

# The Making of a Nation: Who Voted for Australian Federation?

By  
Rohan Alexander  
(University of Toronto)

and  
Timothy J. Hatton  
(University of Essex and Australian National University)

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## ABSTRACT

Between 1898 and 1900 six British colonies held referendums on whether or not to join together as states in a federal Australia. We focus on New South Wales, which was pivotal to the affirmative result. We associate the share of ‘yes’ votes at the polling booth-level with a range of county-level characteristics. We find no evidence that manufacturing districts favoured federation in the expectation of a higher tariff, and those born in the colony tended to vote against. Voters close to land borders and further from Sydney strongly favoured federation but this support was undermined by low turnout.

Keywords: Australian federation, voting analysis, colonial Australia.

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*Corresponding author:* Tim Hatton, Department of Economics, University of Essex, Colchester CO4 3SQ, UK. Email: [hatton@essex.ac.uk](mailto:hatton@essex.ac.uk).

## Introduction

In 1901 six quasi-independent British colonies of the Australian continent combined to form the Commonwealth of Australia. After a decade of debate over whether to unite, and if so under what terms, in 1898 four of the then colonies, New South Wales, Victoria, South Australia and Tasmania, conducted referendums. The other two, Queensland and Western Australia, failed even to agree on having a referendum. The legislatures of New South Wales, Victoria and Tasmania imposed a minimum number of affirmative votes required to pass the respective bills into law. It failed to pass the threshold only in New South Wales. After further negotiation a second round of referendums took place in 1899/1900. In this second round of voting, federation was approved in all six colonies and so the Commonwealth of Australia, within which the former colonies became states, came into effect on January 1<sup>st</sup> 1901.

A large literature has studied the rocky road to the federation, focusing on the political machinations, on economic interest groups, and on the broader ideological trends that lay in the background. But the debate has lacked quantitative analysis linking voting patterns to observed characteristics.<sup>1</sup> In this paper we seek to assess some of the hypotheses in the literature using, for the first time, data at the polling booth-level. We relate the share of affirmative votes in the referendums to a range of local characteristics suggested by the literature. We restrict our focus to the largest colony, New South Wales, as it was pivotal to the eventual agreement to federate. When New South Wales failed to support federation in 1898, the other colonies decided that they could not proceed without the ‘senior’ colony and the process ground to a halt pending further negotiation. And in the renegotiation process leading to the second round of referendums it was agreed that the other colonies would proceed only in the event of an affirmative result in New South Wales.

We utilise data on the referendum results for around 1,500 individual polling booths, which we have geocoded and linked to county-level variables from the 1901 census. The historical literature suggests that a higher post-federation tariff would favour manufacturing and not primary producing. But the results indicate that economic interests, as represented by the difference between broad sectors, are not associated with the share of ‘yes’ votes in the manner predicted. However, there is evidence of higher approval rates in localities bordering other colonies. Higher literacy rates and a higher female presence are positively linked with approval, while religious composition is unimportant. Two variables feature more strongly than is commonly recognised. First, there is a strong negative association between voting in favour of federation and the share of adults who were born in New South Wales. Second, there is a strong positive association at the polling booth-level between voting ‘yes’ and distance from the colonial seat of government, Sydney. We examine whether this last result can be explained by ‘frontier experience’ and find that it cannot. Finally, we examine turnout

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<sup>1</sup> Exceptions are Rhodes (1988) who explored correlations between yes votes and the positions of local politicians and newspapers, and Coleman (2017) who estimates the relationship between ‘yes’ votes and a range of socioeconomic variables across the 27 districts of South Australia.

and find that accounting for turnout has little effect on most of the results except distance. The positive support for federation by voters in remote areas was undermined by low turnout, particularly in the first referendum.

Our analysis links to several literatures. First, an influential literature has analysed the size of nations and the economic and social foundations of their formation and dissolution. This literature has emphasised the trade-off between the economic benefits of greater size and the economic costs of increasing diversity (Alesina and Spolaore, 2003). The benefits of merger or integration include spreading the cost of public goods over a larger tax base, and may also include (depending on the external trade regime) economies of scale in production and gains from increased trade (Alesina et al. 2000). The costs of integration arise from increased bureaucracy or congestion but most importantly from greater diversity, which may be difficult or costly to accommodate in a single set of laws or regulations (for a useful survey, see Spolaore 2016). While we have no direct tests, we may interpret the finding that those born in the colony tended not to favour federation, perhaps as reflecting an unwillingness to embrace the diversity (however limited) that federation might bring. On the other hand, voters most remote from the seat of colonial power may have weighed more heavily the scale benefits of a united Australia.

A recent literature has brought quantitative analysis to the classic study of the United States by Frederick Jackson Turner (1893). Turner suggested that experience on the US frontier instilled rugged individualism and that this led, among other things, to strong support for democracy. For the United States, Bazzi et al. (2020) find a link between current indicators of individualism and the duration that a locality was on the frontier of settlement. For the countries of the Americas, Garcia-Jimeno and Robinson, (2011) find that a higher proportion of frontier territory in 1850 was associated with higher income and more democracy in the twentieth century. In an older literature, Turner's ideas were transposed into the Australian context, by Palmer (1954) and by Ward (1958) who suggested that the 'up country ethos', had a direct effect on the affirmative vote for federation. In order to explore this idea, we develop a county-level measure of frontier experience. Although we find evidence that this is positively associated with support for federation among those who did vote, it does not account for the distance effect. Furthermore, the link between low turnout and distance from Sydney suggests that federation was not a burning issue in remote districts.

A rich historical literature (reviewed below) has debated the causes of federation. Beginning with Parker (1949) and Blainey (1950), much of the debate focused on whether or not voting patterns reflected the expected gains or losses from a unified external tariff and from the abolition of barriers to trade at inter-colonial borders. The more recent literature has moved away from economic interests to focus on social and cultural issues and on the politics of federation (Irving 1997; Hirst, 2000; Coleman 2021). While some of this literature comments on possible links between support for federation and certain local characteristics, such characteristics are often correlated across districts, and hence are difficult to separate, and

this provides the motivation for our regression analysis. On the economic side, we find no support for the view that sectoral composition is consistent with concerns about the tariff but we offer some support for the view that those close to the colonial border favoured federation. Our results do not bear directly on the social and political issues except to say that literacy and the women's movement may have been important but that religion was not. Rather, we shift the focus to geographic remoteness, which has not received the attention that it deserves.

The rest of the paper proceeds as follows. In the next section we outline the process that led to federation and this is followed by an overview of the historical literature. We then turn to our regression results for the 1898 and 1899 referendums in New South Wales. We proceed to consider the possible influence of 'frontier experience' before re-examining the main results when turnout is taken into account. We end with a short conclusion that sums up our findings.

### **Background to the federation referendums**

From the 1850s, when responsible government was established, the six Australian colonies evolved distinct identities and divergent policies, although as British colonies, their political and administrative structures retained much in common. The colonies adopted different railway gauges, they evolved different fiscal arrangements and they developed different tariff policies, which applied to both external and inter-colonial trade. There were periodic discussions and proposals for uniting the colonies as one Dominion embracing the whole continent. 1885 saw the establishment of a Federal Council at which representatives of the colonies met every two years to discuss issues of common interest. But it had no executive power and it was a forum for cooperation rather than a step towards federation. The movement for federation was launched by Sir Henry Parkes (often referred to as the father of federation) in a speech at Tenterfield (NSW) in 1889.<sup>2</sup> Although defence was the initial focus,<sup>3</sup> subsequent speeches by Parkes and other politicians, included issues such as the control of non-white immigration, the benefits (and costs) of inter-colonial free trade and external tariff reduction, as well as the unification of the railways and the regulation of water rights. Parkes initiated a conference of colonial Premiers in Melbourne in 1890 and one in Sydney, but little progress was made.

Meanwhile several federation leagues became active, and those in the border districts of New South Wales and Victoria convened a conference at Corowa (NSW) in 1893. The Corowa conference included 74 delegates from associations representing a range of social strata. Under the leadership of Dr John Quick, it unanimously proposed that another constitutional

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<sup>2</sup> For contemporary commentaries on the political debates and negotiations leading up to federation, see Quick and Garran (1901), Wise (1913) and Deakin (1944).

<sup>3</sup> The original pretext was a report by British Major General Bevan Edwards, written in the wake of incursions by France in New Caledonia and by Germany in New Guinea, which argued that the separate colonial defence forces were inadequate.

convention be organised with delegates elected by the people. It further proposed that the constitution drafted at this convention be put to the people in a referendum. This idea was approved by the colonial Premiers who, at a meeting in Hobart in 1895, produced a draft enabling bill based on the Corowa proposals and consisting of 39 sections. Among the issues current at that time were trade, tariffs and the financing of the federal government. Some of these were discussed at a people's conference in Bathurst in 1896, in particular the redistribution to states of federal customs revenue. This was followed by a constitutional convention which met three times in 1897-8 and was attended by representatives from the colonies who debated and refined a bill to place before each electorate for approval.<sup>4</sup>

**Table 1: Electors and voting in the 1898 and 1899-1900 referendums.**

	New South Wales	Victoria	South Australia	Tasmania	Queensland	Western Australia
Referendums in 1898						
Vote date	3/6/1898	3/6/1898	4/6/1898	3/6/1898	--	--
Population	1,346,240	1,175,463	362,897	177,340	498,523	168,128
Electoral roll	306,878	252,560	136,387	31,613	--	--
Votes cast	138,657	123,627	53,836	14,697	--	--
Turnout (%)	45.2	48.9	39.5	46.5	--	--
Yes votes	71,595	100,520	35,800	11,746	--	--
No votes	66,228	22,099	17,320	2,689	--	--
Yes majority	5,367	78,421	18,480	9,057	--	--
Referendums in 1899-1900						
Vote date	20/6/1899	27/7/1899	29/4/1899	27/7/1899	2/9/1899	31/7/1900
Population	1,357,050	1,176,854	365,755	182,508	512,541	179,022
Electoral roll	307,473	287,331	152,554	34,528	107,133	89,593
Votes cast	191,327	163,783	93,952	14,342	69,832	65,030
Turnout (%)	62.2	57.0	61.6	41.5	65.2	72.6
Yes votes	107,420	152,653	65,990	13,437	38,488	44,800
No votes	82,741	9,805	17,053	791	30,996	19,691
Majority	24,679	142,848	48,937	12,646	7,492	25,109

Source: Rhodes (2002) pp. 12, 14 and 16.

The first round of referendums took place in four colonies in early June 1898. These were organised on the same electoral districts as for elections to the lower houses of the colonial legislatures.<sup>5</sup> The issue was to be decided by an overall majority of all votes in the colony. However, New South Wales, Victoria and Tasmania also imposed a minimum number of affirmative votes required to pass the Bill. New South Wales laid down a minimum of 80,000 votes in the affirmative in order to pass the Bill.<sup>6</sup> The franchise was similar to that for parliamentary elections but it differed between colonies. In South Australia it was all adults

<sup>4</sup> The meetings took place in Adelaide in March 1897, in Sydney in August 1897 and in Melbourne in January 1898. They were attended by ten elected delegates from each colony except Queensland, which did not participate.

<sup>5</sup> New South Wales and Western Australia had single member constituencies while the other colonies had multi-member constituencies, which were therefore somewhat larger on average.

<sup>6</sup> The minimum in Victoria was 50,000 and in Tasmania 6,000.

aged 21 and over (women having been enfranchised in 1894), but in New South Wales and Victoria, it was restricted to adult males and in Tasmania there was an additional property qualification.

As Table 1 shows, in the four colonies that voted in the referendums of 1898, the total number on the electoral roll was 727,438, or 23.8 percent of their total population. The turnout in the 1898 referendums was less than half in each of colonies that voted, and it amounted to 45.5 percent overall. Of those who did vote the overall percentage of 'yes' votes was close to two-thirds. In Victoria it was 81.3 percent, in Tasmania 79.9 percent, and in South Australia 66.5 percent. But in New South Wales only 51.2 voted in favour and the total number of affirmative votes fell short of the 80,000 threshold. Thus the first round of referendums failed to provide universal support for federation and the other three colonies that voted were not prepared to proceed without New South Wales. Queensland failed to mount a referendum in 1898 partly because of changes in leadership and partly because of differences of opinion over whether the colony should be divided into three electorates (north central and south), and require majorities in all three in order to approve the draft constitution (Bolton and Waterson, 1999, p. 107). And in light of the result in New South Wales, Western Australia, where opinion was also deeply divided, decided not to proceed with a referendum (de Garis, 1999, p. 303). So the federation process ground to a halt.

Following the failure to reach the minimum 'yes' vote, the New South Wales Premier, George Reid, met with the other Premiers to discuss amendments to the draft constitution and, upon agreement, to propose another round of referendums. These amendments included the requirement of a two-thirds majority for a joint sitting of both Houses following a double dissolution and the provision that the federal capital be in New South Wales (but at least 100 miles from Sydney). They also included placing a time limit of ten years on the scheme for redistributing revenue among the states and variations to the process for altering the constitution. Once these amendments were agreed, New South Wales resolved that the referendum would be decided on a simple majority, with no minimum threshold. It had also been agreed at the Premiers' conference that, in the second round of referendums, New South Wales would vote first and that the other colonies would vote only in the case of a positive outcome in New South Wales (La Nauze 1972, p. 243).

In the event, South Australia voted first (because of slow progress in New South Wales) and the other colonies except Western Australia held their referendums within a few months of New South Wales.<sup>7</sup> The referendum in Western Australia, was delayed until 1900 pending further negotiation. In the second round of referendums turnout was considerably higher in three of the colonies that had voted in the first round but lower in Tasmania. The overall turnout of 61.1 percent reflected the increased public salience of the federation debate,

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<sup>7</sup> South Australia's second referendum, the outcome of which was largely a foregone conclusion, took place earlier to coincide with a general election.

especially among the middle class.<sup>8</sup> In the two colonies voting for the first time, turnout was particularly high but the majority in favour was smaller in Queensland than in Western Australia. Among the nearly 600,000 votes cast 70.7 percent were in favour of federation. But there were sharp differences, with Victoria and Tasmania recording over 90 percent in favour while in New South Wales and Queensland the percentages were 56.1 and 55.1 respectively. Nevertheless, the affirmative vote in New South Wales easily exceeded the discarded threshold of 80,000. The affirmative vote exceeded two thirds in South Australia and also in Western Australia, where politicians wrestled extensively over federation.

Following the 1899 referendums a deputation of senior representatives from the colonies travelled to London to lobby the British government (in particular the Secretary of State for the Colonies, Joseph Chamberlain) to approve the Commonwealth Constitution Bill. After reaching a compromise over appeals to the Privy Council, the bill passed through the Westminster parliament and received royal assent on 9<sup>th</sup> July 1900. Western Australia, which had delayed for further concessions, had not yet voted although a date had been set.<sup>9</sup> Three weeks after the approval in London, Western Australia voted in favour of joining on a franchise that, for the first time, included women. On 1<sup>st</sup> January 1901 the Commonwealth of Australia came into effect as a federal system, including all six former colonies as states and encompassing the whole continent.

For what follows, it is worth stressing the importance of New South Wales. Falling short of the threshold in the 1898 referendum meant that the whole process ground to a halt as the other, far more enthusiastic, colonies would not proceed without New South Wales. Had New South Wales reached the threshold it is unlikely that there would have been another round for the colonies that had already voted and all that remained would be for Queensland and Western Australia to follow suit.<sup>10</sup> In the second round, based on a revised bill, the other colonies, with the exception of South Australia, voted in the knowledge that federation had already been approved by New South Wales. Thus New South Wales was pivotal, and without its support federation might have been delayed by a decade or more.

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<sup>8</sup> It has been suggested that the increased turnout in New South Wales reflected the greater intensity of debate due to increased polarization among electors (Pringle 1978, p. 248; Coleman 2021, p. 233). The decline in the absolute number of 'no' votes in Victoria and Tasmania may reflect the fact that, in the light of the 1898 results in those colonies, and following the outcomes in South Australia and New South Wales, voting 'no' may have been seen as a lost cause.

<sup>9</sup> Western Australia's vacillation in passing an enabling bill was brought to a head by the threat of the eastern goldfields areas to secede from the colony in order to join the Commonwealth (de Garis, 1999, p. 311). In the preceding negotiation, a key demand by Western Australia was to maintain its inter-colonial tariff for five years on the existing basis rather than progressively reducing it over the five years as in the existing draft constitution. But the prospect of diminished influence as a result of not entering as an 'original state' effectively forced Western Australia to concede the issue (de Garis, 1899, pp. 314-17).

<sup>10</sup> The enabling acts of both Queensland and Western Australia provided that they would not join a federation of which New South Wales was not part (Rhodes 2002, p. 9).

## Debates and hypotheses

In terms of the gains from greater economic scale, one might expect the most populous colony, New South Wales, to be the least favourable to Federation, as proved to be the case, but Victoria, which was almost as large, was strongly in favour. Defence and immigration policy, often mentioned as issues early in the campaign, rapidly faded from the debate, except in Queensland and to a lesser extent Western Australia.<sup>11</sup> One reason is that a united Australia would remain firmly within the British empire and would look to Britain for both leadership in foreign policy and material assistance in defence.<sup>12</sup> Perhaps a more important background factor was the severe recession of the 1890s, when high unemployment, bank failures and the drying up of British loans in 1894 concentrated minds on economic issues.<sup>13</sup> This helped to build support among politicians from across the political spectrum in favour of federation, on the grounds that a united Australia would find it easier to borrow in London. This could help to explain why Victoria, the worst affected colony, would be overwhelmingly in favour of federation. Set against this were concerns that an additional layer of government would lead to higher taxes, either direct or indirect.

Initiating the historical debate, Parker (1949) argued that the degree of support for federation depended on which economic sector dominated a particular region and whether or not its interests would be advanced by reduced barriers to trade within Australia as well as by the expected external tariff regime of a united Australia. He pointed to higher levels of support in areas close to the borders between colonies, notably the Riverina districts on the border between NSW and Victoria.<sup>14</sup> In his riposte to Parker, Blainey (1950) criticised the broad regional approach, suggesting instead that a wide range of social and political influences were at work and that their effects varied both within and between electoral districts, a point echoed by Bastin (1951, p. 205).<sup>15</sup> Nevertheless, Norris (1978, p. 192) concluded that “By and large, attitudes to federation owed less to political persuasion than to expectation of economic gain or loss.” The economic gains and losses would be those arising from a common

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<sup>11</sup> The impression that (non-European) immigration was an issue is supported by the fact that one of the first pieces of legislation passed by the federal parliament was the Immigration Restriction Act 1901, which inaugurated the so-called White Australia Policy.

<sup>12</sup> Full independence from Britain was never an issue, except among a few radicals (Eddy, 1978a). It is notable that even a century later (in 1999) a referendum on moving to a republic failed to gain a majority (see McAllister (2001) for an outline of long term trends and an analysis of the referendum).

<sup>13</sup> Merrett (2013) discusses the banking crisis noting that colonial governments had very little capacity to assist banks in distress, and that federation passed legal power over banking and finance to the Commonwealth.

<sup>14</sup> The Riverina is normally understood as the region in south-west NSW between the Murrumbidgee and the Murray, which separates NSW from Victoria. This region had better access by road from Melbourne or by river from Adelaide than from Sydney and goods imported through Melbourne were subject to double duties. There was also a history of dispute arising from conflicts over navigation and irrigation (Wright 1978; Irving 1999, pp. 47-9).

<sup>15</sup> In his reply to Blainey, Parker (1950) largely conceded this point.



external tariff, the abolition of inter-colonial customs duties, the implications of federal control over revenue, and the unified management of railways and water resources.

Tariff unification was an important debating point because pre-federation tariffs, which applied both to external and inter-colonial trade, varied widely between colonies.<sup>16</sup> As illustrated in Table 2, tariffs were lowest in New South Wales (and covered a narrower range of imports). In the more protectionist colonies the goods subject to duty were mainly manufactured and semi-manufactured goods, with rates of duty that varied widely across goods and between colonies (Lloyd 2015, p. 170).<sup>17</sup> Which sectoral interests would benefit from tariff reform would depend on expectations about the post-federation tariff structure. It seems reasonable at first sight to suppose that voters would have expected the unified tariff to resemble the Victorian tariff, which is roughly what emerged (Forster 1977). One reason is that the tariff would be the main source of revenue for the federal government.<sup>18</sup> As the so-called Braddon clause provided that at least three quarters of tariff revenue would be returned to the states<sup>19</sup>, the room for a lower tariff was limited.<sup>20</sup>

**Table 2: Average Import Duties on Major Items in 1900 (percent)**

Average tariff rate on:	New South Wales	Victoria	South Australia	Tasmania	Queensland	Western Australia
Imports from rest of world	3.2	12.1	12.2	34.2	16.1	22.9
Imports from other colonies	3.7	4.5	5.7	19.3	9.1	11.7

Source: Lloyd (2015), p. 159.

On the assumption of a high post-federation tariff, voters in manufacturing districts in New South Wales might be expected to support federation, although consumers would suffer from higher prices (trade diversion).<sup>21</sup> It is worth noting, however, that average rates of duty were

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<sup>17</sup> In the more protectionist colonies, most of the goods on the duty free list were intermediate inputs, raw materials and foodstuffs, but in the smaller colonies there were also substantial tariffs on imported foodstuffs such as wheat, oats, flour, eggs, meat and fruit (Lloyd 2015, p. 171).

<sup>18</sup> Tariffs were an important part of colonial government revenue. In 1898 customs duties accounted for the following percentages of tax revenue and total revenue respectively: New South Wales: 63.7, 16.5; Queensland: 84.9, 35.2; South Australia: 68.2, 23.3; Tasmania: 79.1, 47.1; Victoria: 78.2, 30.6; Western Australia: 90.6, 36.4 (Barnard, 1985-6).

<sup>19</sup> This clause, originated by Edward Braddon, Premier of Tasmania, was agreed in the Melbourne session of the constitutional convention in 1898 to resolve the contentious issue of how the excess customs revenue over and above that required to finance the federal government would be shared out among the states. It was widely opposed in New South Wales where it became known as the 'Braddon Blot'. Many in New South Wales would have preferred the excess revenue to be shared out on a per capita basis. In the renegotiation after the first round of referendums the Braddon clause was time-limited to the first ten years in order to appease New South Wales led by free-trader Premier George Reid.

<sup>20</sup> Total tariff revenue would also shrink due to the loss of inter-colonial tariff revenue.

<sup>21</sup> Grayson and Varian (2023) estimate that post-federation tariff increased total welfare for the Commonwealth of Australia as a whole but not necessarily that of New South Wales.

lower between colonies, reflecting the commodity composition, and also that the evidence suggests that, ex-post, inter-colonial trade volumes changed only modestly after federation (Irwin 2006).

Much of the subsequent literature focused on the debates within colonies and electorates and shifted the focus towards popular culture and politics as the key influences.<sup>22</sup> One possible cleavage is religion. The 1901 census reported 39.7 percent of the population as Anglican and 22.7 percent as Catholic. While Catholics, inspired by Irish Republicanism, might have supported federation as a step towards autonomy from Britain, some saw it as strengthening the Anglican ascendancy (Cahill 2001). Another possible fault line is gender. Women's associations generally supported federation, especially those seeking to gain female suffrage (Irving 1997, Ch. 10). But women were entitled to vote only in South Australia and Western Australia and the draft constitution did not provide for universal female suffrage.<sup>23</sup> There was also potential for differences by education, as the more educated might have been expected to adopt more socio-tropic views in favour of federation.

Birthplace was potentially important. Those living in the colony in which they were born might have had a greater loyalty to their particular colony and a resistance to change that would not be shared by those born elsewhere. The most well-known example is the (mainly pro-federation) migrants from other colonies living in Western Australia (the so-called t'othersiders), many of whom migrated in the 1890s gold rush (Bastin 1951; Hillman 1978). The dilution of the within-colony native-born was clearly important in Western Australia and it probably also mattered in other colonies. However, there was little ethnic diversity in Australia at the time of federation as the vast bulk of the (white) population had UK ancestry. Thus resistance to merging with outsiders would be due more to identification by colony rather than by differences in ethnicity.

Politics and persuasion have been prominent in the literature. Some writers point to a utopian vision of a united Australia as a growing element in the support for federation (Birrell 1995; Irving 1997; Hirst 2000; Martin 2001; cf. Atkinson 2013). The Australian Natives Association, which was concentrated in Victoria, campaigned vigorously for federation (Blackton 1958; Pettman, 1969) but its influence was limited.<sup>24</sup> The debate was widely publicised in newspapers and magazines, but it is unclear how far this influenced voting. In Sydney, the *Sydney Morning Herald* published a series of pro-federation editorials while the *Daily Telegraph* was strongly against. With a few prominent exceptions the newspapers in country

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<sup>22</sup> Colony-level studies include Hewett (1969), Pringle (1978) and Irving (1999), on New South Wales, Norris (1969), Pettman (1969) and Bannon (1999) on South Australia, Warden (1999) on Tasmania, Bolton and Waterson, (1999) on Queensland and Hillman (1978) and de Garis (1999) on Western Australia.

<sup>23</sup> The Constitution (Chapter I, Part IV) provided only that the franchise in federal elections would be the same as that already existing in each state. Nevertheless, the franchise for federal elections was extended to all women aged 21 and over in the Commonwealth Franchise Act, 1902. For state elections, women were enfranchised in New South Wales in 1902, Tasmania in 1903, Queensland in 1905 and Victoria in 1908.

<sup>24</sup> The ANA was a friendly (mutual aid) society founded in Victoria in 1871. According to one observer "if anything, the federation movement revived the organisation rather than the reverse" (Martin, 1978, p. 179).

New South Wales came out in favour (Irving 1999, p. 78-9). The labour movement, which was barely represented at the constitutional convention, offered little support for federation, which was seen as serving conservative and middle class interests (Eddy 1978b). In New South Wales labour opposed federation partly on the grounds that it would further weaken their bargaining power. Yet certain issues of interest to labour, such as federal control of pensions and the arbitration system were incorporated into the final draft as ‘specific powers’ of the Commonwealth (Martin, 2001).

In his recent book, Coleman (2021) argues that federation was not inspired by economic calculus or nationalism but was engineered by an elite of bureaucrats and lawyers led by a few ambitious leaders and bore very little relation to popular opinion. Voting was often divided across political affiliations and across representatives of different colonies (Loveday 1972). In the 1898 referendum, in one third of electoral districts the majority voted in the opposite direction to the position of their elected representatives (Rhodes, 1988). Indeed, among Labor members of the New South Wales parliament, 17 out of 19 were opposed yet in 15 of their constituencies the majority voted in favour.

Geographical differences are likely to have been more influential on voting for federation. Lack of unified management of railways and waterways, which often meant additional costs of portage or longer and more expensive routes to and from markets, would have been felt most on the borders between colonies (Pringle 1978, p. 235). Of particular note, was the lack of integration of the railways, where the colonies operated three different railway gauges.<sup>25</sup> Also, water transport was especially important in the Riverina districts on the border between New South Wales and Victoria. Interestingly, this was where some of the most active campaigning for federation took place. Another geographical dimension is the frontier hypothesis put forward for the United States by Frederick Jackson Turner (1893) who suggested that the “rugged individualism” of the US frontier promoted democracy. This was noted by Blainey (1950) and was taken up more fully for Australia by Ward (1958) who argued that frontier dwellers favoured a form of government wider than the existing colonial administrations.<sup>26</sup>

## **Data and Estimating Framework**

We analyse the proportion of ‘yes’ votes at each polling booth taken from the compendium compiled by Rhodes (2002) from contemporary sources. For both referendums, it lists votes cast, for and against, at each polling booth within each electoral district. The individual booths were geo-located within each electoral district by using the name of the booth to identify the

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<sup>25</sup> New South Wales was on standard gauge (4 ft 8½ in), Queensland, Tasmania and Western Australia adopted narrow gauge (3ft 6 in), Victoria chose broad gauge (5 ft 3 in), and South Australia operated a combination of broad gauge and narrow gauge.

<sup>26</sup> Similarly, Bolton (1963, p. 209-10) notes that those in the north of Queensland had no respect for colonial boundaries or loyalty to the colonial government in Brisbane.

locality or the specific place (such as a post office, hotel or homestead).<sup>27</sup> We use the coordinates to create two location variables at the polling booth-level. To capture border effects, we define a dummy variable for booths within 100km of a land border with another colony (Victoria, South Australia or Queensland). We also calculate the distance of each polling booth from Sydney to capture remoteness from the seat of government.

For other explanatory variables, we use information from the 1901 census. Because there is very little surviving unit-record data from the Australian censuses we have to rely on the published volumes. For New South Wales the finest level of aggregation reported for most variables is the county, of which there are 141. We use the 1901 census rather than 1891 for two reasons. First, 1891 is further from the referendum dates and it predates the deep recession of the mid-1890s. On a more practical level, we have maps of the relevant census district boundaries only for 1901. In order to locate each polling booth within a census district we have geocoded the boundaries of all the census districts using maps of the borders provided by Camm et al. (1983). We omit five counties that do not include a polling booth.<sup>28</sup>

**Table 3: Descriptive statistics by county for New South Wales in 1901**

	Mean	Std. Dev
Share of labour force in m/f – share in primary sectors	-0.49	0.17
Proportion Catholic	0.29	0.07
Proportion of adults literate	0.87	0.04
Proportion of adults female	0.40	0.08
Proportion of adults born in the colony	0.67	0.19
Booths within 100km of land border	0.31	0.44
Booth distance from Sydney (km)	474	223
No of counties	136	

Source: Author calculations, see text and Appendix 1.

The means for 136 counties in 1901 are reported in Table 3. The first row shows the difference between the share of the labour force in manufacturing and the share in primary industry, which includes agriculture and mining. This difference is negative overall, reflecting the predominance of rural counties. The proportion of Catholics in the population is somewhat higher than for Australia as a whole. Among adults, the average literacy rate by county (able to read and write) is 87 percent, while the proportion of women, at 40 percent, reflects the well-known gender imbalance. About two thirds of adults were born in New South Wales, and the remainder were born in other Australian colonies or overseas. Across counties, an average

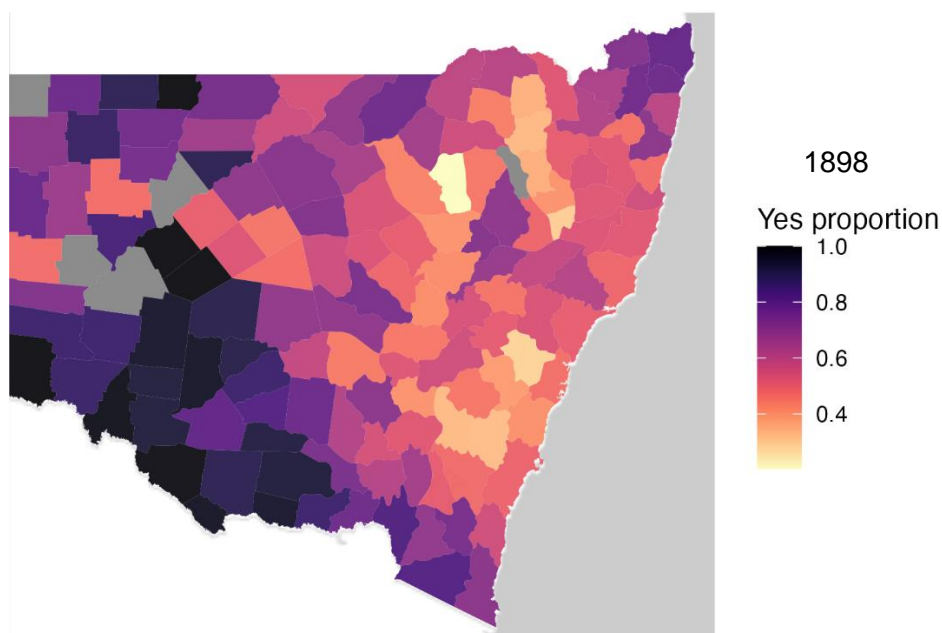
<sup>27</sup> These places were located in the first instance using the Google Maps API, and then supplemented using the websites LatLong.net and Bonzle.com to find the ones where there were alternatives with the same name or where the contemporary place name is no longer used.

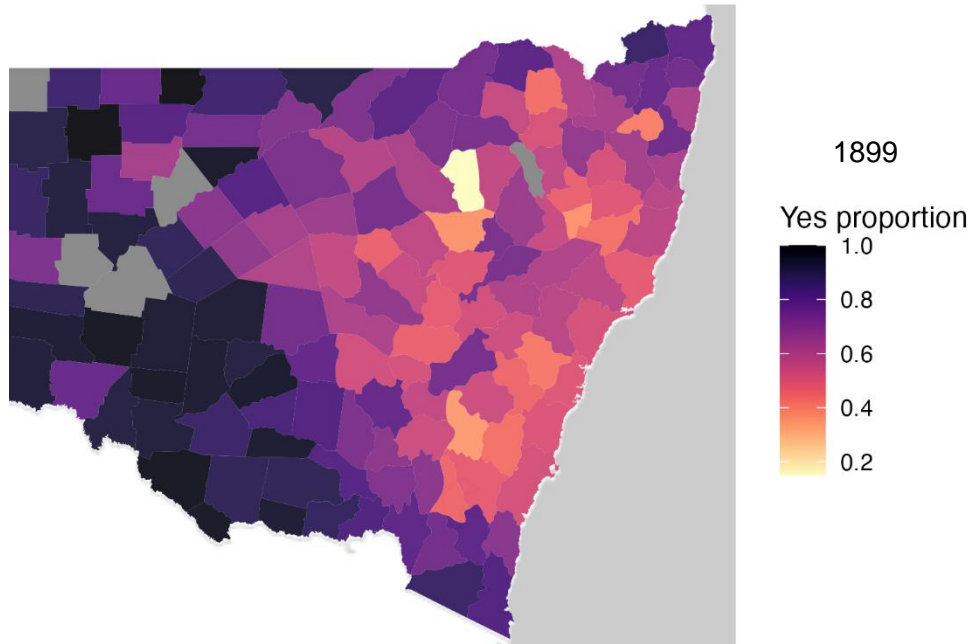
<sup>28</sup> The five omitted counties are: Killara, Livingstone, Nandewar, Poole and Tandora.

of 31 percent of booths were within 100km of the land border with another colony while the average booth distance from Sydney is 474km.

The result of mapping polling booth data into 136 of the counties in which booths were located is illustrated in Figure 1. This shows the proportion of 'yes' votes in the referendums with the darker shading reflecting higher approval rates. While the approval rates are generally higher in 1899 (hence the shading is darker), the geographic pattern is similar in the two referendums. This illustrates the strength of support for federation in the Riverina counties bordering on Victoria and also suggests that districts further from the capital voted more strongly for federation. However, this may simply reflect the fact that other potential influences on voting for federation were also distributed unevenly, something that qualitative studies have not clearly distinguished. For example, further from the capital the proportions of women and native-born are lower while literacy is somewhat higher. This may be because districts of the interior were more recently settled, a point to which we shall return.

**Figure 1: Proportion of 'yes' votes by county in 1898 and 1899**





Source: Author calculations.

Our dependent variable is the share of affirmative votes in formal votes at polling booth  $i$  in census district  $c$  and electoral district  $e$ ,  $V_{ice}$ . We estimate the odds ratio:

$$\left[ \frac{V_{ice}}{1 - V_{ice}} \right] = f(X_{ice}, Z_c, \mu_{ice})$$

Where  $X_{ice}$  represents the location of polling booth  $i$  in county  $c$  and electoral district  $e$ ,  $Z_c$  is a vector of county characteristics from the 1901 census and  $\mu_{ice}$  is the error term.

Estimating the odds ratio presents problems when some observations of the dependent variable take the value of either one or zero. Over the 3060 polling booths across the two referendums in our estimating data there are 160 ones and 20 zeros. To account for these, we use the procedure suggested by Papke and Wooldridge (1996) for estimating proportions that include limit values, which can be executed in STATA's generalised linear model (glm, see Baum, 2008). The estimation uses a logit functional form and assumes a binomial distribution and the standard errors are clustered by electoral district.<sup>29</sup> As the number of formal votes differs widely across booths we weight by the number of votes cast at each booth as a share of the total for the electoral district. Finally, it is important to caution that these are associations and not necessarily causal effects. Our intention is to explore the strength of these associations over range of different variables rather than to try and estimate a causal relationship for one specific variable or channel of influence.

### Regression results for voting in the referendums

<sup>29</sup> In 1898 electors were able to vote at any booth in the electoral district in which they were registered. In 1899 they could vote in any district within the colony but the vast majority voted within their own electoral district.

The results of estimating the approval rate at the polling booth-level for the two referendums in New South Wales are presented in Table 4. Columns (1) and (3) report the results from glm estimation where the coefficient are marginal effects (rather than odds ratios), while columns (2) and (4) are the results from ordinary least squares. These two methods give similar results overall, which suggests that they are not very sensitive to functional form. Also striking is that the results from the two referendums are similar in terms of the signs and statistical significance of the coefficients. Thus, the pattern of voting was similar across the two referendums and the OLS constant terms (not shown) suggest an overall upward shift of about ten percentage points in the share of ‘yes’ votes between 1898 and 1899.

The variable representing sectoral interests (the share of the labour force in manufacturing minus the share in primary sectors) gives significant negative coefficients of a similar magnitude in both referendums. This is the opposite of what would be expected if voting reflected the anticipation of tariff protection for manufacturing industries in New South Wales. As noted earlier, it might be explained if those in industrial districts feared that merging with other colonies could undermine the bargaining strength of labour. On the other hand, the share Catholic gives a small insignificant coefficient for 1898 but a larger positive but still insignificant coefficient for 1899. This provides little support for the view that the sectarian divide was important in voting for federation.

**Table 4: Regression results for the share of ‘yes’ votes in 1898 and 1899 referendums**

	(1)	(2)	(3)	(4)
	1898 GLM	1898 OLS	1899 GLM	1899 OLS
Share of l/f in manufacturing – share of l/f in primary sectors	-0.275*** (0.08)	-0.241*** (0.07)	-0.256*** (0.07)	-0.213*** (0.06)
Catholic share	-0.021 (0.17)	-0.014 (0.18)	0.186 (0.12)	0.222 (0.14)
Share of adults literate (read and write)	0.748** (0.32)	0.678** (0.29)	0.627* (0.33)	0.532* (0.31)
Share of adult population female	0.713** (0.35)	0.540** (0.24)	0.847** (0.35)	0.613** (0.25)
Share of adult population born in colony	-0.766*** (0.19)	-0.631*** (0.14)	-0.875*** (0.14)	-0.688*** (0.10)
Within 100km of land border (=1)	0.072** (0.04)	0.062* (0.03)	0.076*** (0.02)	0.064** (0.03)
Log distance from Sydney	0.036*** (0.01)	0.042*** (0.01)	0.038*** (0.01)	0.050*** (0.01)
Log pseudo-likelihood	-642.64		-641.27	
R-squared		0.338		0.443
Observations (booths)	1461	1461	1599	1599

Notes: Cols (1) and (3) report marginal effects from GLM estimation of the odds ratio using the logit link function and binomial distribution; cols (2) and (4) are linear probability coefficients. Standard errors in parentheses clustered by electoral district; significance levels: \*\*\* = 1%, \*\*=5%; \* = 10%.

Demographic differences show up more strongly. Literacy is positively and significantly associated with approval in 1898 but slightly less so in 1899. This may reflect access to information or simply the fact that the more educated likely had a broader perspective. A one standard deviation increase in the literacy rate is associated with an increase of 2.4 percentage points in the approval rate in 1898 and 2.0 percentage points in 1899. Although women did not have the vote in New South Wales, their presence in the community has a positive association in both referendums, a result that could be seen as supporting a link between female presence and progressive voting outcomes (Grosjean and Khattar, 2019). An increase of one standard deviation in the share of females is associated with increases in approval of 3.7 and 4.3 percentage points in 1898 and 1899 respectively. Most striking are the strong negative coefficients on the share of native born in the colony. An increase of one standard deviation in the share of those born in the colony is associated with decreases in approval of 10.9 and 11.4 percentage points in 1898 and 1899 respectively. This supports the notion that those who were firmly rooted in their colony did not welcome a federated Australia, which might be expected to embrace a more diverse range of interests.

If lack of transport integration, tariffs and administrative barriers at the borders between colonies were a costly irritation that federation could overcome, then those located close to the borders with other colonies should exhibit higher levels of support. Consistent with that view, the coefficient on the dummy for booths within 100km of a border is positive and significant, especially in the glm estimates.<sup>30</sup> Those coefficients imply that for booths within 100 km of a land border approval rates were 7.2 percentage points higher in 1898 and 7.6 percentage points higher in 1899. However, the influence of geographical location was not simply an issue at the borders. The coefficient on the log of distance from the capital is positive and strongly significant, indicating that support for federation increased with remoteness from the seat of colonial administration. At the means, increases in distance of one standard deviation (a little over 200 km) is associated with increases in the share of 'yes' votes of 2.6 and 2.7 percentage points in 1898 and 1899 respectively. Together with the share of native-born, this is the strongest and most consistent result that emerges from Table 4. This feature has been under-emphasised in the literature on the referendums even though distance is a recurring theme in Australian history. One possibility is that the coefficient on distance is particularly strong because unlike all the other variables, it takes a different value for every polling booth. But as shown in Appendix 2 Table A1, the results are very similar if distance is measured at the county level.

### **Exploring the frontier effect**

Frederick Jackson Turner (1893) famously suggested that experience on the US frontier instilled rugged individualism and that this led, among other things, to strong support for democracy. This view was echoed in some early writings on Australia. In a well-known account

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<sup>30</sup> As shown in Appendix 2 Table A2, the coefficients are much less significant when border localities are defined as within 50 or 25 km from the land border, suggesting that the wider hinterland was important.



of the 1890s Palmer (1954) argued that the experience of the bush created a distinct Australian character that emerged in the last decades of the century. According to him, as early as 1891: “In the interior there was very little talk of federation but the essential unity of Australia as a country with common interests was taken for granted: in the capital cities federation was discussed as an important issue, but it was regarded almost as an alliance between countries foreign to one another and having rival economies” (1954, p. 141). This idea was taken up by Ward (1958) who, drawing directly on Turner, suggested that frontier mentality, the ‘up country ethos’, had a direct effect on the affirmative vote for federation. But as with Turner in the US, these ideas subsequently fell out of favour with historians.<sup>31</sup>

Recently, interest in the frontier hypothesis has revived. Bazzi et al. (2020) find that cumulative ‘frontier experience’ in US counties has persistent effects on measures of individualism, as reflected in the uncommon names given to children. It also influenced voting behaviour right down to the present. Their measure of frontier experience is the number of years that a county was on the frontier of settlement, defined as less than two persons per square mile. For 21 countries of the Americas, Garcia-Jimeno and Robinson, (2011) find that those with a higher proportion of frontier territory in 1850 had higher average income in 2007 and higher average democracy scores across the 20<sup>th</sup> century. Here we explore whether or not voting for federation was associated with the frontier in New South Wales.

While the US internal frontier was formally closed by 1890, in Australia, much of the interior was still very lightly populated by white settlers, and could still be regarded as frontier territory. Nevertheless, a version of frontier experience can be calculated for New South Wales, where county boundaries were largely unchanged from the date that each county was first established. The ‘erection’ of a county involved a cadastral survey that documented land holdings, division into parishes and some degree of local organisation to maintain law and order. Outside the ‘limit of location’ large tracts of land were occupied originally by squatters with little oversight. As the colony developed, legislation increasingly transformed informal land holding into formal ownership and encouraged closer settlement (Roberts, 1968; Australian Bureau of Statistics 1909, pp. 263-272).<sup>32</sup> Areas previously designated commissioners’ districts and pastoral districts became incorporated and divided into new counties. Thus, “the erection of counties was demanded, as a requirement of control and administration, to keep pace with the progress of land settlement which, in turn, reflected

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<sup>31</sup> There is, however, a vigorous debate over the violent conflicts between white settlers and aboriginal population, mainly in the first half of the nineteenth century, which have become known as the frontier wars (Connor, 2002).

<sup>32</sup> In the first few years of the colony land grants were issued, followed from 1825 by sales, but much land was occupied without formal title. From 1847 leases of different lengths were issued on three classes of land: settled districts (1 year), intermediate districts (8 years), and unsettled districts (14 years). In 1861 land was opened to ‘free selection before survey’ where pastoral leases were divided and a portion made available to purchasers (selectors); and in 1884 conditional leases were introduced for larger holdings, giving selectors a right to future purchase. In 1898 12.6 percent of land in New South Wales was held as freehold, 10.7 percent was in the process of alienation, 64.2 percent was held under lease or licence, and 12.4 percent was unoccupied (Australian Bureau of Statistics, 1909, p. 352).

the economic development of the colony” (Atchison, 1980, p. 32). This process took place unevenly over time and the number of counties increased from 19 in 1830 to 55 in 1860 and 118 in 1890. Our measure of frontier experience is the time elapsed in decades between the year that a county was gazetted and the year that its population density reached two adults per square mile or until 1898. As a basis for comparison we use a dummy for less than two adults per square mile in 1901.

**Table 5: Regression results for referendums with frontier experience**

	(1)	(2)	(3)	(4)
	1898 Referendum		1899 Referendum	
<b>Share of l/f in manufacturing – share of l/f in primary sectors</b>	-0.198** (0.09)	-0.229** (0.09)	-0.217*** (0.07)	-0.229*** (0.08)
<b>Catholic share</b>	0.025 (0.17)	-0.051 (0.18)	0.205 (0.13)	0.169 (0.13)
<b>Share of adults literate (read and write)</b>	0.778** (0.31)	0.809*** (0.31)	0.644* (0.33)	0.663** (0.33)
<b>Share of adult population female</b>	0.618* (0.35)	0.721** (0.34)	0.810** (0.34)	0.854** (0.34)
<b>Share of adult population born in colony</b>	-0.820*** (0.18)	-0.751*** (0.19)	-0.902*** (0.13)	-0.866*** (0.14)
<b>Within 100km of land border (=1)</b>	0.069** (0.03)	0.073** (0.04)	0.074*** (0.02)	0.076*** (0.02)
<b>Log distance from Sydney</b>	0.049*** (0.01)	0.030** (0.01)	0.045*** (0.01)	0.035*** (0.01)
<b>Frontier experience (decades of popn. density &lt; 2 per sq. mile)</b>	0.033*** (0.01)		0.016** (0.01)	
<b>Population density &lt; 2 per sq. mile (=1) in 1901</b>		0.046 (0.03)		0.026 (0.02)
<b>Log pseudo-likelihood</b>	-639.55	-641.92	-640.35	-640.98
<b>Observations (booths)</b>	1,461	1,461	1,599	1,599

Notes: Coefficients are marginal effects from GLM estimation of the odds ratio using the logit link function and binomial distribution. Standard errors in parentheses clustered by electoral district; significance levels: \*\*\* = 1%, \*\*=5%; \* = 10%.

Columns (1) and (3) of Table 5 show the effect of adding frontier experience to regressions otherwise similar to those in columns (1) and (3) of Table 4. Frontier experience takes positive and significant coefficients, so there is evidence that past experience of low density matters. And it is considerably stronger in 1898 than in 1899. On the other hand, population density of less than two adults per square mile in 1901 is insignificant for both referendums (columns (2) and (4)). It is also worth noting that the inclusion of frontier experience only marginally affects the other coefficients. The coefficients on the sectoral shares and share female become slightly weaker but the coefficients on the border dummy and distance from Sydney retain their size and significance. Thus while frontier experience is positively associated with the share of ‘yes’ votes it does nothing to account for the border or distance effects. However, as shown in Appendix 2 Table A3, when frontier experience is defined as decades between

the year a county was gazetted and the year it reached one adult per square mile, the coefficients are insignificant for both referendums.

### **Accounting for turnout**

As was shown in Table 1, less than half of those eligible to vote in New South Wales turned out in the 1898 referendum, although turnout increased to more than 60 percent in 1899. This raises two questions. The first is how would the picture change if instead of using as the dependent variable the proportion of 'yes' votes among those who actually voted, we look at the ratio of 'yes' votes to those on the electoral roll? If abstention was linked to some of the same explanatory variables, then this would alter the assessment of support for federation suggested by Table 4. The second, and far more difficult, issue is whether those who did not vote were more likely to have favoured 'yes' or 'no'—something that is inherently unobservable.

In order to vote in the federation referendums, eligible individuals were required to register prior to voting. Turnout for each electoral district can be calculated as a ratio of the number of formal votes to the number on the electoral roll. In order to assess the effect of differential turnout on votes for federation we estimate regressions for the ratio of 'yes' votes to the number on the electoral roll. But as turnout is measured only at the electoral district level the share of 'yes' among votes at each polling booth is multiplied by the turnout rate for the electoral district as a whole.

The results for both referendums are presented in Table 6. Comparing the coefficients in columns (1) and (3) in Table 6 with those in columns (1) and (3) of Table 4, the sectoral variable remains negative and is not greatly affected by differential turnout. Among the demographic variables, the coefficient on the Catholic share remains insignificant but the share female becomes stronger. The coefficient on proximity to borders becomes weaker for 1889 and insignificant for 1898. The coefficient on literacy is reduced for 1898 but not for 1899, perhaps reflecting the increased intensity of the debate and the enhanced salience of the issue. Regressions for the change in turnout at the electoral district level presented in Appendix 2, Table A4 indicate that the increase in turnout is (weakly) associated with literacy, which tends to support that view.

The most striking result from this exercise is that the coefficient on distance from Sydney, which was positive and highly significant in Tables 4 and 5, now becomes much smaller and completely insignificant. Thus the positive association between 'yes' votes and distance among those who voted disappears when turnout is taken into account. Those remote from the capital, who did vote, strongly supported federation, but overall they failed to turn out in sufficient numbers for the ratio of 'yes' votes to the electoral roll to increase with distance. The results in columns (2) and (4) indicate that this applies whether or not frontier experience

is included. It suggests that, as widely noted, federation was not a burning issue in the more remote districts.

**Table 6: Regressions on the ratio of ‘yes’ votes to electoral roll**

	(1)	(2)	(3)	(4)
	1898 Referendum		1899 Referendum	
Share of I/f in manufacturing – share of I/f in primary sectors	-0.258*** (0.08)	-0.232** (0.09)	-0.228*** (0.04)	-0.181*** (0.04)
Catholic share	0.040 (0.09)	0.063 (0.09)	0.072 (0.11)	0.110 (0.12)
Share of adults literate (read and write)	0.382*** (0.11)	0.384*** (0.11)	0.563** (0.23)	0.569** (0.22)
Share of adult population female	0.786*** (0.18)	0.742*** (0.18)	0.989*** (0.19)	0.910*** (0.17)
Share of adult population born in colony	-0.435*** (0.13)	-0.451*** (0.12)	-0.520*** (0.09)	-0.548*** (0.09)
Within 100km of land border (=1)	0.006 (0.04)	0.004 (0.04)	0.046** (0.02)	0.042* (0.02)
Log distance from Sydney	0.003 (0.01)	0.007 (0.01)	-0.007 (0.01)	0.000 (0.01)
Frontier experience (decades of popn. density < 2 per sq. mile)		0.011* (0.01)		0.021** (0.01)
Log pseudo-likelihood	-579.66	-579.22	-699.44	-698.07
Observations (booths)	1,461	1,461	1,599	1,599

Notes: Coefficients are marginal effects from GLM estimation of the odds ratio using the logit link function and binomial distribution. Standard errors in parentheses clustered by electoral district; significance levels: \*\*\* = 1%, \*\*=5%; \* = 10%.

It is likely that turnout was non-random and this could have affected the overall result. For example, using a unique individual-level dataset for the city of Bendigo, Victoria, Fowler (2013) was able to compare the list of eligible voters with a record of those who actually voted in the 1899 referendum. He found that property owners were 10 percentage points more likely to vote than occupiers, and that for both groups the turnout rate increased with the value of property held. It is therefore likely that systematic differences in turnout could have affected the referendum outcomes, and this could be linked with some of our explanatory variables. If, for example, those in more remote locations would have voted against federation had they made it to the polling booth then there would be positive selectivity in the choice to vote.

One way to assess such selectivity is to include turnout as an explanatory variable in regressions for the share of ‘yesses’ among those who did vote. In principle this would give a direct measure of voter selectivity. For example, a positive coefficient would suggest that higher turnout led to higher share of ‘yes’ vote and hence that non-voters were more likely to favour ‘yes’. However, that raises a serious identification problem. If turnout is endogenous, as is likely, we would need as an instrument a variable that influences the share

of ‘yesses’ among formal votes only through turnout. Unfortunately, we have no plausible instrument and so we can proceed only by including the turnout variable in our estimation without accounting for endogeneity, entering a strong caution that the coefficient may suffer from endogeneity bias.<sup>33</sup>

**Table 7: Results for the share of ‘yes’ votes with turnout included**

	(1)	(2)	(3)	(4)
	1898 Referendum		1899 Referendum	
<b>Turnout</b>	0.470*** (0.13)	0.489*** (0.12)	-0.012 (0.10)	-0.038 (0.10)
<b>Share of I/f in manufacturing – share of I/f in primary sectors</b>	-0.185** (0.08)	-0.100 (0.09)	-0.258*** (0.07)	-0.221*** (0.07)
<b>Catholic share</b>	-0.064 (0.18)	-0.017 (0.18)	0.185 (0.12)	0.202 (0.13)
<b>Share of adults literate (read and write)</b>	0.741** (0.36)	0.767** (0.37)	0.630* (0.34)	0.656** (0.33)
<b>Share of adult population female</b>	0.321 (0.40)	0.210 (0.39)	0.857** (0.38)	0.841** (0.36)
<b>Share of adult population born in colony</b>	-0.633*** (0.19)	-0.688*** (0.17)	-0.877*** (0.14)	-0.910*** (0.14)
<b>Within 100km of land border (=1)</b>	0.080*** (0.03)	0.077*** (0.03)	0.076*** (0.02)	0.074*** (0.03)
<b>Log distance from Sydney</b>	0.049*** (0.01)	0.063*** (0.01)	0.037*** (0.01)	0.043*** (0.01)
<b>Frontier experience (decades of popn. density &lt; 2 per sq. mile)</b>		0.035*** (0.01)		0.016** (0.01)
<b>Log pseudo-likelihood</b>	-639.02	-635.58	-641.28	-640.31
<b>Observations (booths)</b>	1,461	1,461	1,599	1,599

Notes: Coefficients are marginal effects from GLM estimation of the odds ratio using the logit link function and binomial distribution. Standard errors in parentheses clustered by electoral district; significance levels: \*\*\* = 1%, \*\*=5%; \* = 10%.

As Table 7 shows, the coefficients on turnout are positive and significant for the 1898 referendum but small and insignificant for the 1899 referendum. The coefficients on the other variables are much as before. In particular, the coefficients on proximity to a border and distance to Sydney remain highly significant. While it is impossible to put weight on these results, some positive effect in 1898 is plausible, suggesting that non-voters tended to favour federation. An alternative is to assume simply that there is no association, positive or negative, so that higher turnout would increase both ‘yes’ and ‘no’ votes by the same proportion. In that case the turnout in 1898 would have needed to increase from 45.2 percent to 50.5 percent to reach the 80,000 threshold for the number of affirmative votes. As turnout

<sup>33</sup> An attempt to use turnout rates in the 1895 NSW general election as an instrument in (linear probability) regressions for turnout in the referendums failed because the first stage was too weak, largely because of the low correlation between turnout at the election and at the referendums.

increased to 62.2 percent in 1899, this is well within the bounds of possibility. Although speculative, it is likely that, if turnout had been modestly higher in 1898, the first vote might have passed the 80,000 threshold and a second referendum would have been unnecessary.

## **Conclusion**

Our analysis of voting patterns in the federation referendums in New South Wales yields several conclusions. Under the assumption that the federal tariff would look more like that of Victoria than that of New South Wales, the negative association between affirmative votes and the sectoral difference between the shares of manufacturing and primary production does not support views expressed in some of the literature, which suggests a positive association. It may be due instead to the resistance of workers in manufacturing who saw federation as a threat to their bargaining power. However, there is support for the view that those living close to the borders with other colonies were more likely to favour federation, which would be consistent with trade restrictions and other hurdles at the borders, even though tariffs on goods in inter-colonial trade were relatively low. And it would also be consistent with activism in districts close to the border, notably the Riverina districts, which has been widely noted in the literature. Not only did voters in those districts vote more heavily for federation they also turned out in greater numbers.

Counties with higher literacy rates and with larger proportions of females show some tendency to support federation while the share of Catholics in a county exhibits little association with the outcome. But there is a strong negative association between the proportion in a county who were born in New South Wales and affirmative voting in the referendum, which could reflect opposition to increased diversity. It suggests that those more firmly rooted in their colony were reluctant to embrace a federated Australia, which would have to accommodate interests beyond their own colony. Whatever its interpretation may be, this link has not been given the attention in the literature on New South Wales that it deserves.

The positive relationship between distance from Sydney and support for federation is particularly strong and suggests that those remote from the capital stood to gain more from nationwide governance or at least that they had a broader vision of Australia and less attachment to the colony. It also evokes the idea that experience of the frontier, past or present engendered a distinctive culture. Our evidence suggests that past experience of low population density was indeed positively associated with voting for federation but that current low density was not. However, frontier experience does not explain the link between affirmative votes and distance from Sydney. Whatever the reason for the link between strong approval and remoteness, the contribution of more remote areas to the 'yes' vote was largely offset by low turnout.

Federation was a watershed moment in Australian history. Our paper provides the first quantitative analysis of voting at the polling booth-level in the referendums that enabled this to take place. It also suggests directions for future research. One would be to develop variables to capture social and political influences using sources beyond the census, such as newspaper reports and local directories. Another would be to expand the list of local geographic variables beyond distance to the border and the colonial capital to include features such as land quality, topography, settlement concentration and proximity to transport links. Finally, even though New South Wales was central to the outcome, it would nevertheless be interesting to examine the correlates of voting patterns in other colonies, especially Queensland where the margin of approval was also relatively small.

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# Appendices to: The Making of a Nation: Who Voted for Australian Federation?

## Appendix 1: Data sources and methods

The data on votes in the referendums were compiled by Glenn Rhodes, originally for a PhD thesis at the London School of Economics (Rhodes 1988). Rhodes carefully collected the votes reported in the local press for each polling booth in each electoral district. These data (for the whole of Australia), together with an introductory discussion, were later collected on a CD, which is held at the Centre for Governance and Public Policy (formerly CAPSM) at Griffith University (Rhodes 2002). In order to geo-locate each polling booth we searched in the first instance for coordinates using Google Maps, guided by the location of the electoral district in cases where there were alternatives with the same name. This was supplemented using LatLong.net and Bonzle.com for places that were not easily identified or where the place name is no longer used, such as hotels, homesteads or mines. This was done separately for each referendum as there were 1461 booths in 1898 and 1600 booths in 1899.

As noted in the main text, there were 125 electoral districts, which do not correspond with the 141 counties for which data are reported in the 1901 census. In order to place each polling booth within a county we used the map of county boundaries in New South Wales from Camm et al. (1983) to create a shape file within which to place each of the polling booths. Figure A1 shows the location of individual booths within counties. We restrict our regression analysis to the 136 counties containing polling booths in both referendums, losing one polling booth in 1899. Five of the counties had no polling booth in 1898 and four in 1899. We also use the coordinates of individual booths to calculate distance from the nearest land border (with Victoria, South Australia or Queensland) and the distance from the Town Hall in Sydney.

Most of the explanatory variables are taken from the following tables in the 1901 census. Share of the labour force in manufacturing and in primary sectors: Part 8--Occupations of the People, Table VII. The primary sector includes agriculture, pastoral dairying and mining.

Share Catholic: Part 3--Religions of the People, Table IX.

Share of adults literate (read and write): Part 2—Education of the People, Table VI.

Share of adults female: Part 1—Ages of the people, Table VIII.

Share of adults born in the New South Wales: Part 4—Birthplaces of the People, Table VIII.

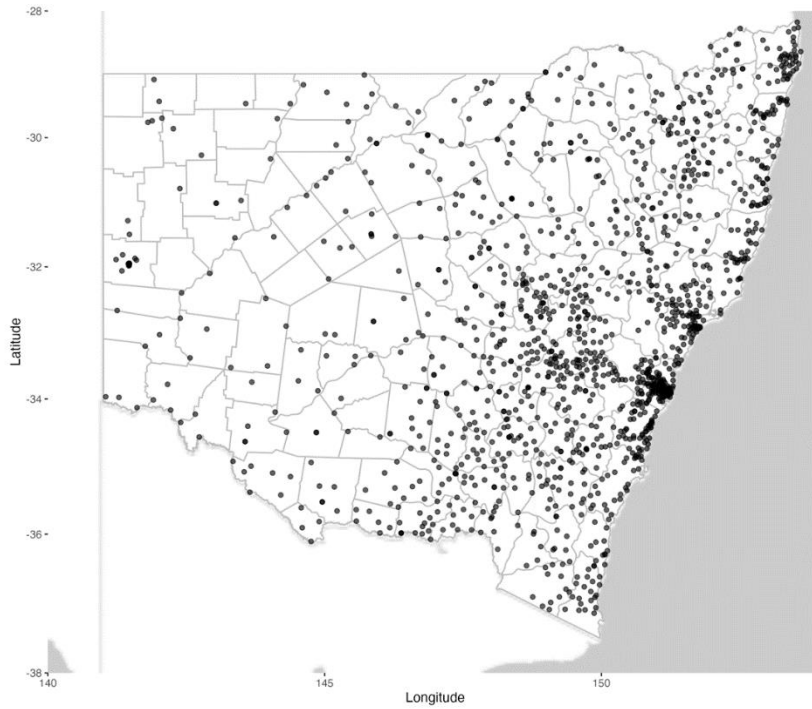
In order to calculate the variable for frontier experience, the date of first erection of a county was taken from the table at: [https://en.wikipedia.org/wiki/Lands\\_administrative\\_divisions\\_of\\_New\\_South\\_Wales](https://en.wikipedia.org/wiki/Lands_administrative_divisions_of_New_South_Wales).

Following its original erection, the population of each county was taken from summary tables in the censuses of 1841, 1846, 1851, 1856, 1861, 1871, 1881, 1891 and 1901. The population numbers were then divided by the area of the county in square miles and the ratio then linearly interpolated between censuses. Frontier experience was calculated as the number of years between the year of erection of a county and the year that it reached two persons per square mile.

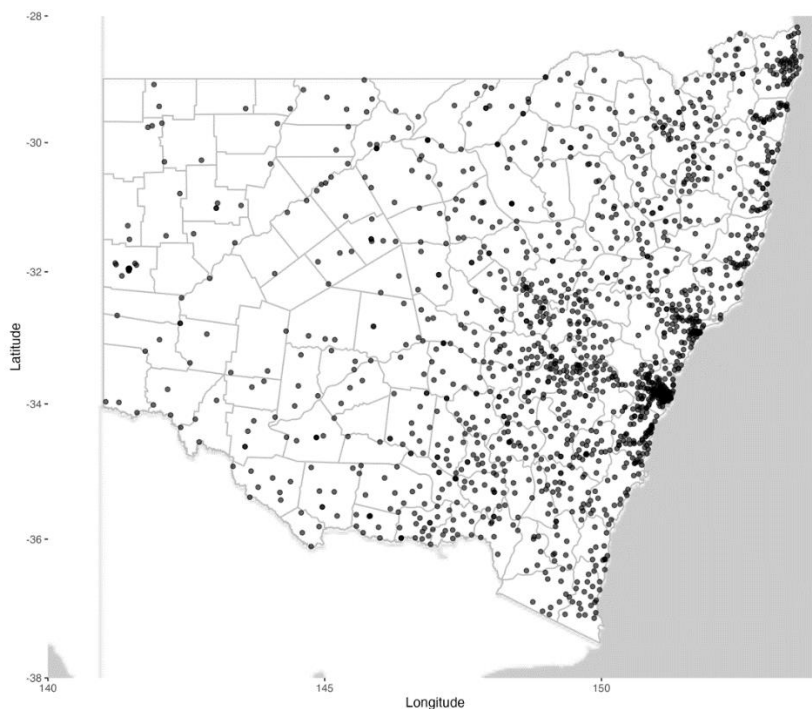
Turnout is also taken from Rhodes (2002) and is measured as the number of formal votes divided by number on the electoral roll. As this is defined at the electoral district level, we apply the electoral district turnout to each polling booth within the district.

**Figure A1: Polling booth locations in 1898 and 1899**

Booth locations in 1898



Booth locations in 1899



## Appendix 2: Supplementary regressions

Table A1 reproduces Table 4 in the text, but here the distance from Sydney is measured from the centroid of the county so, consistent with the other explanatory variables, there is no within-county variation. The coefficients are similar to those in Table 4, which indicates that the result does not depend on measurement of the variable at the booth level. Also in Table A1 the dummy for 100 km from a land border is replaced by a dummy = 1 if the county is contiguous with a land border. The coefficients are again similar to those in Table 4 but the significance levels are considerably lower.

**Table A1: Regression results for the share of ‘yes’ votes using distances to counties**

	(1)	(2)	(3)	(4)
	1898 GLM	1898 OLS	1899 GLM	1899 OLS
Share of l/f in manufacturing – share of l/f in primary sectors	-0.264*** (0.08)	-0.234*** (0.07)	-0.243*** (0.07)	-0.206*** (0.06)
Catholic share	0.019 (0.19)	0.022 (0.19)	0.224 (0.14)	0.253 (0.16)
Share of adults literate (read and write)	0.737** (0.32)	0.670** (0.29)	0.602* (0.35)	0.520* (0.31)
Share of adult population female	0.690* (0.36)	0.536** (0.26)	0.837** (0.37)	0.629** (0.27)
Share of adult population born in colony	-0.749*** (0.19)	-0.621*** (0.14)	-0.863*** (0.14)	-0.682*** (0.10)
County contiguous to land border (=1)	0.063* (0.03)	0.053 (0.03)	0.059** (0.03)	0.046* (0.03)
Log county distance from Sydney	0.043*** (0.02)	0.050*** (0.02)	0.047*** (0.01)	0.060*** (0.01)
Log pseudo-likelihood	-643.58		-643.00	
R-squared		0.334		0.435
Observations (booths)	1,461	1,461	1,599	1,599

Notes: Cols (1) and (3) report marginal effects from GLM estimation of the odds ratio using the logit link function and binomial distribution; cols (2) and (4) are linear probability coefficients. Standard errors in parentheses clustered by electoral district; significance levels: \*\*\* = 1%, \*\*=5%; \* = 10%.

Alternative definitions of border districts are included in Table A2. These are for polling booths within 50km and 25km of a land border. These coefficients are insignificant in three cases out of four, suggesting that it is not immediate proximity to a border but the wider hinterland that matters. It is worth noting also that the other coefficients in the model are little affected and in particular that on distance from Sydney.

**Table A2: Regression results for the share of ‘yes’ votes with different border distances**

	(1) 1898	(2) 1899	(3) 1898	(4) 1899
Share of I/f in manufacturing – share of I/f in primary sectors	-0.256*** (0.08)	-0.238*** (0.07)	-0.249*** (0.08)	-0.238*** (0.07)
Catholic share	0.006 (0.18)	0.208 (0.14)	0.01 (0.19)	0.204 (0.14)
Share of adults literate (read and write)	0.721** (0.33)	0.585* (0.35)	0.764** (0.33)	0.592* (0.35)
Share of adult population female	0.656* (0.34)	0.819** (0.35)	0.615* (0.35)	0.842** (0.35)
Share of adult population born in colony	-0.747*** (0.18)	-0.867*** (0.13)	-0.734*** (0.19)	-0.881*** (0.13)
Within 50 km of land border (=1)	0.057 (0.04)	0.049 (0.03)		
Within 25 km of land border (=1)			0.105** (0.05)	0.050 (0.04)
Log distance from Sydney	0.048*** (0.01)	0.052*** (0.01)	0.049*** (0.02)	0.054*** (0.01)
Log pseudo-likelihood	-644.35	-643.98	-643.37	-643.29
Observations (booths)	1,461	1,461	1,599	1,599

Notes: Coefficients are marginal effects from GLM estimation of the odds ratio using the logit link function and binomial distribution. Standard errors in parentheses clustered by electoral district; significance levels: \*\*\* = 1%, \*\*=5%; \* = 10%.

Following Turner (1893) Bazzi et al. (2020) we define a frontier county as one with less than two persons per acre in a given year. As noted above we define frontier experience as the number of years between the erection of a county and the year that it reached a density of two persons per square mile. However, as Australia was more sparsely populated than the United States, we use as an alternative the number of years between the erection of a county and the year that it reached a density of one person per square mile. The results of using this alternative definition are presented in Table A3. In the first and third columns the coefficients on frontier experience are small and insignificant, in contrast with Table 5. When population density is included as a dummy for less than one person per square mile in 1901 instead of frontier experience (second and fourth columns) the coefficients remain insignificant as in Table 5.

**Table A3: Regression results for NSW with frontier experience using < 1 per sq. mile**

	(1)	(2)	(3)	(4)
	1898 Referendum		1899 Referendum	
<b>Share of l/f in manufacturing – share of l/f in primary sectors</b>	-0.269*** (0.08)	-0.253*** (0.08)	-0.254*** (0.07)	-0.249*** (0.07)
<b>Catholic share</b>	-0.004 (0.17)	-0.014 (0.17)	0.190 (0.12)	0.188 (0.13)
<b>Share of adults literate (read and write)</b>	0.738** (0.31)	0.780** (0.32)	0.625* (0.34)	0.636* (0.33)
<b>Share of adult population female</b>	0.737** (0.34)	0.794** (0.33)	0.855** (0.35)	0.873** (0.35)
<b>Share of adult population born in colony</b>	-0.776*** (0.18)	-0.741*** (0.19)	-0.877*** (0.14)	-0.866*** (0.13)
<b>Within 100km of land border (=1)</b>	0.077** (0.04)	0.076** (0.04)	0.077*** (0.02)	0.077*** (0.02)
<b>Log distance from Sydney</b>	0.040*** (0.01)	0.028** (0.01)	0.039*** (0.01)	0.036*** (0.01)
<b>Frontier experience (decades of popn. density &lt; 1 per sq. mile)</b>	0.013 (0.01)		0.003 (0.01)	
<b>Population density &lt; 1 per sq. mile (=1) in 1901</b>		0.049 (0.03)		0.015 (0.02)
<b>Log pseudo-likelihood</b>	-642.03	-641.57	-641.22	-641.14
<b>Observations (booths)</b>	1,461	1,461	1,599	1,599

Notes: Coefficients are marginal effects from GLM estimation of the odds ratio using the logit link function and binomial distribution. Standard errors in parentheses clustered by electoral district; significance levels: \*\*\* = 1%, \*\*=5%; \* = 10%.



Turnout, the ratio of formal votes to number on the electoral roll, increased dramatically, by 17 percentage points, between the two referendums (Table 1). It would be interesting to know if or how that was associated with different population characteristics. Because the electoral roll is district level, turnout can only be measured at that level. For this exercise the county-level variables are mapped into the 125 electoral districts using a crosswalk where the weights are the number of formal votes averaged between 1898 and 1899. The mean of the difference in turnout is 17.3 percentage points, similar to the overall. OLS regressions in Table A4 show that most of the variables are insignificant and the results are somewhat sensitive to how proximity to land borders is measured and the inclusion of frontier experience. Most significant are the positive coefficients on literacy rates and we mention this on p. 19 of the paper. Apart from this and the marginal significance of colony-born there are few systematic effects.

**Table A4: Regression results for changes in turnout between 1898 and 1899**

	(1)	(2)	(3)	(4)
<b>Share of l/f in manufacturing – share of l/f in primary sectors</b>	0.066 (0.04)	0.033 (0.05)	0.058 (0.04)	0.025 (0.05)
<b>Catholic share</b>	0.055 (0.10)	0.051 (0.10)	0.055 (0.10)	0.051 (0.10)
<b>Share of adults literate (read and write)</b>	0.677** (0.33)	0.574* (0.33)	0.595* (0.33)	0.493 (0.33)
<b>Share of adult population female</b>	-0.395 (0.28)	-0.205 (0.31)	-0.334 (0.29)	-0.145 (0.31)
<b>Share of adult population born in colony</b>	0.121* (0.06)	0.078 (0.07)	0.082 (0.07)	0.039 (0.07)
<b>Log distance from Sydney</b>	-0.006 (0.00)	-0.003 (0.00)	-0.005 (0.00)	-0.003 (0.00)
<b>Within 100 km of land border</b>	0.003 (0.02)	0.003 (0.02)		
<b>Border county</b>			-0.017 (0.02)	-0.017 (0.02)
<b>Frontier experience (decades of popn. density &lt; 1 per sq. mile)</b>		0.009 (0.01)		0.009 (0.01)
<b>R-squared</b>	0.291	0.303	0.296	0.309
<b>Observations (electoral districts)</b>	125	125	125	125

Notes: OLS regressions across electoral districts. The explanatory county-level variables are weighted by the average of formal votes in within each electoral district in 1898 and 1899. Standard errors in parentheses; significance levels: \*\*\* = 1%, \*\*=5%; \* = 10%.