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The Case for Statutory Cost Audits

Janek Ratnatunga[1]

This article makes argues that Qantas' cost and price calculations should be independently audited.

It is an indisputable fact that large-and small-scale businesses, NGOs and non-profit enterprises all need ***reliable cost information*** to take strategic decisions that will affect the future of their stakeholders. This is true also of Governments. The Australian Federal Government, whilst being deservedly praised for its handling of the COVID-19 crisis, still made a A$65 Billion calculation error because if its faulty forecasting of the impact of the pandemic.[2]

The Australian government's *JobKeeper* subsidy was originally forecast to support more than 6 million jobs. However, Dr Steven Kennedy, the Treasury secretary said that the original estimates were made in late March when it appeared the Australian economy could contract by almost 25 per cent in the June quarter. This was based on lockdowns similar to those put in place overseas that were forecast to result in 4.8 million people not working over a two-month period. This amounted to a subsidy of A$130 billion. This number was then confirmed when some businesses had responded to a question about numbers of eligible staff with figures that had erroneously inflated the number of expected recipients – which happened to be closely in line with the Treasury's own forecasts.[3] This double-costing-error luckily went in the government's favour giving it an opportunity saving of A$60 Billion.

In an article published just after the Covid-19 related lockdowns were imposed in Australia, the author used a management accountant's approach to calculating the cost of the economic impact, and showed that the government could save at least A$65 Billion in worker-support costs if certain immediate actions were taken.[4] It has now come to pass that this is almost exactly the savings that the government will benefit from due to its economic forecasting error. Rather than taking the macro-costing approach of economists; the government would have had fewer red faces if they had taken the micro and granular costing approach of management accountants.

Hot on the heels of the A$60 Billion JobKeeper subsidy forecasting error; the Australian Government had to deal with another erroneous cost calculation referred to as **'***Robo-Debt'***.**

In 2016, Australia's Social Security agency, *Centrelink*, introduced a new automated system to try to detect overpayments to past and present recipients of its social security payments. A letter was sent advising past recipients of a potential debt and asked them to provide further information about their income such as payslips, etc. If a recipient did not respond, Centrelink obtained income information from the Australian tax Office (ATO) and *averaged it* over multiple fortnights to

[1] Institute of Certified Management Accountants.

[2] Michelle Grattan (2020), **"Treasury revises Job Keeper's cost down by massive $60 billion, sparking calls to widen eligibility",** *The Conversation,* May 22.

[3] Shane Wright and Dominic Powell (2020), Australian economy appears to have avoided 'cycle of destruction', *The Age,* News, June 9, p.5.

[4] Janek Ratnatunga (2020), "Financial Modelling Wars: COVID-19 vs. the Economy", *The Journal of Applied Management Accounting Research*, *18(1)*, *pp. 1-10.*

determine the existence of a debt. If additional information was provided, Centrelink took that into account when calculating a potential debt.

In late 2019, after losing a test case at the Federal Court, the Australian Government conceded that income averaging of ATO data was not a lawful way to accurately calculate a debt; and on May 29, 2020, announced that it will give refunds to about 470,000 wrongly-issued debts. The refunds are linked to about 373,000 Australians, as some people were made to repay Centrelink multiple times.

The government initial cost estimate was that the repayments were in the vicinity of $720 million. However, it has been revealed in media reports that internal Government estimates have shown that the total value will be close to $1.5 Billion – according to a source familiar with the refunds process.[5]

As one can see, the implications of getting cost numbers wrong is staggering. Faulty costings result in faulty strategic decision making in pricing, quality, marketing, supply-chain, product mix etc.; which then have a flow on effect in many related industries. Governments often make funding and other regulatory decisions to support various industries based on faulty cost information that are not subject to any statutory controls. These decisions can amount to millions of dollars of taxpayer funds.

The Qantas Case

Let us now look at the example of Qantas, Australia's largest airline. Many people, even in Australia, think it is government owned, rather than a public company owned by shareholders who naturally want a return for their investment via profits and dividends.

When the COVID-19 lockdowns severely disrupted the viability of Australia's two domestic carriers, Qantas and Virgin, the Australian government had to finalise a deal with them to underwrite a minimum domestic network, to the value of $165 million.[6] It is unclear how the costs of running a minimalistic domestic network were presented by the airlines to the government – e.g. were they based on full costs or variable costs; and were the indirect costs allocated based on volume, activity or time? One can only assume that the government accepted the numbers presented by the airlines without undertaking a fully independent cost audit, by a trained cost auditor.

Qantas, Virgin Australia and their respective budget arms Jetstar and Tigerair, have stated that they have cut their combined domestic flying to 128 return services per week underwritten by the government.[7] For Qantas, that is around 5 per cent of its normal schedule. The airlines currently enforce some social distancing on domestic flights by leaving one seat empty between passengers; which has been possible, they say, because of the government underwriting and because of very low passenger numbers.

However, this reprieve from the planes' dreaded "middle seat" could be short-lived as airlines prepare for interstate travel restrictions to ease. But Qantas and Jetstar have stated that they will no longer leave an empty seat between passengers to provide a level of social distancing on board; because, they claim, it is impractical, unnecessary and would result in exorbitant airfares.

[5] Luke Henriques-Gomes (2020), Robodebt: total value of unlawful debts issued under Centrelink scheme to exceed $1bn, *The Guardian*, June 10, https://www.theguardian.com/australia-news/2020/jun/10/robodebt-total-value-of-debts-issued-under-unlawful-centrelink-scheme-to-exceed-1bn-refund

[6] Adam Thorn (2020), "Government Unveils New $165m Domestic Bailout, Virgin Staff Return", *Australian Aviation*, April 17, https://australianaviation.com.au/2020/04/government-unveils-new-165m-domestic-bailout-virgin-staff-return/

[7] Ibid

Qantas Group medical director Dr. Ian Hosegood has claimed that the risk of catching coronavirus on a plane is extremely low due to the fact air in the cabin runs through hospital-grade HEPA filters every five minutes, removing 99.9 per cent of all particles including viruses, while also injecting fresh air from outside.[8]

This is an incredible statement on multiple grounds. COVID-19 is not an airborne virus per se, but one via droplet transmission which occurs when a person is in in close contact (within 1.5 m) with someone who has respiratory symptoms. Also, it can be passed on by direct contact with infected people and indirect contact with surfaces in the immediate environment.[9] As such, due to the hours spent huddled up to strangers and well-worn tray tables, planes have long been considered a hotbed for germs, with some passengers certain they suffer colds or other illnesses after lengthy flights. Anyway, the "virtually moisture-free" conditions inside a plane cabin mean one is extra vulnerable to airborne infection. Respiratory infection and viruses are all known to thrive in conditions of low-humidity, which includes everything from the common cold to far worse.[10] Another factor that goes against the Qantas Group medical director's low-risk view is that more than 59 Qantas employees (including 37 cabin crew) have become infected with the coronavirus; and they are exploring options, including a class action, alleging the airline failed to adequately protect them against COVID-19.[11]

With regards to the issue of seat configuration, the research led by Emory University's Vicki Stover Hertzberg et. al., should be considered.[12] Theirs was the first study to quantify transmission during transcontinental flights; by observing how people moved about the cabin, and how this movement affected the number and duration of their contacts with others. Their study found that passengers in window seats have the lowest likelihood of coming into contact with an infected person; and that illnesses are most likely to be transmitted only to passengers within one row of the infected person.[13] This and other studies have resulted in a growing concern about the possibility that international airline crews could become a vector for infections into the community.[14]

With national and international borders set to open in the near future, social distancing and seat configuration on aeroplanes has become a hot topic. Best practice can be achieved,[15] but at what cost; and how will it affect prices? The *International Air Transport Association (IATA),* the global industry trade group, is leading calls against the practice and warning it could cause airfares to jump by about 50 per cent.

[8] Patrick Hatch (2020), "Qantas gives passengers masks, but not empty seats, in COVID-19 plan, *Sydney Morning Herald*, May 19, 2020, https://www.smh.com.au/business/companies/qantas-gives-passengers-masks-but-not-empty-seats-in-covid-19-plan-20200519-p54u9f.html

[9] WHO (2020), "Modes of transmission of virus causing COVID-19: implications for IPC precaution recommendations, Scientific brief, *World Health Organisation*, 29 March, https://www.who.int/news-room/commentaries/detail/modes-of-transmission-of-virus-causing-covid-19-implications-for-ipc-precaution-recommendations

[10] Emma Cooke (2020), "Why flying can make you ill – and how to stay healthy on board a plane", Telegraph (UK), 6 May, https://www.telegraph.co.uk/travel/news/Can-flying-make-you-ill/

[11] Anne Davies, (2020), "Qantas staff consider class action alleging airline failed to protect them against Covid-19". The Guardian, 13 April, https://www.theguardian.com/business/2020/apr/13/qantas-staff-consider-class-action-alleging-airline-failed-to-protect-them-against-covid-19

[12] Vicki Stover Hertzberg, et. al. (2018), "Behaviors, movements, and transmission of droplet-mediated respiratory diseases during transcontinental airline flights*", Proceedings of the National Academy of Sciences*, March, 115(14):201711611.

[13] Amy Mckeever(2020), "Here's how coronavirus spreads on a plane—and the safest place to sit", *National Geographic*, March 6, https://www.nationalgeographic.com/science/2020/01/how-coronavirus-spreads-on-a-plane/#/01_virusplane_ap_20023354695993.jpg

[14] Anne Davies, (2020), Op cit

[15] Air New Zealand is continuing to leave an empty seat between passengers on domestic flights, while US airline Delta plans to keep its planes no more than 60 per cent full at least until July 2020.

This view is shared by Qantas, with its Chief Executive Officer, Mr. Alan Joyce, stating that:

> *Social distancing on an aircraft is impractical… an empty seat only provides a 60-centimetre gap between passengers. To provide the recommended 1.5-metre distance between people would mean Jetstar could only board 22 passengers on a 180-seat Airbus A320.That means airfares are going to be eight to nine times more than they are today.*[16]

In this article we will demonstrate that the need for such exorbitant price increases is an exaggeration by Mr. Joyce; and is clearly meant to jolt the government into 'kowtowing' to the needs of Qantas' board and shareholders – rather than the safety of the passengers who elect to fly in an iconic Australian-branded airplane. The 1.5-metre distance between people is recommended only when there is no other physical barrier. With other barriers, such as plastic screens between seats, and innovative seating arrangements, the load capacity can be significantly increased to around 70-75% of full capacity. Some suggested strategies to achieve this will be discussed later in this article.

Qantas' strategy in putting profit before the safety of their customers is no different to the recent corporate scandals at Boeing and Volkswagen.[17] The Boeing case is particularly relevant to the current Qantas strategy. Boeing used the MCAS software in its 737 Max – which was a cost minimizing way to fix a nagging design problem. Then, as the U.S Congress had mandated its Federal Aviation Administration (FAA) to "delegate fully" safety functions to industry itself, Boeing 'self-approved' its own faulty design. By putting short-term profit ahead of social responsibility; the company, once-venerated for the safety and integrity of their aircraft, may well go into liquidation for the loss of this reputation.

Qantas, like all airlines, is at a watershed moment. It has an enviable reputation for safety built over exactly hundred years.[18] It could all be lost if it chases profits by putting its customers and crew at risk of infection.

The Australian government has an important role to play in this saga. It can "delegate fully" the in-cabin social distancing decisions to the aviation industry; or develop stringent government regulation not only to ensure that its citizens are protected when they fly; but also, to ensure that there is no price gouging by the dominant players in the industry.

Qantas, will have no domestic competition should Virgin cease to operate. It has already flagged "eye-watering" airfares, if it is required to adhere to social distancing expectations.[19] Is this cost-recovery or monopolistic pricing? To answer this question, we need solid, reliable, and independently verified cost information.

[16] Patrick Hatch (2020), Op cit

[17] Janek Ratnatunga (2019), "Why do corporations like Boeing and Volkswagen prematurely launch Killing Machines?", On Target, April 17, https://www.cmawebline.org/ontarget/why-do-corporations-like-boeing-and-volkswagen-prematurely-launch-killing-machines/

[18] Qantas was founded in Winton, Queensland on 16 November 1920 as Queensland and Northern Territory Aerial Services Limited

[19] Patrick Hatch (2020), Masks or eye-watering fares? Airlines prepare for COVID-19 flying, Sydney Morning Herald, May 8, https://www.smh.com.au/business/companies/masks-or-eye-watering-fares-airlines-prepare-for-covid-19-flying-20200507-p54qve.html

What Does It Cost to Operate an Aircraft?

A study published in a peer-reviewed journal in 2006 by William Swan and Nicole Adler gives us a very good starting point to make an estimate.[20]

The paper disaggregates aircraft operating costs into various cost categories and provides background for an engineering approach used to compute a generalized aircraft trip cost function. Engineering cost values for specific airplane designs were generated for a broad spread of operating distances, enabling a direct analysis of the operating cost function. The resulting data points were used by the authors to calibrate a cost function for aircraft trip expenses as they vary in seating capacity and distance.

This is particularly important to note, as such a direct operating cost approach avoids the problems associated with allocations based on historical financial reporting frameworks and practices such as *Generally Accepted Accounting Principles (GAAP)* and *International Financial Reporting Standards (IFRS)*.

In their paper, the authors explain how they created two formulas for estimating the cost of operating a commercial flight in the United States. The costs are in US Dollars. There are separate formulas for short-haul flights operated by narrow-body aircraft, such as Boeing 737s, and long-haul flights on wide-body aircraft like Boeing 747s. The two formulas are needed because smaller aircraft can take off and land more efficiently, while long-haul aircraft are more efficient when cruising at altitude. The formulas take into account the flight's distance and the number of seats on the aircraft.

Their formula for a *short-haul aircraft* average trip cost is simplified as follows:

A. ([Distance in km] + 722) x ([number of seats on plane] + 104) x 0.019

The formula for calculating a *long-haul aircraft* average trip cost is simplified as follows:

B. ([Distance in km] + 2200) x ([number of seats on plane] + 211) x 0.0115

[Calculations pertaining to some selected Qantas aircraft and routes will be provided later in the article.]

These formulas account for the cost of one aircraft trip, considering costs including pilots, cabin crew, fuel, insurance, airport and air traffic control fees, maintenance and aircraft ownership costs. In reality, aircraft trip costs only account for 50-60% of an airline's total operating costs – many of which are fixed. The overall cost to an airline of operating a flight, taking all of the airline's other expenses into account, is obviously higher; and this is where there are often creative allocations made to show regulators (such as those in the Telecommunications and Petroleum industries) that the costs of running their businesses are high; in order to justify approval of price increases by the regulators.

Of course, the Swan and Adler paper was published in 2006, and the costs are just averages for aircraft at the time. Newer aircraft may be more fuel efficient, some airlines may pay their staff less, and so on. Planes with high-density configurations – which are typically low-cost carriers – also have a lower operating cost on a per-seat basis.

[20] William M. Swan and Nicole Adler (2006)," Aircraft trip cost parameters: A function of stage length and seat capacity, *Transportation Research Part E: Logistics and Transportation Review,* Vol. 42 (2): 105-115.

Assuming that the formulas are still, by-and-large, relevant in 2020, it would cost an airline just over A$10,500 to fly a short-haul aircraft like the Boeing 737 from Sydney to Melbourne, meaning they needed to make at least A$60 in revenue from each seat to make a profit. For an aircraft like the Airbus A380, it costs almost A$200,000 to run an ultra-long-haul flight such as Qantas' Sydney-Dallas route. These are the results calculated by type of aircraft for some of the routes:

Aircraft type	Origin	Destination	Distance (km)	Seat Capacity (All Classes)	Trip cost (USD)	Trip cost (AUD)	Average cost per seat (AUD)
Boeing 737	Sydney	Melbourne	705	175	$7,565	$10,510	$60
Airbus A330	Sydney	Melbourne	705	270	$16,069	$22,326	$83
Boeing 737	Brisbane	Auckland	2298	173	$15,894	$22,083	$128
Boeing 737	Sydney	Denpasar	4618	174	$28,206	$39,189	$225
Airbus A330	Sydney	Denpasar	4618	271	$37,792	$52,508	$194
Airbus A380	Sydney	Dallas	14566	484	$134,002	$186,181	$385

The exact price depends on a whole range of factors. Many of these factors change daily such as the price of fuel, exchange rates and the weather.

As one can see the 'cost' per seat is averaged over first, business and economy class seats in the formulae given. These costings could be further refined by the area taken, and the extra services provided, by each class of seat. Despite these possible refinements to the basic formulae; it is unlikely that the maximum increase in terms of cost per seat for business and first class would be more than twice that of an economy seat – although the pricing can be 5-10 times higher depending on class of travel. In a budget airline with only economy class seats (thus more overall seats and packed tighter), the cost per seat will be significantly lower. However, obviously, the 'price-per-seat' is a different matter; depending on the class of travel.

How to Solve the Seat Capacity Issue?

From the above discussion, it can be seen that the 'cost per seat' which is averaged across the aircraft is different from a 'price-per-seat' which is dependent on class of travel.
If the airlines are going to continue with the middle-seat empty policy, then on aircraft with a 3-3 seat configuration, there will be 2 seats free per row, i.e. 33% of available capacity. On a wide-bodied aircraft with a 3-4-3 seat configuration, there will be 4 seats free per row, i.e. 40%. However, this does not, by itself, provide the recommended 1.5-metre distance between people for social distancing. It must be enhanced by with other physical and logistical barriers, such as:

- Compulsory face masks and easy access hand sanitizers;
- Transparent plastic screens in the middle of the empty middle seat (s) and in the aisle-side of the seat; designed for easy access by crew members during meal times;
- Protection screens provided between rows at the widow seats;
- Economy seats prevented from being lowered more than a few centimetres, to provide additional protection to the person in the row behind;
- Staggered meal servings (e.g. every other row is served during multiple meal times)

To increase capacity on long-haul flights; the seating configuration could be modified in the 4-seat section in the middle of a row (i.e. seats D, E, F & G). Every other row can have the plastic screen in the middle of either Seat F or E. This will leave seats D&E (or F&G, depending on the row) for couples who are not socially distancing from each other. Similarly, families can book 3 or 4 seat configurations in both long-haul and short-haul flights, if they do not need to socially distance from each other. [Those in adjoining rows will be protected by the plastic screens on the aisle seats].

Such innovative seating arrangement will increase seating capacity on wide-bodied long-haul flights by at least 60 seats (or +12%) and on short haul flights by at least 20 seats (+12%). This will increase maximum load capacities to 70-75% and still maintain a reasonable social distancing regime. The passenger flying experience may not be as bad as it sounds, if there is no passenger in the dreaded middle seat in economy class.

The costs per flight per aircraft per destination with the reduced capacities are given below.

Aircraft type	Origin	Destination	Trip cost (AUD)	Average cost per seat 60% capacity (AUD)	Increase in Cost per seat 60% capacity $	Average cost per seat 75% capacity (AUD)	Increase in Cost per seat 75% capacity $
Boeing 737	Sydney	Melbourne	$10,510	$100	$40	$80	$15
Airbus A330	Sydney	Melbourne	$22,326	$138	$55	$110	$21
Boeing 737	Brisbane	Auckland	$22,083	$213	$85	$170	$32
Boeing 737	Sydney	Denpasar	$39,189	$375	$150	$300	$56
Airbus A330	Sydney	Denpasar	$52,863	$323	$129	$258	$65
Airbus A380	Sydney	Dallas	$186,181	$641	$256	$513	$96

As one can see, the trip costs remain the same, but as expected the costs per seat increase. Even if such cost increases are passed onto consumers, they are not as 'eye-watering' as claimed by Qantas. The maximum for an ultra-long-haul flight is just A$96. Airfares need not be eight to nine times more than they are today, as the Qantas CEO, Mr Joyce claims, unless airlines resort to price gouging under the pretext of social distancing. This could well happen, of course, if there is a lack of competition in the Australian domestic market.

Conclusion

A financial audit of past transactions has very little decision information to make strategic decisions, especially if the past is very different to what the environment is going to be in the future. In a world of uncertainty, the one thing we are certain about is that the Post-COVID-19 business environment is going to be very different from anything experienced in the past. Yet, governments have placed statutory obligations on financial statement auditors in auditing the past; but cost auditors have no such statutory backing in auditing numbers that affect future performance.[21]

[21] Only organisations of a certain size in India, Pakistan and Bangladesh are subjected to a statutory cost audit.

A strategic cost audit is an in-depth review to determine whether a company is meeting its organizational objectives in the most efficient way. Additionally, it examines whether the company is utilizing its resources fully and in an environmentally sustainable manner. A successful strategic cost audit is beneficial to any company. It ascertains the accuracy of cost calculations to ensure that they are in conformity with cost accounting principles, plans, procedures and objectives.

Faulty costings result in faulty strategic decision making in many business areas especially pricing and supply-chain management. Using the Qantas case as an example, it is demonstrated that governments need independent verification of costs and prices, in order to ensure sound regulatory oversight of companies that come to them lobbying for bailout funds, tax incentives, reduction of tariffs and the like.