

Title

'Australian sailors wanted': Labour supply and Australian shipping, c. 1870
– c.1910

Running Title

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‘Australian sailors wanted’: Labour supply and Australian shipping, c. 1870 – c.1910

In the pre-1914 era, despite the critical importance of overseas shipping for the national economy, Australia did not develop an ocean-going merchant navy. The problem is well recognized in previous studies that hypothetically assumed that it was high Australian wages that made the operational cost of deep-sea vessels uncompetitive on a global scale. This article offers a new analysis of this problem. It reconstructs historical shifts in the Australian market for a seagoing workforce and argues that it was the shortage of a domestic labour supply that constrained the development of a national deep-sea shipping industry.

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INTRODUCTION

Australia's geographical remoteness from major global markets and major global population centres has always been central to shaping its economic fortunes. While different modes of transport played their role in taming 'the Tyranny of Distance' it was deep-sea shipping that was truly indispensable by connecting the nation with the rest of the world (Blainey, 1966). This article is concerned with problems encountered by this transportation sector of the national economy during the period of 1870-1914. That time is widely regarded as the first wave of globalisation marked by the expansion of international travel and trade (Robertson, 2003; Lew and Cater, 2006; Abbenhuis and Morrell, 2020). Accordingly, many national deep-sea merchant navies – instrumental in moving goods and people around the globe – boomed. Ships became bigger and faster owing to the adoption of steam power and design modifications, and global tonnage tripled to around 45 million gross tons over that period (Stopford, 2009, 26). The relevant advancements of Australia were far more modest. The newly federated nation did not build an ocean-going merchant fleet, even though it had some major advantages. In fact, it needed overseas shipping services to support its burgeoning trade and immigration. It possessed sufficiently large capital resources to acquire vessels, and it boasted many established coastal shipping companies that had sufficient technical expertise to enter transcontinental ocean trade. That step forward was not made, however, and on the eve of World War I Australia still lacked ownership or control of the overseas shipping on which its progress and prosperity was increasingly dependent.

The purpose of this article is to explain this paradox by placing it in the context of labour-related factors which hindered the penetration of domestic maritime enterprise into the oceanic freight and passenger markets of the world. Generating new estimates of supply and demand of Australian seagoing labour the article adds a new important piece to the larger puzzle of why Australia has been unable to turn itself into a global maritime nation over the course of its history. Unlike many other developed countries, Australian shipowners have never operated on a large scale on long-haul ocean routes and it was the Australian government that at times, largely for political reasons, attempted to keep the national flag on the high seas. (Burley, 1968; Pemberton, 1979; Broeze, 1998; Bach, 1976; Blainey, 1966). Between 1916 and 1928 and then between 1956 and 1998 it owned and managed two shipping companies - the Commonwealth Line and the Australian National Line, respectively. With subsidies and government support both public ventures managed to maintain Australia's presence on highly competitive global shipping market. (McDonell, 1976; Brennan, 1978; Spyers, 2009; Ostapenko, 2019).

Other political forces played their constraining role in the history of the national maritime sector. In this respect, the country's dependency on essential British Imperial regulatory framework and British commercial shipping interests shaped Australia's shipping pattern not just before but long after the Federation. The highly controversial liquidation of the Commonwealth Line by the Bruce Government politically committed to Britain and the resistance of powerful British shipowners to new entrants on the most lucrative long-haul ocean routes were two of the most known examples of these negative influences. (Burley, 1968; Broeze, 1998). Australia's

industrial capacity itself shaped by government policy was also a complicating factor. When ships were largely wooden some Australian shipbuilders was engaged in overseas trade, including whaling but as ocean-going vessels moved to iron scale the building of large steamships became a challenge. Under these circumstances these ships had to be imported from overseas and 'the long distance from British and European shipping markets constituted a practical and psychological barrier of considerable consequence to potential owners' (Broeze, 1992, 13).

This article shifts the focus from these well-known political and technological handicaps in the development of Australian deep-sea merchant fleet to the less recognised problem of labour endowment deficiency to manage that fleet. Chronologically, it concentrates on the pre - First World War period when the involvement of the government into shipping industry was relatively small and it was only private ventures that could provide supply of overseas shipping services. At that time the great shortage of Australian deep-sea tonnage deeply worried many policymakers and public activists who jointly developed a sense of 'shipping nationalism' (Broeze, 1992, 19). In the pre-Federation era, voices were already saying that over-reliance on non-Australian ships drained millions from the domestic economy annually and that the promotion of a national ocean-going merchant fleet would thus 'materially add' to national prosperity (Table Talk, 4 August 1893, 10). Influenced by this line of thought and adopting a critical attitude towards British shipowners, who monopolised trade between Australia and the mother country, the Royal Commission on Shipping Service (1906) reported that should 'a National Fleet' be established it would benefit Australian people by boosting the country's current account of the balance of payments,

by offering more reliable ocean transportation services to domestic producers and merchants, and by providing a 'splendid advertisement for this country throughout the world' (1906, ix). As well as delivering economic benefits to the nation and projecting a positive image of Australia to the international community, having a national deep-sea merchant fleet would be equally valuable for Australia's naval defence. In view of Australia's geographical isolation from British military strength and given the expanding Japanese and German presence in the Pacific region the newly federated nation required a substantial merchant fleet that would serve two important purposes: the provision of transportation in war and the supply of qualified manpower for the Australian Navy (Crowley, 1974; Meaney, 1976; Broeze, 1998). To achieve this, it was estimated that as many as 15,000 trained seamen would be required in the short term: indeed, a slogan 'Australian sailors wanted' became rather popular in the contemporary press (Fremantle Herald, 19 September 1913).

The article dwells on this contemporary insight into the inadequate supply of Australian seagoing labour and engages with modern literature arguing that the higher wages of Australian seafarers, relative to other countries, by default made the expansion of Australia into international sea trade an unattainable target. As Frank Broeze summarised: 'Foreign rivals were capable of undercutting Australian owners with significantly lower crew charges and other running costs' (1992, 12). Yet, there is some doubt that Australia was, in fact, an exceptionally high-wage economy on the eve of World War I. In his ground-breaking study on the drivers of Australia's economic growth, Ian McLean argued that while for some time after the discovery of gold in 1851 the country did maintain the highest per capita

income in the world, the national economy afterwards declined due to the 1890s depression and a prolonged drought. Thus, having lost a decade of growth, Australia was not, by any means, a working man's paradise in the early Federation years, when the domestic per capita income actually fell to the US level (McLean, 2013). Needless to say, the US income level and local labour costs did not prevent US shipowners from successfully expanding their presence in the global shipping industry (Stopford, 2009).

The shipping experiences of British dominions varied. Similar to Australia New Zealand had a small ocean going fleet and it experienced a shortage of qualified seamen to crew national flag ships so that local shipowners had to employ Indian seamen to work on their vessels. (Atkinson, 2001; Holman,1973). Canada, however, despite the status of as a high-wage economy, already captured a sizable proportion of bulk cargo traffic from the eastern United States to Britain and Europe by the late nineteenth century. Even though prior to World War One the progress of the national shipping sector slowed down the literature attributed this fact not to the cost of Canadian seafaring labour but mostly to the lack of government support, more attractive investment opportunities in the onshore industry sectors and increasing availability of non-Canadian shipping tonnage (Sager 1989; Sager and Panting,1990)

After all, the belief that high wages necessarily make commercial operations unprofitable is questionable in the light of efficiency wage theory. That theory holds that paying workers above the market average for their labour can maximise business profits in two ways: first there is an increase in labour productivity because of a greater incentive for employees to work harder; second, there is a reduction in supervision costs due to less need to monitor

labour performance (Weiss, 2014; Ehrenberg & Smith, 2006). That is why higher crewing labour costs may not necessarily have been a disadvantage for the Australian shipowner.

More importantly, though, the argument that the high cost of Australian labour was the major economic factor that prevented the shipping sector from being competitive on a global scale is rather hypothetical and cannot be tested via a robust cost–benefit analysis for an obvious reason—no Australian companies had ever operated on the busy and most commercially important European or North American routes in the pre-1914 period. Rather than making theoretical assumptions, as previous literature has done, this article adopts a conceptually novel approach to analysing why Australia did not create a deep-sea merchant fleet prior to World War I. To that end, let us pose a question: Did the nation have enough labour resources to operate that merchant fleet? To search for an answer, this article pieces together data from a diverse set of historical sources: shipping industry statistics, population returns, recorded wage rates, and proceedings of the two 1900s Australian royal commissions: one on Shipping Services (1906) and the other on the Navigation Bill (1904–1906). This evidence base allows us to estimate the supply of and demand for Australian seagoing labour between 1890 and 1910 and to reconstruct structural shifts in the national market for a seagoing workforce to shed light on the increasing shortage of domestic labour in that market over the period in question.

This article argues that Australia had the technological and institutional potential to build a large deep-sea merchant fleet, but lacked the qualified, skilled manpower to crew it. Most unskilled and semi-skilled workers saw no incentive to pursue a seagoing career because of higher pay and better

employment conditions in many industries ashore. Those who were willing to go to sea could fill only half of all positions available on Australian vessels engaged in extensive coastal trade. In a closed economy, an equilibrium in the national seagoing labour market would be effectively restored by increasing wages to attract more workers from other industry sectors. This did not take place. Unlike the business operators of onshore industries, Australian shipowners enjoyed direct access to external sources of labour outside the framework of the national economy. They faced few restrictions on hiring foreign nationals to crew their vessels, and thus they were able to keep wages below the national average. This factor consequently limited numbers of skilled, qualified Australian workers entering the profession and was a significant impediment to the development of a national deep-sea merchant fleet.

To advance the argument the paper is structured into three sections. The first section outlines the progress of Australian coastal shipping in the pre-1914 period to demonstrate that the industry possessed the technical, financial, and entrepreneurial capacity to successfully engage into deep-sea trade. The second section examines the character of the Australian market for seagoing labour to reveal the short supply of domestic seagoing labour. The third section finally explains the causes of this shortage and concludes that the supply of Australian seagoing labour was inadequate at the time to operate a national deep-sea shipping industry.

AUSTRALIAN SHIPPING IN THE PRE-1914 PERIOD

As a large island country Australia has always needed shipping to establish trading links with the outside world. Even now, despite the advancement of air transport, merchant vessels still provide the only means of delivering most Australian international cargo. In the early twentieth century, there was literally no substitute for ships plying international ocean routes. At that time overseas shipping contributed to national development in several major ways. One was with the shipment of international passengers. Over the years between the Federation of Australia in 1901 and the outbreak of World War I, ships brought 250,000 new migrants to the continent and moved other overseas travellers both inbound and outbound (Migration to Australia, 2010). Australia further relied on ships for carrying international mail correspondence, not only personal letters and packages, but also official documentation and financial papers. The apparent importance of postal services for public use and commerce prompted the British and Australian colonial authorities in 1852 to start providing regular mail subsidies to shipping companies (Meeker, 1905). Although fluctuating over time, these subsidies were large. In the first six years after Federation, the relevant expenses absorbed as much as a million pounds in the budgets of the Commonwealth and state governments, which exceeded by a quarter the total expenditure on the Federal Parliament over the same period (Year book Australia, 1908, 614, 654).

Merchant vessels were equally vital for the transportation of goods. By the start of the twentieth century Australia had already been greatly integrated into the global economy. Its rich endowment of natural resources—pastoral land and mineral deposits—unlocked lucrative commercial opportunities in

agriculture and mining. Both industry sectors became vehicles of economic progress by producing and exporting large quantities of bulky staple products such as wheat and coal. In line with the notion of comparative advantage, Australia also imported a range of manufacturing goods, predominantly from industrialised European countries (Dyster & Meredith, 1990). A common indicator of a nation's openness to international trade is the ratio of exports and imports to its gross domestic product (GDP). In this respect, Australia's two-way overseas trade averaged around 40 percent of GDP from 1870 to until the outbreak of World War I. By contrast the figures for the United States and Canada did not exceed 15 percent and 30 percent, respectively, for the same period (Kuznets, 1965).

With its high degree of openness to world trade, the Australian national economy was bound to generate a strong demand for deep-sea shipping tonnage. Table 1 summarises the relevant figures for the period of 1862 to 1912 and it shows that the volume of cargo flowing between Australia and the outside world remained rather constant between 1862 and 1872. At that time, around 3,000 ships annually visited Australian ports to load or discharge up to 1.5 million tons of various products. In the following four decades, which coincided with the first wave of globalisation, the number of merchant vessels coming from overseas did not increase significantly, owing to the replacement of sailing vessels by much larger steamers. Yet, the total shipping tonnage soared nearly eightfold to more than ten million tons, at a growth rate of around 5 per cent per annum or two times faster than the growth rate of the Australian population, which increased from 1.74 to 4.75 million between 1872 and 1912 (Australian Historical Population Statistics, 2004).

As expected, most foreign ships that dropped anchor at Australian ports flew the British flag. In 1912 British registered tonnage accounted for half of Australian deep-sea shipping traffic. Other important carriers were German and New Zealand ships, each moving around 12 percent of Australian international freight on the eve of the war. The participation of Australian ships in Australia's international trade was already disproportionately small. Between 1904, when relevant Commonwealth statistics were recorded for the first time, and the outbreak of the war, their share hovered at around 8 percent. Unlike foreign ships that were trading across the globe, Australian-flagged vessels operated on relatively short and unimportant routes connecting Australia to neighbouring Pacific islands and New Zealand (Year book Australia, 1908, 533; *ibid*, 1912, 666; *ibid*, 1915, 576). This meant that virtually all Australian transcontinental cargo and passenger traffic was transported by foreign-flagged ships at the outbreak of World War One.

The situation was perplexing given the successful long-term progress of Australian coastal shipping. By 1821 New South Wales already had a colonial register totalling nearly 120 small vessels. Built mainly locally, those secured important connections between Sydney and fledgling coastal outposts in the Hunter and Van Diemen's Land (Bach, 1976). As early as 1831, the first two steamers were plying coastal trade. One was an English-built 150-ton wooden paddle-steamer that managed to cross the oceans to reach Australia and another was a small vessel built in Sydney, demonstrated the ship-building capacity of the young settlement (Pemberton, 1979). Over the following two decades many more steamships appeared on the south-eastern coast of Australia operating to a regular

schedule and capturing 'the cream of the freight market: passengers, mail, valuable low-bulk commodities and perishables' (Broeze, 1998, 131).

With the expansion of Australia's colonial population and commerce after the discovery of gold in 1851, the number of coastal shipping routes and volumes of freight increased substantially. The geography of Australia and the lack of uniformity of railway gauges between the colonies made shipping the easiest means of communication around the country (Linge, 1979). Major traffic flows, known as the 'interstate trade', developed between the colonial capitals, all of which were easily accessible by sea. These major ports further formed their own networks of shorter runs with smaller outports, later named the 'intrastate trade' (Bach, 1976). To some extent, the expansion of colonial shipping traffic was also a result of repealing (in 1849) the British Navigation Acts, which essentially opened British trade, including around Australia, to foreign-flag vessels. So lucrative was the Australian coastal trade during the gold rush that even two US ships came to Australia to move cargo between colonial ports (Pemberton, 1979).

Interestingly, competition with foreign vessels was never a serious obstacle to the progress of domestic coastal shipping (Henning, 1973). When the Steamship Owners' Association of Australia assembled in Sydney in 1886 to bargain over labour rates with maritime unions, it represented the voices of 25 shipping companies and individual shipowners. These participants managed in total 171 vessels, amounting to 140,000 tons in carrying capacity, and paid an annual wage bill of £600,000 (Special Report of the Conference, 1886). In the early post-Federation years the institutional organisation of coastal shipowners further strengthened. United under the newly formed Australasian Steamship Owners Federation, they signed a

coastal shipping agreement incorporating a complex set of differing rebates and pooling arrangements. The agreement remained in force until the outbreak of World War II (Broeze, 1998).

The most visible activity of the coastal industry, if measured in terms of volume of freight, was the shipment of coal from Newcastle, New South Wales. The national market for coal was extensive because of burgeoning demand from the government railways, gasworks servicing cities, and steamboats operating both ocean and coastal routes (Pemberton, 1979). Overall, during the period of 1864 to 1914 the Newcastle mines produced as much as 200 million tons of fossil fuel. Roughly a quarter went overseas, and the rest was shipped within NSW and interstate, boosting bulk trade between the major colonial ports (Bach, 1976, 192). Another important function of Australian coastal shipping was the transportation of passengers on fixed schedules. At the end of the nineteenth century, ships that moved people were still 'spartan', featuring only saloon and cabin accommodation, as they also needed to use deck space for general cargo. Thereafter ships became more specialised, fitted out either as passenger liners or purely cargo vessels. Most interstate travellers at that time preferred a sea journey over a railway trip since passenger comfort was far superior aboard ship (Pemberton, 1979). Table 2 provides statistics on coastal liner services for the first decade of the twentieth century. It demonstrates that the scale of liner coastal trade grew throughout the reporting period. Even though the data for 1901 was not fully complete, between that year and 1912 the number of liner steamships increased by at least a third and so did their combined passenger and goods transportation capacity. In 1912 there were as many as 24 separate coastal shipping companies that managed in total 180

vessels that could accommodate 15,000 passengers. Coastal liners composed only a part of the domestic fleet. Table 3 presents statistics on changes in the total number of all Australian registered vessels and their combined gross tonnage over the period between 1890 and 1910.

The table does not show data for the post-1910 period as the system of collecting statistics on Australian shipping changed in 1911, which means subsequent data is not compatible with that of the preceding period. The pre-Federation shipping statistics also do not provide information for some years and do not differentiate between steam and sail-propelled vessels. Even so, the progress of Australian shipping over the timeframe of 1890 to 1910 is apparent. The number of registered vessels increased by 23 percent and their combined gross tonnage by 40 percent. This remarkable growth also took place in a generally adverse economic environment caused by the 1890s economic crisis and the following drought at the time of Federation (McLean, 2013). To a large extent, the strong progress stemmed from limited competition from land transport, which enabled coastal shipowners to retain a monopoly in interstate transportation and to make profits 'with relative ease' (Pemberton, 1979, 11). This latter statement is indirectly supported by the introduction of very large vessels into coastal trade prior to the war. In 1912 eight shipping companies managed in total 17 steamships of almost 10,000 tons, which was basically the size of an ocean-going liner (Pemberton, 1979, 12).

The largest coastal shipping carriers were financially capable of venturing into international shipping trade. Apart from their internal financial resources they could also tap into external sources of capital flowing from the national economy. By 1914 the total amount of deposits held in Australian banks

reached £163.8 million, or nearly 50 times more than in 1871 (A Statistical Account of the Seven Colonies of Australasia, 1899-1900, 751; Year book Australia, 1915, 743). In 1906 the Royal Commission on Ocean Shipping Service estimated that to carry all international mail and some passengers on the Australia–Europe route a new company would need £3 million in fixed costs to acquire eight new modern steamers and around £1 million in variable costs per annum to manage the fleet (1906, vi–vii). In practice, however, the investment required to take part in deep-sea shipping was less owing to the influence of economy of scale on the shipping industry at that time. This was especially the case for tramp shipping which, unlike regular liner transportation, operated under a flexible schedule and could call at any port to deliver or pick up cargo. Prior to the war, only 34 out of 99 British overseas tramp companies, that dominated the sector, had a fleet of six or more vessels. Most companies were small and as many as 37 managed to successfully operate with just one or two vessels, implicitly suggesting that provision of deep-sea shipping services was within the means of some Australian shipowners (Stopford, 2009, 32–33).

The Australian demand for these services was high in the pre-1914 period. The very nature of the national economy integrated as it was into global markets, and the isolated position of the country required steadily ever-larger amounts of ocean-going tonnage. Viewing the historical progress of Australian coastal shipping during the entire 19th century leads to a reasonable conclusion that the industry was financially, technologically, and institutionally capable of meeting, at least partially, that demand and yet it did not make that attempt. The following two sections provide an explanation

of this fact by examining the character of the seagoing labour market that developed in Australia.

THE SHORTAGE OF SEA-GOING LABOUR IN AUSTRALIA

Steam-era shipping was a labour-intensive industry owing to the lack of automation or mechanisation of onboard work. Overall, between 90 and 250 people were needed to operate a merchant ship of between 7,000 and 13,000 tons (Royal Commission on Ocean Shipping Service (1906), 65). The crews commonly consisted of seven or eight separate working teams divided into three major departments: engine, deck, and catering. Engine room personnel operated the propulsion system of the ship. Large vessels consumed vast quantities of coal and burned somewhere between 2,500 and 5,000 tons of fuel on the 12,000-mile trip between Australia and England (Royal Commission on Ocean Shipping Service, 1906, 65). Accordingly, their engine rooms needed dozens of stokers and trimmers to manually shovel coal from bunkers to furnaces and then remove the ash from furnace grates (The impact of technologies, 1982). Many crew members were also needed on the deck to handle tasks involving navigation, cargo handling and maintenance. To effectively manage the vessel during the voyage one engine room team and one deck team had to be on duty on each of the six four-hour shifts which comprised the 24 hours of the shipboard day. Catering personnel had a less rigid schedule and were mainly responsible for providing meals and general housekeeping at sea. Ships could have several cooks, mess attendants and even bakers who were all assigned daily work tasks (Morris & Donn, 1997).

The size of the Australian coastal fleet was large and so was its requirement for labour. The occupational statistics of Australian population censuses for the years 1891, 1901 and 1911 provide a convenient and reliable source of quantitative evidence by which to measure the size of the national seagoing labour force. This information can be used as a rough proxy to estimate the national domestic supply of seagoing labour. The Commonwealth census of 1911 and the colonial censuses of 1901 and 1891 listed maritime workers under three different subcategories: first, shipmasters, officers, and seamen; second, engineers, stokers, and coal-trimmers (for steamers); and third, stewards and ship servants. Table 4 presents these statistical data subdivided by colony/state.

The census breakdown of maritime occupations into three different groups aligned with the workplace division of ships' crews into three different departments—deck, engine, and catering. The table shows that long-term trends in the size and composition of the maritime workforce differed across the Australian states. New South Wales and Western Australia saw an increase in the number of maritime workers, especially in the number of engine room workers, that fact explained by more extensive deployment of steamships on coastal routes. The figures for Victoria and Queensland were relatively static, except for an increase in engine room workers. South Australian and Tasmanian data, however, suggest a general decrease of all three maritime occupational groups. As a result, the combined nationwide total of Australians working aboard merchant vessels increased by just five percent between 1891 and 1911. This slow growth rate contrasted with the progress of the Australian shipping industry. As Table 3 shows above, during 1890 to 1910 the number of Australian registered vessels increased by

nearly a quarter and their net tonnage grew by more than a third, implying that ships were becoming larger, requiring bigger crews.

Even assuming that basic mechanisation was making the operation of steamships less labour-intensive, the very nature of steam technology— heating water in a boiler and manually maintaining it at a particular pressure by manipulating various switches, gauges and valves—would still demand several crew members to be on constant watch in the engine room. Thus, the discrepancy in growth rates between the number of Australian ships and the number of Australians hired to manage them implicitly suggests a shortage of domestic labour supply. This assumption can be further tested by matching census occupational statistics, that is, the domestic supply of maritime workers, with an estimation of the number of workers who would be needed to manage the vessels, or the domestic demand for maritime workers. The figures in tables 2 and 3 can address that function. Table 2 indicates that the average numbers of crew members per coastal liner were 32, 30, and 32 in 1901, 1906 and 1912, respectively. This meant that a typical coastal liner needed around 30 workers to operate. Considering that steamships on fixed schedule could require much more manpower than other merchant vessels, due to their larger size and need for extra catering staff to take care of passengers, the average number of staff required across the whole merchant fleet would be halved: the fleet staff average should thus have been around 15 people per vessel. This estimate matches the evidence of Robert Grayson, the Australasian Steamship Owners' Federation secretary, to the Royal Commission on Navigation Act, that the manning level of two typical coastal vessels – *Shamrock* and *Colac* were 15 and 22 people, respectively (1906, 551). If the former figure is multiplied by the

number of Australian registered vessels (recorded in Table 3), it appears that 32,500, 35,500 and 41,500 crew members would have been required by the Australian merchant navy in years 1891, 1901 and 1910, respectively. Comparing these results with the maritime occupational statistics from censuses for the corresponding years reveals that the domestic supply of seagoing labour was likely to fall short of the demand by around 12,000, 14,000 and 20,000 staff in 1891, 1901 and 1910, respectively.

This growing shortage in the national maritime worker market was met by foreign supply. Harry Wollaston, the first Comptroller-General of the Australian Department of Trade and Customs, reported in 1904 to the Royal Commission on the Navigation Bill that British Imperial legislation, which then applied to Australia, allowed the employment of any person of any nationality, in any capacity on locally registered vessels (1904, 3). Coastal companies were naturally eager to take advantage of these liberal provisions and to recruit non-domestic sources of maritime labour. In the 1870s some shipowners even manned their vessels with Chinese crews, to the dissatisfaction of Australian maritime unionists who showed their objection to this by taking industrial action (*Queenslander*, 4 January 1879; *Morning Bulletin*, 27 November 1878). In the subsequent decades the resistance of the industrially strong and consolidated Seamen's' Union of Australia made the employment of 'Asiatics' a rare practice [can we put here a reference to our forthcoming book]. Much more common was the temporary engagement of British sailors in the Australian coastal trade. The story of Havelock Wilson, the founder of the powerful British National Union of Seamen, reflected this trend. As a young man in the late 1870s Wilson worked for a few years on Australian coastal ships before returning to England. He mainly

sailed on the busy Sydney–Newcastle run, making occasional calls to other smaller NSW ports (Wilson, 1925).

Some evidence presented by William Henry Hall, Government Statistician of New South Wales to the 1906 Royal Commission on Ocean Shipping Service indicated the scale of employment of foreign labour on Australian ships. Hall testified that a special investigation was conducted during the first six months of 1900 regarding the nationalities of crew members of vessels trading in New South Wales. Its result showed that 484 of these crew members were British-born (the number also included Australian-born, by virtue of Australia being then still a part of the British Empire). As many as 468, however, were foreigners. Of those, 224 were from Scandinavia, 131 from Russia or Finland, 37 from Germany and the rest came other foreign countries, including Denmark, the United States, France, and Italy (1906, 91). In this respect Charles Dingle, warden of the South Australian Marine Board, and marine superintendent of the Adelaide Steamship Company, complained in 1906 to the Royal Commission on the Navigation Bill that ‘there is a difficulty in getting a sufficient number of men—especially Englishmen—to man the ships now’ and as a result, ‘there is a large majority of foreigners on board’ (1906, 499). The inadequate supply of Australian-born and British-born rank-and-file seamen ultimately provoked widespread illegal shanghaiing activities at Australian ports. The same royal commission found overwhelming evidence of these illegal practices, prompting James McVane, sub-inspector of police in Newcastle for 20 years, to make a sarcastic comment that ‘none but stiffs and loafers were to be found round the shipping offices’ (1906, 743).

A shortage of Australian mariners worried the Australian public well before the Royal Commission on Ocean Shipping Service and the Royal Commission on the Navigation Bill. In late 1894 to early 1895, the *Sydney Daily Telegraph* dedicated its Letter to the Editor column to a lively public debate about structural changes in the Australian maritime community. Some contributors pointed out that while retirement and workplace accidents took their toll, few young Australians were joining ships to make up their numbers. This imbalance ultimately led to 'the disappearing Australian seaman' as an occupational identity and prompted the employment of foreign nationals on local ships. Figures were quoted to illustrate that in the early 1890s foreigners composed a third of rank-and-file seamen employed on Australian steamships and that proportion rose to two-thirds on sailing vessels. One reader complained that 'we have no Australian sailors, and worse still, we are without the means of providing them'. (*Daily Telegraph*, 17 November 1894, 5; *Ibid.*, 7 December 1894, 3; *Ibid.*, 17 November 1894, 4; *Ibid.*, 2 January 1895, 7). While the question was important for economic reasons, there was also an emphasis on national security. One columnist wrote:

The best defence for this magnificent territory lies in an efficient fleet, manned by skilled officers and disciplined crews of our own nationality and with reliable and efficient naval reserves by cultivation of marine industries and maritime population. The sooner the Australian people realise this fact and bestir themselves towards its achievement the better it will be for our future prosperity and security (*Daily Telegraph*, 2 January 1895, 7).

A summary of the discussion was forwarded to the governor of New South Wales, Robert William Duff, who promised to give his support in popularising the importance of maritime occupations (*Daily Telegraph*, December 1894,

3). The task was, indeed, important, as Australian residents took only about a half of all positions available onboard Australian ships, with the rest going to foreign nationals. This ratio remained unchanged throughout the period 1890 to 1910 and thus it supports the contention that there was a shortage of Australian maritime labour in the period before World War I.

CONSTRAINTS OF DOMESTIC SEAGOING LABOUR SUPPLY

Demographically, Australia was capable of providing an adequate supply of maritime labour. The population returns show that the total size of the national workforce, if measured by the number of male breadwinners, increased from 1.189 million people in 1891 to 1.284 in 1901 and further grew to 1.566 million in 1911 (Census of the Commonwealth of Australia, 1911). Throughout these years, the Australian cohort of seamen remained relatively constant at around 20,000 members (see Table 4). This means that as a proportion of the national pool of economically active workers, seagoing occupations declined from 1.85 percent in 1891, to 1.61 percent in 1901 and then further down to 1.34 percent in 1911. Given this evidence, the question arises why the maritime occupation was becoming less and less attractive as a source of income for Australians in the pre-World War I period.

The answer to this question in part stems from high wages being paid to skilled and semi-skilled workers in onshore industry sectors. To demonstrate this fact, Table 5 compares historical changes in the pay rates of rank-and-file seamen with those of their onshore fellow workers in selected industries. A national comprehensive dataset of pre-Federation labour costs is not available, so for the period of 1881 to 1901 the table lists wages as recorded

by Victorian statisticians. To maintain data continuity until 1913 the table quotes contemporary Melbourne wage figures by drawing on a series of Commonwealth labour and industrial statistics, published in that year for the first time.

The figures in Table 5 should be treated with caution for several reasons. First, actual real wages paid to workers often fell short of the high rates quoted in official returns as there was a diverse array of remuneration practices in play across different industries (Fahey and Sammartino, 2013). Second, the figures for 1881, 1891 and 1901 are not directly comparable with those for 1913 due to differences in the job classification systems used by Victorian and Commonwealth statisticians. This is especially the case for the shipping industry. The 1913 statistics showed the jobs of rank-and-file maritime workers classified into four groups, whereas the earlier years classified them into two groups. Third, the official returns recorded the wages of all onshore workers at either per day or per week rates, whereas seamen's wages were paid monthly. The table recalculated wages of onshore workers on a monthly basis, leaving some room for error. Forth, the earlier data of 1881–1901 were likely to cover the wages of ordinary seamen only and the pay rates of more skilled crew members, such as able seamen or boatswains, could be as much as twice as high (see Table 6 below).

Finally, unlike most onshore workers, seamen received nonmonetary benefits in the form of free onboard meals and accommodation, albeit of usually inferior quality. Even with all these caveats it is apparent from Table 5 that most of the rank-and-file seamen generally earned less than their onshore counterparts. One illustration of this fact was the comparative wages of steamship firemen and locomotive firemen in 1913. The latter could

earn the same or slightly more than his seagoing colleagues despite performing much the same tasks. Moreover, railway management offered young workers the possibility of very-long-term employment with very rare nominal pay cuts and salaries attached to tenure and to position (Seltzer and Sammartino, 2009). Given this difference in wages and employment conditions with, as Robert Craig, a former ship captain, put to the 1906 Royal Commission on Ocean Service, 'so many other ways of getting a livelihood', most working-class Australian males did not consider a possible career at sea (1906, 95).

Two major factors might explain the relatively low wages in the coastal shipping industry. One was the admission of some cheap overseas carriers into the coastal trade, potentially eroding the profit margin of Australian shipowners, which then instigated them to keep labour costs low (Nairn, 1961; Royal Commission on the Navigation Bill (1906), 462). Another, more important factor, was the possibility for Australian shipowners to hire foreigners to work aboard their ships, a practice not permitted in other local industries. That is why, the Australian Seamen's Union lobbied the Commonwealth government for amending the subsection of the immigration Restriction Act to denounce foreign sailors who served on coastal vessels as 'prohibited immigrants' if their wages were lower than those ruling ashore (Examiner, 13 August 1903, 6). As expected Australian seamen's representatives testified at the Royal Commission on Navigation Bill with genuine sympathy of some commission members that admission of 'cheap European and Asiatic labour' into coastal trade depressed their rates (1906, 672, 721). Thus, the employment of relatively cheap labour was both the cause and effect of the shortage of a domestic supply of maritime labour.

Referring to the general situation across the British Empire, Harry Wollaston, Comptroller-General of Australian Customs, reported to the Royal Commission on the Navigation Bill, that competition with cheap foreign labour admitted into the Australian shipping industry caused a disposition on the part of British-born seamen to look for employment ashore (1906, 3).

Taking labouring jobs onshore not only offered generally higher wages but also better working conditions. Unlike their fellow workers in onshore industries that were covered by the provisions of master and servant Acts, seamen were employed under the regulations of the British merchant shipping Acts (Broeze, 1981). They were typically enlisted for a single voyage only and were not allowed to terminate their contract at sea or refuse to carry out their duties. If they did so, they could be fined or even imprisoned. Failure to show up for the voyage after signing their contract (and thus receiving an advance payment), could also result in a few months of imprisonment. Seamen also had little influence over their working environment. Even if they judged their ship unseaworthy or complained about unsafe working conditions, they could still be forced to sail with the ship (*Leader*, 24 December 1892; Royal Commission on Ocean Service, 1906).

The work on board was gruelling and life at sea was harsh in general. The ship was a small, closed community that consisted of a diverse set of rugged individuals who had to share narrow spaces and live side by side for a prolonged period. The cramped, narrow compartments for rank-and-file crew members, situated in the bow of the ship, were used for multiple purposes: sleeping, messing, recreation and assembly. Captain Henry Press, a Port

Phillip pilot, reported to the members of the Royal Commission on the Navigation Act on living conditions in seamen's quarters:

A ship forecastle is not fit for a dog to sleep in.... There is the risk of collision. A man cannot get a proper sleep. There is the windlass chain and all the muck running through; the sanitary arrangements are dreadful. What you want to do is to make a man self-respecting and you cannot do that in these places (1906, 598).

Working hours of seamen were long, consisting of watches of six to eight hours. Considering that there were no days off on weekends, when the ship was at sea, a typical working week could extend for more than 60 hours. The situation was even worse on small vessels that had smaller crews. A vessel could engage all day in taking in cargo, and when it sailed at night the crew members who had been working throughout the day were required to take their watch at sea which made their working shift stretching for 50 hours excepting short meal intervals. (Royal Commission on the Navigation Bill, 1906, 4). These practices contrasted sharply with 'extravagances ... of the eight-hour system' granted to Australian workers onshore (*Daily Telegraph*, 17 November 1894, p. 4).

Tough working conditions on merchant vessels provoked a deep sense of unhappiness and resentment among many seamen. Some Australian periodicals ran a regular 'The Seamen's Case' column to inform their readership about the hardships and deprivations of either individual sailors or ships' crews as a whole. Not surprisingly, in the eyes of most Australians working at sea was viewed as an unworthy pursuit that was not suitable for any dignified and self-respecting man (Broeze, 1998; Broeze, 1981). Reflecting on this public perception, Captain Press openly stated to the members of the Royal Commission that he would not allow his own children

to go to sea as ‘there is absolutely no inducement for any one to go to sea—no plums, no goal’ (Royal Commission on the Navigation Bill (1906), p. 598).

Along with inferior pay and poor working conditions, shipping industry representatives also complained about the limited training opportunities for Australian youth to give them a good start in the maritime industry. What was required, in their opinion, was a system of apprenticeship to place young people on ships with ‘proper food, quarters and pay’ and train them to sit for the Certificate of Able Seaman, with which they could gain relatively good pay rates (Royal Commission on the Navigation Bill (1906), 499, 598). Some also criticised the ‘selfish policies’ of Australian seamen’s unions that prohibited non-unionised youths from working aboard vessels manned by unionised labour, which in turn placed additional barriers for entry into the Australian maritime workforce (*Daily Telegraph*, 17 November 1894, 5; *Ibid.*, 7 December 1894, 3; *Ibid.*, 17 November 1894, 4; *Ibid.*, 2 January 1895, 7).

Apart from joining Australian-owned vessels, Australian residents were able to seek employment on foreign-flag carriers, not only British but from many other countries as well. There was no legal impediment to this (Royal Commission on Ocean Service (1906), 210). Yet, as a Perth shipping agent testified to that royal commission, ‘Australians [are] not to be found in overseas boats, except in a very few cases.’ (1906, 331). To a great extent, this was because an ocean seagoing career on non-Australian vessels was even less financially rewarding than work on Australian coastal ships. To illustrate this fact, Table 6 compares wages paid in 1903 to the crews of Australian coastal vessels and to the mostly European crews of British vessels trading with Australia.

The data collated in Table 6 allows us to conduct a simple paired t-test to measure the differences in wages between the same occupations on coastal and ocean-going vessels. With a high degree of probability (p -value = 0.00001 and a confidence level of 99%), the seaman who worked aboard a coastal ship could earn somewhere between 14.7 and 45.7 shillings a month more than his counterpart working aboard an ocean-going ship. Remembering that deep-ocean sailing also involved prolonged periods of absence from home and families, it is clear that Australians who considered going to sea for a living would overwhelmingly prefer domestic coastal ships over foreign-flagged ocean-going vessels. Signing on for a return Australia–UK run entailed spending around four months at sea. As expected, married seamen preferred employment on shorter coastal runs to enable them to be with their families more often. (Royal Commission on Ocean Service, (1906), 68, 211, 337)

Maritime work on foreign-flagged vessels was therefore of little appeal to Australian nationals, who also were not much tempted to join coastal ships, due to low pay and inferior working conditions. Drawing on these facts, Figure 1 constructs a simple supply-and-demand diagram of the Australian market for seagoing labour to illustrate a probable answer to the question of why the nation did not create a deep-sea merchant fleet prior to 1914.

Figure 1 shows that that supply of domestic maritime labour was static between 1891 and 1911 since clearly the domestic supply curve does not change on the graph. Considering the comparatively small size of the Australian labour market the supply of seagoing foreign labour was perfectly elastic at the level of local seamen's wages W_1 , which were above the global average. In Section 2 it was explained that the demand of the coastal

shipping industry for labour increased by roughly a quarter between 1891 and 1911 and thus the demand labour curve on the graph shifts to the right from $D_{1891(\text{coastal})}$ to $D_{1911(\text{coastal})}$. In 1891 at W_1 the domestic labour supply (L_1) failed to meet the demand so that the shortage had to be partially met by foreign supply (difference between L_1 and L_2). With an increase in labour demand and unchanged domestic labour supply over the next two decades, the supply of foreign labour increased (difference between L_1 and L_3). Indeed, it was possible to estimate that the shortage of domestic labour nearly doubled to around 20,000 maritime workers over that period. If Australian shipping companies had made an attempt to enter into long-haul sea transportation, they would have generated additional demand for labour and this would have pushed the demand curve on the graph further to the right to $D_{1911(\text{coastal and deep-sea})}$. At wage rate W_1 the only way to meet that demand would have been to further increase the supply of foreign labour (difference between L_1 and L_4)—that is, to man Australian-registered ocean-going vessels with foreign crews. This option was neither economically nor politically viable. It would not help to retain more labour earnings in the national economy, nor would it help to boost the number of qualified seamen joining the Australian Navy.

These new estimates of supply and demand of Australian seagoing labour show that the cost disadvantages of Australian flag vessels were driven by the lack of domestic seafarers. The national-based solution to this problem was to impose a legal barrier to foreign carriers to their entry into the coastal trade and to bring the coastal shipping industry under the national industry relations framework to equalise wages between Australian coastal shipping and onshore industries. This dual target was politically archived

with the adoption of the 1912 Navigation Act becoming operational after World War One. There was, however, no viable solution to secure adequate labour supply for Australian overseas merchant marine that had to work in unregulated and highly competitive global commercial environment. Higher wages well above global averages would have been necessary to induce Australian residents to go to sea, yet higher labour costs would have increased the cost disadvantages of national flag ships, acting as an impediment to the establishment of Australian private deep-sea merchant fleet.

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TABLES

Table 1. Volume of Australian overseas shipping traffic for selected years

	1862	1872	1882	1892	1902	1912
Vessels	2,917	2,788	3,652	3,432	3,608	4,052
Tonnage	1,389,231	1,380,466	3,010,944	4,239,500	6,234,460	10,275,314

Source: Year book Australia, 1915, 569

Table 2. **Regular coastal services**

		1901	1906	1912
Number of companies*		11	22	24
Number of steamships		113	153	180
Net tonnage		114,080	133,697	179,996
Number of passengers licensed to carry	1st class	4,617	6,191	9,084
	2nd class and steerage	4,490	5,911	6,376
	Total passengers	9,107	12,102	15,460
Crew	Masters and officers	403	506	604
	Engineers	332	407	509
	Other crew members	2,875	3,657	4608
	Total	3,610	4,570	5,721
	Average numbers of crew members per coastal liner	32	30	32

*A few small companies did not provide returns for 1901 even though they operated in that year.

Sources: Year book Australia, 1912, 676; *ibid*, 1915, 686.

Table 3. Vessels on the Australian register 1890 to 1910

	Steam*		Sailing*		Total	
	number	net tonnage	number	net tonnage	number	net tonnage
1890				130	2,261	294,404
1891					2,169	278,919***
1892					2,207	312,447***
1893					Data not available	
1894					2,278	285,966
1895					Data not available	
1896					2,267	307,626
1897					Data not available	
1898					Data not available	
1899					2,315	322,683
1900					Data not available	
1901	943	203,541	1,433	141,722	2,376	345,263
1902	965	208,043	1,483	141,125	2,448	349,168
1903	1,004	219,985	1,578	136,888	2,582	356,873
1904	1,011	223,558	1,700	129,801	2,711	353,359
1905	1,052	222,551	1,690	129,291	2,742	351,842
1906	1,082	238,742	1,644	128,288	2,726	367,030
1907	1,108	249,600	1,555	126,402	2,663	376,002
1908	1,148	255,249	1,571	129,392	2,719	384,641
1909	1,196	274,551	1,535	129,540	2,731	404,091
1910	1,224	284,104	1,548	128,319	2,772	412,423

*Includes steam-propelled port tugs and dredges

**Includes sailing ships fitted with auxiliary steam engine

***not including sailing vessels in Queensland

Sources: Year book Australia, 1912, 671; A Statistical Account of the Seven Colonies of Australasia, 1892, 29; *ibid*, 1893, 35; *ibid*, 1894, 27; *ibid*, 1895-96, 129; *ibid*, 1897-98, 140; *ibid*, 1899-1900, 331.

Table 4. Categories of Australian sea-going workers by colony/state

	1891	1901	1911
NSW			
Shipmaster, officer, seaman	4,605	4,372	4,742
Engineer, stoker, coal-trimmer of steamer	1,770	2,409	2,196
Steward, ship servant	913	1,429	1,351
<i>Total</i>	<i>7,288</i>	<i>8,210</i>	<i>8,289</i>
Victoria			
Shipmaster, officer, seaman	2,100	2,023	2,198
Engineer, stoker, coal-trimmer of steamer	893	660	1,174
Steward, ship servant	1,093	528	820
<i>Total</i>	<i>4,086</i>	<i>3,211</i>	<i>4,192</i>
South Australia			
Shipmaster, officer, seaman	2,248	2,001	1,682
Engineer, stoker, coal-trimmer of steamer	738	818	664
Steward, ship servant	611	655	309
<i>Total</i>	<i>3,597</i>	<i>3,474</i>	<i>2,655</i>
Queensland			
Shipmaster, officer, seaman	2,010	1,561	1,318
Engineer, stoker, coal-trimmer of steamer	366	835	801
Steward, ship servant	272	475	551
<i>Total</i>	<i>2,648</i>	<i>2,871</i>	<i>2,670</i>
Western Australia			
Shipmaster, officer, seaman	1,182	1,104	1,133
Engineer, stoker, coal-trimmer of steamer	95	452	734
Steward, ship servant	71	362	584
<i>Total</i>	<i>1,348</i>	<i>1,918</i>	<i>2,451</i>
Tasmania			
Shipmaster, officer, seaman	701	673	527
Engineer, stoker, coal-trimmer of steamer	203	250	147
Steward, ship servant	186	153	85
<i>Total</i>	<i>1,090</i>	<i>1,076</i>	<i>759</i>
Northern Territory			
Shipmaster, officer, seaman			21
Engineer, stoker, coal-trimmer of steamer			5
Steward, ship servant			1
<i>Total</i>			<i>27</i>

Total for Australia	20,057	20,760	21,043
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Sources: Census of the Commonwealth of Australia, 1911; New South Wales Census, 1891, *ibid*, 1901; Census of Victoria, 1891; *ibid*, 1901; South Australia, Census of 1891; *ibid*, 1901; Census of Western Australia, 1891; *ibid*, 1901; Census of Queensland, 1891; *ibid*, 1901; Census of the colony of Tasmania, 1891; Census of the state of Tasmania, 1901.

Table 5. Wages of occupational groups in Melbourne (shillings per month).

	1881	1891	1901	1913
<i>Shipping industry</i>				
Sailor – sailing vessels	90 - 100	70 - 100	80 – 90	
Sailor –steamship	120	140	140	
Boatswain				180
Able seaman				160
Fireman				200
Trimmer				160
<i>Average</i>	<i>107.5</i>	<i>112.5</i>	<i>112.5</i>	<i>175</i>
<i>Selected onshore industries</i>				
Mason	200	200-220	180– 200	256 – 286
Blacksmith	200 - 260	200-240	180-200	264
Iron worker	200 – 240	160 - 280	160 – 240	224
Miner	160-180	160-200	160-200	
Bricklayer	200	200	200 –220	284
Railway fireman				192 - 228
<i>Average</i>	<i>204</i>	<i>206</i>	<i>194</i>	<i>250.6</i>

Sources: Victorian Year-Book, 1892, 162-166; Statistical Register of Victoria, 1901, 276 – 278; Year Book Australia, 1913, 1130 – 1138.

Table 6. Coastal and ocean shipping wages compared *

Occupation	Average monthly wage (shillings)			Average monthly wage (shillings)	
	Ocean-going steamers	Interstate steamers		Ocean-going steamers	Interstate steamers
<i>Navigation</i>			<i>Catering department</i>		
1st Mate	300	300	Chief Cook	220	240
2nd Mate	200	240	2nd Cook	120	140
3rd Mate	160	200	Baker	120	160
Boatswain	130	150	Butcher	120	100
Carpenter	150	170	Pantryman	80	110
Able Seaman	80	130	Head Steward	200	240
Ordinary Seaman	45	60	2nd Steward	140	140
Winchman	140	190	Stewardess	50	50
<i>Engine Room</i>			General Servant	60	80
1st Engineer	500	440-500			
2nd Engineer	300	340-360			

3rd Engineer	250	280-300			
5th Engineer	160	200			
6th Engineer	160	200			
Fireman	80	170			
Greaser	90	170			
Trimmer	70	130			

*Wages paid to Indian and Chinese sailors who also worked on British-flag vessels were considerably lower

Source: A Statistical Account of Australia and New Zealand, 1903--04.

FIGURES

Figure 1. Market for seagoing labour in Australia pre-1914

