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The Evolution of the Low-Cost Carriers in the Trans-Tasman Aviation Market

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Abstract

This research examined the evolution of low-cost carriers (LCCs) in the Trans-Tasman aviation market, quantifying their impact and qualifying their influence on the market. New Zealand is Australia's second largest tourist market, and the air routes to Australia are New Zealand's busiest; as such, the trans-Tasman passenger traffic is of significant economic and strategic interest. This study utilized an exploratory research design and an in-depth longitudinal research approach to examine the evolution of the market and to understand the process of market development. The qualitative data was examined by document analysis. The study period was from 1995 to 2020. The low-cost carriers (LCCs) first entered the market in 1995. The case study revealed that since that time, the market has broadly had four discrete phases. The first phase was from 1995 to 2003 when the first low-cost carriers (LCCs) entered the market; the second phase saw the rapid growth in traffic following the launch of services by Pacific Blue Airlines (a subsidiary of Virgin Blue) and Jetstar Airways. An important development in the market took place in 2010, when Pacific Blue was rebranded Virgin Australia, and, as such, implemented the full-service network carrier (FSNC) business model. In 2016, AirAsia-X entered the market, utilizing fifth freedom traffic rights, to provide daily Airbus A330 services from Coolangatta to Auckland. AirAsia-X exited the market in early 2019 leaving Jetstar Airways as the sole low-cost carrier operating in the market (Phase 4).

1. Introduction

The low-cost carriers (LCCs) or low airfare airlines have become a global phenomenon, with virtually all travel markets containing at least some low-cost carriers (LCCs) today (Vasigh, Fleming & Tacker, 2013). Indeed, one of the most significant trends in the world airline industry over the past three decades or so has been the phenomenal growth of the low-cost carriers (LCCs). The low-cost carriers (LCCs) are often viewed as one of the most successful business concepts that have happened within contemporary travel. The astute business model of these airlines by offering significantly lower prices through the elimination all the in-flight extras together with their strict focus on cost-control has enabled them to capture significant market share. USA-based Southwest Airlines operated its first low-cost domestic US flight in 1973 (Kua & Baum, 2004). In more recent times, the low-cost carrier (LCC) business model has evolved with several low-cost carriers (LCCs) commencing long-haul, scheduled, no frill services (Daft & Albers, 2012; De Poret, O'Connell & Warnock-Smith, 2015; Morrell, 2008; Wensveen & Leick, 2009; Whyte & Lohmann, 2015a). Jetstar Airways, for example, has implemented international, no-frills service in addition to their domestic Australian services (Jiang, 2013; Taneja, 2016; Whyte & Lohmann, 2015b). Like many other countries, since 1995, Australia has seen the introduction of international services by not only Australia-based low-cost carriers (LCCs), such as, Jetstar Airways, but also the provision of services from Asia-based low-cost carriers (LCCs), for example, Air Asia-X, Cebu Pacific, and Scoot.

The low-cost carriers (LCCs) first entered the Trans-Tasman aviation market in 1995 with the introduction of a low-cost, no-frills services by Kiwi Travel International Airlines. Since the inception of these services, the market has continued to evolve, and has seen the entry of Pacific Blue, a subsidiary of Virgin Blue, in 2004 and Jetstar Airways, the Qantas Group low-cost carrier (LCC) in 2005. Air New Zealand followed the carrier-within-carrier (CWC) strategy launching Freedom Air International Airlines as its Trans-Tasman low-cost carrier (LCC) in December 1995 (Knibb, 2004b). AirAsia-X entered the market in March 2016 operating daily Airbus A330-300 services from Kuala Lumpur to Auckland via Coolangatta (the Gold Coast), using fifth freedom rights to operate their services over the Coolangatta to Auckland and Auckland to Coolangatta sectors (Freed, 2016).

Despite the growth of the low-cost carriers in the Trans-Tasman aviation market, there has been no reported study that has examined their evolution since the inception of their low-fare services in 1995. Thus, a key aim of this study was to address this apparent gap in the literature. The objective of this paper is to examine the evolution of low-cost carriers (LCCs) in the Trans-Tasman aviation market in terms of the annual

number of inbound and outbound enplaned passengers, the annual inbound and outbound enplaned passenger growth rates, and the low-cost carriers (LCCs) annual share of the inbound and outbound Trans-Tasman passenger market share. In order to achieve the research objectives, this study addressed the following research questions.

1. How have the low-cost carriers (LCCs) evolved in the Trans-Tasman aviation market over the period 1995 to 2020?
2. How have the low-cost carriers (LCCs) competing in the Trans-Tasman market structured their route networks to optimize their passenger traffic?
3. Have the low-cost carriers (LCCs) competing in the Trans-Tasman aviation market focused on the use secondary airports as a key part of their service offering?
4. Have the low-cost carriers (LCCs) competing in the Trans-Tasman aviation market utilized a homogenous aircraft fleet strategy?

The remainder of the paper is structured as follows: Section 2 presents an overview of the low-cost carrier (LCC) business model, the international air transport industry regulatory framework, and airline competition and market share. Section 3 outlines the research method that underpinned the in-depth case study. The case study results are presented in Section 4. Section 5 provides the concluding remarks on the research findings.

2. Literature Review

2.1. The low-cost carrier business model: A brief overview

Doganis (2006) suggests that a low-cost carrier (LCC) is an airline that offers low air fares but eliminates all unnecessary services. A critical focus of the low-cost carriers (LCCs) business model is cost reduction. By minimizing their costs, low-cost carriers (LCCs) can implement a price leadership strategy in the markets which they serve (Acar & Karabulak, 2015; Vidović, Štimac & Vince, 2013).

Low-cost carriers (LCCs) costs are minimized by the operation of a single-type aircraft fleet (Koch, 2010; Schlumberger & Weisskopf, 2014; Vasigh & Rowe, 2020). The low-cost carriers (LCCs) operating short-to-medium-haul flights typically use a homogeneous fleet, for example, Jetstar operates a fleet of Airbus A320 and A321 aircraft on its domestic Australia and Trans-Tasman services. The use of a young and homogenous fleet of medium-sized aircraft (usually Boeing 737-700/800 or Airbus 320/321 aircraft) normally results in a reduction in the low-cost carriers (LCCs) fuel, maintenance, and staff costs (Ehmer et al., 2008).

The low-cost carriers (LCCs) typically configure their aircraft with a high-density, all-economy seating arrangement (Bowen, 2019; Leick & Wensveen, 2014; Wilken & Berster, 2016). However, not all low-cost carriers (LCCs) adhere to his principle, with some airlines offering seat pitches of between 31 to 34 inches (Schlumberger & Weisskopf, 2014). In addition, some low-cost carriers (LCCs) also offer a business or premium economy class. AirAsia-X, for example, offers a 'Premium Flatbed' class on its Airbus A330-300 aircraft (Lennon, 2016; Vasigh, Taleghani & Jenkins, 2012).

The network features of air transportation are critical to those whose supply and use air services (Button & Stough, 2000). Every airline is endowed with a unique route structure, traffic catchment area, cost base, productivity levels and management skills that are the result of its path and pace of historical development, strategic intent, the characteristics of its home and regional markets, and the international regulatory system (Baxter, 2015). From an airline's perspective, there are many possibilities in providing its route network. Which network form is selected is likely to be a function of external institutional factors, for example, controls over flight paths, available airport landing and aircraft take-off slots, and air service agreements (ASAs) stipulations, as well as economic considerations (Button, 2002). An airline's network design encompasses the strategic decisions made on an airline's network shape and the route flight frequencies (Hsu & Wen, 2000).

The operation and profitability of an airline, whether it be passenger or a freight operator, is highly dependent on the network over which its services are operated, and thus, the airline's network represents at once its production plan and its product' (Reynolds-Feighan 1994, p.197). The multiple roles of an airline's route networks make it a critical strategic and competitive variable for airlines (Cento, 2009). The size of an airline's network is a competitive variable. An airline's route network is a collection of origins-and-destinations (O&Ds), often called city pairs. If a single city-pair is regarded as one product of the airline, then, the larger the airline route network, the greater is its range of products. Route networks are therefore a factor in differentiating airlines (Kleymann & Seristö, 2016). Linear (P2) route networks simply link separate airports (Button, Haynes & Stough, 1998). Many low-cost carriers (LCCs) operate route networks that are principally based on a point-to-point (P2P) network design (Birolini et al., 2022; Franke, 2018; Gross & Klemmer, 2014; Whyte & Lohmann, 2017). A linear route, point-to-point (P2P) airline therefore tends to focus its services on dense markets with sufficient origin and destination (O & D) traffic to sustain non-stop operations (Dempsey & Gesell, 1997). The low-cost carriers (LCC) model is based on simplicity. To maintain a low-cost base and to increase efficiencies the low-cost carriers (LCC) must remove all complicating factors from their business environment. As such, point-to-point (P2P) operations they provide low-cost carriers (LCCs) with the simplest network building block (Doganis, 2006).

Many airlines structure their route networks on short haul, medium-haul, and long-haul services (Baxter & Bardell, 2017). In addition, as the numbers of passengers increase on a route, it becomes possible for airlines to deploy larger aircraft types and/or offer a more frequent service. In the airline industry, there are "thin" routes, that is, routes that have a small number of passengers per day, and "dense" routes, where there are substantial numbers of passengers per day. Typically, dense air routes receive a point-to-point (P2P) service, whilst thin routes are combined using the hub-and-spoke system (Morrison, 2007).

In international markets, however, the airline is often constrained by the various 'Freedoms of the Air' and cabotage restrictions as to how many stops it can make en-route (Wensveen, 2016).

The low-cost carriers (LCCs) often operate services from secondary airports (Beria, Laurino & Postorino, 2017; Dobruszkes, Givoni & Vowles, 2017; Pan & Truong, 2018), which are normally located farther from the main urban area

than primary airports. Strategically low-cost carriers (LCCs) are endeavoring to broaden their traffic catchment area and increase their market shares by offering flights at lower air fares (de Wit & Zuidberg, 2014). Less congested secondary airports help airlines to maintain their flight schedules and avoid delay costs. By utilizing less congested airports aircraft turnaround times can be optimized which helps keep costs low and increases operational efficiency and productivity (Barrett, 2004; Gillen & Lall, 2004).

Apart from the lack of congestion at smaller airports, secondary airports usually charge lower fees than the more established airports and, where permitted, are more willing to co-finance the promotion of new routes. Using secondary airports not only reduces costs but enhances low-cost carriers (LCCs) competitive advantage in several aspects. The use of secondary airports overcomes slot availability problems allowing the low-cost carriers (LCCs) to design flight schedules that maximize their aircraft fleet utilization (Barbot, 2006). This is also relevant to the present study, as the case study will show that several LCCs launched services from regional airports, such as, Hamilton and Dunedin in New Zealand to Australia's major gateway airports – Brisbane, Melbourne, and Sydney.

2.2. The international air transport industry regulatory framework: a brief overview

International air transport operates within the framework of the 1944 Chicago *Convention on International Civil Aviation* and is traditionally administered by a complex network of multilateral government air services agreements (ASA's) and International Air Transport Association (IATA) rules (Oum & Yu, 2012). Based on the principle that "every state has complete and exclusive sovereignty over the air space above its territory" (Wensveen, 2016), the 1944 Chicago *Convention on International Civil Aviation* established multilateral agreements in some areas, mainly concerning an airline's right to overfly and make technical stops in a foreign country, but not in areas of commercial rights. Commercial air rights were left to bilateral agreements to be negotiated between individual countries (Martin & Román, 2011; Oum & Yu, 2012; Rochat, 1995).

Air Services Agreements (ASAs) (often called "bilaterals" in the industry) are government to government negotiated agreements governing the conduct of trade in international air services between two respective countries (Bureau of Transport and Communication Economics, 1994). Scheduled airline services/capacity between nations is determined through a legal framework of bilateral negotiations of air services agreements (ASA's) (Jones & Collett, 2001). Bilateral air services agreements (ASAs) are negotiated on the principle of reciprocity (Graham, 2016; Law, Zhang & Zhang, 2019; Zhang et al., 2017), and equal and fair exchange of air services traffic rights between countries that are very different in size and with airlines of varying sizes.

Scheduled airline capacity between nations is therefore determined through bilateral negotiations of air services agreements (ASA's). Bilateral air services agreements (ASA's) vary in form, but in general, these agreements establish a country's market access (entitlement of capacity), airline designation, capacity (the level of flight frequencies, the authorized routings, and whether dedicated freight services would be permitted). These agreements can also determine tariffs, the types of aircraft that can be use, and what airports can be utilized by airlines for their services (Chang & Williams, 2001). Most air services agreements (ASAs) include broadly similar clauses or articles, dating back to the original 'Bermuda 1' agreement signed between the United States and the United Kingdom (Morrell & Klein, 2020).

International aviation rights consist of the "Eight Freedoms of the Skies"(Wensveen, 2016). The fifth freedom of the air is of relevance to this study as the case study will reveal that Air Asia-X used fifth freedom traffic rights to operate its services between Coolangatta, The Gold Coast, Queensland to Auckland, New Zealand. The "fifth freedom" is the right of the airline of State A to operate beyond State B and to take on and put down passengers and mail travelling between State B and State C (that is, carriage of third country traffic, not originating or terminating in the home country of the airline (Bartlik, 2007; Haanappel, 2003).

2.3. Airline competition and market share

In the global airline industry, airlines compete for both passengers and market-share. These commercial and strategic objectives are achieved through the following factors:

- The frequency of flights offered and the departure schedule on each route served;
- Price (air fare) charged, relative to competitors, to the degree to which the regulatory framework permits price competition; and
- Quality of service and products offered by the carrier, including airport and in-flight amenities, and/or restrictions on discount fare products (Belobaba, 2016, p. 67).

3. Research Methodology

3.1. Research method

The research undertaken in this study was exploratory in nature (Dawes Farquhar, 2012; Stebbins, 2001) and was underpinned by an in-depth longitudinal case study research design (Baxter & Srisaeng, 2021; Derrington, 2019; Hassett & Paavilainen-Mäntymäki, 2013; Neale, 2019). The primary advantage of this research technique is that it reveals change and growth in an outcome over time (Kalaian & Kasim, 2008). A qualitative case study also allows for the exploration of complex phenomena (Remenyi et al. 2010; Yin, 2018). In addition, a case study enables a researcher(s) to gather and use rich, explanatory information in their study (Ang, 2014; Mentzer & Flint, 1997). Furthermore, a case study research approach also enables researchers to connect with real world practice (McCutchen & Meredith, 1993).

3.2. Data collection

The qualitative data for this study was obtained from a range of documents, which included official Government reports, relevant low-cost carrier (LCC)-related articles in the authoritative industry magazines, such as *Air Transport World, Airline Business, Aviation Week & Space Technology* and *Flight International* and air transport industry-related journals, books, and the low-cost carriers (LCCs) websites. The enplaned passenger data was sourced from the Bureau of Infrastructure, Transport and Regional Economics (BITRE). The study therefore used secondary data. The three principles of data collection as recommended by Yin (2018) were followed: the use of multiple sources of case evidence, creation of a database on the subject and the establishment of a chain of evidence.

3.3. Data analysis

The empirical data collected for the case studies was examined using document analysis. Document analysis is often employed in case studies (Grant, 2019; Monios, 2016) and focuses on the information and data from formal documents and company records that have been gathered by the researcher(s) (Baxter, 2021; Oates, 2006; Ramon Gil-Garcia, 2012). The documents gathered for the study were examined and assessed by four key criteria: authenticity, credibility, representativeness and meaning (Fulcher & Scott, 2011; Scott, 2014; Scott & Marshall, 2009).

The document analysis was undertaken in six discrete phases. The first phase involved planning the types and required documentation and their availability for the study. Phase two represented the data collection phase and this involved sourcing the documents and developing and implementing a scheme for the document management. In Phase 3 of the document analysis, the collected documents were examined to assess their authenticity, credibility and to identify any potential bias that may be present in the documents. During Phase 4, the contents of the collected documents was carefully examined, and the key themes and issues were identified. Phase 5 involved the deliberation and refinement to identify any difficulties associated with the documents, reviewing sources, as well as exploring the documents content. In Phase 6, the final phase, the analysis of the data was completed, and the case study was updated accordingly (O'Leary, 2004, p. 179).

Following the recommendation of Yin (2018), all the collected documents were downloaded and stored in a case study database. The documents gathered for the study were all in English. Each document was carefully read, and key themes were coded and recorded in the case study (Baxter, 2021; Baxter & Srisaeng, 2020).

4. Results

4.1. Evolution of Australia's Trans-Tasman single aviation market policy

Air services between Australia and New Zealand were initially regulated by an air services agreement (ASA) that was signed in 1961 by the respective governments (Duval, 2005; Findlay & Kissling, 1997), and the subsequent Memoranda of Understanding (MOU). The arrangements were originally very restrictive. Air New Zealand and Qantas were the only two designated airlines and the governments of both countries had to agree on air fares, flight frequencies and capacity. Some of these restrictive features were relaxed during the 1980s (Findlay, 1996). However, since the Australia–New Zealand Closer Economic Relations Trade Agreement (known as the CER Agreement) entered effect in 1983, the Australian and New Zealand economies have become progressively integrated (International Civil Aviation Organization, 2007).

In 1992, Australia and New Zealand agreed to the formation of a "Single Aviation Market" (SAM) as part of the Australia–New Zealand Closer Economic Relations Trade Agreement (Productivity Commission, 1998). Notwithstanding, in 1988, following the conclusion of the CER Trade in Services Protocol, Australia chose to exclude international and domestic air services from its application. In contrast, the only air services exclusion by New Zealand was international airlines flying cabotage route within New Zealand. As a result, liberalization of air services across the Tasman continued to be dealt with through a bilateral air services (ASA) agreement and related understandings. For instance, the 1989 understanding agreed to multiple designation for all-cargo services with no capacity constraints. Importantly, the integration process has been significantly affected by the progress of domestic deregulation and privatization of both country's national airlines (International Civil Aviation Organization, 2007). In Australia, the domestic aviation market was deregulated on the 30th of October 1990 (Mills, 2017; Quiggin, 1997; Srisaeng, Baxter & Wild, 2014). The Australian Government owned Qantas Airways was partially privatized in 1993, when the Australian Government sold 25 per cent of its shares to British Airways (Marquardt, Berger &; Loan, 2004). In New Zealand, the domestic market was deregulated in 1983 (Lyon & Francis, 2016; Mecham, 1994a; Wolfe, 1999). In 1987, the New Zealand Government invited Australia-based carrier Ansett Australia to establish a New Zealand subsidiary – Ansett NZ (Mecham, 1994a) and State-owned Air New Zealand (ANZ) was fully privatized in 1989, and subsequently re-nationalized in 2002 (Hunziker, 2005).

In 1992, Australia and New Zealand concluded a Memorandum of Understanding (MOU). This agreement lifted capacity restrictions across the Tasman Sea, introduced multiple designation and a double disapproval tariff regime (International Civil Aviation Organization, 2007; Productivity Commission, 1998). The ratification of the Memorandum of Understanding (MOU) opened the Trans-Tasman air travel market to Australasian airlines other than Air New Zealand and Qantas and provided a phased introduction (with a limit up to of 12 Boeing 747s per week) of an all-points exchange so that by November 1st, 1994, all Australasian airlines could operate to, from or between and designated international airport in either country (Pearce, 1995). The Memorandum of Understanding (MOU) also contained a commitment by both States to consult on the subsequent full exchange of beyond rights and cabotage rights, the ownership and control of designated airlines, and the possibility of forming a joint bloc for negotiating international traffic rights (Productivity Commission, 1998, p.69). Airlines were permitted to set their own air fares and flight frequencies (Wolfe, 1999). In addition, by November 1, 1994, there was multiple designation for passenger and air cargo services with no limit on the number of cities that an airline(s) could serve (Findlay, 1996). The joint air services agreement was due to take effect on November 1, 1984. In October 1994, Australia withdrew its commitment (Findlay, 1996; (International Civil Aviation Organization, 2007; Mecham, 1994b).

In 1996, Australia and New Zealand ratified the "Single Aviation Market" (SAM) arrangements, which was incorporated into the CER Protocol. The arrangements permitted a "SAM carrier" to operate without restrictions trans-Tasman and domestic services in either State. Unlimited beyond rights were excluded from the agreement, and which were subsequently governed by the bilateral air services (ASA) agreements and the 1992 Memorandum of Understanding (MOU) (International Civil Aviation Organization, 2007). Effective from November 2006, any airline with 50 per cent or more Australian and/or New Zealand ownership was permitted to operate services freely between the two countries or within them, subject only to border restrictions (Phelan, 1997a, 1997b).

In 2000, Australia and New Zealand ratified an "open skies" agreement, which was officially signed in 2002

(International Civil Aviation Organization, 2007). This agreement liberalized air traffic between the two States and opened the Trans-Tasman market to other airlines from other countries, thus raising the connectivity of both countries with foreign markets (Vowles & Mertens, 2014, p. 118).

The aviation arrangements were further relaxed by Australia in 2006 when the *Civil Aviation Legislation Amendment (Mutual Recognition with New Zealand) Act 2006* came into effect. This act amends the *Civil Aviation Act 1988* to permit Australia and New Zealand to mutually recognize air operator's certificates (AOCs) for aircraft with more than 30 seats or having a Maximum Take-Off Weight (MTOW) of more than 15,000kg. The mutual recognition enables Australian and New Zealand operators to operate to, from and within either country based on their home certification (Civil Aviation Safety Authority, 2007).

4.2. Evolution of Australia's Trans-Tasman single aviation market

The low-cost carriers (LCCs) entered the Trans-Tasman air travel market in 1995. The initial services were pioneered by low-cost carrier (LCC), New Zealand-based, Kiwi Travel Airlines International, who commenced Trans-Tasman services around September 1995. Air New Zealand established Freedom Air Airlines in 1996 to compete with Kiwi Travel Airlines International (Francis et al., 2006; Taumoepeau, 2016; Williams, 2016). Figure 1 shows the development of the number of inbound and outbound Trans-Tasman enplaned passengers carried by the low-cost carriers (LCCs) for the period 1995 to 2020. One passenger enplanement measures the embarkation of a revenue passenger, whether originating, stop-over, connecting or returning (Holloway, 2016).As can be observed in Figure 1, the Trans-Tasman low-cost carriers (LCC) market development has occurred in four discrete phases; Phase 1 (1995-2004) was the initial entry of New Zealand-based carriers Kiwi Travel International Airlines and Freedom Air International; Phase 2 (2004 to 2010) saw the introduction of services by Pacific Blue (an off-shoot of Virgin Blue) and Australian-based Jetstar Airways. In 2010 (Phase 3: 2010-2016), Pacific Blue was re-branded as Virgin Australia and the carrier's business model evolved from a low-cost carrier (LCC) business model to that of a full-service network carrier (FSNC). This strategic change by Virgin Australia saw a marked drop in the low-cost carriers (LCC's) share of inbound and outbound Trans-Tasman passengers (Figure 1). Another important develop in Phase 3 was the introduction of fifth freedom services from Coolangatta to Auckland by AirAsia-X. The "fifth freedom" air services rights allow foreign airlines to fly between Australia and New Zealand on a flight originating or ending in their own country (Freed, 2016). In Phase 4, Air Asia-X exited the Trans-Tasman air travel market during 2019 thereby leaving Jetstar Airways as the sole low-cost carrier (LCC) competing in the market. The outbound Trans-Tasman low-cost carriers (LCC) passengers also follows the same market development phases as that for the inbound Trans-Tasman low-cost carriers (LCC) passengers.

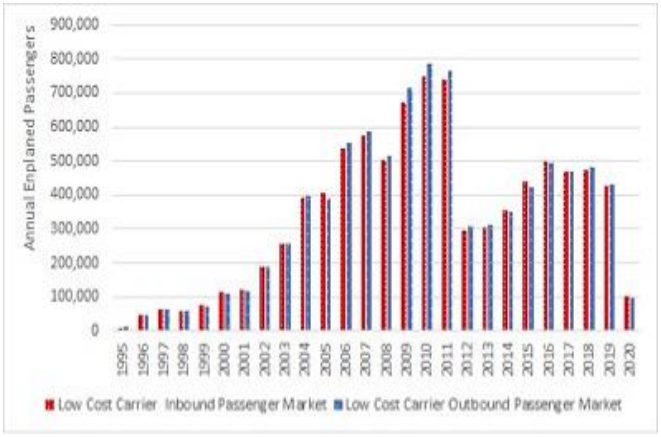

Figure 1. Low-cost carriers (LCCs) annual enplaned inbound and outbound Trans-Tasman passengers: 1995-2020.
Source: Data derived from Bureau of Transport and Regional Economics (2002-2006), Bureau of Infrastructure, Transport and Regional Economics (1998, 2008-2021), Department of Transport and Regional Services (2001).

Figure 1 shows that there was a downturn in both inbound and outbound passengers in 2008. The 2008 recession and global financial crisis resulted in a downturn in air travel demand (Daley, 2010; Pearce, 2012; Yu, 2020). Also, as can be observed in Figure 1, there was a very significant reduction in the number of inbound and outbound passengers in 2020. The Australian international air travel market was impacted by the corona virus pandemic in 2020 (Bureau of Infrastructure, Transport and Regional Economics, 2021). During 2020, the COVID-19 pandemic caused a decline in economic activity around the world, and this resulted in disruptions in the air travel market supply and demand chain (Dube et al., 2021). In addition, because of the global coronavirus crisis, most countries placed restrictive measures to confine the pandemia (Maria Iacus et al., 2020), and these restrictions had an adverse impact on airline passenger demand. Australia's borders and entry points were closed to non-New Zealand residents on March 19th, 2020, as part of the government's strategy to deal with the pandemic (Fitzgerald & Wong, 2020). On 19 March 2020, New Zealand closes its border and only New Zealand residents and a very select group of essential workers were permitted to enter the country after this date (Fairweather et al., 2021).

Australia's Productivity Commission (1998) has noted that following the entry of new competitors in the Trans-Tasman air travel market there were substantial consumer benefits in terms of new services and lower air fares. As can be seen in Figure 1, the commencement of low-cost carrier (LCC) services by Kiwi Travel International Airlines and Freedom Air International resulted in significant passenger traffic growth. This was because there were many first-time travelers who were attracted by the availability of some highly discounted air fares. The total origin–destination (O & D) passenger traffic between Australia and New Zealand increased from around 1.8 million in 1995 to around 2.2 million passengers in 1996 (Productivity Commission, 1998).

The Trans-Tasman strategies of Jetstar Airways and Freedom Air International differed to that of Pacific Blue Airlines. Upon their inception of Trans-Tasman services, Jetstar Airways and Freedom Air International focused on secondary routes, for instance, Hamilton-Sydney and Auckland to Newcastle; these were city pairs that their parent

company did not fly to. In contrast, Pacific Blue by 2005 had launched services such as Auckland to Brisbane, a major route historically operated by the full-service network carriers (FSNCs), such as Air New Zealand and Qantas Airways, whilst they also competed in other Trans-Tasman leisure markets (Knibb, 2005b). Following the withdrawal of services by Kiwi Travel International Airlines in September 1996, passenger traffic growth slowed markedly (Figure 1).

As noted earlier, in January 2004, Pacific Blue commenced Trans-Tasman operations and in December 2005, Jetstar Airways started their Trans-Tasman services. Following the introduction of services by Pacific Blue Airlines, the low- cost carriers (LCCs) inbound and outbound traffic grew by 53.1 and 55 per cent, respectively in 2004. A similar increase in traffic growth was recorded in 2006, the first full year of operations by Jetstar Airways, when inbound and outbound traffic grew by 31.6 and 35.8 per cent, respectively (Figure 1). As noted earlier, in January 2004, Pacific Blue commenced Trans-Tasman operations and in December 2005, Jetstar Airways started Trans-Tasman services. Following the introduction of services by Pacific Blue Airlines, the low- cost carriers (LCCs) inbound and outbound traffic grew by 53.1 and 55 per cent, respectively in 2004. A similar increase in traffic growth was recorded in 2006, the first full year of operations by Jetstar Airways, when inbound and outbound traffic grew by 31.6 and 35.8 per cent, respectively (Figure 1).

A significant development occurred in December 2011 when Virgin Australia decided to re-brand its subsidiary companies “Pacific Blue” and “V-Australia” under the Virgin Australia brand (Centre for Aviation, 2011; Walton, 2011). At the same time, the airline’s business model changed towards a full-service network carrier (FSNC) (Whyte, Prideaux & Sakata, 2012). This was part of the airline’s transformation process. From 2012 to 2015, Jetstar Airways was the sole low-cost carrier (LCC) operating Trans-Tasman services. In 2016, AirAsia-X entered the market. However, 2019, Air Asia-X exited the market. At the time of the current study, Jetstar Airways was the only low-cost carrier (LCC) providing Trans-Tasman services.

Like many other air travel markets, the Trans-Tasman market is served by both full-service network carriers (FSNCs) and low-cost carriers (LCCs). The major full-service network carriers are Air New Zealand, Qantas Airways and Virgin Australia. The Trans-Tasman air travel market is also served by foreign-based airlines, such as Taiwan-based China Airlines, Emirates Airline, and LATAM Airlines, who have exercised fifth freedom traffic rights to provide their Trans-Tasman services from key cities in Australia and New Zealand. Figure 2 presents the annual full-service network carriers (FSNCs) and low-cost carriers (LCCs) Trans-Tasman inbound passenger market shares from 1995 to 2020. The inbound market is comprised of passengers arriving in Australia from New Zealand. As can be observed in Figure 2, the full-service network carriers (FSNCs) annual market share declined from 1995 to 2007, increased slightly in 2008, and once again declined from 2009 to 2011. The full-service network carriers (FSNCs) market share increased significantly in 2012 to 89.61% and remained relatively steady from 2012 to 2020 (Figure 2). As noted earlier, the low-cost carrier (LCC) market share displayed an upward trend from 1995 to 2011 and declined quite significantly following the change in Pacific Blue Airlines business model to that of a full-service network carrier (rebranded as Virgin Australia). The low-cost carriers (LCCs) inbound passenger market share increased from a low of 0.72% in 1995 to a high of 27.07% in 2010. Figure 2 shows that the annual number of inbound passengers carried by the low-cost carriers (LCCs) decreased from 740,419 (26.29% of the market) in 2011 to 297,761 passengers (10.39% of the market) in 2012. This large decline reflected the change in business model by Virgin Australia. From 2012 to 2020, there were six years where the low-cost carriers (LCCs) annual enplaned inbound passengers decreased on a year-on-year basis. These decreases occurred in 2012 (-60.47%), 2013 (-0.48%), 2017 (-6.57%), 2018 (-0.82%), 2019 (-10.87 %), and 2020 (-1.77%) (Figure 2). The significant decrease recorded in 2012 (-60.47%) reflected the change in business model by Pacific Blue. As noted, Air Asia-X exited the Trans-Tasman aviation market in 2019.

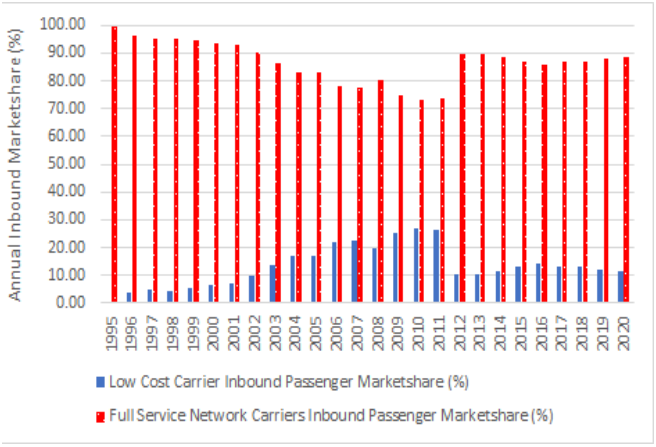

Figure 2. Low-cost carriers and full-service network carriers Trans-Tasman inbound passenger market share (%): 1995-2020.
Source: Data derived from Bureau of Transport and Regional Economics (2002-2006), Bureau of Infrastructure, Transport and Regional Economics (1998, 2008-2021), Department of Transport and Regional Services (2001).

The annual full-service network carriers (FSNCs) and low-cost carriers (LCCs) outbound, that is, passengers from Australia to New Zealand, Trans-Tasman passenger market shares from 1995 to 2020 are depicted in Figure 3. As can be observed in Figure 3, both the full-service network carriers (FSNCs) and low-cost carriers (LCCs) outbound Trans-Tasman passenger market shares have followed a similar trend to their inbound passenger market, that is, the full-service network carriers annual market share declined from 1995 to 2007, increased slightly in 2008, and once again declined from 2009 to 2011. The full-service network carriers (FSNCs) market share increased significantly in 2012 to 89.15% (Figure 3). From 2013 to 2020, the full-service network carriers (FSNCs) outbound market share averaged around 88.80%. The low-cost carrier (LCC) market share displayed an upward trajectory from 1995 to 2011 and then significantly declined when Pacific Blue Airlines changed its business model to that of a full-service network carrier (FSNC). The low-cost carriers (LCCs) outbound passenger market share increased from a low of 0.90% in 1995 to a high of 28.50% in 2010. The low-cost carriers (LCCs) annual enplaned outbound passengers declined significantly in 2012, decreasing by 60.18% on the 2011 levels. Once again, this large decrease in passenger traffic reflected the change in business model by Virgin Australia. From 2013 to 2020, there were four years

where the low-cost carriers (LCCs) annual enplaned outbound passengers decreased on a year-on-year basis. These decreases occurred in 2013 (-2.58%), 2017 (-05.62%), 2019 (-11.36%), and 2020 (-1.51%). As noted earlier, Air Asia-X exited the market in 2019.

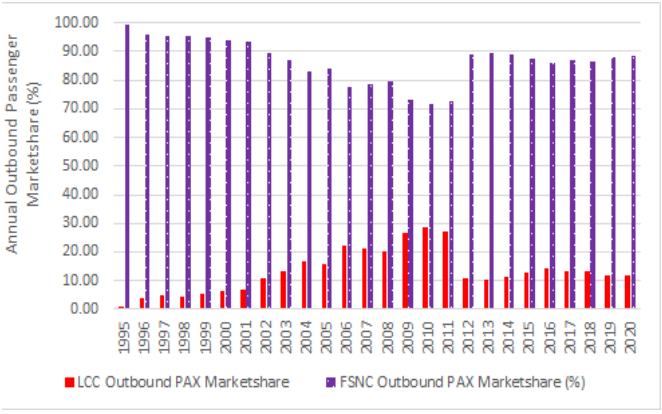

Figure 3. Low-cost carriers and full-service network carriers Trans-Tasman outbound passenger market share (%): 1995-2020.
Source: Data derived from Bureau of Transport and Regional Economics (2002-2006), Bureau of Infrastructure, Transport and Regional Economics (1998, 2008-2021), Department of Transport and Regional Services (2001).

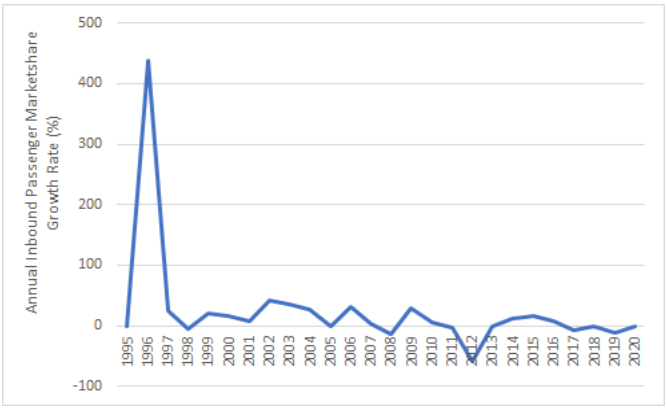

Figure 4. Low-cost carriers Trans-Tasman inbound passenger market share (%) annual growth rate: 1995-2020.
Source: Data derived from Bureau of Transport and Regional Economics (2002-2006), Bureau of Infrastructure, Transport and Regional Economics (1998, 2008-2021), Department of Transport and Regional Services (2001).

Figure 4 presents the low-cost carriers (LCCs) annual inbound passenger market share growth for the period 1995 to 2020. As can be observed in Figure 4, the low-cost carriers (LCCs) annual inbound passenger market share oscillated throughout the study period reflecting differing levels of passenger demand. There was a very pronounced spike in the low-cost carriers (LCCs) inbound passenger market share in 1996 (+438.88%) (Figure 4). This large increase in 1996 could be attributed to the first full year of operations in the market by the low-cost carriers (LCCs) plus Freedom Air International entered the market in 1996. Figure 4 also reveals that there were significant increases in this metric in 1997 (+25.51%), 2002 (+41.66%), 2006 (+31.02%), and 2015 (+16.46%), respectively. In 1997 and 2002, Freedom Air International increased the number of enplaned passengers quite significantly. In 2006, Jetstar Airways uplifted 178,516 passengers, which was much higher than the 13,187 passengers uplifted by the airline in 2005. In 2015, Jetstar Airways carried considerably more inbound passengers, which enabled it to capture greater market share. Figure 4 also shows that there were two years in the study period where the low-cost carriers (LCCs) inbound passenger market share decreased quite substantially on a year-on-year basis. These decreases were recorded in 2012 (-58.73%), and in 2019 (-77.79%) (Figure 4). The decrease in 2012 reflected the change in business model by Pacific Blue (Virgin Australia), whilst the decrease in 2019 could be attributed to the substantial decrease in the number of passengers carried by Air Asia-X on its services from Auckland to Coolangatta (Queensland). Air Asia-X enplaned passengers decreased by 86.90% in 2019.

The low-cost carriers (LCCs) annual outbound passenger market share growth from 1995 to 2020 is depicted in Figure 5. As can be observed in Figure 5, the low-cost carriers (LCCs) annual outbound passenger market share growth rates have fluctuated quite markedly over the study period. Like the Trans-Tasman inbound passenger air travel market, there was a pronounced spike in the low-cost carriers (LCCs) outbound passenger market share in 1996 (+336.66%). As has been previously noted, Freedom Air International entered the market in 1996. From 1998 to 2003, the low-cost carriers (LCCs) increased their annual market share on a year-on-year basis, with the most significant increase occurring in 2002 (+59.64%). In 2002, Freedom Air International attracted strong customer patronage on its Trans-Tasman services. In 2004, Pacific Blue entered the market and also captured market share. There was strong growth in 2006 (+40.83%), following the entry of Jetstar Airways into the market (Figure 5). Following a decrease in market share in 2008 of 5.87%, the low-cost carriers were able to grow their market share in 2009, when they increased it by 32.33% (Figure 5). Figure 5 also shows that there were two quite pronounced decreases in the low-cost carriers (LCCs) market share in 2012, when it declined by 60.18% on the 2011 level, and in 2019 when it decreased by 11.36% on the 2018 levels. The decrease in 2012 could be attributed to the change in Pacific Blue's business model. Whilst the decrease in 2019 could be attributed to the exit of Air Asia-X from the market plus there were also smaller volumes of outbound travelers from Australia to New Zealand in 2019.

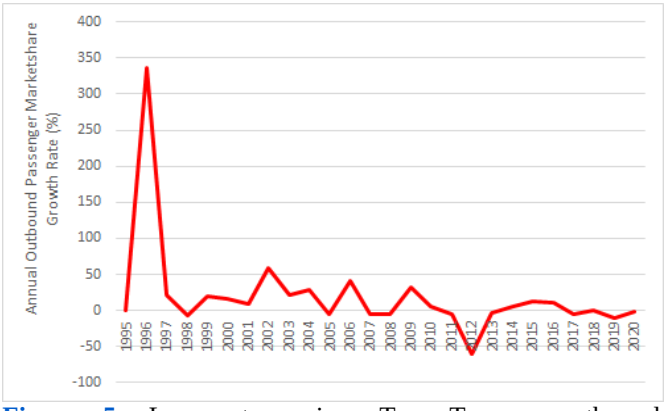

Figure 5. Low-cost carriers Trans-Tasman outbound passenger market share (%) annual growth rate: 1995-2020.
Source: Data derived from Bureau of Transport and Regional Economics (2002-2006), Bureau of Infrastructure, Transport and Regional Economics (1998, 2008-2021), Department of Transport and Regional Services (2001).

The major milestones in the development of the Trans-Tasman low-cost carrier (LCC) aviation market are presented in Figure 6.

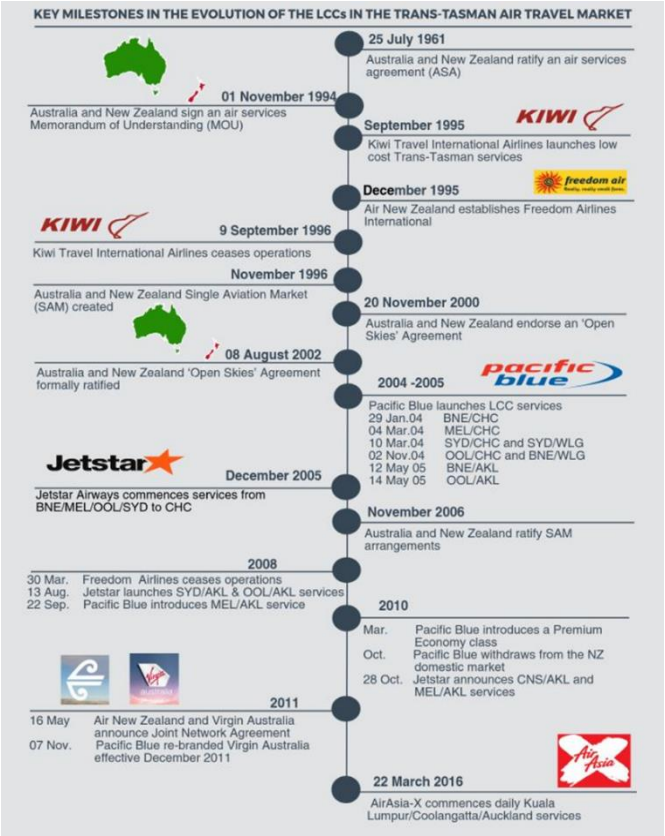

Figure 6. The key milestones in the development of the Trans-Tasman low-cost carrier air travel market. Legend: AKL=Auckland, BNE=Brisbane, CHC=Christchurch, CNS=Cairns, MEL=Melbourne, OOL=Coolangatta, SAM=Single Aviation Market, SYD=Sydney, WLG=Wellington.

4.2. The development of Australia's low-cost carriers (LCCs) Trans-Tasman services

4.2.1. Pacific Blue (Later Virgin Australia)

Virgin Blue Airlines commenced operations in Australia in August 2000 with two Boeing B737 aircraft. The airline initially operated 7 flights per day between Brisbane and Sydney. Its original owner and founder were British businessman, Sir Richard Branson. Following the collapse of Ansett Australia in 2001, Virgin Blue sought a capital injection. Patrick Corporation purchased a 50 per cent stake in Virgin Blue in 2002. The airline was subsequently publicly listed on the Sydney Stock Exchange in 2003 (Thomas, 2006). Toll Holdings bought control of Virgin Blue in 2006 (Knibb, 2008a). However, in July 2008, Toll Holdings decided to transfer its 62.7 per cent stake in Virgin Blue to the company's other shareholders (Knibb, 2008b). In March 2020, Virgin Australia filed for bankruptcy and was subsequently acquired by Bain Capital from the executors (Baer, 2021; Morrell, 2021).

Virgin Blue Airlines was granted authority by the Australian Government to commence New Zealand flights in 2003. In accordance with the "Open Skies" agreement ratified between Australia and New Zealand, Virgin Blue acquired unlimited capacity to New Zealand (Knibb, 2003). Prior to commencing its international services, Virgin Blue confronted a branding issue. This was because when Singapore Airlines purchased an equity stake in Virgin Atlantic in 1999, part of the deal was that the "Virgin" name could not be used internationally without Singapore Airlines permission (Knibb, 2003; Pilling, 2007).

Virgin Blue Airlines launched its Christchurch, New Zealand leisure-based airline, Pacific Blue in January 2004 (Knibb, 2005a, 2005c). Pacific Blue commenced daily services from Christchurch to Brisbane on the 29th of January 2004. Christchurch to Melbourne services were introduced on March 4th, 2004. Pacific Blue continued its expansion of Trans-Tasman services in 2004 commencing daily services from Sydney to Christchurch and Wellington on the 10th of May 2004. On the 2nd of November 2004, Pacific Blue commenced services between Christchurch and Coolangatta (Gold Coast) and Wellington and Brisbane. Pacific Blue continued to expand its Trans-Tasman services in 2005. The airline introduced Brisbane to Auckland and Coolangatta (Gold Coast) to Auckland on the 12th and 14th May, respectively. Pacific Blue gained entry to Auckland Airport, New Zealand's principal gateway airport, in 2005 (Airline Business, 2005a).

On the 22nd of September 2008, Pacific Blue launched flights from Melbourne to Auckland and, in so doing, became the first LCC to provide services on this important air route (Virgin Australia, 2008). Air New Zealand and Virgin Australia announced a new joint network strategy on the 16th of May 2011, whereby Air New Zealand would operate services equal to 70 per cent of the total capacity and Pacific Blue would provide the remaining 30 per cent. These were like the market shares held by the two airlines prior to the agreement. Also, both airline's flights were aligned under the agreement to ensure more convenient schedules for passengers (Virgin Australia, 2011).

On the 7th of December 2011, the "Virgin Australia" group of airlines officially launched its international airlines V-Australia and Pacific Blue under the new brand, "Virgin Australia". The decision to change the names of V-Australia and Pacific Blue came following an agreement with Singapore Airlines to allow the use of the Virgin name on V Australia and Pacific Blue services (Creedy, 2011). During the company's history, Pacific Blue's Trans-Tasman services were operated by the airline's "Next Generation" Boeing B737-800 aircraft (Knibb, 2004a).

Figure 7 shows Pacific Blue Airlines total annual inbound Trans-Tasman passengers and the year-on-year change (%) for the period 2004 to 2011. As can be observed in Figure 7, there was an upward trend in the number of inbound passengers carried by Pacific Blue from New Zealand to Australia from 2004 to 2010. In the final year of their Trans-Tasman services, the annual number of inbound passengers decreased by 5.88% in 2011 for a total of 433,723 passengers. The overall upward trend in the annual inbound passenger volumes is demonstrated by the year-on-year percentage change line graph, which is more positive than negative, that is, more values are above the line than below. There was just the single year (2011) when the airline's annual enplaned inbound passengers decreased on a year-on-year basis. Figure 7 also shows that Pacific Blue's annual enplaned inbound passengers increased from a low of 137,326 passengers in 2004 to a high of 460,848 passengers in 2010. The most significant annual increase in this metric was recorded in 2009, when the airline's annual inbound passenger volumes increased by 51.09% on the 2008 levels (Figure 7).

Figure 7. Pacific Blue annual enplaned Trans-Tasman inbound passengers and year-on-year change (%): 2004-2011.
Source: Data derived from Bureau of Infrastructure, Transport and Regional Economics (2005-2012).

Pacific Blue Airlines total annual outbound Trans-Tasman passengers from Australia to New Zealand and the year-on-year growth (%) from 2004 to 2011 is presented in Figure 8. Pacific Blue's annual enplaned outbound passengers from Australia to New Zealand followed a similar trend to the airline's annual inbound passengers, that is, there was an upward trend in the number of outbound passengers from 2004 to 2010. The overall upward trend in the annual outbound passenger volumes is also demonstrated by the year-on-year percentage change line graph, which is more positive than negative, that is, more values are above the line than below. Indeed, as can be observed in Figure 8, there was just a single year when the airline's annual outbound passengers decreased on a year-on-year basis. This decrease was recorded in 2011, when the total number of outbound passengers decreased by 7.71% on the 2010 levels. Figure 8 shows that Pacific Blue's annual enplaned outbound passengers increased from a low of 143,305 passengers in 2004 to a high of 487,669 passengers in 2010. The most significant annual increase in the annual number of enplaned outbound passengers from Australia to New Zealand was recorded in 2009, when the airline's annual outbound passenger volumes increased by 52.33% on the 2008 levels (Figure 8).

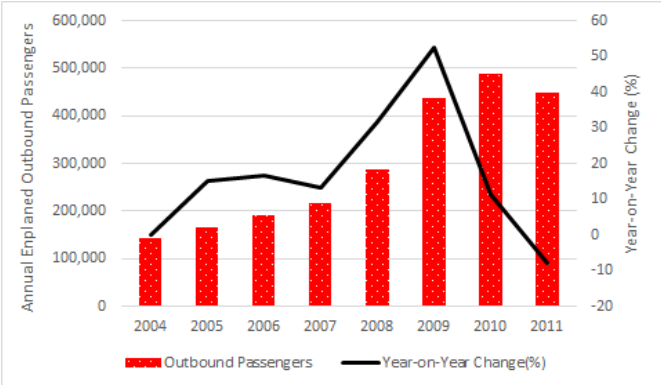

Figure 8. Pacific Blue annual enplaned Trans-Tasman outbound passengers and year-on-year change (%): 2004-2011.
Source: Data derived from Bureau of Infrastructure, Transport and Regional Economics (2005-2012).

Pacific Blue Airlines annual inbound Trans-Tasman passenger market share and the year-on-year growth (%) from 2004 to 2011 is presented in Figure 9. Figure 9 shows that there was an upward trend in the airline's annual inbound passenger market share when it increased from a low of 5.93% in 2004 to a high of 16.70% in 2010. During the study period, there was just a single year when Pacific Blue's annual inbound passenger market share decreased on a year-on-year basis. This decrease occurred in 2011, when the airline's annual inbound market share decreased by 7.78% on the 2010 level. The most significant annual increase in the airline's annual inbound passenger market share was recorded in 2009, when it increased by 45.09% on the 2008 level (Figure 9).

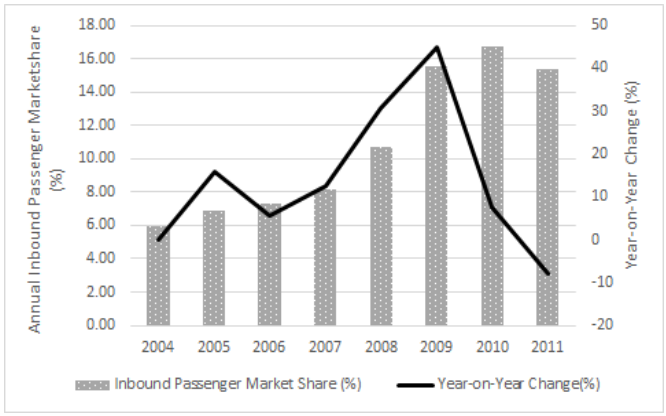

Figure 9. Pacific Blue annual Trans-Tasman inbound passengers market share and year-on-year change (%): 2004-2011.
Source: Data derived from Bureau of Infrastructure, Transport and Regional Economics (2005-2012).

Figure 10 presents Pacific Blue Airlines annual outbound Trans-Tasman passenger market share and the year-on-year growth (%) for the period 2004 to 2011. Pacific Blue Airlines annual outbound Trans-Tasman passenger market share exhibited an upward trend over the period 2004 to 2010 before decreasing by 9.51% in 2011. The airline's annual outbound Trans-Tasman passenger market share increased from a low of 6.09% in 2004 to a high of 17.66% in 2010. Figure 10 shows that there were two quite pronounced year-on-year increases in 2008 (+43.29%), and 2009 (+45.58%), respectively (Figure 10). The smallest annual increase in this metric occurred in 2007, when the airline's annual outbound Trans-Tasman passenger market share increased by 1.41% on the 2006 level (Figure 10).

Figure 10. Pacific Blue annual Trans-Tasman outbound passengers market share and year-on-year change (%): 2004-2011.
Source: Data derived from Bureau of Infrastructure, Transport and Regional Economics (2005-2012).

4.2.2. Jetstar Airways

In 2003, to address Virgin Australia's success and strong growth, Qantas Airways established Jetstar Airways. This followed a similar strategy of full-service network carriers (FSNCs) based in North America and Europe (Homsombat, Lei & Fu, 2014). Jetstar Airways is a wholly owned subsidiary of the Qantas Group. The aim of the Qantas low-cost offshoot was to be Australia's lowest cost operator (Kelly, 2003). The airline commenced low fare operations in May 2004 (Collins, Hensher & Li, 2010; Forsyth, 2018; Lück & Gross, 2016), with a fleet of 14 Boeing 717 aircraft. Qantas had inherited these Boeing 717 aircraft from its acquisition of Impulse Airlines. Qantas purchased Impulse Airlines in the 2002/2002 financial year (Fletcher & Crawford, 2014). At the launch of Jetstar Airways, Qantas announced an order for 23 Airbus A320 aircraft (Airline Business, 2004a) as the Qantas Group had decided to move Jetstar Airways into a standardized fleet of 177 seat Airbus A320 aircraft (Airline Business, 2004b).

Jetstar Airways later expanded to include international services, commencing services from Brisbane, Coolangatta (Gold Coast), Melbourne and Sydney to Christchurch, New Zealand, in December 2005 (Thomas, 2007). On 13 October 2008, Jetstar Airways unveiled plans to provide daily flights from Auckland to Sydney and the Coolangatta (Gold Coast). to Auckland (Ritchie, 2008). In July 2010, Jetstar Airways announced the expansion of its Trans-Tasman service with the introduction of new Airbus A320 services from Cairns and Melbourne to Auckland (Jetstar Airways, 2010a). Jetstar introduced Airbus A320 services from Melbourne and Coolangatta (Gold Coast) to Queenstown that commenced on the 16th and 17th December 2010, respectively (Jetstar Airways, 2010b). On the 15th of November 2012, Jetstar Airways increased the number of flights between Melbourne and Sydney to Queenstown to 4 and 3 per week, respectively (Jetstar Airways, 2012). Jetstar further expanded their Trans-Tasman on December 12, 2015 with the launch of its first flights from Coolangatta (Gold Coast) to Wellington. Services from Wellington were expanded on March 30, 2016, with the introduction of four weekly flights between Melbourne and Wellington (Schofield, 2015).

At the time of the present study, Jetstar Airways served Auckland and Wellington on the North Island of New Zealand and Christchurch, Dunedin, and Queenstown in New Zealand's South Island (Jetstar Airways, 2021b). Jetstar operates a fleet of Airbus A320 and A321 aircraft that are configured in an all-economy configuration. The Airbus A320 aircraft holds 180 passengers whilst the Airbus A321 aircraft can carry between 220 and 230 passengers (Jetstar Airways, 2021a).

Figure 11 shows Jetstar Airways annual enplaned Trans-Tasman inbound passenger traffic and the annual year-on-year change (%) from 2006 through to 2020. As can be observed in Figure 11, there was an upward trend in Jetstar Airways annual enplaned Trans-Tasman inbound passengers from 2005 to 2016, this was followed by a decrease in the annual passenger volumes in 2017 and 2018 and an increase again in 2019, when they grew by 1.66% on the 2018 levels. Figure 11 shows that the annual Trans-Tasman enplaned inbound passengers declined substantially in 2020, decreasing by 76.31% on the 2019 levels. This significant decrease could be attributed to the impact of the COVID-19 pandemic on air travel demand together with the related government response measures. There was a very pronounced spike in the number of passengers carried in 2006, when they increased by 989.8% on the 2005 levels. This large increase in 2006 reflected the first full year of services in the market by Jetstar Airways. There were three other significant annual increases in the enplaned Trans-Tasman inbound passengers throughout the study period. These increases occurred in 2009 (+38.96%), 2014 (+16.43%), and 2015 (+22.85%), respectively, and reflected greater passenger demand during these years (Figure 11). As noted earlier, the largest single annual decrease in enplaned Trans-Tasman inbound passengers occurred in 2020 (-76.31%). Figure 11 shows that the highest annual number of enplaned Trans-Tasman inbound passengers was recorded in 2016, when the airline carried 461,105 passengers on its services from New Zealand to Australia.

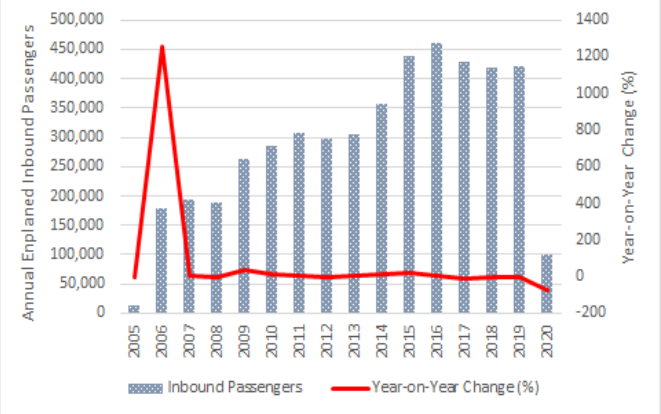

Figure 11. Jetstar Airways annual enplaned Trans-Tasman inbound passengers and year-on-year change (%): 2005-2020. Source: Data derived from Bureau of Infrastructure, Transport and Regional Economics (2006-2021).

Jetstar Airways annual enplaned Trans-Tasman outbound passengers and the annual year-on-year change (%) from 2006 through to 2020 are depicted in Figure 12. Figure 12 shows that Jetstar Airways increased the annual number of Trans-Tasman passengers on its services from Australia to New Zealand over the period 2005 to 2016. This overall upward trend was interrupted in 2018 and 2019 when the airline's annual Trans-Tasman out bound passengers decreased by 7.02% in 2017 and 2.30% in 2018. The airline grew the number of Trans-Tasman outbound passengers during 2019, when they increased by 1.66% on the 2018 levels. There was 77.34% decrease in the number of passengers carried in 2020, with this decrease possibly attributed to the effects of the Corona virus pandemic and the closure of borders by the Australian and New Zealand governments. Figure 12 shows that there were some significant annual increases in the airline's annual Trans-Tasman outbound passenger volumes. These increases were recorded in 2009 (+46.69%), 2014 (+12.36%), and 2015 (21.47%), and reflected higher levels of passenger demand for the airline's services throughout these years (Figure 12). Figure 12 shows that the highest annual number of outbound enplaned Trans-Tasman passengers was recorded in 2016, when the airline carried 450,539 passengers on its services from Australia to New Zealand.

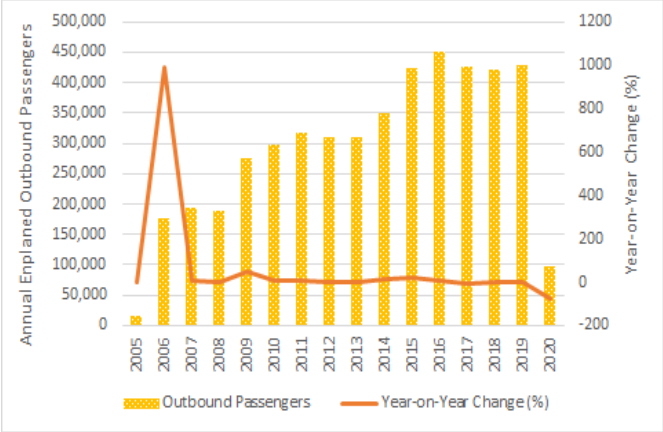

Figure 12. Jetstar Airways annual enplaned Trans-Tasman outbound passengers and year-on-year change (%): 2005-2020.
Source: Data derived from Bureau of Infrastructure, Transport and Regional Economics (2006-2021).

Jetstar Airways annual enplaned Trans-Tasman inbound passengers market share from 2006 through to 2020 are depicted in Figure 13. It can be observed in Figure 13 that Jetstar Airways annual enplaned Trans-Tasman inbound passengers market exhibited an upward trend over the period 2005 to 2016, increasing from a low of 0.54% in 2005 to a high of 13.36% in 2015. The airline's annual market share decreased on a year-on-year basis in each of the latter years of the study, that is, from 2016 to 2020. In 2020, Jetstar Airways carried 11.59% of the passengers travelling from New Zealand to Australia. Figure 13 shows that there was a very large increase in the airline's market share in 2006, when it increased by 1,450% from 0.54% in 2005 to 7.29% in 2006. 2006 marked the first full year of commercial services between New Zealand and Australia and vice versa. There were three other significant increases in this metric, with these increases occurring in 2009 (+33.46%), 2014 (+11.02%), and 2015 (+16.37), with these increases reflecting higher levels of passenger demand (Figure 13). Apart from the decreases recorded in the latter years of the study, the airline's annual Trans-Tasman inbound passenger market share decreased in 2008 (-2.74%), 2012 (-4.68%), and 2013 (-0.38%), with lower levels of passenger demand during these years. It is important to note that an airline market share can vary (Yan, Tang & Lee, 2007), such as the Trans-Tasman aviation market.

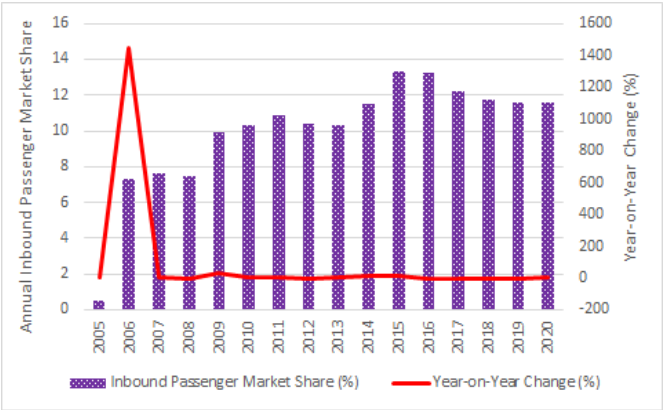

Figure 13. Jetstar Airways annual Trans-Tasman inbound passenger market share and year-on-year change (%): 2005-2020.
Source: Data derived from Bureau of Infrastructure, Transport and Regional Economics (2006-2021).

Jetstar Airways annual enplaned Trans-Tasman outbound passenger market share from 2006 through to 2020 are presented in Figure 14. Figure 14 shows that Jetstar Airways Trans-Tasman outbound passenger followed a similar trend to the airline's annual Trans-Tasman inbound market share, that is, the market share displayed an upward trend from 2005 to 2016 before declining in the latter years of the study (2017-2020). Jetstar Airways annual enplaned Trans-Tasman outbound passenger market share increased from a low of 0.66% in 2005 to a high of 12.84% in 2016. In 2020, Jetstar Airways carried around 11.68% of the passengers travelling by air between Australia and New Zealand. Figure 14 shows that there was a very pronounced spike in the airline's market share in 2006, when it increased by 987.87% on the 2005 levels. As previously noted, 2006 marked the first full year of commercial services between Australia and New Zealand and vice versa. There were two other significant annual increases in the airline's annual Trans-Tasman outbound passenger market share. These increases occurred in 2009 (+40.16%), and 2015 (12.95%), respectively (Figure 14). During 2009 and 2015, Jetstar Airways was able to attract greater patronage of its Trans-Tasman services. Figure 14 also reveals that Jetstar Airways decreased on a year-on-year basis in the early years of the study, that is, 2007 (-2.64%), mid-way through the study period, that is, 2012 (-3.64%) and 2013 (-2.67%), and during the latter years, which include 2017 (-6.38%), 2018 (-2.66%), and 2020 (-0.34%) (Figure 14). These annual decreases in market share reflect the fluctuating nature of airline market share and passenger travelling behavior and the associated demand patterns.

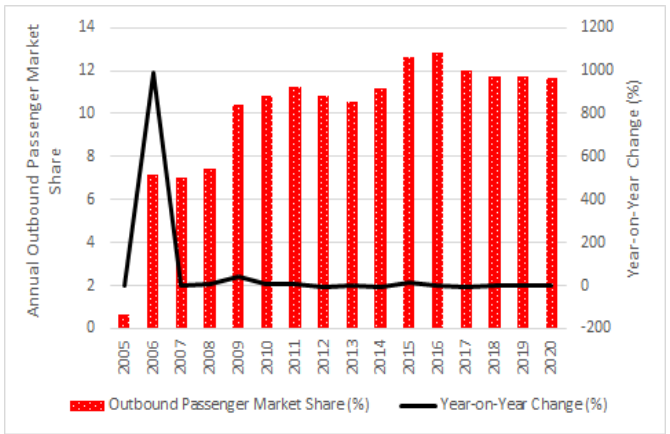

Figure 14. Jetstar Airways annual Trans-Tasman outbound passenger market share and year-on-year change (%): 2005-2020.
Source: Data derived from Bureau of Infrastructure, Transport and Regional Economics (2006-2021).

4.3. Entry of New Zealand-based low-cost carriers (LCCs) into the Trans-Tasman aviation market

4.3.1. Freedom Air International

Freedom Air International, which was owned by the Mount Cook Airline Group (who in turn was owned by Air New Zealand), was established in December 1995 as a domestic discount carrier for Air New Zealand (Knibb, 2004b). By 1997, the airline was operating 17 weekly round-trip services from Hamilton, Palmerston North, and Dunedin to Brisbane, Coolangatta and Sydney (Phelan, 1997b). Prior to March 1998, the airline operated a single-class Boeing B737-300

aircraft that was "damp-leased" from the El Salvadorian airline TACA. In March 1998, the airline replaced this aircraft with a B737-300 that was dry-leased for a period of five years through a Hong Kong-based leasing firm. Freedom Air International boosted services from Christchurch in 2004 in response to Pacific Blue entering the market. The airline also announced plans for new services from Christchurch to Brisbane and Coolangatta (Gold Coast) in Queensland (Knibb, 2004b).

Pacific Blue launched domestic services in New Zealand in mid-November 2007, operating Boeing B737-800 aircraft between Auckland, Christchurch and Wellington, Flight frequencies ranged from two to five flights per day (Knibb, 2007a). The introduction of domestic New Zealand services by Pacific Blue prompted Air New Zealand to close Freedom Air and to fold its operations into the main airline (Knibb, 2007b). Thus, in 2005, Air New Zealand announced its intention to integrate its operations with its low-cost subsidiary, Freedom Air. Air New Zealand also decided to replace Freedom Air's Boeing B737-300 aircraft with four new Airbus A320 aircraft. These aircraft were merged into Air new Zealand's fleet of nine Airbus A320 aircraft. This fleet alignment enabled Air New Zealand to reduce its costs by ten per cent. Freedom Air International retained its brand and its own in-flight services under the plan. It was also decided that Freedom Air should add a business class cabin in its fleet of Airbus A320 aircraft (Airline Business, 2005b). In 2006, Freedom Air cancelled its services to Brisbane as they were competing against Air New Zealand (Airline Business, 2007).

Air New Zealand decided to close Freedom Air International at the end of March 2008. This decision followed Air New Zealand's strategy to divide its own economy class into two sections on both the Trans-Tasman routes and domestic services as well. The rear section of the company's aircraft has tighter seating, and with snacks and in-flight entertainment provided on a user's pay basis. By emulating the low-cost carriers (LCCs) service standards and offering air fares comparable to the low-cost carriers (LCCs), Air New Zealand concluded that it had no strategic reason to keep Freedom Air as a separate brand (Airline Business, 2007).

Freedom Air International maintained a strategy of cut-price capacity-controlled air fares, with around half of the airline's bookings sold through direct telephone sales, with the remainder coming from travel agents, who received a $NZ 20 "finder's fee" (Phelan, 1997b).

Figure 15 shows Freedom Air International annual enplaned inbound Trans-Tasman passengers and the annual growth rate from 1996 to 2008. Like their counterparts Jetstar Airways and Pacific Blue Airlines, Freedom Air International annual enplaned inbound Trans-Tasman passengers largely displayed an upward trend, increasing from a low of 9,989 passengers in 1996 to a high of 254,355 passengers in 2004. During the latter years of the airline's operations in the Trans-Tasman aviation market, Freedom Air International Airlines annual enplaned inbound Trans-Tasman passengers decreased from 2005 to 2008. As discussed previously, the decline in passenger numbers in these latter study years is due to the 2005 announcement that Air New Zealand would integrate Freedom Air International back into its operations. This was also compounded by the entry of Pacific Blue Airlines into the market space in 2004, and then Jetstar Airways in 2005/2006. It can be seen in Figure 15, that there was a very pronounced spike in the airline's annual inbound passengers in 1997 (+531.23%). This large increase reflected the first full year of operations by the airline in the Trans-Tasman aviation market. Figure 15 shows that there were also four other significant annual increase in the airline's Trans-Tasman enplaned inbound passengers during the study period. These increases were recorded in 1999 (+23.16%), 2000 (+53.93%), 2002 (+54.05%), and 2005 (+35.63%) (Figure 15). During these years, the airline was able to grow its outbound passenger patronage from New Zealand to Australia. In the latter years of the airlines Trans-Tasman operations there were quite significant decreases in the annual number of passengers carried between New Zealand and Australia, with the most significant decrease occurring in 2006 (-20.53%) and 2008 (-76.44%). As previously noted, the decision by Air New Zealand to integrate Freedom Air International back into its operations impacted the annual passenger volumes. Also, Freedom Air International confronted the additional competition by Pacific Blue and Jetstar Airways.

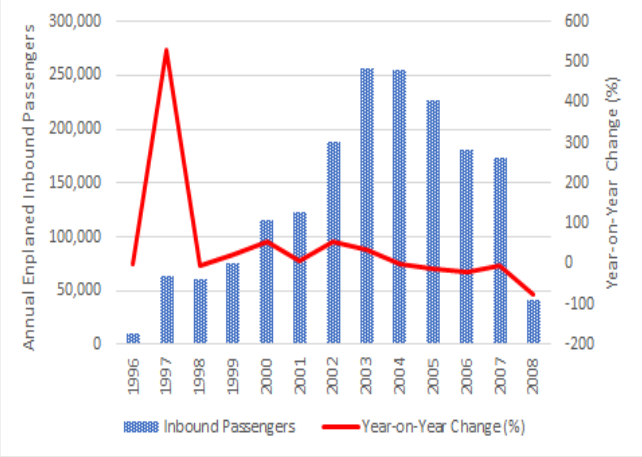

Figure 15. Freedom Air International annual enplaned Trans-Tasman inbound passengers and year-on-year change (%): 1996-2008.
Source: Data derived from Bureau of Transport and Regional Economics (2002-2007), Bureau of Infrastructure, Transport and Regional Economics (1998, 2008, 2009).

Freedom Air International annual enplaned outbound Trans-Tasman passengers and the annual growth rate from 1996 to 2008 are depicted in Figure 16. Figure 16 shows that Freedom Air International annual enplaned outbound Trans-Tasman passengers displayed an upward trajectory from 1996 to 2004, increasing from a low of 9,989 passengers in 1996 to a high of 254,355 passengers in 2004 (Figure 16). Figure 16 also shows that from 2005 to the cessation of operations by the airline in 2008 that the annual volume of passengers carried decreased on a year-on-year basis in 2005 (-10.8%), 2006, (-10.8), 2007 (-3.43%), and 2008 (-76.44%). The largest single annual decrease in outbound Trans-Tasman passengers was the 76.44% decrease recorded in 2008. Figure 16 shows that there was a pronounced spike in the annual number of passengers carried from Australia to New Zealand in 1997, when this metric increased by 531.23% on the 1996 levels. 1996 was the first full year of operations by the airline in the Trans-Tasman aviation market. There were four other significant increases in the airline's passenger volumes in the Trans-Tasman outbound air travel market. These significant increases were recorded in 1999 (+23.16%), 2000 (+53.93), 2002 (+54.05%), and 2003 (35.63%), respectively (Figure

16). The airline was able to grow its passenger traffic in these years because of a strong demand for its services.

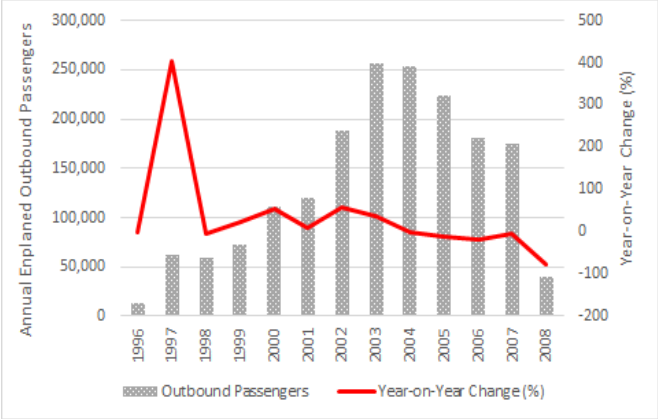

Figure 16. Freedom Air International annual enplaned Trans-Tasman outbound passengers and year-on-year change (%): 1996-2008.
Source: Data derived from Bureau of Transport and Regional Economics (2002-2007), Bureau of Infrastructure, Transport and Regional Economics (1998, 2008, 2009).

Freedom Air International annual enplaned inbound Trans-Tasman passenger market share and the annual change (%) from 1996 to 2008 are presented in Figure 17. Figure 17 shows that Freedom Air International enplaned inbound Trans-Tasman passenger market share grew strongly from 1996 to 2003, when it increased from a low of 0.85% in 1996 to a high of 13.36% in 2003. In the latter years of the airline's operations, its annual enplaned inbound Trans-Tasman passenger market share decreased from 13.36% in 2003 to 1.61% in 2008, which was the airline's final year of operations in the Trans-Tasman aviation market.

Figure 17. Freedom Air International annual enplaned Trans-Tasman inbound passengers market share and year-on-year change (%): 1996-2008.
Source: Data derived from Bureau of Transport and Regional Economics (2002-2007), Bureau of Infrastructure, Transport and Regional Economics (1998, 2008, 2009).

Figure 17 shows that there was a pronounced spike in this metric in 1997, when it increased by 472.94% on the 1996 level. As noted earlier, 1996 was the first full year of operations by the airline in the Trans-Tasman aviation market. Figure 17 also shows that there were four years during the study period where there was a substantial increase in market share recorded by the airline. These increases occurred in 1999 (+20.39%), 2000 (16.39), 2002 (41.72) and 2003 (+35.63%), with these increases reflecting higher levels of passenger demand for the airline's services from New Zealand to Australia. There were four quite significant annual decreases in the airline's annual enplaned Trans-Tasman inbound passengers market share in the study period. These decreases were recorded in 2004 (-17.73%), 2005 (-15.19%), 2006 (-20.92%), and 2008 (-76.53%) (Figure 17). The cause of these decreases in market share followed Air New Zealand's decision to integrate Freedom Air International back into its operations plus the Additional competition in the market following the entry of Pacific Blue Airlines into the market in 2004, and then Jetstar Airways in 2005.

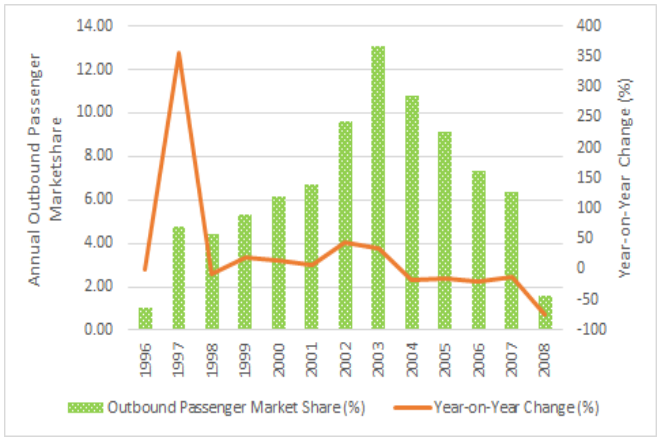

Figure 18. Freedom Air International annual enplaned Trans-Tasman outbound passengers market share and year-on-year change (%): 1996-2008.
Source: Data derived from Bureau of Transport and Regional Economics (2002-2007), Bureau of Infrastructure, Transport and Regional Economics (1998, 2008, 2009).

Figure 18 presents Freedom Air International annual enplaned outbound Trans-Tasman passenger market share and the annual change (%) for the period 1996 to 2008. As can be seen in Figure 18, Freedom Air International steadily increased its annual enplaned outbound Trans-Tasman passenger market share from 1996 to 2013, at which time the airline had secured 13.07% of the total passenger market between Australia and New Zealand. This was the highest market share that Freedom Air International had captured during the time that it competed in the Trans-Tasman aviation market. Like the airline's annual inbound Trans-Tasman market passenger market share, there was also a pronounced spike in the airline's outbound air travel market share in 1997, when it increased by 356.19% on the 1996 levels. Figure 18 also shows that during the study period, there were four years where the airline's annual enplaned outbound Trans-Tasman passenger market share increased quite substantially on a year-on-year basis. These substantial increases were recorded in 1999 (+19.77%), 2000 (+15.57%), 2002 (+44.16%), and 2003 (+35.72%), and reflected greater patronage of the airline's services (Figure 18). Figure 18 shows that the airline's outbound Trans-Tasman passenger market share declined on an annual basis from 2005 to 2008, with the most significant decrease recorded in 2008 (-75.35%). As noted earlier, the outbound market dynamics between Australia and New Zealand had changed following the introduction of services by Pacific Blue and Jetstar Airways. Also, the reintegration of Freedom Air International back into Air New Zealand operations was also a contributing factor.

4.3.2. Kiwi Airlines International

The earliest airline that introduced the low-cost carrier (LCC) business model in the Trans-Tasman air travel market was Hamilton, New Zealand-based Kiwi Travel International Airlines. The airline received approval to commence scheduled services between New Zealand and Australia around September 1995. Originally, the air services license was granted to AvAtlantic for a period of 6 months. AvAtlantic provided Kiwi Travel International Airlines with a United States registered Boeing B727-200 aircraft. Upon receipt of its approval to operate Trans-Tasman services, the airline announced that it would provide services between Hamilton and Brisbane, Hamilton to Sydney, and Dunedin to Brisbane, using the hush-kitted Boeing B727-200 aircraft. The license also granted the airline the opportunity to apply for other international air traffic rights (Flight International, 1995).

In July 1996, Kiwi Travel International Airlines became the first New Zealand-based operator of an Airbus type, when the carrier leased an Airbus A320 aircraft from Orix Leasing. This aircraft was used for flights to Brisbane and Sydney, and for new services to Melbourne and Perth (Flight International, 1996).

Due to sustained losses, Kiwi Travel International Airlines entered voluntary liquidation having accrued losses estimated to be around NZ$ 3 million for the operating period June to September 1996. Prior to entering voluntary liquidation, the airline had been operating 30 scheduled weekly trans-Tasman services from the New Zealand regional centres of Hamilton and Invercargill to Brisbane, Perth, Sydney and from Christchurch to Sydney (Phelan, 1996). Kiwi Travel International Airlines also operated services from Dunedin (Vowles & Tierney, 2007). The airline was grounded on September 6, 1996, following court action taken by Airservices Australia to recover unpaid air navigation service charges (Phelan, 1996). The collapse of the airline occurred just two months prior to the Single Aviation Market (SAM) taking effect (Phelan, 1997a).

In its brief history as a scheduled low-cost carrier (LCC), Kiwi Travel International Airlines had identified quite a large low-cost travel market originating from Hamilton, New Zealand's fourth largest urban population as well as being a major regional population centre. The airline also pioneered low-cost routes from Invercargill, located in the South Island to Brisbane, Perth, and Sydney. The airlines decision to launch flights from Christchurch, New Zealand's second busiest airport, resulted in Air New Zealand implementing a defensive strategy by launching Freedom Air International (Phelan, 1997a).

Kiwi Travel International Airlines operated services in the Trans-Tasman market from October 1995 to June 1996. In 1995, the airline carried 8,363 passengers between New Zealand and Australia, which equated to a market share of 0.91%. The airline uplifted 10,695 passengers on its services from Australia to New Zealand in 1995, and, in so doing, captured a market share of 0.70%. In 1996, Kiwi Travel International Airlines uplifted 35,336 passengers from New Zealand to Australia, this was an increase of 322.52% on the number of Trans-Tasman inbound passengers carried in 1995. In 1996, the airline's Trans-Tasman inbound passenger market share was 2.98%, an increase of 322.52% on the 1995 level. In 1996, the airline carried 34,047 passengers from Australia to New Zealand, which was an increase of 218.81% on the 1995 levels. The airline's Trans-Tasman outbound enplaned passengers market share was 2.91%, an increase of 219.78% on the 1995 level.

4.4. Entry of foreign-based LCCs into the Trans-Tasman aviation market

In January 2016, Malaysia-based low-cost carrier (LCC) AirAsia-X announced plans for a daily Gold Coast-Auckland service. These services were to be provided by densely configured Airbus A330 aircraft (Freed, 2016). Daily services between Kuala Lumpur to Auckland via Coolangatta (Gold Coast) in Queensland commenced on March 22, 2016 (Boot, 2016). The AirAsia X Airbus A330-300 aircraft has been configured with 12 Premium seats and 365 standard sized economy seats. AirAsia-X offers a premium flat-bed product on its Airbus A330 services (Allen, 2019; Bright, 2019). In late 2018, Air Asia-X announced that it would suspend its daily services from the Gold Coast to Auckland in early 2019 (Centre for Aviation, 2018).

Air Asia-X annual enplaned Trans-Tasman inbound passengers and the year-on-year change (%) from 2016 to 2019 is presented in Figure 19. During the short period of time that Air Asia- X competed in the market, the airline was able to grow its passenger volumes, which increased from 36,618 in 2016 to a high of 53,467 passengers in 2018. During 2019, its final year of operations in the market, the airline carried 6,999 passengers between New Zealand and Australia, which equated to a reduction of 86.9% on the 2018 passenger volumes. The most significant annual increase in Trans-Tasman enplaned inbound passengers was recorded in 2018, when this metric increased by 32.29% on the 2017 levels (Figure 19).

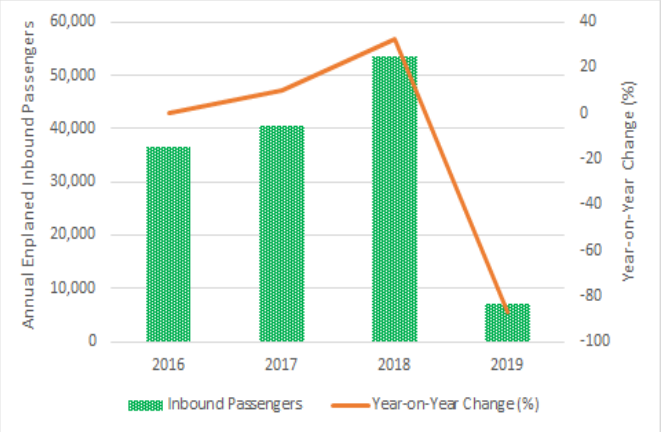

Figure 19. Air-Asia-X annual enplaned Trans-Tasman inbound passengers and year-on-year change (%): 2016-2019. Source: Data derived from Bureau of Infrastructure, Transport and Regional Economics (2017-2020).

Air Asia-X annual enplaned Trans-Tasman outbound passengers and the year-on-year change (%) from 2016 to 2019 is depicted in Figure 20. As can be observed in Figure 20, Air Asia-X increased its annual passenger volumes from Australia to New Zealand in 2017 (+3.53%) and 2018 (+37.36%), with the latter being the most significant annual increase in passenger volumes recorded during the study period. The largest number of Trans-Tasman outbound passengers carried occurred in 2018, when the airline uplifted 60,385 passengers (Figure 20). Figure 20 shows that in the final year of operations between Australia and New Zealand, Air Asia-X annual passenger traffic between Australia and

New Zealand decreased by 91.48% on the 2018 levels. In 2019, the airline uplifted 5, 141 passengers between Coolangatta (The Gold Coast) and Auckland.

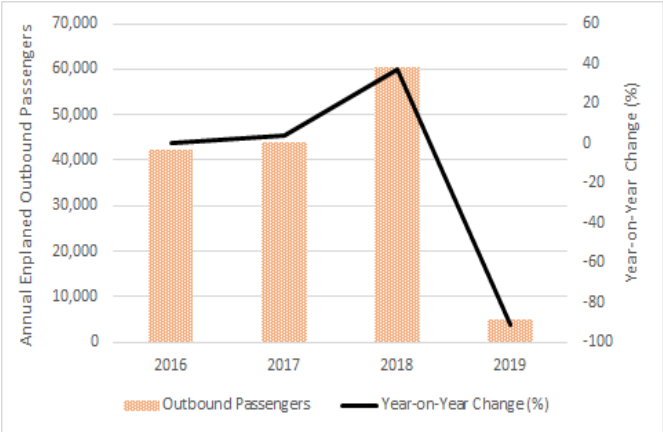

Figure 20. Air-Asia-X annual enplaned Trans-Tasman outbound passengers and year-on-year change (%): 2016-2019.
Source: Data derived from Bureau of Infrastructure, Transport and Regional Economics (2017-2020).].

Air Asia-X annual enplaned Trans-Tasman inbound passengers market share and year-on-year change (%) from 2016-2019 is depicted in Figure 21. As can be observed in Figure 21, Air Asia-X annual enplaned Trans-Tasman inbound passengers market share displayed an upward trend from 2016 to 2918 before declining in 2019 (Figure 21). The airline's largest annual Trans-Tasman inbound passenger market share was recorded in 2018, when it had a market share of 1.49% (Figure 21). The largest single annual increase in the airline's market share occurred in 2018, when it increased by 29.56% on the 2017 levels. In 2019, the airline's Trans-Tasman inbound passengers market share decreased by 87.24% to 0.19% (Figure 21).

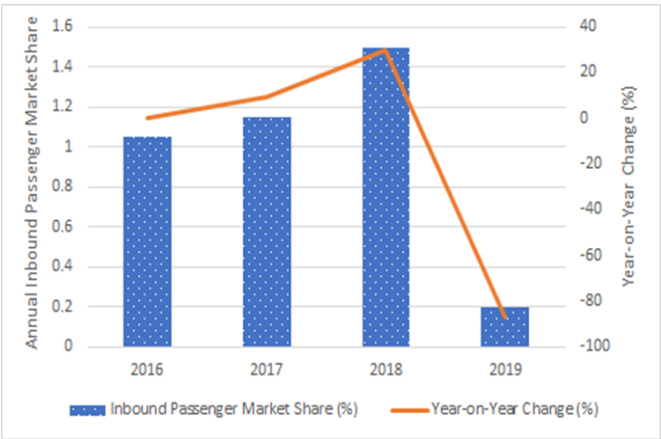

Figure 21. 21. Air Asia-X annual enplaned Trans-Tasman inbound passengers market share and year-on-year change (%): 2016-2019.
Source: Data derived from Bureau of Infrastructure, Transport and Regional Economics (2017-2020).

Figure 22 presents Air Asia-X annual enplaned Trans-Tasman outbound passengers market share and year-on-year change (%) for the period 2016-2019. Air Asia-X annual enplaned Trans-Tasman outbound passengers market share followed a similar trend to its inbound Trans-Tasman passenger market share, that is, it displayed an upward trajectory from 2016 to 2018 before declining in 2019 (Figure 22). The airline's largest annual Trans-Tasman outbound passenger market share was recorded in 2018, when it had a market share of 1.68% (Figure 22). The largest single annual increase in the airline's market share occurred in 2018, when it increased by 36.58% on the 2017 levels. In 2019, the airline's Trans-Tasman inbound passengers market share decreased by 91.66% to 0.14% (Figure 22).

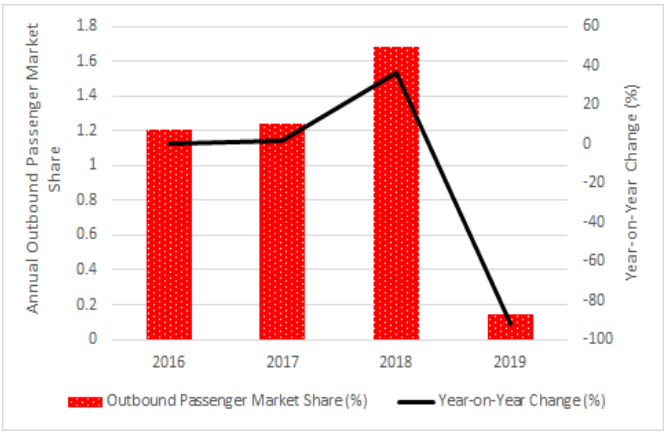

Figure 22. Air Asia-X annual enplaned Trans-Tasman outbound passengers market share and year-on-year change (%): 2016-2019.
Source: Data derived from Bureau of Infrastructure, Transport and Regional Economics (2017-2020).

5. Discussion

Historically, the low-cost carriers tended to operate a homogeneous aircraft fleet, with their aircraft deployed on a point-to-point route network (Vidovic, Štimac & Vince, 2013). This study has found that the low cost carriers (LCCs) competing in the Trans-Tasman aviation market followed a similar aircraft fleet strategy as those low-cost carriers (LCCs) that entered the Canadian market (for example, West Jet), the European market (for example, Easyjet and Ryanair), the Japanese market (for example, Skymark Airlines), Asia/Malaysia (for example, Air Asia), the Brazilian market (for example, GOL Airlines), the Middle East market (for example, Air Arabia), the Thailand market (for example, Nok Air and Thai Air Asia), the Singapore market (for example, Tiger Airways and Valueair), and the China market (for example, Spring Airlines) (Gross, Lück & Schröder, 2016). In the United States, a key element of the low-cost carriers (LCCs) business model is the use of a single aircraft type (Zhang et al., 2016). As previously noted, a key feature of the low-cost carrier (LCC) business model is the point-to-point (P2P) route network (Birolini et al., 2022; Franke, 2018; Whyte & Lohmann, 2017). The present study found that the low-cost carriers (LCCs) competing in the Trans-Tasman aviation market had adopted a similar route network strategy, and thus, they have focused on linking key cities in both Australia and New Zealand. A further feature of the low-cost carriers (LCCs) business model is their use of secondary airports (Choo & Oum, 2013; Dziedzic & Warnock-Smith, 2016; Whyte & Lohmann, 2017). The present study found that the low-cost carriers (LCCs) competing in the Trans-Tasman aviation market have served not only secondary, regional centres in New Zealand, for example, Palmerston North and Hamilton, but have also offered services to both country's major gateway airports, for example, Auckland and Christchurch in New Zealand and Brisbane, Melbourne, and Sydney in Australia. In recent times, low-cost carriers have established their operations at major airports (Choo & Oum,

2013; Dobruszkes, Givoni & Vowles, 2017) and this strategy is reflective of the low-cost carriers (LCCs) providing services in the Trans-Tasman aviation market. De Neufville (2006) has also noted that the low-cost carriers (LCCs) may decide to serve major airports in order to capture market opportunities.

6. Conclusion

This paper has examined the evolution of low-cost carriers (LCCs) in the Trans-Tasman air travel market. The low-cost carriers (LCCs) first entered the market in 1995 following the launch of services by Hamilton, New Zealand-based Kiwi Travel International Airlines. Since that time, the market has broadly had four discrete phases. The first phase was from 1995 to 2003; the second phase saw the rapid growth in traffic following the launch of services by Pacific Blue Airlines (a subsidiary of Virgin Blue) and Jetstar Airways. An important development in the market took place in 2010, when Pacific Blue was rebranded Virgin Australia, and, as such, implemented the full-service network carrier (FSNC) business model. More recently, AirAsia-X entered the market, utilizing fifth freedom traffic rights, to provide daily Airbus A330 services from Coolangatta to Auckland. AirAsia-X exited the market in 2019 leaving Jetstar Airways as the sole low-cost carrier operating in the market (Phase 4).

Following the inception of low-cost carrier (LCC) services by Kiwi Travel International Airlines in 1995, the market displayed quite robust growth, peaking in 2010 prior to the departure of Pacific Blue Airlines from the Trans-Tasman low-cost carrier (LCC) marketplace. The significant growth in the market is clearly attributable to the carrier within a carrier, Freedom Air International a subsidiary of Air New Zealand. Similarly, the arrival of the Australian equivalent, Jetstar Airways a subsidiary of Qantas Airways, in 2005 (a decade later), has facilitated the continued growth of the market, illustrating the importance of this business model for leisure market. The departure of Pacific Blue Airlines resulted in a drop in the Trans-Tasman market share of the low-cost carriers LCCs, suggesting that Virgin Australia was able to capture and retain its market share even when offering a premium product rather than a low-cost product. In contrast, the departure of Air New Zealand's Freedom Air International did not result in a notable distortion of the low-cost carrier (LCC) passenger demand in the Trans-Tasman air travel market.

The case study revealed that the low-cost carrier's (LCCs) outbound and inbound passenger market shares grew quite strongly over the period 1995 to 2010. In 2010, the low-cost carriers (LCCs) had an inbound Trans-Tasman passenger market share of 27.07% and an outbound Trans-Tasman passenger market share of 28.50%. These were the highest recorded market shares during the study period. The low-cost carrier's annual inbound Trans-Tasman and outbound Trans-Tasman market shares both decreased from the high in 2010, and in 2020, the final year of the study period, the low-cost carrier's (LCCs) carried 11.59% of the passengers between New Zealand and Australia, and 11.68% of the passengers travelling from Australia to New Zealand.

The low-cost carriers (LCCs) competing in this market have followed many of the attributes of the "traditional" low-cost carrier (LCC) business model – single homogeneous aircraft type, high-density seating, no-frills in-flight product, and low air fares. During the duration of the study period – 1995 to 2020 – the incumbent carriers have not only provided point-to-point (P2P) services to secondary, regional centers in New Zealand, for example, Palmerston North and Hamilton, but have also offered services to both country's major gateway airports, for example, Auckland and Christchurch in New Zealand and Brisbane, Melbourne, and Sydney in Australia.

A limitation of the study was that it was not possible to analyze the effect that air fares (pricing) has played in the development of low-cost carrier services in the Trans-Tasman marketplace as this data was not publicly available. The low-cost carriers usually have simple fare structures and often use pricing initiatives to stimulate passenger demand for their services. Thus, should these data become available then a future study could examine the impact that pricing has played in the development of the Trans-Tasman LCC marketplace. A further limitation of the study was that it was restricted to a single market.

Ethical approval

Not applicable.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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