-third of the total inflow. Thereafter, the ratio of free immigrants to convict arrivals rose rapidly. In the second half of the 1830s, free immigrants outnumbered convict arrivals by two to one.

Transportation of convicts to New South Wales was abolished at the end of the 1830s, though some convicts continued to be sent to Van Diemen's Land. The cessation of transportation to New South Wales naturally had some effect in reducing the rate of population growth, though this was partly offset by the continued increase in the number of free immigrants. Many of the free immigrants who came to Australia after the early 1830s received passage assistance from the colonial authorities, funded by sales of crown land. But for government expenditure of this kind, immigration would have been substantially smaller than it was. Eastern Australia, still isolated from Europe, was a much less common destination for migrants than North America. Even so, Australia was already an important receiving country. Few migrants from continental Europe found their way to Australia, but during 1821-50 Australia may have taken as much as 10 per cent of total British emigration. During these years, Australia took more migrants than any country apart from the United States and Canada.

Australia was to become much more important in the pattern of world migration in the 1850s. The discovery of gold in 1851 provided an attraction that, for many, overcame the barrier of distance. During the 1850s people came from all parts of the world in search of gold. Most, however, were still of British origin. Between 1851 and 1860 perhaps 40 per cent or more of the people leaving Britain came to Australia. One interesting point, though, is that despite the lure of gold, the United States continued to take substantially more British migrants than Australia. Further, the level of immigration to Australia in the 1850s was still bolstered by various schemes of assisted passage. The gold rushes had made labour scarcer rather than otherwise and it was felt to be in the interests of the colonies to spend money on the encouragement of working migrants. These considerations, however, do not detract from the status of the 1850s as the peak decade of Australian immigration in the nineteenth century. The flow of people to Australia may have accounted for over one-fifth of the total inter-continental migration of the 1850s, a remarkably high proportion in view of the smallness of the Australian settlements. This position was not even approximated in later decades. Further, gold pulled migrants in such numbers that in less than a decade more people arrived in Australia than had been living in the colonies in 1851. Never again was immigration to be so large relative to the size of the existing population.

Turning to the natural increase of the population, there are no useful

estimates of mortality or fertility rates in Australia before the late 1850s, when compulsory registration of births and deaths began to affect the quality of the published statistics. Before then, official figures for births had referred only to baptisms, at first only within the Church of England but later within other denominations as well. Similarly, the figures for deaths referred only to burials at which a clergyman had officiated. Hence, in the official figures both births and deaths were considerably understated. Because of this, it is not possible to use official estimates of births and deaths as a basis for calculating the rate of natural increase of the Australian population before about 1860. Instead, figures for total population increase and immigration have to be used to make indirect estimates of what the rate of natural increase might have been. On this somewhat unsatisfactory basis, it is estimated that the average rate of natural increase may have been about 1.5 per cent p.a. in the 1790s and may have risen to about 2.5 per cent p.a. by the 1850s. These figures are very rough, though the estimate for the 1850s is the same as the rate of natural increase recorded in the first half of the 1860s. In the 1850s (if the experience of the early 1860s is a reliable guide), the natural increase of 2.5 per cent p.a. was composed of a birth rate of something like 42 per thousand and a death rate of about 17 per thousand of total population. There is little point even in guessing at movements in birth and death rates earlier in the nineteenth century.

The demographic experience of the period to 1860 implied a certain population structure. The leading element in this structure was the preponderance of adult males. This was present in an extreme form under the convict system. In 1821, before many free immigrants had arrived and before natural increase had been able to exert much equalising effect on the relative numbers of men and women, there were an estimated 388 adult males per hundred adult females in mainland Australia. In subsequent decades, natural increase helped reduce this disparity between the sexes and there were explicit attempts to encourage female immigration. Nonetheless, a substantial male dominance persisted. In 1861 there were still 166 adult males for each hundred adult females. Another characteristic of the convict period had been the low ratio of children to total population. As late as 1821 children under thirteen made up no more than a quarter of the total population. By 1861 the relative number of children had risen so that children under fifteen now made up about 37 per cent of the total population of mainland eastern Australia. With the demise of the convict system, convicts dwindled to be an insignificantly small fraction of the population. New South Wales had been the home of convictism and, in the early years, most of the adults had been convicts. As early as 1851, however, almost 98 per cent of the adult population of New South Wales was returned in the census as being free. Finally, despite heavy immigration, the proportion of the total population that had been born in Australia was rising slowly. In 1861 about 37 per cent of

the population of eastern Australia had been born in Australia or New Zealand. Most of the people recorded as having been born in Australia were, however, still children in 1861. The bulk of the adult population was made up of immigrants from Britain.

## II

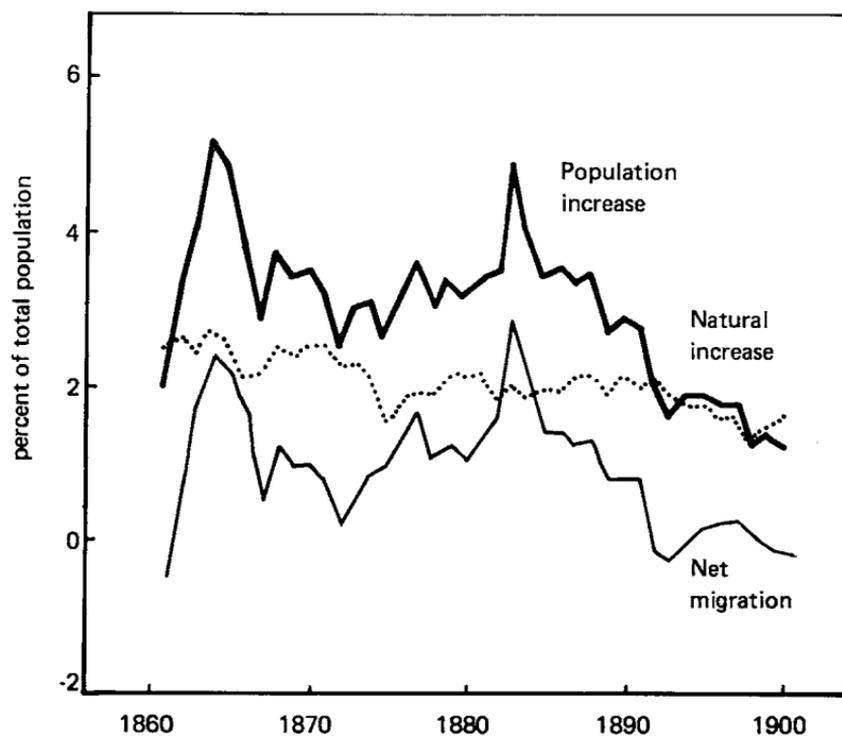
Demographic data for the period 1860-1900 are sufficiently detailed to allow a more precise picture to be drawn of the major determinants of population increase than is possible for the years before 1860. Table 6 sets out average annual rates of population growth, natural increase and net migration for each five-year period during 1861-1900. Figure 5 graphs the same data annually. As noted in Section I, population growth averaged 3 per cent p.a. in these years. Not only was this a substantially lower rate of increase than before 1860, but population growth rates tended to decline during the period itself. The rate of population growth fell from the first half of the 1860s to a trough in the early 1870s. Rates of growth then accelerated until the mid-1880s but never quite reached the levels of the first half of the 1860s. Thereafter, rates of population growth fell more or less continuously to the unprecedentedly low levels (for white Australia) of the late 1890s. The average rate of growth of total population was to recover somewhat from the lowest levels of the 1890s but the average for the decade (1.8 per cent p.a.) was not much different from subsequent long-run experience. (Between 1900 and 1970 the average rate of growth of the Australian population was about 1.7 per cent p.a.) The period after 1860 can be seen, therefore, as one of transition between the exceptionally rapid population growth of the first half of the nineteenth century and the more sober rates of population increase that have so far characterised Australia in the twentieth century.

The lower rate of population growth in Australia after 1860 was the result, in demographic terms, largely of a fall in the level of immigration. In the 1850s well over half a million people had come to Australia as migrants. In the 1860s, the corresponding figure was about 175,000 people. The decline in immigration was, of course, more marked when expressed as a percentage of total population. Though immigration was reduced, both absolutely and in relation to total population, after 1860, it remained an important component of population growth until about 1890. In the depression of the 1890s, however, the flow of migrants to Australia virtually ceased. This was in marked contrast to the experience of other regions of recent white settlement. Indeed, the period between the 1880s and World War I saw the flow of migrants from Europe reaching a peak. By the end of the century over a million people were leaving Britain and Europe each year for new homes overseas. Yet local conditions were so uninviting that Australia shared hardly at all in the massive transfer of people from Europe after 1890. Between 1890 and the

**Table 6** *Components of Australian population increase, 1861-1900*

	Annual increase in population	Annual increase from	
	%	Natural increase	Immigration
		%	%
1861-65	4.0	2.5	1.5
1866-70	3.5	2.3	1.2
1871-75	2.9	2.1	0.8
1876-80	3.3	2.0	1.3
1881-85	3.8	1.9	1.8
1886-90	3.2	2.0	1.2
1891-95	2.1	1.9	0.2
1896-1900	1.5	1.5	0.0

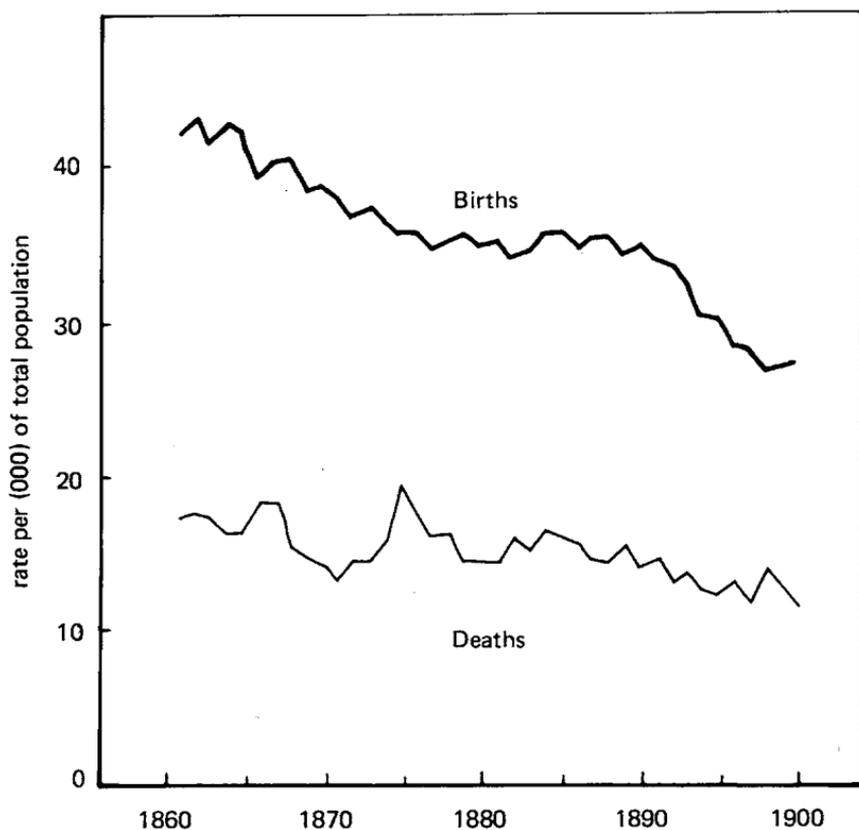
*Source: Demography Bulletins*

**Figure 5** *Components of Australian population increase, 1861-1900*

**Table 7** *Australian birth and death rates, 1861-1900*

	Annual rates per 000 of total population	
	Births	Deaths
1861-65	42.4	17.0
1866-70	39.6	16.3
1871-75	37.0	15.6
1876-80	35.5	15.8
1881-85	35.2	15.7
1886-90	35.2	14.9
1891-95	32.4	13.3
1896-1900	27.7	12.8

*Source: Demography Bulletins*

**Figure 6** *Australian birth and death rates, 1861-1900**Source: Demography Bulletins*

outbreak of war, total net immigration to Australia accounted for less than half of one per cent of the number of people leaving Britain and Europe.

The rate of natural increase in the Australian population, like the rate of immigration, tended to decline during 1861-1900. The rate of natural increase averaged 2.5 per cent p.a. in the first half of the 1860s but thereafter fell continuously, save for a temporary interruption in the second half of the 1880s, to an average of 1.5 per cent p.a. in the second half of the 1890s. Natural increase was now a more important source of population growth (relative to the total increase in population) than previously. In each of the 5-year periods distinguished in Table 6, natural increase accounted for over half the increase in total population. Indeed, in only one 5-year period (1881-5) did the share of natural increase in population growth fall below three-fifths. In contrast, as noted in the preceding section, the share of natural increase in total population growth had not exceeded one-third in any decade before 1860. Whilst natural increase provided a substantially larger part of total population growth than did immigration after 1860, it is clear from Fig. 5 that changes in the level of immigration were responsible for most of the annual variation in the rate of population growth. This is because year-to-year changes in the rate of natural increase were fairly small, whilst immigration was much less stable in the short run.

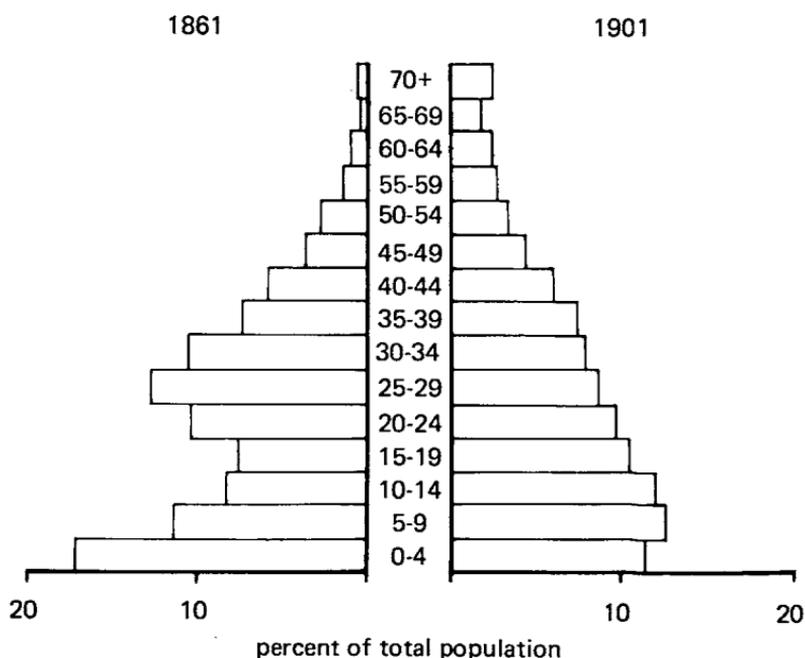
In demographic terms, the fall in the rate of natural increase in the Australian population after 1860 can be explained wholly by a fall in the birth rate. Table 7 sets out average birth and death rates for 5-year periods during 1861-1900. Figure 6 graphs the same data annually. The birth rate fell steeply from 42.4 per thousand of total population in 1861-5 to 27.7 per thousand in 1896-1900. But for the reduction in the death rate during the same period from 17.0 to 12.8 per thousand of total population, the rate of natural increase would have fallen even more sharply than it did. The decline in the birth rate after the early 1860s is not to be explained by things such as changes in the age composition of the population. Rather, it is clear that the fertility of the Australian population was falling. It is estimated that between 1861 and 1901 fertility (as measured by the number of births per thousand women aged 15-44, standardised for age) fell by about 40 per cent.<sup>2</sup> Most of the decline in fertility appears to have taken place after 1880. The trend towards reduced fertility was not confined to Australia but was characteristic of most western countries in the latter part of the nineteenth century. The fall in fertility was to persist, in Australia and elsewhere, well into the twentieth century.

The period after 1860 is one in which the age and sex structure of the Australian population became much more 'normal'. As noted in Section I, the population of 1861 had a disproportionately high number of adult males. This structural peculiarity was much reduced by the end of the

**Table 8** *Indicators of population structure, eastern Australia, 1861 and 1901*

	1861	1901
<i>% of total population</i>		
Children (0-14)	37	35
Adult males	39	34
Adult females	24	31
Adult males per hundred adult females	166	112
<i>Birthplaces (%)</i>		
Australia and New Zealand	37	78
Britain and Ireland	54	18
Other and unspecified	9	4

*Source:* Censuses of New South Wales, Queensland, South Australia and Victoria, 1861 and 1901.

**Figure 7** *Age distribution of the Australian population, 1861 and 1901*

*Source:* Censuses of New South Wales, Queensland, South Australia and Victoria, 1861 and 1901.

century because of the change in the relative importance of natural increase and immigration as sources of population growth. Men and women were found in approximately equal numbers in the part of population growth that was attributable to natural increase. Thus, as immigration (with its preponderance of males) declined in importance, the natural equality between the numbers of each sex began to assert itself. Between 1861 and 1901 the number of adult males per hundred adult females fell, as Table 8 shows, from 166 to 112. The proportion of adult males in the total population was reduced from 39 per cent to 34 per cent in the same period. Some imbalance between the sexes remained, but it was no longer so marked as to dominate the Australian way of life.

A further structural adjustment in the Australian population is not evident in Table 8. After decades in which immigration (which had a preponderance of young adults) had accounted for the bulk of population growth, and particularly as a result of the mass immigration of the 1850s, the age distribution of the Australian population had a distinct 'kink' in 1861.<sup>3</sup> This kink is shown in the population pyramid in Fig. 7. The figure shows that in 1861 there was a very large number of people in the 20-34 age group relative to neighbouring age groups and to total population. This characteristic was most marked in Victoria, the focus of the gold rushes. In the other colonies, the distribution of the population into 5-year age groups was more regular than Fig. 7 would suggest. However, in 1861 Victoria was easily the most populous of the Australian colonies (with almost half the total population) and the structural distortions of the Victorian population were extreme enough to ensure the presence of similar distortions in the Australian total. Figure 7 shows that by 1901 the kinked age distribution of 1861 had been eliminated and a more normal age distribution established. As was the case with the sex composition of the population, the reduced importance of immigration allowed the pattern of natural increase to iron out the peculiarities of the 1861 age structure. The only irregularity in the 1901 age distribution appeared in the lowest age groups, where the 0-4 group was smaller than the group above it. This was a reflection of the low birth rate of the second half of the 1890s.

One other structural change in the population deserves mention: the total population was increasingly Australian born. Again, like the trend towards a more normal age and sex distribution, this reflected the greater importance of natural increase as a source of population growth after 1860. As indicated in Table 8, the proportion of the total population recorded as being born in Australia or New Zealand (the latter was a minor component) rose from 37 per cent in 1861 to 78 per cent in 1901. The proportion of *adults* that had been born in Australia in 1901 was smaller than this. The limited data that are available on the birthplaces of adults in the 1901 censuses suggest, roughly, that 60 per cent of people aged twenty-one or over had been born in Australia. This was almost

certainly the first census date at which, as a result of the virtual cessation of immigration in the 1890s, a clear majority of adults was Australian-born.

### III

So far this chapter has described certain features of Australian population growth and structure but has avoided reference to any relationship between demographic change and economic growth. The rest of the chapter deals with some aspects of this relationship. The present section discusses some economic influences on population growth. The following section discusses the effects of demographic change on Australian economic growth.

The question of the influence of economic factors on population growth falls easily into two parts: economic influences on immigration and on the rate of natural increase. Migration to Australia was part, of course, of the redistribution of the European population during the nineteenth century. Despite the array of proximate causes of the migration of individuals and groups—whether social, political, religious or simply eccentric—there is no serious doubt that the international migration of the nineteenth century was basically a response to economic conditions. Underlying the population redistribution were differences in the ratio of population to resources in Europe and the regions of recent white settlement. In this context, there has been some debate on the relative importance of the 'pull' of untapped resources in the new world and the 'push' of economic conditions in Europe. One consideration that seems to favour the view that push conditions were a decisive influence is that differences in the ratio of population to resources alone were not sufficient to induce large-scale migration. The Americas were empty and accessible long before the nineteenth century, but large-scale population transfers were delayed until economic changes in Europe led to the displacement of rural population. That is, economic dislocation created a pool of people who were virtually forced to leave their traditional homes. By and large these people gravitated to areas of economic opportunity, some to towns and cities in their own countries, others overseas. Initially, then, push factors may have predominated. However, once the migration habit had been established, the pull of economic opportunity in the regions of recent settlement seems to have become an increasingly important influence on the level of international migration, so that migration was no longer critically dependent upon an initial displacement of population in the sending countries. By the last decades of the nineteenth century, though, the distinction between push and pull factors had lost some of its analytical usefulness. By this time improved transport and communications, freer trade and relatively unimpeded international factor flows had tied much of the world together into something resembling an

international economy. Although the mutual dependence of the various national economies can be exaggerated, international migration is to be seen essentially as one aspect of an interdependent set of economic relationships, with population shifting in a fashion systematically associated with currents in international trade and the fluctuating economic fortunes of various parts of the world. One example of the artificiality of distinguishing between push and pull factors in this situation is the accelerated rural displacement in Britain after 1870. Ostensibly, agricultural dislocation was an important push factor generating emigration. However, agricultural distress in Britain was related to increased competition from American grain. Hence the resources superiority of American farming—a pull factor—was an essential element in the genesis of the push factor in British emigration from the 1870s.

How does the Australian experience fit with the overall pattern of international migration? Very early in the nineteenth century, of course, Australia was all but isolated from the major developments in international trade and factor flows. Convicts rather than free immigrants provided the main source of population increase and the flow of convicts was not much influenced by changing economic conditions in the penal colonies. Later, as Australian involvement in the international economy increased, migration to Australia became an integral part of the basically economic process of population redistribution. Further, it seems that economic conditions in Australia were a more important influence on the level of immigration than were economic conditions in Britain or Europe. Whatever the relative strength of push and pull factors in determining the total outflow of people from the old world, the *distribution* of these migrants between receiving countries was presumably a reflection of the relative strength of the pull of economic opportunity in the various regions of recent settlement. In this respect, the United States was consistently more attractive than other new countries to migrants. Australian resources were not sufficiently large to support anything like the average flow of people to the United States and, in any case, Australia was much farther from Europe. For these reasons, Australia was destined to take a fairly small share of total European emigration. However, there were periodic fluctuations in the level of economic prosperity in both the United States and Australia which affected the attractiveness of each country as a destination for migrants. When prosperity in Australia coincided with temporary stagnation in the United States (as, for example, during 1873-8 and 1882-5), a greater than usual proportion of total British migrants came to Australia.<sup>4</sup> The reverse was true in periods of high prosperity in the United States. On at least two occasions in the nineteenth century, economic conditions in Australia can be identified as a critically important influence on the level of migrant inflow. First, in the 1850s the prospects of easy fortunes in

gold would have made Australia a more common destination than previously, irrespective of the state of the United States economy. Second, in the 1890s economic depression in Australia was so severe that immigration was bound to dry up. Australia's failure to share in the massive transfer of people from Europe after 1890 was clearly the result of local economic conditions.

There are, of course, complications qualifying the fairly simple view that the level of immigration to Australia was the net outcome of the interaction of economic forces in Australia, other new countries and the old world. For example, it has been argued by Allen C. Kelley that the timing of migration to Australia after 1861 was associated with cyclical changes in the age structure of population that themselves originated in the age composition of the Australian population in 1861.<sup>5</sup> The main feature of the 1861 age structure has already been described: the disproportionately high number of people aged 20-34 and the under-cutting of younger age groups (see Fig. 7). Kelley argues that, if no further immigration took place, this age structure could be expected to produce systematic changes in age composition in subsequent decades. For example, exceptionally rapid growth could be expected in the 20-34 age group about two decades after 1861 as a lagged result of the high birth rate implicit (because of the high proportion of young adults) in the age composition of population in the early 1860s. At just this time—in the early 1880s—immigration was booming and this (because of the age composition of migration) further accentuated the concentration of population in the young adult age groups. Taking the whole period 1861-1911, Kelley identified the major swings in age structure that would have resulted from the age composition of the Australian population in 1861 if no further migration had occurred. Kelley found that relatively rapid growth in the younger adult age groups in these hypothetical cycles tended to be associated with periods of high immigration. Thus, Kelley concluded that 'migration subsequent to 1861 tended to *accentuate* and reinforce the population cycles originating from the experience of the 1850s'. Further, and more tentatively, Kelley suggested that the heavy immigration of the 1850s, via its impact on the age structure of the population at the end of that decade, 'was the primary underlying causal force in the long, demographic cycles, and that subsequent migration reacted to, rather than initiated, waves of economic and population growth'.<sup>6</sup>

How is this to be reconciled with the notion of specifically economic conditions as the major influence on immigration? One link is presumably to be found in any effect that changes in the age structure of population may have had on the level of economic activity. In this connection, it could be argued that rapid growth in the younger adult age groups tended to produce rapid growth in demand for many important items, especially housing. If so, it is possible that, during the early 1880s, the

changing age structure of population helped to produce a situation of excess demand in the economy as a whole, leading to labour shortages and increasing the attractiveness of Australia as a destination for migrants. This would mean that, whilst favourable economic conditions were an important *proximate* cause of increased immigration, variations in economic conditions may themselves have been due in some measure to systematic demographic changes originating in the peculiarities of the age composition of population at the end of the gold rushes. At present, the importance of this effect remains a matter for speculation. However, Kelley's analysis points to the need to be aware of the possible existence of complex interconnections when trying to assess the determinants of the level of immigration into Australia.

A further complication is that colonial government expenditure on assisted immigration was an important influence on migrant inflow during most of the nineteenth century. In the short run, the flow of migrants to Australia was affected significantly by the amount that governments spent on subsidising passages. This, in turn, was influenced by budgetary considerations and, particularly after 1860, by public investment plans. In the long run, government expenditure on assisted immigration meant that more people came to Australia than would otherwise have come, especially as a major barrier to migration to Australia was the length and cost of the ocean voyage from Europe. Australia was not alone in trying to tempt migrants in this way. Latin American countries offered passage assistance and free land in a bid to divert migrants from going to the United States, where generous government land policies after the Homestead Acts were a potent inducement to would-be settlers in rural areas. The conclusion is, therefore, that government policy in most receiving countries modified to some extent the basically economic process of population redistribution in the nineteenth century.

Government policy in Australia may also have affected the composition of immigration. For one thing, government efforts to find suitable migrants were largely confined to Britain. This reinforced the extreme British character of Australian immigration. Further, land policy, compared with land policy in the United States, meant that Australia was not a very attractive place for farming migrants after 1860. In the United States, land was given free to settlers. In Australia, on the other hand, land was to be had only at a price. Partly as a consequence of this, Australian immigration in the latter part of the nineteenth century was more urban in origin than was typical in other new countries.

The rate of natural increase in the Australian population was also affected by economic factors. Indeed, it can be argued that economic and social change originating in the process of modern economic growth was critical to the trend displayed by birth and death rates. Despite the lack of direct evidence on mortality conditions in Australia before the late

1850s, it is reasonably certain that, for most of the nineteenth century, the long-term trend in the death rate was downwards. Steadily falling death rates were common to Australia and most other western nations in this period. Here, the influence of advancing medical practice was presumably important. However, there is much to suggest that falling mortality in the western world was closely associated with economic growth, which produced better nutrition, improved housing and provided the resources necessary for social investment in, for example, more adequate water and sewerage systems. There were also adverse effects of economic change: increased urbanisation shifted population increasingly into cities where mortality was consistently higher than in rural areas. In the main, however, these structural shifts were outweighed by the effect of economic growth in raising overall living standards and material well-being. In Australia, the lack of overcrowding in the major cities and the absence of old structures meant that, in any case, city life was never as unhealthy as in Britain and Europe.

The relationship between fertility and economic growth is less well established. Little that is useful can be said about fertility levels in Australia before about 1860: it is not even known whether birth rates were rising or falling in the long term. After 1860, two aspects of fertility deserve special attention. First, at the end of the gold rushes fertility was substantially higher in Australia than in Britain or Europe. In 1861 births per thousand women aged 15-44 were one-third more numerous in Australia than in Great Britain.<sup>7</sup> It is not certain to what extent economic circumstances explain this high level of Australian fertility. It is significant, however, that in the regions of recent settlement as a group the fertility of the white population was typically higher than in Britain or Europe.

Second, in the last decades of the nineteenth century a sustained fall in fertility developed both in Australia and in other western countries. Some of the fall in fertility was undoubtedly a spontaneous reaction, whose mechanism remains unspecified, to prior falls in mortality. Reduced death rates, and particularly reduced infant mortality rates, meant that generally unchanged fertility levels produced in most countries accelerated population growth and rapid increases in average family size. To some extent, reduced fertility was presumably a means of adjustment tending to eliminate these effects of changed mortality conditions. In addition, falling fertility in the latter part of the nineteenth century is generally seen as an outcome of sustained economic development. Again the mechanisms involved are not understood, though the greater incidence of urbanisation and the changed economic and social conditions of an industrial as against a rural society are clearly part of the explanation. Whatever mechanisms did operate, however, the historical association of the establishment of modern economic growth followed, after a lag, by rapid falls in fertility is sufficiently common to be per-

suasive. In general terms, it is easy to see where Australia fits into this demographic experience, though details of the Australian case are not always typical. For example, it has been shown that increased urbanisation—an important cause of falling fertility in most western countries—was not a particularly powerful source of reduced fertility in Australia during 1861-1901. Further, the reduced masculinity of the population after 1861 significantly reduced the proportion of women who married, and this presumably added to the fall in Australian fertility.<sup>8</sup>

One interesting feature of the connection between economic growth and fertility, in the conditions of the nineteenth century, concerns the contrast between the long run and the situation in the short run. In the long run, economic progress led eventually to falling fertility; in the short run, fertility tended to be lower in periods of depression than when the economy was booming. In Australia, therefore, economic *growth* was an important long-run influence tending to reduce fertility, whilst the temporary *cessation* of economic expansion in the depression of the 1890s produced, in the short run, an accelerated decline in fertility.

#### IV

What implications did population growth have for Australian economic development in the nineteenth century? Obviously, without the growth in population that took place, the continent's economic resources would not have been exploited to the extent that they were. Population growth was a critical influence on the rate of growth of aggregate real product, providing both a growing labour supply and a growing body of domestic consumers. Except on isolated occasions, an increase in population must have had a positive effect on total product.

More interesting than the effect of population on the level of aggregate economic activity is the relationship between the increase in population and the growth of product per head. How did population influence the level of per capita product? Would Australians have increased their product per head faster or more slowly if the rate of population growth had been different? These questions are basic to our understanding of Australian economic development. Hence it is unfortunate that their answers are by no means clear. The experience of many countries suggests that there is no simple unchanging relationship between demographic and economic change: population growth sometimes helps and sometimes hinders the growth of product per head. And, in the present state of research, it is not possible to discuss the Australian case in a full and satisfactory way.

A first approach is to abstract from the short-run effects of population growth and concentrate upon the long-run implications of population expansion for economic growth. In this context, elementary economics teaches that increases in population (once any short-run adjustments in

capital stock and other economic magnitudes have occurred) may be associated with increasing, decreasing or constant returns to scale. A large rather than a small population can lead to economies, for example in the use of items of social overhead capital, such as transport systems. Further, the increased size of the domestic market resulting from a larger population may make possible the use of technically efficient productive processes that would be uneconomic at low levels of output. On the other hand, an increase in population can produce adverse effects on product per head if, for example, an economy's resource base is inadequate in relation to the enlarged population.

As a general proposition, it is often asserted that, in a given state of technical knowledge and with given resources, the level of output can be expected to change in the following fashion as population grows. At low levels of population, it is thought likely that increases in population will be accompanied by a greater than proportionate expansion in real product, thus raising product per head. At high levels of population, however, any limitations implied by the fixity of resources are more likely to make themselves felt. After a certain point, these adverse influences can be expected to outweigh any sources of increasing returns to scale, so that further population expansion will lower rather than raise product per head.

If this is a plausible analytical framework, it can be asked whether, at any stage of the nineteenth century, the Australian population was large enough for diminishing returns to have been a possibility. A casual comparison of Australia with other countries would suggest that this is unlikely. At the very end of the century, Australian population density remained low, even by the standards of other regions of recent settlement. There were well under three people for each square mile in the four eastern mainland colonies in 1900, compared with about twenty-five people per square mile in the United States. Even in Victoria, the smallest and most closely settled mainland colony, population density was not much over half the average for the United States.

Here, though, Australia's emptiness is misleading, for the continent's economic resources were not anywhere near as vast as its area. Given the nature of Australian rural development in the nineteenth century, there is some scope for arguing that as early as the 1880s eastern Australia was being affected by diminishing marginal returns to scale expansion. Australia's comparative advantage lay most obviously in the pastoral industry. As will be seen in the next chapter, the latter had by this time begun to run into long-term limits to further growth. From about this time, population expansion would necessarily be absorbed into other rural pursuits (and even here opportunities were limited) or into other sectors, such as manufacturing, that had a low resources content and were less productive, per unit of labour input, than the pastoral industry had been. If so, then in the absence of fundamental technical change

future population increases would involve diminishing returns in the sense that the scale expansion of the economy would be achieved at the expense of a lower rate of growth of product per head than might otherwise have been attained. Given what we know about Australia in the nineteenth century, these propositions must remain largely speculative, though they appear to be broadly consistent with the economic development and structural changes of the first decades of the twentieth century. Ironically, manufacturing productivity was so low in these later decades partly because the Australian population was much too small for the domestic market to allow manufacturing to reap significant scale economies. Thus Australian population may have grown to be too large for the economy to make the best use of its comparative advantage in high productivity rural pursuits, whilst population would have had to be very much larger for local manufacturing to have been capable of being conducted in a technically efficient manner.

Apart from these long-run considerations, there are short-term limits to the ability of any economy to absorb increases in population. Very rapid population growth is likely to produce adjustment problems that, in the short run, tend to constrain rises in real product per head. For example, if population is increasing very quickly, a large proportion of productive effort is necessary simply to supply the growing labour force with complementary capital inputs and to provide basic items of social overhead capital. This sort of consideration is relevant to Australia before 1860. Population growth at the average rate of this period must have imposed substantial strains, in the short run, on the ability to expand the capital stock at an appropriate rate. Hence a slower rate of population growth may have allowed product per head to rise faster than it did. This was particularly true of the 1850s. With population growing at 11 per cent p.a. there was no immediate prospect of meeting even basic demands for shelter in a very satisfactory way.

None of this means that the migration of people to Australia in the nineteenth century was an uneconomic process. Even if slower rates of population growth would have meant that product per head in Australia would have expanded faster—and this remains speculation—there is little doubt that, in a wider context, the redistribution of population from Britain to Australia raised overall economic efficiency. If Britain and Australia are considered together (and even at the end of the nineteenth century most Australians would have thought themselves part of the British community), it is clear that migration continued to redistribute labour supplies more effectively in relation to economic opportunity. Further, to the extent that differences in product per head between Britain and Australia reflected differences in the ratio of population to resources in each country, there remained a basic economic justification for migration flows from Britain to Australia.

So far, this discussion has centred on the economic effects of changes in

*total* population. Additional complications arise when shifts in the *structure* of population are also taken into account. For example, it has already been argued that during 1820-60 the sheer rapidity of total population growth may have tended to limit rises in product per head. During these years, however, structural shifts in the Australian population may have pushed product per head in the opposite direction. Further, these structural changes were closely related to the rate of population increase itself. In 1820 convicts were an important part of the workforce. With the subsequent growth of free immigration the convict element in the workforce fell rapidly until it became insignificant in the late 1840s. Given the evident superiority of free labour, the quality of the workforce must have risen considerably, with favourable implications for the growth of per capita product. Had free immigrants been less numerous (so that total population grew more slowly), this would have delayed the improvement in the economic effectiveness of the working population. The situation was complicated further by a fall in the ratio of workforce to total population as the extreme masculinity of the population of the convict period was reduced. Here, the relevant point is that a lower rate of immigration would have brought changes in age and sex structure that would have led to the share of total population engaged in the workforce falling faster than it did. The speed of total population growth, therefore, helped to limit the decline in the proportion of the population that was in the workforce, thus perpetuating to a significant degree the situation in which the level of *product* per head was underpinned by unusually high labour *inputs* per head of total population. It was not until after 1860 that substantially reduced immigration allowed the ratio of workforce to population to fall to levels more or less typical of other nations. In sum, in the years after 1820 the quality of the workforce and the proportion of the population in the workforce would have been lower if the rate of total population growth had been lower. In this situation, the *net* impact of the rate of population growth on product per head is very difficult to estimate.

In Section III of this chapter it was noted that changes in the age structure of population had been analysed in detail by Allen C. Kelley. In that section, attention was focused on Kelley's notion that the peculiar age structure of population at the end of the gold rushes was the source of subsequent swings in the age structure of the Australian population. In his article, Kelley goes on to examine some of the implications of the changes in age structure for Australian economic performance after 1861. Underlying his analysis is the assumption that three important economic variables were linked with age structure. First, changes in age structure are taken to have determined changes in the number of people of working age. Second, the growth of the 20-34 age group was held to be a particularly important influence on the growth of housing demand, as it was at these ages that people typically began to exercise an effective demand

for separate accommodation. Third, Kelley argues that the rate of household savings was affected by changes in age structure because of a tendency for people to save at different rates at different stages of life. If these sorts of relationships did hold, then workforce growth, housing demand and household savings would be tied together in a systematic fashion by the influence on each of them of changes in the age structure of population.

Whilst Kelley's analysis is too complex to pursue in detail, it is worth looking at a simplified version of his general results for the 1880s and 1890s.<sup>9</sup> In Chapter 1 it was pointed out that much of the 1880s was characterised by heavy immigration, a housing boom, deteriorating productivity growth and a reliance upon overseas borrowing to finance a large part of domestic capital formation. On Kelley's assumptions, age structure would at this time have been changing in the following fashion as a lagged result of the 1861 age composition. First, in the absence of immigration, the workforce would have been growing more slowly than population and absolute additions to the population of working age would have been falling. Second, numbers in the young adult age groups would have been growing exceptionally quickly so that demographically determined residential demand would have been high. Third, age structure would have been changing in a fashion that would have tended to depress the level of domestic savings. The combination of slow workforce growth, high housing demand and low domestic savings seems to fit neatly with the high immigration, housing boom and heavy capital inflow actually experienced in the 1880s. Further, the shift of resources into housing is consistent with a poor productivity performance, as conventionally measured, in that investment in housing made considerable demands on labour supplies and yet had little impact on the growth of productive capacity.

Central to Kelley's analysis is the point that the mechanics of population change would make this particular conjunction of circumstances transitory. The continued ageing of the Australian population would have produced by the 1890s an age structure that involved an increasing level of additions to the workforce, falling residential demand and a rising domestic savings ratio. Again, much of the economic experience of the depression of the 1890s is apparently consistent with these developments: immigration and capital inflow dried up, housing investment collapsed and severe unemployment developed.

The validity of this kind of analysis depends, of course, on the appropriateness of the assumptions that are made about the relationship between age structure, on the one hand, and workforce growth, housing demand and household savings, on the other. Here, the link between age structure and the growth of the workforce is clearly the strongest, though the size of the workforce was affected by changes in participation rates as well as by age composition of population. Less well established is the

influence of changes in the relative size of particular age groups upon the growth of housing demand. Although Kelley's assumptions are intuitively plausible, there are reasons for thinking that the course of residential demand was not critically dependent upon changes in age structure. (This is dealt with further in Chapter 6.) Finally, the relationship between the savings ratio and age structure is based largely on supposition. Given the nature of the available data, the estimates of swings in the savings ratio implicit in the shifts in age composition must remain (as Kelley recognises) hypothetical and incapable of empirical verification. This sort of difficulty is inherent in historical analysis. Despite limitations of this sort, Kelley has demonstrated that systematic swings in the age structure of population may have been a potent influence on the rate and timing of Australian economic growth after 1861, even if the exact relationship between age composition and economic growth is open to debate. Kelley's work is a reminder that a reasonable understanding of the links between demographic change and economic growth requires a more complex analysis than can be conducted in the general terms used in this chapter.

#### NOTES:

<sup>1</sup> The Australian population statistics in this chapter are taken from the Australian *Demography Bulletins* or are calculated directly from the various annual censuses. Statistics of international migration are derived from I. Ferenczi and W. F. Willcox, *International Migrations*, 2 vols., New York, 1929-31. The best introductory account of Australian population change in the context of world demographic trends is W. D. Borrie, *Population Trends and Policies: A Study in Australian and World Demography*, Sydney, 1948, pp. 1-58.

<sup>2</sup> Colin Forster, 'Aspects of Australian Fertility, 1861-1901', *Australian Economic History Review*, vol. XIV (1974), pp. 106-7.

<sup>3</sup> The kink in the age distribution of the Australian population at the end of the gold rushes will figure prominently in the latter part of this chapter. A. R. Hall first analysed the possible implications of this kinked age distribution for subsequent Australian economic development in a short article, 'Some Long Period Effects of the Kinked Age Distribution of the Population of Australia, 1861-1961', *Economic Record*, vol. 39 (1963), pp. 43-52. This is a useful piece to read in preparation for the more difficult reading on this topic that is referred to later in the chapter.

<sup>4</sup> Allen C. Kelley, 'International Migration and Economic Growth: Australia, 1865-1935', *Journal of Economic History*, vol. XXV (1965), p. 349.

<sup>5</sup> 'Demographic Change and Economic Growth: Australia, 1861-1911', *Explorations in Entrepreneurial History*, 2nd ser., vol. 5 (1967-8), pp. 207-77.

<sup>6</sup> *Ibid.*, pp. 250-3.

<sup>7</sup> Forster, 'Aspects of Australian Fertility', p. 106.

<sup>8</sup> These points are developed further in Forster, 'Aspects of Australian Fertility'.

<sup>9</sup> The graph on p. 263 of Kelley's article 'Demographic Change and Economic Growth' is helpful here.

# Exports and the balance of payments

Chapter 1 outlined some features of the spread of economic growth to regions of recent white settlement in the nineteenth century. It was noted that transmission of growth involved the development of a pattern of international trade in which the regions of recent settlement exchanged food and raw materials for the industrial products of Britain and Europe. Transmission of growth also involved unprecedentedly large transfers of people and capital from the old world to the new. Here, international trade and factor flows were intimately related. Economic opportunity in the export sector of the new countries underlay the inflows of labour and capital that occurred. Export production and the inflow of overseas capital underpinned the growing capacity of the new regions to import the products of the older countries. On occasion, as in the United States, economic development freed a region of recent settlement from much of its dependence on external economic circumstances. By the Civil War, domestic economic relationships had come to dominate the pattern of American growth. In contrast, other regions of recent settlement remained tied to the international economy even where, as in Australia, the domestic economy had developed sufficiently by the end of the nineteenth century to influence significantly a region's overall economic performance.

In the first chapter some general points were made about the relationship between the balance of payments and economic growth in Australia in the period to 1900. This chapter deals in more detail with the development of the export industries and with major trends in the balance of payments (including capital imports), beginning with the convict period.

## I

During the convict period, Australia received little economic stimulus from international trade. Before 1820 most of the colonists' limited ability to earn foreign exchange derived from the penal function of the original settlements. Early in the colony's history a pattern of internal trade emerged in which the government bought food and stores from the private sector, paying for these, ultimately, in Treasury Bills drawn on London. These sales to the government sector (plus the pay of the military) dominated local supplies of foreign exchange. As noted in

Chapter 1, the proceeds of these sales to the government were in some ways akin to export income. Although there was no trade over international boundaries, foreign exchange was being earned by sales to a market in which both price and the quantity demanded were fixed independently of the level of local economic activity. However, it was also pointed out in Chapter 1 that sales to the government to feed the gaol lacked an important attribute of exports in that government expenditure of this kind could not, in the long run, exceed the growth of the local population. There was, therefore, no access to a market wider than that provided by the local population itself. Further, this population was so small that there can have been no possibility of domestic demand being sufficient to generate a high and rising level of real product per head. The latter would be achieved only through a specialisation that depended upon access to a large international market.

Before white settlement in Australia was two decades old, some of the colonists were saying explicitly that sources of export income would have to be found if the colony was to progress. Here, it has been argued that the years 1803-4 were critical.<sup>1</sup> The Australian settlements were by that time close to being self-sufficient in grain so that, in the absence of exports, grain output could no longer grow faster than population. In addition, it was clear that the government was intent on limiting its expenditure and hence the flow of Treasury Bills to the private sector. Together, these developments meant that the private sector's capacity to import would be curtailed unless alternative supplies of foreign exchange were found. It seems to have been at about this time that the colonists began to look in earnest for export products. The list of exports tried was a long one: timber, coal, trepang, sandalwood, sealskins, seal and whale oil, wine and wool were included. All, of course, were resource intensive and many sought to exploit neighbouring seas and islands rather than the resources of the Australian mainland itself.

The fisheries seemed to offer the most immediate hope of rapid export growth. Overseas demand for whale and seal oil and for sealskins was high whilst nearby seas and the southern coast of Australia were promising whaling and sealing grounds. The colonists did not have the fisheries to themselves, for British and American whalers were keen rivals for the catch. Once Australians entered the trade in earnest, however, they had an advantage in that Sydney and Hobart were so much closer to the whaling grounds than were the home ports of the British and American ships. Before 1820, sealing and whaling were the largest sources of genuine export income the colonists had. In the 1820s they were joined as a major export earner by wool. The following decade, the 1830s, was in some ways a peak decade for whaling. Certainly, the industry's export earnings were higher than ever, though wool exports grew much faster and, by the end of the 1830s, were a good deal larger

than the exports of the fisheries. In the 1840s, whaling dwindled into insignificance, partly as a result of falling world demand for whaling products, partly due to the depletion of herds through over-fishing.

How important were the fisheries in the colonial economy? Most historians have either ignored whaling or given it an essentially subordinate or ephemeral role in Australia's early economic development. One exception is Geoffrey Blainey who argues that, until the early 1830s, whaling was more influential than wool in determining the pattern of economic change.<sup>2</sup> Blainey points out that export earnings from whaling exceeded those from wool before 1820 and that it was not until after 1833 that wool began to leave whaling behind as a source of export income. Further, according to Blainey, whaling had important linkage effects on the colonial economy, for it stimulated shipbuilding, helped to develop a local carrying trade and promoted urbanisation. Socially, whaling was the first major Australian industry to employ only free labour, whilst the practice of paying labour on a profit-sharing basis had implications for the distribution of income.

Blainey's main concern is to establish that the fisheries were more significant than wool in the early Australian economy. Before 1820 this was almost certainly so. However, this early primacy does not necessarily give to whaling a central role in the transition to modern economic growth. Whilst whaling and sealing earned more than other exports, the industry provided only a supplementary stream of foreign exchange before 1820. During this period it is unlikely that whaling exports were large enough to modify significantly the limits to economic growth inherent in the smallness of the domestic market. It was not until the 1820s or 1830s that a critical shift occurred towards economic growth based on the exploitation of overseas demand for the products of abundant local resources. By this time, whaling exports were much larger than before 1820, but the dynamic element in export growth lay increasingly in the expansion of wool output. The available statistics are inadequate to sustain confident assertions about the composition of exports in the 1820s. The most that can be said is that the value of wool and whaling exports were about equal by the end of the 1820s. Given whaling's lead in 1820, this implies that wool exports had grown faster than exports from the fisheries in the intervening period. After the early 1830s, there is no doubt that the value of wool exports was growing much faster than whaling exports. The later the date one takes, the wider the gap that appears between the export earnings of the two industries. By the end of the 1830s wool, then still growing rapidly, earned two or three times as much export income each year as the fisheries, which were soon to decline into obscurity. Even if the paucity of research into whaling did not prevent an extended treatment of the industry's place in the early colonial economy, the critical role of the rise of wool exports during Australia's transition to modern economic growth would justify con-

centrating on the development of the pastoral industry before 1850. The next section discusses the growth of pastoral activity in this period.

## II

The first sheep landed in Australia were unsuited to wool production, but a small number of merinos were introduced from South Africa as early as 1797.<sup>3</sup> Limited attempts to breed up the quality of some flocks followed almost immediately. By 1804 it was widely recognised that fine wool growing promised to be a lucrative means of exploiting the resources of eastern Australia. Good pastoral land was to be had virtually for the asking and it was known that British manufacturers were anxious to obtain raw wool from sources that were less likely than European supplies to be disrupted by political upheaval. There was, however, no rapid development of wool exports for years after this. As late as the beginning of the 1820s wool exports appear (though this figure is very uncertain) to have brought in no more than 10 per cent of the colony's earnings of foreign exchange and most of these exports were of coarse rather than fine wool.

The long time lag between the widespread realisation of wool's potential, around 1804, and the development of large-scale wool exports some twenty or so years later has presented Australian economic historians with some problems of interpretation.<sup>4</sup> Why did fine wool growing take so long to become established as a major export industry? The answer to this question seems to have involved fairly mundane economic considerations affecting investment in wool growing. There were, in the first place, short-run supply constraints. Local flocks were initially so poor that raising their quality to a point where a substantial proportion of sheep would be producing fine wool was a lengthy process. Something like seven years was seen as a minimum period before a pastoralist could expect satisfactory returns from fine wool. This meant that prerequisites for fine wool growing were a long-term attitude towards investment and sufficient capital to carry a pastoralist through the necessary gestation period. But capital was scarce and, in the early years, many colonial capitalists seem to have thought of Australia as a temporary home. Hence, short-run returns tended to be emphasised. Moreover, there were in the short run profitable alternative avenues for investible funds, particularly in importing or in exporting motley cargoes of hastily garnered products. In the pastoral industry itself, returns to meat production were for years high enough to deter investment in wool. The demand for meat was for long undersupplied from local sources so that beef and mutton production was a profitable enterprise. Further, mutton and wool growing were competitive in the sense that building up a fine wool flock meant forgoing mutton income. It can be argued, therefore, that large-scale efforts to raise fine wool would be delayed until

**Table 9** *Pastoral expansion in mainland eastern Australia, 1831-50*

	Annual increase	
	1831-40	1841-50
	%	%
Sheep numbers	22	12
Value of wool exports	32	11
Volume of wool exports	26	14

*Source:* New South Wales *Votes and Proceedings*, various years. The figures for the growth in sheep numbers, in particular, are only approximate.

livestock growth had caught up with population, until the limited growth potential of other exports was felt and until a significant number of leading capitalists revised their attitude towards long-term investment.

It has been usual to assume that these conditions were satisfied by the beginning of the 1820s. This position has been challenged by E. A. Beaver,<sup>5</sup> who has argued that in New South Wales the wool trade did not develop in more than a nominal sense before the late 1820s or early 1830s. On these points, Beaver has conducted a lively debate with J. P. Fogarty, who has defended the traditional view.<sup>6</sup> There is no space here to review this debate. Much of the disagreement arises from ambiguities in the available indicators of variables such as the quality of the wool clip and the proportion of the colony's flocks used in wool production in the late 1820s. Because of the lack of directly relevant information in contemporary statistics, the debate is almost of necessity inconclusive, though the traditional view has been supported by G. J. Abbott in his recent account of pastoral development before 1850.<sup>7</sup>

Once wool growing had been firmly established the value and volume of wool exports, almost wholly to Britain, rose extremely quickly (see Table 9). The 1830s, in particular, was a decade of buoyant optimism and expansion. Sheep spread rapidly into the interior of eastern Australia. Access to a seemingly unlimited supply of virtually free land was one of the essential ingredients of the pastoral boom. Another ingredient was the existence of a large market for wool in Britain that had so far been untapped by the colonists. British demand for raw wool had long been met by Spanish and German supplies. Neither the Spanish nor the Germans were to prove capable of resisting Australian competition for a major share of the market. Given Australia's initial position as a supplier of negligible importance, the Australian industry could expand its output much faster than the rate of growth of British demand. There seemed, for the moment, to be no effective market constraints on growth. Unusually high wool prices in Britain in the middle of the 1830s were an extra stimulus, though they were not basic to the industry's expansion. As

prices for Australian wool fell after the mid-1830s the value and volume of wool output continued to grow.

Pulled along by the headlong expansion of wool, the total recorded value of exports of New South Wales (which then included Queensland and Victoria) rose at an average annual rate of about 25 per cent during 1831-40. Whilst this figure must be subject to a wide margin for error, and whilst there are no estimates of gross domestic product for these years, there is no doubt that, in value terms, the growth of exports exceeded the growth of total product by a considerable margin. (Exports per head rose at 14 per cent p.a.—there is no possibility that the growth of per capita product was as high as this.) As a result, the ratio of exports to gross domestic product in current prices must have risen substantially in the 1830s.

More remarkable still was the growth in recorded imports into New South Wales, financed by rising exports and a flood of British capital seeking profit from the pastoral boom. Private capital came in cash and goods brought by immigrants and through British banks and companies newly established in the colony. In addition, British government expenditure on the convict establishment remained an important component of total capital inflow. By the end of the 1830s, New South Wales was able to import each year twice as much as was being earned in exports. Thus, whilst the growth of export income from wool was a major direct source of economic expansion, the indirect effects of pastoral prosperity on economic growth (via induced inflows of capital and migrants) were also considerable.

In the early 1840s the pastoral expansion faltered as a result, according to S. J. Butlin, of falling profit expectations.<sup>8</sup> Wool prices continued to be lower than in the early part of the boom. At the same time, production costs threatened to rise at the margin. The spread of pastoral activity had already gone so far that many contemporaries felt that only land inferior to that taken up in the 1830s was now available to new stations. Further, irrespective of the quality of available land, the industry had pushed far enough into the interior to prompt fears that new stations would face higher transport costs. Worries about rising costs also reflected incipient labour shortages. The industry had relied to a significant extent on convict labour, and transportation ceased at the end of the 1830s. There was not felt to be much prospect of non-convict labour supplies growing quickly enough to fill the gap, for it was recognised that budgetary difficulties would force the local administration to cut expenditure on assisted immigration. For potential new entrants to the industry, short-run profit expectations, which had been high during the boom, were probably seriously reduced by 1840-1. It is argued by Butlin that this fall in profit expectations underlay the sharp fall in the flow of British capital to the colony which occurred in the early 1840s, though some part may also have been played by the English financial crisis of 1839. Pastoral

distress and the fall in capital imports were important influences during the transition to severe economic depression in eastern Australia after 1840.

The situation of the pastoral industry was, for a time, desperate. The cessation of expansion was felt throughout the industry because sales of stock to new entrants had been an important source of income to established pastoralists. The lack of a profitable means of disposing of stock increases was alleviated somewhat by resort to boiling down carcasses for tallow, but the reduction in stock sales and continued low wool prices placed many pastoralists in financial difficulty. Prospects were further depressed by threatened developments in the land laws in New South Wales. During the 1830s, the pastoral industry had spread on to crown land, paying only a nominal licence fee. Now the local administration, itself facing budgetary problems, was determined to squeeze more from the industry for the use of land. New land regulations were promulgated in 1844. These regulations would have increased pastoralists' costs significantly, especially on the very large inland stations. In the ensuing political battle, the squatters managed to persuade the British government to alter the regulations so as to reduce their effect but the industry was left, in the end, with higher land costs than previously. In return, their security of tenure was increased. (Chapter 8 discusses this further.)

One way in which distress spread through the pastoral industry in the depression of the early 1840s was via a reduction in stock sales by established pastoralists to new entrants. In this connection, it has been argued by G. J. Abbott that disposal of surplus stock was in fact essential to pastoral profits before 1850. Abbott is quite explicit:

Looking back over the three decades preceding the discovery of gold it would seem that . . . only in a few years were the returns on wool sufficiently high to cover costs of production, and that graziers depended to a large degree on the sale of their surplus stock for their profits.<sup>9</sup>

The implication of this is that the continued profitability of individual pastoral enterprises depended upon the expansion of the industry as a whole: established pastoralists sold stock to new entrants who in turn made no profits until their flocks had increased sufficiently to allow sales of sheep to still more new entrants. Ultimately, the process was financed presumably by the injection of new funds into the industry, principally from Britain.

If this were the case, the pastoral expansion would have been a remarkable economic phenomenon: an extremely rapid growth in output that fed off itself, that had no external economic justification and that managed to survive a severe economic crisis (for, as Table 9 shows, wool exports grew rapidly even in the 1840s). As it is, the evidence for the supposed lack of profitability of wool production in normal years is not

Table 10 *Hypothetical costs and returns of sheep farming in the 1840s*

<i>Initial outlay</i>	£
20,000 sheep	6,000
Bullocks, drays and horses	433
Station buildings, etc.	1,500
	<u>7,933</u>
<i>Annual expenses</i>	
Labour (wages and rations)	1,360
Repairs, depreciation, loss of stock	263
Freight, commission	433
Travelling expenses, household luxuries, grog for shearing, proprietors' time	200
Miscellaneous expenses	175
Interest on £7,933 at 8%	633
	<u>3,063</u>
<i>Annual income</i>	
Wool at 1s 6d a lb	3,000
Sale of wethers at boiling down price	250
	<u>3,250</u>

*Source:* Condensed from C. P. Hodgson, *Reminiscences of Australia*, London, 1846, pp. 59-62. Abbott, *The Pastoral Age*, pp. 121-2 reproduces Hodgson's figures in more detail. The individual items under annual expenses do not add to the total because of rounding.

strong. In his analysis of the profitability of wool farming, Abbott is forced to rely heavily on estimates of 'typical' costs and returns made by various contemporary observers rather than on the account books of actual stations. The various estimates differ so widely that the accuracy of any of them must be suspect. Further, it is not clear that the estimates used by Abbott do support unambiguously his propositions about the critical role of stock sales in pastoral profitability. Consider, for example, a set of estimates made in 1846 that is described by Abbott as 'the most detailed of any presented in books and pamphlets published before 1851'. A condensed version of these estimates is contained in Table 10. Abbott takes these estimates to show that 'the returns from wool... just covered costs including interest on capital at the current colonial rate of interest'.<sup>10</sup> An alternative reading of Table 10 is that—ignoring for the moment any livestock increases that occurred—income from wool may have returned something like a normal profit, covering both interest charges and an allowance for a pastoralist's time.

This does not, however, get at a basic difficulty in Abbott's analysis, arising from his attempt to distinguish between income produced by wool taken off a pastoralist's initial stock of sheep, on the one hand, and in-

come produced by the increase in a pastoralist's flocks, on the other. The tendency for flocks to increase rapidly that was inherent in the conditions of the pioneering pastoral expansion was obviously an important source of economic gain. But reaping this gain did not depend upon *selling* stock increases (unless a station was already fully stocked), for any unsold stock would produce a future stream of income in the form of wool. Thus the situation in Table 10 is one in which the year's operations bring in a current income from wool *and* provide an increase in the station's capital stock in the form of a natural increase in its flocks. In the table, this natural increase is listed as being sold, but retaining the extra stock would increase the subsequent stream of wool income without increasing costs in the same proportion (for interest charges and some labour and miscellaneous costs would not rise at all). This casts doubt on the usefulness of a procedure which ignores the fact that livestock increases may themselves be converted into returns from wool. Here, it is important not to confuse an enterprise's *liquidity* position with its profitability. On occasions, as was common in the early 1840s, liquidity problems may have meant that disposing of surplus livestock was essential to a pastoralist's financial survival. This situation, however, is not relevant to conclusions about the profitability of wool growing in normal years.

The depression of the early 1840s marked a serious crisis in the fortunes of the pastoral industry. Further, many contemporaries feared that the depression was a sign that long-run limits to pastoral expansion were beginning to make themselves felt. These contemporary attitudes have prompted some historians to write of the 1840s as if little or no pastoral growth occurred. It is true that the heady days of the 1830s were gone, but the available evidence suggests that pastoral growth resumed after no more than a temporary set-back. Table 9 shows the value and volume of wool exports to be increasing at annual rates of 11 and 14 per cent respectively during 1841-50, percentage rates of growth that may have been lower than in the 1830s but which were still extremely high. Further, the expansion of sheep farming was much greater in *absolute* terms in the 1840s than in the 1830s. Despite boiling down of surplus stock and even a few exports of livestock to New Zealand and South America, there were three times as many sheep in mainland eastern Australia in 1850 as in 1840. During the 1840s almost nine million sheep were added to the colony's flocks, compared with an addition of well under four million sheep in the 1830s. If constraints on pastoral growth, such as shortages of suitable land, were inevitable in the long run, there was as yet no clear sign of their influence being critical.

The continued growth of wool output almost certainly meant that wool increased further its share in gross domestic product in the 1840s. (Whilst there are no figures for the latter, total product growth of 11-14 per cent p.a. is just about out of the question for these years.) The in-

crease in wool exports in the 1840s was not, however, enough to maintain the growth of the value of total exports at anything like the rate of the 1830s. During 1841-50 the total recorded exports of mainland eastern Australia rose at about 5 or 6 per cent p.a. The relatively slow growth of total exports in the 1840s was due partly to the collapse of the fisheries. By 1848-50 the amount of export income gained each year from this source was only one-quarter the average annual earnings of 1838-40. The slower growth in exports in the 1840s was accompanied by a drastic fall in imports. In 1848-50 recorded imports were actually 20 per cent lower than in 1838-40. The fall in imports was associated with the apparent cessation of net capital inflow into eastern Australia after the early 1840s. The wool industry may have been growing rapidly, but its ability to attract large amounts of capital from Britain had been much reduced. Together, slower export growth and the drying up of capital imports meant that the external stimulus to Australian economic growth was less in the 1840s than it had been in the 1830s.

In the two decades to 1850 the pastoral industry was obviously an important influence on the shape of the Australian economy. One set of ideas designed to illuminate the relationship between a new country's export sector and its pattern of economic development is the staple theory of economic growth.<sup>11</sup> A distinctive feature of staple theory is that it stresses the effect that the technology of export production will have upon the economic structure of a new country. Some types of export staples are said, by their nature, to imply a pattern of income distribution and of backward and forward linkages that generates demand for a wide range of domestic production. The result is a fairly complex economic structure. Other staples, through want of appropriate linkages, result in a more simple type of economy. It is usual to place wool in the latter category of export staple. Wool created no demand for a wide range of inputs from other sectors. In particular, there was no significant impetus given to local manufacturing before 1850. Nor was wool an input in other local industries: virtually the whole of the clip was exported with no more processing than was needed to transform it into a marketable commodity. It can be argued that the technical requirements of wool exports—a thinly spread rural population and relatively heavy demands for financial, commercial and marketing facilities in the main ports—helped to create a distinctive pattern of Australian urbanisation. Most of the urban population was in a few coastal towns. Inland, the urban structure was underdeveloped. Finally, the dominance of wool found expression in the social and political structure with the incipient emergence of a pastoralist elite.

Staple theory is a useful way of analysing the structural implications for a new country's economy of a given pattern of comparative advantage and a given export technology.<sup>12</sup> Explaining economic growth involves, however, explaining *changing* patterns of comparative advantage and

economic structure. When a new country begins to specialise in the export of a particular commodity, export production can grow very quickly indeed because, initially, both the resource base and the size of potential overseas demand are huge relative to the scale of local economic activity. However, the initial pace of export growth will not be maintained indefinitely if exports continue to depend on one commodity. Eventually, either limits to the resource base or market saturation will slow the growth of export production. Then the rate of aggregate economic expansion will fall unless the previous phase of development has created the pre-conditions for self-sustaining economic growth or unless new export commodities are found.

At the end of the 1840s a market constraint on the future growth of Australian wool exports was not far from becoming apparent. Almost all the wool clip was sent to Britain. The very rapid expansion of wool sales to Britain in the period to 1850 had been possible because Australia had initially been an insignificantly small supplier in the British market. By the late 1840s, however, Australia had come to supply over half of Britain's total wool imports. Obviously the scope for further growth based on increasing Australia's market share was limited. Had the rate of growth of Australian wool exports and total British wool imports been maintained at the average levels of the 1840s, Australia would have been supplying the whole of Britain's wool imports by the middle of the 1850s. In 1850, then, the time was approaching when the rate of growth of wool exports would fall unless new markets were found.

Applying staple theory to this situation would suggest that in 1850 Australian growth prospects were poor. Wool had not produced strong domestic sources of economic expansion or the conditions likely to foster the rise of a 'second-generation' staple. Yet Australian export prospects were transformed in 1851 by the finding of large deposits of easily worked alluvial gold. Staple theory does not add to our understanding of the rise of this new export, for the gold rushes cannot be linked in any but an analytically trivial way with the technology of the previous export staple. What staple theory can do is point to some of the structural implications of wool as a staple export and point to the different structural implications of gold. But staple theory seems to have no useful and distinctive contribution to make to the analysis of a *change* in export staple that, in the short run, considerably affected both the pace of economic growth and the direction of structural change in eastern Australia.

### III

To criticise staple theory for its failure to explain the gold rushes is to set high standards, for economic analysis in general has little to offer in the way of explanations of mineral discovery. Usually, mineral finds are

treated as random events. In the Australian context, this would mean that the occurrence of the gold rushes was not related in any systematic way to the prior pattern of economic development. On the other hand, Geoffrey Blainey has argued that mineral discovery ought to be amenable to explanation by conventional economic analysis. Indeed, Blainey himself has attempted to construct a theory of mineral discovery, using his extensive knowledge of Australian mining in the nineteenth century.<sup>13</sup> Blainey argues that, whilst the essential conditions for mineral discovery were present in Australia throughout the period 1840-1900, the forces promoting mineral discovery 'were startlingly heightened in certain economic conditions'. In particular, 'the overwhelming majority of discoveries appears to coincide with the trough and initial upswing of the business cycle'.<sup>14</sup> Willingness to exploit mineral finds was greater at this phase of the business cycle, according to Blainey, because the profitability of alternative pursuits was low, as were interest rates, whilst labour was more freely available than usual.

Blainey's theory is intended to explain the timing of mineral discoveries in Australia throughout 1840-1900. Whatever the theory's merits in this context, it has difficulty accommodating the gold rushes of



2. Bullock transport, about 1875. Bullock and horse teams continued to move a large part of the Australian wool clip and station supplies long after the basic railway network had been laid. (By courtesy of the National Library of Australia)

the 1850s. The scale of the rushes, in relation to the size of the economy, dwarfed other mineral discoveries in Australia in the nineteenth century. This makes the gold rushes, in some sense, unique and hence unlikely to be explained in precisely the same terms as later discoveries. And, whilst the first important gold discoveries in 1851 (earlier finds had occurred regularly since the 1820s) were probably made at about the stage of the business cycle predicted by Blainey's theory, the mechanisms specified by Blainey do not appear to have been operative. Blainey's theory emphasises increased inducements to capitalists to exploit mineral discoveries at particular phases of the business cycle. It is clear, however, that local capitalists viewed the initial gold discoveries with disfavour. In alluvial gold mining, as conducted in the early 1850s, what has to be explained is the rush of working men to the diggings, to the distress and alarm of their employers. The likelihood of such a rush occurring would seem to be insensitive to cyclical variations in profits and interest rates and even insensitive to variations in labour market conditions (except perhaps in cycles of much greater amplitude than were evident in the Australian economy at the relevant time). Further, Blainey himself cites other influences external to the economy that affected the timing of the gold rushes: '... the first major gold discovery would have come in the slump of 1848-9 but for the archaic common law which affirmed that all gold belonged to the crown'.<sup>15</sup> In sum, despite Blainey's argument that minerals discovery ought to be capable of analysis in economic terms, it is probably necessary in the present state of research to continue to treat the gold rushes as a random shock to the Australian economy.

The gold rushes are a colourful and important chapter in Australia's economic history. However, surprisingly little has been written about the gold rushes in analytical economic terms. There is not even a basic quantitative description of the main features of the development of gold mining in the 1850s, though some general points can be made. Gold mining was initially a primitive labour-intensive industry where average returns were not startlingly high but where the uneven distribution of income and the hope of striking it rich proved a sufficient inducement to the diggers. In terms of staple theory, linkage effects were presumably different from those of the pastoral industry, though this matter has not been investigated in detail. As time passed, the technology of mining and the organisation of the industry changed. Easily won surface deposits ran out and gradually gold mining became an industry with higher capital requirements, organised on a company basis.

The balance of payments was transformed by gold. By 1853 total exports were running at five or more times the 1850 level. As noted in Chapter 1, this was an inflationary shock that was massive in relation to the size of the local economy. Gold, of course, now provided the bulk of Australian exports. After 1853 total exports grew much more slowly. By the late 1850s gold returns were falling. Yet gold still accounted for about

half of Australia's exports as late as 1861, bringing in more than twice the export income gained from wool.

The rapid export growth of 1851-3 made possible a considerable increase in imports. Indeed, by 1853 imports were already higher than exports and an import surplus continued to be incurred through the rest of the 1850s. This import surplus was financed by capital inflow. But gold differed from wool in the scale of capital inflow that was attracted. In the pastoral boom of the 1830s, Australian economic growth had depended at least as much on capital imports as on increased exports. In some years total imports were twice the value of exports. In the 1850s, on the other hand, the import surplus was never so large in relation to export earnings. At no stage of the 1850s do capital imports appear to have exceeded half of total exports and in most years the ratio of capital imports to exports was substantially lower than this. In terms of the balance of payments, gold made its impact directly through an increase in exports rather than through its ability to attract outside capital.

The gold rushes brought important adjustments in the pastoral industry. As the rushes developed, labour costs to pastoralists soared whilst the export price of wool rose only slowly. The profitability of wool growing must have declined significantly. At the same time, local meat prices increased sharply. To some extent, this rise in meat prices reflected a growth in the volume of demand resulting from population increase. Much more important, though, was the influence of the domestic inflation that came in the train of the surge of gold exports. In the situation of the 1850s, it was inevitable that many pastoralists should turn their attention from exports to satisfying the domestic demand for meat. So many sheep were slaughtered that in 1860 there were probably slightly fewer sheep in eastern Australia than there had been a decade earlier (compared with a tripling of sheep numbers in the 1840s). Some pastoralists shifted to cattle raising as a more profitable means of exploiting the local meat market. The volume of wool exported appears to have risen very slowly indeed during the 1850s. Export values increased faster as British wool prices rose, presumably partly in response to the changed Australian supply situation. The share of wool in total exports fell drastically from about two-thirds to one-fifth between 1850 and 1860. Australia's share of the British market also fell, a development that may have increased the scope for subsequent growth in wool exports once the gold rushes were over.

When the easily won alluvial gold discovered in the 1850s began to run out, employment and output on the gold fields declined. The peak had already passed by the last years of the 1850s, though sporadic local rushes to new fields continued into the 1860s and 1870s. Here, it is important to emphasise that, once the limits to expansion in gold mining had been reached, there was no stabilisation of output at a high level. Rather, the level of mining activity fell considerably in absolute terms so

that by 1890 gold output and exports were a fraction of their value in the 1850s. Hence, after 1860 a crucial underpinning of the *existing* level of exports and economic activity was beginning to fail. As a consequence, maintaining the level of overall economic activity (as distinct from managing to expand) itself required a substantial growth in output from other sectors. The end of the gold rushes saw Australia with high *levels* of exports and product per head but the subsequent decline in gold mining threatened the maintenance of these levels as well as militating against further increases in exports and per capita product.

#### IV

A renewed growth in wool exports was the means by which some increase in total export income was achieved after 1860.<sup>16</sup> As noted in Section III of this chapter, the wool industry was scarcely any further forward in 1860 than it had been a decade earlier (though pastoralists had presumably made high profits from meat in the 1850s). The sheep population was somewhat lower and the volume of wool exports not much higher than in 1850. The next fifteen years, however, saw impressive gains in wool growing. On N. G. Butlin's estimates (see Table 11), the value and volume of wool output rose at about 11 per cent p.a. between 1861 and 1875. Spurs to wool expansion included favourable wool prices in Britain, easier supplies of labour than during the gold rushes, the availability of unused but accessible and well-watered grazing land and a falling rate of growth of domestic demand for meat as population growth subsided.

The growth in wool output during 1861-75 was associated with an increased level of pastoral investment. As Table 11 shows, annual in-

Table 11 *Pastoral expansion in Australia, 1861-91*

	1861-75 %	1876-91 %
<i>Annual increase</i>		
in volume of pastoral product	11	4
in value of pastoral product	11	2
<i>Annual pastoral investment</i>		
as a proportion of pastoral product	20	42

Source: Calculated from data in N. G. Butlin, *Australian Domestic Product, Investment and Foreign Borrowing*, pp. 10, 18 and 460. The investment figures include agricultural as well as pastoral capital formation. The agricultural component is said by Butlin to be small.

vestment in the pastoral industry averaged about 20 per cent of current pastoral product in this period. This must have represented a substantial increase in investment rates over previous periods, though there are no statistical estimates of total pastoral capital formation before 1860. The capital requirements of wool growing appear to have been minimal before the gold rushes. The major item of physical 'capital' was the sheep themselves. Fixed structures were few and primitive. Some alteration in this situation occurred in the 1850s, but the critical changes in investment rates appear to have taken place after 1860. For a time in the 1860s expenditure on washpools was important, but easily the most important component of the new pastoral investment outlays was expenditure on fencing. In the 1880s, water conservation took an increasing proportion of investment funds as the industry expanded beyond the well-watered parts of eastern Australia.

The pastoral investment that was undertaken in the 1860s and 1870s was labour intensive, but the long-run effect of increased investment was undoubtedly to reduce labour requirements (especially shepherding) per unit of pastoral output. Fencing, in particular, allowed the spread of new techniques of sheep farming with much lower labour needs than had been typical earlier in the century. The highly productive investment of these years appears to have been financed largely by the resources of the pastoral industry itself. N. G. Butlin has described 1871-7 as perhaps 'the most profitable period of pastoral enterprise ever encountered in Australia'.<sup>17</sup> Certainly, profits were high enough to minimise the needs of the industry as a whole for outside finance.

Important changes in the character of pastoral investment appear to have taken place from the middle or late 1870s. Two aspects of this changed character of investment can be seen in Table 11. First, the rate of investment was much higher than earlier in the pastoral expansion. During 1876-91 the annual value of pastoral capital formation averaged more than 40 per cent of current pastoral product, compared with about 20 per cent between 1861 and 1875. Second, however, the rising rate of pastoral capital formation was accompanied by a steep decline in the rate of growth of pastoral product. On N. G. Butlin's figures, the annual increase in real pastoral product was reduced from 11 per cent in 1861-75 to 4 per cent during 1876-91. The fall in the rate of growth of the value of pastoral output was even more marked, reflecting the influence of the generally downward trend in wool prices after the early 1870s.

Underlying the reduced *physical* productivity of pastoral capital formation was a shortage of suitable grazing land to accommodate the industry's geographic expansion. At the end of the 1870s, most of the adequately watered areas of inland eastern Australia were already in production. Further pastoral expansion involved a movement of the industry into drier areas, mainly in the west of New South Wales and, later, Queensland. By the late 1880s, the industry had spread on to land

that was to prove incapable of sustaining the number of sheep then being run on it. In a purely physical sense, wool growing was by this time significantly over-extended.

It is probable that the wool industry was also over-extended in a market sense by the late 1880s. Although the volume of wool output increased more slowly from the mid-1870s than in any previous period except the 1850s, the growth in Australian supplies on the British market was sufficient to bring a generally downward trend in wool prices. Had the investment of the 1880s brought greater physical returns, the wool industry would presumably have run into a market barrier to expansion, for in these circumstances British wool prices must surely have fallen more quickly than they did. Hence, the high pastoral investment of the 1880s is unlikely to have been profitable even if shortages of suitable land had not limited its physical productivity.

Why did pastoral investment continue to be so high in the face of these developments? Here, it must again be stressed that wool growing was an extraordinarily lucrative activity for much of the 1870s. This experience must have continued to influence assessments of potential profitability long after the exceptional conditions of the 1870s had passed. Further, it appears that much of the investment of the 1880s was speculative in nature. With investors seeking capital gains, the inducements to invest were not necessarily closely related to current levels of wool income. This speculative investment was nurtured by a flow of finance into the industry through a growing network of banks and pastoral mortgage and finance companies. Indeed, the level of pastoral investment so far outran the ability of the industry to finance capital formation from current profits during the 1880s that the widespread use of outside funds was essential to the maintenance of investment. This resort to outside finance substantially increased pastoral indebtedness in the later stages of the expansion. A high proportion of the funds that flowed into the pastoral industry came from Britain. Financing pastoral investment was a major element in the rising external indebtedness of the Australian economy as a whole during the 1880s.

This outline of the development of the wool industry during 1860-90 has drawn heavily on N. G. Butlin's detailed analysis of pastoral growth. In turn, the latter account rests in part on the mass of statistical estimates compiled by Butlin himself. It was noted in Chapter 1 that a task as large as the construction of a comprehensive set of national income estimates is bound to involve errors. In this connection, Butlin's estimates of wool output have been questioned by E. A. Beaver.<sup>18</sup> In compiling his figures, Butlin relied on official data to derive an annual series for the quantity of wool exported. This series was converted into a series of export values by means of a price index (thus reversing a sequence familiar to modern students of national income accounting: in history, estimates of *real* output often come first and are often more

reliable than figures of output expressed in current prices). Beever has no serious quarrel with Butlin's figures for the quantity of wool exported. Rather, Beever argues that the prices used by Butlin to calculate the annual value of wool exports were inappropriate. Using a method quite different from Butlin's, Beever has calculated an alternative set of estimates of the annual value of the wool clip during 1861-1900. These alternative estimates diverge markedly from Butlin's valuations in many years. In particular, Beever suggests that Butlin's figures consistently undervalue the wool clip during 1861-73. For these years, the figures given by Butlin are an average of about 10 per cent below those calculated by Beever. After the early 1870s there is, according to Beever, a sudden switch to overvaluation in Butlin's estimates. This tendency to overvaluation is said to be most serious in the 1880s and early 1890s. During 1883-93, the annual value of the wool clip given by Butlin is, on average, about 20 per cent greater than the value suggested by Beever.

The publication of Beever's recalculations of the value of the wool clip brought an immediate response from Butlin, who defended his original series in vigorous terms.<sup>19</sup> The ensuing debate between Butlin and Beever is complicated enough to make it difficult for anyone but a specialist to sort out the relative merits of the competing series of estimates of the value of the wool clip. Here, it is possible to sidestep the question of which is the better series by asking: what difference does accepting one or other set of estimates make to our interpretation of pastoral development after 1860?

Obviously, at a detailed level of analysis the choice of series will materially affect any account of the pastoral industry. And, even at a fairly general level, the choice may be important. For example, it was asserted in Chapter 1 that by about 1890 wool had recaptured the share of total exports it had held in 1850. Figures, based on N. G. Butlin's estimates, were produced in Table 4 to show that wool made up about two-thirds of total Australian exports in 1886-90. Beever's estimates of the value of the wool clip, on the other hand, suggest that 'at no time since the discovery of gold has Australia's great staple ever accounted for as much as half its export income'.<sup>20</sup> As Beever's figures suggest a substantially lower rate of growth of wool exports throughout 1860-90 than is implicit in Butlin's estimates, using Beever's recalculations would imply that wool was less important a source of export growth and of economic expansion in general than has usually been assumed.

However, it is essential to stress that in some basic matters each series of estimates suggests substantially the same conclusions. Particularly important here is that both Butlin's original figures and Beever's recalculations suggest that there was a critical slowing down in the rate of growth in the value of the wool clip in the middle of the 1870s, after an earlier period of rapid expansion (see Table 12). On Butlin's figures, the value of the wool clip increased at 10.7 per cent p.a. during 1861-74 and at

**Table 12** *Alternative estimates of the growth in the value of the Australian wool clip, 1861-91*

	Butlin (% p.a.)		Beever (% p.a.)
1861-74	10.7	1861-75	7.6
1875-91	3.2	1876-89	2.2
1861-91	6.4	1861-89	4.9

Source: Calculated from the comparative figures in E. A. Beever, 'The Australian Wool Clip, 1861-1900', *Economic Record*, vol. 39 (1963), p. 443.

only 3.2 per cent p.a. during 1875-91. On Beever's estimates, the rate of growth in the value of the wool clip was reduced from 7.6 per cent p.a. in 1861-75 to 2.2 per cent p.a. in 1876-89. The growth rates suggested by Beever's figures are consistently lower than in Butlin's estimation, but the same *change in trend* is evident. Thus Beever's recalculation of the Australian wool clip tends to support a central proposition of Butlin's analysis—the apparent reduction in growth rates after the middle of the 1870s.

Further, in a wider context than the pastoral industry, the use of Beever's estimates of the value of the wool clip would reinforce some of the points (based on Butlin's balance-of-payments figures) made in Chapter 1. It was argued in Chapter 1 that a secular slowing down in the rate of growth of exports was a central feature of Australian economic experience after the gold rushes. Accepting Beever's estimates of wool exports would imply that total exports grew even more slowly in these years. This would mean that the overall balance-of-payments position in the 1880s was even weaker than suggested by the outline given in Chapter 1 (see Fig. 4). It will be recalled that the major trends in the balance of payments in the 1880s, apart from slow export growth, were rising imports, high capital inflow and a rapid increase in income payable overseas. If Beever's figures for wool exports are accepted, then exports would be lower than in Fig. 4, whilst capital imports would be much higher. If so, the situation in the balance of payments would have been even more precarious than Chapter 1 suggested.

The last paragraph raised the question of capital imports into Australia. How large was overseas borrowing and what was its role in Australian economic growth during 1860-90? Table 13 uses N. G. Butlin's estimates to derive several indicators of the quantitative importance of overseas borrowing in successive decades during this period. From what was said in connection with the Butlin-Beever debate on the value of the Australian wool clip, it will be clear that the underlying estimates of net

**Table 13** *Australian capital imports, 1861-90*

	Net capital inflow as a % of		
	Gross domestic product	Gross domestic capital formation	Total exports
1861-70	6	48	22
1871-80	2	14	10
1881-90	10	51	64

*Source:* Calculated from data in N. G. Butlin, *Investment in Australian Economic Development*, p.28.

capital inflow are very rough. In Table 13 capital inflow is measured as a residual: it is the amount necessary to make the balance of payments balance after other items have been calculated. This procedure obviously makes the capital inflow estimates subject to wide margins for error. There is, however, surprisingly little dispute about the general contours of the flow of capital to Australia (largely from Britain) in these years.

The 1870s emerge in Table 13 as the decade in which overseas borrowing was smallest in relation to the scale of the Australian economy. The major inflows concentrated in the 1860s and the 1880s. On the whole, historians have tended to neglect the overseas borrowing of the 1860s, preferring to focus upon the more spectacular developments of the 1880s. An examination of Table 13 will reveal why this is so. A comparison of the two decades shows that in each net capital inflow was equal to about half the value of gross domestic capital formation but that in other respects overseas borrowing was much more significant in the 1880s. For one thing, the ratio of capital inflow to gross domestic product was about 60 per cent higher in the 1880s than in the 1860s. Further, and perhaps more important, overseas borrowing was three times as large in relation to current export income in the 1880s. This meant that, compared with the 1860s, the capital inflow of the 1880s represented a much more powerful source of erosion in the external viability of the Australian economy. Thus at the end of the 1880s the amount of investment income due overseas each year was climbing towards 40 per cent of current export income. In contrast, the corresponding figure barely exceeded 10 per cent of annual export income at the end of the 1860s.

The flow of overseas funds into Australia during 1860-90 went in roughly equal amounts to colonial governments and to private borrowers. The large share of overseas borrowing accounted for by the public sector reflected the importance of the colonial governments in domestic capital formation. The bulk of government loan raising in this period was in connection with railway construction. Most private borrowing was

destined to fund investment in the pastoral industry. During the 1880s capital inflow indirectly stimulated investment in housing, for large-scale capital inflow was the major factor in a lowering of local interest rates. It will be argued in Chapter 6 that the easing in local credit conditions was a major influence in the development of the housing boom after 1880. In sum, overseas borrowing allowed total investment to be much higher than it would otherwise have been. The direct importation of capital equipment was not, however, particularly important. As in other new countries, domestic capital formation in this period was a labour-intensive process involving simple structures, basic building materials and simple equipment. The structure of imports reflected this. In 1889, for example, consumer goods made up over half the total imports of New South Wales and Victoria. Building materials accounted for about 15 per cent of imports, with metals, railway materials, machinery and equipment together accounting for a little under 20 per cent of total imports.<sup>21</sup> An essential function of rising capital inflow, especially in the 1880s, was to finance a growth in imports, largely of consumer goods, that indirectly made possible the use of a significant proportion of the domestic labour force in the construction of capital assets.

In the 1880s, overseas borrowing was indispensable to the maintenance of Australian economic expansion. Rising capital imports meant that, for the moment, the Australian economy could expand without running into the balance-of-payments constraints inherent in the slow growth of export income. In the longer run, however, capital imports were no substitute for export growth. Borrowing on the scale of the 1880s was bound to lead to balance-of-payments difficulties unless it managed to generate a renewed growth in exports. The capital flows of the 1880s were indeed directed into avenues that might have been expected to increase export income: into pastoral investment to raise wool output and into railways to carry the clip to the ports. However, the earlier parts of this section will have made clear the ineffectiveness of the pastoral investment of the 1880s as a means of raising the value of wool exports. Similarly, as will be explained in the next chapter, the railway building of the 1880s had little immediate effect on Australian export potential. Over-investment was as characteristic of government railway construction as it was of the pastoral industry in the 1880s. One net effect of capital imports, therefore, was not to stimulate export growth but to contribute to the over-investment that took place in the leading sectors of the Australian economy.

## V

In Chapter 1 it was stated that the balance of payments was a source of severe deflationary pressure in the early 1890s. Falling exports and reduced capital imports were identified as important influences leading to

a contraction in the level of domestic economic activity, though it was suggested that developments internal to the Australian economy may have been largely responsible for the length and severity of the ensuing depression. Chapter 1 also noted some of the structural changes that occurred in exports during such recovery from the depression as did take place before 1900. The last section of this chapter looks in a little more detail at the major trends in exports and in the balance of payments as a whole during the 1890s.<sup>22</sup>

It is not at all clear how far export income did fall in the early part of the 1890s. Chapter 1 suggested that a reduction of 12-13 per cent in export income took place between 1891 and 1894. This figure is based on N. G. Butlin's estimates of Australian exports. The preceding section of this chapter will have made it clear that Butlin's export estimates have not met with universal acceptance. Beever's recalculation of the value of the wool clip has already been mentioned: if Beever's revisions were accepted this would imply a more moderate fall in export income after 1891. Another series of total exports for the 1880s and 1890s has been provided by E. A. Boehm, who treats both wool and gold exports in a way that differs from Butlin's procedures.<sup>23</sup> On Boehm's estimates, total export income fell by less than 3 per cent during 1891-4, with most of the reduction being delayed until 1894. If these figures were an accurate reflection of the course of exports after 1891, then falling export income could have had little role to play in the transition to depression. Here, though, it is not clear that Boehm's treatment of gold shipments, in particular, is entirely appropriate. And it is Boehm's handling of gold exports that accounts for much of the difference in behaviour between his export series and the one estimated by Butlin. A more conventional treatment of gold exports would make Boehm's estimates consistent with a 10 per cent fall in export income during 1891-4.

Australia's leading export industry, wool growing, faced considerable difficulties in the early 1890s.<sup>24</sup> Initially, the most obvious of these was a fall in wool prices from about 1890. It is probable that the growth of Australian supply during the 1880s and into the early 1890s was itself a critical element undermining the level of wool prices, though falling demand associated with cyclical movements in overseas markets was an important temporary influence. As a result of sagging wool prices, the value of Australian wool exports fell. On N. G. Butlin's estimates, the value of the wool clip was 26 per cent lower in 1894 than it had been at the peak in 1891. Beever's estimates suggest a much smaller fall in export income from wool (a 10 per cent fall in wool exports between 1889 and 1894). Reduced wool prices made wool growing an unprofitable exercise for many pastoralists. The implications of this for the financial position of individual wool growers and of the industry as a whole were made particularly serious by the high level of indebtedness that was a legacy of the over-investment of the 1880s. Physical difficulties compounded the

Table 14 *Composition of Australian exports, 1888-90 and 1898-1900*

	% of total exports	
	1888- 1890	1898- 1900
Wool	59	35
Meat products and butter	6	15
Grain and fodder	5	4
Gold	12	28
Other minerals	12	11
Other exports	6	7
	<u>100</u>	<u>100</u>

Source: Calculated from data in Boehm, *Prosperity and Depression in Australia*, pp. 15 and 100. The treatment of gold poses difficult problems in the 1890s. Adopting conventions different from those used by Boehm would affect the measured share of gold in total exports in this period, though the trend towards a greatly increased share of gold in total exports in the 1890s is not in doubt.

situation. The geographical over-extension of wool growing meant that pastoralists on the margins of the industry were using land that was incapable, in the long run, of generating sufficient wool output to make for profitable operations even in years of average wool prices. Further, over-grazing and the methods of pastoral expansion before 1890 had led to pasture deterioration and the spread of rabbits, so that carrying capacity was actually reduced in many areas. From the middle of the 1890s, the volume of wool output began to fall in response to the unprofitability of wool production and as a consequence of the previous physical over-extension of the industry. Severe and prolonged drought from 1895 speeded the decline in output. The massive fall in sheep numbers provides some indication of the scale of the pastoral contraction: by 1902 the flock population was less than half the peak level of a decade earlier.

The commodity composition of Australian exports changed with the fall in wool exports and increased output of other export products in the 1890s. Table 14 shows that the share of wool in total exports fell by 24 percentage points between 1888-90 and 1898-1900. (Table 14 is based on E. A. Boehm's series of export values because it includes a convenient breakdown by commodity groups. Boehm's figures are not quite consistent with N. G. Butlin's estimates that are otherwise used throughout this book.) Part of the fall in wool exports was made good by rising exports of frozen meat and butter. Of these, the increase in meat exports

was quantitatively the more important. Frozen meat exports used refrigeration techniques that had been developed before 1890 but that were neglected by Australians during the wool boom. The growth in meat exports was the result, in large part, of pastoral distress and was thus a systematic factor operating to limit the effects of falling wool output. As well as underpinning most of such increase in pastoral export income as was achieved in the 1890s, meat exports provided a valuable means of turning the forced reduction in flocks to good account.

Gold was the largest single source of increased exports in the 1890s. In the main, the growth in gold production was made possible by important new discoveries in Western Australia. As noted in Chapter 1, the exploitation of these gold discoveries strengthened the balance of payments and stimulated internal demand, thus ameliorating some of the worst effects of the depression. In the discussion earlier in this chapter of the gold rushes of the 1850s, it was argued that the discovery of gold was to be seen as a random event with no essential systematic connection with the prior pattern of Australian economic development. Although the question cannot be pursued here, it appears that there are much stronger grounds for regarding the gold discoveries of the 1890s as being, at least in part, a systematic anti-cyclical development that cushioned the impact of depression.<sup>25</sup>

The fall in capital imports was undoubtedly a greater source of deflationary pressure than any fall in exports that may have occurred in the early 1890s. At the end of the 1880s, annual net capital inflow appears to have been running at two-thirds or more of the value of exports. Exactly how far capital inflow then fell is a matter for conjecture, though all estimates indicate that the decline was considerable and that the reduction in private capital imports went further than the reduction in public borrowing overseas. The various available estimates of capital imports suggest that during 1891-5 total inflow was only between one-fifth and one-third of the level of 1886-90. If the experience of individual years is taken as a guide, the decline in capital inflow appears to have been even steeper than this comparison of 5-year periods implies. On N. G. Butlin's indirect estimates, there was a small net outflow of capital in 1893-4. Boehm has estimated that, in these same years, net capital inflow was only 15 per cent of the average for 1889-90. To place this in context, even Boehm's relatively favourable estimates imply that between 1889-90 and 1893-4 annual capital inflow was reduced by an amount equal to about 8 per cent of the pre-depression peak value of gross domestic product. So large a deflationary shock must have had a drastic effect on the level of Australian economic activity.

Why did capital inflow fall after 1890?<sup>26</sup> Was the decline in capital imports caused by domestic developments or by factors external to the Australian economy? Here, it seems that external events did have some role to play. Almost all of Australia's capital imports came from Britain

and British willingness to lend overseas appears to have been reduced after 1890. To some extent, this reduced willingness to lend was a result of temporary depression in the British economy. In addition, revolution in the Argentine in 1890 brought default on loans that had been made to the Argentine government and caused considerable financial disruption in London. This almost certainly prompted British lenders to be more wary of foreign issues in general, including loans sought by Australian governments.

However, the reduction in lending to Australia was not simply a matter of Britain calling a halt for reasons unconnected with Australian conditions. Rather, the pattern of Australian borrowing before 1890 meant that, sooner or later, a decline in capital imports was virtually unavoidable. During the 1880s Australians borrowed excessively on both public and private account. The proceeds of government borrowing were used mainly to finance railway construction. Much of this railway investment was uneconomic in the sense that net earnings failed to cover the interest payable on loan raisings. This helped to undermine the budgetary position of the various colonies. By the end of the 1880s budget deficits had become the rule rather than the exception in New South Wales, Queensland and Victoria. In these circumstances, a growing reluctance in Britain to subscribe to Australian government issues was almost inevitable. Essentially the same process can be identified in the private sector. The inflow of private capital in the 1880s fostered over-investment. The eventual decline in capital imports on private account seems basically to have been a reaction to the unprofitability of previous investment in Australia and the uncertainty of the colonial economic outlook. In sum, domestic developments were probably critical influences upon the contraction of capital imports in the early 1890s. Reduced capital inflow is not to be seen, in other words, simply as an external shock that plunged the economy into depression: a fall in capital imports was implicit in the preceding pattern of domestic economic development.

The decline in capital imports and, to a smaller extent, export income in the early 1890s meant that reduced expenditure on imports was essential to the restoration of equilibrium in the balance of payments. The payments adjustment was achieved quickly, if unpleasantly. The fall in Australian domestic product in the depression led to a rapid fall in expenditure on imports. By 1893-4 the value of merchandise imports was less than 60 per cent of the peak levels of the late 1880s. For the first time since the 1840s imports were now consistently much smaller than exports. In the absence of a large capital inflow, this was inevitable for during the 1890s an average of one-third of export receipts went on interest and dividend payments on the overseas debt. In the 1890s Australians paid a high price in terms of forgone imports and lower consumption standards for the extravagances of the previous decade.

## NOTES:

<sup>1</sup> On this see G. J. Abbott's analysis in G. J. Abbott and N. B. Nairn (eds.), *Economic Growth of Australia, 1788-1821*, chs. 8-9.

<sup>2</sup> Blainey summarises his position in his article 'Technology in Australian History', *Business Archives and History*, vol. IV (1964), pp. 118-22. He treats whaling in greater detail in *The Tyranny of Distance*, Melbourne, 1966, Chapter 5. Barbara Little, 'The Sealing and Whaling Industry in Australia before 1850', *Australian Economic History Review*, vol. IX (1969), which disputes some of the points made by Blainey, is the only other recent account of the fisheries in this period.

<sup>3</sup> Useful recent accounts of pastoral development before the gold rushes are G. J. Abbott, *The Pastoral Age: A Re-examination*, Melbourne, 1971, and D. N. Jeans, *An Historical Geography of New South Wales to 1901*, Sydney, 1972, especially ch. 9.

<sup>4</sup> Abbott, *The Pastoral Age*, pp. 5-13, discusses some of these problems in more detail than is possible here and contains references for further reading.

<sup>5</sup> 'The Origin of the Wool Industry in New South Wales', *Business Archives and History*, vol. V (1965), pp. 91-106.

<sup>6</sup> *Australian Economic History Review*, vol. VIII (1968), pp. 110-28 and vol. IX (1969), pp. 71-80.

<sup>7</sup> *The Pastoral Age*, Introduction.

<sup>8</sup> The best short analysis of the slump in the pastoral industry in the early 1840s is S. J. Butlin, *Foundations of the Australian Monetary System*, pp. 315-28.

<sup>9</sup> *The Pastoral Age*, p. 124. The whole of Chapter 5 of Abbott's book is devoted to comparing the costs and returns of sheep farming in New South Wales during 1820-50.

<sup>10</sup> *The Pastoral Age*, p. 122.

<sup>11</sup> J. W. McCarty, 'The Staple Approach in Australian Economic History', *Business Archives and History*, vol. IV (1964), first suggested that staple theory might usefully be applied to the analysis of Australian economic development in the nineteenth century. McCarty concentrates on the periods before 1820 and after 1860, asserting that the applicability of the staple approach during 1820-60 is 'fairly evident' (p. 10).

<sup>12</sup> Some implications of this point are discussed in N. G. Butlin, 'Growth in a Trading World: The Australian Economy, Heavily Disguised', *Business Archives and History*, vol. IV (1964), pp. 138-58.

<sup>13</sup> 'A Theory of Mineral Discovery: Australia in the Nineteenth Century', *Economic History Review*, 2nd ser., vol. XXIII (1970), pp. 298-313.

<sup>14</sup> *Ibid.*, pp. 313, 306.

<sup>15</sup> *Ibid.*, p. 306.

<sup>16</sup> N. G. Butlin, *Investment in Australian Economic Development*, ch. II, is the standard account of pastoral development after 1860. The first seven paragraphs of this section do little more than summarise Butlin's detailed analysis.

<sup>17</sup> *Investment in Australian Economic Development*, p. 61.

<sup>18</sup> 'The Australian Wool Clip 1861-1900', *Economic Record*, vol. 39 (1963), pp. 437-64.

<sup>19</sup> 'A Problem in Prices and Quantities', *Economic Record*, vol. 40 (1964), pp. 233-47. The ensuing debate in the same volume of *Economic Record* is on pp. 248-59 and 467-70.

<sup>20</sup> 'The Australian Wool Clip', p. 454.

<sup>21</sup> N. G. Butlin, *Investment in Australian Economic Development*, p. 26.

<sup>22</sup> Boehm, *Prosperity and Depression in Australia*, chs. 1 and 4-7, is a useful and fairly comprehensive account of trends in the Australian balance of payments and their relationship with developments in the economy as a whole in the 1890s.

<sup>23</sup> *Ibid.*, p. 15.

<sup>24</sup> Two accounts of the pastoral industry in the 1890s are N. G. Butlin, *Investment in Australian Economic Development*, pp. 433-41 and Boehm, *Prosperity and Depression in Australia*, ch. 4.

<sup>25</sup> On this see Blainey, 'Theory of Mineral Discovery', and Boehm, *Prosperity and Depression in Australia*, pp. 117-24.

<sup>26</sup> This question is discussed in Boehm, *Prosperity and Depression in Australia*, chs. 6, 9 and 10.

# Transport

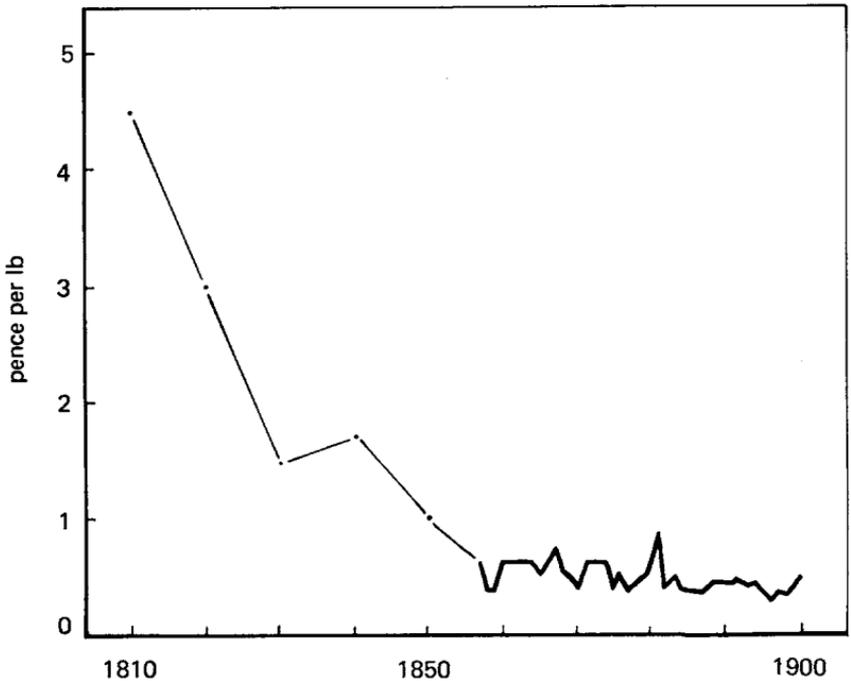
Previous chapters have noted that the nineteenth century was characterised by the spread of modern economic growth, the growth of international trade and a redistribution of much of the world's population through the largest voluntary human migration on record. These developments were closely associated with changes in the availability and efficiency of transport and communications facilities. The effectiveness of both land and sea transport was transformed, allowing people and goods to be moved more quickly, more cheaply and in much greater volume than ever before.

At the beginning of the nineteenth century Australia lacked even rudimentary transport facilities. The Australian settlements were isolated from the rest of the world and little penetration had been achieved into the continent's interior. The voyage from Britain was so long and Australia's inland so vast that one historian has been prompted to interpret Australian economic development in terms of distance.<sup>1</sup> Obviously, without the important changes in transport and communications that took place, the initial settlements in eastern Australia would not have grown so rapidly and would not have become so much a part of the international economy as they did in the nineteenth century. Yet Australian economic development, which apparently stood so much to gain from improved transport, did not depend critically on the dramatic nineteenth-century changes in transport technology (i.e. the application of steam to both ocean and land transport). From at least the 1830s Australia possessed the capacity to produce exports (first wool, then wool and gold, then wool again) that were valuable enough to withstand the high cost even of primitive land and sea carriage to markets in Britain. And, as this chapter will explain, factors other than changes in transport technology underlay much of the improvement in transport that helped integrate Australia into the international economy. There was, of course, some role for changing transport technology *per se* as a source of economic development, but the growth of Australian trade and economic activity may not have been much impeded had there been no steamships on the Australian run and no railways on the Australian continent. This chapter describes the main changes that did occur in transport in the period to 1900, dealing first with shipping and later with land transport.

## I

For Australian exporters and importers, a feature of nineteenth-century experience was the progressive reduction in the cost and inconvenience of engaging in overseas trade that was brought about by improved transport facilities.<sup>2</sup> In 1800 the Australian settlements had little contact with the outside world. Only a handful of ships arrived in Sydney each year to unload convicts or a speculative cargo of imports. The volume of goods and passenger traffic was much too small to support regular shipping links. Freight charges were high and the voyage to Britain inordinately long. At the end of the nineteenth century, freight rates were a fraction of the amounts charged in 1800 and average passage times had been reduced substantially. Regular, frequent and reliable shipping services had replaced the casual, occasional links of the early decades of the century. Australia had become an integral part of a world-wide shipping system.

**Figure 8** *Average freight charged on pressed greasy wool shipped from Sydney to Britain, 1810-1900*



Sources: 1810-50, approximate figures at ten-year intervals from Broeze, 'The Cost of Distance: Shipping and the Early Australian Economy, 1788-1850', *Economic History Review*, 2nd ser., vol. XXVIII (1975), p. 587; 1857-1900, Coghlan, *The Wealth and Progress of New South Wales, 1900-01*, Sydney, 1902, p. 99.



3. Loading wool bales into the hold of the *Patriarch*. Space, not weight, was the most important determinant of shipping charges for wool. Here, the last bale is being 'jumped in' to place. (By courtesy of the National Library of Australia)

Figure 8 graphs the trend in the average freight charged on pressed greasy wool shipped from Sydney to Britain during 1810-1900. The trend in wool freights can be taken as a rough indicator of the extent and timing of the general fall in the level of shipping charges on the Australian run in the nineteenth century. Figure 8 suggests that by the last decades of the century wool freights were about one-tenth the average for the 1810s. Almost all of this reduction in freight rates appears to have been achieved before 1860.

The fall in ocean freight rates meant that, for wool, the problem of distance from overseas markets had effectively been overcome by 1830, at the latest. The average freight charged in that year (about  $1\frac{1}{2}$ d a pound) was equal to less than 15 per cent of the average price of Australian wool in the late 1820s and early 1830s. Transport costs were

not by this time an effective barrier preventing Australian producers from making substantial inroads into the British market. Further reductions in freight rates in the 1840s and 1850s were an important source of cost saving. By the late 1850s, freight charges were  $\frac{1}{2}$ d a pound or less on wool shipped from Sydney to Britain. This meant that the cost of ocean freight was now no more than 5 per cent of the selling price of Australian wool. In this situation, any future reduction in ocean freights could have only a limited potential for reducing total wool costs or for stimulating further pastoral expansion.

Several points can usefully be made in relation to the fall in freight charges on Australian wool up to the 1850s. First, a substantial part of the reduction in wool freights shown in Fig. 8 was due to technical change in the wool industry itself. Space rather than weight was the basic determinant of shipping charges. During this period, resort to the wool press drastically reduced the amount of space occupied by each pound of wool. In consequence, the fall in ocean freights for wool went further than the fall in freights in general. This is an illustration of the fact that reduced transport costs are not always the result of developments in the transport industry itself. In this connection, Broeze has gone so far as to suggest that 'it was the prosaic wool press which, by reducing the bulk of wool . . . made the long ocean voyage to Britain economically possible'.<sup>3</sup>

Second, the trend in shipping charges on the Australian run has to be seen in the context of freight movements on other routes.<sup>4</sup> During 1815-50 freight charges on most routes were reduced considerably. Some of this fall in freight rates was simply a reflection of the decline in the general level of prices that took place in these years. However, ocean freight charges appear to have fallen further than the general price level, so that the proportion of delivered price taken up by freight costs was reduced. Particularly relevant to the Australian situation was a tendency for rates to fall further on long hauls than on the shorter runs, a development that lowered the barriers to participation in international trade that faced regions remote from Europe.

Third, the critical reduction in ocean freights on Australian wool occurred well before major changes in shipping technology (the development of bigger, faster sailing ships and, eventually, the substitution of steam for sail) began to exert a significant influence. The new sailing clippers, spectacularly faster than any sailing ship built previously, did not become common on the route to Australia until the 1850s. Steamers were little more than a curiosity on the Australian run before 1860.

Fourth, some of the fall in ocean freights shown in Fig. 8 was presumably a result of the growth of traffic to and from Australia and the establishment of the major Australian ports as part of the existing pattern of shipping routes. Particularly important was the integration of the Australian run into the general trading pattern of the eastern region which developed in a way favourable to Australian freight rates.<sup>5</sup>

## II

After the late 1850s, there seems to have been no marked tendency for ocean freights to decline on the Australian run. This contrasted with the long-term fall in freight rates on other routes, and especially on long hauls, that was resumed from the early 1870s.<sup>6</sup> There were, nevertheless, important improvements in ocean transport to Australia in this period. Thus average passage times were substantially reduced and there was an increase in the regularity and reliability of shipping services. This reduction in uncertainty and time spent in shipping goods overseas meant that, effectively, transport costs continued to fall even though nominal freight rates were unchanged. To some extent, improved shipping services reflected the building up of a more or less organised shipping network whose growth was partly the outcome of the spread of modern economic growth itself. The potential efficiency of this shipping network was critically affected by technical change outside the sphere of ship building. In particular, the invention of the submarine telegraph



4. The Melbourne waterfront in about 1870. Steamers did not become significantly more common than sail on the run from Britain to Australia until the end of the nineteenth century. (By courtesy of the Mitchell Library, Sydney)

allowed existing tonnage to be used more effectively than had been possible when ships themselves were the fastest means of communication between ports. Finally, the greater speed, regularity and reliability of shipping services were the result of the gradual replacement of sail by new and steadily improving steamships.

The victory of the steamship over sail was longer in coming on the Australian run than upon other trading routes. The return trip from Britain emphasised the virtues of the sailing clippers. After leaving Britain, the clippers came south through the Atlantic, rounded the Cape of Good Hope and were then blown to Australia by the most reliable winds on the globe. The same westerlies blew the clippers from Australia to Cape Horn on the homeward voyage. Running before the westerlies in high latitudes, clippers often sailed 300 or more miles in a day. The fastest clippers of the 1850s sometimes managed to reach Australia in ten or eleven weeks sailing. At the same time, the Australian run highlighted some of the deficiencies of the early steamships. For decades, steamers were prone to mechanical breakdown and were so prodigal in their use of coal that they were useful only for short hauls or on routes where frequent calls at coaling ports were possible. Clippers on their way to Australia often saw no land at all between the British Isles and the Australian coast. The early steamers took a different route to Australia but, even so, coaling ports were sufficiently few and far between to limit severely the competitive powers of the steamship.

In the eastern trade in general, the opening of the Suez Canal in 1869, together with the use of improved marine engines which significantly reduced the fuel consumption of the steamship, undermined the competitive position of the sailing ship.<sup>7</sup> The Canal was useless to sailing ships, but for steamers it virtually halved the trip from Liverpool to Bombay and cut one-quarter to one-third off the run to China.<sup>8</sup> Apart from the distance saved, the Suez route increased the competitiveness of the steamship in the eastern trade because the establishment of closely spaced coaling ports was more feasible than on the old route around the Cape of Good Hope. The opening of the Suez Canal had a much less immediate impact on shipping on the Australian run, for the Canal route was little shorter than the voyage around the Cape. On the trip to Australia, even steamers preferred the Cape route in the nineteenth century. As late as 1912 only 25 per cent of British steam tonnage on the voyage to Australia (and 40 per cent on the return voyage) went by the Canal route.<sup>9</sup> It can be argued that the opening of the Canal actually prolonged the use of clippers on the Australian run by diverting to it large numbers of very fast sailing ships that were now uneconomic in the Indian and Far East trades.

Slowly, however, the steamers won more of the Australian trade. Here, improvements in the design of the steamship were probably critical. The main advantage of the improved steamers lay in their greater average

speed, their greater reliability and their reduced fuel consumption. The fastest clippers could match the new steamers for speed if conditions were favourable, but the *average* passage time of the steamships was significantly shorter than that of the sailing ships. Further, the steamers could be relied upon to stick more or less to a specified schedule in most conditions, whilst the time taken by a sailing ship to complete a particular voyage remained unpredictable. These virtues of the steamship rather than cheaper freights (steamers charged, if anything, more than sailing ships) proved ultimately to be decisive.

Table 15 gives some idea of the timing of the transition from sail to steam on the Australian run. It was not until 1880 that steamships made up half the British and foreign tonnage cleared from New South Wales ports. And, as late as 1900, almost one-third of overseas tonnage was accounted for by sailing ships. As Table 15 indicates, the average size of British and foreign ships engaged in the Australian trade rose markedly in the last decades of the century. In 1900 the average overseas sailing ship had perhaps three times the tonnage of its 1861 counterpart. Steamships working in the overseas trade were larger still. Table 15 also brings out the differences between the fleet of British and foreign ships engaged in overseas trade and the fleet of Australian coastal vessels. The advantages of steam were much more evident in the relatively short hauls in local waters. Hence the trend towards greater use of the steamship occurred quite early in the coastal trade. By 1900 sailing ships had been virtually eliminated from the coastal fleet. The steamers engaged in the

**Table 15** *Shipping cleared from New South Wales ports, 1861-1900*

	Australasian ships			British and foreign ships		
	1861	1880	1900	1861	1880	1900
Steam as % of total tonnage	?	71	97	?	50	68
<i>Average tonnage</i>						
sail	217*	299	229	525*	719	1350
steam		619	850		1334	2511
<i>Average crew</i>						
sail	13*	9	7	27*	16	20*
steam		32	27		74	80

\*Includes both sail and steam. Separate figures for steam vessels are not available before 1876.

Source: New South Wales Statistical Registers, 1861, 1880 and 1900. Broadly, Australasian ships were engaged in the coasting trade and British and foreign ships accounted for the overseas trade of New South Wales. The figures for Australasian ships for 1861 and 1880 include some shipping from other British possessions.

coastal trade were, however, small ships. At the end of the century, the average tonnage of locally owned steamers was only one-third that of British and foreign steamships and significantly smaller even than the tonnage of the typical sailing vessel engaged in overseas trade.

In 1900, the replacement of sail by steam on the Australian run was soon to be complete. However, the slowness with which the steamship asserted its superiority was an indication that, at least in Australia's overseas trade, the comparative advantage of the new steamers was scarcely dramatic. As Geoffrey Blainey notes, 'the effect of steamships was subtle and indirect rather than sweeping'.<sup>10</sup> One implication is that the growth of Australian trade may not have been very different if Australians had been forced to rely on sailing ships throughout the nineteenth century. Some details would have been different: for example, there may not have been any growth in exports of refrigerated meat and dairy produce right at the end of the century had there been no steamships. In the main, though, the direct impact of the steamship on Australian overseas trade does not appear to have been critical before 1900.

### III

Before the railway age land carriage was slow and expensive, except where inland waterways allowed the cheaper movement of goods. Thus in both Britain and the United States the existence of navigable rivers and the construction of canals were essential ingredients in the transition to modern economic growth. In Australia, geography limited severely the scope for the development of inland water carriage. The Eastern Highlands (formerly called the Great Dividing Range) are a chain of mountains whose general lowness belies the earlier name. Yet the influence of these low mountains was important, for they ran so close to the east coast that the rivers flowing coastwards had their source only a little way inland. As a result, river navigation was possible for only short distances inland from the early settlements in eastern Australia. There were long rivers in the interior, but they were not useful as a means of transport before the 1850s. For most of their length, the inland rivers were remote from the regions that were occupied before the gold rushes and, in any case, the main river system flowed to the sea in South Australia, well away from the transport centres implicit in the early pattern of settlement. The lack of suitable natural waterways was not remedied by canal building. There was no physical potential for an extensive system of canals in eastern Australia, even if the population had been large enough before 1850 to sustain the heavy capital outlays involved.

The absence of long navigable waterways in Australia meant that, before the coming of the railway, transport in the interior was ex-

pensive.<sup>11</sup> There were some roads, built by convict labour, but settlement was sufficiently sparse before the gold rushes to limit the gains to be had from road building: no feasible level of outlays could have provided an adequate road system in the interior. Goods were moved on bullock carts or drays, much of the time over unmade bush tracks. Before the 1850s, people simply walked or went on horseback.

It seems, nevertheless, that high land transport costs were not a significant barrier to the development of wool exports in the first phase of pastoral growth. Wool was valuable enough per unit of weight or volume to stand the high cost of cartage to the coast. As the geographical spread of the industry proceeded, however, transport costs presumably rose for stations on the pastoral frontier. Did the wool industry spread so far at any stage before 1850 that rising transport costs tended to restrain the pace of expansion? In the absence of detailed information on transport charges, this question cannot be answered with any certainty, though some writers have seen rising transport costs as a factor limiting pastoral growth. For example, S. J. Butlin has suggested that increased transport costs for marginal stations helped to reduce profit expectations in the early 1840s.<sup>12</sup> Also, Blainey has argued that 'there were areas near the end of the long inland roads where the mounting cost of transport . . . slowed the wanderings of shepherds and flocks'.<sup>13</sup> On the other hand, Abbott clearly thinks that freight was never a major expense of the wool grower before 1850. In his account of wool costs and returns,<sup>14</sup> the expense involved in carting the wool to the major ports scarcely receives a mention. Nor do the contemporary observers quoted by Abbott appear to lay much stress on freight charges as a component of total pastoral outlays. Thus the 1846 estimates of typical costs and returns of sheep farming that were summarised in Table 10, above, suggest that the direct charge for carting wool to Sydney averaged less than  $\frac{1}{2}$ d a pound. (To put this into some perspective, it might be noted that this was about half the amount allowed as commission to agents handling the wool.) In considering the operations of the station as a whole, some account must also be taken of the cost of bringing supplies from the coast, plus items such as the upkeep and depreciation charges on a station's bullock teams. However, the most generous allowances for charges of this sort in the set of costs and returns in Table 10 would not be enough to raise land transport costs to as much as 10 per cent of total working expenses. Of course, cartage costs varied with distance from the major ports so that, in remote regions, transport charges may have been significantly higher than this implies. Two factors relating to the transport expenses of stations on the pastoral frontier are worth noting here. First, the rise of Melbourne as a major port influenced favourably land transport costs in the region that accounted for much of the pastoral expansion of the 1840s. Second, stations in the interior had some scope for reducing the bulk of supplies brought from the coast by growing their own food, a

practice that was not uncommon. In all, it seems unlikely—though the available information is far from being conclusive—that a situation was reached before 1850 in which even a station on the fringes of the pastoral expansion could expect to have its wool income seriously eroded by the cost of the long haul to Sydney or Melbourne.

Indeed, it can be argued that the high cost of land transport before 1850 helped to secure the pastoral industry from competition for land from other rural activities. In particular, high transport costs made grain farming uneconomic in much of mainland Australia where wheat might otherwise have been a rival to wool. In this respect, the crucial difference between wheat and wool was the greater bulk of wheat in relation to its market value. A ton of wool was worth anything from ten to twenty times the value of a ton of wheat, depending on prevailing prices. Hence wool could carry the cost of cartage over long distances whilst within a few miles rising transport charges began to cut deep into any potential profit in wheat growing. Partly as a consequence of this, grain farming was not pursued far from the coast or rivers. The lack of competition from grain farming for land in the interior reinforced the competitive advantage that Australian wool growers enjoyed over their European counterparts. In Europe, competition for land from arable farming and meat production was a factor that raised costs to wool producers. The absence of similar competition in much of eastern Australia ensured that land for expansion remained available at virtually no cost to the pastoral industry.

#### IV

With the beginning of the gold rushes in 1851 the nature of the inland transport problem in eastern Australia changed.<sup>15</sup> Gold was immensely more valuable in relation to its bulk than other exports—ounce for ounce it was worth five hundred times as much as wool. Obviously, transport costs to the coast from the goldfields were only a tiny fraction of the value of the commodity. The goldfields faced in extreme form a reverse transport problem: that of carting the necessities and luxuries of life to the newly rich communities. Initially, the new goldfields were not served by made roads. Goods had to be hauled along routes that ran through broken country and over unbridged creeks. In addition to these difficulties, the cost of carriage to the goldfields was boosted by the high cost of labour during the rushes and by the fact that the return journey was made with empty wagons (gold was much too valuable to be entrusted to so cumbersome and vulnerable a means of transport as the bullock cart). The press on transport facilities in the early stages of the gold rushes is reflected in the soaring cost of freight from the coast. It seems that freight charges on goods carted from Melbourne to the Victorian diggings as often as not equalled the price of the goods in Melbourne.<sup>16</sup> Further, freight charges fluctuated widely. In wet periods

many routes were simply impassable and transport costs on goods that could get through were often several times the amounts incurred in dry weather.

The transport problems associated with supplying the goldfields brought several responses that, by the early 1860s, had significantly eased the transport situation in eastern Australia. Road transport improved as the number of made roads increased. Construction of bridges and culverts at particular bottlenecks did much to alleviate transport difficulties with relatively little outlay. The extension of made roads allowed the substitution of draught horses for bullocks on some routes. Also, the efficiency of land transport seems to have been affected favourably by the establishment of relatively large-scale specialist carrying firms in the 1850s. In 1864 it was estimated that in the years since 1857 the expense and time involved in journeys on the main highways had fallen by up to a half.<sup>17</sup>

The falling cost of road haulage after the middle 1850s may also have reflected growing competition from other modes of transport. The transport demands of the goldfields generated a growing river traffic, new to Australia, that may have helped to compete road freights downwards. Many of the goldfields lay not far from the river system that drained into the sea at the mouth of the Murray in South Australia. These rivers were far from ideal as a means of inland transport. The Murray was shallow, meandering and navigable for less than half the year. Despite these difficulties a thriving river trade developed as it became clear that goods could be taken 1500 miles upriver and still be landed as cheaply as supplies dragged a hundred miles overland from Melbourne. The river trade was especially valuable because it complemented as well as competed with road haulage. The river was generally passable during the winter months, when conditions were worst for the bullock teams, and unpassable in the summer and autumn, when the roads were much better. Once the goldfields trade had declined, the river boats turned their attention to shipping wool from the Riverina or from the newer pastoral areas served by the Darling River. Again, the seasonal pattern of the river trade suited reasonably well the needs of the wool industry. Most of the clip was in before the summer falls in river levels made navigation impossible. Traffic on the Murray-Darling system continued to grow until about 1880 but then dwindled into insignificance as the railways began to capture more of the pastoral trade.

A final response to the transport problem of the 1850s was the making of a substantial beginning on the construction of a railway network in eastern Australia. This had a longer-term significance than either the improvements to roads or the development of the river trade. The first, unsuccessful, rail projects slightly ante-dated the discovery of gold in 1851 (and it may be that increased labour costs resulting from the gold rushes helped to kill these early projects, though more substantial

reasons for their failure can be advanced).<sup>18</sup> However, the new concentration of inland settlement associated with the rise of the goldfields provided a rationale for rail construction that had hitherto been absent. From the mid-1850s governments began to take responsibility for railway building as a means of improving internal transport. Within a few years lines were reaching into the interior, but these had not been brought into operation when the gold rushes petered out.

## V

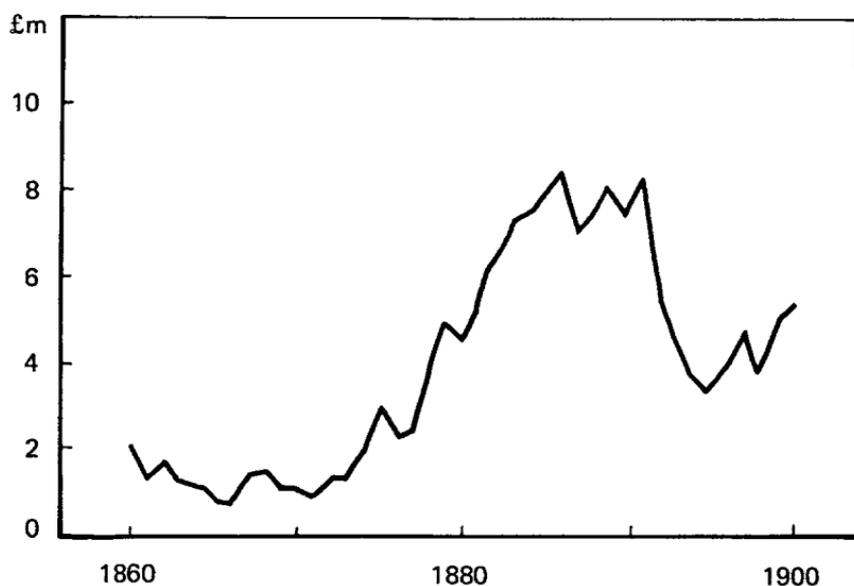
The first major phase of government railway building in Australia was getting under way by the 1860s.<sup>19</sup> In the following decades the framework of the continent's rail network was laid. Some impression of the scale and timing of railway construction in the eastern colonies can be gained from Table 16 and Fig. 9. From relatively modest levels before 1870, annual expenditure on railway construction rose quickly and fairly smoothly to a high plateau in the middle and late 1880s, before collapsing in the depression of the 1890s. The sustained increase in railway building during 1860-90 absorbed most of the resources devoted to government capital formation. By the end of the nineteenth century, the scale of the Australian railway system was impressively large. There were, for example, many more miles of track in relation to population than in Britain at the same time. As Table 16 indicates, total railway mileage was shared more or less evenly between the four mainland colonies. This meant that the less populous colonies of Queensland and South Australia had much more track than New South Wales or Victoria in relation to their population. Hence it is not surprising that both Queensland and South Australia should have concentrated on building a lightweight, narrow track in an attempt to minimise construction costs.

Given the pattern of Australian economic development in the nineteenth century, it is understandable that the new railways should have been built largely to facilitate the movement of exports to the major ports and the distribution of imports from these ports into the interior. There was a tendency for railway networks in particular colonies to focus on the capital city, channelling both exports and imports through the metropolis. This tendency to reinforce the position of the capital at the expense of other smaller ports was strongest in Victoria. In contrast, in Queensland geography precluded more than a minimal focus on the capital. Instead, the railway system consisted of a series of spur lines to the interior from ports dotted along the coast. If the main purpose of the railways was to move exports and imports to and from the main ports, most new lines in eastern Australia were designed to serve existing traffic flows, linking the coastal cities with established inland areas. There were few attempts to construct specifically developmental lines into unsettled areas.

**Table 16** *Australian railway mileage, 1860-1900*

	1860	1870	1880	1890	1900
<i>Miles of railway open</i>					
New South Wales	70	340	848	2,193	2,811
Queensland	—	206	633	2,142	2,801
South Australia	56	133	667	1,610	1,736
Victoria	?	274	1,199	2,471	3,218
Total, eastern Australia	?	953	3,347	8,416	10,566
<i>Railway mileage per 000 of total population</i>					
New South Wales	0.2	0.7	1.1	2.0	2.1
Queensland	—	1.8	3.0	5.5	5.7
South Australia	0.4	0.7	2.4	5.0	4.9
Victoria	?	0.4	1.4	2.2	2.7
Total, eastern Australia	?	0.6	1.6	2.8	3.1

Sources: Railway miles open from N. G. Butlin, *Investment in Australian Economic Development*, p. 324; population from *Demography Bulletins*.

**Figure 9** *Government gross railway capital formation, Australia, 1860-1900*

Source: N. G. Butlin, *Australian Domestic Product, Investment and Foreign Borrowing*, p. 348.

How did the building of an extensive railway network affect Australian economic growth? Intuition suggests that there was considerable scope for better inland transport to transform the productive potential of so large and sparsely settled a continent as Australia. There was an extreme contrast between the heavily laden bullock dray struggling through a handful of miles a day in dry weather (or marooned in the wet) and the steam train travelling as far in an hour, unaffected by wind and rain. Certainly, railways reduced significantly the cost of land transport along their routes. Whilst direct comparisons of road and rail freight rates for wool are not usually possible, useful information is occasionally available. It has been estimated, for example, that in 1869 when the rail connection between Goulburn and Sydney first operated, rail freights per ton were under half the average for road haulage that had been charged five years previously and the time for the journey had been cut to fourteen hours from the previous average of five to ten days.<sup>20</sup>

However, the advantage to the export sector of the railways during the nineteenth century was probably much more limited than this sort of comparison suggests. By the 1860s land transport costs were typically only a small part of the value of wool. Hence the scope for reduced transport charges to lower total production costs was rarely significant by this time, except in very remote areas. Where water transport was available, on the inland rivers, railways actually charged more than the river boats, though the saving in time (and hence in interest and insurance charges) when the railway was used was considerable. Further, in the interior people and sheep were spread over huge areas. Even the large-scale railway construction of the period to 1890 left many pastoral areas a long way from the nearest railway line. For pastoralists in these areas, road haulage to the railhead remained an important component of the total cost of shipping wool to the coast.

Any effect on the export potential of the Australian economy that railways might have had was limited by the fairly general policy of building lines to serve existing traffic flows. This policy meant that it was not unusual for an area to have been reasonably fully exploited by pastoralists before the railway arrived. One example is the Riverina, which was the major focus of pastoral expansion in the 1860s and early 1870s. Much of the railway building of this period was designed to tap the Riverina trade. However, by the time the Riverina was reached by the railway the area's main phase of pastoral expansion was coming to an end. The new lines ran into an area where reduced transport charges would have no very marked effect on the growth of wool output because the limits to pastoral expansion in the region were already being approached.

In the longer run, railway building stimulated export growth by improving the competitive position of commodities such as wheat that had been unable to stand the high cost of earlier forms of land carriage. In the

1890s and later the existence and extension of the rail network made possible the rural diversification that followed the widespread realisation that the wool industry had been over-extended. However, this effect had not been felt by the end of the major economic expansion to 1890. It is unlikely, therefore, that railway building added directly and substantially to the growth of Australian exports during the major phase of nineteenth-century economic growth.

At the same time, the way in which railway building was pursued in eastern Australia may have imposed costs on the export sector and on the economy as a whole that were heavier than warranted. In this context, it is important that up to 1900 the various colonies were separate political entities. Hence it is not surprising that there was no co-ordinated overall approach to meeting the transport needs of the continent. Some aspects of lack of co-ordination were trivial in their effect in the nineteenth century. One instance is the adoption of different gauges in different colonies.<sup>21</sup> New South Wales, for example, used the standard British gauge whilst Victoria preferred the wider Irish gauge. In the twentieth century this was to be a source of irritation that inconvenienced the flow of people and goods between these states. Before 1900, however, the pattern of railway building and the nature of Australian economic development meant that differences in gauge had little effect. Most inter-colonial trade went by coastal steamer or river boat and, given the layout of the New South Wales and Victorian railway systems, there was little scope for rail traffic over the colonial border even if a uniform gauge had been adopted.

In fact, the New South Wales system was designed specifically to *limit* inter-colonial rail traffic as much as possible. Again, the Riverina is a useful example. The Riverina is closer to Melbourne than to Sydney, even though it is in New South Wales. Victoria built lines to the Murray River (the colonial boundary), partly to capture the Riverina trade. The Victorian lines were not, however, allowed to enter New South Wales so that Riverina wool had to be hauled by road to the Murray. New South Wales undertook an expensive railway building program with the aim of preventing the Riverina trade from going south to Melbourne, diverting it to Sydney instead. In other words, the separate colonies were undertaking investment programs with the mutually contradictory aims of directing a specified traffic flow in opposite directions. It can be argued that the resultant duplication of facilities was one element in a situation of general over-investment in railways before 1890.

Another element leading to over-investment was a change in the rationale of railway building that was subscribed to by the various colonial governments. Initially new railway lines were expected to produce revenue that covered interest charges and running costs. Gradually, however, it was realised that railways brought social and economic benefits that were not reflected in their earnings. The im-

plication was that individual construction projects need not pay their way. However correct this attitude may have been, it involved the difficulty that there was no possibility of guessing usefully at the magnitude of the benefits that were not reflected in railway earnings. In the buoyant budgetary conditions of the 1870s and 1880s, the new philosophy of railway building encouraged over-investment. The avowed purpose of most lines was still to serve existing areas of settlement, but many lines were built that linked areas with very few people and little potential trade.

Overbuilding of railways adversely affected the external viability of the Australian economy in a number of ways. In the 1880s, in particular, railway building was financed to a large extent by government borrowing overseas. High investment involved, therefore, steadily rising external interest obligations whilst making little contribution to export growth. Where overseas borrowing was not directly involved, railway investment was financed by revenue from sales of crown land or from the tariff. Land sales placed a direct burden on the pastoral industry and, in Victoria, the tariff presumably raised the cost structure of export industry. More serious, perhaps, were the effects of government demand for labour. Railway construction was labour intensive and the overbuilding that occurred took place in the context of a full employment economy. There is little doubt that government demand for labour to build the railways competed labour away from private activity and raised wage rates. Whatever other implications this may have had, it was one cause of a divergence between local cost levels, which were rising or stationary, and overseas prices, which fell in the 1870s and 1880s. These divergent trends adversely affected profitability in both export and import-competing industries. In these circumstances, it is reasonable to suppose that over-investment in railways contributed to the deterioration in external viability that has already been noted as a characteristic of the Australian economy in the 1880s.

#### NOTES:

<sup>1</sup> Geoffrey Blainey, in *The Tyranny of Distance*.

<sup>2</sup> Blainey, *Tyranny of Distance*, chs. 3-5, 8-9 and 12, is the best introduction to the subject of shipping to Australia in the nineteenth century. F. J. A. Broeze, 'The Cost of Distance: Shipping and the Early Australian Economy, 1788-1850', *Economic History Review*, 2nd ser., vol. XXVIII (1975), pp. 582-97, is a useful source for the first half of the century.

<sup>3</sup> 'Cost of Distance', p. 597.

<sup>4</sup> For a short account of freight movements on the major trade routes in the nineteenth century, see D. C. North, 'Ocean Freight Rates and Economic Development, 1750-1913', *Journal of Economic History*, vol. XVIII (1958), pp. 537-55.

<sup>5</sup> This is discussed in more detail in Broeze, 'Cost of Distance'.

<sup>6</sup> North, 'Ocean Freight Rates', p. 542.

<sup>7</sup> On the effects of the Suez Canal on shipping in Australia and the Far East see M. E. Fletcher, 'The Suez Canal and World Shipping, 1869-1914', *Journal of Economic History*, vol. XVIII (1958), pp. 556-73. W. Woodruff and L. McGregor, *The Suez Canal and the Australian Economy*, Melbourne, 1957, also discusses briefly some of the implications of the Canal for shipping on the Australian run in the nineteenth century.

- <sup>8</sup> Fletcher, 'The Suez Canal and World Shipping', p. 559.
- <sup>9</sup> Woodruff and McGregor, *The Suez Canal and the Australian Economy*, pp. 8-9.
- <sup>10</sup> *Tyranny of Distance*, p. 286.
- <sup>11</sup> Blainey, *Tyranny of Distance*, ch. 6, is a good account of land transport in eastern Australia before the railways.
- <sup>12</sup> *Foundations of the Australian Monetary System*, p. 317.
- <sup>13</sup> *Tyranny of Distance*, p. 131.
- <sup>14</sup> *The Pastoral Age*, ch. 5.
- <sup>15</sup> The transport situation in the 1850s is summarised in N. G. Butlin, *Investment in Australian Economic Development*, ch. V, section 2.
- <sup>16</sup> N. G. Butlin, *Investment in Australian Economic Development*, p. 301.
- <sup>17</sup> A. Barnard, *The Australian Wool Market, 1840-1900*, Melbourne, 1958, pp. 182-3.
- <sup>18</sup> On the failure of the early railway companies see N. G. Butlin, *Investment in Australian Economic Development*, pp. 302-3, and Blainey, *Tyranny of Distance*, pp. 228-34.
- <sup>19</sup> N. G. Butlin, *Investment in Australian Economic Development*, ch. V, is an indispensable source on railways and economic growth in Australia after 1860. Most of the final section of this chapter rests heavily on Butlin's work.
- <sup>20</sup> Barnard, *Australian Wool Market*, p. 183.
- <sup>21</sup> Blainey, *Tyranny of Distance*, ch. 11, treats this in greater detail.

# Urbanisation

In countries that participated in the process of modern economic growth in the nineteenth century, one of the major changes that occurred in the structure of economic activity was a large increase in the proportion of the population that lived and worked in towns. In 1800 the overwhelming majority of people in all countries lived in rural areas. In 1900, on the other hand, a large and rising share of the population of economically advanced areas lived in towns and cities. The urbanisation of the nineteenth century was essentially a result of economic growth and structural change. The growth of towns and cities implied substantial social as well as economic changes. In Australia, the proportion of population living in urban areas was high in 1900. However, Australian urbanisation in the nineteenth century does not fit easily into the world pattern. There are significant differences between urbanisation in Australia and in the industrial countries, for Australian urban growth did not depend to a significant extent upon industrialisation. At the same time, there are contrasts between Australian urbanisation and the experience of urban growth in other regions of recent white settlement. In particular, a high urban proportion developed much earlier in Australia than in other 'new' countries and in 1900 Australia remained more heavily urbanised than other regions specialising in the export of primary products. This chapter describes the pattern of Australian urban growth in the nineteenth century and discusses some factors that might explain the relatively high degree of urbanisation of the Australian population.

## I

Defining what constitutes an urban area has always posed difficulties for people wanting to measure and understand urban growth. Most writers have distinguished urban from rural places by counting as urban all settlements with more than a specified minimum population. This prescribed minimum population has varied widely, depending on the scope and purpose of the analysis. Sometimes a minimum of 100,000 people has been used. For other purposes, aggregations of a few hundred people are reckoned as urban.

The nature of Australian inland settlement raises serious problems of definition if one is interested in comparing the degree of urban development in Australia with the degree of urbanisation in other

regions. In Australia, official practice in the nineteenth century was often to define as urban all settlements with 500 or more people, though a lower minimum population was sometimes used. This was significantly smaller than the population required for a settlement to be treated as urban in the official statistics of most other countries. Despite this, recent interpretations of Australian urbanisation have seen a benchmark of about 500 people as a useful basis for distinguishing towns in the conditions of the nineteenth century. N. G. Butlin, whose pioneering work reawakened a general interest in Australian urban development, argues that it was at 'about the 500 population mark that a break in growth frequently occurred . . . [and] that townships began to acquire specialised commercial and industrial population'.<sup>1</sup> Underlying this attitude is a judgment that the population at which a settlement took on an urban character was substantially lower in Australia than in most other countries. Thus, according to D. N. Jeans, the small country towns in Australia 'were true urban places, rarely containing farmers or farm workers, who lived instead on the properties, so that they could not be compared with English "villages" of the same population size'.<sup>2</sup>

The present chapter does not define Australia's urban population in this spirit. Instead, a lower limit of 2,500 people is used to separate urban from rural settlements, both in Australia and other regions. This procedure simplifies the exposition of the main features of Australia's urban growth and facilitates the comparison with the United States which run through much of the chapter. Here, it should be noted that the validity of the elementary propositions about Australian urbanisation made in this chapter is not very much affected by the size of the benchmark population that is chosen to define an urban area. Indeed, an alternative procedure—such as that suggested by Butlin—which recognised that the minimum population needed for a settlement to be counted as urban may have been lower in Australia than elsewhere would reinforce rather than dilute what appear as the distinctive attributes of Australia's urban development in the nineteenth century.

Table 17 sets out estimates of the level of urbanisation in eastern

**Table 17** *Share of urban in total population, eastern Australia, 1841-1901*

	<u>%</u>		<u>%</u>
1841	30	1881	43
1851	34	1891	51
1861	38	1901	52
1871	41		

*Source:* Calculated from data in the censuses of New South Wales, Queensland, South Australia and Victoria, 1841-1901. The 1841 figure omits South Australia. Urban areas are defined to include all towns with a population of 2,500 or more.

**Table 18** *Share of urban in total population in Australia and other new countries, about 1900*

	Year	Minimum population counted as urban	% urban
Australia	1901	2,500	52
United States	1900	2,500	40
Canada	1901	1,000	35
Australia	1891	10,000	44
Uruguay	1890	10,000	30
Argentina	1890	10,000	28
Chile	1885	10,000	17
Brazil	1888	10,000	10

*Sources:* Australia: as for Table 17; United States: U.S. Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1957*, Washington, 1960, Chapter A; Canada: Leroy O. Stone, *Urban Development in Canada*, Ottawa, 1967, p. 29; other countries: A. F. Weber, *The Growth of Cities in the Nineteenth Century*, New York, 1899, pp. 144-5.

Australia at intervals between 1841 and 1901. These estimates, which have been calculated directly from disaggregated census data, are necessarily fairly rough. The early figures, in particular, are uncertain. Estimates for the period before 1841 are available but have been discarded. The figures in Table 17 suggest that by 1841 the degree of urban development in Australia was already relatively high. The experience of the United States helps to put the Australian urban share into perspective. Census data imply that in 1840 only 11 per cent of the American population lived in towns of 2,500 or more people, compared with 30 per cent in Australia in 1841.

Not only was the proportion of the Australian population in towns high in 1841, but it continued to increase during the rest of the nineteenth century. In 1901 the urban share had been raised to 52 per cent of total population. This remained higher than the share of urban in total population in the United States and other new countries at about the same time, as Table 18 shows. Detailed comparisons of the degree of urbanisation in different countries are bedevilled by statistical difficulties and the figures in Table 18 should be taken as no more than rough indications of orders of magnitude. Nevertheless, it seems safe to conclude that no other region of recent settlement was nearly so heavily urbanised as Australia at the end of the nineteenth century. This has prompted N. G. Butlin to write:

The process of urbanisation is the central feature of Australian history, overshadowing rural economic development and creating a fundamental contrast with the economic development of other 'new' countries.<sup>3</sup>

But how important was the process of *increasing* urbanisation in

**Table 19** *Increase in urbanisation, Australia and the United States, 1840-1 to 1900-1*

	Increase in share of urban areas in total population % points	Share of total population increase located in urban areas %	Decade increase in population		(1) ÷ (2)
			(1) urban %	(2) rural %	
<i>Australia</i>					
1841-51	4.1	37	184	136	1.4
1851-61	3.1	39	248	204	1.2
1861-71	3.1	47	59	40	1.5
1871-81	2.4	50	45	31	1.5
1881-91	7.9	70	68	22	3.1
1891-1901	1.4	62	17	11	1.5
1841-1901	22.0	53	89	62	1.4
<i>United States</i>					
1840-50	4.5	28	92	29	3.2
1850-60	4.5	32	75	28	2.7
1860-70	5.9	52	59	14	4.2
1870-80	2.5	36	43	26	1.7
1880-90	6.9	62	56	13	4.3
1890-1900	4.6	62	36	12	3.0
1840-1900	28.9	48	59	20	3.0

Sources: As for Table 18.

Australia in the nineteenth century? Did the urban proportion rise faster or slower than in other new countries? Again, it is useful to compare Australia with the United States. Table 19 contains several indicators of the pace of increased urbanisation in Australia and the United States between 1840-1 and 1900-1. This multiplicity of indicators is made necessary by the difficulty of deriving a single measure of the rate of change in urbanisation that is free of ambiguity. Each indicator in Table 19 highlights a somewhat different aspect of the growing importance of towns and cities. The figures in the table offer scope for a quite detailed comparison of the rate of Australian and American urban development. In the context of this chapter, however, only a few general points need to be made.

First, although Australia was more heavily urbanised than the United States throughout the nineteenth century, the rate of increase in urbanisation in Australia was fairly slow by American standards. Between 1840-1 and 1900-1 the Australian urban proportion rose by 22 percentage points, compared with a rise of 29 percentage points in the United States. This implies that Australia's urban population rose less quickly, relative to the rate of growth of rural population, than was the case in the United

States. Thus, as Table 19 shows, the percentage increase in the Australian urban population each decade was about one and a half times the percentage increase in rural population. In the United States, on the other hand, the corresponding ratio of the decade percentage increases in urban and rural population had a value of about three. In this context, a significant difference between Australia and the United States related to the growth of rural population. After 1860, the long-term growth rate of the American rural population (about 16 per cent per decade) was less than the rate of natural increase. Hence, in the United States urbanisation to some extent involved a net movement of people from rural to urban areas. In Australia, there was no direct counterpart of this net internal redistribution of population until much later. Until at least the 1880s, rural areas in Australia were adding more to their population than was implied by the rate of natural increase: there was no net loss of people to the towns. Only in the depression of the 1890s was there a situation in Australia in which the growth of rural population fell significantly short of the rural rate of natural increase.

Second, despite these indications that the rate of increase in urbanisation in Australia may have been relatively slow, the high *initial* urban proportion meant that the share of total population growth arising in the towns was typically larger in Australia than in the United States. It is in this context that the continued rise in Australian urbanisation has claims to be seen as being particularly rapid after the middle of the nineteenth century. Almost certainly, the growth of urban areas absorbed on average a higher fraction of total additions to population in Australia than in other new countries. However, it needs to be emphasised that the gap between Australia and the United States in this respect was not very wide.

Finally, all the indicators in Table 19 agree that the 1880s was a period of exceptionally rapid urbanisation in Australia. Between 1881 and 1891 the urban proportion rose by eight percentage points and urban areas accounted for about 70 per cent of total population increase. The percentage growth in urban population in these years was three times as high as the percentage growth in rural population. In no other decade in the period covered by Table 19 did Australian urbanisation increase at anything approaching these rates. Moreover, this was the only period between 1840-1 and 1900-1 in which the rate of increase in Australian urbanisation unambiguously equalled or exceeded the long-term pace of urban development in the United States.

## II

Australian urbanisation has had some enduring features. One of the most notable of these has been a tendency for a handful of large cities to dominate the urban structure. Table 20 shows that, in 1901, 70 per cent of

**Table 20** *Percentage of total urban population in towns of specified size, Australia and the United States, 1900-1.*

	Australia, 1901	United States, 1900
100,000 and over	70	47
10,000 and under 100,000	16	33
5,000 and under 10,000	6	11
2,500 and under 5,000	8	10

Sources: As for Table 18.

urban dwellers in eastern Australia lived in cities of 100,000 or more people. Again, comparison with the United States throws this aspect of Australian urban development into relief. In the United States only 47 per cent of the urban population lived in cities of this size in 1900. Here, the Australian experience differed also from that of the older industrial countries. Even in Britain, the most heavily urbanised country in the world at this time, no more than half the urban population lived in cities of 100,000 or more at the end of the nineteenth century. A counterpart of the dominance of large cities in Australia was a relative absence of middle-sized towns from the urban hierarchy. Table 20 suggests that in Australia in 1901 the percentage of total urban population located in towns of 5,000 to 100,000 people was only half the corresponding figure in the United States. On the other hand, at the bottom of the urban hierarchy, there were almost as many people in very small towns in Australia (relative to the total urban population) as in the United States. The concentration of the Australian urban population into the big cities thus appears to have been at the expense of the development of middle-sized towns, rather than in place of the growth of small urban settlements.

Each of the cities with a population of 100,000 or more in 1901 was a state capital. The four capital cities of mainland eastern Australia were grouped into pairs of roughly equal size. Sydney and Melbourne, with just under half a million people each, were large cities by any standard of the time. Adelaide and Brisbane had about 140,000 and 120,000 people respectively. Each of these cities was dominant in its own region: none of the capitals accounted for less than half of its state's total urban population.

Australians have become accustomed to thinking of the growth of the metropolitan cities as an inexorable process. In the twentieth century, the population of the state capitals has consistently grown faster than the rest of the Australian population. As a result, the proportion of total population living in the capital cities has risen considerably since 1900. In these circumstances, it is worth emphasising that, during the nineteenth century, there was only a short period of about two decades in which a



5. Inner Melbourne in about 1894. By the late nineteenth century Melbourne and Sydney were already two of the great cities of the modern world. (By courtesy of the Mitchell Library, Sydney)

movement towards *increasing* metropolitan concentration was clearly evident. Each of the Australian settlements began with population clustered in and around what was to become the major port. It is not possible to discover how much of this population was genuinely urban in the very early years, but it seems likely that the pioneering development of the two or three decades before the gold rushes saw inland population increasing at least as fast as the number of people in the coastal towns.

From 1851 reasonably accurate figures are available for the populations of the capital cities. Table 21 contains some indicators of the pattern of metropolitan and non-metropolitan population growth during 1851-1901. In 1851 Sydney, Melbourne and Adelaide held about 29 per cent of the total mainland population. Twenty years later, in 1871, these cities plus Brisbane accounted for about 27 per cent of total population. Thus, despite the upheavals of the gold rushes and despite marked changes in the rate of aggregate population growth in the 1850s and 1860s, the capital cities as a group seem to have had a more or less stable relationship with total population. The proportion of population living in the colonial capitals may have been high, but it showed no tendency to increase.

One implication of this is that any rise in the urban proportion during 1851-71 must have reflected the growth of non-metropolitan towns. Rapid growth of inland towns in the 1850s would scarcely be surprising,

**Table 21** *Metropolitan population growth, eastern Australia, 1851-1901*

	Share of metropolitan areas in			
	total	increase in total	total urban	increase in total
	population	population over	population	urban population over
%	%	%	%	
1851	29	—	84	—
1861	26	25	69	65
1871	27	27	65	57
1881	30	39	69	78
1891	36	52	71	74
1901	36	37	70	60

Sources: Populations of Sydney, Melbourne and Brisbane are from T. A. Coghlan, *Statistical Account of Australia and New Zealand* (various issues). Adelaide's population has been taken from J. W. McCarty, 'Australian Capital Cities in the Nineteenth Century', *Australian Economic History Review*, vol. X (1970), p. 133. Estimates of non-metropolitan urban population have been made directly from the censuses of New South Wales, Queensland, South Australia and Victoria, 1851-1901.

given the occurrence of the gold rushes. And, in this decade, non-metropolitan towns grew so fast that the share of the capital cities in total urban population fell from 84 per cent to 69 per cent. In the following decade, metropolitan population growth continued to lag behind the increase in the rest of the urban population, though by a smaller margin than in the 1850s. By 1871, as Table 21 shows, the share of the mainland capitals in total urban population had been reduced further to 65 per cent. This phase of relatively rapid growth in the population of non-metropolitan towns to 1871 is an aspect of Australian urbanisation that awaits further investigation.

In the two decades after 1871, however, metropolitan population growth outstripped the growth of the rest of the Australian population. By 1891 the share of the capital cities in the total population of eastern Australia had risen to 36 per cent, nine percentage points higher than in 1871. And, for the first time since relatively reliable figures had been compiled, metropolitan population growth was faster than the growth of other towns. As a result, the proportion of total urban population living in the capital cities began to rise, reaching 71 per cent in 1891. The twenty years 1871-91 thus appear as the only period in the nineteenth century in which the dominance of the capital cities increased significantly. The 1880s, in particular, emerges as a decade of exceptionally rapid metropolitan concentration in Australia. About half the increase in the total population of eastern Australia between 1881 and 1891 was accounted for by the metropolitan areas. (It will be remembered

that this was also the decade in the nineteenth century in which the tendency towards increased urbanisation as a whole was strongest.)

The experience of Melbourne in the 1880s was the extreme instance of increasing metropolitan concentration in Australia in the nineteenth century. The growth of Melbourne completely overshadowed non-metropolitan Victorian development. Between 1881 and 1891 Melbourne was the scene of over 90 per cent of the colony's urban population expansion and accounted for almost three-quarters of the total increase in the Victorian population. This surge of expansion in Melbourne in the 1880s has helped to perpetuate the heroic notions of 'marvellous Melbourne' that were born in the 1850s, when under the influence of gold the Victorian capital became, almost overnight, Australia's largest city. Before the 1890s contemporaries were fond of contrasting a reputedly dull, unenterprising and played-out Sydney with the supposedly vigorous, energetic and go-ahead southern capital.

In terms of the growth of population and economic activity, however, such comparisons were misleading. Once the gold rushes were over the long-term rate of population expansion was perceptibly faster in Sydney than in Melbourne. Even between 1861 and 1891 (that is, before the collapse of Melbourne's growth in the depression of the 1890s), Sydney's population grew at 4.7 per cent p.a., compared with a 4.3 per cent p.a. growth in the population of Melbourne. A more striking difference emerges if the comparison between the two cities is extended to include the 1890s, when Melbourne stagnated whilst Sydney continued to grow, if more slowly than in the past. During 1861-1901 the average annual rates of population growth in Sydney and Melbourne were 4.2 per cent and 3.2 per cent respectively. Sydney's faster rate of expansion in this period meant that by the end of the nineteenth century there were nearly as many people in Sydney as in Melbourne (which had been almost 50 per cent larger than Sydney in 1861). The more rapid growth of Sydney was presumably related to the gradual shift in the focus of economic expansion northwards after the end of the gold rushes. This was reflected, very roughly, in the rates of growth of total population in New South Wales and Victoria: in no decade after the 1850s did the number of people in Victoria increase as quickly as the population of New South Wales. The difference between the growth rates of the two capital cities was to persist until after World War II, by which time Sydney held over 25 per cent more people than Melbourne.

### III

What were the characteristic features of the Australian capital cities? J. W. McCarty has argued that the Australian metropolitan areas can be fitted into a general world typology of cities in the nineteenth century.<sup>4</sup> They were, according to McCarty, examples of the commercial city which

tended to be dominant in newly settled regions. Commercial cities should be distinguished, first, from traditional cities, long established as centres of trade and industry and still affected by the pattern of their previous development. Second, commercial cities need to be distinguished from industrial cities, whose growth and structure were significantly influenced by the particular industries which happened to be dominant. In both traditional and industrial cities a diversity of growth patterns and a diversity of internal economic structure were apparent. McCarty argues that, in contrast, the growth and structure of commercial cities tended to be fairly similar. The major commercial cities shared the characteristic of being established to aid the exploitation of hitherto unsettled regions. They served as a channel for both exports and imports. Manufacturing was essentially a subsidiary activity stimulated by urban growth itself. Being new, commercial cities were, according to McCarty, '“pure” products of the nineteenth-century expansion of capitalism'. Their growth 'was determined predominantly by world economic forces, and by the broadly similar requirements of the staple export economies that formed their hinterlands'. For these reasons, McCarty argues that one would expect the commercial cities 'as a group to exhibit stronger likenesses and regularities in their structure and growth than either the pre-capitalistic cities . . . or the industrial cities'.<sup>5</sup>

Until the 1870s or 1880s the commercial cities are said to have been compact entities with a tight ring of working-class and middle-class suburbs circling both the city core and a few pockets of rich housing. Most people lived within walking distance of the main areas of employment. From about 1880 the commercial cities began a slow transition under the influence of continued population growth and the construction of public transport systems. Development proceeding along radial transport routes led to lower population densities and the emergence of more or less clearly defined zones of suburbs stratified according to the social and economic status of their residents. The rich moved to the outer suburbs. Some industry tended to develop in the inner suburbs as a response to city growth. During this phase of expansion, the extension of the city core into previously residential areas involved the demolition or conversion of old structures. And, overall, the pattern of city growth brought significant rises in investment demands associated with the provision of housing and public utilities, thus adding an autonomous element that reinforced the expansion of economic activity in the city as a whole.

McCarty is concerned to highlight similarities between Australian cities and cities in other regions of recent white settlement. Whilst this is a useful means of putting Australian metropolitan development into perspective, it is also necessary to look for ways in which Australian cities differed from their counterparts overseas, in both the old world and the new. Here, at least three distinctive features of the Australian capital

cities in the nineteenth century can be mentioned as being critical influences upon Australian city life.

First, Australian cities were sprawling affairs. The most intensive large-scale development in Sydney and Melbourne took the form of rows of two-storey terraces squeezed on to narrow frontages in the inner suburbs. These terraces seem tightly packed when viewed in the context of the typical suburban development of the twentieth century. There was, however, nothing in either Sydney or Melbourne to compare with the



6. Some of the poor of Sydney in 1901. Extreme poverty was rare in Australian cities. There was no counterpart of the slums common in cities overseas at this time. (By courtesy of the National Library of Australia)

tenement housing that was common in large European and American cities. Few parts of Sydney or Melbourne had a population density significantly greater than fifty or sixty persons per acre. In contrast, the most crowded parts of London, Paris and New York had 350 to over 500 persons per acre in 1890.<sup>6</sup> It is not difficult to envisage reasons for the contrast in population density between London, with its four million people, and Sydney and Melbourne, with less than half a million each. However, the population density of Australian cities was low even in comparison with other new cities in regions of recent settlement. Thus, for example, metropolitan cities in the United States with a population of 400,000 to 600,000 in 1900 had, according to the census, an average population density of about fifteen persons per acre, approximately three times the average for the Sydney metropolitan area or the Melbourne Metropolitan Board of Works area in 1901. This comparison overstates somewhat the difference in the density of city population in Australia and the United States, because the Sydney and Melbourne figures include large areas of very sparsely settled suburban land, whilst similar areas on the outskirts of the American cities are excluded. Nevertheless, it is almost certainly true that, overall, the Australian capital cities were significantly less densely populated than American cities of about the same population size. Why this should have been so is not immediately apparent. The low density of population in the Australian metropolitan areas, by the standards of overseas cities in the nineteenth century, is a basic aspect of Australia's urban experience that awaits further investigation.

Second, a notable feature of Australian cities in the nineteenth century was the absence of large areas of slum housing. There were, of course, suburbs consisting of little else but row upon row of working-class housing. Bernard Barrett has analysed the experience of one of these: Collingwood, an inner suburb of Melbourne.<sup>7</sup> Collingwood was an area of poor quality housing and noxious industry which Barrett characterises as having been 'crippled from birth'. This description appears extreme if Collingwood is compared with the poor parts of London or New York in the nineteenth century. Collingwood and other working-class suburbs in Melbourne and Sydney were not ghettos. Nor were they slums in the same sense as were the desperately poor areas to be found in European and American cities. Indeed, Collingwood and the like were a major Australian achievement, for they represented a standard of physical comfort that was well beyond the reach of the urban poor in other countries. The attainment of such high minimum standards of residential urban development was made possible by the high level of income per head and may indicate something about the relative evenness of income distribution in Australia in the latter part of the nineteenth century. Also important was the general absence of serious unemployment before the 1890s. The racial and cultural homogeneity of the white population was a

contrast between Australia and other regions of recent settlement that helped to limit the development of slum areas. Finally, the very newness of Australia's cities meant that, in the nineteenth century, there were never large tracts of old decaying housing to serve as the natural habitat of the urban poor.

Third, throughout the nineteenth century cities everywhere had significantly higher mortality rates than rural areas. This was as true in Australia as in other countries. During 1881-90, for example, Sydney had an average death rate of about 19 per thousand of total population, compared with a death rate of 13 per thousand in non-metropolitan New South Wales. However, death rates were lower in Australia, in both city and country, than in most areas overseas. Thus, Sydney's death rate in the 1880s was about equal to the average for Britain as a whole in the same period, but well below the *urban* death rate in Britain. In sum, Sydney and Melbourne had lower death rates than any of the great cities of the old world or the Americas, whilst it appears that few medium-sized cities in other countries possessed as good a mortality record. Low mortality in Australian cities reflected, in part, the features already mentioned: low population density and the absence of slum areas. Also relevant were factors such as a generally favourable climate and the relative absence of diseases such as smallpox and cholera, as well as specifically economic influences such as the high level of income per head in Australia. There is, however, one serious qualification to be made about the general healthiness of Australian cities. Low mortality appears to have arisen chiefly from the low death rate among adults, for infant mortality was high. In Sydney and Melbourne in the 1880s the number of deaths of children under the age of one as a percentage of births each year was above the level recorded in London and nearly 80 per cent higher than in non-metropolitan New South Wales and Victoria.

#### IV

In the first section of this chapter it was argued that the level of urban development in Australia was unusually high in the nineteenth century. The present section discusses some of the reasons that have been suggested to explain this high degree of urbanisation.

It is worth emphasising at the outset that by 1900 the concentration of the Australian population into urban areas was high even by the standards of the older industrial nations. Indeed, on some reckonings, no region outside Britain and parts of Germany had so large a proportion of its population living in towns as did the Australian colonies. But the circumstances that appear to explain the rise in urbanisation in the leading industrial countries in the nineteenth century cannot be used to explain Australian urban development. In the industrial countries, the growth of manufacturing itself was an important cause of urbanisation.

In Australia, on the other hand, industrialisation contributed much less to the growth of urban areas. As early as 1850 many of the characteristic features of Australian urbanisation were already established, whilst manufacturing was still in its infancy. At the end of the century, manufacturing had grown to account for perhaps 15 per cent of total employment in Australia. Although this increase in manufacturing obviously added to the rise in urbanisation, two aspects of the relationship between manufacturing growth and urban development in Australia need to be noted. First, even in 1900 the size of the industrial sector was still too small for manufacturing growth to serve as a major explanation of the level of urbanisation. Second, in Australia much of the manufacturing growth that did occur was probably a result of prior urban growth itself rather than being an independent stimulus to urbanisation. As N. G. Butlin has written in relation to the period after 1860:

Industrial expansion undoubtedly stimulated other urban activity and promoted further urban growth. But it seems reasonable to suggest that urbanisation stimulated industrial development directly and indirectly.<sup>8</sup>

J. W. McCarty has argued that this tendency for urbanisation to precede and promote industrial development was not unique to Australia. It may have been at odds with the experience of industrialising countries but was, according to McCarty, characteristic of city development in new regions in the nineteenth century.<sup>9</sup> This raises the question of the existence of similarities between Australia and other new countries that might throw some light on Australia's urban growth and structure. It was noted in the preceding section that McCarty's analysis of metropolitan development emphasised the extent to which the Australian capital cities conformed to a general pattern of city growth in new regions in the nineteenth century. Particularly important, in the present context, is McCarty's suggestion that in a number of other new regions besides Australia there was a tendency towards the development of a single large city which dominated the urban hierarchy. McCarty argues that this was so both in South America and in parts of the United States. In Section II of this chapter, Australia's urban structure was contrasted with that of the United States (see Table 20). At the aggregate level, there was no trace in the American data of the primacy of large cities that was so characteristic of Australia. It can be argued, however, that the United States should be treated as a collection of semi-independent economic regions rather than as a single entity. If this is done, some examples of primacy are evident. Thus, in California the largest city, San Francisco, appears to have dominated the urban hierarchy at the end of the nineteenth century in much the same way as did the Australian capital cities. The primacy of the major city in new regions, where it occurred, can probably be taken as a reflection of the simplicity of the economic structure of these regions. The lack of a

complex domestic sector tended to inhibit the growth of urban areas outside the major port.

There are, then, parallels between Australian urbanisation and the pattern of urban growth in a number of other regions of recent settlement in the nineteenth century. More striking, however, is the *contrast* that has already been noted between the degree of urban development in Australia and other new countries. Here, it appears that some basic structural differences in the economic growth of Australia and other new regions can go far towards explaining Australia's exceptionally high level of urbanisation. Critically important in this respect is the fact that in Australia the proportion of the working population engaged directly in agricultural or pastoral activity was substantially lower than in other regions of recent white settlement (see Table 22). For the nineteenth century, strictly comparable figures on the composition of employment in different countries are out of the question. Nevertheless, the contrast suggested by the figures that are available is so marked that it must be fairly certain that agriculture accounted for a significantly lower share of total employment in Australia than in other new countries. Thus Table 22 suggests that in 1890 about 25 per cent of total employment in Australia was accounted for by the agricultural sector. In the United States at this time the corresponding figure for agriculture was about 40 per cent of total employment. Other new countries seem to have been more like the United States than Australia in this respect. The share of agriculture in the Australian workforce was low also by the standards of older countries. At the end of the nineteenth century agriculture appears to have accounted for more of the workforce in each of the major countries of continental Europe (except Belgium) than in Australia.

For the period before 1890, it is not possible to do more than make a rough guess at the share of agriculture in the total Australian workforce.

**Table 22** *Percentage of workforce engaged in agriculture, Australia and other new countries, about 1890*

---

Australia, 1890	25
United States, 1890	40
Canada, 1891	48
New Zealand, 1896	37
Argentina, 1895	40

---

*Sources:* Australia and the United States: J. A. Dowie, 'The Service Ensemble', in Colin Forster (ed.), *Australian Economic Development in the Twentieth Century*, p. 221; Canada: O. J. Firestone, *Canada's Economic Development, 1867-1953*, London, 1958, pp. 184-5; New Zealand and Argentina: Simon Kuznets, *Economic Growth of Nations: Total Output and Production Structure*, Cambridge, Mass., 1971, pp. 250-3. The agricultural sector is defined to include all agricultural and pastoral activity plus rural pursuits such as forestry and trapping. Mining is excluded.

---

However, what information is available does suggest that agriculture also accounted for a relatively low proportion of the workforce in earlier periods of Australian history. The 1851 census information may, as was noted in Chapter 1, be unsatisfactory but it is sufficient to enable us to be fairly sure that agriculture and pastoral activity employed directly no more than 40-45 per cent of the occupied population of eastern Australia. In the United States at about the same time agriculture can have accounted for no less than 60-65 per cent of the workforce. If these figures are approximately correct, then the structural changes that occurred in the Australian and American economies are broadly consistent with the pattern of urban growth in each country in the nineteenth century. Early in its history, Australia had an exceptionally low share of workforce engaged in agriculture and an unusually high urban proportion. Thereafter, the share of agriculture in total employment fell more slowly than in the United States, a development that was in line with the slower *increase* in urbanisation in Australia that was described in the first section of this chapter.

Much of the smallness of the share of the Australian workforce that was devoted to agriculture can be attributed to the high labour productivity of Australian rural activity in the nineteenth century. In Europe and North America average labour productivity in agriculture was consistently below—and often well below—the level of labour productivity in other sectors. As a consequence, the contribution of agriculture to total product was lower than agriculture's share in the workforce. In Australia, on the other hand, the available estimates for this period point to the agricultural sector being at least as productive, in terms of the value of product per unit of labour input, as the rest of the economy. Presumably, this reflected, in part, the relative unimportance in Australia of a backward, partly subsistence component in the rural sector. Australian rural activity seems to have been integrated almost wholly into the market economy. Agricultural and pastoral output was overwhelmingly for sale, principally for export. The absence of large numbers of relatively unproductive small farmers operating on the fringe of the market system must have contributed substantially to the high level of Australian urban development in comparison with other new countries.

In Australia, primary production was dominated, of course, by wool growing. It was recognised even in the nineteenth century that the unusually low labour needs per unit of output in the pastoral industry (by the standards of rural activity in other countries) were a powerful factor in the early development of towns in Australia. In addition, the wool industry influenced the emergence of an urban structure characterised by a concentration of the urban population into a few port cities and the absence of large inland towns. Wool was produced almost wholly for export and the only important linkages involved in the handling of the

clip were its transport to the coast and trans-shipment in the main ports. Nor did wool demand as inputs much that could serve as the basis for an inland urban economy. The major physical inputs of the industry were land, sheep, station labour and, in the second half of the century, construction materials. Here, only the supplying of construction materials and the provisioning of station labour were likely sources of neighbouring urban activity. And, in each of these cases, the thin geographical spread of demand precluded the development inland of a basically urban support structure. Before the railways, station provisions and supplies, for example, were typically got once a year, when they came direct from the ports in wagons returning after taking the wool clip to the coast. The net effect of all of this was that it encouraged the concentration of urban population into the ports, for the lack of local linkage effects inhibited the growth of inland towns.

It has been argued by Geoffrey Blainey that conditions in pastoral areas helped to swell the urban population in another way,<sup>10</sup> especially before the gold rushes. The isolation of pastoral stations in the outback made them particularly uncongenial to women and children. Hence, it is argued by Blainey, there developed early in Australia's history a strong tendency for the *dependent* population to congregate in the towns and cities. This meant that the proportion of population living in towns was greater than was implied simply by the distribution of employment and economic activity between urban and rural areas. There is no doubt that pioneering pastoral regions had very few women and children relative to the number of adult males. As a consequence, an extremely high proportion of the population of remote pastoral areas was actively engaged in the workforce. What was the quantitative impact of this on the level of urbanisation? The available data allow some tentative answers to be given with respect to the distribution of population between metropolitan and non-metropolitan areas. If the census returns on breadwinners and dependants, which are summarised in Table 23, are taken at their face value it appears that a tendency for dependants to favour the capital cities helped to raise the urban proportion to a moderate extent in the period to 1851. In Sydney and Melbourne in 1851 dependants made up 63 per cent of the population, compared with 55 per cent of population in the rest of eastern Australia. During 1851-91, however, any tendency for disproportionately large numbers of dependants to locate in the capital cities (and hence to boost the urban proportion above the level implied by the distribution of economic activity between city and country) appears to have been eliminated. In 1891 the census data suggest that dependants accounted for approximately the same proportion of total population in both metropolitan and non-metropolitan areas.

Changes in the age and sex structure of population during 1851-91 are broadly consistent with the shifts in dependency rates outlined in the

**Table 23** *Population structure and dependency rates, metropolitan and non-metropolitan areas, eastern Australia, 1851-91*

	Metropolitan		Non-metropolitan	
	1851	1891	1851	1891
<i>% of total population</i>				
Breadwinners	37	43	45	42
Dependants	63	57	55	58
Children 0-14	40	34	40	38
Adult males	31	33	40	36
Adult females	29	33	20	26

*Source:* Calculated from data in the censuses of New South Wales, Queensland and Victoria, 1851 and 1891. Brisbane is counted as metropolitan in 1891 but not in 1851.

previous paragraph. In 1851 the greater number of adult males, relative both to total population and to the number of adult females, was obviously important in raising the proportion of breadwinners in non-metropolitan areas above the levels recorded in Sydney and Melbourne. And, between 1851 and 1891, the age and sex composition of population altered in such a way as to raise dependency rates in non-metropolitan areas and lower dependency rates in the capital cities. In the metropolitan areas, the heavy fall in the ratio of children to total population tended to reduce dependency rates. In the country, the proportion of children fell less than in the capital cities, whilst a reduction in the share of total population accounted for by adult males must have lowered significantly the proportion of the non-metropolitan population that was actively engaged in the workforce.

It is unfortunate that difficulties with the census data on breadwinners and dependants must make these conclusions preliminary and tentative. Because of inconsistencies in the census treatment of women workers, especially in rural areas, the precise distribution of adult females between breadwinners and dependants is suspect. A further problem concerns the inability of the census returns to identify migratory labour, which was presumably an important component of the pastoral workforce in the nineteenth century. Seasonal rural demands for migratory labor were low at the time of year when the census was taken. It is possible that large numbers of migratory pastoral workers, including those who would leave dependants behind when working on the runs, would have been living for the time being in towns when the census was taken. If this was the case, the census returns would not be a very reliable guide to the relative numbers of breadwinners and dependants normally resident in towns and rural areas and, in particular, the urban proportion recorded in the census would overstate the proportion of the population gaining a livelihood

from the towns. The extent of any overstatement of urban development on this count is at the moment a matter of conjecture.

It will be pointed out in Chapter 8 that governments had a major role to play in Australian economic development by the standards of the nineteenth century. How much did political factors influence the scale and pattern of Australian urban development? Government economic activity was larger in relation to the size of the local economy than was typical of many countries and it is possible to argue that government employment was more prone than employment in the private sector to locate in towns and cities. Thus Sean Glynn has written that 'Australian political and administrative activity was highly centralised in each colony and undoubtedly this played an important part in metropolitanisation'.<sup>11</sup> This argument has an intuitive appeal. However, it is not clear that the centralisation of government functions did add much to metropolitan growth or to urban growth in general. Much of the government activity that accounted for the public sector's relatively high share of total employment, especially railway construction, directly boosted migratory rural employment rather than employment in the cities.

The policy priorities of colonial governments (as distinct from the size and location of employment in the government sector) may also have influenced urbanisation. Australian land laws encouraged rural settlement less than in the United States. Tariff protection in Victoria after the gold rushes aimed at stimulating the growth of manufacturing, and hence of urban employment. The design and operation of colonial railway networks tended to reinforce the concentration of population in the capital cities. The net impact of factors such as these on the level of urbanisation is difficult to estimate, but it may have been much smaller than the previous sentences imply. Land laws were probably less significant an influence on rural settlement than were economic and geographic factors. The tariff in Victoria, as will be seen in Chapter 8, may have had little effect on the growth of manufacturing. And the focus of the railway networks on the capital cities was less the outcome of purely political forces than a response to the pre-existing traffic flows inherent in the pattern of Australian economic development.

Finally, among nineteenth-century commentators a popular explanation of the concentration of population in the capital cities was related to the fact that Australian population growth depended heavily upon immigration. Immigrants arrived by ship at one of the major ports and, so it was argued, a combination of inertia and the harshness of the interior deterred many from proceeding further. If this was so, one implication is that Australian metropolitan growth could proceed unfettered by factors such as the need to induce a shift of population from rural areas. In older countries, inertia tended to bolster the declining rural sector. In Australia, it helped to feed metropolitan expansion. This line of reasoning is less applicable to the question of why Australia had

more of its population in the major ports than did other new countries: it ought to apply also to the latter to the extent that these areas depended upon immigration as a source of population growth. A related argument asserts that most people coming to Australia were urban Britons with a preference for city life. Having arrived in Australia, it is said, British migrants set about recreating the urban environment they had left behind. Here, it is true that the preference patterns of immigrants must have affected many aspects of Australian life. As Sean Glynn says:

if Australia, instead of being settled by the British and Irish, had been settled by a different nationality or race (the Spanish or the Chinese), the pattern of urbanisation might have been quite different.<sup>12</sup>

This is not to say, however, that this was a quantitatively significant *independent* influence on the level of Australian urbanisation. After all, decisions to locate in cities that reflected the collective aspirations of British migrants could hardly have been carried through successfully had they not been consistent with the underlying pattern of employment and profit opportunities, as determined by other factors at work in the economy.

#### NOTES:

<sup>1</sup> N. G. Butlin, *Investment in Australian Economic Development*, p. 184. Chapter III of Butlin's book is the first modern treatment of Australian urbanisation before 1900. Sean Glynn, *Urbanisation in Australian History, 1788-1900*, Melbourne, 1970, is a short introduction to the topic. J. W. McCarty, 'Australian Capital Cities in the Nineteenth Century', *Australian Economic History Review*, vol. X (1970), pp. 107-37, is a lucid account with an emphasis that is significantly different from Butlin's.

<sup>2</sup> D. N. Jeans, *An Historical Geography of New South Wales to 1901*, p. 309.

<sup>3</sup> *Investment in Australian Economic Development*, p. 6.

<sup>4</sup> 'Australian Capital Cities', especially pp. 109-18 and 124-9.

<sup>5</sup> *Ibid.*, p. 110.

<sup>6</sup> A. F. Weber, *The Growth of Cities in the Nineteenth Century*, New York, 1899, pp. 460ff.

<sup>7</sup> *The Inner Suburbs: The Evolution of an Industrial Area*, Melbourne, 1971.

<sup>8</sup> N. G. Butlin, *Investment in Australian Economic Development*, p. 182.

<sup>9</sup> 'Australian Capital Cities', p. 110.

<sup>10</sup> 'Technology in Australian History', *Business Archives and History*, vol. IV (1964), p. 128, and *Tyranny of Distance*, pp. 136-7.

<sup>11</sup> *Urbanisation in Australian History*, p. 32.

<sup>12</sup> *Ibid.*, p. 39.

# Manufacturing and house building

Much of this book has viewed Australia's economic growth as depending on exploiting a comparative advantage in the production of primary exports and on the ability to attract inflows of capital and labour from the old world. Whilst this focus on the external sector is appropriate, it is also true that a large part of Australian economic activity throughout the nineteenth century was directed at providing for the needs of the local population. This chapter deals with two sectors of the Australian economy that were devoted to meeting domestic investment and consumption demands. Part of the first of these sectors—manufacturing—had to compete with imports. The second—house building—supplied, for obvious reasons, the whole of the domestic market. Until recently, research efforts in Australian economic history tended to pass by these sectors of the economy. Hence there are many areas where even basic questions remain to be investigated, particularly for the period before 1860.

## I

From the earliest years of white settlement, the Australian population exercised an effective demand for manufactured goods. Most of this demand was satisfied by imports, mainly from Britain. Some commodities, however, could scarcely be expected to stand the cost of shipment half way round the world. Australia's distance from Britain meant that transport charges were high enough and voyages long enough to give substantial natural protection from import competition to domestic producers of bulky low-value articles or perishable commodities. Predictably, the Australian manufacturing that emerged before 1850 was confined to meeting local demand for this type of naturally protected product.<sup>1</sup>

The first manufacturing to appear was geared to the needs of local construction activity. Sawpits and brickfields were necessary as soon as the pioneer settlements turned their attention to permanent residences and public buildings. Given the rapid rate of population growth, construction of various sorts must have absorbed a significant proportion of domestic productive effort. Providing materials to the construction industry was to remain an important source of manufacturing activity throughout the nineteenth century. Other types of secondary industry

were an outgrowth of rising agricultural output. Agriculture may have been a relatively underdeveloped component of the primary sector on the mainland, but enough grain output was forthcoming to make flour milling and brewing fairly sizeable early industries. On the other hand, the pastoral industry provided less stimulus to local manufacturing than its overall economic importance might have suggested, for almost the whole of the wool clip was exported in an unprocessed form. Only small amounts of low-grade wool were worked up in Australian factories. Resort to the boiling down of surplus stock in the 1840s stimulated industries such as soap and candle making, tanning and fellmongering. The 1840s also saw the establishment of sugar refining on a modest scale. This industry was unusual in that it used imported rather than local raw materials, though the source of supply in the East Indies was relatively close. Some boat building for the coastal trade and the fisheries, plus a motley collection of activities—coach building, hat making, simple foundry work, among others—filled out the manufacturing sector before 1850.

How large was manufacturing in relation to the colonial economy before the gold rushes? It is impossible to say how many people were engaged directly in manufacturing activity. The early censuses made no attempt to distinguish between employment in commerce and employment in manufacturing. This procedure was probably an accurate reflection of the contemporary economy. At the rudimentary level of industrial specialisation that prevailed before 1850 manufacturing can scarcely have been a source of full-time employment for many people. Part of manufacturing activity must have been conducted by people who were also employed in commercial pursuits. Further, it is likely that many households made simple manufactures for their own use instead of resorting to the market in a fashion typical of more mature economies. On the whole, developments in manufacturing before the gold rushes were insignificant in that they have no important implications for the interpretation of the manufacturing growth that took place in the latter part of the nineteenth century. Except in a trivial sense, no foundations of subsequent manufacturing development had been laid by 1851.

## II

The discovery of gold in 1851 had implications for manufacturing, as for other sectors of the Australian economy. The immediate effect was to create a severe labour shortage that caused some manufacturing operations to close down. Even in the short run, however, the net impact of gold on manufacturing industry is difficult to determine. The gold rushes lifted local price and cost levels sharply. The considerable rise in the domestic cost structure, relative to overseas levels, must have led to a significant deterioration in the competitive position of any import-

competing manufacturing industry. On the other hand, the acceleration in the rate of population growth induced by the gold discoveries can be expected to have stimulated the manufacture of goods for which import competition was not a serious possibility. Accelerated population growth raised demand for many basic manufactured products. Further, it was argued in Chapter 1 that, after 1853-4, rapid population growth allowed the domestic sector to expand much faster than exports. Manufacturing of naturally protected products was presumably a beneficiary of this re-orientation of economic activity after the initial rush to the gold fields had taken place. In sum, as T. A. Coghlan wrote, in what is still in many ways the best account of the 1850s, 'the immediate effect of the gold discoveries upon the small manufacturing industries of New South Wales was to stimulate some and extinguish others'.<sup>2</sup>

Because of these conflicting tendencies, a confident assessment of the course of manufacturing development in the 1850s must await the results of further research. In the meantime, it is worth noting two distinct attitudes towards the net effect of the gold rushes on manufacturing in the 1850s.

First, it has long been argued that, whilst the rushes were in progress, manufacturing expansion was inhibited by labour shortages, even though the demand for manufactured goods was rising quickly. Once gold mining began to decline, however, labour shortage was succeeded by a situation in which labour supplies were plentiful so that manufacturing could now expand in response to the previous growth in demand and, in so doing, provide employment for ex-miners. This early interpretation of the gold rushes was made without its authors having much in the way of suitably processed statistical information to guide them. However, the accuracy of this approach seemed to be confirmed to some extent by the publication in 1962 of N. G. Butlin's estimates of major Australian economic aggregates for the period after 1860. On these estimates, manufacturing accounted for a mere 4 per cent of gross domestic product in current prices in 1861. Moreover, during the 1860s manufacturing product appeared to have risen much more rapidly than activity in the economy as a whole. By the end of the decade the estimated share of manufacturing had doubled to 8 per cent of gross domestic product.<sup>3</sup>

Second, it has also been argued that substantial manufacturing growth may have taken place *during* the gold rushes, despite the high labour demands of the mining sector. In this context, Allan Thompson has suggested that N. G. Butlin's estimates may have understated quite seriously the extent of manufacturing activity in 1861.<sup>4</sup> Further, Thompson argues that the degree of understatement of manufacturing output in Butlin's estimates was less marked in 1871 than in 1861. If so, the rate of growth of manufacturing in the 1860s would have been lower than is implied by Butlin's figures. Hence, according to Thompson, a revision of Butlin's estimates would suggest, first, that manufacturing

development was being stimulated before large numbers of miners were forced by the decline in gold mining to seek alternative employment and, second, that the re-deployment of ex-miners was a less important source of manufacturing growth than has often been assumed. Thompson is correct in pointing to the inherent fragility of Butlin's estimates of manufacturing output in the 1860s. This is an area of considerable statistical uncertainty. Unfortunately for Thompson, this uncertainty also affects his own proposed revisions. And Thompson has not managed to create a reasonable presumption that his alternative procedures would produce a 'truer' estimate of the level of manufacturing employment and output.

Irrespective, however, of the relative merit of the procedures used by Butlin and Thompson in calculating manufacturing output, it is certain that at the end of the gold rushes manufacturing continued to be a minor component of the Australian economy. No plausible reconstruction of the available statistical data could upset this point. Moreover, manufacturing establishments were still conducted on a small scale, using primitive techniques. For example, mechanisation had scarcely begun to be adopted in 1860. At this stage of development, Australian manufacturing remained a backward sector that relied wholly on supplying the small domestic market with relatively simple products.

### III

After the end of the gold rushes manufacturing expanded significantly faster than the Australian economy as a whole, so that the share of manufacturing in total product increased.<sup>5</sup> There is no doubt about the existence of a shift towards manufacturing in the economic expansion of 1860-90, though the exact timing and extent of the shift cannot be determined. On N. G. Butlin's estimates, manufacturing production grew at about 8 per cent p.a. in these years, compared with a growth in real gross domestic product of 4½-5 per cent p.a. The share of manufacturing in total product rose, according to Butlin, from 4.5 per cent in 1861 to 10-11 per cent in 1891. Again, it must be noted that Allan Thompson would disagree with these estimates. Thompson argues that a figure of about 15 per cent of gross domestic product, rather than 10-11 per cent, would more accurately reflect the position of manufacturing in the colonial economy in 1891.

The existence of such large differences in the estimated share of manufacturing in gross domestic product is due partly to measurement difficulties that are themselves revealing about the nature of Australian industrial development in this period. Some of the measurement problems arise because a considerable amount of Australian manufacturing was carried on in backyard establishments. There was not much in the way of a recognisable factory system in Australia even at the end of

the nineteenth century. In consequence, the collection of comprehensive statistical information was always beset with difficulties. More basic is the problem of distinguishing between manufacturing and associated commercial activity. This arises not simply because of statistical inadequacies but largely because both commercial and manufacturing functions were often undertaken in the one establishment. This reflected a lack of specialisation in the commercial-industrial structure that was wholly characteristic of the period. Part of the difference between the Butlin and Thompson manufacturing estimates is attributable to the fact that each author has drawn a different line between manufacturing and commerce. Here, a particular judgment about the boundary to be adopted will have meaning only in relation to the stage of development of the Australian economy. And, moreover, *any* statistical procedure that aims to place manufacturing and commercial activity into rigidly separated compartments runs the risk of being seriously misleading. In this connection, it is relevant that a significantly large, and historically improbable, discontinuity between the 1890s and the early 1900s (that is not apparent in Butlin's figures) would be evident in estimates calculated along the lines suggested by Thompson.



7. A brewery in Carcoar in the 1890s. Most Australian manufacturing was carried on in small factories or backyard workshops. The economics of the brewing industry, however, favoured larger establishments. Small country breweries were gradually driven out of business. (By courtesy of the National Library of Australia)

**Table 24** *Composition of manufacturing employment, New South Wales and Victoria, 1890*

	%
Metals, machinery, carriages	25
Building materials, furniture	23
Clothing, textiles	19
Food, drink, tobacco	15
Books, paper, printing	9
Leather products, tanning	4
Other	5
Total manufacturing employment	<u>100</u>

Source: Calculated from N. G. Butlin, *Investment in Australian Economic Development*, pp. 203-4.

The commodity composition of Australian manufacturing in 1890 was much as might have been expected, given the structure of the economy and the main sources of growth in the preceding decades. Table 24 shows the distribution of total manufacturing employment in New South Wales and Victoria between major industrial groupings in 1890. Each of the two largest groups in Table 24 produced physical inputs for other industries rather than final consumer goods. Metals, machinery and carriages, which employed one-quarter of the people working in manufacturing, was in some ways a fairly 'modern' industrial grouping. Certainly, it had increased its share of total manufacturing employment significantly in the twenty years or so to 1890. However, much of the activity of this group continued to be simple work carried on in small foundries, repair shops and low-grade engineering works. Building materials production employed almost as many people as metals and machinery in 1890. The importance of the building materials industry, which was dominated by brickworks and sawmills, reflected the high level of construction activity that remained a characteristic of the Australian economy. Other major industry groups concentrated on the production of basic consumer goods. Clothing and textiles production—which accounted for about one-fifth of manufacturing employment in 1890—was most important here, followed by the production of food, drink and tobacco. Local manufacturing concerns did not venture much beyond elementary processes. There were thus large gaps in the industrial structure. For example, despite periodic attempts at iron production from the 1840s, there was nothing to resemble an Australian iron and steel industry in the nineteenth century.

Almost all the output of the manufacturing sector was sold on the domestic market. The growth of the local population and income, together with changes in the composition of domestic demand, were thus major influences upon the development of manufacturing. So, too, was the redistribution of the population. Steadily increasing urbanisation

probably stimulated manufacturing activity, as noted in the previous chapter, by providing growing concentrations of demand and labour supplies, especially of women workers. As well as these specifically domestic influences, those industries that competed directly with imports were affected by the extent to which import replacement was possible. Here, conditions differed between the two most populous colonies. Victorian governments chose to give varying amounts of tariff protection to a range of manufacturing industries from the 1860s. In New South Wales, on the other hand, an avowedly free trade policy was pursued. The effects of these policies on manufacturing growth are discussed in Chapter 8, which deals with the role of governments in colonial economic development.

The smallness of the typical Australian manufacturing establishment has already been mentioned. As well as being undertaken by small enterprises, Australian manufacturing was very labour intensive. At no stage did the manufacturing sector account for more than a minor share of total capital formation. According to N. G. Butlin's estimates, manufacturing investment represented only 7 per cent of gross domestic capital formation in the 1860s and 1870s and 5 per cent of capital formation in the 1880s.<sup>6</sup> Hence, industrial growth took place during 1860-90 without any increase in the share of total investment going to manufacturing. This is one reason for Butlin's belief—already referred to several times in earlier chapters—that a structural imbalance in domestic capital formation and in the Australian economy as a whole was emerging in this period. On Butlin's analysis, manufacturing was one of the sectors that suffered from a lack of investment in the 1880s just as significant amounts of over-investment were occurring in other areas of economic activity, such as the pastoral industry and railway building. Butlin implies that, but for this over-investment in other sectors, manufacturing would have increased significantly faster than it did before 1890. In Butlin's analysis, over-investment in the pastoral industry and railway building limited industrial development partly by depriving manufacturing directly of capital and partly by raising the domestic cost structure (a factor which was especially relevant in the case of import-competing industries). An alternative approach is to argue that, as manufacturing export potential was negligible in the nineteenth century, the smallness of the domestic market can be expected to have limited severely the opportunity for further profitable investment in manufacturing, even if domestic costs had fallen at the same rate as overseas prices. Further, the small volume of domestic demand presumably restricted the scope for using more capital intensive methods as well as denying generally to Australian manufacturing the productivity gains to be had from large-scale production. These arguments imply that a readier supplier of industrial capital and the avoidance of over-investment in other sectors may not have produced significantly greater manufacturing

growth. A conclusion along these lines has some intuitive appeal, but the lack of detailed basic research into Australian manufacturing during the nineteenth century means that it is not yet possible to make a reasonably informed judgment on matters such as this.

A final point about Australian manufacturing in the nineteenth century needs to be set against the experience of industrial development in other countries. In the industrialising countries, the marginal productivity of labour was typically much higher in manufacturing than in agriculture. Thus, as the industrial sector increased its share of workforce and product at the expense of agriculture, average labour productivity rose directly as a consequence of the shift of labour from low to high productivity pursuits. In Australia, the situation seems to have been quite different. Average labour productivity was almost certainly lower in manufacturing than in much of the rest of the Australian economy. This reflected both the primitive nature of Australian industrial development and the exceptionally high productivity of labour in rural activities. The relatively low level of average labour productivity in manufacturing suggests the absence in Australia of any scope for achieving the sorts of productivity increases that arose in other countries directly from the movement of resources out of agriculture and into the industrial sector. The information on *marginal* (rather than average) labour productivity needed to clinch this point is lacking. Nevertheless, it would be surprising if marginal productivity conditions in Australia were such as to allow any shift to manufacturing in the nineteenth century to generate important rises in productivity. It can be argued that this circumstance represented a basic contrast between Australia and most other countries that was to restrict the economic gains to be had from industrialisation in Australia until well into the twentieth century.

#### IV

Construction of one sort or another accounted for an important part of domestic economic activity in Australia from the earliest years of white settlement. The penal colony began with none of the social overhead capital or residential assets necessary to satisfy elementary human needs. This, plus the rapidity of ensuing population growth, meant that constructing the basic physical assets of a viable community took a significant proportion of total economic effort. Unfortunately, economic historians have not given much of their attention to this aspect of colonial life. In particular, the provision of housing in the period to 1850 has not been analysed in economic terms. Accordingly, the account of Australian housing before the gold rushes that is given in this section is confined to some preliminary observations.

The Australian population increased at an average rate of about 9 per cent p.a. in the first half of the nineteenth century. This population ex-

pansion generated a rapidly rising physical demand for housing space. It can be argued, however, that the speed of population growth, the presence of lucrative alternative uses for resources and the existence of short-run limits to the expansion of residential productive capacity meant that the increase in housing stock often lagged behind population. If so, there is at present no way of documenting or measuring the size of any housing shortage that may have occurred at various times. There is not even aggregate information about the size and quality of the stock of housing before the 1840s, when some census data on housing become available. From this census material, it seems clear that the amount of housing space in eastern Australia was significantly lower in relation to population than in later periods of the nineteenth century. But this does not allow any conclusions to be drawn about the adequacy of housing in the 1840s, which must be judged in relation to contemporary preferences and income levels rather than by the standards of later generations.

The houses that had been built by 1851 ranged from elegant town and country residences to bark huts that were called houses only because people happened to live in them. The census information allows some generalisations to be made about housing in different areas. In Sydney and Melbourne about three-quarters of the housing stock of 1851 was built of brick or stone. Brick housing was less prevalent in non-metropolitan towns and uncommon in rural areas. In eastern Australia as a whole about two-fifths of all housing was made of brick or stone. Most rural houses were wooden, whilst some were built of what the census described as 'inferior' materials—largely bark slabs and mud. In all areas, roofs were made of flammable materials. Wooden shingles were most common though bark or thatch were not unusual in rural areas. Slate roofs were comparatively rare and, apart from occasional instances, confined to the towns. Even in Sydney, slate was used as a roofing material on only 5 per cent of houses.

Much of the housing built in the first half of the nineteenth century must have been erected by owner-builders using roughly processed materials. As late as 1851 the census returns of occupations allow no reliable estimate to be made of the number of people engaged in house construction, but housing can scarcely have been served to any appreciable extent by a specialised construction industry, except in the major towns. Even in the latter, some housing was presumably built by owners with a minimum resort to the market. Further, housing gained no institutional support from the developing financial sector. Banks made no loans for house construction or land purchase, whilst mortgage and insurance companies seem generally to have avoided lending on residential securities. The first building societies did not appear until the second half of the 1840s and, even then, had little impact on residential financing.

Apart from fairly rudimentary matters such as these, little is known

about the economics and organisation of residential building before the gold rushes. More information is available and more historical work has been done on housing in the period after 1851. The following section considers in more detail the growth of housing in eastern Australia during the second half of the nineteenth century.

## V

After 1851 the gold rushes brought a surge of population growth that soon outstripped the growth in the stock of housing. For some years a substantial proportion of the Australian population lived in tents or other temporary structures. The conventional picture is that, in the short run, little could be done to alleviate this situation. This picture is too simple. Even during the gold rushes building—a naturally protected activity—expanded rapidly in response to the rising price of accommodation. Despite labour shortages, twice as many permanent houses were built in eastern Australia during the 1850s as in the whole of the previous history of white settlement. In some significant sense, these years probably saw the foundations being laid of an enduring building and contracting industry, at least in the towns. However, a good deal of the building activity of the 1850s must have been undertaken by owner-builders rather than by specialist contractors and part of it must have depended upon seasonally available labour near the goldfields. Table 25 suggests that the expansion in the aggregate housing stock in the 1850s was sufficiently rapid for the ratio of residential rooms to population in eastern Australia to be about the same in 1861 as it had been a decade earlier. But this apparent similarity nonetheless conceals a serious

**Table 25**    *Indicators of housing standards in eastern Australia, 1851-1901*

	1851	1861	1871	1881	1891	1901
Rooms per person	0.64	0.67	0.79	0.85	1.06	1.07
Rooms per house	?	3.1	3.8	4.3	5.1	5.3
Brick or stone houses as % of all permanent dwellings	43	28	27	29	32	32
Temporary structures as % of all dwellings	?	31	14	12	8	5

*Sources:* Calculated from data in N. G. Butlin, *Investment in Australian Economic Development*, pp. 217-21, and in the censuses of New South Wales, Queensland and Victoria, 1851-1901. The figure given for rooms per person in 1851 is based on the assumption that the average dwelling had four rooms in that year. The estimate is very approximate and probably overstates the ratio of rooms to population. The 1871 and 1881 figures for rooms per house exclude New South Wales. South Australia is excluded throughout.



8. Terrace housing near the centre of Sydney in the early 1870s. The two-storey houses in the foreground are typical of the period. (By courtesy of the Mitchell Library, Sydney)

deterioration in the housing situation. Temporary structures, which had been a fairly small component of the housing stock in 1851, made up about 31 per cent of all houses in 1861. It is also clear from Table 25 that the quality of permanent housing, as measured by the proportion of dwellings built of brick or stone, declined in the 1850s.

The situation at the end of the 1850s, then, was one in which physical housing standards were lower than before the gold rushes. In subsequent decades the amount and quality of housing space, in relation to population, rose considerably.<sup>7</sup> Some aspects of the transformation in housing are summarised in Table 25. By 1891 there appear to have been about as many residential rooms as there were people, compared with about two-thirds of a room per person in 1861. Further, the housing stock in 1891 showed few signs of the previous austerity. Temporary structures had dwindled to 8 per cent of dwellings. The average house had increased in size from three to five rooms. At the aggregate level, there was little measured change in the materials used in Australian housing. Brick and

stone structures accounted for 32 per cent of permanent dwellings in 1891, a rise of only four percentage points over the 1861 level (and still well below the level in 1851). Wooden housing still prevailed in rural areas and throughout Queensland, whilst Sydney, Melbourne and Adelaide remained cities whose houses were predominantly brick or stone. But the new houses built immediately before 1891 bore little resemblance to the improvised dwellings of thirty years earlier. In the cities, in particular, exuberantly decorated structures loaded with ornamental plaster and cast iron were visible evidence of the rise in housing standards.

The transformation of the housing situation described in the previous paragraph is generally characterised as a transition from severe housing shortage to a surfeit of housing space. In what sense was housing 'short' in 1861? As noted earlier, this question should be answered not in relation to some physical measure of a satisfactory housing situation according to the standards of later periods but in relation to contemporary expectations, as conditioned by factors such as the level and distribution of real income. It is almost certain that a housing deficiency in the latter terms existed in 1861. The amount of permanent housing space was lower than before the gold rushes and probably lower than some roughly defined 'desired' level, given prevailing preferences and income per head. This housing deficiency seems to have arisen out of the sheer pace of



9. A selector's homestead, about 1875. Rural housing was generally much poorer than houses in the cities. Wood in one form or another was used almost universally outside the main towns. (By courtesy of the National Library of Australia)

population expansion and the speed of population redistribution in the 1850s, which presumably led to a lag in the growth of housing relative to population. It is difficult to estimate the size of any housing deficiency on this account. N. G. Butlin writes of 'gross overcrowding', and 'intense' shortage and 'extreme scarcity' of housing in 1861.<sup>8</sup> However, in the absence of specific obstacles to house building, it might be argued that any housing shortage would have been essentially of a *temporary* nature, occurring in the interval needed for the market to bring forth a rise in building activity sufficient to meet the growth in effective housing demand. If this was the case, it would be remarkable if it took more than a few years for housing shortages to be eliminated once population growth had slowed at the end of the 1850s. Indeed, Table 25 suggests that by 1871 average housing standards in eastern Australia might already have been somewhat higher than in 1851, implying that any gold-induced housing shortage had by that time been overcome.

If there were no unusually severe housing shortage by 1871—and this is by no means a generally accepted conclusion—what factors might explain the long-term rise in housing standards to 1891 that is evident in Table 25? A basic influence must have been exerted by the continued increase in average real income. Measured real product per head rose at 1 to 1½ per cent p.a. during the thirty years or so after 1860, which meant an increase of 35 to 55 per cent in average per capita real income over the period as a whole. In this context, improved housing is to be seen as one of the principal manifestations of greater material well-being, one of the fruits of sustained economic growth.

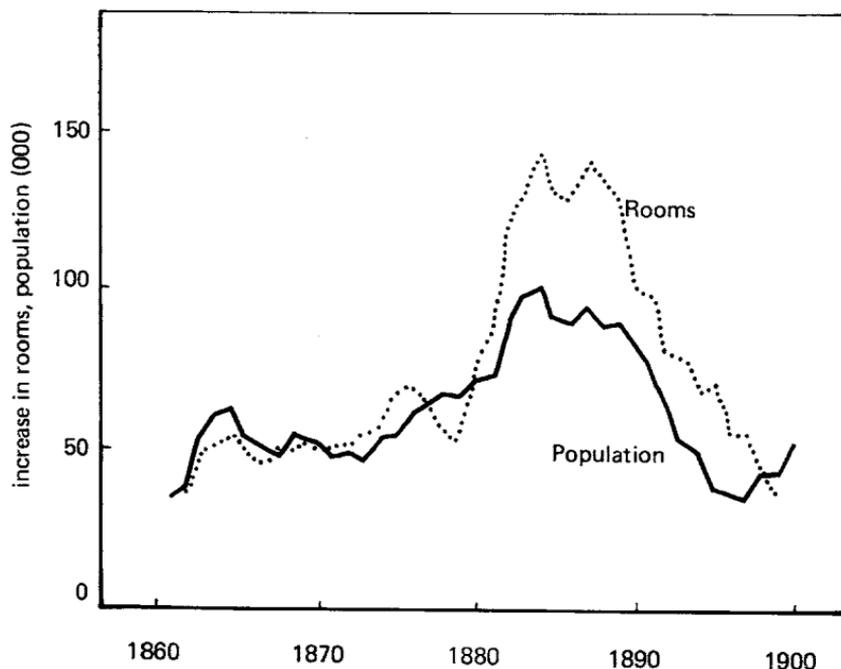
There is scope for arguing that changes in the distribution of income—as distinct from increasing average income per head—also affected housing standards. The characteristics of alluvial gold mining suggest that the distribution of income in Australia may have been very uneven at the end of the 1850s. If so, the years after 1860 probably saw a substantial reduction in income inequality as most of the workforce came to share the benefits of a buoyant, full employment economy. This is likely to have been particularly significant in lifting the minimum acceptable standard of housing.

A third positive long-term influence on average housing standards may have been the trend towards greater urbanisation that was described in Chapter 5. The point here is that housing was consistently better in the towns, especially in the capital cities, than elsewhere. In N. G. Butlin's words:

Throughout the whole of Australia, with the exception of the comparatively few mansions of wealthy squatters, rural housing was much smaller and poorer, using a great deal of local, unprocessed materials and lacking the facilities, conveniences and style of urban residences.

For Butlin, the implication is clear: 'The rise of the towns and cities meant that Australians moved increasingly into areas of rapidly rising

Figure 10 Increase in number of residential rooms and population, eastern Australia, 1861-1900



Sources: Three-year moving averages calculated from data in N. G. Butlin, *Australian Domestic Product, Investment and Foreign Borrowing*, ch. XVI and in *Demography Bulletins*.

housing standards and away from rural districts with relatively very poor housing conditions.<sup>9</sup>

The last three paragraphs have mentioned some long-term influences tending to raise housing standards. It is clear from Fig. 10, however, that the expansion in the housing stock did not take place at a uniform rate during 1861-91. Rather, two main periods can be identified. Before 1880 additions to the stock of residential rooms more or less equalled the increase in population. Given the smaller number of rooms than people in 1861, equal marginal additions of both people and housing were sufficient to lift the ratio of rooms to population significantly (see Table 25). After 1880 the volume of house building was very much greater than in the 1860s and 1870s, both absolutely and in relation to population growth. It can be seen from Fig. 10 that net additions to the stock of residential rooms were two to three times as high in the 1880s as in the previous two decades and half as high again as current population increase.

A number of changes can be identified after about 1880, each adding impetus to the expansion in housing investment. For one thing, shifts in the age structure of population favourably affected the growth of housing

demand. It is often assumed that increases in demographically determined housing demand are related more to the growth in numbers in the younger adult age groups than to the growth of total population. In this connection, A. R. Hall and Allen C. Kelley have argued that, as a result of the lagged effects of the demographic upheavals of the 1850s (see Chapter 2), the younger adult age groups increased less quickly than total population in the 1870s and much more quickly than total population in the 1880s.<sup>10</sup> Hence, according to Hall and Kelley, it is changes in the rate of growth of housing demand, induced by shifts in the age structure of population, that explain the contrast between the level of house building in the 1870s and 1880s.

One problem with this analysis is its failure to take sufficient account of demographic differences between the various colonies. The age structure of the Australian population was strongly influenced by the peculiarities of Victoria's demographic history. Indeed, if Victoria is omitted from the Australian total the distortions in age composition are much reduced. A major difficulty is involved in fitting New South Wales, in particular, into the analysis.<sup>11</sup> New South Wales did not experience wide swings in age structure after 1861, but in that colony, as well as in Victoria, the 1870s were characterised by a fairly subdued level of residential building activity whilst the 1880s saw a major housing boom. This combination of roughly similar patterns of residential investment with differing demographic experience suggests that factors other than changing age composition must have been important influences on the volume of residential building. Shifts in age structure undoubtedly reinforced the growth in housing demand in eastern Australia after 1880, especially in Victoria, but they are by no means the whole story.

To turn to more specifically economic factors, it seems that a crucial role in the transition to the housing boom of the 1880s was played by changes in credit conditions. It has been argued by N. G. Butlin that during the 1870s the high investment demands of other sectors restricted the amount of house building by pushing up interest rates and by competing successfully for scarce labour resources. According to Butlin, high rates of interest in the 1870s were 'probably the major explanation why new residential investment did not participate fully in the general investment boom'.<sup>12</sup> After 1880 rising capital inflow reduced local interest rates and significantly eased the terms on which residential finance was available. Little overseas capital was used directly in financing residential building, but the general easing in domestic credit conditions that resulted from the high level of overseas borrowing clearly affected the development of the housing boom.

These changes in credit conditions were reinforced by institutional developments in residential financing.<sup>13</sup> The appearance and spread of new forms of building society, drawing on much wider sources of finance than previously, helped to channel funds into residential investment.

Institutional change within the building industry itself was also important. Partly as a result of the long period of sustained building activity from the 1850s, there had emerged by the 1880s a growing number of large-scale building contractors and investors capable of carrying through a major burst of housing investment.

One of the features of Australian economic development in the 1880s that has been commented upon repeatedly in earlier chapters was a tendency for over-investment to occur in the pastoral industry and in railway building. N. G. Butlin has argued that a similar over-investment in residential building during the 1880s generated a substantial excess supply of housing.<sup>14</sup> During the boom annual additions to the housing stock exceeded annual additions to population by a wide margin (as was seen in Fig. 10). This created considerable scope for the stock of houses to grow to exceed the size warranted by prevailing population and income levels, particularly if high investment was fostered in part by the development of speculative activity. In fact, once it had got under way, the housing boom derived much of its momentum from speculative building. Speculation in housing was associated with a concurrent land boom and related opportunities for capital gains, especially in the rapidly growing suburbs of the metropolitan cities. Further, the length and severity of the depression in house building that followed the boom are consistent, on the surface, with the need for population growth to catch up with excess capacity in the housing stock before high levels of new residential investment could again be sustained. By the early 1890s many houses were standing empty, large numbers of builders were insolvent, unemployment in the building trades was high and most house and land financing institutions had failed or were experiencing severe liquidity problems.

These considerations do not, however, establish unambiguously the proposition that a significantly large housing surplus had been created by the end of the 1880s. A low level of residential investment was inevitable in the 1890s even if there were no excess housing in 1890, for population growth was slower and real income had fallen heavily in the depression. Low residential investment in the 1890s meant that the insolvency of many builders and serious unemployment among building workers could scarcely have been avoided, again irrespective of whether or not there had been over-investment in housing in the preceding boom. In addition, it can be argued that a high vacancy rate in the early 1890s may have been a symptom of depression in the economy as a whole rather than a reflection of the existence of surplus housing in relation to the pre-depression level of population and income. Indeed, one feature of the 1890s that is revealed in Table 25 and Fig. 10 is that, despite the small amount of building, despite the collapse of residential financing institutions and despite the severity of the general depression, annual additions to the stock of housing continued to match or exceed the increase in population,

thus maintaining the ratio of residential rooms to population that had been established in the late 1880s.

The rise in housing standards in the decades after the end of the gold rushes was a significant aspect of the improvement in Australian living conditions. An important ingredient of Australia's material well-being was the way in which the new housing situation was achieved. At the end of the long boom an impressively large number of people owned the houses in which they lived. Rented accommodation was less prevalent than in other countries. This feature of Australian life was commented upon so frequently by British travellers that the contrast with Britain must have been marked. Apparently, the high level of income per head and continuing full employment had combined with relatively low land prices to reduce the barriers to individual home ownership. It is easy, though, to exaggerate the extent of owner-occupation in this period. Individual home ownership may have been more common than elsewhere, but it would be surprising if significantly more than half of Australia's houses were owner-occupied at any time in the second half of the nineteenth century. And, in the metropolitan cities, land costs were high enough to prevent many people from owning a house. In Sydney and Melbourne in 1891 perhaps 60 or 70 per cent of housing was tenanted rather than owner-occupied.<sup>15</sup> The metropolitan disadvantage in this respect was to persist until after World War II. Not until the 1950s did a clear majority of metropolitan dwellers achieve the supposedly traditional Australian ideal of owning the houses in which they lived.

#### NOTES:

<sup>1</sup> Little has been published on Australian manufacturing before the gold rushes. Two relevant pieces by G. P. Walsh are 'Manufacturing', in G. J. Abbott and N. B. Nairn (eds.), *Economic Growth of Australia, 1788-1821*, and 'The Geography of Manufacturing in Sydney, 1788-1851', *Business Archives and History*, vol. III (1963), pp. 20-52. A shorter account can be found in the relevant sections of the first volume of T. A. Coghlan, *Labour and Industry in Australia*.

<sup>2</sup> *Labour and Industry*, vol. II, p. 683.

<sup>3</sup> *Australian Domestic Product, Investment and Foreign Borrowing*, p. 12.

<sup>4</sup> 'The Enigma of Australian Manufacturing, 1851-1901', *Australian Economic Papers*, vol. 9 (1970), pp. 76-92.

<sup>5</sup> The best account of manufacturing growth during 1860-90 is N. G. Butlin, *Investment in Australian Economic Development*, ch. III.

<sup>6</sup> *Australian Domestic Product*, pp. 16, 18.

<sup>7</sup> This is treated in detail in N. G. Butlin, *Investment in Australian Economic Development*, ch. IV. The present section draws heavily on Butlin's account, which is the only extended economic analysis of Australian housing in the nineteenth century.

<sup>8</sup> *Ibid.*, pp. 215-17.

<sup>9</sup> *Ibid.*, p. 235.

<sup>10</sup> A. R. Hall, 'Some Long Period Effects of the Kinked Age Distribution of the Population of Australia, 1861-1961', *Economic Record*, vol. 39 (1963), pp. 43-52; Allen C. Kelley, 'Demographic Change and Economic Growth: Australia, 1861-1911', *Explorations in Entrepreneurial History*, 2nd ser., vol. 5 (1967-8), pp. 207-77.

<sup>11</sup> This point is developed further in R. V. Jackson, 'House Building and the Age Structure of Population in New South Wales, 1861-1900', *Australian Economic History Review*, vol. XIV (1974), pp. 143-59.

<sup>12</sup> *Investment in Australian Economic Development*, p. 283

<sup>13</sup> There is no space to describe these developments here. They are analysed in detail in N. G. Butlin, *Investment in Australian Economic Development*, ch. IV, section 5.

<sup>14</sup> *Ibid.*, especially pp. 211-14 and 286-7.

<sup>15</sup> R. V. Jackson, 'Owner-occupation of Houses in Sydney, 1871 to 1891', *Australian Economic History Review*, vol. X (1970), pp. 138-54; A. E. Dingle and D. T. Merrett, 'Home Owners and Tenants in Melbourne, 1891-1911', *Australian Economic History Review*, vol. XII (1972), pp. 21-35. N. G. Butlin, *Investment in Australian Economic Development*, ch. IV, argues that the level of owner-occupation was higher than is suggested in the above paragraph.

# Money and banking

The analysis contained in preceding chapters has generally been conducted in real rather than monetary terms. This reflects the orthodox view of economists that monetary influences are not a basic determinant of economic change. Whilst it is usually acknowledged that developments in money and banking have been one of the more obvious signs of institutional adaptation involved in the process of modern economic growth, economists and historians have tended to assume that the independent effect of monetary factors has been considerably less important than the effect on growth of 'real' forces operating in the economy.

In recent years this view has been challenged by a group of economists who argue that money and monetary arrangements can be a powerful source of economic change. So far, there has been no systematic attempt to apply the new monetarist view to the interpretation of Australian economic history in the nineteenth century. This may well be a fruitful line of enquiry for the future, but in the context of the present book there is little alternative to giving a conventional account of the evolution of the Australian monetary system that sees monetary factors as peripheral rather than central to the course of events. It is possible that historical research from a monetarist standpoint would alter significantly the assessment of the relationship of money and banking to the pattern of Australian economic development that is outlined in the following pages.

## I

The initial plans for settling New South Wales as a penal colony made no provision for purely financial matters. Apparently it was assumed that in a gaol there would be no call for money or banking because all internal transactions would be administered directly by the authorities rather than be the outcome of exchange in the market. The early years of the penal settlement saw, however, the beginnings of an exchange economy and hence the need for monetary arrangements and institutions. In the kind of private economy that was eventually to emerge in eastern Australia three main monetary needs can be identified. First, some form of domestic currency and credit was needed to finance local transactions. Second, the size and structure of the nascent economy implied the necessity for some mechanism to supply the private sector with foreign

exchange to purchase imports. Finally, economic development required at an early stage the growth of institutions to mobilise and allocate investible funds, both local and from overseas. In short, economic development would depend upon and create a demand for institutions to perform the monetary and banking functions of facilitating domestic and international trade and providing the basis of a capital market.

The monetary system that grew up in the convict period reflected the nature of the convict economy. It was argued in Chapters 1 and 3 that trade with the government was the main basis of such private economic development as took place in the convict years. Accordingly, the government store became, in S. J. Butlin's words, 'the core of the monetary system'. It was 'for a short period in effect and in functions the colony's bank'.<sup>1</sup> Each of the three monetary needs identified in the preceding paragraph appears to have been met to some extent by the functioning of the Commissariat store. Sales to the government were paid for by receipts issued by the Commissariat. These receipts were quickly accepted as a local currency and their circulation was an essential ingredient of domestic exchange. Further, store receipts could be consolidated into bills drawn on the British Treasury, which could be spent on imports. Appropriately enough, therefore, the government store was a source both of a domestic circulating medium and of foreign exchange to the private sector. These aspects of the Commissariat system have received their share of attention in the literature. Less common has been the recognition that the Commissariat was also a major source of capital advances. Government grants of stock, equipment and rations to ex-convicts and others may not have been a market operation—there was no capital *market*—but they were nevertheless a means of supplying capital to a private sector that was extremely short of capital equipment and investible funds.

Central as the Commissariat was, its operations could not meet all the monetary needs of the infant colony. Several expedients supplemented the store receipts in financing domestic trade. English and foreign coins found their way into the colony, brought by convicts or their gaolers or spent by crews of the occasional ship. The use of these coins in domestic exchange was generally short lived, for they were too valuable a means of paying for imports to stay in the colony for long. This situation is reflected in Macquarie's attempts to provide coin for local transactions: Spanish dollars were imported, defaced and deliberately overvalued for local use. Notes issued by private individuals were more important than coin in domestic trade. Buyers would make promises to pay and, until they were redeemed, these promissory notes circulated as currency. Private notes were, of course, of variable reliability and could be used only for domestic transactions. These disabilities meant that they circulated at something less than their face value. There developed, in other words, a dual monetary system, with 'currency' (that was useful only in

domestic trade) being substantially discounted relative to 'sterling' (which could be used for imports). A final expedient was the resort to barter, or payment in kind. The use of rum to pay wages has provided a colourful chapter in Australia's early history. But rum's role as a currency has often been exaggerated in popular accounts of the period. Other commodities—wheat, flour, tea, sugar—were often used as a means of payment and, in any case, barter was usually less prevalent than exchange involving a genuinely monetary medium such as Treasury Bills, store receipts, coin and private notes.

The deficiencies of private notes as a domestic currency and the extreme difficulty experienced by the administration in trying to regulate private note issues led to proposals for the creation of a note-issuing bank during Macquarie's governorship. After the idea of a government bank was rejected in England, moves were made to establish a private bank, with the Governor's aid and encouragement. The result was the formation of the Bank of New South Wales in 1817. This was, according to S. J. Butlin, an event 'of the first importance', despite the fact that in the short run the bank's operations 'made no great impact on the economy' and despite uncertainties surrounding the bank's legal position. Butlin argues that entrusting the solution of the monetary question 'to a group of wealthier entrepreneurs . . . symbolized the acceptance of an economic development which was to be guided and controlled by a relatively few capitalists'. Moreover, it was significant that 'those same entrepreneurs were confident that the private economy had so far outgrown the goal that a normal banking institution could succeed'.<sup>2</sup>

## II

In previous chapters, the 1820s and 1830s have been identified as years in which a transition to capitalist economic growth occurred in eastern Australia. As might be expected, the onset of capitalist growth was accompanied by a rapid development in the monetary and banking structure. An important part of this monetary development took place as a result of government initiatives. In 1822 the local administration began to use imported Spanish dollars instead of store receipts to pay for Commissariat purchases. It was also proposed that the dollar (which was then widely used throughout the trading world and was the closest thing to a universally accepted international currency) should become the standard unit of account in the colony. Implementation of the new system was plagued by uncertainty and perhaps by some government duplicity concerning the valuation of the dollar for official purposes, but considerable progress appears to have been made by the middle of the 1820s. Then the British government decided upon a uniform Imperial policy: in the colonies British money was to be the accounting unit and British coins were to circulate. This policy was a logical extension of the

recent adoption of a gold standard at home. It meant, of course, the end of official attempts to introduce a dollar standard in eastern Australia. Large-scale importation of British coin—some by the administration, some as private capital inflow—soon went far in the direction of making note issue by private individuals redundant. By the 1830s it seems that a reasonably adequate basic circulating medium had been established, thus creating one of the necessary conditions for the effective conduct of internal trade.

Private initiatives were responsible for the rapid building up of a banking system congenial to economic expansion. Initially, the lead was taken by the colonists themselves. By 1830 the Bank of New South Wales had been joined by two other banks with head offices in Sydney and four banks which operated in Van Diemen's Land. There were, in addition, a handful of savings banks. Invariably, the new banks were small partnerships with a purely local business. Their presence as note-issuers, however, reinforced the effects on private note issues of the currency changes outlined in the previous paragraph. As a result, domestic bank notes and British coin soon came to dominate the money supply, except in outback areas where notes issued by individuals remained important until the second half of the nineteenth century.

The small-scale banking development of the 1820s was overshadowed by the growth in the banking system after 1830. Most of the colonial banks established in the 1820s expanded rapidly and a number of new banks were formed. By 1840 there were about a dozen banks and several related institutions operating in mainland eastern Australia and in Van Diemen's Land. Some important features of banking development during the 1830s need to be noted.

First, the amount of banking business increased much more quickly than the number of banks, so that the scale of operations of individual institutions was considerably larger at the end of the 1830s than previously. These years saw the genesis of a banking structure dominated by a few large banks, each with an extensive network of branches and agencies. This resembled the structure and organisation of British banking but contrasted strongly with the situation in the United States, where a unit banking system prevailed. In matters of general banking practice, also, Australian banks appear to have stuck fairly closely to the British model at this stage.

Second, a dynamic element in the situation of the 1830s was provided by the entry into Australia of aggressively competitive British banks. Australia had by this time been recognised as a profitable area for exploitation by British capital. And, as was seen in earlier chapters, the inflow of private capital from Britain was an important ingredient of Australian economic expansion from about this period. The establishment of British banks in Australia seems to have been prompted partly by the need to construct an institutional mechanism for transferring

British capital to the Australian colonies. By this means Australia began to be integrated into the emerging international capital market that was to become so much a feature of economic experience in the nineteenth century.

Third, allied to these developments were the beginnings of a private foreign-exchange market that would soon displace the Commissariat system. The appearance of this foreign-exchange market owed much to the British banks, who conducted most of its operations, but in a wider sense it reflected the surge in Australian exports and capital imports that underlay the economic growth of the 1830s.

Fourth, the entry of the British banks also stimulated the growth of a domestic capital market. Earlier, in the 1820s, the colonial banks had tapped few sources of funds. Share capital raised from a few subscribers had provided most of the money available for lending. Deposits had been accepted, but banks had not been willing to pay interest on them. In the 1830s the amounts raised by share subscription, by both local and British banks, rose swiftly but the major development was the active search for deposits initiated by the latter. High and rising interest rates were offered, even on daily balances. The growth of deposit banking was so rapid that deposits were soon larger than share capital as a source of loanable funds. Table 26 gives some idea of the extremely rapid growth in bank deposits in the 1830s.

Fifth, the banks of issue were the main but not the only avenue of growth in the local money market during the 1830s. Insurance and other

**Table 26** *Deposits in Australian banks, 1820-1900*

	N. S. W., Qld and Vic. £ 000	Australia £m	Average annual increase over previous decade %
1820	27		—
1830	75		11
1840	1,247		35
1850	1,522	2.4	2
1860		14.2	20
1870		20.1	4
1880		46.2	9
1890		98.8	8
1900		87.8	-1

*Source:* S. J. Butlin, A. R. Hall and R. C. White, *Australian Monetary and Banking Statistics, 1817-1945*. Reserve Bank of Australia Occasional Paper No. 4A, Sydney, 1971, pp. 17-30 and 282-6. The figure for 1830 is only approximate. The 1850 figure for Australia as a whole is for the March quarter of 1851. Otherwise the figures are generally for the half-year or quarter ending in December (seasonally adjusted for 1860-1900).

companies, as well as private individuals, who discounted bills and lent on mortgage, added variety to the institutional arrangements of the money market.

Care needs to be taken not to exaggerate the extent to which the banking growth of the 1830s aided Australian economic expansion. The high rates of interest ruling throughout the boom of that decade reflected the continuing overall shortage of capital relative to profitable investment opportunities. Further, outlets for the banks' funds were limited in the sense that bank advances tended to finance the commercial transactions incidental to the pastoral expansion rather than financing investment directly in the physical process of wool growing. Nevertheless, the developments of the 1830s meant that by the end of the boom the enduring basis of a competitive domestic capital market had been laid.

The early 1840s brought the most severe depression that had been experienced in eastern Australia up to that time. Monetary disorders arising out of the extravagances of the boom and the forced withdrawal of government deposits from the banking system had some part to play in the economic crisis. However, it is generally accepted that monetary factors were not a basic cause of the depression. The banks themselves suffered considerably in the short run and a number of bank failures occurred. The phase of rapid banking growth was clearly over. Total bank advances and deposits fell steeply in the first half of the 1840s. Recovery was slow. The pre-depression peak was not significantly exceeded until 1850 in the case of deposits and somewhat later in the case of bank lending. The subdued banking activity of the 1840s was accompanied by interest rates that were well below the levels typical of the preceding boom. In fact, banks ceased to offer any interest on deposits, finding that they still managed to attract enough funds to meet the reduced demand for advances. The cessation of banking growth is one of the noteworthy features of the 1840s. It stands in marked contrast to the resumption of high rates of expansion in the Australian economy as a whole that followed the lifting of the depression in the mid-1840s.

During the 1840s the banking system remained fundamentally as it had evolved in the 1830s. Banking continued to be conducted by a relatively few banks, each with branches scattered through eastern Australia. There were, however, changes that reflected the peculiarities of the Australian economy. Already, inconclusive moves were being made to advance loans on the security of real property, foreshadowing one of the major banking developments of the second half of the century. More important, in the short run, were changes introduced in New South Wales by the Lien on Wool and Livestock Act of 1843. Pastoralists' access to outside finance had previously been limited by the fact that squatters, in particular, often had little to offer as security for loans. The 1843 Act alleviated this situation by allowing a pastoralist to use his two im-

portant marketable assets—livestock and unshorn wool—as security. The novelty of this proposal provoked adverse comment from the British government, but the new arrangements were allowed to stand. This marked the first substantial break with English banking procedure in the Australian colonies. It was the forerunner of adaptations in the banking structure that were to influence the course of economic events later in the nineteenth century.

### III

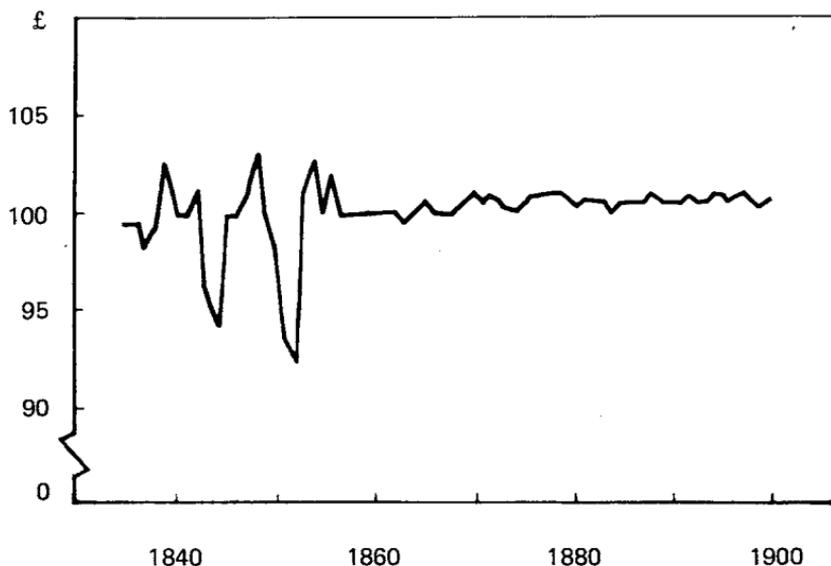
In the decades after 1850 the Australian monetary system developed significantly in a number of ways. With respect to external monetary relations the major change was the rapid transition to a gold standard. The main elements of a gold standard, which was the foundation of the international monetary system for most of the nineteenth century, can be summarised as follows.<sup>3</sup> First, gold had to be the basis (directly or indirectly) of the domestic currency and the monetary authority had to be willing to buy and sell gold without restriction at a fixed price. Second, gold exports and imports had to be allowed without limit. Together, these features meant that the exchange rate between any two gold-standard countries would not vary, except within narrow bounds. (If the price of one currency changed markedly in terms of another currency, people would find it profitable to ship gold between the two countries until the exchange-rate difference disappeared.) This implied that a balance-of-payments surplus or deficit was to be met by changes in the level of domestic economic activity and/or changes in domestic prices rather than by exchange-rate variation. Thus, if the balance of payments was in deficit a fall in domestic income or prices was necessary to reduce imports in relation to exports and so restore external balance. Conversely, a balance-of-payments surplus implied a need for domestic economic expansion to raise imports relative to exports. The necessary movements in domestic economic conditions were supposed to be encouraged by a third element of the gold standard, namely that the banking system was willing to determine its credit policies in accordance with its gold reserves. If the balance of payments was in deficit, gold reserves would fall, leading to deflationary monetary policies. In the reverse situation, a balance-of-payments surplus would increase gold reserves and hence lead to expansionary monetary policies. In theory, therefore, adhering to a gold standard meant that, in the face of balance-of-payments disturbances, a country gave a higher priority to maintaining a fixed exchange rate than it gave to the condition of the domestic economy. In practice, the gold standard appears to have worked fairly well in most countries before 1914, partly because fundamental balance-of-payments disequilibria requiring prolonged adjustments in the level of domestic activity were not common. In Australia, the depression of the 1890s was

to provide an example of an unusually severe domestic adjustment to disequilibrium in the balance of payments, broadly along the lines envisaged in the gold-standard arrangements.

The previous section of this chapter noted that Britain adopted a gold standard in the 1820s. Whilst some elements of the gold standard did operate in Australia from this period, the colonies were not at once fully integrated into the system. In particular, there was no fixed price for gold in Australia before the middle of the 1850s and the Australian exchange rate varied much more widely than was consistent with the gold standard conventions. Some idea of the extent of movements in the exchange rate during this period can be gained from Fig. 11. (In reading Fig. 11, upward movements in the graph are to be taken as the equivalent of currency depreciation, downward movements as currency appreciation.)

Many modern economists would argue that exchange-rate flexibility is more desirable than changes in the level of domestic economic activity as a response to balance-of-payments disturbances. Exchange-rate adjustments alter directly relative price levels in various countries and hence alter the relative prices of any country's imports and exports. It is often argued that if, for example, the balance of payments is in deficit, currency depreciation will allow the deficit to be eliminated (by raising import prices in terms of domestic currency and lowering export prices in terms of other countries' currencies) without the need to depress the

Figure 11 *Australian exchange rate, 1835-1900*



Source: S. J. Butlin, A. R. Hall and R. C. White, *Australian Banking and Monetary Statistics, 1817-1945*, pp. 36-7 and 495-500. The graph represents the price in pounds Australian of £100 sterling bought from the major banks at rates prevailing on 31 December each year.

domestic economy. There is, however, no presumption that the exchange-rate variations shown in Fig. 11 are of this convenient nature. It is likely that part of the instability in the exchange rate reflected the immaturity and small scale of both the Australian monetary system and the local foreign-exchange market. These factors were compounded by the slowness of internal and external communications and by the high risk and cost involved in the long period of shipment of gold or coin from Britain. If this was the case, changes in the exchange rate may often have been the result of market imperfections rather than representing a market response tending to restore equilibrium.

Nevertheless, there do seem to have been occasions when the exchange rate altered in a fashion that modified the effect of major shifts in the balance of payments on the level of domestic economic activity. During 1851-2 exports rose steeply as a result of the gold discoveries. Exports soon exceeded imports by a wide margin. Figure 11 shows that one response to this was a marked currency appreciation, which must have moderated to some extent the inflationary impact of the gold rushes. Similarly, the surge in imports which eliminated the export surplus by 1853 was accompanied by an equally rapid currency depreciation. These exchange-rate movements were in the appropriate direction, but it must be emphasised that, in the context of the upheavals of the 1850s, they were almost certainly not major influences on the course of events.

It was the gold rushes that produced the conditions necessary for a fuller implementation of a gold standard in Australia. Here, the critical development was the establishment of a branch of the Royal Mint in Sydney in 1855. The new Sydney mint stood ready to buy gold and issue coin at the standard British valuation. Local gold prices, which had fluctuated considerably since 1851, were now effectively fixed. For the remainder of the nineteenth century the Australian exchange rate was free to move only within narrow limits. The contrast in this respect between the years before and after 1855 that is evident in Fig. 11 could hardly be more marked.

However, whilst Australia was now operating within the broad framework of a gold standard, local variations in the system seem to have allowed some flexibility of response to changes in the balance of payments. Distance from London meant that permissible exchange-rate variations were somewhat greater than was usual elsewhere. Further, the dominance of the exchange market by banks with head offices in Britain, combined with Australia's remoteness, had encouraged the growth of a system in which the banks held and manipulated so-called 'London funds', an arrangement which eliminated much of the need for monetary gold shipments. This more complicated mechanism also allowed the banks to pursue policies that, in effect, cushioned the short-run impact on the Australian economy of fluctuations in export receipts inherent in a pastoral export economy.

These monetary arrangements were presumably a stabilising influence during the long period of steady economic growth to 1890, but they could scarcely modify the more substantial and more protracted adjustments required in the depression of the 1890s. It is clear from Fig. 11 that the deterioration in the balance of payments in the early 1890s described in Chapters 1 and 3 had no significant effect on the exchange rate. This meant that external balance was restored almost wholly through a decline in domestic income and prices, which reduced the demand for imports to match the prior fall in exports and capital inflow. Had the exchange rate been free to vary, the extent of this domestic deflation may well have been much reduced. It says a good deal about the attitudes and institutions of the time that it was simply taken for granted that the domestic economy ought to bear the full brunt of the severe deflationary forces coming through the balance of payments.

#### IV

After the lull in banking growth in the 1840s that was outlined in Section II of this chapter, the gold rushes brought an exceptionally rapid increase in banking activity. Table 26 shows that during 1850-60 total colonial bank deposits rose at an annual rate of about 20 per cent. This misrepresents the character of the impact of the gold rushes, for almost



10. An outback bank of the mid-1870s. Branches of the major banks were often established in isolated areas in the period to about 1890. (By courtesy of the National Library of Australia)

**Table 27** *Deposits, advances and branches of major Australian banks, December quarter, 1890*

	Date established	Colonial deposits £m	Advances £m	Colonies where bank operated No.	Total branches No.
New South Wales	1817	14.5	15.1	5	154
Commercial of Sydney	1834	10.2	10.0	2	?
Australasia	1835	9.7	11.3	5	?
Union	1838	8.4	10.2	6	66
Commercial of Australia	1866	6.9	8.2	5	86
National	1858	6.8	8.2	4	145
Australian Joint Stock	1853	6.4	9.4	2	181

*Source:* Boehm, *Prosperity and Depression in Australia*, pp. 209, 211 and 242. The figures for branches in the final column are for various dates in 1890.

the whole of the growth in deposits during the 1850s had occurred by the end of 1853, when deposits were already over five times as high as they had been at the beginning of 1851. After 1853 deposits stabilised at the new level for some years. Only in the 1860s did total deposits resume their growth, slowly at first then gradually accelerating. By the 1870s and 1880s the amount of banking activity, as indicated by the increase in deposits, was growing at 8.9 per cent p.a., which was significantly faster than the rise in population and income. At the end of the long expansion, in about 1890, the scale of the banking system had been transformed. For example, Table 26 shows that total colonial deposits were forty times as large in 1890 as in 1851.<sup>4</sup>

This scale expansion in the Australian banking system was achieved without a corresponding increase in the number of banking firms. Multiplication of branches of existing banks was the main form taken by banking growth. In 1890 there were twenty-eight banks of issue in Australia. Seven of these accounted for nearly two-thirds of colonial bank deposits. Some information about these seven banks is set out in Table 27. It can be seen from the table that all seven had branches in more than one colony, whilst five of them operated in four or more colonies.

The domination of the banking system by a small number of banks with branches spread over most of eastern Australia encouraged a high degree of uniformity in banking policy. Interest-rate competition between the major banks appears to have been rare. Changes in fixed-deposit rates, then regarded as the chief instrument of banking policy, were usually made after consultation between banks, generally in two or more colonies. It is important to remember that the uniformity in banking policy occurred as a result of agreement between the private banks: there

was nothing in the Australian colonies resembling a central bank to impose a common policy or to act as a lender of last resort. The uniformity in interest-rate policy did not prevent banks from competing in other ways. This competition involved wide differences in attitude between banks towards basic matters, such as liquidity, which were to have important implications for the ability of individual institutions to bear the strains imposed during the depression of the 1890s.

During the long period of banking expansion to 1890, changes in lending policy embedded the banks more deeply into the economy than was the case before 1850. The main new development was the growth in advances secured by mortgages on real property. English banks had traditionally avoided this type of lending because of the high risk that it was thought to involve. It was felt, on the basis of English conditions, that real property was prone to fluctuate too much in value and, in any case, land could be difficult to sell quickly in times of financial stress when cash might be needed to maintain public confidence in a bank's stability. Before the 1850s, Australian banks had followed this English practice. Bank loans on real estate were illegal and, by and large, bank lending took the form of discounting commercial bills of exchange.

After the gold rushes, banks became increasingly involved in lending to pastoralists on the basis of mortgages on real property. The legal restrictions on this sort of bank lending were eased or evaded. By 1888 it was so clear that any legal impediments to real estate loans had become inoperative that the Victorian government removed them, on the recommendation of a Royal Commission on banking. It seemed to contemporaries that the conditions of Australian economic growth justified this fundamental change in banking practice. In Australia, experience suggested that property values would tend to rise as the scale expansion of the economy proceeded. Further, prolonged periods when it was difficult to sell land were virtually unknown. Hence there appeared to be every reason until the end of the 1880s for banks to be confident, like the Royal Commission on Banking Laws, that

a landed estate is always marketable, subject only to the rise and fall in value. It is improbable, therefore, that a Bank administered with ordinary prudence could so lock up its money in land that it would become seriously involved. Banks take care to have a margin of safety, and experience shows that there are no better securities than those effected on land.<sup>5</sup>

In addition, the nature of pastoral growth after 1860, with new land laws and greater investment requirements, created pressure for pastoralists to raise money on mortgage. The ready response of the banking system in this situation was undoubtedly a factor making possible the high level of pastoral investment that was sustained in the period to 1890.

The increasing involvement of the banking system in the Australian economy was accompanied by a considerable diversification and

specialisation in other financial institutions. The establishment of stock exchanges in the major cities was one aspect of the continuing development of a domestic capital market. More important in determining the pattern of economic growth was the emergence of specialised non-bank financial institutions to serve the pastoral industry.<sup>6</sup> The period after the 1850s, and particularly after the mid-1870s, saw the rapid growth of a system of pastoral finance companies, some of which had close business links with the banks of issue. Together, the banks and the pastoral finance companies became a powerful means of channelling investible funds into the pastoral industry. Finally, there developed in the years to 1890 a large number of residential and urban land financing institutions to serve an area of the economy where the banks were relatively unimportant.<sup>7</sup>

The system of interlocking financial institutions that developed in this period did not confine itself to mobilising and allocating domestic funds. Both the banks and the pastoral companies were active in raising funds overseas. For the banks, this fund raising took the form of attracting deposits from Britain. In the late 1860s about 10 per cent of bank deposits were already held overseas,<sup>8</sup> but nearly all of these were probably Australian government deposits or the working balances of Australian merchants with dealings in Britain. It was only in the 1870s that large amounts of British money on deposit began to find its way into



11. The Oriental Bank, St Kilda. City bank buildings were usually expensive and impressive structures. Solid and imposing buildings were not enough, however, to prevent a loss of public confidence in the banking system in the early 1890s. (By courtesy of the National Library of Australia)

banks operating in Australia. Colonial interest rates were still significantly higher than in Britain, so that normal Australian fixed-deposit rates offered high returns by British standards. From the late 1870s, British deposits in Australian banks grew rapidly. While deficiencies in the data prevent a precise assessment of the size of these British deposits, it is likely that by 1891 about one-quarter of the total deposits in Australian banks were of British origin. In the case of the pastoral companies, the reliance on British funds was more extensive. Here, the main device was the sale of debentures in Britain, again at rates of interest well above those ruling for comparable British securities. From the mid-1870s the proceeds of these debenture sales were easily the largest source of new funds to the pastoral companies. In the field of residential and urban land financing, direct fund raising in Britain was much less important. Building societies, which were the largest institutional source of finance for house building, derived almost all of their funds locally. On the other hand, some of the companies formed to exploit the profit opportunities in urban land subdivision and speculation in the 1880s secured a significantly high proportion of their funds in Britain.

## V

The summary of changes in the banking and financial structure given in the preceding section might suggest that by the 1880s Australia was blessed with a sound, effective and integrated capital market that mobilised both domestic and overseas funds to advantage. However, there are grounds for believing that some characteristics of the financial system contributed to the growing instability of Australian economic expansion that was so much a feature of the years after 1880.

It will be recalled from earlier chapters that two important elements in this economic instability were, first, the high level of capital inflow from Britain during the 1880s and, second, a tendency for over-investment to occur in the major avenues of domestic capital formation (perhaps coupled with under-investment in other areas of the economy).

It can be argued that both these sources of instability were encouraged by developments in banking and finance. After the mid-1870s, the banks were engaged in an active hunt for British deposits, which involved the setting up of a string of agencies in Britain, whilst pastoral finance companies were established for the express purpose of raising British capital. Sorting out the institutional and other aspects of a situation such as this is always difficult, but it would be surprising if the institutional channels created for the transfer of British capital to Australia were not an important positive influence on the level of capital inflow in the 1880s.

Further, the structure of the financial sector may itself have contributed in some measure to a misallocation of private investible funds within Australia. Over-investment in the private sector was most clearly

evident in the pastoral industry, whilst both the pastoral and housing sectors (particularly urban land subdivision in the latter) were characterised by a growing diversion of funds to speculative activity. Here, the building up of a set of financial institutions tailored specifically to the pastoral industry or to urban land dealings, when combined with ready access to funds in Britain, may be an important part of the explanation of the speculative extravagances of the 1880s. This is ironic, for the capital raised in Britain was from conservative investors looking for safe but remunerative outlets. Thus, in N. G. Butlin's words,

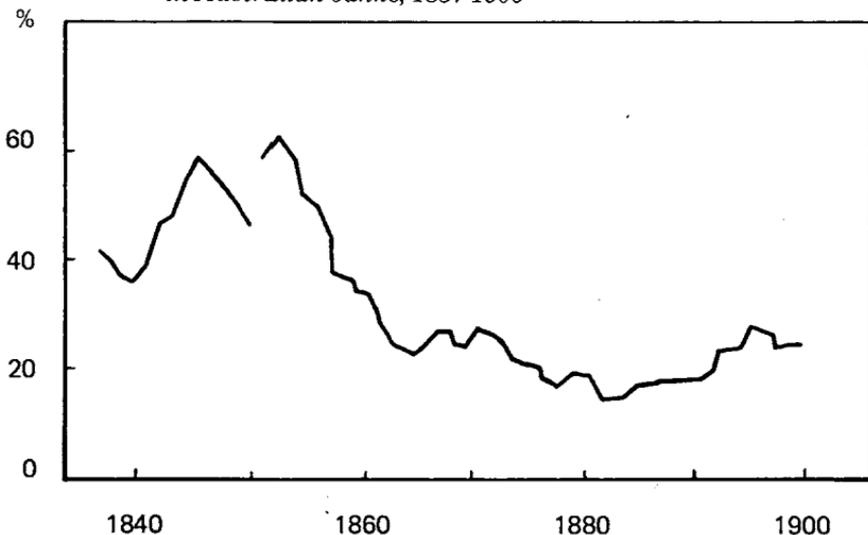
one of the more fascinating socio-economic aspects of the process of Australian rural development is in the transformation of a conservative British approach to foreign investment into the highly venturesome undertakings which were the final product of these savings in Australia.<sup>9</sup>

There is the possibility here of a serious imperfection in the capital market. In the Australian context, the *uneven* development of specialised financial institutions may have meant that investible funds continued to flow along established channels even when alternative uses may have been more remunerative and more productive.

Within the banking and financial system itself, the evolution of lending policy described in the preceding section of this chapter exposed the banks and other financial institutions to danger. The involvement of banks in heavy pastoral lending, often secured on real estate, meant that a substantial part of bank assets became tied up with the fortunes of the wool industry. Chapter 3 has already outlined the serious difficulties facing pastoralists during the reverses of the early 1890s. These difficulties led to widespread default on loans. In a buoyant market default would have posed few problems for the banks, who would have been able to sell any security to cover outstanding loans. In the conditions of the early 1890s, however, the speedy liquidation of mortgage and other security for pastoral loans was frequently impossible. Much the same situation, in a more extreme form, confronted urban land and building companies from the end of the 1880s. The assets of these companies were mainly land or fairly long-term loans secured on real property. Once the metropolitan land booms of the 1880s were over, these assets were close to being completely illiquid.

The difficulty posed by the illiquidity of loans arose out of the fact that banks and other financial institutions had relatively short-term liabilities. Deposits, in particular, were generally made at call or for fixed periods of three to twelve months. In the event of a substantial withdrawal of deposits large cash balances would be needed, especially if withdrawals were being made because of the failure of public confidence in a bank's soundness. Hence the potential illiquidity of bank assets made reserves policy vital: cash balances or highly liquid assets had to be large enough to meet unexpected contingencies.

Figure 12 *Cash balances as a percentage of deposits in Australian banks, 1837-1900*



Source: S. J. Butlin, A. R. Hall and R. C. White, *Australian Banking and Monetary Statistics, 1817-1945*, pp. 29-30 and 282-7. The figures for 1837-50 are not quite comparable with those for 1852-1900, but the rise shown in the early 1850s is of the right order of magnitude. Figures for 1837-50 are 3-year moving averages of half-yearly or December quarter figures for New South Wales banks. Figures for 1852-1900 are 3-year moving averages of seasonally adjusted December quarter figures referring to holdings of all Australian banks within Australia.

In these circumstances, it is significant that the period to the early 1890s saw a marked long-term reduction in the ratio of reserves to bank deposits. Figure 12 shows that in the 1880s cash balances held by Australian banks averaged 17-18 per cent of colonial deposits, compared with 25-26 per cent of deposits in the late 1860s. Before 1860 cash balances rarely fell as low as one-third the level of deposits and, as Fig. 12 shows, were often very much higher than this. Figure 12 suggests that there was some stabilisation of reserve ratios after the early 1880s: the ratio of cash to deposits may have been lower than in the past, but it was no longer falling. However, the graph in Fig. 12 refers only to cash balances and deposits within Australia. Similar figures for overseas assets and liabilities are not available in the same form or with the same degree of accuracy. Nevertheless, it seems clear that trends in bank assets and liabilities overseas were such that the overall reserve position of the banking system continued to decline until the early 1890s. A rough indication of the external situation is given by figures of bank reserves and deposits in Britain calculated by Boehm. These figures suggest that between 1888 and 1892, for example, British deposits rose at the high annual rate of 15 per cent, whilst banking assets held abroad did not increase at all. Thus Boehm concludes that

whereas the internal liquidity of the banking system remained fairly stable during the late eighties and the early nineties, external liquidity, and hence the over-all liquidity of the banking system, had declined.<sup>10</sup>

The changes in reserve policy outlined in the preceding paragraph were deliberate actions taken in the light of colonial banking experience. Several aspects of the post-gold period provided justification for some long-term fall in reserve ratios. For one thing, the structure of deposits had altered, with fixed-term deposits forming an appreciably higher proportion of the total than previously. Further, improvements in communications and organisation meant that a given amount of cash could be used more effectively in the event of localised withdrawals of deposits. More important was the long, virtually uninterrupted economic and banking expansion that was a feature of the period to the early 1890s. Bank failures and panic-induced withdrawals of deposits had been rare within the working lives of the bank managers of the 1880s. Continued banking growth, without short-term strain on reserves, had been the norm. This, plus the fact that holding unnecessarily large amounts of coin and bullion meant limiting loans (and hence forgoing profit opportunities), was fundamental to the decline in reserve ratios observed in the years to 1890.

Confidence in the adequacy of liquid reserves was shattered in the financial crisis of 1893. During the crisis, most of the banks were unable to meet all their immediate commitments. The banking crisis arose directly out of the depression in the economy as a whole in the early 1890s and the developments in lending and reserve policy outlined in the foregoing pages. The story of the bank crashes of 1893 has been told many times, from the point of view of both individual banks and the banking system as a whole, so that only a summary account is necessary here.<sup>11</sup>

Briefly, the beginnings of financial collapse can be traced back to the late 1880s. As noted above, the ending of the metropolitan land boom left many building and land companies in a difficult position, with short-term liabilities and unrealisable assets. On the assumption that the lull in the land market was temporary, the usual response of these companies was to build up their short-term liabilities still further by raising deposits locally and in Britain and by borrowing from the banking system. This response was made possible by easy credit conditions, underpinned by continuing capital inflow, and by the generally held belief that the land market would soon recover. This belief disappeared during 1891-2, by which time the land companies were even more precariously placed than in 1888-9, because of the intervening increase in deposits. Heavy withdrawals of deposits, reflecting a loss of public confidence in the land and building companies, soon brought a rash of failures.

The support given to unsound land and building companies from the

late 1880s significantly weakened the banks. This was not, however, fundamentally responsible for the bank crashes that followed in 1893. The banking policies pursued during the long period of economic expansion had left the banks vulnerable to any serious disruption in the Australian economy. The combination of potentially illiquid advances and low reserve ratios meant that, in the event of prolonged economic depression, banks would find it extremely difficult to continue to repay deposits on demand. Public confidence in the banks began to fail in 1892, leading to large withdrawals of deposits. At first, only the weakest institutions with close connections with land companies were suspected. Hence, for a time, the drain of deposits from some banks led to increased deposits elsewhere as people shifted money from weak to stronger institutions. The most vulnerable bank, the Federal Bank of Australia, was forced to suspend operations at the end of January 1893. Some time later, a more general loss of confidence became apparent and a widespread run on deposits developed. All the major banks were in severe difficulty and most were forced to close for varying periods during April-May 1893 because they were unable to meet all demands for withdrawal of deposits. It is important to emphasise in this connection that most of the withdrawals in 1892-3 were made by local depositors. British investors do not appear to have become alarmed until the Australian run on deposits had undermined the position of the banks. The withdrawal of British deposits was not a major factor in the development of the banking crisis of 1893.

Not all the banks suspended payment in 1893. And, as might be expected, the ability to come through the crisis was related directly to the lending and reserve policies of the individual banks. The English banks established in Australia in the 1830s were conspicuous in their wariness of heavy lending on the security of real estate and in their insistence on maintaining higher cash balances than the rest of the banking system. The aggressive newcomers of the 1830s were by the 1880s long-lived and conservative institutions. The cautious attitude of these banks to lending on the security of real property was expressed as follows by the Superintendent of the Bank of Australasia in 1888: 'Australian banks, like mortgage companies, make advances on land, and we must do it or else close our doors. Our great safeguard is not to have an *undue* amount of such business.'<sup>12</sup> The combination of this attitude with high cash reserves must have cost the Bank of Australasia business in the 1880s, but it allowed the Australasia and a number of other conservative banks to continue to meet all their immediate commitments, including heavy withdrawal of deposits, throughout the period of crisis.

Most of the banks that were forced to close in 1893 were, in the long run, solvent: their difficulties had arisen from a short-term lack of liquidity. Hence these banks generally devised reconstruction schemes aimed at allowing them to reopen without threat of further liquidity problems. Not all reconstruction schemes were successful and some

banks failed outright. The banks that managed to continue in business did so, in the main, by reaching agreements with depositors to freeze deposits for varying periods or to convert a proportion of their deposits into preference capital.

The bank crashes have usually been seen as a result rather than a cause of severe economic depression, but the monetary contraction and financial disruptions of 1893 almost certainly intensified the decline in economic activity. Further, there is scope for arguing that banking policy in the remainder of the 1890s hampered economic recovery. Substantial amounts of money on deposit were locked into the banking system during the reconstruction period, whilst the surviving banks adopted more cautious lending policies and higher reserve ratios than before the crisis. It can be seen from Fig. 12, above, that this policy resulted in a sharp rise in cash balances as a percentage of deposits after 1893. The amount of bank lending fell throughout the 1890s. By the end of the decade total advances within Australia were only two-thirds the pre-crisis peak level. The contraction in banking business was accompanied by the closure of many small branches and agencies that had been opened in the preceding expansion. The reconstructed banks, in particular, co-operated in a program of closures designed to cut costs and reduce inter-bank competition.

It is not clear, however, that these developments were a significant independent influence restricting the level of economic activity after the bank crashes. On the contrary, it can be argued that the fall in advances was largely a product of the depressed state of the Australian economy. Limited real investment opportunities, reinforced from 1895 by drought of unprecedented length and severity, were probably basic to the decline in bank lending. In this connection it is noteworthy that interest rates on both deposits and advances were now abnormally low by the standards of earlier periods in Australian history. Interest rates quoted for fixed deposits of twelve months, for example, were  $2\frac{1}{2}$  or 3 per cent during 1896-1900, compared with an average of about 5 per cent for most of the boom of the 1880s. These low interest rates were apparently able to attract enough in the way of deposits to cover the limited amount of lending possible in the economic circumstances of the 1890s. It was now no longer profitable to seek new deposits in Britain and, in fact, the gradual repayment of old deposits considerably reduced the amount of British funds in the banking system.

#### NOTES:

<sup>1</sup> *Foundations of the Australian Monetary System*, p. 5. Sections I and II of this chapter rely heavily on Butlin's account, which is one of the classic works of Australian economic history. There is no other good general treatment of Australian money and banking before the gold rushes. Two books on the history of individual banks are: S. J. Butlin, *Australia and New Zealand Bank: The Bank of Australasia and the Union Bank of Australia Limited, 1828-1951*, London, 1961; and R. F. Holder, *Bank of New South Wales: A History*, 2 vols., Sydney, 1970.

<sup>2</sup> *Foundations of the Australian Monetary System*, p. 7.

<sup>3</sup> A fuller account of the mechanism of a gold standard can be found in most texts on international trade theory, such as C. P. Kindleberger, *International Economics*, 3rd ed., Homewood, Illinois, 1963, ch. 4.

<sup>4</sup> There is no treatment of the banking system as a whole in the second half of the nineteenth century that compares in scope and detail with Butlin's account of the period to 1851 in his *Foundations of the Australian Monetary System*. The most useful general treatment is E. A. Boehm, *Prosperity and Depression in Australia*, Chapters 8-10.

<sup>5</sup> Quoted in Boehm, *Prosperity and Depression*, p. 223.

<sup>6</sup> The growth of specialised pastoral financing institutions is discussed in more detail in N. G. Butlin, *Investment in Australian Economic Development*, ch. II.

<sup>7</sup> The development of new forms of building society and urban land finance companies is described in N. G. Butlin, *Investment in Australian Economic Development*, ch. IV, and in Boehm, *Prosperity and Depression*, ch. 9.

<sup>8</sup> The figures for the proportion of British in total bank deposits quoted in this paragraph are taken from N. G. Butlin, *Investment in Australian Economic Development*, p. 161.

<sup>9</sup> *Investment in Australian Economic Development*, p. 158.

<sup>10</sup> *Prosperity and Depression*, pp. 294-5.

<sup>11</sup> Boehm, *Prosperity and Depression*, ch. 10, is the most useful introduction to the banking crisis of the 1890s.

<sup>12</sup> Quoted in S. J. Butlin, *Australia and New Zealand Bank*, p. 251.

# Government and the economy

During the nineteenth century a distinctive set of ideas about the place of government in economic life became a major influence upon economic thought in many parts of the western world. Contemporary economic theory seemed to have demonstrated that the operation of a free market would normally result in resources being fully and efficiently utilised: an 'invisible hand' would lead to the best economic result. This implied that a government ought to interfere as little as possible in economic affairs, confining itself to maintaining an appropriate legal and institutional framework for the orderly conduct of business activity and discharging certain other minimal economic functions. Despite the dominance of this line of reasoning in the realm of ideas, no government acted consistently in the spirit of its prescribed role. Even in Britain, the home of such doctrine, the nineteenth century saw the growth of new forms of government intervention and restriction at the same time as old regulations that hampered the working of a free enterprise system were being dismantled. And, in the United States, an aggressively capitalistic ethic did not prevent both state and federal governments from taking an active part in economic development.

In its first years, of course, the colony of New South Wales bore no resemblance to the *laissez-faire* model referred to in the previous paragraph. The settlement at Botany Bay was itself a government undertaking. With the transition to capitalist economic growth in the 1820s and 1830s the economic role of governments declined until, by 1850, government was a less pervasive influence on the economy than could have been thought possible a generation earlier. Nevertheless, throughout the nineteenth century Australian colonial governments continued to take a much more active part in economic affairs than was consistent with *laissez-faire*. In accordance with the approach in the rest of the book, this chapter deals mainly with government and the economy during the period of growth after about 1820. First, however, there is a short account of the convict years when, in some sense, government *was* the economy.

## I

In effect, the early Australian settlements carried out a single government function: the running of a gaol.<sup>1</sup> But it must have been clear from the first that, besides the government, there would need to be a free

sector, if only because convicts would settle in Australia once their sentences had expired. Whilst historians disagree about precisely what sort of local economy was envisaged by the colony's founders, it seems likely that the official view of the matter ran something as follows. The goal was to be, so far as was possible, a self-sufficient enterprise. Government farms and factories were to be worked by convicts to provide food and basic clothing. Convicts were also to be put to making such roads and buildings as were necessary. The private sector was to be made up of ex-convicts and other settlers working small-scale agricultural holdings granted by the local administration. It is probable, though by no means certain, that official policy favoured the emergence of some form of subsistence or peasant farming community that would have few economic links with the government sector. Private settlers were to be under the control of non-elected officials responsible to London. Formally, the government was all-powerful, able to mould the infant economy at will. And, presumably, it was thought that private economic development would be allowed only to the extent that it was consistent with the government's primary purpose of running a penal establishment.

As it turned out, the administration did not control closely the shape of the private economy that emerged in the convict period. Indeed, it can be argued that some significant features of private economic activity arose out of the government's inability even to develop the public sector effectively. Particularly important, according to this argument, was the failure of public agriculture. Large-scale public farms using convict labour were supposed to provide the gaol with enough produce to feed itself. However, circumstances combined to frustrate this aim. As a consequence, the government bought large amounts of grain grown by private farmers. The rise of this trade between the government and private individuals appears to have been a critical factor in the early development of an exchange economy. Grain bought by the government was paid for in official receipts that circulated as a local currency and that could be consolidated into Treasury Bills drawn on London. Government demand for foodstuffs was the prime moving force in the growth of demand for private output and a major source of foreign exchange to the private sector. Earlier chapters have already commented upon the quasi-export character of sales to the government to feed the gaol: these sales earned foreign exchange and were made at prices that were not much affected by changing conditions within the private sector, but they lacked an essential attribute of exports as a source of economic growth in a new region because the extent of the market remained limited by the size of the local population.

Despite this demand limitation, there is scope for arguing that the pattern of economic relationships between public and private sectors in the convict years helped to create some of the preconditions of future

capitalist expansion. The trading system appears to have fostered the concentration of wealth and foreign exchange into a few hands, which probably speeded the development of a genuine commercial sector and may have been important in promoting the capital accumulation necessary for the substantial beginnings of fine wool growing. The tendency towards monopoly and concentration of trading profits was undoubtedly strengthened by the manipulation of public power for private gain by officers and others. The conflicts inherent in this situation generated a series of clashes between the administration and the officer traders, culminating in the Rum Rebellion of 1808.

The physical circumstances of the colony significantly restricted the ability of the government to fashion the economy to its own ends. Thus, for example, the initial aim appears to have been to build a free sector composed of small farmers. Large-scale private agriculture or grazing was apparently not to be encouraged and, in particular, officers were not to be eligible for land grants. However, the climate and geography of the Sydney region did not suit small-scale farming. Nor did many of the expirée settlers have much potential as sturdy yeomen. Physical and economic conditions both made it extremely likely that fairly large-scale grazing by officers and traders would develop. This situation was acknowledged by the administration from the earliest years. Even so staunch an advocate of the small emancipist farmer as Macquarie pursued a land grant policy that increased the dominance of a class of large landholders. This was more than simple expediency. It represented the bending of policy to make it consistent with an economic reality that was beyond the ambit of government control.

In sum, therefore, government policy may have had substantially less influence on private economic development than a casual inspection might suggest. It is true that government demand dominated much private economic activity and that, formally, the government had discretionary power to regulate any aspect of the local economy, including the supply of factors of production to the private sector. Nevertheless, the private economy developed in ways that were not envisaged by London or the local administration and that, in the long run, were to prove incompatible with the operation of the gaol. Here, it can be argued that the view of public policy put forward in this section is too simple. Indeed, there is evidence that the local administration sought, on occasion, to promote economic development even where this may have conflicted with the aim of maintaining Australia as a penal settlement.<sup>2</sup> Thus the early governors may have been, to some extent, active collaborators in the laying of foundations for a free capitalist economy. In any event, the government was unwilling or unable to manipulate the local economy in a way that would, in the long run, protect whatever interest it had in keeping eastern Australia a suitable repository for British convicts.

## II

During the convict period Australia was ruled autocratically by a succession of naval and military governors. From the early 1820s, however, the Australian settlements began to acquire elements of the British legal and political system. An important early development was legislation providing that the fabric of British statute and common law was to apply in New South Wales to the extent that this was consistent with the circumstances of the colony. Then came the first major step towards self-government by the colonists: the formation of a Legislative Council whose members were to be nominated by the Governor from among the officials and leading merchants and landholders of the colony. The Council had restricted power but it was a significant addition to the formal avenues through which local economic interests could influence government decisions. A further step in the direction of responsible and representative government was taken during the early 1840s with the creation of a new Legislative Council (still with limited powers *vis-à-vis* the Governor) composed partly of nominees and partly of members elected by men of property. A more complete transfer of legislative and executive power to the colonists was made by a British Act of 1850 which set working rules within which the constitutions of the various Australian colonies were to be framed. In all but matters that directly affected Imperial interests, Australians were now to be left to govern themselves.

The gradual transformation of the Australian settlements into self-governing colonies accompanied a change in the official British view of Australia. By the 1820s, Australia was no longer regarded simply as a gaol but also as a colony of settlement and trade. In the subsequent phase of economic growth Australia came to be seen in much the same light as other areas of economic opportunity in the Empire. Partly as a reflection of this, and because of the emergence of distinct regional interests with the spread of settlement in Australia, areas of the original colony of New South Wales were split off to form the colonies of Van Diemen's Land, South Australia and Victoria. The extent of the shift in the British attitude towards Australia ought not to be exaggerated. The penal establishment remained until the 1840s in New South Wales and government policy formed in Britain continued to be an important influence on the local economy. However, by the 1830s at the latest the assumptions underlying Imperial policy towards Australia had clearly been altered. The emphasis now lay on the development of a free society and economy rather than on protecting any narrower interest the British government may have had in the maintenance of a penal settlement.

Indeed, for a time the convict system itself was used in ways that contributed to private economic development. Convict labour was employed by the government in land clearing and in the construction of

buildings, roads and bridges. The use of convicts on these projects probably meant that the growth in basic overhead capital lagged less behind population increase than would have been the case if its provision had been left to the operation of the market or to more normal forms of intervention by the government in a free economy.

Also important was the practice of assigning convicts to work for private employers, especially in the pastoral industry. As noted in Chapters 1 and 2, convicts were generally acknowledged to be less effective workers than free labourers. In the pastoral industry, however, this was not a critical shortcoming of convict labour because shepherding made few demands on energy, skill or intelligence. Further, the use of convicts had two advantages. First, convicts were cheap, costing pastoralists little more than it took to provide rations and basic clothing and shelter. Second, within the Settled Districts at least, convicts could simply be directed to areas away from the main towns: no extra financial inducement was necessary as would have been the case if free labour had been used. It can be argued that these advantages meant that the assignment system made labour available to pastoralists at a price below the one that would have ruled in a free market and below the value of a convict's marginal productivity.

Some aspects of the assignment system appeared to suit the administration as much as the private sector. The system was cheap for the government because assigned convicts had to be kept by their masters. And, despite the fact that it was at times a brutalising influence on both convict and master, the system probably offered more scope for rehabilitation than any feasible alternative. But the attitude of the British government to this latter virtue was ambivalent, for the government worried that so effective a means of rehabilitation, involving a relatively high and secure material standard of living for convicts, was unlikely to be much of a deterrent to would-be criminals at home. Hence there was some conflict of interest between the government and private employers. The government often felt it would be desirable to restrict the number of convicts being assigned, retaining a significant percentage of convicts in conditions that were deliberately harsh and degrading, so that a sentence of transportation would not lose its terrors. On the other hand, private employers naturally pressed for a policy of assigning as high a proportion of convicts as was possible, reserving punitive servitude for intractables who were in any case useless as employees.

Contemporaries in Britain appear to have thought that, in this conflict, the short-term interests of the employers generally won the day. The high level of assignment that resulted became a focus of attack by influential British opponents of transportation. It seems certain that the decision to abolish convict transportation to New South Wales at the end of the 1830s was hastened by the existence in Britain of a body of opinion that felt transportation was no longer an effective deterrent, because of the

way in which the assignment system had operated. There were, however, more fundamental factors underlying the abolition of transportation. As A. G. L. Shaw notes: 'New South Wales had become too well settled and too civilized to be a good penal colony; what was the punishment in being sent where so many free labourers were anxious to go?'<sup>3</sup> Economic development, in other words, had made New South Wales unsuitable as a place to send convicts, even though continued transportation may have been in the immediate economic interests of the leading colonists. Transportation to Van Diemen's Land remained important for some time after 1840. Further, there were attempts to revive a modified form of transportation to New South Wales late in the 1840s. These moves were strongly and successfully opposed by local popular opinion, though some powerful colonial economic interests had favoured the re-introduction of convicts.

### III

The previous section noted that a gradual shift in the British attitude towards Australia occurred from the 1820s, with the increasing recognition that the latter would eventually become a free society indistinguishable in essentials from other colonies of British settlement. This shift in attitude did not mean, however, that the British government resolved to allow the pattern of colonial economic development to emerge simply from the unfettered operation of the market. On the contrary, until the 1840s London made explicit attempts to shape the New South Wales economy according to its own ideas of what was appropriate. Central here was the question of land alienation policy.<sup>4</sup>

Before 1820 land in eastern Australia was granted free to private settlers according, by and large, to the amount of their capital. This is said to have encouraged a natural tendency towards large-scale individual land holdings and a scattering of settlement. During the 1820s the British government appears to have become concerned to limit the spread of low-density settlement that had resulted both from previous land policy and from the operation of economic forces. A series of new land regulations and proposals was devised to promote more intensive settlement. The so-called 'Settled Areas' of New South Wales were defined. No land grants were to be made and no settlement was to be allowed beyond the limits of these areas. Inside the Settled Areas, there was to be a reduction in the rate at which new land grants were made. One device was the requirement that land could not be granted until it had been surveyed. (Most unoccupied land was not yet surveyed and there was not at this time the means of carrying out surveys on the scale necessary to accommodate the rate at which land had previously been granted.) It was also proposed that land was, in the first place, to be offered at auction. Only land that remained unsold for six months could

be granted free of charge. The local administration did not implement the latter proposals during the 1820s, but the existence of such proposals is evidence of an early British interest in limiting the dispersal of settlement in eastern Australia.

It seems that the British preference for closer settlement arose mainly out of practical considerations. Far-flung outposts were costly to administer and protect, whilst there was naturally some nervousness at the prospect of allowing assigned convict servants to wander far from the centres of government and justice. An important theoretical justification for limiting the spread of settlement was added to these practical reasons with the publication in 1829 of E. G. Wakefield's *Letter from Sydney*.<sup>5</sup> Wakefield, who had not then been to Australia, wrote of the economic and social evils that he thought to be the result of a system of free land grants. According to Wakefield, the land grant system led to an artificial shortage of labour: who would work for wages when land was to be had for the asking? Wakefield argued that land should be sold at a price sufficient to create an adequate supply of labour to landholders. If land was sold instead of being given away, those without the means of buying it would be forced to work for wages, at least until they accumulated enough money for land purchase. Further, the proceeds of land sales would provide the government with funds to pay for assisted migration to Australia. This had the dual attraction of adding to the supply of labour in the colony and removing (at colonial expense) part of the so-called 'surplus population' from Britain.

The influence of Wakefield's writings is evident in the subsequent development of land policy. In 1831 new regulations abolished land grants in New South Wales and restated the prohibition on the occupation of land outside the Settled Areas. Within the Settled Areas, crown land was to be sold at a price of not less than five shillings an acre. The proceeds of land sales were to be used to finance assisted immigration. The 1830s also saw the establishment of the new colony of South Australia, which was to be administered from the start along the lines suggested by Wakefield's theory of colonisation.

In some respects the 1831 land regulations were successful. Extensive land sales at above the prescribed minimum price provided a means of financing a rising level of expenditure on assisted immigration. Table 28 shows that, by the late 1830s, assisted immigrants were coming to eastern Australia in greater numbers than the combined inflow of unassisted free immigrants and convicts. Some of the people who were assisted to migrate may well have come to Australia anyway, but the implication of the figures in Table 28 is that the number of free immigrants during 1832-42 would have been much smaller than it was had no government assistance been available. In the absence of government expenditure on immigration, the transition to an essentially free society in New South Wales must have been delayed significantly.

**Table 28** *Immigration into New South Wales, 1832-42*

	<i>Free Immigrants</i>				<i>Convicts</i>	
	Assisted		Unassisted		No.	%
	No.	%	No.	%		
1832	792	16	1,214	24	3,101	61
1833	1,253	18	1,432	21	4,115	61
1834	484	10	1,080	23	3,114	67
1835	545	11	883	18	3,547	71
1836	808	15	913	17	3,751	69
1837	2,664	39	813	12	3,348	49
1838	6,102	59	1,328	13	2,928	28
1839	8,416	66	2,133	17	2,256	18
1840	6,637	61	1,849	17	2,453	22
1841	20,103	89	2,380	11	—	—
1842	6,823	76	2,164	24	—	—
1832-42	54,627	55	16,189	16	28,613	29

Sources: Free immigrants: Coghlan, *Labour and Industry in Australia*, volume I, p. 368; convicts: Shaw, *Convicts and the Colonies*, pp. 366-7.

Wakefield argued that his system of land sales and assisted immigration would ease the labour shortages that were said to have restricted previous economic development. However, it can be argued that the net result of the large inflow of free migrants in the 1830s was to promote a change in the opposite direction. Thus, in the short run, free immigration may have added more to local demand than to supply potential. The interesting effect, though, occurred in the slightly longer run. It has already been argued that the convict system allowed colonial employers to get assigned convict labour for less than it would have been worth in a free market. The large volume of free immigration in the 1830s must have speeded the demise of the convict system, substituting a situation in which parallel opportunities for exploiting labour did not exist. With the emergence of a largely free population and economy, a shortage of labour relative to resources and employment opportunities natural to a region of recent settlement (as distinct from older countries like Britain) can be expected to have made itself felt in the price that employers had to pay for labour. Free immigrants may have made better workers and may have added directly to the physical supply of labour, but it can be argued that the associated shift to a free society and economy must have removed much of the scope for exploiting the local labour force and raised correspondingly the supply price of labour to employers.

The prohibition on the occupation of land outside the Settled Areas contained in the 1831 regulations was ignored by the colonists. The pastoral industry continued to spread inland, with pastoralists simply

squatting on land to which they had no title. The local administration made little serious effort to contain this pastoral expansion, recognising that, as Governor Bourke wrote in 1835, 'Sheep have at once disposed of the question of concentration'.<sup>6</sup> Squatting outside the Limits of Settlement presented the government with a difficult problem. There seemed to be no real prospect of stopping the movement of sheep and shepherds beyond the Limits. Yet the government had too few resources to police and administer the squatting districts adequately. Further, the government had no wish to see the prolonged use of crown land by squatters create any presumption that the latter had gained permanent rights of occupation. The local Legislative Council moved quickly in a way that acknowledged the need of the pastoral industry to expand on to virtually free land, whilst producing revenue to meet some of the cost of administering the squatting districts and, at the same time, protecting the position of the Crown. An Act of 1836 allowed squatting outside the Settled Areas on payment of a £10 annual licence fee. Squatters were to have rights of tenure only on a year-to-year basis and the Crown would pay no compensation for improvements if the land were resumed. The lack of security of tenure and lack of compensation provisions were not serious shortcomings of the Act from the point of view of most squatters in the 1830s because, under the prevailing sheep technology, the amount of investment in fixed assets on pastoral runs outside the Limits of Settlement was in any case negligible. In effect, squatters were now assured of continued access to new land in return for a nominal annual fee. The local legislature had stated unambiguously that attempts to shape the colony according to the British preference for intensive, concentrated settlement were to be abandoned in favour of allowing economic and geographic forces to produce the sprawling development characteristic of a pastoral export economy.

This was not, however, the end of the question of squatting outside the Limits of Settlement. A stock levy that was raised in 1839 to meet the cost of maintaining the police force of the squatting districts was a prelude to a more determined effort by the government to squeeze extra revenue out of the squatters. The administration's need for revenue was made urgent by budgetary difficulties in the early 1840s that resulted partly from the depression in the economy as a whole (which reduced land sales) and partly from a mismanagement of the program of assisted immigration that left the government with more commitments than money. For their part, squatters were becoming more anxious to gain some security of tenure over their runs as it came to be realised that further pastoral expansion was likely to involve a rising level of outlays on fixed assets.

By the early 1840s, then, both government and squatters were dissatisfied with matters as they stood: the government wanted more revenue, the squatters more security. The elements of a political trade-off

were clearly present. The process of determining the exact nature of the compromise that was reached has become one of the more famous battles of Australia's political history. In 1844 the Governor, Sir George Gipps, promulgated new regulations that would have meant substantial increases in the amounts payable by squatters. In the ensuing political manoeuvres, the pastoral interest managed to by-pass the Governor and persuade the British government to intervene. In 1847 new Orders in Council eventually gave pastoralists the long leases on crown land they wanted in return for a smaller rise in revenue than the local administration had hoped to see. A significant aspect of the 1847 Orders in Council was that they represented a belated but explicit acknowledgment by the British government that outback Australia was not rural England. It had finally been recognised that the conditions of the pastoral economy of New South Wales were inconsistent with the vision of colonial settlement the British government had been wanting to implement since the 1820s. Ironically, the newly independent colonial governments were subsequently to renew the effort to encourage small-scale land settlement. This attempt to break the pastoral ascendancy is discussed briefly later in the chapter.

#### IV

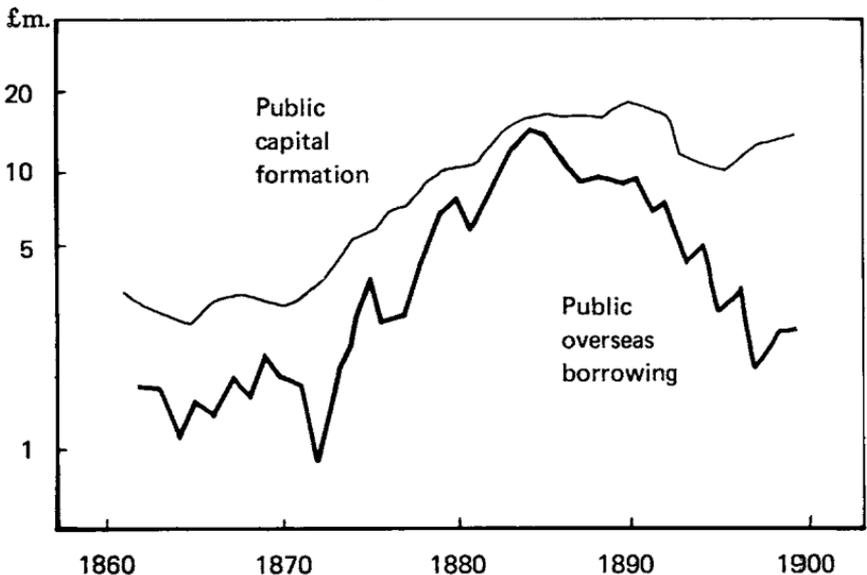
The coming of representative and responsible government to the Australian colonies has often been associated with the gold rushes. The economic and demographic upheavals of the gold years produced a pressure for 'democratic' reform that must have influenced the form self-government was to take. Nevertheless, it remains true that the constitutions of the various colonies were drafted largely within the framework of the Australian Colonies Government Act of 1850, which preceded the discovery of gold. Further, despite pressures for more democratic arrangements, the constitutions of the 1850s were based on the assumption that property as such had rights to representation in the political process: there were significantly high property qualifications for the franchise and for membership of the legislature. Subsequent constitutional development was generally in the direction of reducing this special political role of property. By the end of the nineteenth century the principle of universal manhood suffrage had been established in all the colonies, though most still allowed plural votes to men of property. South Australia had also extended the right to vote to women. From the point of view of this chapter, the main difference between the years after the 1850s and earlier periods is that government decisions affecting the economy were to be made in Australia free of any significant interference from Britain.

As a preliminary to the discussion of the role of government in Australian economic development from the end of the gold rushes to

about 1890, it is useful to recall some basic features of the Australian economy in 1860. A central point is that a high level of real product per head was underpinned by the exploitation of a productive advantage in a narrow range of resource-intensive exports. This export production allowed a degree of economic specialisation that would have been impossible if goods had been produced only for the small domestic market and implied a considerable dependence upon an uninterrupted flow of imports to sustain consumption standards. Growth also required an increasing supply of labour and capital, much of which came from overseas. A shortage of capital was a particularly significant aspect of the situation in 1860.

This outline throws into relief the importance of colonial governments as entrepreneurs and investors: governments were directly responsible for a substantial part of both total domestic capital formation and total overseas borrowing during 1860-90. As was appropriate in an economy like Australia's, much of this public investment was used to provide social overhead capital that could have been expected to promote export growth. Governments also acted directly to increase labour supplies by spending money on assisted immigration, as they had done in the period before 1850. The rest of this section looks briefly at some of the implications of these government activities for the pattern of Australian economic growth during 1860-90.<sup>7</sup>

**Figure 13** *Public gross capital formation and public overseas borrowing, Australia, 1861-1900*



Source: Three-year moving averages calculated from data in N. G. Butlin, *Australian Domestic Product, Investment and Foreign Borrowing*, pp. 16 and 424.

**Table 29** *Public capital formation and overseas borrowing, Australia, 1861-90*

	1861-70	1871-80	1881-90
<i>Public capital formation as % of</i>			
Gross domestic product	5	5	8
Gross domestic capital formation	38	34	41
<i>Public overseas borrowing as % of</i>			
Gross domestic product	2	3	5
Total direct overseas borrowing	68	65	55

*Source:* Calculated from data in Butlin, *Australian Domestic Product, Investment and Foreign Borrowing*, pp. 6, 16 and 424.

Figure 13 shows the major changes that took place in the level of government capital formation and overseas borrowing between 1861 and 1900. The graph of each series in Fig.13 has what is by now a familiar shape: each curve is relatively flat in the 1860s, rises quickly in the 1870s, reaches a high plateau in the 1880s and falls after 1890. Table 29 gives some indication of the size of government investment and overseas borrowing in relation to other economic aggregates. Public capital formation appears to have made up a large and fairly stable part of total Australian investment (about 35-40 per cent over the period 1861-90), whilst government borrowing accounted for an even larger proportion of total overseas borrowing (an average of perhaps 60-65 per cent, though the precise figure is uncertain because of deficiencies in the basic data). The share of gross domestic product taken up by public capital formation increased from about 5 per cent in the 1860s to about 8 per cent in the 1880s. Similarly, government overseas borrowing rose from an amount equal to 2 per cent of gross domestic product during 1861-70 to about 5 per cent of gross domestic product in 1881-90. The figures in Table 29 leave no room for doubt that the colonial governments were a major economic presence throughout the period 1861-90.

What effect did government capital formation have on Australian economic growth? Here, it is necessary to distinguish between several different avenues of potential influence of government investment. In the first place, the social overhead capital provided by governments produced a flow of output that was either consumed or used as an input in the productive process. Governments built railways, roads, bridges, telegraph lines, water and sewerage systems and so on. All these investments were useful and the output resulting from them added directly to the growth in Australian material well-being. But it is important to ask whether this stream of output was worth the cost, particularly as government investment plans during much of the period 1860-90 were made in budgetary conditions that gave little incentive to governments to curb their expenditure. So far, historians have asked this question only

in relation to railway building, which was easily the largest category of public investment in these years. The transport services generated by railway construction might be expected to have contributed significantly to economic development. Australia was, after all, a sparsely settled continent of extremely long distances and the high cost of land transport helped to determine the shape of the pastoral economy. Yet it was argued in Chapter 4 that, for a number of reasons, the provision of a network of railway services in the period to 1890 did little to promote export growth or economic development in general. Chapter 4 concluded that in the 1880s at least, a substantial amount of over-building of railways may have occurred, implying that the value of the flow of transport services was not commensurate with the amount of investment undertaken. If so, then in this context some of the railway building of these years represented an inefficient use of resources.

A second way in which government capital formation could have influenced the economy was through any backward linkages that might have been present. For example, did the demand for materials and equipment that resulted from government construction stimulate private economic activity? Or did the running of the railways promote manufacturing development by creating a need for engineering workshops or by creating opportunities for local production of rolling stock? Whilst it is not always possible to make a precise judgment on issues such as these, it appears likely that the linkage effects of govern-



12. Railway building in the 1880s. The labour intensive nature of construction is clearly apparent from the photograph. (By courtesy of the Mitchell Library, Sydney)

ment capital formation were usually small. Imports supplied many of the inputs necessary for the construction and maintenance of capital assets and for the operation of public business undertakings. This is one instance of a more general tendency for the multiplier effects of government investment and expenditure to be fairly weak. Given the simple structure of the colonial economy, and given that full employment was experienced for most of the period 1860-90, it can be assumed that much of the growth in demand due to rising government expenditure on capital formation was diverted to imports rather than being met by increased domestic production.

A third means by which the high level of public capital formation affected the economy was through the cost of undertaking this public investment. Chapter 4 has already discussed this in relation to railway building during 1860-90. Briefly, the growing volume of public capital formation imposed external costs on the economy to the extent that it involved a rising import bill and to the extent that it was financed by overseas borrowing. This was an important element in the deterioration of Australian external viability in the 1880s that led, eventually, to the cessation of economic expansion. Further costs may have arisen because of the fact that, in a full employment economy, government capital formation diverted investible funds and real resources to the public sector from private uses, including export production. The potential adverse effects of such a diversion of resources were particularly serious if, as has been argued, much public investment was relatively unproductive. In the circumstances of the 1880s, however, over-investment was not confined to the public sector. This makes it difficult to sustain the argument that a high level of government capital formation alone inhibited, through competition for investible funds, the growth of productive investment in other sectors. Nevertheless, the effects of the high government demand for labour that was associated with government capital formation may well have been significant. Much of the period was characterised by the existence of an excess demand for labour and it can be argued that the wasteful use of scarce labour on public investment projects was one factor tending to raise the local cost structure and limiting the rise in product per head before 1890.

Governments were not, however, simply users of labour, for they spent large amounts of money assisting migrants to come to Australia. Indeed, the number of assisted migrants was equal to about half of total net immigration between 1860 and 1890. Queensland spent more than the other colonies combined on assisted immigration. But the northern colony reaped few of such benefits as were derived from this expenditure, because many assisted immigrants left for New South Wales or Victoria soon after their arrival. From the point of view of eastern Australia as a whole, government expenditure on assisted immigration raised significantly both the rate of total immigration and the rate of population

increase. Some of the economic implications of continued population growth during this period were discussed in Chapter 2, where it was suggested tentatively that a slower increase in population might well have allowed Australian product per head to rise faster than it did in the period to 1890.

## V

As well as affecting economic growth through their activities as entrepreneurs and investors, governments played an important role as regulators and policy makers. Two policy questions seem to have been especially relevant to economic growth during 1860-90: land settlement and the tariff. Both had implications (because of their revenue effects) for the program of government capital formation discussed in the previous section. In addition, however, land and tariff policies were potentially a means of exerting some degree of conscious control over the shape of the colonial economy. This section discusses briefly the extent to which land and tariff policies did represent an explicit attempt to foster a particular type of economic structure and asks whether these policies did influence significantly the pattern of Australian economic development.

Section III of this chapter ended by noting that the 1847 Orders in Council instituted a land policy that acknowledged and confirmed the pastoral domination of the rural economy. The system introduced in 1847 was never fully implemented. Much of the interior remained unsurveyed and the long leases envisaged in the Orders in Council were not granted to occupiers of this unsurveyed land. Thus, in effect, some squatters remained in the same position as in the 1830s, on cheap year-to-year tenancies. Nor did the 1847 system last for very long. One political effect of the gold rushes was the emergence of popular pressure for land reform, particularly in the late 1850s when employment on the gold fields was falling. The question of 'unlocking the land' took much of the time and energy of the colonial legislatures in the early years of responsible government. The outcome was legislation in the various colonies that ostensibly aimed at allowing small farmers to challenge the pastoral ascendancy. By and large, individuals were to be entitled to select and work small holdings of crown land (whether or not it was already being grazed by squatters), which they were to purchase from the government in due course.<sup>8</sup>

The exact purpose of the land reforms of the 1860s is, however, difficult to determine. Much of the political rhetoric suggested that vigorous efforts were being made to alter the basic pattern of Australian rural development, substituting agriculture for grazing and small farmers for large squatters. But the new measures were not generous to small settlers when compared, for example, with land policies pursued in the United States (where homestead land was given away free). If the colonial

governments were genuine in their desire to promote closer rural settlement, they were not willing to do this in a way that threatened land revenue. On the contrary, the legislation of the 1860s implied that more revenue could be wrung out of land purchasers and occupiers—whether they were pastoralists or small farmers—than under the previous system of land disposal. The relevance of this to the developing policy of spending large amounts on government capital formation ought to be clear. The growth in land revenue was particularly important in New South Wales, where the proceeds of land sales accounted for a large part of all government revenue. In this connection, N. G. Butlin has argued that land sales in New South Wales during most of the 1870s and early 1880s 'were largely the result of planned increases in government capital formation that governments financed by the sale of land'.<sup>9</sup> Further, according to Butlin, it was the fear that the wholesale disposal of its land assets would prejudice alternative means of financing capital formation (borrowing in London) that eventually induced the New South Wales government to revise the land laws in 1884. This revision brought a fall in land revenue and a consequent increase in reliance on overseas borrowing. If Butlin's interpretation is substantially correct, land legislation was influenced as much by budgetary considerations as by any desire to reshape the colonial economy in accordance with a preference for closer settlement.

In these circumstances, it is scarcely surprising that the new land laws of the 1860s did not alter significantly the pastoral character of most of inland Australia. The interior was generally unsuited, under prevailing technical and transport conditions, to much besides large-scale grazing. Only in South Australia, where wheat farming was often a feasible and profitable alternative to pastoral activity, was there scope for land reform to stimulate agricultural development.

Turning to the question of tariffs,<sup>10</sup> a striking difference in government attitude between the various colonies became evident from the 1860s. On the eve of self-government, each colony had tariffs on goods such as wines, spirits, tea, coffee, sugar and tobacco. The aim of these duties was not to protect local industry but to raise money to cover the cost of government. Hence, the existence of these tariffs was not inconsistent with the contemporary British preference for free trade. Subsequently, tariff policies in the two most populous Australian colonies diverged. New South Wales remained a free trade colony, collecting only revenue duties. In Victoria, on the other hand, the beginnings of a new policy were contained in an Act of 1866 which imposed tariffs on a number of goods that were, or could be, produced locally. Later tariff changes in Victoria were generally in the direction of increasing import duties until, by the 1870s, the colony was avowedly pursuing a policy of giving tariff protection to domestic manufacturing industry.

Why did Victoria adopt this type of policy? As with land policy, the

political debate surrounding the tariffs of the 1860s and later suggested that the Victorian government was making a deliberate effort to alter the structure of the economy, attempting to build up a strong manufacturing sector that would otherwise languish. The initial motive for stimulating this manufacturing growth was supposedly to provide employment for footloose diggers unable to gain a livelihood on the declining goldfields. But again, as with land reform, the political picture is complicated by the revenue implications of tariff policy. The important point here is that Victoria had easily the smallest area of all the mainland colonies and, as a consequence, had much smaller amounts of crown land available for sale. As a result, Victoria had to rely to a greater extent on import duties to finance government expenditure than was the case in, say, New South Wales.

There is no doubt that Victorian tariff levels were often manipulated with revenue considerations in mind. The question of the relative weight given by Victorian governments to revenue and protectionist considerations is important because, in the case of a tariff on a locally produced good, revenue and protection were *conflicting* aims: successful protection implied reducing the volume of imports and hence, in most circumstances, reducing the amount of duty collected. This points to the fact that it is unsatisfactory, as some historians have attempted to do, to speak of 'the tariff' in Victoria. Presumably, there were at least two types of tariff (one revenue and the other protectionist), with changes in the level of each *type* of tariff being made for distinct reasons. Unravelling the details of individual tariff changes is impossible in the context of this chapter, but it needs to be done if a sensible discussion of the aims of tariff policy is to be undertaken. All that can be said here is that protection was one of the motives affecting tariffs in Victoria, without specifying whether protection was a dominant or a subordinate influence on Victorian tariff policy.

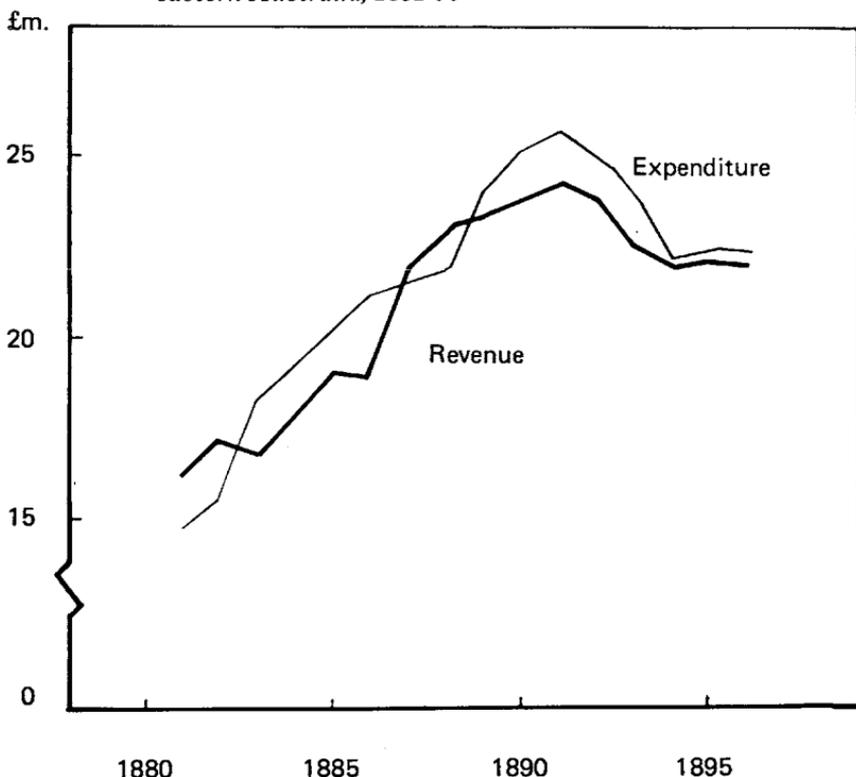
Historians have tended to concentrate on investigating the origins of tariff protection in Victoria, on the assumption that the Victorian experience needs special explanation. However, it may be just as useful to ask why New South Wales remained free trade throughout the second half of the nineteenth century. After all, outside Britain some form of protection to local industry was more common than free trade. And, even in Britain, the last decades of the nineteenth century saw an increased interest in protective policies. Further, both Queensland and South Australia had tariff structures that resembled the Victorian system more than they did the simple revenue tariff of New South Wales. It is legitimate, therefore, to ask whether the 'normal' expected behaviour of governments in regions of recent settlement like the Australian colonies was to protect domestic industry by tariffs or other means. If so, it may be the New South Wales case, rather than the Victorian, that requires special explanation.

If parts of the Victorian tariff were protectionist, was the amount of protection given sufficient to stimulate much extra manufacturing growth? The usual approach to this question has been to compare protectionist Victoria with free-trade New South Wales. Most historians have argued that manufacturing was larger, relative to the size of the economy, in Victoria than it was in New South Wales. However, the extent of this Victorian superiority in industrial development is very unclear, for the available statistical material is consistent with widely differing estimates of the relative size of the manufacturing sector in each colony. Thus, for example, *Statistical Register* figures for 1890 suggest that the share of total workforce engaged in manufacturing in factories was 12 per cent in Victoria and 11 per cent in New South Wales, whilst the 1891 censuses (which use a wider definition of manufacturing employment) imply that the workforce shares accounted for by manufacturing in the two colonies were 20 per cent and 15 per cent respectively. The existence of these measurement difficulties is not surprising, given the nature of Australian manufacturing development that was outlined in Chapter 6. Despite the severe measurement problems involved, historians have generally been willing to conclude that, in terms of *overall* manufacturing development, any margin in favour of Victoria was fairly small during the nineteenth century.

Further, it is sometimes argued that, even if Victoria did come to have more manufacturing than New South Wales, this was not necessarily the result of the operation of the Victorian tariff. Indeed, there are grounds for believing that manufacturing would have been more important in Victoria than in New South Wales, even under free trade. The relevant point here is that Victoria had a smaller resource base and less extensive land area than New South Wales, so that continued scale expansion might be expected to have produced an early tendency towards manufacturing growth. In contrast, opportunities for profitable expansion of land intensive activities might be expected to have persisted longer in New South Wales.

It is on the basis of considerations such as these (reinforced by the assumption that the protective effect of a given tariff was being eroded during the 1870s and 1880s by a combination of falling overseas prices and stable or rising local price and cost levels) that historians have argued that the tariff can have had little positive influence on Victorian manufacturing growth. However, this conclusion must be interpreted carefully. It is not enough to look at indicators of overall manufacturing development because, as Chapter 6 noted, a good deal of manufacturing activity in eastern Australia consisted of the production of non-traded goods. If attention were directed instead at the growth of import-competing manufactures, the differences between New South Wales and Victoria might turn out to have been more substantial than is suggested by the aggregate figures. A tariff as high as the Victorian presumably

**Figure 14** *Government gross revenue and expenditure, eastern Australia, 1881-96*



Source: Calculated from data for New South Wales, Queensland, South Australia and Victoria in Boehm, *Prosperity and Depression in Australia*, p. 169. Boehm's figures are for different accounting periods in the different colonies. In the graph above the original figures have been converted to refer to calendar years.

had *some* influence on the shape of the local economy and the structure of manufacturing industry, though historians have not yet made much progress in the direction of quantifying this effect in a satisfactory and convincing way.

## VI

Economic circumstances changed drastically in the 1890s, with economic expansion and a surfeit of government funds giving way to severe economic depression and budgetary difficulties. The final section of this chapter discusses briefly some of the relationships between government and the economy in the changed economic environment of the last decade of the nineteenth century.

The depression brought a sharp reduction in the amount of funds raised by the colonial governments. Revenue sources such as the tariff were much affected by the fall in domestic income and spending: as the value of imports declined, so did the amount of customs duty collected. Figure 14 shows the extent of the decline in the gross revenue of the four eastern colonies during 1891-6. Further, as was demonstrated in Fig. 13, the level of government overseas borrowing fell steeply throughout the 1890s. By the middle of the decade, annual revenue was 10 per cent below and average annual government overseas borrowing was more than 50 per cent below the levels of 1890-1. In sum, the first half of the 1890s saw the total funds available to finance general government expenditure and public capital formation shrink considerably.

If a present-day government were faced with the situation of the early 1890s—heavy unemployment, falling prices and falling revenue—it would be expected to try to stimulate the economy by raising the level of government spending. In the 1890s deficit financing of this sort was unknown. It was generally felt that, when revenue fell, government expenditure should be reduced so as to avoid a budget deficit. The colonial governments acted broadly in the spirit of this philosophy. Total government outlays fell more or less in line with the fall in revenue. Figures 13 and 14 give some idea of the extent of the decline in government expenditure and capital formation that took place in the first part of the 1890s.

These reductions in government spending undoubtedly reinforced the contraction in economic activity during the early 1890s and thus intensified the depression. This is not to say that the colonial governments were unconcerned about economic distress. Within the limits that were imposed by the need to cut total expenditure, governments often attempted direct remedies for unemployment, such as relief works or the granting of free rail passes to encourage the unemployed in depressed areas to try their luck elsewhere. They also intervened directly in matters such as the bank crisis of 1893 that was described in Chapter 7: both the Victorian and New South Wales governments passed new company legislation designed to help the financial sector overcome its difficulties. Further, government expenditure fell by less than the fall in the value of gross domestic product and government capital formation was reduced by much less than private investment during the depression. As a consequence, the government sector came to bulk larger in the economy as a whole. In the case of public capital formation, in particular, this was the beginning of a long period in which the public sector was an even more significant economic influence than it had been before 1890. However, such developments should not be allowed to obscure the point that, in the political and institutional circumstances of the 1890s, there was little scope for governments to act in an anti-cyclical fashion. Just as the high levels of government expenditure and capital formation had added to the

boom of the 1880s, so did the budgetary actions of governments play an important part in deepening the subsequent depression.

After 1890, governments gave much of their attention to wider economic and social questions than have been discussed in this chapter. The Australian colonies had long been thought 'progressive' and the 1890s brought a number of important initiatives, such as legislation to introduce old age pensions and the establishment of a system of industrial arbitration. Social intervention of this kind became a characteristic aspect of the role of government in Australia in the latter part of the nineteenth century. It is, however, peripheral to the analysis of economic development as such and so lies outside the scope of this book.

The 1890s also saw constitutional developments that culminated in the federation of the Australian colonies in 1901. Given the common social and political heritage of the colonies, and given the similarity of their economies, some form of political union had always been an obvious possibility. Indeed, a federation movement of one kind or another had existed long before the 1890s. However, it is often argued that the economic difficulties of the latter decade were an important stimulus to federation, if only because they encouraged the search for new and more effective forms of political organisation. From the point of view of economic policy, the main change involved in federation was the imposition of a common external tariff combined with free inter-state trade. Apart from this, the initial impact of federation on the distribution of government economic power was fairly limited. The colonies may have been joined together in a new nation, but Australia remained in many ways a set of independent political entities. Well into the twentieth century the state governments continued, individually and collectively, to be more powerful economic influences than the Commonwealth.

The federation of the Australian colonies may have had little short-run influence on economic affairs, but the last decade of the nineteenth century was nonetheless a fundamentally important dividing line in Australia's economic history, as this book should have made clear. The scope for rapid aggregate economic expansion through the exploitation of extensive natural resources was, for the time being, all but exhausted. The Australian economy was on the threshold of fifty years of slower growth and considerable instability. This new economic experience stood in marked contrast to the high rates of growth that had characterised the previous phases of Australian economic development.

#### NOTES:

<sup>1</sup> Various aspects of government economic activity during the convict period are treated in detail in Abbott and Nairn (eds.), *Economic Growth of Australia, 1788-1821*.

<sup>2</sup> On this, see R. B. Joyce, 'Government Policy', in Abbott and Nairn, *Economic Growth of Australia, 1788-1821*.

<sup>3</sup> *Convicts and the Colonies*, London, 1966, p. 275. Shaw's is the best recent treatment of the convict system.

<sup>4</sup> This question has received a lot of attention in the literature. A useful introduction that discusses land alienation policy specifically in relation to the pastoral industry is Abbott, *The Pastoral Age*, ch. 6. P. Burroughs, *Britain and Australia, 1831-1855*, London, 1967, deals with land policy at greater length.

<sup>5</sup> *A Letter from Sydney, the Principal Town of Australasia*, London, 1829; reprinted with some of Wakefield's other writings and an introduction by R. C. Mills, London, 1929.

<sup>6</sup> Quoted in Burroughs, *Britain and Australia, 1831-1855*, p. 160.

<sup>7</sup> The subject matter of this section is discussed more fully in N. G. Butlin, *Investment in Australian Economic Development*, ch. V. Also useful is an earlier piece by Butlin, 'Colonial Socialism in Australia, 1860-1900', in Hugh G. J. Aitken (ed.), *The State and Economic Growth*, New York, 1959.

<sup>8</sup> Land policy in the period is dealt with at length in S. H. Roberts, *History of Australia Land Settlement (1788-1920)*, Melbourne, 1924, and P. N. Lamb, 'Crown Land Policy and Government Finance in New South Wales, 1856-1900', *Australian Economic History Review*, vol. VII (1967), pp. 38-68.

<sup>9</sup> 'Colonial Socialism in Australia', p. 53.

<sup>10</sup> The question of tariffs is analysed in detail in G. D. Patterson, *The Tariff in the Australian Colonies, 1856-1900*, Melbourne, 1968, and W. A. Sinclair, 'The Tariff and Economic Growth in Pre-Federation Victoria', *Economic Record*, vol. 47 (1971), pp. 77-92.

# Index

- Agriculture: share in workforce, 7, 20-1, 106-7; under-investment in, 19, 25; growth potential, 25, 44; labour productivity, 107, 119; in convict period, 151-2; and land reform, 164-5
- Argentina, 73, 94, 106
- Assignment system, 154-5, 156, 157
- Balance of payments, 19-20, 23-6, 136-9
- Bank of Australasia, 140, 147
- Bank of New South Wales, 132, 133, 140
- Banks and banking, 5, 23, 54, 65, 169
- Baring Crisis, 73
- Birth rate, *see* Fertility
- Bourke, Governor, Sir Richard, 158
- Brazil, 94
- Britain: expenditure on convict settlements, 2-3, 4, 54; economy compared with Australia, 3, 4-5, 11, 13-14, 16, 22, 45, 82, 128, 133, 157; Australian trade with, 4, 5-6, 7, 49, 52-3, 59, 62, 63, 65, 112; capital imports from, 5-6, 18-19, 54, 58, 65, 68, 72-3, 133-4, 142-8 *passim*; immigration from, 28, 30, 32, 35, 39, 41, 45, 111; birth and death rates in, 42, 104; financial crisis in, 54, 73; government policy towards Australia, 55, 132-3, 151-9 *passim*; shipping to Australia, 75-82, 112; urbanisation in, 97, 103, 104
- Building societies, 120, 126, 127, 142, 143
- Bullock transport, 83-5, 88
- Canada, 30, 94, 106
- Canals, 82
- Capital formation, 16-20, 24-5, 26, 45, 47, 68-9, 73, 143-4; *see also* Government; Housing; Pastoral industry; Railways
- Capital imports: and economic growth, 4, 5, 12-13, 49, 54, 62, 68-9, 160; fall in, and economic depression, 5-6, 23-4, 54-5, 72-3, 139, 169; and over-investment, 18-19, 65, 69, 90, 163; and age structure of population, 47; and interest rates, 69, 126; and banking, 133-4, 142-8 *passim*
- Chile, 94
- Commissariat store, 2, 4, 49-50, 131
- Construction, 21, 22, 26, 112, 117, 119; *see also* Capital formation
- Convicts and the convict system, 1-5 *passim*, 30, 31, 39, 46, 54, 83, 150-7 *passim*
- Costs of production, 11, 54-7, 62, 90, 113, 118, 163, 167
- Death rate, *see* Mortality
- Dependency ratio, 108-10
- Depression of 1840s, 5-6, 54-5, 57, 135
- Depression of 1890s: turning point in economic growth, 13, 26-7, 170; origins, 23-5; recovery, 25-6; and demographic change, 32, 40, 43, 47; and balance of payments, 69-73, 136-7, 139; and urbanisation, 96, 100; and housing, 127-8; and gold standard, 136-7, 139; and banking, 144-8; and public sector, 169-70
- Dollar standard, 132
- Domestic market: inadequate for economic growth, 1-4 *passim*, 11, 12, 44-5, 50-1, 151, 160; for

- manufactures, 22, 25, 45, 112-18;  
as alternative to exports, 62
- Economic fluctuations, 5-6, 14, 24;  
and demographic change, 39-41, 47;  
and mineral discovery, 60-1
- Economic growth, rate of, 4, 6, 8, 13,  
16, 26-7, 170
- Economic structure: in 1850, 6-8;  
imbalance in, 15, 19, 24-5, 118; in  
1890, 20-2; and recovery from  
1890s depression, 25-6; and scale  
expansion, 44-5; and staple  
exports, 58-9; and urbanisation,  
105-7; and government policy, 164-  
8
- Economies and diseconomies of scale,  
43-5, 118
- Europe: population growth, 28;  
emigration, 28-35 *passim*, 38-40;  
wool growing, 52-3, 84; agriculture,  
84, 106
- Exchange rate, 136-9
- Exports: and economic growth, 1-13  
*passim*, 160; prices, 5-6, 23-4;  
commodity composition, 6-8, 10-11,  
21, 26; and inflation, 8-9; slow  
growth of (in 1880s), 20; export  
ratio, 20-1, 26; fall in (and 1890s  
depression), 23; and structural  
disequilibrium, 24
- Federal Bank of Australia, 147
- Federation, 170
- Fertility, 31, 34-43 *passim*
- Free trade, 165-7
- Full employment, 90, 103, 124, 128,  
163; *see also* Labour shortages
- Gipps, Governor, Sir George, 159
- Gold: effects of gold rushes, 8-12, 30,  
37, 39-40, 61-3, 84-6, 113-15, 121-4,  
126, 138-40, 159, 164, 166; exports,  
8, 11, 13, 21, 26, 61, 71-2; decline in  
gold mining, 12, 13, 20, 62-3;  
discoveries of (in 1890s), 26, 72;  
causes of 1851 discoveries, 59-61;  
mining industry, 61
- Gold standard, 133, 136-9
- Government: spending, 2-3, 4, 49-50;  
capital formation, 17-18, 68-9, 73,  
86-90; assisted immigration, 30, 41,  
54; policy, 41, 55, 110, 132;  
borrowing, 68, 72-3, 90; revenue,  
73, 89-90; employment, 90, 110
- Housing: standards, 11, 42, 45, 102-4;  
investment, 17-19, 22, 47, 69; and  
demographic change, 40, 46-8
- Immigration, 4-14 *passim*, 28-41, 45,  
46-7, 110, 156-7; assisted, 30, 41,  
54, 156-8, 160, 163-4
- Imports, 9, 19-20, 23-4, 52, 54, 58, 62,  
67, 139, 163; import ratio, 21;  
capacity to import, 24, 50, 73;  
composition, 69; competition from,  
112, 118; and tariff protection, 165-  
6
- Income: distribution of, 11, 51, 58, 61,  
103, 124
- Income: due overseas, 19-20, 23-4, 67,  
68, 73
- Inflation, 8-9, 62, 138
- Interest rate, 60, 69, 126, 134-5, 140,  
143, 148
- Investment, *see* Capital formation
- Labour shortages, 9-10, 30, 41, 54, 62,  
113-14, 121, 126, 156-7; *see also*  
Full employment
- Laissez faire*, 150
- Land companies, 142-3, 144, 146
- Land policy, 41, 55, 90, 110, 152, 155-  
9, 164-5
- Macquarie, Governor L., 131, 132, 152
- Manufacturing industry: share in  
economic activity, 7-8, 20, 21, 26;  
under-investment in, 19, 25; labour  
productivity, 21, 44-5; growth in,  
19-21; growth potential, 25; and  
urbanisation, 92, 101, 104-5; and  
government capital formation, 162-  
3; and tariff protection, 167-8
- Metropolitan areas: share in  
population, 7, 21, 99; share in  
urban population, 8, 22, 96-7, 99;

- conditions in, 42, 103-4, 128; and railways, 86; growth, 97-100; structure, 101; density of population, 102-3; factors influencing growth, 107-10
- Mining, 8, 21, 26, 59-60; *see also* Gold
- Mortality, 31, 34-5, 41-2, 104
- Mortgage finance, 135, 141, 144, 147
- New Zealand, 106
- Overseas borrowing, *see* Capital imports
- Pastoral industry: as source of economic growth, 4, 12-13, 51-2, 54, 66; growth potential, 4, 6, 44, 52, 53, 57, 59, 64-5; and depression, 6, 26, 70-2; profits, 6, 54, 55-7, 62, 64, 70-1; share in economic activity, 7, 20-1, 57-8, 62, 66; effect of gold rushes on, 10-11, 62; meat production, 11, 52-3, 62, 71-2; production costs, 11, 54, 55-7, 62; capital formation, 17-19, 63-4, 158; over-investment in, 17-19, 64-5; productivity, 17, 64; flock quality, 52-3; sheep numbers, 53, 57, 62, 71; convict labour in, 54, 154, 157; livestock sales, 55-7; influence on economic structure, 58-9, 107-9; technical change, 64, 78; finance, 65, 69, 135-6, 141-4; transport costs, 75-8, 83-4, 88; and land laws, 157-9, 164-5.
- Population: size a limitation on economic growth, 1-3, 11, 12, 18, 50; structure, 3, 4, 11, 14, 108-10, 125-6; density, 102-4, 108, 155, 158, 162
- Price level: export, 5-6, 11, 23-4, 53-4, 62-6 *passim*, 70; domestic, 9-10, 62, 90, 113, 139, 167, 169; import, 90, 113, 118, 167
- Productivity, 1, 3, 4, 11, 14-18, 44-7 *passim*, 107, 118-19
- Public sector, *see* Government
- Railways, 17-20 *passim*, 68-9, 73, 85-90, 161-3
- Regions of recent settlement, 1-4 *passim*, 28, 32, 38-44 *passim*, 49, 92, 94, 101-6 *passim*, 111
- Resources, 3, 12, 18, 28, 38-9, 43-5, 59, 157, 160, 167, 170
- River transport, 82, 85, 88, 89
- Roads, 83, 84-5
- Rum Rebellion, 152
- Savings, 47-8
- Self-government, 5, 153, 159
- Service activity, 7, 8, 21, 22
- Shipping, 76-82, 89
- Social overhead capital, 11, 17, 42, 44, 45, 119, 154, 160-2
- Speculation, 18, 65, 127, 144
- Standard of living, 1, 3, 4, 11-12, 22-3, 42, 73, 124, 128
- Staple theory of growth, 58-9, 61
- Suez Canal, 80
- Tariffs, 90, 110, 118, 165-8, 169, 170
- Technology and technical change, 44-5, 58-9, 61, 64, 75-81 *passim*, 158
- Transport, 8, 38, 41, 54, 112, 162-3
- Unemployment, 10, 23, 47, 127, 169
- United States of America: economic growth, 1-2, 11, 13-14, 49; standard of living; 11, 23; immigration to, 30, 39-41; land policy, 41, 110, 164; population density, 44, 103; water transport, 82; urbanisation, 93-7, 103, 105-7; economic structure, 106-7; banking, 133; government role in growth, 150
- Urbanisation, 7, 8, 17, 21, 22, 42, 43, 51, 58, 117-18, 124-5
- Uruguay, 94
- Wages, 9-11, 23, 62, 90, 157
- Wakefield, E. G., 156-7
- Whaling and sealing, 3, 6-7, 50-2, 58
- Wheat, 7-8, 84, 88, 165
- Wool, *see* Pastoral industry
- Workforce: share in population, 3, 4-5, 11, 14, 46-7, 108-10; quality, 3, 46; composition, 7-8, 20-2, 106-7; growth, 10, 14-15, 46-7; productivity growth, 14-16

Dr R. V. Jackson, a graduate of the University of Sydney is Senior Lecturer in Economic History at The Australian National University.

His research interests are in the area of Australian urban development, housing and population structure in the nineteenth century.



Book designed by ANU Graphic Design/Adrian Young, MSIA  
Text set in 9/11 Century Textbook and printed on 100 gsm Offset,  
by Southwood Press Pty Limited, Sydney.

The book is a comprehensive survey of nineteenth-century economic development in Australia.

Lucidly written and with extensive illustrations, the text deals with fundamental aspects of development — population, export and the balance of payments, transport, urbanisation, manufacturing, money and banking — set against a broad outline of development to 1900 and with a valuable chapter on the role of government in the economy.

Written by a practical teacher and designed for readers without formal training in economics or statistics, this book will be as valuable to general historians as it will be to students of economic history in schools or at university.

Dr R.V. Jackson, a graduate of the University of Sydney, is Senior Lecturer in Economic History at The Australian National University.

His research interests are in the area of Australian urban development, housing and population structure in the nineteenth-century.

Australian National University Press Canberra

ISBN 0 7081 0337 5