TWO DEPRESSIONS, ONE BANKING COLLAPSE

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Abstract

The depression of the 1890s in Australia was associated with the collapse of the banking system, whereas problems in the financial system during the 1930s depression were far less severe. This is despite the fact that the initial macroeconomic shock during the 1930s depression was at least as large as that during the 1890s depression. We show that variation in the performance of the financial sector during the two depressions was due to differences in the condition of the financial sector well before each depression. Differences in real external factors and government policies were not sufficient to explain variation in the performance of the financial sector.

JEL Classification Numbers: N10, N20
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1. Introduction

Over the past 150 years, Australia has experienced two macroeconomic depressions, both of which coincided with worldwide depressions.[1] The first of these was in the 1890s and the second in the 1930s. These were also times of financial distress both domestically and in the rest of the world. For Australia there were many similarities across both depressions. Indeed Sinclair (1965, p. 85) suggests: 'There is such an obvious similarity between the economic depressions which occurred in Australia in the 1890s and the 1930s that it is tempting to suggest that history was repeating itself in the latter case'.[2] However, in this paper we highlight one of the major differences between the two depressions. Namely, the 1890s involved the collapse of a significant proportion of the Australian financial system, whereas the disruption to the financial system in the 1930s was comparatively mild.

The fact that Australia did not experience a major financial crisis during the 1930s is remarkable in a number of respects. First, the initial fall in real output during the 1930s was just as large as the initial fall during the 1890s – that is, around 10 per cent during the first year of each depression. Second, the world depression was worse, and the Australian terms of trade fell further, during the 1930s than during the 1890s. Third, both the United States and, to a lesser extent, the United Kingdom experienced more severe financial crises during the 1930s than during the 1890s.[3]

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1 Before these, there was a severe depression in the 1840s.

2 Sinclair actually concludes that one major difference was the relative influence of internal and external factors in terms of the underlying causes of the depressions. He shows that internal factors were more relevant to the 1890s depression while external factors were more relevant to the 1930s depression.

3 For a description of the world depression see Kindelberger (1973; 1989) and for discussion of the problems in the US financial system see Chandler (1970).

The central argument of this paper is that variation in the performance of the financial system across the two depressions was primarily due to variation in the condition of the financial system prior to each depression. We show this by examining the behaviour of a range of indicators of financial stability over the decade prior to each depression.[4] These indicators are:

(i) the level and nature of investment;

(ii) property market speculation;

(iii) credit growth;

(iv) capital inflows;

(v) degree of risk management within the financial system; and

(vi) competitive pressures in the financial sector.

Each indicator suggests that the financial system during the 1880s was becoming increasingly vulnerable to adverse shocks. During that period there was a sustained increase in private investment associated with extraordinary levels of building activity and intense speculation in the property market. This was accompanied by rapid credit growth, fuelled in part by substantial capital inflows (much of which appears to have been channelled through financial intermediaries). At the same time, banks allowed their level of risk to increase in an attempt to maintain market share in the face of greater competition from a proliferation of new non-bank financial institutions.

In contrast, if anything there was only a moderate decline in measures of financial system stability during the 1920s compared with the 1880s experience. It is therefore not surprising that whereas the financial system essentially collapsed following the substantial shock to real output in the first year of the 1890s depression, a shock of at least the same magnitude during the first year of the 1930s depression had relatively little impact on what was clearly a more robust financial system.

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4 Shann (1927) makes one of the earliest comparisons of the stability of the financial system of the 1880s with the 1920s. This took the form of a reminder for readers in the late 1920s of the problems that had developed through the 1880s.

An alternative to our pre-conditions hypothesis is that the variation in the performance of the financial sector across the two depressions was due to variation in a range of factors external to the financial system. External factors such as shocks to world output or government policies, for example, may have caused the 1890s depression to be deeper in terms of real output, which may in turn have contributed to the 1890s financial crisis. If this were true, it would reduce the significance of the financial pre-conditions in explaining variation in the performance of the financial system. For this reason we consider the role of those factors outside the financial system which may have directly contributed to variation in the behaviour of real output across the two depressions.

The paper proceeds as follows. Section 2 begins with an overview of the timing and nature of the two depressions in terms of the real sector of the economy, and then outlines the variation in the performance of the financial system across the two depressions. Section 3 suggests that these different financial outcomes followed naturally from differences in the degree of financial stability in the years leading up to each of the two depressions. In Section 4 we consider the role of external factors which may have affected the performance of the real sector, including government policies and real shocks emanating from overseas. Section 5 summarises the main findings of the paper.

2. Two Depressions: Output and Banking

2.1 Output During the Depressions

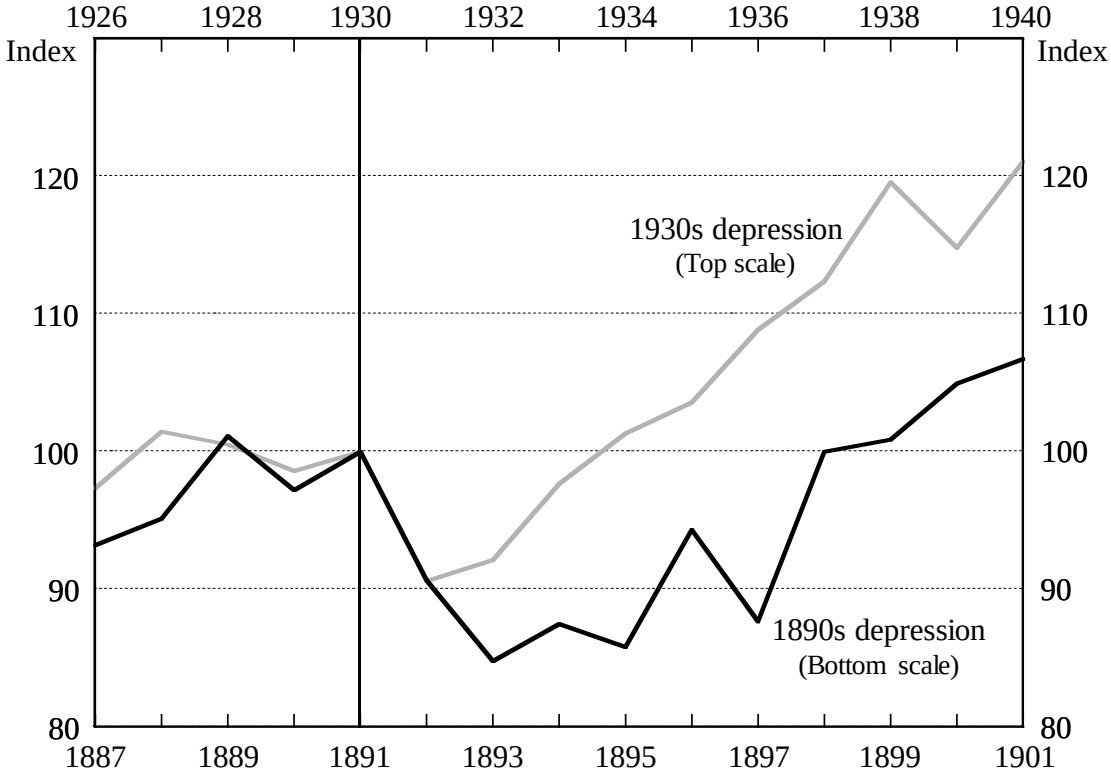
In Australia, real GDP fell by around 10 per cent in the first year of both depressions – that is, 1892 and 1931 respectively.[5] However, the depression of the 1890s was substantially deeper and more prolonged than the depression of the

[5] The data prior to Federation are likely to be less reliable than post-Federation, although there is no reason to believe that the statistics prior to 1900 are biased in any general way. On occasion we comment on crucial data issues in the main text, though a detailed description of the data and sources is left to Appendix A. A few brief comments are, however, warranted at this stage. With regards to the precise timing of the depressions, there is some debate as to whether real GDP (available annually) is the best measure to use (Valentine 1984). This and other debates in the literature often depend on the interpretation of inadequate data, or on the validity (or otherwise) of aggregating data across the colonies/states (Boehm 1971). However, these problems are not of great concern to the main arguments of this paper.

1930s (Figure 1). Real GDP fell by a further 7 per cent in 1893, coinciding with the collapse of the banking system. Growth returned in subsequent years, although it was moderate and erratic. It was not until 1899 that the level of real GDP had surpassed the previous peak set eight years earlier. In contrast, during the 1930s depression, growth resumed in 1932, and by 1934 the level of real GDP had surpassed the previous peak of 1930. Because of the relatively high rate of population growth during the 1890s,[6] the 1890s depression was even deeper than the 1930s depression in terms of real GDP per capita (Figure 2). Real GDP per capita fell by around 20 per cent over the 1890s, compared with a fall of only about 10 per cent over the 1930s.[7]

Figure 1: Real GDP Index – 1890s versus 1930s

1891 = 100 and 1930 = 100

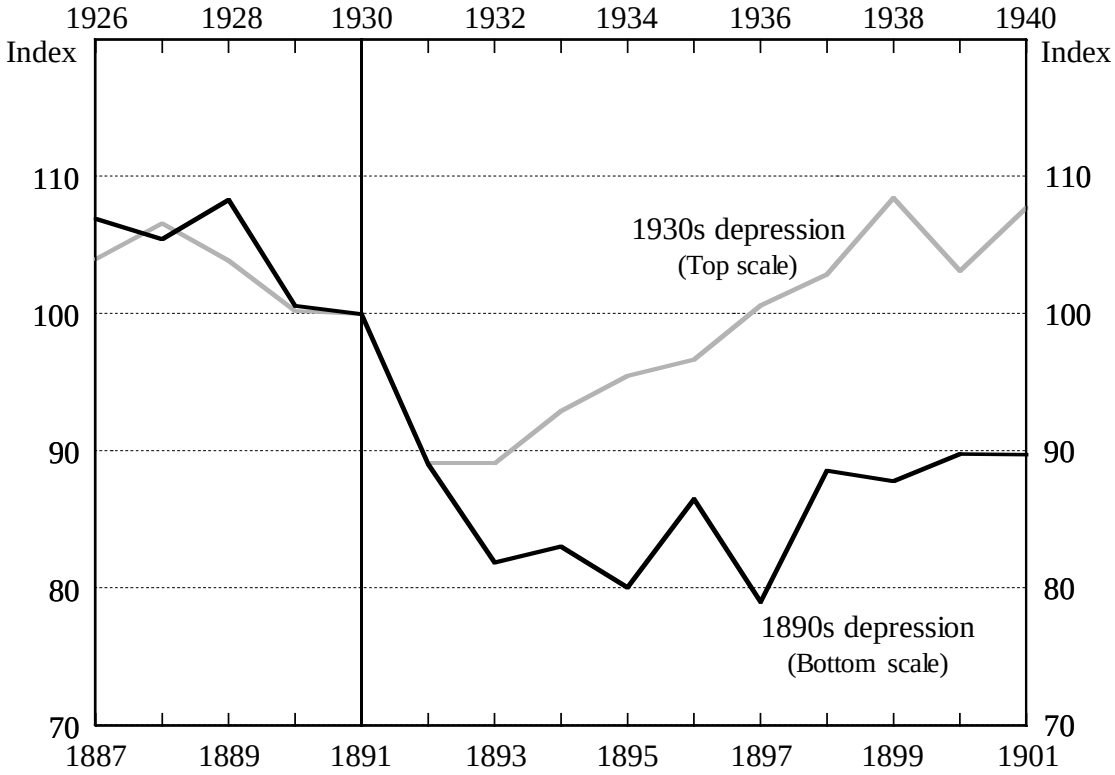


6 The population increased at an annual average rate of 1.7 per cent between 1891 and 1901 compared with an annual average rate of about 1 per cent between 1933 and 1947. These dates correspond to years in which censuses were conducted.

7 A comparison of real GDP per capita over a longer period (not shown) confirms that the greater depth of the 1890s depression did not reflect more variable economic cycles over this earlier period. If anything, real GDP per capita was more variable in the two decades to 1930 than in the two decades to 1891.

Figure 2: Real GDP per Capita

1891 = 100 and 1930 = 100

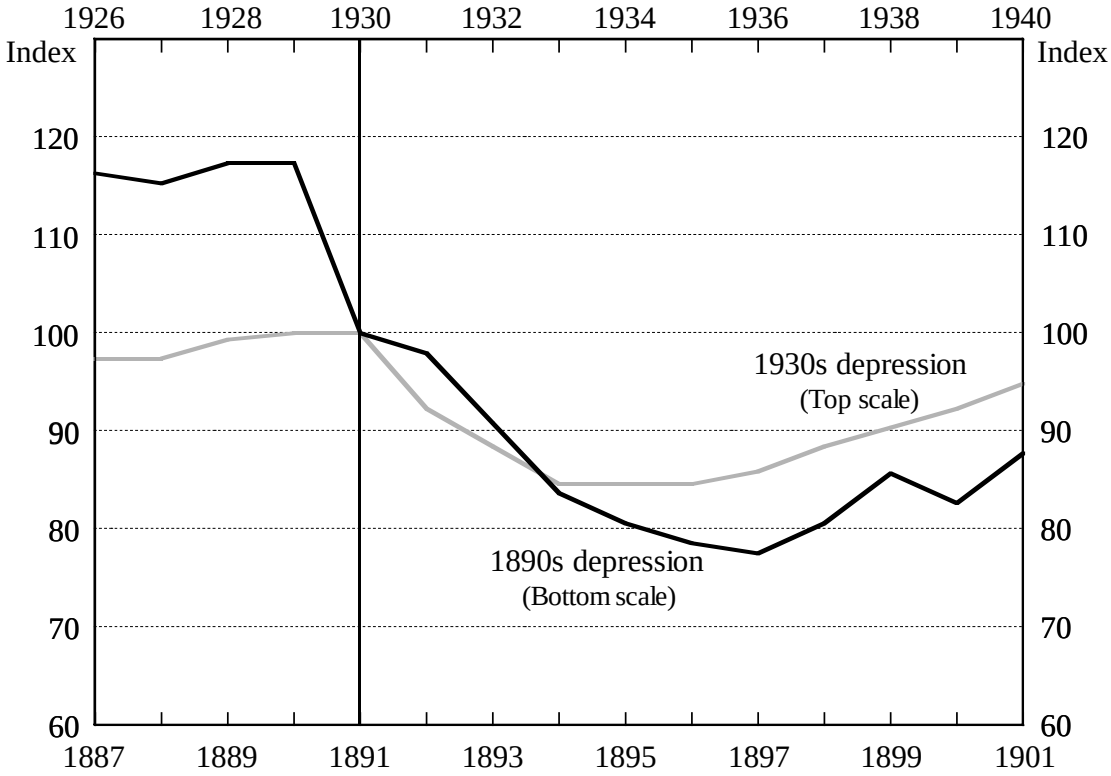


The corollary of a deeper, longer depression is more substantial and sustained deflation. Figure 3 shows that, from 1891 to 1897, retail prices fell by more than 20 per cent. By comparison, the fall in the 1930s episode was smaller at around 15 per cent, and over a shorter period – from 1930 to 1933. Figure 3 also shows that there was a large fall in retail prices from 1890 to 1891, before the downturn in output. This was due almost entirely to falls in house rents which constitute 40 per cent of this retail price index. As we mention in Section 3.2, the property market turned down in the late 1880s and was an important factor leading to the collapse of the financial system.[8]

[8] The implicit price deflator for GDP implies that deflation was actually more severe during the 1930s, although this is driven largely by the fact that export prices fell further in the 1930s. The retail price of groceries in Sydney suggests that deflation was not quite as deep in the 1890s as the 1930s, but was more prolonged; however, NSW did not appear to suffer as large a fall in output as Victoria during the 1890s.

Figure 3: Retail Price Index – 1890s versus 1930s

1891 = 100 and 1930 = 100



It seems reasonable to assert that the rise in unemployment and the fall in employment would have been worse during the 1890s than during the 1930s. However, this is difficult to establish because comparable data on unemployment in the 1890s and 1930s depressions are limited. Statistics on the employment status of trade union members indicate that unemployment peaked at almost 30 per cent in 1932; no comparable data exist for the 1890s depression. One series that is available in both periods is the unemployment rate for members of the Amalgamated Society of Engineers, Australia. This indicates that although the peak rate of unemployment was higher in the 1930s depression (almost 26 per cent in 1931 compared with 16 per cent in 1894), unemployment returned to pre-depression levels more rapidly as the economy recovered.

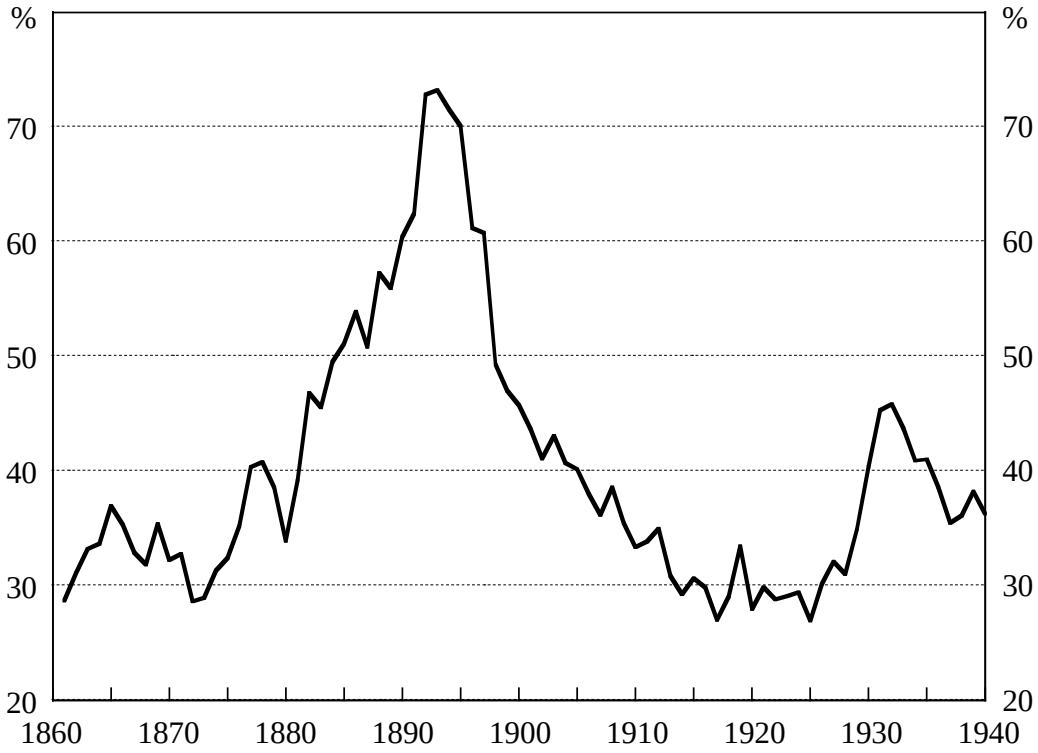
2.2 1890s Banking Collapse versus 1930s Banking Problems

The 1890s depression was characterised by a severe financial crisis, whereas the financial problems during the 1930s were relatively mild by comparison. In the 1890s, more than half of the trading banks of note issue suspended payment and a

large number of non-bank financial institutions failed.[9] This compares to the failure of only a few, mostly smaller institutions during the 1930s. Some indication of the depth of the crisis of the 1890s is provided in Figure 4 which shows the ratio of total bank credit to GDP. Over the course of the 1890s depression, bank credit to GDP fell from above 70 per cent at its peak to about 40 per cent by the turn of the century. In contrast, from a peak of about 45 per cent in the early 1930s this ratio had declined to 38 per cent by the beginning of the Second World War.

Figure 4: Bank Credit

Per cent of nominal GDP



9 The colonial banking regulations allowed trading banks to issue their own notes, which were widely used as a medium of exchange. However, to do so they became subject to legislation which among other things required them to submit regular statistical returns. In this paper we define banks to be the note issuing trading banks and the savings banks. This excludes a range of institutions that are often referred to either as banks, 'land' banks or 'fringe' banks. While these institutions were an important part of the credit cycle of the 1880s and 1890s, data are not readily available. It appears that in terms of their nature and behaviour, these institutions were most like the building societies.

Clearly, the cycle in *bank* credit during the 1880s and 1890s was greatly exaggerated. If anything, the cycle in *total* credit was likely to have been even more pronounced during the 1890s than it was for bank credit because of the behaviour of building societies, finance companies and the 'land' and other 'fringe' banks. Data on credit provided by these financial institutions are difficult to obtain. However, data on assets of financial institutions show that building societies and finance companies grew extremely rapidly through the 1880s – their share of financial system assets rose from 12 per cent in 1885 to more than 21 per cent by 1892 (Figure 5).[10] These institutions also lost market share very rapidly through the 1890s depression, especially building societies. In contrast, through the late 1920s and early 1930s, the asset shares by institution remained relatively stable. Banks lost some ground, but mainly to managed funds and funds administered by trustee companies – neither of which were a substantial source of credit.[11]

The data shown in Figure 5 do not include a number of important financial institutions, including the land finance companies and institutions that are sometimes referred to as banks because they accepted deposits and provided cheque facilities. However, it is worth noting that both of these types of institution played a key role in the 1890s episode – they tended to be newer, less conservative institutions, more willing to lend for speculative purposes, and were more likely to have failed in the financial crisis of the 1890s.

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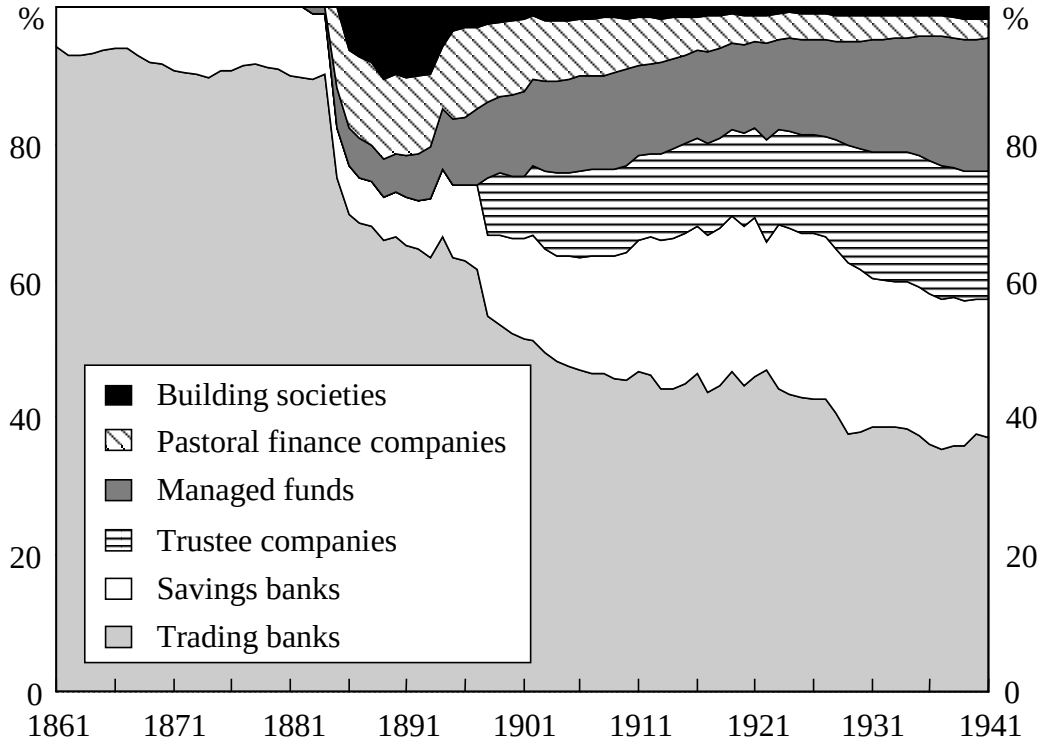
[10] We do not have data on assets held by building societies and finance companies prior to the mid 1880s. Their share of financial system assets at this time was not actually zero as is suggested in Figure 5. Nevertheless, the rapid growth of these institutions through the 1880s as implied by the data in Figure 5 is consistent with other evidence (for example, see Boehm 1971).

[11] These institutions provided some lending for mortgages, but this represented less than a quarter of their total assets (Royal Commission 1937).

Figure 5: Assets of Financial Institutions

Per cent of financial system assets



2.2.1 Trading banks

The financial system in the years prior to the banking crisis of 1893 was dominated by the private trading banks of note issue. In the early 1880s there were 26 trading banks[12] controlling around 90 per cent of the assets of the financial system (Figure 5). The growth of other financial institutions over the 1880s resulted in the market share of trading banks falling to less than 70 per cent by the early 1890s. Building societies and pastoral finance companies grew particularly quickly in tandem with the property price boom during the second half of the 1880s (Pope 1991, Merrett 1991 and Boehm 1971). By the beginning of 1893, there were 23 trading banks in operation.[13]

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[12] This does not include the Mercantile Bank of Australia which did not enter official returns until 1887, even though it was established in 1877.

[13] Boehm (1971) lists 22 Australian trading banks in operation at the beginning of 1893. We have included the Bank of New Zealand, which commenced operations in Melbourne in 1872. We did not include the Bank of South Australia because a major part of their business had been acquired by the Union Bank of Australia in 1892.

The structure of the financial system underwent considerable change over the period between the two depressions. Consolidation among the trading banks was perhaps the most significant development. There were 11 amalgamations of trading banks between 1917 and 1927, leaving 10 trading banks at the onset of the 1930s depression. Trading banks also lost market share over the intervening years, mainly at the expense of savings banks, while building societies failed to regain the share of the financial system that they had lost in the crash of the 1890s (Figure 5).

The problems experienced by the banking sector during the depressions can be illustrated in two complementary ways: by examining the movement of deposits; and by describing the numbers and details of bank failures.

Trading banks suffered a loss of deposits during both depressions, although the loss was more rapid, larger and more sustained over the 1890s compared with the 1930s (Figure 6). In the two years to 1894, trading bank deposits fell by 15 per cent and did not reach a trough until 1898, by which time they had fallen a further 5 per cent. In contrast, from 1929 to 1931 trading bank deposits fell by less than 10 per cent and recovered rapidly thereafter.[14]

The performance of the trading banks over the 1890s was even worse than suggested by the movement in aggregate deposits, since these data include deposits frozen as the result of the reconstruction of many trading banks.[15]

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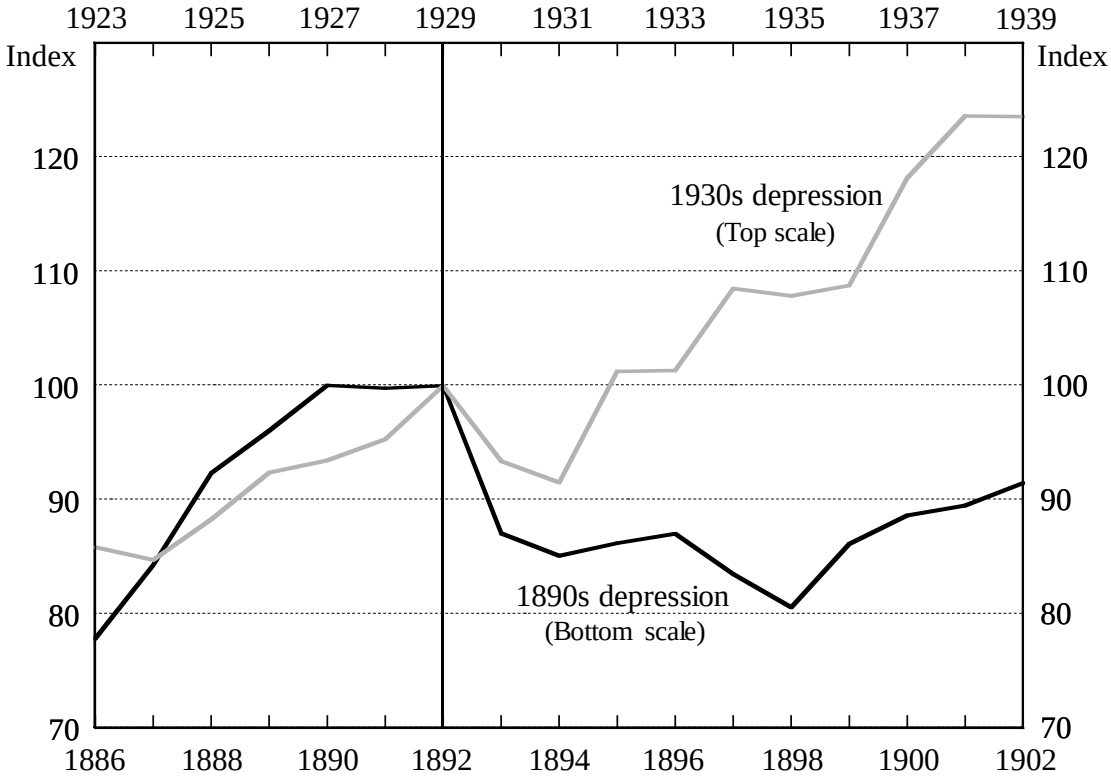
[14] Due to significant deflation, real deposits, and deposits as a share of nominal GDP, rose sharply during the early years of both depressions. However, the fall in nominal deposits weakened banks because their lending contracts were specified in nominal terms.

[15] Merrett (1993a) discusses some of the problems with the money supply data contained in Butlin, Hall and White (1971). Problems with these data arise from the treatment of deposits frozen in the suspended banks. Merrett presents a revised series showing that the fall in the money supply may have been larger than shown by the series we have used. This strengthens our finding that the fall in trading bank deposits was larger in the 1890s than the 1930s.

Figure 6: Trading Bank Nominal Deposits – 1890s and 1930s

1892 = 100 and 1929 = 100



During the financial turmoil of the late 1880s and early 1890s, the first institutions to experience problems were the land finance companies and building societies that had been established during the property boom. Pope (1991) suggests that between 1891 and 1893, 54 deposit-taking financial intermediaries closed their doors (with 60 per cent of these closing permanently). The first trading bank to fail in 1893 was the Federal Bank of Australia which went into liquidation in January, but the banking panic started in earnest with the suspension of payment by the Commercial Bank of Australia in April of that year (Merrett 1989).[16] These two banks were both exposed to the property market through loans to the land finance companies. Initially, runs on the banks of note issue focused on these two banks, and those known to be similarly exposed to the property market. Although there was a widespread loss of confidence in the banks, Merrett (1991) suggests that at least initially, customers were able to differentiate between institutions and some depositors transferred funds from the weaker banks to the older, more established banks. These included the Bank of Australasia, the Bank of New South Wales and

[16] Previously, the Bank of Van Diemen's Land went into liquidation in 1891 and the Mercantile Bank of Australia and the New Oriental Bank Corporation went into liquidation in 1892.

the Union Bank of Australia, which had tended to be more conservative in their lending practices through the boom period of the 1880s.

In total, 13 trading banks were forced to close their doors in the first five months of 1893 (Royal Commission 1937, paragraph 96). However, by early August, 12 of these banks had undergone a process of reconstruction and were able to reopen.[17]

Although the details differed between institutions, reconstruction of the suspended banks generally involved the formation of a new limited liability company with the same name, writing off capital, converting some deposits into equity and deferring the payment of the remainder of deposits. Another important factor in the reconstructions was that shareholders were required to inject large sums of additional capital into the new company (this can be seen in the sharp rise in the ratio of paid up capital to assets for the trading banks, Figure 13, Section 3.5). Over the course of the resolution of the financial crisis, the 13 trading banks that had suspended payments were forced to write off an amount in excess of the initial value of their capital in 1893. They wrote off 40 per cent (£4.4 million) of their capital in the first year of the crisis. This proved to be inadequate and from 1894 to 1909 these banks were forced to write off an additional £7.4 million worth of capital. This was more than the £5.9 million of new capital which had been issued from 1893 to 1909.

At the time of their closure, the banks that suspended payment controlled around half of the total deposits of the trading banks in Australia. In general, the reconstruction process resulted in the immediate release of very small deposits, but for the majority of depositors, receipts were issued for the value of the deposit, to be paid some time in the future. Over 85 per cent of deposits in the suspended banks were repayable in cash, and the remainder were converted to securities such as preference shares.

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[17] It has been suggested that banks may have favoured reconstruction as a way of avoiding liquidation, irrespective of the resulting costs to creditors (Pope 1987). An alternative view is presented by Merrett (1993b) who suggests that the reconstruction schemes were necessary in order to end the runs on banks and minimise potential losses to creditors. Further, the Royal Commission (1937) suggests that of those banks that suspended only the Commercial Banking Company of Sydney did so unnecessarily.

Of the deposits repayable in cash, the majority were paid back between 1893 and 1901, however, payment was not finalised in some cases until as late as 1918 (Royal Commission 1937, paragraph 224). So although most depositors ended up being paid (with interest), there were considerable indirect losses in terms of reduced liquidity by having deposits frozen, as evidenced by the fact that many customers opted to sell their deposit receipts in secondary markets for less than face value (Royal Commission 1937). Moreover, some depositors incurred direct losses due to the failure of the Federal Bank and the City of Melbourne Bank which went into liquidation in 1895. These losses totalled around £4 million (about 4 per cent of total trading bank deposits in 1891).

In contrast to the 1890s experience, only three financial institutions suspended payment in the 1930s depression, none of which were trading banks. The largest of these was the Government Savings Bank of NSW (GSB), which had been experiencing pressure on deposits throughout 1930. Sykes (1988) suggests that it was not these withdrawals *per se* but rather political influences that resulted in the run on deposits that forced the closure of the bank. In the lead up to the NSW State election in October 1930, statements by the incumbent Nationalist Government predicted financial collapse if a Labor Government was elected. This caused public alarm, which was further inflamed when the Labor party won the election and the public became aware that the government had defaulted on the payment of interest due to the GSB. On 1 April 1931, the NSW Government also defaulted on interest payments due to British holders of government bonds and this triggered a run on deposits at the GSB which led to the closure of the bank in April of that year. In early May, the bank was temporarily reopened (with the backing of the Commonwealth Bank) in order to release deposits for individuals with 'necessitous circumstances'. However, it was not until December 1931 that the bank was merged with the Commonwealth Bank.[18]

The other two institutions to suspend payment were the Primary Producers' Bank of Australia and the Federal Deposit Bank Limited. Although the 1937 Royal Commission suggests that the Primary Producers' Bank was not in a hopeless position, it had lost almost 40 per cent of its deposits in 18 months and was liquidated. At the date of suspension, deposits equalled £1.2 million, less than half

[18] This followed protracted negotiations which began in May between the Commonwealth Bank and the NSW Government regarding the conditions under which the merger would take place.

of 1 per cent of total bank deposits in 1931. After the sale of debts of the bank, creditors were repaid 98.75 per cent of their funds, but shareholders received nothing (paid up capital just prior to suspension had been valued at almost £½ million).

The Federal Deposit Bank was, in effect, more like a building society than a bank. After it was forced to suspend payment, it was taken over by the Brisbane Permanent Building and Banking Company Limited and arrangements were made to pay depositors in full. Shareholders were paid in shares of the new company (Sykes 1988).

In addition to the above closures, there were a number of mergers following depositor withdrawals and liquidity problems. The Australian Bank of Commerce merged with the Bank of NSW in 1931 after profits of the former had fallen by over 50 per cent from their level in 1930.[19] The other merger was that of the State Savings Bank of Western Australia with the Commonwealth Savings Bank in 1932, due to the illiquid position of the former and the fallout from the suspension of the GSB.

The only other significant run was on deposits at the Commonwealth Bank itself after it took over the business of the GSB. This run was stopped by statements by the Chairman of the Commonwealth Bank that dispelled fears that the Bank was in financial difficulties (Royal Commission 1937). However, more generally, the Commonwealth Bank did not contribute to the more stable position of the financial system leading into the 1930s depression, either in terms of monetary policy, or in terms of playing a regulatory role in the banking system (Schedvin 1992; Commonwealth Bank of Australia 1936).

2.2.2 Savings banks

By 1871 there was at least one savings bank operating in each of the colonies (Butlin 1986). Savings banks were either government owned and run through post offices, or run by government-nominated trustees and commissioners. Compared

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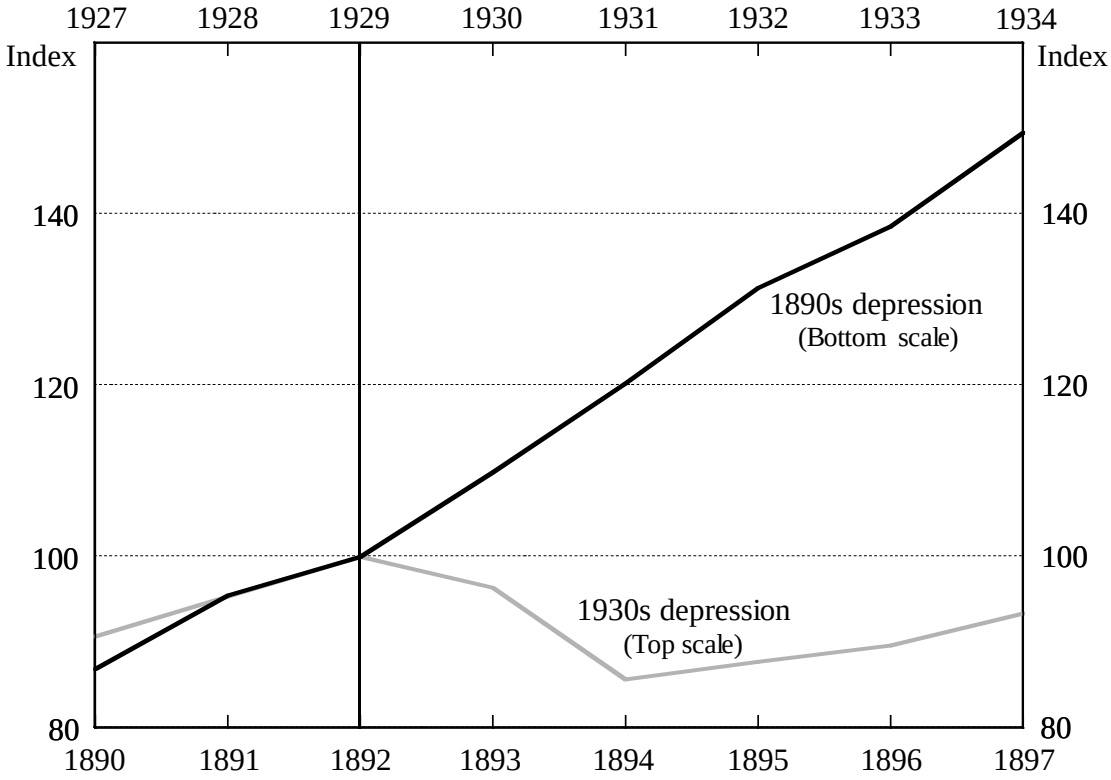
[19] The Royal Commission (1937, paragraph 281) concludes from statements by the Chairman of the Australian Bank of Commerce that '...the bank would have experienced some difficulty in continuing to carry on its business without assistance'.

with trading banks, savings banks controlled a small, though increasing, share of total financial system assets.[20] Despite their size, the performance of the savings banks provides an interesting comparison with trading banks. Whereas trading banks suffered a sharp fall in deposits in the 1890s, some failed and even more closed their doors for a short time, savings bank deposits rose steadily through the 1890s, albeit from a small base (Figure 7). This difference between the two types of institutions through the 1890s may have reflected a perception that savings banks were safe havens, given their tendency to invest heavily in government securities and their implicit colonial government guarantees.[21] Over the 1880s, savings banks invested 26 per cent of their assets in government securities, compared with 1.3 per cent for trading banks.

Figure 7: Savings Bank Nominal Deposits – 1890s and 1930s

1892 = 100 and 1929 = 100



[20] Their share increased from 7 per cent on average over the five years to 1891 to 24 per cent on average over the five years to 1930.

[21] Indeed, the Victorian Government promised to guarantee deposits in the Commissioner's Savings Bank if it agreed to merge with the Post Office Savings Bank of Victoria (Murray and White 1992).

Even though the increase in savings bank deposits through the 1890s was not large in absolute terms, it highlights an important point – namely, that the runs on financial institutions were not driven purely by self-fulfilling expectations that all financial institutions would fail. Rather, runs were specific to those institutions which were unable to demonstrate their soundness in the face of increasing fragility across much of the financial system.

One of the significant structural changes between the two depressions was the gain in market share of the savings banks – by the late 1920s, savings bank deposits accounted for about 40 per cent of total bank deposits. From 1929 to 1931, savings bank deposits fell by 14 per cent (or £32 million), compared with a fall of 8 per cent (or £27 million) for trading bank deposits over the same period (compare Figure 6 with Figure 7). However, a significant part of the fall in savings bank deposits was accounted for by the GSB, which lost £14.5 million of deposits from June 1930 to April 1931; although, it seems that some of these deposits were placed into the Commonwealth Savings Bank (Royal Commission 1937, paragraph 351).

Apart from concerns regarding the GSB, the fall in savings bank deposits may have reflected the tendency of people to draw upon their savings during difficult times (Royal Commission 1937, paragraph 351). Because savings banks were in a relatively sound condition, these withdrawals did not seem to raise concerns regarding the viability of these institutions.[22] In this way, the increased proportion of deposits held in savings banks appears to have been one of the factors that enhanced the stability of the financial system in the 1930s and limited the extent of runs on deposits.

In summary, although there were runs on banks during the 1930s, they were largely confined to smaller institutions. The major trading banks survived the 1930s relatively unscathed and there were no losses to depositors in the trading banks. This was not the case in the 1890s when there were direct losses to depositors due to the failure of the Federal Bank of Australia and the City of Melbourne Bank and indirect losses due to the freezing of deposits while banks

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[22] One indication of the relative soundness of savings banks is the fact that their holdings of government securities averaged about 50 per cent of total assets over the 1920s, compared with an average of about 15 per cent for trading banks.

were restructured. Also, a large number of non-bank financial institutions failed in the 1880s and 1890s. We have not considered the magnitude of these losses here, but they were significant and should not be overlooked in any comparison of the two episodes.[23] Again this contrasted with the experience of the 1930s, during which there were only small direct losses to depositors due to the failure of the Primary Producers' Bank, in addition to indirect losses arising from the suspension of payment by the GSB.

3. A Comparison of Indicators of Financial System Stability

The central thesis of this paper is that the variation in the performance of the financial system across the 1890s and 1930s stems mainly from differences in the condition of the financial systems that were evident *well before* the economic downturn in each episode. This is demonstrated by comparing six broad indicators of financial system stability across the decade or so prior to each depression.

We refer to financial instability in terms of the *ex ante* probability of a financial system disturbance of sufficient size that it implies noticeable macroeconomic effects (Kent and Debelle 1999).[24] In this paper we focus on indicators that relate mostly to the degree of credit risk in the financial system, although we also discuss the related issue of liquidity risk. The indicators we focus on include:

(i) the level and nature of investment;

(ii) property market speculation;

(iii) credit growth;

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[23] An indication of the magnitude of these losses is provided by the fact that deposits in Victorian building societies fell by about 50 per cent (£2.7 million) from 1890 to 1892, and the number of registered building societies in Victoria fell from 70 to 56 over the same period (Boehm 1971). In 1891 and 1892, almost £3 million of Australian deposits were at risk following the suspension of the Melbourne 'land' banks (Boehm 1971); although details of the eventual losses are not readily available.

[24] For a recent discussion of the issues related to defining system stability see Crockett (1997). Bernanke and Gertler (1990) present a model of the relationship between financial fragility and performance in the investment sector and the economy overall. They define financial stability as depending on the net worth of potential borrowers. Mishkin (1997) describes financial instability as occurring when information flows are disrupted to such an extent that the financial system cannot efficiently channel funds to productive investment projects.

(iv) capital inflows;

(v) degree of risk management within the financial system; and

(vi) competitive pressures in the financial sector.

These indicators are of course closely related, and it is not clear that there exists an obvious ranking of their importance for system stability.[25] Arguably the level of credit and the speed at which credit is expanding are the key factors behind many episodes of financial instability. Even so, we choose investment as a starting point for the discussion since it relates to many other indicators and points to the source of the initial positive shock that triggered the expansion and subsequent instability.

3.1 Investment – Public and Private

Total national investment grew strongly leading up to both depressions, and then fell dramatically at the outset of each depression. As a share of GDP, investment was not that much higher through the 1880s compared with the 1920s – averaging around 18 per cent in both decades. However, investment had remained relatively high over a longer period leading up to the 1890s.[26] It had been above 15 per cent of GDP for 17 consecutive years to 1891, whereas it had been above this level over only 10 consecutive years to 1929. Moreover, what distinguished the 1880s from the 1920s was the composition of investment, in terms of both the split between public and private investment, and the nature of this investment (Figure 8). These compositional differences had implications for the relative stability of the financial system over these episodes.

Private investment as a share of GDP was sustained at a higher level, and over a longer period, prior to the 1890s depression than it was prior to the 1930s

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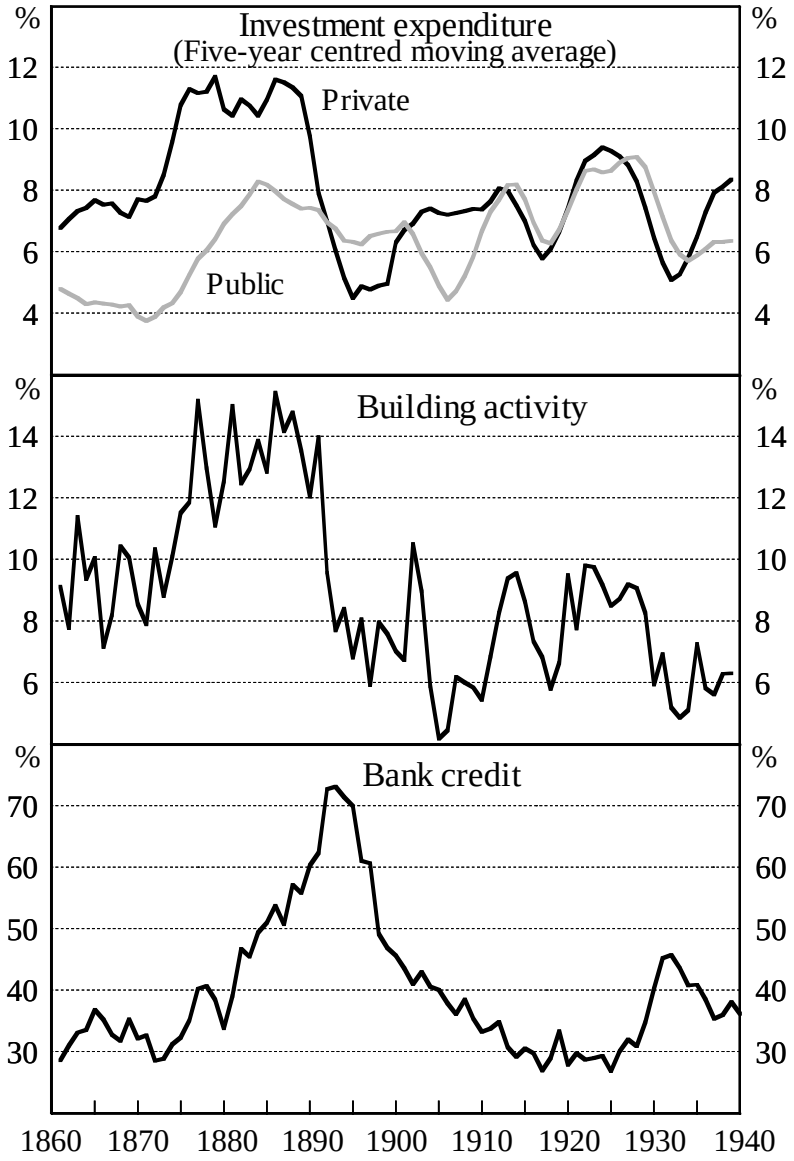
[25] There are potentially many other indicators of financial instability. For example, a credit financed consumption boom, an overvalued real exchange rate, a rapid increase in interest rates (particularly in foreign financial markets which are the source of capital flows) or inappropriate fiscal and monetary policies, to name a few. We discuss some of these later in the paper.

[26] The level of investment in the late nineteenth and early twentieth centuries was quite low as a share of GDP compared with the post-Second World War average of around 25 per cent (Edey and Britten-Jones 1990). However, it is hard to make comparisons across these eras due to disparities in the level of development and the comparability of data.

depression. Although highly volatile, private investment averaged about 11 per cent of GDP from 1875 to 1891, compared with an average of just under 9 per cent from 1920 to 1930. Investment reached a seven-year high of about 13 per cent of GDP in 1888, coinciding with the peak of the property price boom (see below). Through both depressions investment fell rapidly, though the fall in the 1890s was larger and lasted longer than was the case during the 1930s.

Figure 8: Investment, Building Activity and Bank Credit

Per cent of GDP



Public investment spending also grew strongly leading up to both depressions, but was lower on average during the 1880s than during the 1920s – 7 per cent compared with about 9 per cent of GDP.

These differences between the two episodes affected financial stability in a number of ways. The financial system will become less stable if a substantial proportion of lending by financial institutions is used to fund increasingly riskier investment projects. This was more likely during the 1880s than the 1920s because aggregate investment had been sustained at a high level for longer, and private investment was a much larger share of aggregate investment. It is plausible that relatively high levels of investment, if sustained over a very long period of time, will lead to increasingly riskier projects being undertaken, especially when investment is concentrated in only a few sectors of the economy (as it was during the 1880s). Also, a higher share of private investment implies more exposure for financial institutions to the risks inherent in these projects. This follows from the fact that private investment was (and still is) more reliant on financial intermediation than government investment. Furthermore, a greater share of public investment should directly reduce the volatility of aggregate demand since governments are generally better placed to fund investment projects even during downturns.[27]

Figure 8 clearly shows that compared with public investment, private investment fell earlier and further, and stayed lower for longer during both depressions. Also, the cycle in private investment was strongly correlated with the cycle in bank credit during the 1880s and 1890s. However, this relationship was not nearly as strong over the 1920s and 1930s.

The investment boom of the 1870s and 1880s was driven by a number of factors. Extremely high rates of population growth during the 1870s and 1880s helped to drive rapid real GDP growth – output was expanding rapidly through the application of imported capital and labour to the development of many previously unexploited resources and investment opportunities. However, productivity growth was not especially strong. That is, output per capita grew consistently, though not that rapidly – from 1861 to 1891, GDP per capita grew on average

[27] However, governments were less able/willing to raise taxes during the 1890s depression and had relied on funds from London to fund investment over the 1880s (see below).

about 1 per cent per annum, compared with an average of almost 3 per cent per annum in the 30 years following the Second World War. A very high demand for housing was driven by population growth and bolstered by wealth accumulated in the agricultural sector and in the gold fields flowing back into the major cities. Underlying these developments in the private sector, governments were increasing spending on infrastructure such as railways and communications.

Therefore, it is not surprising that investment in the 1870s and 1880s was dominated by construction activity. The strength of construction over this period cannot be overemphasised since it represented the biggest building boom in Australia's history (Figure 8). Much of it was concentrated in urban centres, especially Melbourne which was undergoing rapid expansion and was the focal point for speculation in the property market which eventually spread to other colonies (Boehm 1971). From 1875 to 1891, building activity as a share of GDP averaged around 14 per cent, compared with an average of only 9 per cent from 1920 to 1930.[28] It would not be an overstatement to claim that this level of activity over the 17 years to 1891 represented the most extravagant of building booms.

Even though population growth provided a fundamental reason for the construction boom of the 1870s and 1880s, building activity remained high even after the rate of population growth slowed markedly towards the end of the 1880s.[29] This by itself was a source of instability.

Population growth in the 1920s was considerably slower than during the 1870s and 1880s. Hence, the pressure on the property market was nowhere near as great – construction activity did increase, though a greater proportion of this was public. During the 1920s, public construction accounted for slightly more than half of building activity (Butlin 1962). In contrast, private activity accounted for on average 60 per cent of the construction during the boom years of the 1870s and 1880s.

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[28] During the building booms of the early 1970s and late 1980s the share of construction in GDP was less than 9 per cent and 8 per cent respectively.

[29] However, there was considerable variation across the colonies in terms of the timing of the building cycles and changes in rates of population growth (Boehm 1971).

In summary, one of the major differences between the two depression episodes was the unprecedented building boom prior to the 1890s depression. A large proportion of this activity was undertaken by the private sector. The dramatic boom and bust in private investment, building activity and bank credit were all closely related over the 1880s and 1890s. Cycles in these indicators were comparatively muted through the 1920s and 1930s.

3.2 Speculation in the Property Market

During both episodes, rising asset prices, especially for property, went hand in hand with increasing investment and building activity. Downturns in asset prices, investment and building activity were just as closely related.[30] Melbourne was the centre of a boom in property prices that reached a peak in 1888 (Boehm 1971). Boehm highlights a number of factors driving this boom, including strong population growth, particularly among the working age population and urbanisation.[31] The land boom was supported by the large number of building societies that opened (Figure 5) and the view that one couldn't lose money by investing in land (Cannon 1966). Legislation covering building societies was changed in 1876 to allow them to buy and sell land themselves. This resulted in building societies becoming little more than 'speculative operations' which added to the inflationary pressure on land and property values. Although an accurate time series of property price data is unavailable, Silberberg (1975) presents data suggesting that the average net nominal annual rate of return on land in Melbourne was about 35 per cent from 1880 to 1892. No comparable studies are available for the 1920s. Cannon (1966) cites anecdotal evidence such as a city block in Melbourne almost doubling in value in a couple of months in late 1887, while Daly (1982) estimates that the average price of land in Sydney increased by over 80 per cent from 1880 to 1884. Land prices also increased rapidly in the first half of the 1920s, but Daly suggests prices remained relatively stable leading into the depression.

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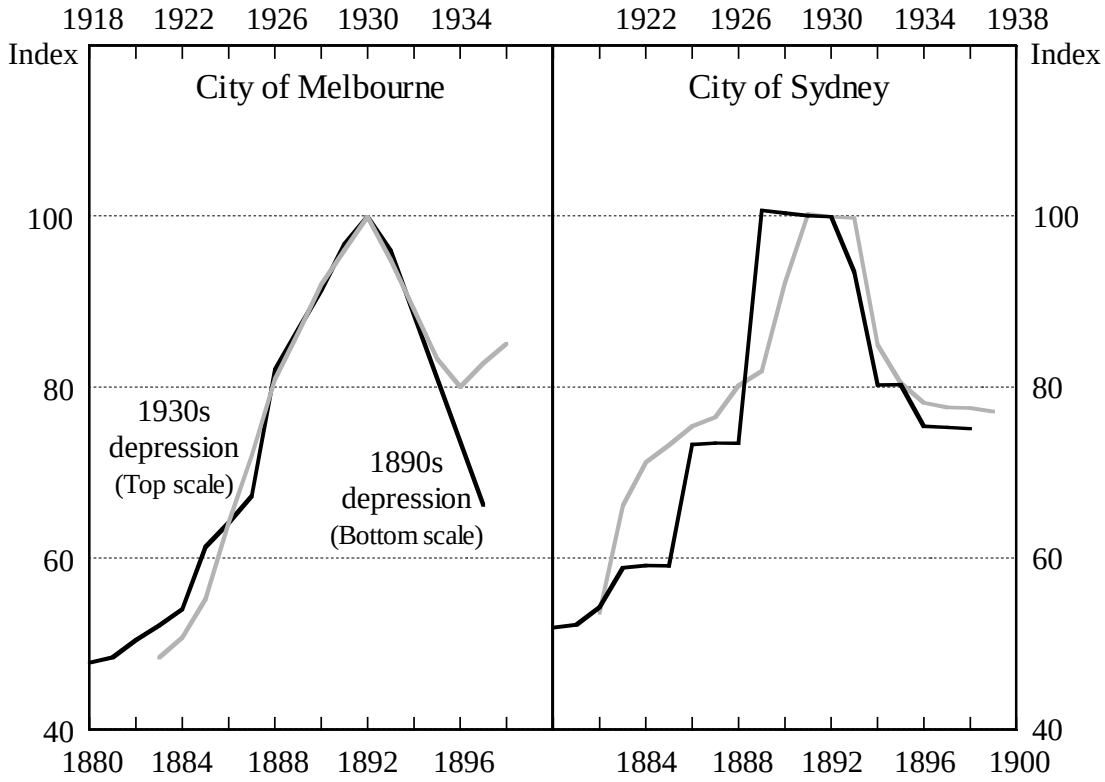
[30] Kiyotaki and Moore (1997) present a theoretical model based on such a relationship. For a description of the relationship between property prices, credit and output in Australia during the property booms of the 1970s and 1980s see Kent and Lowe (1997).

[31] Victoria's population increased by 278 000 (or 32 per cent) from 1881 to 1891. By absorbing about 75 per cent of this increase, Melbourne's population grew by over 70 per cent.

In order to provide a rough approximation to movements in property prices we attempted to exploit data on the aggregate capital value of ratable properties in Melbourne and Sydney. Movements in this measure reflect changes in prices, as well as changes in the volume and quality of properties – both of which we would expect to be on an upward trend or at least not likely to decline rapidly. Figure 9 compares aggregate capital values over the two depression episodes for the cities of Melbourne and Sydney.[32] Figure 9 suggests that price rises over both boom periods and in both cities were of similar orders of magnitude.[33] However, this finding is at odds with contemporary and historical accounts of the two cycles.

Figure 9: Capital Value of Property

1892 = 100, 1930 = 100



[32] Given that the regions defined by the cities of Melbourne and Sydney were relatively small and already well developed (even by the early 1880s), it is reasonable to assume that increases in volumes would have been limited. Other things being equal, ongoing quality improvements imply that rising capital values of property will overstate true price rises.

[33] However, the fall in capital values in Melbourne during the 1890s downturn was particularly large, suggesting *ex post* that the initial rise was especially unsustainable.

One reason why these data might not fully reflect price rises is that capital values were determined for the purposes of tax assessments by the valuation departments of city councils. Councils generally adopted a conservative approach by attempting to value property according to the underlying or 'real' value of property as opposed to the current market value of property. If this process was done methodically and consistently for both episodes then the capital values should provide a reasonable indication of the relative size of the cycles in property prices over the two episodes. However, the Sydney Morning Herald (1930) suggests that, at least for Sydney, the practice of more conservative council evaluations had been ignored during the boom leading up to the 1930s and that valuations were influenced by a '…number of spectacular sales of city properties'. Thus, while capital values of the 1880s may have underestimated actual price rises, this bias seems to have been less prevalent in the 1920s.

Despite the paucity of data, anecdotal evidence and contemporary accounts suggest that speculation in property markets was much more acute during the 1880s than the 1920s. This conclusion is supported by a comparison of building activity across these two decades. The combination of extraordinary high levels of construction and substantial speculation in property markets were important factors behind increasing vulnerability of the financial system through the 1880s. This effect was reinforced by the cycle in credit.

3.3 Credit

Historically one of the major causes of financial instability has been rapid increases in bank lending in conjunction with unsustainable rises in asset prices. In recent times the catalyst for this process has been financial deregulation. In a way, this force was also present in the 1880s. The Australian banking system in the 1800s had operated under direction of the British Treasury in accordance to the 'real bills doctrine', which among other things prohibited lending backed by land.[34] However, Pope (1991) suggests that after the arrival of 'responsible government' in the 1850s, these regulations were largely ignored and banks

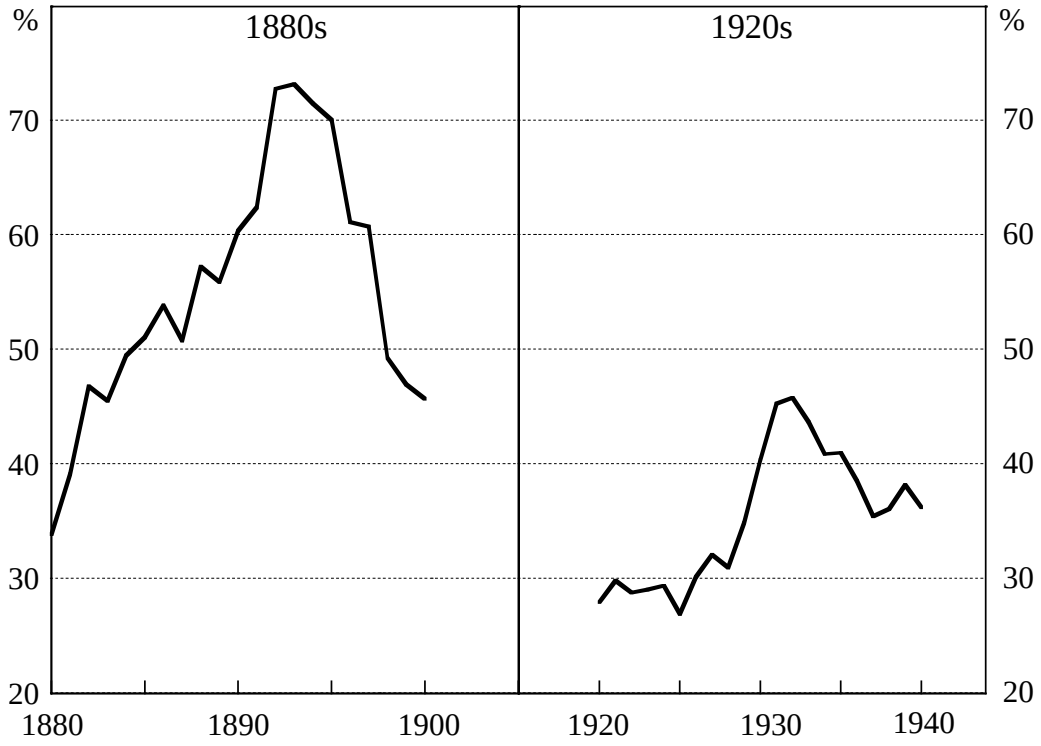
[34] Prior to the 1850s, the British Treasury had laid down regulations for colonial banks governing aspects of banking such as debt-to-capital ratios, loans to directors and frequency of statistical returns. For Australia, perhaps the most significant regulation was that which prevented property being taken as security against advances (Butlin 1986; Pope 1991).

increasingly engaged in lending for speculative purposes. Increasing willingness to ignore the real bills doctrine was at least in part a response to increasing competition from non-bank financial institutions (Section 3.6).

The result of these changes was a dramatic increase in the ratio of bank credit to GDP (Figure 10). This rise was sizeable compared with the experience of the 1920s. Although data on the direction of lending is not readily available over the earlier episode,[35] contemporary accounts suggest that a large proportion of lending in the 1880s was directed to property speculation and development. This is consistent with the very high level of building activity (Figure 8), and the fact that the cycle in building activity coincided with cycles in credit and property prices.

Figure 10: Bank Credit – 1880s and 1920s

Per cent of nominal GDP

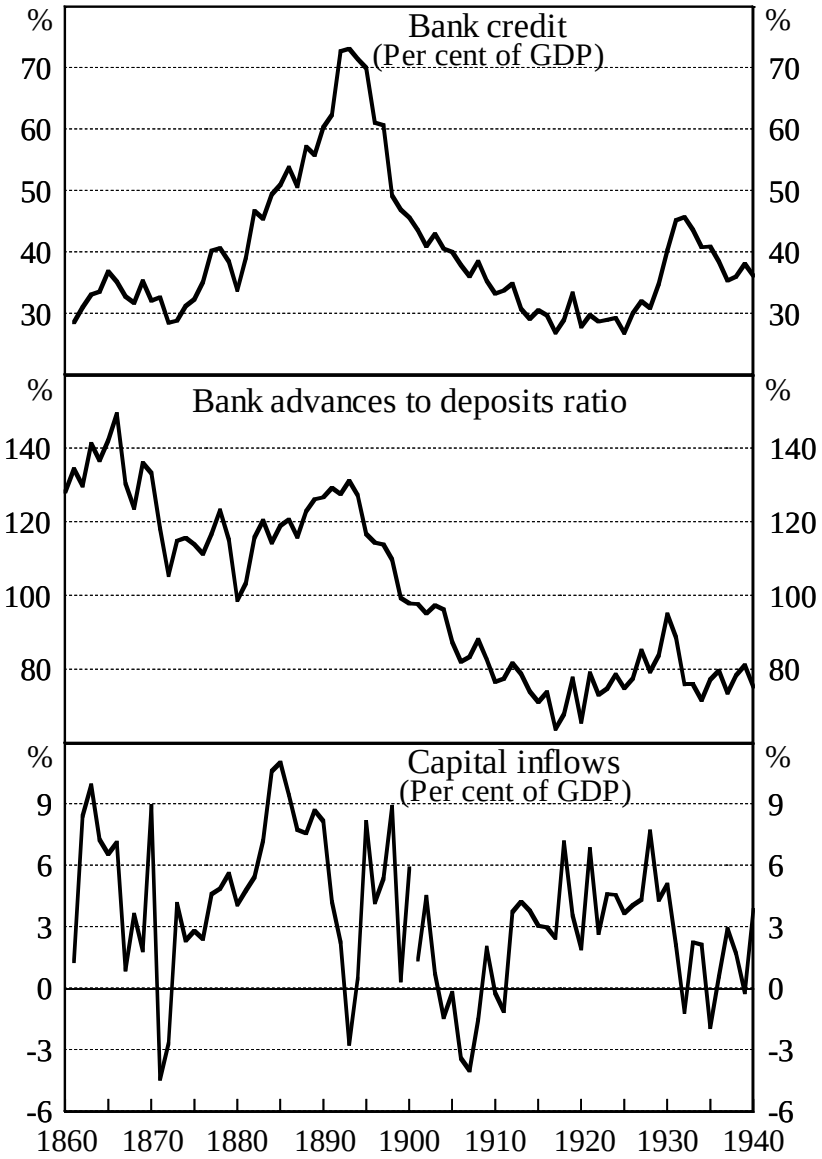


[35] Data for selected years and (five) selected trading banks are available around the 1930s depression (Butlin, Hall and White 1971). Advances allocated specifically for building purposes among these banks represented around 4 per cent of their total advances in 1927 and 1935 (although, this fell to 3.6 per cent in 1930).

3.4 Banks' Balance Sheets and Foreign Borrowing

The rapid expansion of banks' balance sheets contributed to the instability of the banking system leading up to the crash in 1893. The rise in credit over the 1880s was so dramatic that banks were unable to fund their lending through increases in domestic deposits. Bank advances as a share of deposits rose over the 1880s, reversing an earlier downward trend (Figure 11). Banks were able to make

Figure 11: Ratio of Trading Bank Advances to Deposits



Note: Data on capital flows before and after 1901 are not directly comparable; hence, there is a break in this series between 1900 and 1901 (details are contained in Appendix A).

advances in excess of their Australian deposits by seeking deposits in Britain, leaving the banking system exposed to external developments. This is consistent with the substantial increase in capital inflows over this period. Capital inflow was above 6 per cent of GDP for eight consecutive years during the 1880s; it breached this level in only two years during the 1920s.[36]

Through the 1920s, trading banks expanded their lending, but at a rate more in line with increases in Australian deposits. The greater conservatism of the banking sector, particularly with regard to credit policy, was an important factor in providing a more stable financial system leading into the 1930s depression.

The proportion of private sector borrowing to total borrowing was higher in the 1880s than the 1920s (Schedvin 1970).[37] This may have insulated the financial system from overseas developments in the 1930s relative to the 1890s for two reasons. First, the public sector is generally perceived to represent a lower credit risk than the private sector.[38] Second, when funds are channelled through the banking system, in addition to the risk of default by the final user of the credit, there is also the risk of default by the intermediary. From 1886 to 1891, Australian bank liabilities to British residents averaged 45 per cent of liabilities within Australia. This ratio averaged only 15 per cent from 1920 to 1927 (Butlin, Hall and White 1971).

The cessation of capital flows in both episodes was due in part to financial turmoil in the US and UK. The majority of overseas borrowing during the 1880s was done in London. The Barings crisis in 1890 led to a reduction in the availability of British credit. Barings was a London discount house which faced liquidity difficulties in mid 1890 due to its exposures in South America. The default on these loans brought attention to all overseas securities and Australian governments found it difficult to raise new loans in Britain (Boehm 1971). Because

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[36] Capital flows in Figure 11 prior to 1900 are based on indirect estimates from Butlin (1962). While a range of other estimates of capital flows are available (for example, direct estimates from Butlin 1962 and indirect estimates from Boehm 1971) they display broadly similar movements, especially over the 1880s and early 1890s.

[37] This is also consistent with the pattern of investment and building activity.

[38] However, the default on debt by the NSW State Government during the 1930s depression may have shaken this belief.

governments encountered difficulties raising new loans, the Australian private sector also found it more difficult to borrow money in Britain.

Schedvin (1970) suggests that some loans were obtained from New York during the 1920s, but the majority of borrowing was still done in London. The London market was disrupted in the late 1920s by speculative activity in Europe and large outflows associated with the stock market boom in New York. London was virtually cut off as a source of funds for Australian long-term borrowing in early 1929 (Royal Commission 1937, paragraph 114).

In summary, the build up in credit during the 1880s was more substantial than in the 1920s and it was also more reliant on large capital inflows, much of this in the form of private borrowing. This increased the instability of the financial system by increasing its vulnerability to foreign financial shocks.

3.5 Risk Management – Prudence and Diversification

The degree of prudence of the banking system declined over the 1880s. Trading banks were increasing their risk – as measured, for example, by the ratio of lending to deposits – at the same time as reducing liquidity. One measure of liquidity is the ratio of trading bank cash balances to deposits within Australia (Figure 12). Cash balances consisted of coin, bullion and Australian notes.

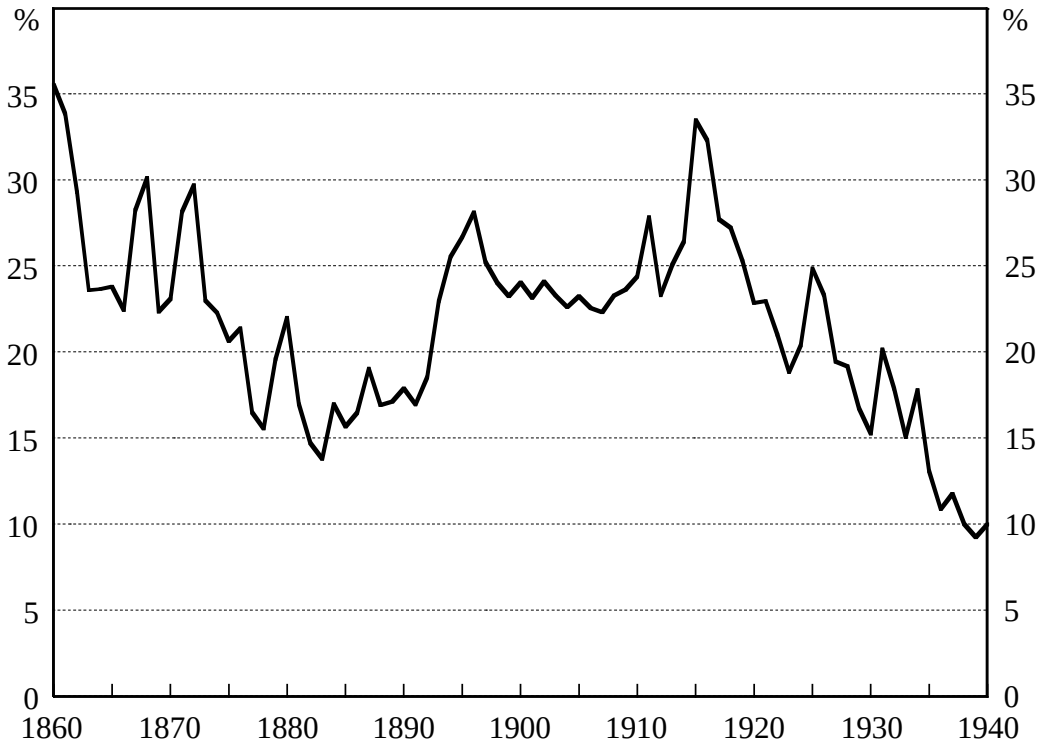
This measure of liquidity actually behaved similarly in the periods prior to each depression. The trading banks' cash-to-deposits ratio fell from the relatively high levels of the 1870s to a trough of 13.8 per cent in 1883, before picking up and stabilising until the onset of the depression. Despite a sharp fall in deposits in 1893, trading banks were able to increase their cash balances and hence, liquidity rose sharply.[39] They were able to do this by reducing advances to such an extent as to more than offset the fall in deposits and by raising new capital. The cash-to-deposits ratio fell over the 1920s. In 1929 the ratio was around 17 per cent – a similar level to the years immediately prior to the 1890s episode. Indeed,

[39] While cash balances in the trading banks increased from 1892 to 1893, they fell by about 6 per cent from March to June 1893 (based on seasonally adjusted quarterly averages). From March to June 1893 the ratio of cash balances to deposits remained at about 19 per cent.

Schedvin (1970) suggests that the banking system experienced a severe liquidity crisis towards the end of 1929.

Figure 12: Trading Bank Liquid Assets

Per cent of Australian deposits



Note: Liquid assets are defined as coin, bullion and Australian notes.

When comparing the ability of the banking system to withstand large shocks, it is also useful to examine a broader measure of the soundness of the system. When trading banks' holdings of government and municipal securities are added to cash balances, the ratio to deposits averaged around 40 per cent over the second half of the 1920s – double the average ratio over the second half of the 1880s. This enabled the banking system to better withstand the macroeconomic downturn and subsequent increases in loan defaults.

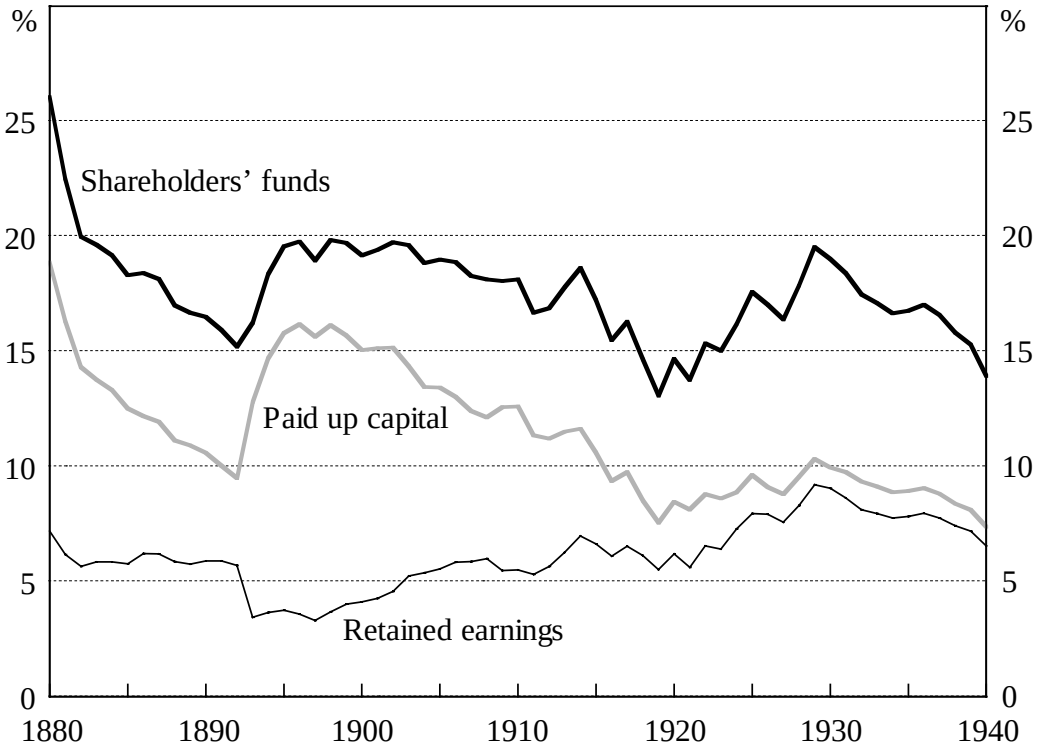
Declining levels of prudence over the 1880s are also reflected in a decline in the ratio of paid up capital to assets, while retained earnings as a proportion of assets remained flat (Figure 13). This was due to a rapid increase in assets as well as relatively high dividend rates, averaging 8.3 per cent of shareholders' funds over the 1880s.

In contrast, through the 1920s trading banks increased paid up capital and retained earnings at a faster rate than total assets, reflecting the greater conservatism in the banking system. The ratio of shareholders' funds to assets was increased to nearly 20 per cent in 1929, from 13 per cent ten years earlier. During the 1930s, the trading banks were able to draw on these funds.

With lower capitalisation of the banks during the early 1890s relative to the late 1920s and early 1930s there was a greater probability of a given internal or external shock leading to bank insolvency. Hence, variation in bank capitalisation was an important explanator of variation in financial system stability.

Figure 13: Trading Banks – Capital and Retained Earnings

Per cent of assets

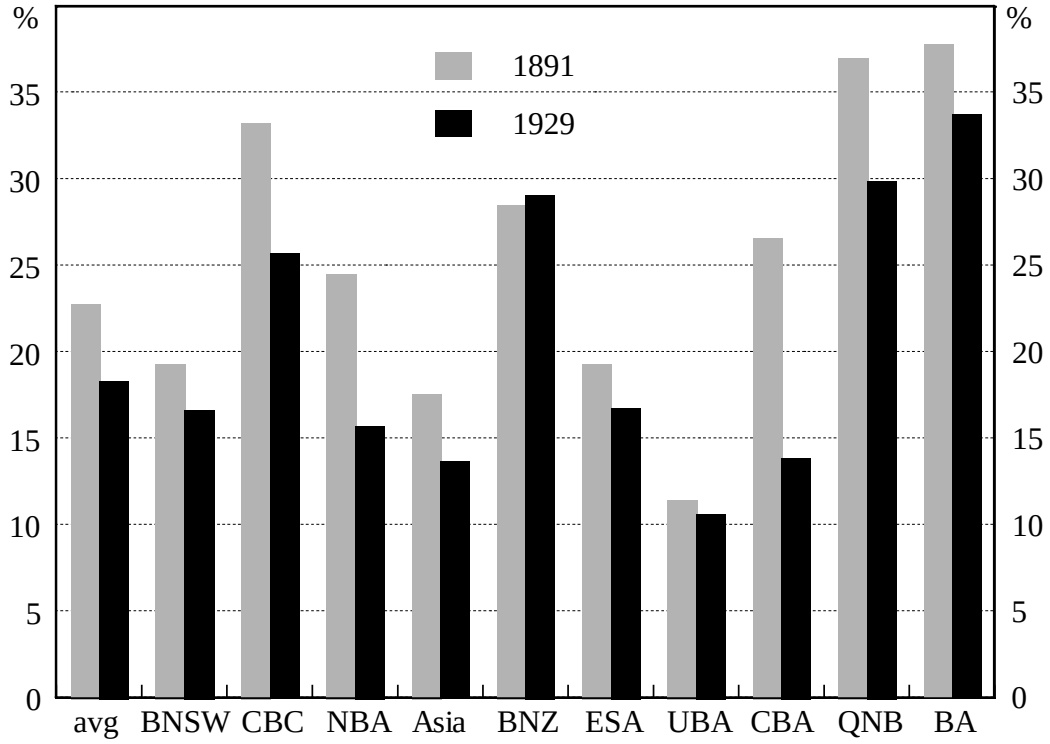


Increased geographical diversification of lending within a given bank tends to increase the stability of the financial system by reducing banks' exposures to specific regions or industries. Of the 23 trading banks operating at the start of the 1890s depression, only ten were in existence at the start of the 1930s depression. Each of these ten banks increased the share of assets held outside their home state between the two depressions (see Appendix B for details). In fact, banks were tending to spread their lending more evenly across all of the six Australian States

and New Zealand. This is demonstrated by examining each bank's distribution of the share of their advances across these seven regions. Figure 14 shows that from 1891 to 1929 there was an almost universal reduction in the variance of these distributions.[40]

Figure 14: Standard Deviation of the Share of Trading Bank Advances by Region

Banks are ranked in descending order by asset size from left to right



Note: The average is calculated by weighting together distributions of individual banks according to each bank's share of total advances.

Another important factor affecting risk is the extent of management control over lending practices. It would appear that this control was increasingly lax over the 1880s. In part, this was due to the rapid expansion of branch networks. Butlin, S.J. (1977; 1986) shows that the number of trading bank branches rose

[40] For simplicity we have chosen to focus only on the geographical dispersion of lending. We did not attempt to systematically account for differences in the size of the economies of the seven regions. However, a casual examination of Table B1 (Appendix B) suggests that for most banks in the sample, the shares of lending across regions was more closely correlated with the economic size of regions in 1929 than it was in 1891.

from about 800 in the late 1870s to a peak of 1 534 in 1892.[41] Through the depression, trading bank branch numbers fell to 1 235 by 1896, and grew thereafter, although at a more moderate pace than before.

Rapid expansion of branch numbers can become a problem for an individual bank if there is a loss of internal control. This view is emphasised by Merrett (1989) who further suggests that the demand for competent bankers exceeded supply as branch networks expanded. Some evidence of over expansion of branches is provided by comparing the behaviour of those banks that suspended payment in 1893 with those that did not, in terms of the rate of branch expansion over the 1880s. The average bank that suspended payment in 1893 had added 53 branches to its network from 1880 to 1891 compared with only 21 branches for the average bank that did not suspend payment in 1893.[42] These figures represent average growth rates of about 150 per cent and 90 per cent respectively for the suspending and non-suspending banks. Interestingly, the banks that suspended payment in 1893 were also larger in 1880 than the average non-failing bank – 52 branches compared with 32 branches respectively.

In contrast, it seems that the pressure on banks to expand their branch networks had eased following consolidation of the trading banks after the First World War, and the lack of competition from non-bank financial institutions. Trading bank branches grew on average by about 43 per cent between 1921 and 1930.

An additional factor in increasing the instability of the banking sector in the 1880s was the widening mismatch of the maturity profiles of assets and liabilities (Merrett 1989). Banks began to make a greater proportion of loans on a longer-term basis, while the majority of liabilities remained as shorter-term

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41 Certainly, compared with Britain, Australians were grossly oversupplied with bank branches even during the early 1880s (Pope 1987). In England and Wales in 1880 for every bank branch there were about 12 000 persons. The comparable number for Scotland was 4 000 persons, and for Australia, only 2 500 persons. By 1891 this had fallen to around 2 000 persons. The geographical dispersion of economic activity may have justified branch numbers in Australia being relatively higher than in the United Kingdom. However, much of the Australian population was contained in urban centres, even during the mid to late nineteenth century (Boehm 1971).

42 There is a fair degree of variation around these averages within the two banking groups, but the conclusions are robust to the exclusion of the outlying observations.

deposits. The result was a decline in the liquidity of banks' balance sheets, at a time when loan repayments began to decline.

3.6 Competitive Pressures

During the 1880s, banks faced increasing competitive pressure from the emergence of a large number of non-bank financial institutions. This led to banks increasing their level of risk in order to maintain returns, and was one of the important catalysts for the excessive expansion of their balance sheets.

One of the primary aims of these newer institutions was the provision of finance for property speculation. Banks which had been competing on a non-price basis through avenues such as increasing branch numbers were now forced to compete for market share with the new institutions. To achieve this, banks lowered their credit standards and became involved in speculative activities, including loans to the new land finance companies (Boehm 1971).

By contrast, leading up to the 1930s depression, although the trading banks had lost market share, it was mainly to the more conservative savings banks. Building societies and other non-bank financial institutions failed to regain the market share they had lost in the late 1880s and early 1890s (Figure 5).

Also, within the set of trading banks there had been considerable consolidation between the two depressions. Between 1917 and 1927 there were 11 amalgamations between the trading banks, leaving 10 at the onset of the 1930s depression. There was one further amalgamation in 1931. This move towards consolidation may have lessened competition in the banking sector at the same time as providing a vehicle for banks to diversify geographically.

Almost all of the indicators we have examined imply a dramatic increase in the vulnerability of the financial system through the 1880s and early 1890s to adverse macroeconomic shocks. Private investment was relatively high, reflecting an extraordinary building boom which helped to ignite, and was then extended by, speculation in the property market. Simultaneously, there was a massive build up in the level of intermediated finance, supported by large private capital inflows. Increasing risk in the financial system came hand-in-hand with reductions in the capital ratios of banks. Banks' greater appetite for risk was driven by competitive

pressures arising from a rash of new non-bank financial institutions. Non-banks and (many, though not all) trading banks became all too willing to lend for speculative purposes using a seemingly inexhaustible supply of funds from overseas.

While many of these pressures were present during the 1920s, they were smaller in magnitude. Private investment was lower, as was building activity. It appears that speculation in property markets was less vigorous. A rise in credit came late in the decade and was relatively minor, as were capital inflows. At the same time there were a number of positive developments for financial stability. Capital ratios of banks increased strongly over the 1920s and banks were more diversified geographically than they had been during the 1880s. Finally, a notable absence of competition from non-bank financial institutions and earlier consolidation among the trading banks helped to foster more prudent lending by banks.

Determining the cause of the greater conservatism in the banking industry during the 1920s compared with the 1880s is beyond the scope of this paper.[43] Instead, we make three brief observations. First, amalgamation within the set of trading banks and the earlier failure of 'fringe' bank and non-bank financial institutions helped to produce a less competitive environment. Second, the greater conservatism in the 1920s may have been due in part to the memory of the disaster of the 1890s.[44] Third, the conservatism of the banking system through the 1920s appears to owe nothing to the role of the Commonwealth Bank. The Commonwealth Bank played no active part in setting prudential standards (Schedvin 1992). Indeed, the Commonwealth Bank did not regard itself to be a central bank in any effective sense until as late as 1929 (Commonwealth Bank of Australia 1936).

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[43] See discussion in Schedvin (1970).

[44] Butlin and Boyce (1985) suggest that during the early 1930s, first-hand experience of the 1890s depression focused bankers' attention on the need for sound financial management. There is some evidence in the 1920s and early 1930s of references regarding the experience of the 1890s – for example, see *The Australasian Insurance and Banking Record* (AIBR) (1930), Vol. LIV, No. 9, p. 777. Also, a history of the Commercial Banking Company of Sydney shows that some very senior staff of the 1880s and 1890s still held senior positions through the 1920s and early 1930s (Commercial Banking Company of Sydney 1934). In fact, George Judah Cohen was a director of the bank from 1885 to 1933, and held the position of chairman in 1892 and then again from 1900 to 1933.

4. Real Macroeconomic Features of the Two Depressions

So far we have shown that the financial system prior to the 1890s depression showed clear signs of increasing instability, whereas prior to the 1930s depression the financial system displayed evidence of relative stability. In this section of the paper we examine whether variation in the financial pre-conditions was the primary reason for the difference in the performance of the real and financial sectors during the two depressions. To this end we consider the role that factors outside the financial system may have played. We examine a number of external and internal exogenous real factors before examining the importance of government policies. We conclude that those differences that did exist in terms of the performance of the real economy were either not significant enough, or were even working in the wrong direction, to explain the financial crisis.

4.1 Exogenous External Factors

Although there is some debate in the literature about the relative importance of internal and external factors in causing both the 1890s and 1930s depressions, there is little doubt that the external sector played a significant role in both.[45]

The United Kingdom and the United States both experienced depressions in the 1890s and 1930s, although the 1930s depression was more severe in both countries. Real GDP fell in the UK by around 3 per cent from 1891 to 1893. Real GNP in the US fell by around 5 per cent in 1893 and by a further 3 per cent in 1894.[46] By comparison, in the US, real GDP fell for four consecutive years, from

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[45] See Sinclair (1965) and Valentine (1985) for a discussion of this debate.

[46] In the UK, real GDP growth had been stagnant since the early 1870s (Pollard and Crossley 1968) and Britain's major influence on the Australian economy was through the cessation of capital flows following the Barings crisis in 1890. Although the depression in the US was worse than the UK during the 1890s, trade flows between the US and Australia were still relatively small. There is no real consensus regarding the cause of the US depression in the 1890s. However, Friedman and Schwartz (1963) suggest that in the early 1890s there was a loss of confidence in the ability of the US government to maintain the gold standard. This caused expectations of a devaluation of the US dollar, which in turn caused funds to flow out of the US (this may have been exacerbated by the Barings crisis, which caused a general loss of confidence on behalf of British investors). The downturn was also fuelled by a crisis in the financial sector – the US stock market crashed in mid 1893 and a month or so later there was a widespread loss of confidence in the banks, leading to some suspensions and some failures. For a recent discussion of these events see Rockoff (1998).

1930 to 1933, with a fall of 15 per cent in the worst year of 1932. The 1930s depression was less severe in the UK than the US, with output declining by 5 per cent from 1929 to 1931.

Relative falls in Australia's terms of trade across the two depressions reflect the greater severity of the world depression of the 1930s compared with the 1890s. The terms of trade fell gradually over most of the 1880s and early 1890s (Figure 15). Over the 11 years to 1894, the terms of trade fell by over 25 per cent. The falls in the terms of trade leading up to, and during the early years of, the 1930s depression were more dramatic. Between 1925 and 1932, the terms of trade fell by nearly 50 per cent; the fall in 1932 alone was a substantial 25 per cent (Jonson and Stevens 1983).

It is not surprising that the larger fall in the terms of trade during the late 1920s and early 1930s was associated with a more marked decline in nominal exports than was the case over the 1890s (Figure 15).[47] This confirms Sinclair's (1965) observation that the influence of the external sector occurred mainly through capital flows in the 1890s depression.

In real terms, exports increased through both depressions – with similar and moderate increases over the five years following output peaks in 1891 and 1930 (Figure 15). It is true that real exports rose more rapidly in the first three years of the 1930s depression compared with the 1890s depression, although it is difficult to know how much of this difference can be explained by the devaluation of the exchange rate in the 1930s (Section 4.2.3). Firstly, the better performance did not last beyond three years, suggesting that special factors in the export sector may have been relevant. Secondly, the financial crisis of the 1890s may have made it difficult for producers and exporters to obtain working capital and trade finance.

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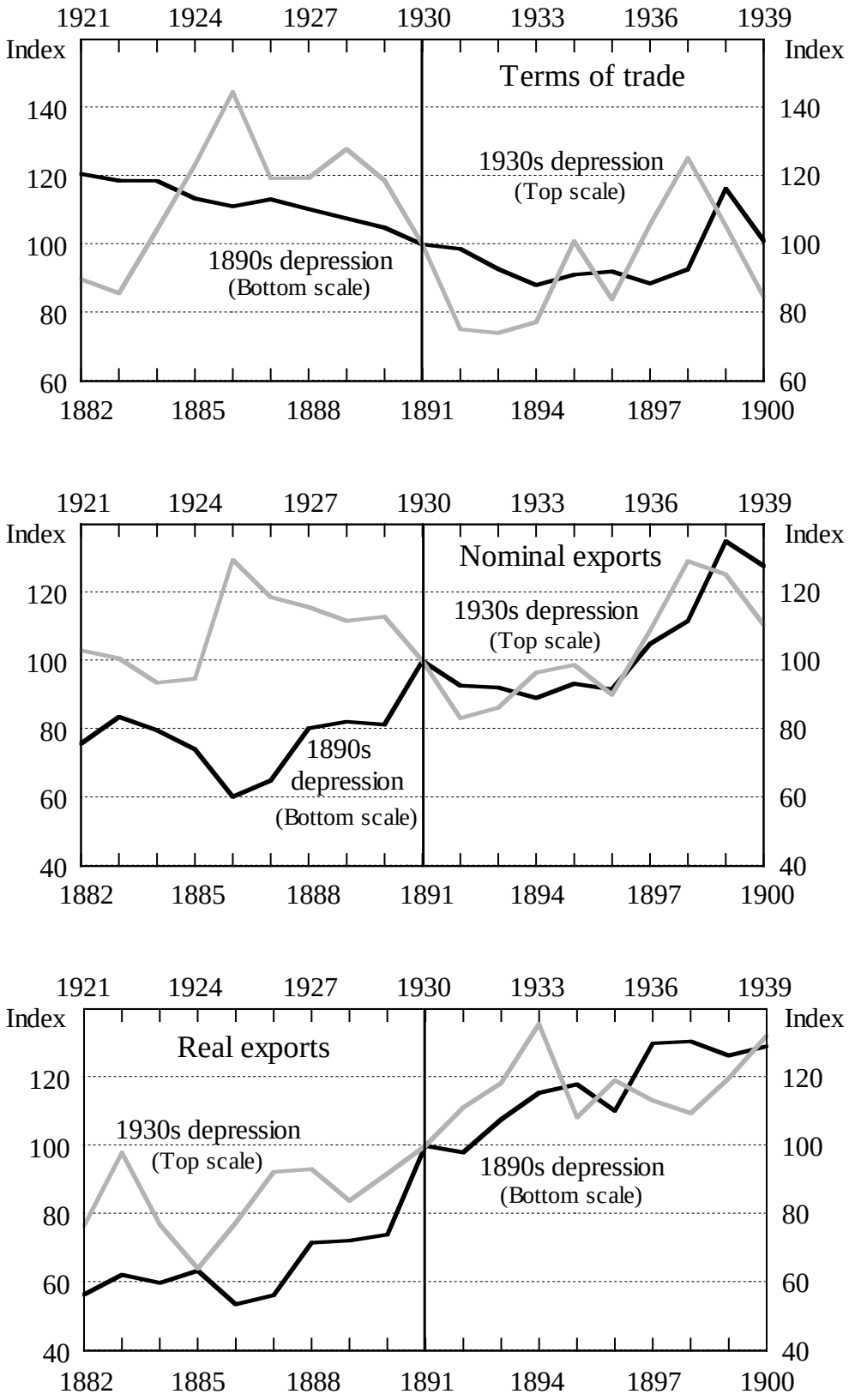
[47] The degree of openness of the Australian economy was broadly similar over the two episodes. Therefore, a given-sized decline in the terms of trade should have had a similar impact. The sum of exports and imports, expressed as a percentage of GDP, suggests a trend decline in the degree of openness from the 1870s to the 1930s; although the average over the 1880s was similar to that over the 1920s – 35 per cent versus 34 per cent. Commonwealth tariffs imposed after Federation, and increased following the First World War, suggest that the economy had become more closed. For a history of protectionism in Australia see Anderson and Garnaut (1987), and Pope and Manger (1984).

Figure 15: Terms of Trade and Exports

1891=100 and 1930=100



In summary, the decline in world output was more substantial during the 1930s depression. Accordingly, the decline in the terms of trade was more pronounced for the 1930s episode than it was for the 1890s. Movements in nominal exports partially reflected these terms of trade declines. The rise in real exports was broadly comparable over the full course of both depression episodes. Therefore, it seems clear that the more substantial decline in real output during the 1890s depression cannot be explained by the size and impact of external real shocks. We now turn to the question of internal factors in the real sector.

4.2 Exogenous Internal Factors

4.2.1 Population

An underlying feature of Australia's economic development in the second half of the nineteenth century was the rapid growth of the population and workforce. The population increased at an average annual rate of 3.1 per cent from 1871 to 1881, and 3.4 per cent from 1881 to 1891 – rates well above all other countries of the Western world (Butlin 1958), and higher than Australia has experienced for any extended period since that time. This rapid population growth was a significant factor behind the high and sustained real GDP growth from 1871 to 1891.[48] In fact, the fall in real GDP during the 1890s depression coincided with a slowdown in the rate of population growth to 1.7 per cent per annum on average over this decade. Population growth also slowed from the 1920s into the 1930s, although this was much less marked than during the 1890s depression.[49]

Rapid population growth through the 1870s and 1880s was undoubtedly a factor behind the high level of building activity over this period. Hence, population growth contributed indirectly to increasing financial system instability prior to the 1890s depression. There is a relatively close positive relationship between annual population growth and residential investment across the three major colonies of NSW, Victoria and Queensland (Boehm 1971 and Butlin 1962). Population

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[48] Population growth depends on factors which are both endogenous and exogenous to the Australian economy. Clearly population growth will impact on real GDP growth, just as economic prospects will influence prospective immigrants. Similarly, prospective immigrants will be influenced by exogenous conditions in their home countries.

[49] Population growth averaged 1.7 per cent per annum from the census dates of 1921 to 1933, and then fell to an average of 1 per cent per annum between 1933 and 1947.

growth peaked in the first half of the 1880s in both NSW and Queensland, as did new residential capital formation. Population growth was increasing over the 1880s in Victoria, and peaked quite dramatically in 1888. This was also a peak year for new residential construction, and property prices in Victoria.

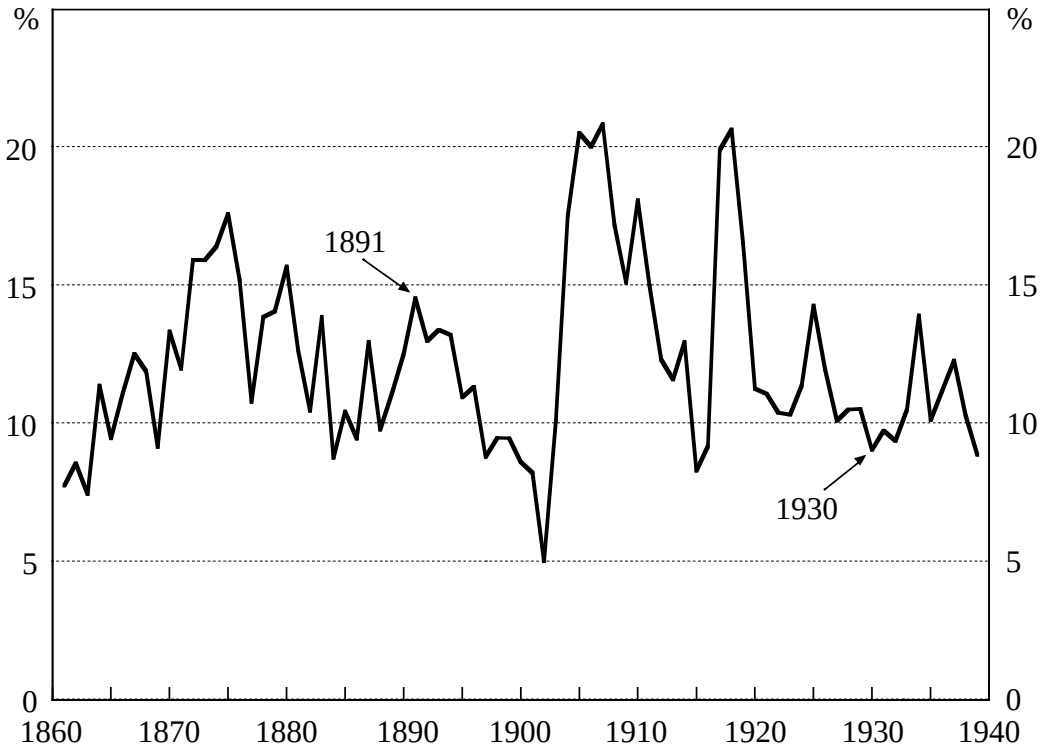
In the early 1890s, population growth rates turned down rapidly having peaked in the first half of the 1880s. This reflected continued falls in the growth rates in NSW and a rapid downturn in the growth rate in Victoria. Despite the trend decline in aggregate population growth rates, aggregate building activity (as a share of GDP) remained at a high level throughout the 1880s and into 1891. In this way, population growth had an important role in initiating the building boom, although it was not responsible for sustaining the boom for so many years (except perhaps in Victoria). Finally, population growth was not an entirely exogenous factor. During the early years of the 1890s depression, some of the fall in population growth should probably be attributed to an endogenous response by prospective immigrants to the rapid decline in living standards.

4.2.2 Weather conditions

Australia's reliance on pastoral industries for export income means that growth is influenced by climatic conditions. Other than 1888, seasons had generally been good leading up to the 1890s depression. However, Australia was hit by a severe drought between 1895 and 1903 (Boehm 1971), which led to a sharp fall in pastoral output as a share of GDP over this period (Figure 16). This may have been an additional factor in the relatively slow recovery from depression in the 1890s compared with the 1930s. However, the fall in the ratio of pastoral output to GDP in the three years following the 1891 peak in output was relatively minor. In other words, the drought cannot explain the relatively large fall in real GDP prior to 1895, and therefore, it cannot explain the collapse of the financial system in 1893.

Figure 16: Nominal Pastoral Output

Per cent of nominal GDP



4.2.3 The gold standard

Prior to 1931, Australia's exchange rate was determined by the gold standard, except for the period between 1914 and 1925 (Schedvin 1970). Under the gold standard, the exchange rate moved within a narrow range that was determined by the gold points. Gold points were the level of the exchange rate at which it became more profitable to import or export gold instead of buying or selling bills of exchange at bank rates. During the period leading up to the 1890s depression, the exchange rate generally moved within 1 per cent either side of par with sterling (Butlin, Hall and White 1971). The major departure from parity was a large depreciation of the buying rate in May 1893, as the surviving banks imported gold to help replenish their reserves after the banking crash.

After being suspended during the First World War, the gold standard was reinstated in Australia in 1925. As the external position worsened during 1929, the exchange rate came under pressure. However, the private trading banks, and the Commonwealth Bank, attempted to resist devaluation and tried to maintain parity with sterling throughout 1930 – in part out of the fear of creating inflation

(Butlin and Boyce 1985). It was the Bank of New South Wales which eventually placed pressure on the other trading banks to devalue. The exchange rate was devalued in late 1930, and by the end of January 1931, £100 sterling bought £130 Australian (Schedvin 1970). Butlin and Boyce conclude that the decision of the trading banks to resist devaluation had led to very tight monetary conditions through 1930, which helped to add to the problems of the depression. Also, the policies of these banks (including the Commonwealth Bank) during 1931 and 1932 acted to delay the reduction in bank interest rates, thereby slowing recovery. Finally, the low level of foreign exchange reserves in 1930 (brought about by the failure to devalue earlier) prevented fiscal policy from taking a more active role; in fact, government spending had to be curtailed significantly (Section 4.2.4).

While it seems plausible that the devaluation in 1931 played some role in supporting demand after the initial downturn in output, it is difficult to determine the significance of this effect. Certainly, real exports grew more rapidly in the early years of the 1930s than during the 1890s (Figure 15), but this was not sustained beyond a few years.

Also, the ratio of nominal imports to GDP fell further during the 1930s depression than the 1890s depression. This may have reflected the relative price effect of the devaluation, that is, switching demand towards the non-traded sector. However, increased protectionism at about this time (Footnote 47) and the higher relative cost of imports, reflected in the large terms of trade decline, also played a role.

Another way of addressing this issue is to ask whether the 1890s depression might have been less severe if there had been some form of devaluation. No doubt this should have had some positive impact on growth. However, it seems very unlikely that devaluation would have been sufficient to prevent the financial collapse. Prior to the substantial fall in output in 1893, events in the early 1890s had already set a course towards the collapse of the banking system. Most telling of all, property prices had turned down as early as the late 1880s, and the crisis in the non-bank financial sector was well under way by 1891.

4.2.4 Fiscal and monetary policy

Federation and the formation of the Commonwealth Bank meant that there was greater *potential* for fiscal and monetary policy to act in combination to stimulate

aggregate demand during the 1930s depression. We argued above that devaluation of the exchange rate in 1931 played some role in alleviating the impact of the significant downturn in the terms of trade. However, in subsequent years, policy is best characterised as having been only mildly expansionary.

The aggregate government budget had been in deficit prior to both depressions, but by less than 1 per cent of GDP. The deficit reached a high of only 1.3 per cent of GDP in 1893, whereas it reached 4 per cent and 3 per cent of GDP in 1931 and 1932 respectively. Even though it might appear as if policy had been loosened substantially in the early years of the 1930s depression, a closer examination of the details of fiscal and monetary policy changes suggests otherwise.

The fiscal deficits of the early 1930s appear to have been an endogenous response to a few special factors. Aggregate government expenditure actually fell from 1930 to 1932, by the same amount (17 per cent in nominal terms) as it did from 1891 to 1893. Within the expenditure categories, charges for debt increased in the 1930s, in part because of the impact of devaluation on debt denominated in pounds sterling (Barnard 1985).

Total tax revenue fell by 12 per cent from 1891 to 1893 and by 6 per cent from 1930 to 1932. Falls in tax revenue were driven primarily by large falls in customs revenue associated with declining import values – this loss was particularly large during the 1930s episode (despite increases in tariff rates). In the 1930s, the fall in customs revenue was partially offset by increases in income tax revenue and the imposition of a new sales tax. In this way, total tax revenues did not fall by as much as they did during the early 1890s.[50]

Fiscal policy was not more expansionary during the 1930s in part because of the reluctance of the Commonwealth Bank to provide credit to the public sector (for details see Butlin and Boyce 1985). Much of the Federal Government deficit during the early 1930s appears to have been financed by the sale of treasury bills to the Commonwealth Bank (precise data is not readily available). The extent of

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[50] Government businesses were also an important component of both revenue and expenditure. Expenditure on Commonwealth and State government businesses fell by 38 and 35 per cent from 1891 to 1893 and from 1930 to 1932 respectively. However, the percentage fall in revenue from these businesses was twice as large in the latter period – 14 per cent versus 7 per cent – thereby helping to contribute to the more substantial budget deficit in the 1930s.

this finance was limited by the Commonwealth Bank because of its fears regarding inflation over the longer term. To this end the Commonwealth Bank also pressured the Government to reduce the stock of outstanding treasury bills from 1932 until the end of 1935. In the meantime, the Commonwealth Bank sold some of its holdings of treasury bills to private banks at reasonably attractive interest rates, thereby helping to keep interest rates relatively high.

One of the changes in financial arrangements that occurred between the two depressions was the passing of note issue from the private trading banks to the Commonwealth Government. The relevance of the form of note issue on the stability of the financial system is unclear, although it seems that the existence of private notes *per se* was not a factor in the relative instability of the financial system leading up to the 1890s depression (Rohling and Tapley 1998). Merrett (1991) suggests that there is evidence of depositors moving their money to the stronger banks as confidence in the banking system deteriorated in the early 1890s. Moving deposits to other note issuing banks indicates that in itself, the existence of private notes was not enough to explain the banking crisis of the early 1890s. Indeed, the ability of banks to issue their own notes may have been a factor in limiting the severity of the banking crisis in NSW in 1893. The NSW Government declared the notes of certain banks to be 'legal tender', which allowed banks to meet withdrawals of deposits with their own notes. Therefore, customers faced the same risk whether their funds were in the form of a deposit with a certain bank or in the form of notes of that bank. It appears that this realisation by customers helped to limit runs on these banks.

Other actions of colonial governments during the 1890s did not prove so successful. The Victorian Government declared a bank holiday for five days at the start of May 1893. However, the stronger Melbourne banks ignored the regulation and opened for business. This helped alleviate the panic, but also drew further attention to those banks that shut their doors during the holiday.

To summarise, neither fiscal nor monetary policy can be characterised as truly expansionary during the 1930s (beyond the impact of the devaluation in 1931). Attempts to expand the fiscal deficit more vigorously were resisted by the Commonwealth Bank. In both the 1890s and 1930s depressions, fiscal expenditure fell by similar percentage amounts, while expenditure on debt payments increased

during the 1930s depression. Also, in the 1930s the tax base was broadened with increases of existing tax rates and the imposition of new taxes.

Therefore, it would seem that the differences in government policy across the depressions were not sufficient to explain the significant variation in the performance of the financial sector. The same can be said of variation in real external shocks across the two depressions. In fact, the real external shocks of the late 1920s and early 1930s were much more substantial than during the early 1890s; although the impact of the significant decline in the terms of trade on output was at least partially offset by the expansionary effect of the nominal devaluation in 1931. Also, variation in the rates of population growth can help to explain why the building boom of the 1880s was much more substantial than that of the 1920s. But this does not help to explain the larger decline in real GDP per capita in the early years of the 1890s depression (compared with the 1930s). Finally, severe drought conditions were a factor in extending the 1890s depression beyond 1894, but were not relevant to the earlier decline in real output and the financial crisis of 1893.

5. Discussion and Concluding Remarks

This paper has focused on one of the major differences between the Australian depressions of the 1890s and 1930s. During the 1890s, a substantial proportion of the financial system collapsed: many finance companies and building societies went out of business; 13 of the 23 trading banks were forced to close their doors and required reconstruction before reopening; trading bank deposits fell substantially over most of the decade; and bank credit declined dramatically, from highs of over 70 per cent of GDP to about 40 per cent by the turn of the century. In contrast, the financial problems of the 1930s were relatively mild: only three financial institutions suspended payment; the fall in the level of deposits was more moderate; and there was only a relatively small decline in bank credit.

This variation in the performance of the financial sector across the depressions occurred despite the fact that the initial macroeconomic shock was at least as large in the first year of the 1930s depression as it was in the 1890s depression. Variation in financial performance across the two depressions was primarily due to variation in the condition of the financial sector well before each depression.

Financial fragility leading up to the 1890s was evident in a range of indicators: the very rapid rise in the share of credit to GDP; relatively high levels of private investment in the form of an unprecedented building boom; the appearance of a new set of financial institutions increased competition facing banks and led to lending for speculative purposes; this led to a property price bubble and a rapid expansion of banks' balance sheets; lending was spurred in part through readily available funds from London; all the while, the level of prudence in the banking system was declining.

This trend towards greater instability through the 1880s meant that the financial system was more susceptible to the initial downturn in the macroeconomy. Further, the collapse of the financial system helped to extend the macroeconomic decline for many years.

Although there was a boom of sorts leading up to the 1930s depression, the same factors which led to financial instability during the 1880s were more muted, or operating in the opposite direction during the 1920s. For example, the rise in the share of bank credit to GDP was smaller and started from a lower base; the share of building activity in GDP was much lower, although there was still a sizeable increase in property prices; the ratio of trading bank advances to deposits was rising only slowly from a low base and capital inflows were not sustained at the same levels, nor for as long, as during the 1880s; a greater proportion of bank assets were being held in the form of government securities during the 1920s; and in contrast to the 1880s, trading banks were increasing both capital and retained earnings at a faster rate than their total assets.

Differences in external and internal real factors that did exist were not significant enough, or were working in the wrong direction, to explain the dramatic difference in the performance of the financial sector across the two depressions. The real external shock was more substantial in the 1930s depression – that is, a bigger worldwide depression and larger fall in the terms of trade. The devaluation in 1931 helped to offset this partially, but it is hard to argue that this effect can explain much of the variation in the performance of the financial sector. Aside from this devaluation, monetary and fiscal policies were not actively expansionary through the 1930s.

Appendix A: Data Sources and Descriptions

Most of the data described below are recorded on a calendar year basis prior to either 1901 or 1915 and on a financial year basis thereafter. For details of the few exceptions see the original sources.

Building activity: from Butlin, N.G. (1962), *Australian Domestic Product, Investment and Foreign Borrowing, 1861–1938/39* (ADP), Table 2, output of construction industry, from 1861 to 1940. Share of construction to GDP for the 1970s and 1980s is from Foster, R.A. (1996), 'Australian Economic Statistics, 1949–50 to 1994–95', Reserve Bank of Australia Occasional Paper No. 8, Table 5.9.

Capital flows: for 1861–1900, ADP Table 250, indirect estimate of long-term capital inflows. For 1901–1940, data are from Vamplew, W. (ed.) (1987), *Australians: Historical Statistics* (AHS), Table ITFC 101–106 apparent capital inflow.

Exports: for 1861–1900 AHS, Table ITFC 48–51. For 1901–1945, AHS Table ITFC 122–151. No data is available for 1914. Real exports are calculated by deflating nominal exports using the export price index, AHS Table ITFC 81–83.

Fiscal data: AHS Table GF (various) and Barnard (1986).

Imports: for 1861–1900 AHS, Table ITFC 22–35, including gold imports. For 1901–1945, sum of imports excluding gold and imports of gold, AHS Table ITFC 167–181.

Investment expenditure: private investment is gross private capital formation – AHS, Table ANA 65–71. Public investment is gross public capital formation and includes local and semi government capital formation. For 1860–1900 gross public capital formation is the sum of public capital formation (excluding local authorities), AHS Table ANA 82–90 and gross capital formation of local and semi government authorities from AHS Table ANA 91–97. From 1901 onwards, public investment is from AHS, Table ANA 104–118 and includes investment by local and semi government authorities.

Output: GDP in current prices for 1861–1900 is from ADP, Table 1, p. 6, col. 2 and is GDP at market prices. From 1900/01 onwards data are from AHS, Table ANA 129. Real GDP (1910/11 prices) is calculated by deflating this series by the GDP price deflator index in AHS, Table PC 79.

Pastoral output: expressed as a ratio to GDP by factor cost, ADP, Table 2.

Population: from AHS, Table POP 17–25. Between census dates, population figures are interpolated.

Property prices: capital value of ratable property in the City of Melbourne, Commonwealth Bureau of Census and Statistics *Victorian Yearbook*, various issues. Capital value of ratable property in the City of Sydney, Commonwealth Bureau of Census and Statistics *NSW Statistical Register*, various issues and Commonwealth Bureau of Census and Statistics *Official Yearbook of NSW*, various issues.

Retail price index and retail price of groceries in Sydney: AHS, Tables PC 31 and PC 8.

Terms of trade: for 1870–1900 AHS Table ITFC 81–83. For 1901–1945 Butlin (1984) Table Aa 21.

UK and US output: Mitchell (1992, 1993).

Unemployment: unemployment rate of trade union members, Jonson and Stevens (1983). Unemployment rate of Amalgamated Society of Engineers, Australia, AHS, Table LAB 98–100.

Bank Data

The source for the majority of bank data is Butlin, S.J, A.R. Hall and R.C. White. (1971), ‘Australian Banking and Monetary Statistics 1817–1945’, Reserve Bank of Australia Occasional Paper No. 4A (OP4A). For details of bank numbers, and dates of amalgamations, liquidations and suspensions see OP4A pp. 103–105 and Royal Commission (1937).

Australian banks liabilities to British residents: OP4A, Table 4(ii).

Bank credit: for 1861–1945 sum of trading bank advances and all other assets within Australia (OP4A, Table 1) and savings bank mortgage loans (OP4A, Table 53(i) and 53(ii)). Trading bank data includes the Commonwealth Bank from 1913 onwards. Trading banks included in this series are the banks of note issue.

Total assets of financial institutions: Pope (1986), Table 1. Assets of managed funds is the sum of the assets of life insurance offices, pension funds and trustee companies.

Trading bank advances by State: for 1929, sworn averages for the quarter ended 31 December 1929 – Australian States and New Zealand, *The Australasian Insurance and Banking Record* (AIBR), Vol. LIV, February 1930, p.137. For 1891, summary of deposits, advances, and coin and bullion-fourth quarter 1891, AIBR, Vol. XVI, February 1892.

Trading bank deposits: consists of all deposits within Australia. Source OP4A, Table 1. Savings bank deposits OP4A, Table 53(i) and 53(ii).

Trading bank liquid assets: is the sum of trading banks holdings of coin, bullion and Australian notes, OP4A, Table 1. For 1893–1900 includes Queensland treasury notes. Quarterly seasonally adjusted data on cash balances and deposits is from OP4A, Table 19.

Trading bank shareholders' funds: OP4A, Table 3. Prior to 1893 paid up capital consists of paid up ordinary capital. From 1893 paid up capital is the sum of ordinary capital and preference capital. Retained earnings are 'reserves' as reported on banks' balance sheets – Butlin, Hall and White (1971) advise caution in interpreting this series. These series exclude a number of trading banks, whose business was primarily undertaken outside of Australia, and do not incorporate the Commonwealth Bank of Australia.

Trading and savings banks' holdings of government securities: trading banks, OP4A, Table 1. Savings banks, OP4A, Table 53(i).

Trading bank branches: Butlin S.J. (1977; 1986).

Trading bank dividend rate: return on capital and reserves, source OP4A, Table 3.

Appendix B: Additional Data

Table B1: Trading Banks Advances By State
Per cent of total, December 1891 versus December 1929

Bank	Head Office	NSW	VIC	QLD	SA	WA	TAS	NZ
BA	Adelaide	0.0	0.0	0.0	100.0	0.0	0.0	0.0
		2.1	2.5	0.2	90.7	4.5	0.0	0.0
Asia	London	23.8	50.2	8.5	4.4	0.0	3.2	9.9
		33.9	32.8	6.2	4.1	5.5	2.0	15.5
BNSW	Sydney	55.1	20.0	11.2	2.7	0.8	0.0	10.3
		50.1	13.4	9.1	1.9	13.6	0.4	11.5
CBC	Sydney	89.1	0.0	10.9	0.0	0.0	0.0	0.0
		69.0	24.3	5.8	0.8	0.0	0.0	0.0
CBoA	Melbourne	16.1	73.3	4.0	4.7	1.9	0.0	0.0
		18.9	43.6	11.5	9.5	3.7	4.9	7.9
ESA	London	38.6	43.9	1.9	15.5	0.0	0.0	0.0
		26.1	47.4	6.5	9.2	3.8	7.0	0.0
NBA	Melbourne	4.6	67.6	0.0	19.6	8.2	0.0	0.0
		17.9	46.6	10.0	13.3	11.7	0.5	0.0
QNB	Brisbane	1.8	0.0	98.2	0.0	0.0	0.0	0.0
		8.4	10.3	81.4	0.0	0.0	0.0	0.0
UBA	London	31.6	27.8	13.8	5.2	3.1	4.2	14.4
		29.4	24.5	5.5	8.0	10.5	1.2	20.9
BNZ	New Zealand	10.7	9.0	0.0	2.1	0.0	0.0	78.1
		6.9	13.9	0.0	0.0	0.0	0.0	79.2

Notes: BA – Bank of Adelaide. Asia – Bank of Australasia. BNSW – Bank of New South Wales. CBC – Commercial Banking Company of Sydney. CBoA – Commercial Bank of Australia. ESA – English, Scottish and Australian Bank. NBA – National Bank of Australasia. QNB – Queensland National Bank. UBA – Union Bank of Australia. BNZ – Bank of New Zealand.

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