A comparative study of the net profitability of airlines in global strategic alliances and a group of airlines not in an alliance

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Abstract
This study examines the profitability of airlines pertaining to global airline strategic alliances for a period of eleven years, centred on the year airlines joined their alliances. Overall, the results obtained show that airlines which joined Oneworld, SkyTeam or Star Alliance lost relative performance and, thus, profitability after joining their alliances, even when they had been doing exceptionally well before joining. In contrast, a group of airlines not in an alliance remained profitable throughout a comparable period of time, achieving a positive relative performance at the end of the eleven-year period. As a similar pattern of profitability occurred for each group of allied airlines, these results suggesting that the benefits of joining an alliance may not necessarily translate into profitability. In fact, airlines might have been better off by themselves than they did by joining an alliance, at least in regards to net returns alone.

Introduction
Three global strategic alliance groups -Star Alliance, Oneworld and SkyTeam- stand as the main strategic alliance partnerships in the airline industry, accounting for 87% of the overall air transportation market between the U.S. and the E.U. in 2009 (Gillespie and Richard, 2011). A few studies have assessed the benefits and costs of pertaining to strategic alliances. These studies mainly focus on the impact that strategic alliances have on their member’s market share, market value, revenue, profitability and productivity (Park and Cho, 1997; Chan, Kensinger, Keown and Martin, 1997; Das and Teng, 1998; Anand and Khanna, 2000; and Oum, Park, Kim and Yu, 2004). To those studies, Perezgonzalez and Lin, (2010, 2011a, 2011b) have added others focused on the net profitability of airlines before and after joining their alliances. The researchers found that airlines lost profitability and, especially, net performance after joining their alliances, while non-allied airlines increased their profitability and net performance in a similar period of time.

The results reported by Perezgonzalez and Lin compared joining an alliance against not joining an alliance but did not address profitability performance linked to joining particular alliance groups. This article now further expands that research by focusing on in-between group performance. The study is descriptive in nature, given the small sample size for each alliance group. It may however shine some light onto the question whether airlines joining

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* Acknowledgment. This study is based on data initially collated by Bo Lin in 2010.
particular global strategic alliances have performed better than others and equally to the non-allied airlines, or not.

Methodology

The main source of data for this research was the financial database compiled by ICAO (ICAOData), a cooperative venture between the International Civil Aviation Organization (ICAO) and Air Transport Intelligence (ATI). The database contains data both for air carriers and for airports. In the case of air carriers, the database provides financial, traffic, personnel, fleet, and on-flight origin and destination data since 1973 and up to 2009. However, airlines report to ICAOData on a voluntary basis, thus data are often missing for particular airlines, variables and years.

The data used for this research were a collation of eleven consecutive years of net returns for 21 airlines; seven airlines which became members of Star Alliance, three airlines which became members of SkyTeam, five airlines which became members of Oneworld, and six airlines which remained unallied during those eleven years.

For airlines in an alliance, net returns (in thousands of US dollars) were for the year each airline joined its alliance, as well as for each of the five years immediately before and each of the five years immediately after they joined the alliance. For the non-alliance group, the eleven variables comprised the net results for the eleven years between 1995 and 2005. All nominal values for each of the corresponding eleven years were transformed into referential dollars (i.e., constant dollars with 2010 as base year – Perezgonzalez, 2011).

Above net returns were converted into short and medium-term averages representing mean returns for the three-year period before joining an alliance, mean returns for the five-year period before joining an alliance, and mean returns for the five-year period after joining an alliance. Averages for similar time periods were also calculated for the non-allied group, using the year 2000 as the ‘joining’ year. The five-year period after joining the alliance was used both as short-term and medium-term measure for this period for two reasons: firstly, because September 11th occurred at the time, thus a longer period of five years seemed to offer a better measure for short-term performance than three years did; secondly, because ICAOData did not have net returns for most airlines beyond five years after joining an alliance.

Furthermore, two relative net performance variables, short-term and medium-term, were calculated by subtracting average returns before joining an alliance from average returns after joining the alliance.

Results

Table 1 summarises mean returns for all groups, while Table 2 summarises relative net performance for each group. Figure 1 represents annual returns for the eleven-year period, centred on the year airlines joined their alliances.

The non-alliance group showed a moderate increase in profitability in the medium term (increasing benefits from rUSD 6,404,000 in the five years prior to 2000 to rUSD 8,572,000 in the five years after 2000), and a substantive increase in profitability in the short term (moving from a loss of some rUSD 8,052,000 in the three years prior to 2000 to a gain of rUSD 8,572,000 in the five years after 2000) (Table 1). This thus let to a profitable relative net performance both in the short term (rUSD 16,624,000) and in the medium term (rUSD 1,303,000), that is, an increase in returns between 1995 and 2005 (Table 2).

1 ICAO is a specialized agency of the United Nations. It was created in 1944 to promote air safety and the orderly development of international civil aviation throughout the world. ATI provides a service that delivers air transport news and data.

2 The same data were used in research reported elsewhere (see Perezgonzalez and Lin, 2011).
Airlines which joined the Star Alliance group remained overall profitable throughout the eleven-year period, showing greater profitability in the years immediately before joining the alliance (rUSD 327,496,000) than in the medium term (rUSD 161,597,000). Yet, the group suffered a substantial reduction in profitability after joining the alliance (rUSD 54,870,000) (Table 1). The relative net performance for this group appears as negative both in the short term (rUSD -272,626,000) and in the medium term (rUSD -106,727,000) (Table 2).

Table 1. Net returns for groups of airlines

<table>
<thead>
<tr>
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<th>five years earlier</th>
<th>three years earlier</th>
<th>five years later</th>
</tr>
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<tbody>
<tr>
<td><strong>Not in alliance</strong></td>
<td>6,404 (65,119)</td>
<td>-8,052 (82,001)</td>
<td>8,572 (35,797)</td>
</tr>
<tr>
<td><strong>Star Alliance</strong>§</td>
<td>161,597 (319,662)</td>
<td>327,496 (261,606)</td>
<td>54,870 (460,332)</td>
</tr>
<tr>
<td><strong>Oneworld</strong>§</td>
<td>395,196 (402,866)</td>
<td>494,810 (429,704)</td>
<td>-119,420 (775,423)</td>
</tr>
<tr>
<td><strong>SkyTeam</strong>§</td>
<td>389,946 (609,994)</td>
<td>616,822 (752,847)</td>
<td>-718,300 (1,481,670)</td>
</tr>
</tbody>
</table>

* Mean returns (standard deviation). All values in thousands of referential USD.
§ Oneworld airlines joined in 1999, most Star Alliance airlines joined in 1997 and some in 2000, while most SkyTeam airlines joined in 2000 and one in 2001; the year 2000 is used for non alliance airlines.

Table 2. Relative performance for groups of airlines

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<th>Short-term (eight years)</th>
<th>Medium-term (ten years)</th>
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<tbody>
<tr>
<td><strong>Not in alliance</strong></td>
<td>16,624 (72,493)</td>
<td>1,303 (74,015)</td>
</tr>
<tr>
<td><strong>Star Alliance</strong></td>
<td>-272,626 (463,509)</td>
<td>-106,727 (370,651)</td>
</tr>
<tr>
<td><strong>Oneworld</strong></td>
<td>-614,231 (1,130,520)</td>
<td>-514,617 (1,033,280)</td>
</tr>
<tr>
<td><strong>SkyTeam</strong></td>
<td>-1,335,100 (2,210,750)</td>
<td>-1,108,200 (2,088,400)</td>
</tr>
</tbody>
</table>

*Mean returns (standard deviation). All values in thousands of referential USD.

Airlines which joined the Oneworld group showed high profitability before joining the alliance (rUSD 395,196,000 in the medium term, and rUSD 494,810,000 in the short term). They, however, incurred substantial losses in the years after joining the alliance (rUSD -119,420,000) (Table 1). The relative net performance for this group, thus, appears as negative both in the short term (rUSD -614,231,000) and in the medium term (rUSD -514,617,000) (Table 2).

Finally, airlines which joined the SkyTeam group showed a trend similar to that of Oneworld’s airlines. They showed high profitability both in the medium term (rUSD 389,946,000) and in the short term (rUSD 616,822,000) before joining the alliance, and substantial losses after doing so (rUSD -718,300,000) (Table 1). The relative net performance for this group, thus, appears as negative both in the short term (rUSD -1,335,100,000) and in the medium term (rUSD -1,108,200,000) (Table 2).

Figure 1 represents graphically annual returns for each group during the eleven-year period. Airlines not in an alliance showed a relatively flat performance, which decreased around the year 2000 but recovered in subsequent years. Airlines which joined alliance groups, however, showed a marked increase in average profitability prior to joining their alliances and a marked deterioration after doing so, with airlines in SkyTeam and Oneworld falling earlier than Star Alliance’s airlines. Furthermore, Oneworld’s airlines recovered from their fall in years four and five after joining the alliance but not so the airlines in other alliances.
Discussion and conclusions

This study expands previous research which reported that airlines in alliances had both performed worse after joining an alliance (Perezgonzalez and Lin, 2011a) and performed worse than non-allied airlines in a comparable period of time (Perezgonzalez and Lin, 2011b). Although those results were consistent with others in the literature (Oum, Park, Kim and Yu, 2004), they did not offer a breakdown of performance per alliance group. This masked the possibility that airlines joining particular alliances may have gained profitability while the remaining had not. This study aimed to cover such possibility.

The results obtained show that airlines joining any of the three global strategic alliances, when considered as a group, followed a pattern very similar to each other. This pattern was characterised by increasing overall returns before joining an alliance followed by a substantial drop in profitability after joining the alliance. In contrast, non-allied airlines had an almost uneventful and flat evolution during that time, with a small drop in profits around the year 2000 and a recovery in the following years.

Although airlines in strategic alliances lost relative net performance after joining their alliance overall, those airlines which joined Oneworld and SkyTeam seem to have been the worst performers, showing huge profits before joining their alliance but big losses afterwards. In both cases, the fall into the red occurred in 2001 and 2002, and may have been due to the aftermath of September 11th 2001’s terrorist attacks.

Airlines which joined Star Alliance, on the other hand, appear to have been the least affected of all the allied groups. The group remained overall profitable during the eleven-year period, showed a smaller loss in relative profitability, was the last group in falling from the height it achieved before airlines joined the alliance, and did not fall as far as any of the other allied groups. Despise this evidence, the group fell at approximately the same time than the others (around 2001 and 2002), probably dragged down by the aftermath of September 11th 2001’s terrorist attacks.

In conclusion, these results provide a better insight about the profitability of joining global airline strategic alliances. Not only becoming a member of a global strategic alliance seems to have been a losing proposition in the recent past but such proposition may now be extended to any of the particular alliance groups - SkyTeam, Oneworld and Star Alliance - indistinctly.
References


