

Economic Opportunities and Risks of Cruise Tourism in Cairns.

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1 Preliminaries

1.1 Global overview

In the last three decades, the global leisure cruise industry has experienced continuous growth and is often regarded as the ‘fastest growing segment’ of the tourism sector (Klein, 2006). Since 1980, global cruise passenger numbers have expanded at an annualized rate of nearly 8% (CLIA Australia, 2013). In 2013, over 21.3 million passengers took to the seas on cruise ships, up nearly 80% from the preceding decade (CLIA, 2014b). However, leisure cruising still only accounts for a minute fraction (around 2%) of overall global tourism revenues (Brida, Bukstein, Garrido, & Tealde, 2012).

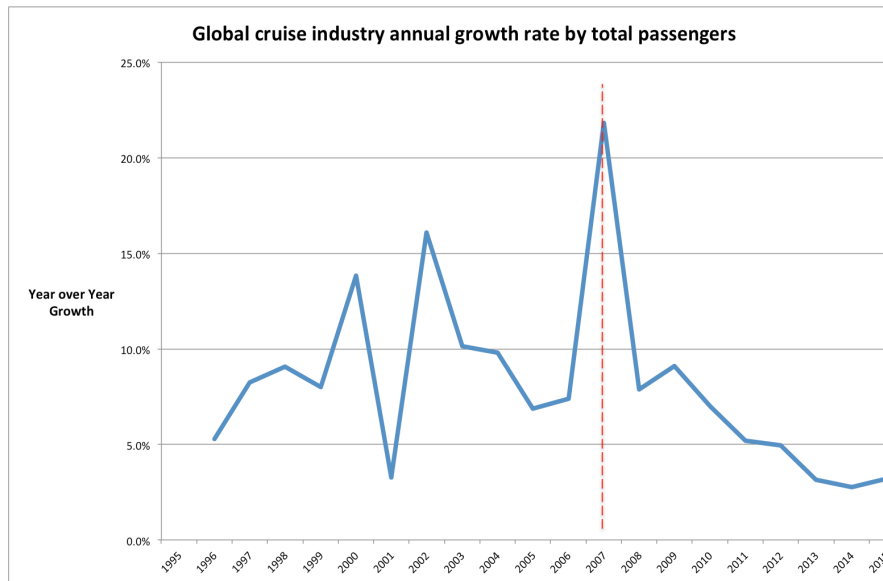
Cruise shipping has been characterised as a quintessentially globalized enterprise, with high mobility enabling a deterritorialization of the cruising industry and its associated value chains (Gui & Russo, 2011). Despite the mobility of industry assets, chiefly the ships themselves, the cruise industry to date remains highly concentrated in a handful of destination markets. Overwhelmingly, cruise shipping is focused in the Caribbean and Mediterranean regions, with 84% of total deployed capacity serving the broader North American and European markets (Rodrigue & Notteboom, 2012). In terms of berthing capacity, only around 5% of the cruise industry’s total passenger-bed days are currently deployed in the Australasian/South Pacific region. Furthermore, despite a rapid expansion in the Australian cruise passenger base, historical growth in leisure cruising has been overwhelmingly driven by North American and European residents, who comprised over 18.2 million passengers in 2013. To put this in perspective, Australian passengers totalled 830,000 (less than 5% of the global passenger source market) (CLIA, 2014b).

Passenger growth rates have abated substantially in recent years. Since 2010, worldwide cruise passenger numbers have grown at an annualized rate of around 3.8% (Cruise Market Watch, 2015b.). Slowing growth reflects a sharp reduction in cruise activity since the global financial recession dating to 2008, as well as increasing saturation of the dominant North American passenger source market. Cruise lines have responded to the latter by redeploying excess ship capacity to the emerging Australasian market (including the South Pacific) (CLIA, 2014a), contributing to recent high growth in local berthing capacities and, by extension, in the Australian passenger base.

Growing at an annualised rate of almost 8% per annum, cruise shipping is one of the fastest growing segments of the tourism industry.

In 2013 over 21.3 million passengers took to the seas – most in and around North America and Europe.

International passenger growth rates have abated substantially in recent years. Cruise lines have responded to this by redeploying excess ship capacity to the emerging Australasian market.



(Cruise Market Watch, 2015b.)

1.2 Port typologies

1.2.1 Port of call

A port of call, or transit port, represents a stop on a cruise ship itinerary. A port of call must have high tourism appeal by virtue of its natural environment, cultural character, historical significance or a combination thereof. Cruise ships do not generally contract ports of call for significant resupply, engineering or business support services. However, the longer a port remains on a cruise ship's itinerary, the greater the chances it has at being integrated within the supply chain (Munro & Gill, 2006). The extent of this integration varies according to port capacities, proximal alternatives and the cruise operator's existing supply chain arrangements. Provision of services to a cruise ship also generally depends on the port's ability to berth the vessel alongside a wharf, rather than via anchorage.

A typical cruise itinerary incorporates at least one quayside berthing per three calls at port. And while the convenience and economic advantages of alongside berthing are preferred by cruise lines and port operators alike, research has shown that it is not necessarily the determining factor on whether or not a ship will call at a port; foremost is the port of call's touristic appeal to passengers. According to one cruise line, "We will put up with a lot such as tendering if the destination is right for us" (Robbins, 2006) (p. 372).

1.2.2 Home port

A home port ideally features many of the same touristic characteristics of an attractive port of call, but with several important additions. As the point of passenger embarkation/disembarkation, a home port requires a complementary road, rail or air transportation infrastructure that can

Cruise lines consider more than whether a ship is able to berth quayside; foremost is the port of call's touristic appeal to passengers.

A home port requires more than just touristic appeal; it also needs substantial industrial infrastructure.

deliver passengers to the port region. Airports, in particular, should be able to process entry and exit visas for international passengers. Proximity to a population centre is also important, as it reduces costs of pre- and post-cruise passenger travel. A successful home port will also have industrial infrastructure suited to the provision of supplies and services to a cruise vessel. Costs associated with transportation of fuel or food stuffs to the port city, for example, must be factored into economic feasibility studies. For each of these reasons, home ports are typically situated in industrial cities with large populations. A home port must also be near relevant ports of call. Prototypical home ports include Port Canaveral, Florida (serving the Caribbean); the Port of Seattle (serving the Pacific Northwest/Alaska); Barcelona (serving the Mediterranean); Singapore (serving Southeast Asia); and Sydney, (primarily serving Australia, New Zealand, the South Pacific).

1.3 Industry structure

World wide growth of the cruise industry has been driven by a small cadre of industry leaders and is geographically centered in a few, choice markets. In the wake of an aggressive program of mergers and acquisitions, the myriad brands of only three cruise lines – namely, Carnival Cruise Lines (CCL), Royal Caribbean (RCL), and Star Cruises, who hold a majority concern in Norwegian Cruise Lines (NCL) – now account for over 80% of total market revenue (Cruise Market Watch, 2015a). By a wide margin, Carnival and its international subdivisions comprise the industry’s dominant presence, commanding nearly half of global cruise market share by both passenger numbers and total revenue.

1.4 Inter-regional redeployment; constraints in the ‘post-Panamax’ era

The cruise industry is often characterized by its high inter-regional mobility, which has allowed cruise lines to respond to changing economic conditions with remarkable flexibility. Within destination regions, such conditions may include new financial incentives or regulatory concessions offered by ports competing to gain a greater share of cruise traffic. But cruise ships have also benefitted from an ability to move between regions in order to accommodate seasonal demand, a critical advantage in light of the industry’s vulnerability to inclement weather. In the past, this has primarily entailed the redeployment of Florida-based vessels, which serve the dominant Caribbean market, to Alaskan coastal itineraries. ‘Post-Panamax’ mega-ships, i.e., ships too massive to transit the Panama Canal, are more constrained in this regard (Dowling, 2006).

Three cruise lines dominate the global market, with a single firm accounting for more than half of total cruise passengers and revenue.

‘Mega-ships’ have enabled operators to capitalise on economies of scale. The leisure cruise—previously the exclusive domain of the wealthy—is thus now within reach of a more diverse customer base.

1.5 Mega-ships: revenue capture at sea and in port

Industry analysts recognize that much of the cruise industry's growth has been 'supply driven,' i.e., "[...] the ships are built and the customers are found to fill them through various marketing and discounting strategies" (Rodrigue & Notteboom, 2012) (p. 5). Through the construction of ever-larger ships, cruise lines have dramatically improved their economies of scale; reduced per-passenger costs have been passed on to customers in the form of reduced ticket prices. As Papatheodorou observes, this "makes the product more appealing and affordable to wider parts of the population" (Papatheodorou, 2006) (p. 32). The leisure cruise—previously the exclusive domain of the wealthy—is now within reach of a much broader and socioeconomically diverse customer base. Industry leaders have continued to build increasingly massive ships, heavily discounting ticket prices as necessary to maintain high occupancy rates. On larger ships, reduced ticket prices can be ameliorated by increased customer volume and enhanced discretionary spending aboard ship (Vogel, 2011).

Mega-ships, able to carry in excess of 3,000 passengers, have come to dominate the established North American markets of the Caribbean and Pacific Northwest (Alaska), as well as the Mediterranean. Floating resorts that may be regarded as tourist destinations in and of themselves, mega-ships offer a broad range of services and amenities previously only available on-shore. The latest ships boast elaborate restaurants, bars, casinos, swimming pools, climbing walls, shopping malls, spas, live entertainment venues and more. The days of the all-inclusive cruise have largely passed, with the largest cruise lines now deriving the bulk of their income from "substantially all liquor and some non-alcoholic beverage sales, shore excursions, casino gaming, gift shop sales, photo sales, full service spas, communication services, cruise vacation protection programs and pre and post-cruise land packages" (Carnival Corporation & PLC, 2013) (p. 48). By lengthening itineraries and enhancing opportunities for on-board revenue capture, cruise lines now compete directly with land-based operators. The importance of these expanded revenue opportunities to the cruise industry cannot be overstated. As Vogel (2012) stresses, real cruise ticket prices are declining and no longer cover operational costs for the major carriers. Contemporary growth in the world wide cruise industry has been driven almost exclusively through the increased capture of passengers' discretionary spending aboard ship and whilst in port.

In the aggregate, calls by ships on a coastal cruise itinerary are economically more beneficial to a country (e.g. Australia) than those of ships on international itineraries. According to Dwyer and Forsyth (1996), "because of leakages due to foreign ownership and foreign sourcing of inputs," average per-passenger revenue inflows into the Australian economy are twice as high from a coastal cruise than from an

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international cruise (p. 37). But the economies of scale made possible by mega-class ships are best realized through ocean cruising, rather than in port. At sea, passengers may be kept aboard ship for longer periods of time, enabling the ship to capture a greater share of discretionary spending on high margin retail, food, alcohol and gambling. Cruise operators may also face less stringent regulatory environments and pay less in fees and tariffs in the ports of call of small island nations. So cruise operators have a range of motivations favouring international, ocean cruising itineraries.

From an industrial-organisational perspective, the cruise industry's ascendant business model has important implications for shore-side operators. Specifically, as cruise lines come to rely more heavily on discretionary passenger spend, they will be compelled to vertically integrate as much of the tourism industry supply chain as possible (Vogel, 2011). This can be seen clearly in the Caribbean, where mega-ship cruise operators duplicate shore-side retail offerings onboard ships, facilitate their own shore excursions, operate their own ports and in some cases, own private beaches—even entire islands—and all tourist infrastructure therein. Where broad vertical integration is not possible, cruise ships can easily redeploy to ports with more favourable market conditions and lax regulatory environments. These historical developments define the success of the cruise industry to date and are expected to inform the cruise industry business model of the future. Local land-based tourism operators can expect to compete not only with other land-based operators, but with the cruise lines themselves in an increasingly asymmetrical market environment.

Local tourism operators must compete with other land-based operators, as well as the cruise lines themselves.

2 Review of the international cruise ship market in Australia

2.1 Demand

CLIA Australia (2014) reports that cruise ship visits to Australian ports in 2013 were up nearly 11% from the year before, for a total of 746 calls producing 1.94 million passenger port days. Approximately three quarters of total passenger port days and substantively all of the country's home port passenger visit days were in Sydney, Brisbane and Melbourne. Nearly 70% of total passenger days in Australian ports were generated by domestic ships (i.e., ships that home port in Australia). Aboard domestic ships, nearly 95% of the passengers are Australian residents. Australians also make up around half of all passengers coming into Australian ports aboard international ships (CLIA Australia, 2014).

According to CLIA Australia, over 833,000 Australians took a cruise in 2013. Over the previous decade, the number of Australian cruise passengers has grown at an annualized rate of 20%, making Australia the fastest growing passenger source market in the world (CLIA Australia, 2013). With the equivalent of 3.6% of the population taking a cruise, Australia has for the first time exceeded the United States in terms of overall market penetration. And while this figure certainly denotes a rapid expansion of the Australian propensity to cruise, its significance to domestic port economies is not self-evident.

Recent growth in the overall number of Australian cruise passengers does not necessarily indicate a commensurate expansion of the domestic cruise tourism market nor an equivalent increase in Australian cruise tourism revenues. In large part, the growing cohort of Australian cruisers are heading abroad – great news for cruise operators, less so for Australian regional economies. In fact, fewer than 18% of Australian cruise passenger days were spent in domestic ports in 2013. These travellers account for less than 6% (5.8%) of growth in the Australian passenger base. Nearly 40% of Australian cruise passengers headed for destinations in the South Pacific, 19.5% to the dominant North American and European markets,¹ and 11.9% to New Zealand (CLIA Australia, 2013). Hence, although more Australians are cruising than ever before, a broad majority are leaving the country to do so.

Nonetheless, as measured by passenger days in port, domestic Australian cruise tourism did undergo significant growth between 2012-13. CLIA Australia (2014) reports an increase of 342,000 passenger days in Australian ports in 2013, comprising a 21% gain over the previous year. According to CLIA Australia (2013), the increase in Australians cruising locally has been facilitated by the introduction of additional “coastal and

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Australians took a cruise in 2013. Growing at an annualized rate of 20%, Australia is the fastest growing passenger source market in the world.

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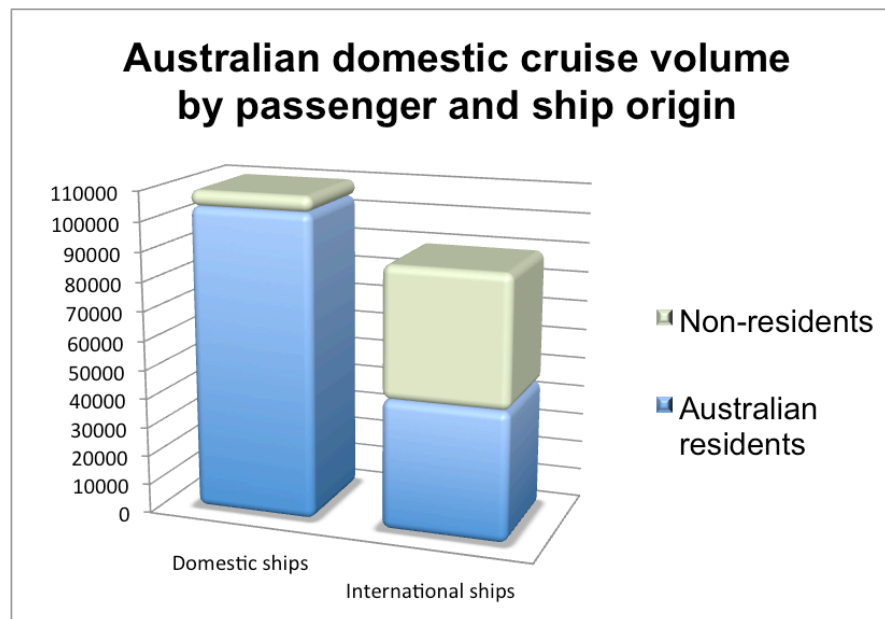
Australian destinations

grew 20% between 2012

and 2013.

¹ Figure includes river cruising in Europe.

short-break” cruise itineraries (p. 6). Cruise lines have added to domestic cruise offerings, featuring longer average cruise durations and relatively more calls in Australian ports. These developments suggest that passenger numbers alone are an insufficient measure of the domestic cruise tourism market. Cruise composition, including passenger makeup, number of calls, and overall duration must also be taken into consideration in order to gauge the scope of this sector.



Source: CLIA Australia (2014)

The nascent Chinese source market does not contribute significantly to the Australian cruise market; neither do Chinese passengers comprise a substantial portion of the international cruise market base. Despite the growing propensity for travel among the country’s rapidly expanding middle class, Chinese cruise ship passengers totalled only 727,000 in 2013, fewer than in Australia and Brazil (CLIA, 2014b). Though cited as having strong growth prospects (Dwyer, Douglas, & Livaic, 2004), China’s potential as a significant cruise passenger source market has yet to be realized. With limited domestic Chinese cruise shipping capacity serving Chinese residents, high costs to cruise lines aiming to switch between linguistically and culturally distinct passenger bases, and competition from the established North American and European destination markets, substantive expansion of the Chinese cruise passenger base to Australia in the coming decade is unlikely. Furthermore, the increasing strength of the Chinese Yuan against the Euro may encourage would-be Chinese cruise passengers to take advantage of higher tourism values in Europe.

The vast majority of cruise passengers calling at domestic ports are Australian residents.

Chinese passengers are not likely to comprise a substantial segment of Australia’s cruise tourism base in the coming decade.

2.2 Australian home ports

To date, functionally 100% of Australia's home port capacity is found in Sydney, Melbourne and Brisbane. This is set to change slightly in 2016, with the launching of P&O Australia's new ship, the *Pacific Eden* (245m length overall (LOA); 1,500 maximum passenger capacity). The vessel, which is scheduled to home port in Cairns for three months a year, will be able to transit Trinity Inlet without additional modification to the wharf, channel or swing basin. However, the port will require infrastructure upgrades if it is to offer a full array of home port services, in particular the provision of heavy fuel oil.

2.3 Local deployments

Together, New South Wales, Queensland and Victoria accounted for 84% of total cruise passenger visit days in Australia.

New South Wales – Sydney is Australia's dominant port, with 247 cruise ship calls generating 1,057,173 passenger days in 2013 (CLIA Australia, 2014). As a home port, Sydney services departures to the South Pacific, New Zealand, and Southeast Asia, as well as coastal cruising and circumnavigation of Australia. As a home port, Sydney also benefits from longer average tourist visits—as many passengers stay overnight in the city before and after their cruise. These additional stays generate higher overall tourist spend, as cruise passengers patronize local accommodations and restaurants to a higher degree than in transit ports.

Queensland – In 2013, the Port of Brisbane led Queensland in cruise tourism, with 104 calls generating some 230,000 passenger days (CLIA Australia, 2014). As Queensland's only home port, Brisbane enjoys close proximity to popular South Pacific destinations such as New Caledonia, which dominate many of the ocean cruising itineraries that originate in the city. Brisbane also services coastal cruises heading north to the Great Barrier Reef and is a feeder port for much of the cruise ship traffic that passes through Cairns. Though Cairns does not currently home port, its proximity to the reef, as well as to Papua New Guinea and the Solomon Islands, allows it to absorb excess off-season capacity from Brisbane and Sydney. P&O Australia's intention to home port its new ship, the *Pacific Eden*, in Cairns for three months of the peak season beginning in 2016 may signal the company's desire to diversify its offerings and supply chains in the high growth markets of the upper South Pacific and Southeast Asia. For more information about cruise ship visits to Cairns, including passenger and crew numbers, please see Section 3.2.

Victoria – As Victoria's only significant cruise port, Melbourne accounted for essentially all of the state's cruise shipping tourism in 2013. Melbourne hosted 63 cruise ship calls, generating approximately 146,000 total passenger days (CLIA Australia, 2014).

Currently, Sydney, Melbourne and Brisbane provide 100% of Australia's home port services and account for 84% of all cruise passenger visit days.

This is set to change slightly in 2016, with the *Pacific Eden* due to home port in Cairns for three months a year.

2.4 Cruise itineraries by company

In terms of passenger volume, cruise tourism in Australia is dominated by two companies: Carnival and Royal Caribbean.

Carnival's locally based subdivision, P&O Australia, currently operates a three ship fleet in Australia, with two additional ships scheduled to launch in 2016. The *Pacific Pearl*, *Pacific Dawn*, and *Pacific Jewel* offer itineraries to destinations in Australia, New Zealand and the South Pacific year round. Though primarily routing from Sydney, the *Pacific Pearl* and *Pacific Jewel* home port for at least a portion of the year in Auckland. The *Pacific Dawn* is based primarily out of Brisbane. Signature ships of Carnival's other brands also frequent the Australasian and South Pacific regions, including ships in the fleets of P&O (UK), Cunard, and Princess Cruises. In addition to a transpacific itinerary from Sydney to San Francisco, P&O's *Aurora* sailed transglobal itineraries in excess of 48 weeks between Southampton and Auckland, transiting the Panama Canal. The ship, with a passenger capacity of 1,878 and measuring 270m LOA, also features limited itineraries that include ports of call to the Great Barrier Reef, including Cairns (via Yorkey's Knob). Cunard's *Queen Elizabeth* (294m LOA; 2,092 passenger capacity) and *Queen Mary 2* (345m LOA; 2,620 passenger capacity) each anchored off Cairns once in 2014.

Royal Caribbean operates five vessels with Australian itineraries: the *Voyager of the Seas*, *Explorer of the Seas*, *Radiance of the Seas*, and *Rhapsody of the Seas* (all home porting in Sydney), as well as the *Legend of the Seas* (home porting in Brisbane). Royal Caribbean routes out of Sydney to New Zealand, South Australia, the northern coast of Queensland, several South Pacific islands including New Caledonia and Fiji, Indonesia and Southeast Asia. Routes out of Brisbane include South Pacific destinations, Indonesia and Southeast Asia. Royal Caribbean also runs limited routes from Perth to select Southeast Asian destinations, including Thailand and Vietnam.

2.5 Future trends

With so few companies controlling the lion's share of the international marketplace, what happens in the dominant markets of North America and Europe will continue to have direct impacts on the remainder of the world's cruising markets. The vast majority of the extant berthing capacity currently deployed in the South Pacific, including in Australia, has been imported from other markets. Dwyer, Douglas, & Livaic (2004) note that "[a]s mega ships monopolize the traditional cruise areas of the Caribbean, Mediterranean, and Baltic area, surplus smaller vessels are being redeployed to peripheral regional markets" (p. 2). The cruise industry's ability to serve Australian demand, then, is a product not just of local market potentials, but of ships' earning prospects elsewhere (Rodrigue & Notteboom, 2012).

With so few companies controlling the lion's share of the domestic and international marketplace, what happens in the dominant markets of North America and Europe will continue to have direct impacts here.

According to Cruise Market Watch (2015b), there are 10 new vessels with passenger capacities in excess of 2,500 scheduled to enter service by the end of 2016.² These new ship builds will add approximately 37,000 berths (8.2%) to global cruise shipping capacity. All of the vessels will sail under the brands of either Carnival, Royal Caribbean or Norwegian Cruise Lines.³ Deployment of these vessels within the dominant destination markets of the Caribbean and Mediterranean may generate excess capacity in North America and Europe, a portion of which may be redeployed to peripheral markets. The amount of excess berthing capacity that might spill over into the Australasian/South Pacific region—as well as the potential impact of this capacity on the Australian destination market—are at present uncertain.

As noted in Section 1.3, many mega-class ships are too large to pass through the Panama Canal (Dowling, 2006). This has important implications for the far-flung markets of Australasia and the South Pacific. Dowling (2006) provides a useful summary of the cruise industry's main inter- and intra-regional repositioning patterns, possibilities and limitations. Seasonal repositioning of ships from the Pacific coast of North America (Alaska) to Asia-Pacific markets is limited, and from the Caribbean side, is generally financially prohibitive for post-Panamax size ships. Though there is some seasonal repositioning to the Asia-Pacific region from Europe (Mediterranean), the Australasian market is considerably smaller. For mega-class ships to redeploy seasonally from established, highly profitable markets, the costs of relocation and potential discounting of ticket prices in order to maintain full occupancy would constitute considerable opportunity costs (Papatheodorou, 2006).

Intra-regional redeployments of cruise ships designed to target multiple passenger bases within the Asia-Pacific region are likewise highly unlikely. As Papatheodorou observes, "Switching the nationality mix of passengers can be difficult because of variations in national tastes and preferences" (Papatheodorou, 2006) (p. 36). In the Asia-Pacific region, requisite on-board changes would include additional staff, the translation of ship protocols, services and amenities, and ship reconfigurations to accommodate disparate cultural expectations and passenger requirements. Furthermore, successful redeployment into a new passenger source market requires substantial investments in marketing, including a the development of a highly specialized network of intermediaries (i.e., travel agencies), as well as a concerted lobbying effort to secure and

In 2016, 10 new ships will add approximately 37,000 berths to global cruising capacity – the amount of excess berthing capacity that might spill over into the Australasian market is uncertain.

The Australian source market, though growing, is not large enough to support a large scale, permanent redeployment of existing mega-class ships to the region.

² This figure does not include P&O Australia's *Pacific Eden* or *Pacific Aria*. Currently undergoing refits and scheduled to return to service in 2015, these ships are formerly the *MS Ryndam* and *MS Statendam*, respectively, of Carnival's Holland America brand.

³ Genting Hong Kong (Star Cruises) has ordered a ship for delivery in 2016 for deployment in Asia. It is not likely to generate excess capacity in the discussed markets and its berths are excluded from the tabulation above.

maintain amenable regulatory environments. Associated costs discourage regular intra-regional redeployments of ships to serve more than a single distinct cultural or linguistic passenger base.

Long-term, sustainable growth in the Australasian cruise tourism market, then, will likely require local drivers. Locally based fleets have to date been imported. These ships generally represent excess capacity created by the introduction of mega-class vessels in the Caribbean. Permanent redeployment of mega-class vessels to the Australasian/South Pacific region from established markets in North America and Europe would only be justified on the basis of sufficient, year-round demand for local itineraries. New builds specifically targeting the Australasian/South Pacific markets will only be initiated as part of a measured, years-long process. Hence capacity growth in the region will most likely continue to be driven by the gradual redeployment of ante-Panamax ships—which still comprise the majority of the world wide cruising fleet⁴ (Dowling, 2006)—and a mix of ante- and post-Panamax new builds in accordance with the local market’s ability to absorb them.

As passenger growth rates taper in North America and Europe, industry leaders are pulling back on new builds of mega-ships to service these markets (Carnival Corporation & PLC, 2013). Hence, capacity growth in the Australasian/South Pacific markets derived from the redeployment of excess capacity is likely to wane in the coming decade. If so, sustaining current passenger growth rates in the Australian destination market would require new ships built specifically for local deployments. Given the relative paucity of the Australian passenger source market, as well as seasonal nature of the region’s cruise industry, a large number of new mega-ships built to service the domestic market is by no means a foregone conclusion.

In summary, the Australian source market, though growing, does not seem large enough in absolute terms to support a large scale, permanent redeployment of existing mega-class ships to the region. At present, the nascent local market serves principally to absorb excess capacity created by the introduction of mega-ships into the larger and more established North American and Caribbean markets. But there is little evidence to suggest that Australian cruise demand would be unmet without the introduction of mega-ships. Smaller ships can and will continue to service markets in which port capacities do not allow berthing of the industry’s largest vessels.

While the largest ships are only operated by the largest companies, the largest companies continue to operate ships of many sizes.

Australian current cruise demand can be met without the introduction of mega-ships.

⁴ Papatheodorou (2006) observes that new entrants into the cruise market are not generally required to build new vessels as there is an extensive secondary market for cruise ships. Cruise lines regularly sell, purchase, refit, refurbish and rebrand ships for redeployment into emerging markets. A ship may expect at least three decades of service in a multitude of destination regions under a variety of brands.

3 Cruise tourism in Cairns

3.1 Seasonality

The northern Australian coastal cruise market is irreconcilably vulnerable to the region's seasonal weather patterns, as the monsoon rains coincide with the peak summer cruise season (November-April). In Cairns, this pattern manifests in a noteworthy manner. The majority of the port's cruise activity for alongside berthing of smaller ships takes place in the peak summer cruise season. Conversely, the bulk of its anchorage of larger ships off Yorkey's Point takes place in the mild winter months. Presumably, these larger ships are being rerouted from the south to relieve seasonal excess capacity as cruise volume from colder southern ports to South Pacific destinations ebbs in the winter. Due to the severe weather of its monsoon season, tropical North Queensland may be less attractive as a home port region for ocean cruising in the high volume summer months. Hence Cairns' ability to draw mega-ships away from Brisbane and Sydney in the peak cruise season warrants careful scrutiny.

3.2 Number and typology of ships

In 2013, Cairns ported 22 cruise vessels quayside at Trinity Inlet and 17 ships via anchorage off Yorkey's Knob. The longest ship to berth alongside was the *Rhapsody of the Seas* (Royal Caribbean), with a maximum passenger capacity of 2,435. The ship provides a good illustration of the port's capacity and limitations. Originally launched in 1995, the *Rhapsody of the Seas* was refitted in 2012. Its twin shafts and efficient rudder configuration allow the ship to traverse Trinity Inlet's existing swing basin. At 279m LOA, the ship is well in excess of Trinity Inlet's standard maximum of 200m LOA. Conversely, consider P&O Australia's *Pacific Dawn*, by far the most frequent visitor to Cairns. Though shorter than the *Rhapsody* (245m LOA) and carrying considerably fewer passengers (2,052), the *Pacific Dawn* cannot transit Trinity Inlet and is compelled to anchor off Yorkey's Knob. Other ships stopping in Cairns in 2013 via anchorage at Yorkey's Knob included Carnival's *Pacific Pearl*, *Aurora*, and *Queen Mary 2*, at 247m, 270m and 345m LOA, respectively, as well as Royal Caribbean's *Celebrity Solstice*, *Celebrity Millennium*, and *Radiance of the Seas*, at 315m, 294m and 293m LOA, respectively. Of these, the *Celebrity Solstice* has the highest passenger capacity, at 2,850 berths.

In 2014, Cairns ported 31 cruise vessels alongside at Trinity Inlet and 18 ships via anchorage off Yorkey's Knob. Royal Caribbean did not return to Yorkey's Knob in 2014, leaving only Carnival-owned brands at anchor there. Carnival expanded its offerings, introducing four itineraries for the *Pacific Jewel*, a ship with similar technical specifications and capacities as the *Pacific Dawn*. However, total passenger and crew days generated at Yorkey's Knob remained virtually unchanged. The majority

In 2014, 18 ships visited Cairns by anchorage off Yorkey's Knob.

Twenty-one individual ships – owned by 15 companies operating 16 distinct brands – docked at Trinity Inlet.

The longest ship to berth alongside was the *Rhapsody of the Seas* (Royal Caribbean), with a maximum passenger capacity of 2,435.

of the 2013-14 growth in Cairn’s cruise tourism was actually generated via Trinity Inlet. While greater numbers transiting Trinity Inlet underscore cruise lines’ preference for quayside berthing and greater utilization of Cairn’s recently refurbished cruise terminal, they also indicate a robust, competitive market comprised of smaller cruise ships. Twenty-one individual ships docked alongside at Trinity Inlet in 2014, owned by 15 companies operating 16 distinct brands. Despite the push toward mega-class vessels in the dominant markets of North America and the Mediterranean, the ante-Panamax cruise market not been abandoned by the industry’s biggest players. Smaller ships figure prominently in P&O Australia’s local development strategy. In 2016, the company is scheduled to launch two new vessels, the *Pacific Eden* and the *Pacific Aria*. At 219m LOA, these ships will be able to navigate Trinity Inlet’s existing channel, swing basin and wharf facilities. So while the largest ships are only operated by the largest companies, the largest companies continue to operate ships of many sizes.

3.3 Visitors

In Cairns, CLIA Australia (2014) estimates 61,050 passenger visit days and 13,019 crew visit days in 2013. These estimates are based on an assumed 105% average ship capacity⁵ and expected disembarkation rates of passengers and crew at port. CLIA research in a range of international cruise tourism markets has determined that on average, approximately 87% of transit passengers and 45% of crew disembark at a port of call. Interestingly, CLIA asserts that whether a ship calls via anchorage or quayside berthing bears no discernable impact on the proportion of passengers and crew who disembark (CLIA Australia, 2014b).

Independent estimation, based on cruise ship arrival and departure schedules published by Ports North, finds that cruise ship calls to Trinity Inlet and Yorkey’s Knob generated 50,533 passenger days and 11,448 crew days in 2013.⁶ This lower independent estimates call into question CLIA’s working assumption that cruise ships of all types always sail at full capacity. It is widely reported that mega-class ships, whose income is heavily reliant upon on-board, discretionary passenger spending, ensure at least 100% occupancy on all itineraries—resorting to extensive ticket discounting as necessary. However, smaller ships with fewer on-board services and amenities are presumably more reliant on passenger ticket revenues and may be amenable to sailing at less than full occupancy. Indeed, hardly any of the cruise ships that berthed alongside at Trinity Inlet sailed at full capacity in 2013: the *Rhapsody of the Seas* (Royal Caribbean), *Artania* (Phoenix Reisen), *Costa neoRomantica* (Carnival), and *Asuka II* (Crystal Cruises) transited Cairns at least once

Cruise ships carried
between 50 and 60
thousand passengers to
Cairns in 2013.

According to the Cruise
Lines International
Association, whether a
cruise ship has berthed
quayside or via
anchorage does not
influence the number of
passengers who
disembark.

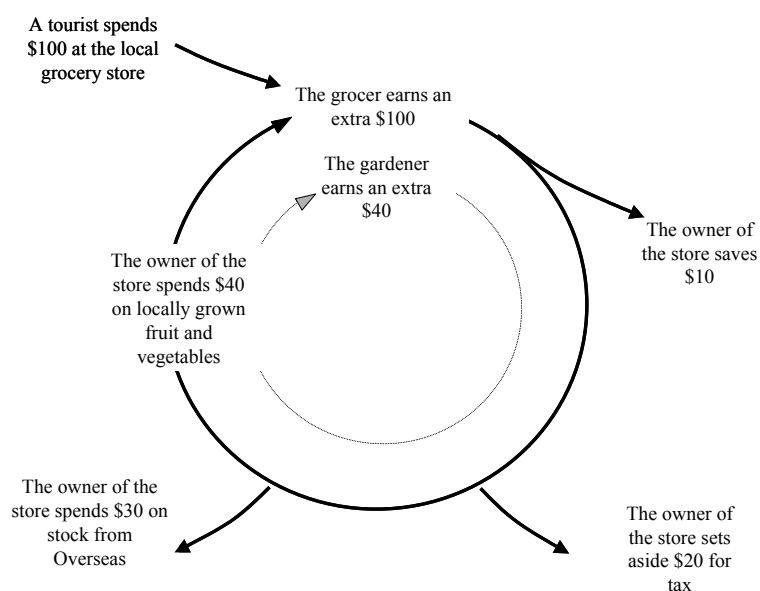
⁵ Full capacity is generally understood to comprise two passengers per cabin, though cabins may accommodate more passengers than this—hence full occupancy rates in excess of 100%.

⁶ Please see Appendix I: Cruise ship arrivals and departures in Cairns (2013)

with total occupancies of only 81%, 79%, 67% and 66%, respectively. By the same methodology, the independent estimation yields 60,462 passenger days and 12294 crew visit days in 2014.⁷ Though the independent 2013 estimate is around 17% lower than the estimate provided by CLIA Australia in absolute terms, year over year growth from 2013-14 is nearly 20%, well above the national average for Australian destinations.

3.4 Economic impact - background

The regional economic impact of tourism expenditure is generally greater than the direct spend of tourists. The process by which this happens can best be explained by use of an example (see the figure below). If a visitor spends money that has been earned outside the region at a local grocery store (say \$100 – often termed the *direct expenditure*), the store-owner (and hence the region) earns an extra \$100 in income. The owner of the store may put aside some money for savings/profit (say \$10) and for taxation (say \$20). He/she may also spend money importing stock from overseas (say \$30), and may spend the rest on fresh produce from the local gardener (say \$40 – often termed *indirect* or *knock-on expenditure*). So the gardener (and hence the region) earns an extra \$40 in income. The economic impact of the tourist expenditure is thus greater than just the \$100 spent: it is equal to the \$100 earned by the grocer, plus the \$40 earned by the gardener – and if the gardener spends more locally, then the impact will be larger still.



The 'multiplier' effect: how tourist spending generates extra regional benefit

The regional economic impact of tourism expenditure will generally exceed the direct spend of visitors.

Simplistically, regional economic impact can be estimated by multiplying direct spend by a 'multiplier'.

⁷ Estimates are based on the same disembarkation rates used by CLIA, with adjustments for overnight stays and stays of less than five hours. Arrival and departure schedules published by Ports North include passenger and crew counts for alongside berthing at Trinity Inlet through November, 2014. Where actual passenger and crew figures were not reported, full ship capacities are assumed.

To generate estimates of the (regional) economic impact of particular types of tourism, one thus needs information about tourist expenditure and about the spending patterns of regional business operators and residents – formally, one needs to determine the proportion of tourist expenditure re-spent locally (to calculate regional *multipliers*).

3.4.1 Tourist (direct) expenditure

Dwyer, Douglas and Livaic (2004) developed a model for estimating the economic impact of cruise-related expenditure in Cairns. They classify cruise-related expenditures into four principal categories: passenger, crew, vessel (including state and federal charges and taxes), and supporting expenditures (i.e., expenditures related to the promotion and marketing of cruise tourism payable within the local economy). With sufficient data—a persistent stumbling block in economic impact analyses of the cruise tourism industry—this model may be used to calculate a reliable estimate of the benefits of cruise tourism to Cairns’ regional economy.

Many cruise lines promote shopping excursions arranged by concessionaires. Ports may incentivise facilitated retail shopping excursions by reimbursing berthing fees, and participating retailers typically pay the cruise line fees or royalties (Klein, 2006). A cruise ticket is typically inclusive of all meals, so disembarking passengers tend to spend much less in local restaurants than land-based tourists. However, passengers do accumulate some spending on food and beverages during their stay. The arrival of a cruise ship can also be a boon to taxi drivers, who experience a temporary jump in demand among passengers en route to activities throughout the city.

Scholars underscore the persistent dearth of empirical evidence upon which assessments of the economic impact of cruise tourism may be based. Dwyer, Douglas and Livaic (2004) stress that the diverse spectrum of cruise ships, passenger bases and itineraries make it difficult to generalize about the ‘typical’ cruise; economic models that extrapolate regional impacts from small sample data sets must therefore be treated with caution. Projections of the economic contributions of cruise tourism demand prudence, especially in underdeveloped markets with little research by which estimates may be substantiated.

As outlined by Munro & Gill (2006), the regional economic impact of cruise related expenditures is influenced by several factors. Passenger spend depends heavily on whether the port serves as a home port or port of call, the amount of time a ship spends in port, passengers’ personal preferences and income, as well as the duration and composition of the cruise itinerary. Crew member spend is largely a product of crew salaries,

Cruise related expenditure can be classified into four principal categories: passenger spend, crew spend, vessel spend (including state and federal charges and taxes), and supporting expenditures (i.e., expenditures related to the promotion and marketing of cruise tourism payable within the local economy).

which are principally a function of nationality. Ship-related expenditures in a given port are a product of the ship's needs, which tend to be greater in all categories for larger ships, but also depend on existing supply chain arrangements. Port service and supply agreements are negotiated in light of alternatives available in neighbouring ports that may be incorporated within cruise itineraries. As these itineraries are typically marketed twelve months or more in advance of departure, a ship's procurement flexibility is strictly limited in the short term. With cruise lines not keen to continually renegotiate supply contracts, ports will experience considerable pressure to retain existing business through lower prices and incentives.

3.4.2 Regional multipliers and estimates of indirect spend

One cannot estimate indirect expenditure without information about local multipliers. These are often estimated using input/output or (preferably) general equilibrium models. The size of a region's various multiplier depends upon the industrial mix of the local economy, its myriad interactions and the industry/sector of interest. Revenues generated by the sale of traditional crafts to ship passengers would bear a relatively high multiplier, as a large portion of such items' value-added is locally produced. Heavy fuel oil for ships, on the other hand, is typically imported from outside the regional economy. Since much of this product's value-added is generated elsewhere, less of its sale price carries forward through the local economy. Fuel, food stuffs and consumer goods for sale on a cruise ship each require their own particular supply chain infrastructure. Thus the ability of a port city to benefit from a cruise ship's demand for goods and services depends on its local industrial capacities. Likewise multipliers tend to be smaller in rural/regional economies than in urban centres – primarily because there are fewer opportunities for people to spend money on local goods and services (Stoeckl, 2007).

3.5 Economic impact – estimates from the literature

To date, the bulk of economic data on cruise ship contributions to local, state and national economies is derived from the cruise shipping industry itself, primarily through its principal trade association, the Cruise Lines International Association (CLIA). While the CLIA's economic impact studies are increasingly comprehensive, with mixed method research approaches and improved transparency, there is no way to independently confirm much of the underlying data. This holds especially true for findings pertaining to passenger and crew spend in ports of call, which are derived from proprietary, self-response surveys distributed onboard. In addition, extrapolating ship-wide passenger and crew expenditures on the basis of self-response surveys risks the misstatement of total spend, as individuals who complete such questionnaires may not be representative of other passengers.

A cruise ticket is typically inclusive of all meals, so disembarking passengers tend to spend much less in local restaurants than land-based tourists.

However, passengers do spend some money on food, beverages, taxis and shore excursions.

3.5.1 The economic contribution of the cruise industry to Australia and Queensland

CLIA Australia (2014) provides a comprehensive estimate of the total contributions of the cruise industry to the Australian economy in 2013. The report concludes that cruise tourism generated domestic direct expenditures of \$1.72 billion in 2013. Direct expenditures were analysed for three segments: cruise lines, passengers and crew, and categorized by industrial sector. The services and government sector, which includes local tourism operators, accounted for the greatest proportion of direct spending (\$520 million), followed by wholesale trade (\$418.7m), transport (\$345.2m), lodging (\$164.7m), restaurants and bars (\$116.6m), manufacturing (\$96.6m), and retail trade (\$53.8m). These expenditures are reported to have induced an additional \$1.49 billion in revenue and generated close to 5,600 full-time equivalent jobs.

Throughout Queensland, CLIA Australia estimates that the cruise industry contributed \$269 million in direct expenditures in 2013, inducing an additional \$232 million in indirect output/expenditures. CLIA Australia's estimates of indirect and induced spending reflect generally accepted economic multipliers at the state level in Queensland (~1.87).

3.5.2 Passenger and crew spend in Cairns

Passenger-related expenditure on a port of call to Cairns includes retail purchases; local excursions (land, sea and air); entertainment; food and alcohol; local transportation; incidental expenses; tourist services including travel agents and insurance products; medical expenditures; and departure taxes (Dwyer, Douglas, & Livaic, 2004). If incorporated as a home port, passenger expenditures would expand to include the local component of inter-regional travel (ex., through Cairns airport and other inter-regional transportation infrastructure) and, importantly, local accommodation.

Shore excursions and port shopping programs sold onboard cruise ships represent a significant source of income for cruise operators. In Cairns, shore excursion packages available for purchase aboard ships of the leading cruise lines are similar—if not identical—to activity packages available for purchase directly from local operators. The major ostensible difference is price. For example, P&O Australia offers the popular Kuranda tour package—including round-trip transportation to Kuranda, a half day in the village, a ride on the Kuranda scenic railway and return by Skyrail Rainforest Cableway—for \$190, around 60% more than the price offered online by CairnsTours.⁸ Other Cairns-based excursions

CLIA Australia (2014) reports that cruise tourism generated direct expenditures of \$1.72 billion in 2013 for Australia as a whole, and \$269 million for Queensland. CLIA estimates that the indirect expenditures generate an additional \$232m for Queensland.

⁸ Online at: <http://www.pocruises.com.au/findacruise/shoretours/pages/default.aspx>

offered by P&O Australia include visits to the Australian Butterfly Sanctuary, white water rafting on the Baron river, an amphibious vehicle tour of Rainforeststation, ecotourism on Green Island, Hartley's Crocodile Adventure, jet skiing, parasailing, horse riding, quad-biking, scenic flights over Cairns and the reef, river tube-riding, and the Atherton Platypus Experience.

Although the cruise lines charge more for booking shore-side activities than a passenger would pay an operator directly, there are important intangibles associated with such transactions. Foremost, shore excursions purchased via the cruise line come with the assurance that the ship will not depart before participants have returned aboard. Shore excursions purchased directly from a local operator do not. If a passenger misses the ship's departure, even if not personally at fault, he or she will have to make individual arrangements to catch up with the vessel, often at significant personal cost. Second, reserving a shore excursion through the cruise line lends convenience and confidence to a purchase that tourists might otherwise be reluctant to undertake in an unfamiliar environment, especially under the time constraints imposed by a brief call. Without the cruise line operating as intermediary, a portion of these sales might not occur. Finally, although the cruise line keeps a majority share of the excursion booking fee, because the company has charged a significantly higher price, the revenues passed on to local operators' could conceivably be higher than they would otherwise receive.

Categories of crew member expenditure mirror those of passengers, though a greater proportion of crew spending is on retail, food and transportation than on shore excursions. CLIA Australia (2014) estimates that on average, crew members spend around 35% less per day in Cairns than domestic passengers.

Using the figures detailed in Section 3.2 (Visitors), CLIA Australia estimates that cruise passengers and crew generated a combined \$16.3 million in direct expenditures in Cairns in 2013. These expenditures included \$8.9 million paid to local operators for shore excursions; \$3.2 million in retail shopping; \$3 million in transportation and other expenses; and \$1.2 million in food and entertainment. As a transit port, Cairns does not generate substantial direct expenditures on lodging through its cruise tourism sector. CLIA did not generate estimates of induced/indirect expenditures in the Cairns region. However, due to the remoteness and limited industrial infrastructure of Far Northern Queensland, the appropriate multipliers for estimating induced spending throughout the Cairns regional economy would be slightly lower (~1.18-1.42) (Stoeckl, 2010).

According to the independent estimate (also detailed in Section 3.2

CLIA estimates that Australian passengers disembarking in Cairns spend about \$187 per day. Accounting for crew spend, the industry is estimated to have generated about \$16.3 million of 'direct' expenditures in Cairns during 2013.

Multipliers tend to be quite small in regional/rural centers, so one would not expect indirect expenditures to be particularly high (perhaps between 20-40% of direct expenditures).

and <http://cairstours.net.au/kuranda/half-day-kuranda-scenic-rail-skyrail>, respectively. Accessed 3 Feb 2015.

above), a total of 61,981 passenger and crew visit days to Cairns in 2013 generated approximately \$12.7 million in direct expenditures.⁹ These expenditures were comprised of approximately \$7 million spent on excursions; \$2.5 million on transportation and other; \$2.2 million on retail shopping; and \$1 million on food and entertainment. The revised total is approximately 22% lower than the estimate provided by CLIA Australia.

There are a few additional points of interest.

- 1) CLIA Australia reports that the average international cruise passenger spends over \$200 per day on shore excursions in Cairns. This is 66% higher than the amount reportedly spent by an average domestic passenger.
- 2) CLIA Australia reports that the average international passenger reportedly spends \$98 per day on retail shopping, nearly five times the average spent by either domestic cruise passengers or land-based, domestic (non-Queensland residing) tourists to the region (Sakata et. al, 2014).

Though CLIA Australia's figures cannot be independently verified, the results suggest that cruise tourism targeting international passengers would be substantially more profitable to shore excursion and retail operators in Cairns than domestic (coastal) cruise tourism. As discussed in Section 2.1, international passengers comprise a relatively small minority of total passengers on cruise ships to Australian destinations.

3.5.3 Vessel and support expenditures

Dwyer, Douglas and Livaic (2004) also identify a range of vessel-related expenditures, including: port agency fees; storage; terminal charges; water; pilotage; berthage, baggage handling and stevedoring; fuel bunkering; marine engineering; dry-dock charges; waste disposal; and towage (p. 10). Vessel-related expenditures in these categories tend to be higher at a home port than a port of call. In addition, vessel-related expenditure may include state and federal charges and taxes that vary according to cruise route and ports of call. In Queensland, such charges have included: AMSA Marine Navigation and Oil Pollution Levy; Queensland Transport-State Conservancy; Australian Taxation Office-Freight Tax; GBRMPA Environmental Management Charge; and Reef Pilotage. Most tax revenue does not remain in Queensland, though there may be some flow back of taxes charged for services performed (Dwyer, Douglas, & Livaic, 2004). It is noteworthy that foreign registry and bilateral maritime agreements allow most international cruise operators, including P&O Australia, to avoid paying any Australian corporate income tax (Carnival Corporation & PLC, 2013).

CLIA reports that international cruise passengers spend 66% more than Australian passengers on shore excursions and nearly five times more on retail shopping.

Foreign registry and bilateral maritime agreements allow most international cruise operators, including P&O Australia, to avoid paying any Australian corporate income tax (Carnival Corporation & PLC, 2013)

⁹ Utilizes CLIA's estimates of average (domestic and international) passenger and crew expenditures. Assumes that 70% of passenger days in Cairns were generated by domestic ships, aboard which 94% of passengers were Australian residents.

Support expenditures include, inter alia, the component of shipping agent commissions and marketing expenses paid directly to operators in Cairns (Dwyer, Douglas, & Livaic, 2004). Cruise line payments for local marketing and travel agent services are substantially higher in the ship's home port than in ports of call.

CLIA Australia (2014) estimates a total of \$142.4 million in vessel and support-related direct expenditure in Queensland in 2013. The largest expenditure category was wholesale trade, generating a reported \$54.7 million state-wide, followed by water and other transport (\$36.1 million), travel agency and administrative services (\$34 million), manufacturing (\$12.6 million), and other (\$5 million). The organization does not provide estimates on vessel or support-related expenditure at the local level, though as a transit port with limited resupply capacity, Cairns' share in these revenues is not likely to be substantial.

3.6 Future trends / predictions

Already a transit port on many of the *Pacific Dawn's* current itineraries, given the requisite port infrastructure, Cairns could feasibly compete with Brisbane as a home port for much of the ship's extant schedule. P&O Australia's forthcoming ships, the *Pacific Eden* and *Pacific Aria*, are expected to offer itineraries relevant to Cairns. The city plans to home port the *Pacific Eden* for three months of the year beginning in 2016.

In 2015, Royal Caribbean has scheduled calls to Cairns by the *Rhapsody of the Seas* and *Legend of the Seas*, both of which are able to transit Trinity Inlet. In addition, the *Radiance of the Seas* (with a maximum passenger capacity of 2,501) is scheduled to return to Yorkey's Knob. With development of its heavy fuel oil supply infrastructure, Cairns could ostensibly compete with Brisbane as a part-time home port for the *Legend of the Seas*. However, irrespective of the requisite infrastructure expansion, to win home porting agreements for the *Voyager of the Seas*, *Radiance of the Seas*, or *Rhapsody of the Seas*, Ports North would have to draw these ships from Sydney. This is highly unlikely given the latter's size, regional demography and industrial advantages. In addition, Sydney is adjacent to the established, lucrative destination markets of New Zealand and the South Pacific islands. It is also the capital of New South Wales, from which the majority (41%) of Australian cruise passengers are drawn (CLIA Australia, 2013).

Princess Cruises' *Sea Princess* (261m LOA; 1,950 passenger capacity) called at Yorkey's Knob three times in the winter months of 2014. Another Princess vessel, the *Ocean Princess* (181m LOA; 826 passenger capacity) is scheduled for two calls to Cairns via Trinity Inlet in 2015. Australasian

Already a transit port on many current itineraries, with development of its heavy fuel oil supply infrastructure, Cairns could feasibly compete with Brisbane as a part-time home port for some ships.

routes of the *Ocean Princess* are home ported in Sydney as part of lengthy intercontinental itineraries. Cairns can expect to draw periodic calls from these and other ships sailing months-long itineraries that include visits to the Great Barrier Reef. However, Cairns' small population and remoteness make it a highly unlikely candidate to home port large ships serving this type of global itinerary. Ports North predicts 61 mega-ship visits a year by 2025. This figure, ostensibly based on current anchorage at Yorkey's Knob, is consistent with the cruise industry's global historical average growth of 8% (which includes both mega-class and smaller ships). However, whether current growth trends will continue in the Australian market, and whether they are to be driven by the local introduction of mega-ships, is currently indeterminable. As discussed in section 2.5, cruise lines' decisions to build new mega-ships will largely be a product of the long-term outlook in the North American and European markets. At present, the expectation that a large number of mega-ships will enter into service in the Australasian/South Pacific market within the coming decade is highly speculative.

4 Issues for consideration

4.1 Differentiating between genuine growth and substitution

As noted in section 2.1, growth in the Australian cruise destination market is currently being driven overwhelmingly by local residents rather than by international visitors. Hence domestic growth in this industry does not connote significant net financial inflows at the national level. Moreover, foreign registry and bilateral maritime agreements allow most international cruise operators, including P&O Australia, to avoid paying any Australian corporate income tax (Carnival Corporation & PLC, 2013)

Cruise passengers also tend to spend less in a port of call than land-based tourists, so an expanding number of cruise tourists does not automatically translate into expanding tourist revenues. On average, land-based tourists remain in the city longer, utilize local accommodation and patronize a greater range of local businesses and income-generating public services. The longer a tourist stays in a region, the more they spend (Mustika et al., 2014). As discussed in Section 3.5.2, CLIA Australia estimates that the average domestic and international cruise ship passenger to Cairns spends \$187 and \$366 per day, respectively. This contrasts with estimates of land-based tourist expenditure in the Cairns/Port Douglas area of between \$733 and \$1176 per person, depending on origin (Sakata et al., 2013). There is not enough evidence to determine whether domestic growth in cruise tourism represents 'new' tourism, or whether it represents a substitution of land-based domestic tourism (and revenue) for cruise-based tourism

If tourists swap land-based vacations in the Cairns/Port Douglas region for ship-based vacations, then expansion of cruising could mean a reduction in local visitor spending.

Increased cruise tourism will only expand the local tourism industry if it brings people who would not have otherwise come to the region.

(and revenue). But if tourists are swapping land-based vacations in the Cairns/Port Douglas region for domestic cruises, then expansion of cruising could mean a reduction in local tourism spend.

Dwyer, Douglas and Livaic (2004) caution about cruise tourism's potential crowding-out effects on a locality's established, land-based tourism. "Unless there is significant excess capacity in tourism-related industries," they argue, "the primary effect of an economy wide expansion in inbound tourism is to alter the industrial structure of the economy rather than to generate a large increase in aggregate economic activity" (p. 8). Should a city decide to home port cruise vessels, the requisite transformations of its existing tourism networks and inter-industrial supply chains could be substantial. In practical terms, as cruise volume rises—especially into a home port—an increased proportion of the local economy's industrial infrastructure will be diverted to service the emergent sector. Though the economic benefits of this reallocation could be substantial, they will comprise less per cruise passenger than per land-based tourist, and will be distributed amongst a relatively narrower group of stakeholders (Brida & Zapata, 2010). To the extent that a regional economy is dependent upon land-based tourism, crowding out effects stemming from increased cruise tourism may weaken aggregate long-term economic growth (Bresson & Logossah, 2011).

4.2 Challenges facing local tourism operators

The swift arrival and departure of high volumes of cruise passengers can put pressure on local tourism capacities, degrade the natural resources upon which they depend, and lower the overall level of tourist satisfaction. It is not surprising, therefore, that the cruise industry generates mixed sentiments in port communities. According to Klein (2006), "Many ports have a love-hate relationship with the cruise industry. They feel on the one hand that they are not getting a fair share of the cruise tourism revenues; but on the other hand ports recognize the money they make from cruise tourism and are hesitant to speak up for fear that cruise ships will pass them by" (p. 266). Local tour operators face planning challenges, as the number of excursion reservations may not be made known until a ship's arrival. This lack of foreknowledge can lead to supply and staffing inefficiencies, as well as shortages, crowding and overbooking of tours. According to Klein (2006), 50-80% of passengers purchase an excursion from the cruise line at each port call. The price of a shore excursion purchased onboard is typically marked up between 70%-200%, with less than half that amount paid to excursion operator. "[...] This leaves the shore excursion provider in the uncomfortable position of being paid US\$20 for a product that passengers expect US\$60 of value" (Klein, 2006, p. 264). Rapid inflows of cruise passengers may also cause short-term shortages in local transportation services, such as taxis and tour buses (Brida & Zapata, 2010). As the inflated demand is temporary, it may not be feasible to

The economic benefits of home porting a cruise vessel can be substantial. But the dollars per cruise passenger earned by local businesses will be less than the dollars currently earned for land-based tourists, and total benefits may be distributed amongst a narrower group of stakeholders.

High volumes of cruise passengers can also put pressure on local capacities, degrade the natural resources upon which they depend, and lower the overall level of tourist satisfaction.

ameliorate shortages through increased capacity. In the long run, potential visitor dissatisfaction is a cost largely borne by the local community, rather than by cruise lines.

4.3 International context and planning horizons

Cruise port development does not happen in a vacuum. In light of the substantial investment and risk involved, port expansion for the sake of cruise shipping must be closely coordinated with cruise lines in order to ensure the utilization of new facilities. This is evident as port authorities and cruise industry representatives have lobbied in tandem for public and governmental support of port facility expansions in Cairns and elsewhere (Klein, 2006).¹⁰ The time to recover expenses of a port expansion can also be considerable. Consider the case of Seattle. In the mid-1990s, the Port of Seattle undertook major infrastructure expansions in order to gain a larger share of the burgeoning Alaskan cruise market. Though construction was largely completed by 1996, Seattle was not incorporated within the cruise industry supply chain as a home port until four years later. Though the port has experienced substantial growth in cruise ship traffic since 2000 (Munro & Gill, 2006), it is a poignant illustration of the time scales involved.

For a port city to benefit from infrastructure expansion, its new port capacities must be matched by adjustments in cruise itineraries and associated industrial logistics. In contrast to the incorporation of a new port of call, a relatively flexible process for a ship operator, new home port arrangements require broad adjustments to a cruise line's entire logistical apparatus. These adjustments entail a significant time gap between development and new revenue generation from home porting activity. If the process of port development is contested, it can introduce further delays in revenue generation that may significantly alter the cost/benefit structure of an expansion. Such delays must be factored into any net present value estimations of anticipated cruise traffic and associated home porting activity. Crucially, a cruise line's decision to switch home ports unfolds in a highly competitive 'buyers' market in which rival ports are obliged to make compelling concessions to the cruise lines (Klein, 2003). Such concessions may include discounts, rebates and fee waivers that could potentially further undermine the profitability of a port development project.

Furthermore, Seattle's entrance as a home port unfolded in well established, highly developed market. New cruise ship traffic to Seattle represented 'capture' from the Port of Vancouver of ships already deployed to the Pacific Northwest region. If Cairns intends to establish itself as a home port for ships already deployed to the Australasian/South

Cruise port development

does not happen in a vacuum.

For a port city to benefit from infrastructure expansion, its new port capacities must be matched by adjustments in cruise itineraries and associated industrial logistics.

Crucially, a cruise line's decision to switch home ports unfolds in a highly competitive 'buyers' market in which rival ports are sometimes obliged to make compelling concessions to the cruise lines.

¹⁰ See also Ports North. (2014). *Ports North welcomes P&O Cruises homeport announcement*. Retrieved February 2, 2015, from http://portsnorth.com.au/pdfs/media-releases/MediaRelease_POAnnouncementAug.pdf

Pacific region (rather than rely on a more gradual process of sector-wide cruise tourism capacity growth), it will do so in direct competition with Sydney and Brisbane. Indeed, Ports North has published draft 2015 and 2016 cruise ship arrival and departure schedules featuring calls by P&O Australia's *Pacific Dawn* and *Pacific Jewel*, ships already scheduled to home port in Brisbane and Sydney, respectively, serving S. Pacific itineraries in New Caledonia and Papua New Guinea.¹¹ Stops in Cairns are not actually indicated by P&O Australia on these particular itineraries. Cairns' competitive disadvantages vis-à-vis the larger, better positioned ports of Sydney and Brisbane warrant careful consideration.

4.4 Environmental issues

Where tourism is dependent upon the natural environment, such as along the Great Barrier Reef, special consideration must be given to the environmental sustainability of various tourism forms. Cruise tourism, especially since the introduction of mega-ships, has come under heightened scrutiny due to the significant pressures this sector imposes upon vulnerable marine ecosystems. Johnson (2002) highlights some of the most pressing concerns, including: infrastructure impacts (e.g., degradation of coastal/marine habitats due to the construction of terminal facilities, use of local natural resources for construction, dredging and dumping of spoil); operational impacts (e.g., consumption of local resources by ships, water and air pollution, and damage caused to marine ecosystems by ships); distribution impacts (e.g., associated with passenger travel and industrial supply chain logistics); use impacts (e.g., cultural impacts on the local community, as well as disturbances to wildlife and natural environments); and waste impacts (e.g., from garbage, oils, sewage and other hazardous waste generated by ships). The difficulty in appraising such costs, Johnson argues, is framing them according to the same terms of reference used to present the economic benefits of cruise tourism (p. 263). Though difficult to quantify, the various environmental costs of cruise tourism must be accounted for within cost/benefit analyses, with clear plans to mitigate foreseeable long-term economic consequences.

Where tourism is dependent upon the natural environment, such as along the Great Barrier Reef, special care must also be taken to consider the environmental sustainability of various tourism forms.

¹¹ Online at <http://www.portsnorth.com.au/our-ports/cruise-arr-dep.php> and <http://www.pocruses.com.au/findacruise/pages/default.aspx>, respectively. Accessed 2 February 2015.

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Appendix I: Cruise ship arrivals and departures in Cairns (2013)

Cairns Port - Cruise Liner Schedule (2013)								
Trinity Inlet								
Ownership	Ship	In Service	LOA	Date	Passengers	Crew	Capacity	Length of Stay (h) ¹
Costa (Carnival)	Costa neoRomantica	1993	220m	13-Jan-13	1011	602	67%	16
Holland America (Carnival)	Volendam	1999	237m	26-Oct-13	1318	603	92%	10
				28-Nov-13	1338	604	93%	9
Seabourn (Carnival)	Seabourn Odyssey	2009	200m	05-Mar-14	406	340	95%	32
				16-Dec-13	434	337	98%	33
	Seabourn Quest	2011	198m	22-Feb-13	358	334	88%	30
Royal Caribbean	Rhapsody of the Seas	1997	279m	22-Feb-13	2085	820	91%	9
				27-Mar-13	2177	406	81%	10
				23-Nov-13	2118	797	91%	7
Silversea	Silver Shadow	2000	186m	05-Feb-13	332	286	91%	34
				15-Dec-13	298	295	88%	10
Seadream Yacht Club	Columbus 2	1985	180m	10-Feb-13	400	360		6
Phoenix Reisen	Artania	1984	231m	19-Feb-13	879	532	79%	10
Crystal Cruises (NYK)	Crystal Symphony	1995	238m	16-Feb-13	857	603	100%	10
	Asuka II	1989	241m	12-Feb-13	521	466	66%	14
Hapag-Lloyd	Europa	1999	199m	27-Feb-13	341	284	92%	25
Lindblad Expeditions	Orion	2003	103m	27-Mar-13	179	75		11
				08-Dec-13	186	67		9
	Pacific Princess			07-Mar-13	573	344	76%	10
Coral Princess (Australia)	Oceanic Discoverer	2005	63m	30-Mar-13	113	22		
APT Group	Caledonian Sky		103m	14-Mar-13	103	72		24
				21-Nov-13	97	79		15
Subtotal Trinity Inlet					16124	8328		
Yorkey's Knob								
Ownership	Ship	In Service	LOA	Date	Passengers	Crew	Capacity (100%)	Length of Stay (h) ¹
P&O (Carnival)	Pacific Dawn	1991	245m	15-Jan-13	2052	660		9
				2-Apr-13	2052	660		9
				14-May-13	2052	660		9
				11-Jun-13	2052	660		9
				2-Jul-13	2052	660		9
				13-Aug-13	2052	660		9
				24-Sep-13	2052	660		9
				3-Dec-13	2052	660		9
				17-Dec-13	2052	660		9
	Pacific Pearl	1988	247m	23-Aug-13	1578	700		8
	Aurora	2000	270m	26-Feb-13	1878	850		10
Cunard (Carnival)	Queen Mary 2	2003	345m	2-Mar-13	2620	1253		12
Royal Caribbean	Celebrity Solstice	2008	315m	27-Feb-13	2850	1500		12
				31-Mar-13	2850	1500		10
	Celebrity Millennium	2000	294m	26-Nov-13	2138	999		29
	Radiance of the Seas	2000	293m	15-Apr-13	2501	859		10
				17-Oct-13	2501	859		11
Subtotal Yorkey's Knob					37384	14460		
Total Passengers & Crew (Trinity+Yorkey's)					53508	22788		
Adjustments (Add for stayovers longer than 24 hours; subtract for stayovers less than 5 hours)					57620	25440		
Total in port (Pax:87.7%;Crew:45%)					50533	11448	Total:	61981
Source: Ports North (2013)								
¹ Rounded to nearest hour								
Represents an average of previous visits in the year - Actual figure not reported								
Represents full capacity - Actual figures not reported								