A STEADY BUT UNEVEN CLIMB: AIR PASSENGERS IN CANADA SINCE 9/11

Trever Bova, Gwen Cromwell and Lawrence McKeown
Statistics Canada

Introduction

Events of September 11, 2001 had a dampening impact on airline activity in Canada as elsewhere. Since that time, the number of airline passengers travelling through Canadian airports has climbed steadily. To some extent however, this climb has been uneven with the upward trend masking variation across travel segments – domestic, trans-border, overseas – and among airports. The paper begins by examining the growth in airline passengers in Canada from 2002 to 2013 and then identifies some underlying patterns. It concludes with a discussion of some considerations of these trends and patterns.

The impact of September 11, 2001 reverberated through the entire economy. A direct impact on the airline industry was a decrease in total aircraft movements with declines between 5 and 10% in the months that followed.[1] It appears however, that this impact served to exacerbate an already difficult situation, stemming from a worsening economy and declining domestic travel. Moreover, the airline industry was also experiencing financial turbulence with many airlines in liberalized markets, particularly legacy carriers with higher cost structures, suffering large financial losses.[2]

To examine the trend in airline activity since 9/11, this study uses passengers carried, rather than aircraft movements, to account for changing fleet composition and other operational changes.[3] From just over 78 million passengers in 2002, the total number of passengers enplaned and deplaned[4] at Canadian airports has climbed steadily, excepting the 2009 economic downturn (Figure 1). By 2013, the total

number of passengers at Canadian airports increased by more than 50% since 2002 to reach over 122 million.

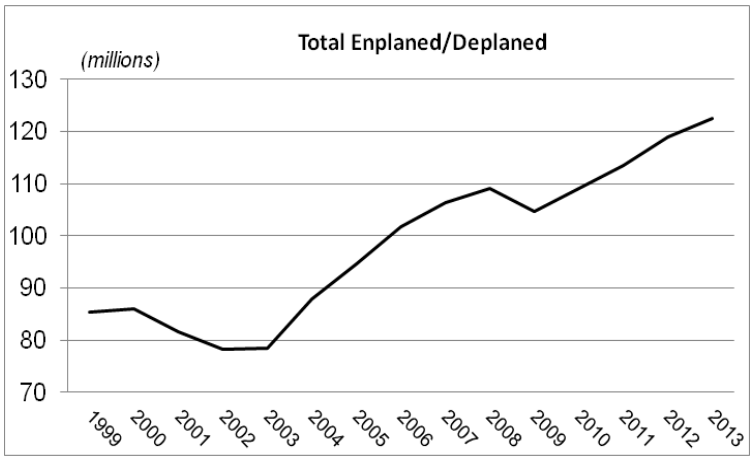

Figure 1: Total Passengers, Canadian Airports, 1999-2013
Source: Statistics Canada, Airport Activity Surveys

Trends and Patterns

To some extent, passenger growth since 9/11 has been uneven with the upward trend masking variation across different travel segments and airports. To examine the former, total passengers are grouped into *domestic*, *trans-border* and *overseas* travel segments.[5] Airports can be grouped either by size or geographically. And finally, there is an interaction effect in that certain airports, by virtue of their size and location, are better positioned to serve particular travel segments.

All three segments contributed to growth in the absolute total number of passengers enplaned and deplaned at Canadian airports since 2002 (Figure 2). However, overseas passengers accounted for the largest relative increase at 83% and represented about one in every five passengers by 2013 while the trans-border segment experienced the lowest growth at 36%. The number of domestic passengers grew by

just over 50% from 2002 to 2013 and continued to represent about 60% of total passengers at Canadian airports.

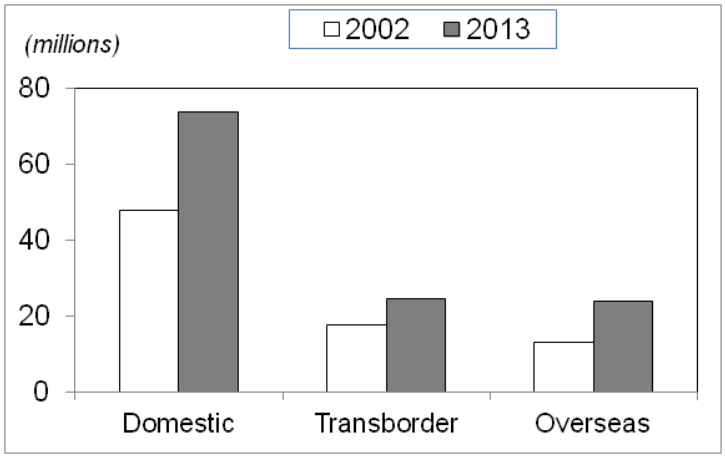

Figure 2: Total Passengers by Travel Segment, 2002 and 2013
Source: Statistics Canada, Airport Activity Surveys

It is difficult to determine the extent to which this increase in domestic passengers enplaned and deplaned is real growth or reflects operational changes. That is, the increase may partly result from the type of airline network system architecture utilized. In a deregulated market, legacy/existing carriers must adopt a form of the hub and spoke model to better maximize load factors and reduce costs. A hub and spoke network tends to inflate the passenger count for the same number of trips, all else being equal.

New entrants tend to rely on a hybrid network model that can be hub and spoke service on some routes and point-to-point on others.[6] For example, in its new, low cost service planned for 2015, *Canada Jetlines* is considering the use of a "starburst pattern" with point-to-point routing out of Vancouver to Western Canada.[7] This strategy of starting with under-served market segments is reflected by research on firm turnover and productivity.[8]

The research reported that, contrary to other service industries, the Canadian airline industry had lower turnover with a higher exit than entry rate over the 2002 to 2007 period. The effect of new entrants on productivity was relatively unimportant, indicating successful new carriers first entered the market on the competitive fringes. Once established, they begin competing in more lucrative markets.[9] And more competition in these lucrative markets since 9/11 has resulted in an upward trend in average passenger load factors (Figure 3).

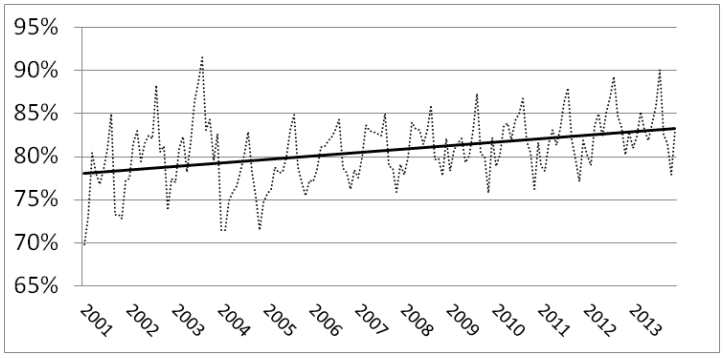

Figure 3: Monthly Load Factors, Level I Carriers, 2001-2013
Source: Statistics Canada, Civil Aviation, Level I Scheduled Service

Similarly to travel segments, not all Canadian airports have shared equally in the increasing total number of passengers. The top eight airports in Canada accounted for 80% of the total passengers enplaned and deplaned in 2013, down slightly from 83% in 2002.[10] However, when combined with travel segments, the evolving network orientation of the Canadian airline market becomes more apparent. That is, the top 8 Canadian airports have captured virtually all (97%) of the most lucrative and fastest growing overseas travel segment (Figure 4).

Economic theory considers this evolving traffic pattern as an outcome of increasing competition. In a deregulated market, existing carriers must compete on price and begin to adopt a form of the hub and spoke to increase load factors and reduce costs. Since the hub is

always located at a carrier's largest volume origin-destination node in the network, this tends to reinforce relative differences; some airports become greatly used (e.g. Pearson in Toronto) while neighbouring airports may remain underutilized (e.g. Munro in Hamilton).

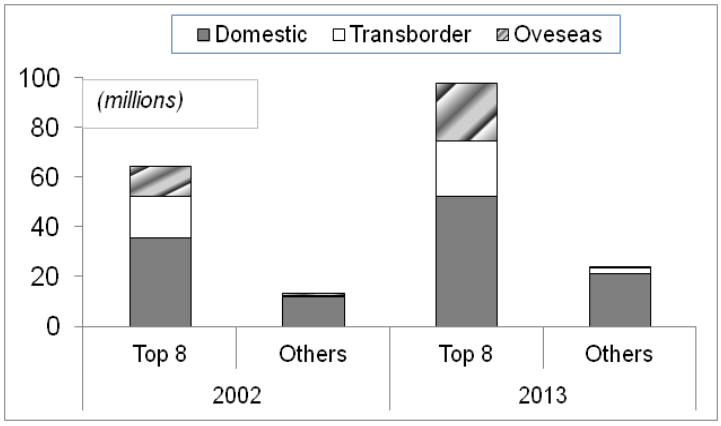

Figure 4: Passengers by Segment and Airport Size, 2002 and 2013
Source: Statistics Canada, Airport Activity Surveys

Internationally, carriers form partnerships or strategic alliances. This creates a global network hierarchy – local, regional, national, continental and international – in which airports will benefit from their centrality and intermediacy.[11] Centrality affects airport size by its traffic-generating ability. Pearson International in Toronto is the largest traffic generating location, and accounted for 29% of total passengers during 2013.

Intermediacy reflects the specific context of networks and technological change. For example, into the 1960s Gander International Airport was an important refuelling location for trans-Atlantic flights with aircrafts unable to fly directly to Europe. Today, Vancouver International, well positioned as a gateway to Asia-

Pacific, accounted for 14% of total passengers in 2013. However, this could change with the introduction of the Boeing 787 *Dreamliner* since one variant has a range of 15,700 km, sufficient to fly Toronto to Hong Kong directly.

Discussion

With this evolving network hierarchy, there has also been some passenger losses to neighbouring American airports. A 2012 Conference Board study estimated that as many as 5 million Canadians cross the U.S. border in order to fly with American carriers.[12] Focussing on three Canadian airports, Pierre Elliot Trudeau in Montréal (Trudeau), Pearson and Vancouver, the study examined the reasons for, and potential impact of, this lost traffic. The increase in the number of trans-border passengers at these 3 airports was less than the national increase in this same travel segment (Table 1).

Table 1: Trans-border Passengers, Selected Airports, 2002 and 2013

Airport	Trans-border Passengers		% Δ
	2002	*2013*	
Trudeau in Montréal	2,467,266	3,175,445	29
Pearson in Toronto	7,769,014	9,571,850	23
Vancouver International	3,803,975	4,059,898	7
All Airports	17,574,814	23,814,873	**36**

Source: Statistics Canada, Airport Activity Surveys

It is often cheaper to fly south of the border than it is at neighbouring Canadian airports. Enormous passenger growth rates at certain American 'border' airports may be further evidence of a passenger leakage (Table 2). However, the total number of passengers remains comparatively small with 5 million representing about 4% of the 2013 total number. Moreover, some Canadian airports are being positioned to serve higher margin overseas traffic as the Canadian Airports Council sees "some of the best opportunities in Asia and Latin America."[13]

Table 2: Enplaned Passengers, Selected U.S. Airports, 2002-13 013

Airport	Competing airports	Passengers Enplaned		% Δ
		2002	*2013*	
Burlington Int. , VT	Trudeau	546,857	606,503	11
Plattsburg Int., NY	Trudeau	-	151,235	-
Ogdensburg Int., NY	Trudeau	2,242	5,392	141
Buffalo-Niagara Int., NY	Pearson	2,060,710	2,567,594	25
Niagara Falls Int., NY	Pearson	-	98,958	-
Grand Forks Int., ND	Winnipeg	87,569	148,665	70
Bellingham Int., WA	Vancouver	70,517	596,152	745

Source: U.S. Department of Transportation: Federal Aviation Administration

The ability to grow some Canadian airports as international hubs is certainly an opportunity. For example, Toronto's Pearson is second only to New York's JFK among continental airports in the annual number of international passengers through the terminal.[14] However, Winnipeg's airport for instance is a key regional hub. As an important economic catalyst, any passenger leakage reverberates through the regional economy in terms of employment and suppliers.

The Conference Board study found a large price gap in air fares between American and Canadian carriers, concluding the addition of ancillary fees (e.g. fuel surcharge, airport improvement and security fees) to the base fare in Canada accounted for over half (55%) the difference. Other factors (e.g. wage rates, fuel costs) were smaller but discernible.

Another consideration is exchange rates. When the Conference Board study was released, the Canadian dollar was valued more or less as on par with the U.S. dollar. However, the recent slide in the Canadian

dollar is partly off-setting the fare difference responsible for the passenger leakage.[15] It remains to be seen however, at what level the Canadian dollar must fall to in order to fully off-set the American carrier price advantage.

It appears that regulatory reforms of the Canadian passenger airline industry provided the conditions for lower cost provision (Figure 5). Average base fares that hovered around $300 in real dollars in the early 1990s declined to just above $200 by 2012. However, these same reforms were also accompanied by a user-pay approach which resulted in higher ancillary fees, increasing final fares.

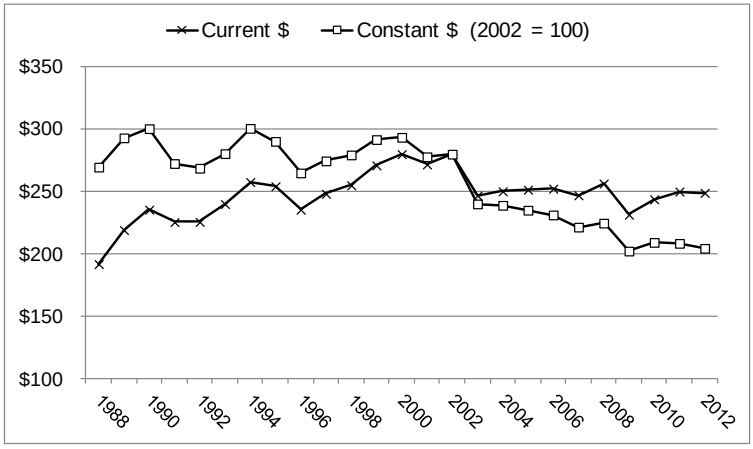

Figure 5: Average Air Passenger Base Fare, Canada, 1988-2012
Source: Statistics Canada, Fare Basis Survey (CANSIM 481-0003)

In summary, the number of air passengers enplaned and deplaned at Canadian airports has been steadily increasing since 2002. However, this increase has masked to some extent the relative growth of each travel segment with a different impact on Canadian airports. Moreover, this upward trend has also been masking a possible loss of passengers in the trans-border segment with competition from neighbouring American airports.

Endnotes

[1] Masse, R. (2002). How much did the airline industry recover since September 11, 2001? *Aviation Service Bulletin* (Special Issue, November). Statistics Canada: 51-004.

[2] In 2001, *Air Canada* acquired *Canadian Airlines* and then, in 2003, filed for bankruptcy protection, emerging as *ACE Aviation Holdings Inc*. In the U.S., every legacy carrier has been among the 180 filings for bankruptcy protection by American airlines since 1990.

[3] Additional flights with a decline in seats offered reflects a change in aircraft fleet in an attempt to increase passenger load factors; see Dunlavy, J. et. al. (2007). An analysis of the transportation industry in 2005. *Analysis in Brief*, **44**. Statistics Canada: 11-621.

[4] Enplaned passengers count those who embark and take off from a Canadian airport while deplaned passengers count those who land and disembark.

[5] Trans-border is traffic between an airport in the United States (including Alaska, Hawaii and Puerto Rico) and an airport in Canada while overseas traffic is between an airport in a foreign country (excluding the U.S.) and an airport in Canada..

[6] Cook, G. and J. Goodwin (2008) Airline Networks: A combination of hub-and-spoke and point-to-point systems, *Journal of Aviation / Aerospace Education & Research*, **17** (2).

[7] Jang, B. (2014). Canada Jetlines lays out its Western flight plan. *The Globe and Mail* (December 29, p. B1).

[8] Baldwin, J. and A. Lafrance. (2011). Firm turnover and productivity growth in selected Canadian service industries, 2000-2007, Economic Analysis Research Paper Series, **72**. Statistics Canada, 11F00027.

[9] Peter, J. and L. McKeown (2012). Trends in the Canadian Airline Industry: A Statistical Review. North American Regional Science Association International Conference. Ottawa: November.

[10] The top eight airports consist of: Pearson in Toronto, Vancouver, Trudeau in Montréal, Calgary, Edmonton, MacDonald-Cartier in Ottawa, Stanfield in Halifax and Richardson in Winnipeg.

[11] Fleming, D. and Y. Hayuth (1994). Spatial characteristics of transportation hubs: Centrality and intermediacy, *Journal of Transportation Geography* **2** (1), 3-8.

[12] Gill, V. (2012) Driven away: Why more Canadian are choosing cross border airports, The Conference Board of Canada (Ottawa, October 2).

[13] Gooch, D-R (2014). Canada's airports ready to face the challenges of a competitive global market. *Globe and Mail*, p. CA 5, December 2.

[14] In 2013, there were 26.5 million international passengers enplaned / deplaned at JFK in New York and 20.8 million at Pearson. According to the most recent report (September, 2014) of the Airports Council International, the highest ranking North American airport for international passengers was JFK (20) followed by Pearson (26).

[15] For example, a $200 flight from Syracuse, New York to Tampa, Florida would have cost $198 CAN in December 2012 but today would cost would $250 CAN (February 23, 2015 the Canadian dollar valued at 80 cents American).