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Pan-Caribbean Airlines: Unlocking Regional Aviation Potential

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The Caribbean's air transport system is facing significant challenges, including operational fragmentation, excessive costs, and inadequate inter-island connectivity. These challenges limit its ability to support the region's heavily tourism-dependent economies. This research evaluates whether consolidating small Caribbean airlines into a single or virtual Pan-Caribbean carrier could transform regional air travel. Based on financial analysis, historical traffic data, and case comparisons with airline mergers in South America and the US, the paper simulates the anticipated efficiencies resulting from route consolidation, fleet standardization, and common operational services. The research concludes that consolidation may create a regional GDP impact of up to $3.3 billion and generate over 200,000 new jobs. Research highlights regulatory harmonization, stakeholder coordination, and governance reforms as essential conditions for success. Despite transparency challenges, a unified Caribbean airline offers a compelling path to regional economic integration, improved connectivity, and long-term sustainability in aviation.

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Introduction

Air Connectivity in the Caribbean

The Caribbean is a diverse region of island states and territories and consists of independent states like Jamaica, Barbados, Trinidad and Tobago, the Bahamas, and the Dominican Republic, as well as those territories in association with other states, including Puerto Rico (USA), Martinique (France), and Aruba (Netherlands) (Richardson, 2023). In contrast to this complex geographic and political landscape, connectivity, particularly through air travel, is of the utmost importance in linking the region internally and with the rest of the world. The International Air Transport Association (IATA) reports a 7.7% year-over-year increase in Caribbean air traffic in early 2024 (Karp, 2025). Compared to 2014, seat availability has risen by 31%. However, many Caribbean islands lack direct flight options, requiring travelers to connect through major hubs like Miami or Panama City (Karp, 2025). Given the lack of land connections and tourism's growing economic importance, stronger air links are crucial for regional development and shared prosperity. However, one of the region's most considerable challenges is reaching its full air transportation potential.

Problems from the dismal financial performance of Caribbean airlines

The Caribbean airline industry faces a fundamental structural problem: fragmentation among small, inefficient national carriers that operate in a region with weak home markets and intense connectivity requirements. Burdened by high operating costs, fleet diversity, and the lack of strategic coordination, added to by government ownership and poor economies of scale, these carriers cannot compete effectively. As a result, Caribbean airlines remain unprofitable and are unable to meet the region's growing demand for reliable, affordable air transport, and the market is increasingly dominated by foreign low-cost carriers.

The necessity of research for airline consolidation

To address these issues, this paper explores a consolidated Pan-Caribbean Airline System: an ambitious undertaking to unify the region's ailing flag carriers into a coherent network, thereby rationalizing operations, efficiently utilizing fleets, and fostering regional cooperation for improved connectivity, reduced costs, and substantial economic benefits. This integration could enable Pan-Caribbean Airline System to expand its scale and network, efficiently allocating capacity, achieving cost efficiencies, and gaining regional pricing power. Government benefits would include assured interisland connectivity, increased mobility, cessation of government subsidies, and taxpayer savings. A similar concept has been successfully tested in South America with LATAM and Avianca (now Abra Group).

The possible positive impacts are immense and extend far beyond aviation. A successful Pan-Caribbean Airline System would foster regional economic integration, uniting Caribbean nations and opening new opportunities for trade, investment, and cultural exchange. Additionally, it would help in utilizing international tourism demand while simultaneously improving intraregional mobility. Unification would also minimize aviation's carbon footprint by streamlining routes and reducing redundancy, promoting greener travel.

In conclusion, this consolidation will enable Pan Caribbean Airlines to soar into the next Level of the Airline System. As the Caribbean seeks to compete in the global tourism marketplace, a unified and advanced air transport arrangement could form the basis for continued success and expansion in the years to come.

Background and context

Overview of the Caribbean airline industry

The Caribbean airline industry is fragmented, comprising a few local carriers dispersed across a vast region, which faces demanding connectivity obligations but weak home base markets. Internal inefficiencies, including high operating costs from short-range flights, external taxes/fees, and non-homogeneous fleets, strain airline finances. A lack of alignment between airline owners and management teams frequently leads to conflicting priorities: owners might concentrate on short-term financial goals, but management might aim for longer-term operating efficiency and strategic development. Such a mismatch, combined with volatile and short-term planning, weakens consistent decision-making and organizational resilience. Collectively, these issues result in high operational expenses, expensive tickets, and continuous unprofitability, preventing the region from fully capitalizing on its aviation potential for economic growth and tourism. Meanwhile, intensified foreign competition for inbound tourist traffic relegates Caribbean carriers to niche players serving home customers or limited intra-Caribbean passengers, leading to low load factors, low yields, and unprofitability.

Foreign carriers, offering superior products to foreign vacationers, have gained dominant market share at the expense of Caribbean airlines. This dominance has been further strengthened by the consolidation, entry, and expansion of Low-Cost Carriers (LCCs) and Ultra-Low-Cost Carriers (ULCCs). Conversely, Caribbean carriers, with their relatively high-cost structures (partially due to small size), face intense price competition. The relatively small and spread-out inter-Caribbean market, combined with low overall business traffic, depresses both load factors and yields. Furthermore, government ownership often results in slow responses, unstable management, and poor long-term survivability prospects.

Role of tourism and economic reliance on air transport

Air transport plays a significant role in the economies of island nations, with international and regional air travel leading to economic prosperity and cultural exchange. For these economies that depend on tourism, the airline would serve as the lifeblood of their transportation function in tourism and economic development. This calls for ensuring a stable flow of visitors through regional connections into source markets such as the United States, Canada, and Europe, achieving market diversification toward seasonality. While intraregional travel is essential for locals and visitors with multi-destination experiences, access from abroad into the region remains a headache for many Caribbean nations. Most smaller islands have no direct flights from primary international sources and depend on key regional hubs to transfer passengers from major global markets: Barbados, Trinidad, Jamaica, and Antigua.

Performance challenges facing Caribbean carriers

These systemic inefficiencies hinder the tourism sector from realizing its full potential and broader economic opportunities. In particular, the lack of proper transportation infrastructure is injurious to the tourism industry, which is the mainstay of most Caribbean economies. International visitors are often forced to take flights that do not provide direct service, and residents and tourists alike find access to the variety of the Caribbean difficult. In contrast, regions like Hawaii and the Greek Islands offer a better-integrated system due to their numerous well-integrated air systems and multi-destination travel options for tourists seeking to maximize revenues, which is not as readily available to the relatively poorly interconnected Caribbean economies.

Literature Review

Air transport and tourism interrelationships

The Caribbean airline sector is beset by numerous challenges to its viability and growth. This literature review examines the significant challenges facing Caribbean airlines. It analyzes the factors driving consolidations in the airline industry and their impacts, referencing various scholarly articles, industry reports, and studies. Over the last decade, numerous studies have highlighted the growing challenges faced by the Caribbean airline industry. The factors that have come together to influence the sector include market structure, competition, and sustainability concerns (Yarde & Jönsson, 2016). A systematic review of the literature on air transport and tourism found that the interrelationship between aviation and tourism is an area of growing interest, with a specific focus on air route and service development, passenger experiences, low-cost carriers, and the implications of new direct long-haul flights (Spasojevic et al., 2018). One of the most significant problems confronting the Caribbean airline industry is economic instability within the region. The Caribbean relies heavily on tourism, which is particularly vulnerable to global economic fluctuations, natural disasters, and pandemics (Erman et al., 2021). The COVID-19 pandemic severely impacted the aviation sector, resulting in a significant decline in passenger numbers and substantial financial losses (Cerda, 2020). High fuel, fees, and airport costs undermine Caribbean airline profitability (Alleyne et al., 2021). The market is also fiercely competitive, with regional and major international airlines. Competition culminated in price wars, which compromise service quality and operational standards (Arnell, 2024). Market consolidation trends are also seen where small airlines are struggling to compete with large ones that enjoy economies of scale (CAPA, 2024b). This consolidating environment raises questions about the long-term viability of some regional airlines. Building on this literature, this study further analyzes how these structural weaknesses hinder regional viability and explores strategic options for sustainable growth.

Governance and regulatory complexity in regional airline systems

Regulatory frameworks are largely fragmented and inconsistent throughout the Caribbean. Numerous countries implement their own set of regulations, making conducting operations rather difficult for those airlines that operate in several jurisdictions (Scott, 2023). Additionally, many issues of inadequate infrastructure at airports, including old and less-

maintained facilities, further add to the inefficiency in airline operations (Espinet et al., 2023). The regulatory environment often does not support streamlined operations or uniform safety standards, creating vulnerabilities in the industry.

The Caribbean airline industry also faces labor market issues concerning workforce stability and recruitment. Turnover rates are extremely high, and there is a shortage of adequately skilled personnel among various airlines (Arnell, 2024). Seasonality of the business, which dictates employment based on tourist seasons, amplifies these labor issues. Therefore, temporary workers are more reliant on forming a consistent workforce.

Airline mergers and consolidation

Several key factors influence the decision-making process for airline acquisitions. Man et al. (2020) identified a total of eight factors influencing airline acquisitions. These include branding, network compatibility, and business conditions. Mizutani et al. (2021) found that unified branding enhances post-merger profitability. Synergies in aviation can also be categorized into two broad groups: revenue and cost synergies (Schosser & Wittmer, 2015). Revenue synergies anticipate access to new markets, increased network, loyalty, standard pricing, and increased availability of market information. Cost synergies are typically expected to result from network, fleet, labor, sales, and marketing expense reduction, common training and maintenance, increased infrastructure availability, and lower financing costs.

Studies have shown that unless integration plans are well thought out, firms may be surprised by the resources required to cope with the problems induced by post-merger integration. A notable study was the one by Gonzalez (2024), who displayed that some mergers they studied created losses due to organizational inefficiencies of about 870 million dollars, a conservative lower bound. Antitrust authorities should pay close attention to how post-merger organizational consolidation affects the likelihood of reaping efficiency gains.

Mergers in the aviation industry can also result in several organizational complications, including the integration of the workforce, which badly affects the quality of services provided by the merged firms despite their gains in efficiency (González et al., 2024). Kim et al. (2021) analyzed US airline mergers from 1993 to 2018 and showed that large, long-run cuts in wages and fringe benefits have occurred in the merging airlines, especially in large-scale mergers. They also indicate that short-run negative employment impacts differ by occupation type.

Ponomarev (2020) examined the possible merger of the second-largest European low-cost carrier, EasyJet, and a smaller carrier with a different business model, Norwegian. It would allow both airlines to increase passenger numbers, gain access to new markets, and achieve significant revenue and cost synergies, especially on Norwegian's part, which is likely experiencing difficulties filling its planes and maintaining its margins. It would create a new, second-largest European airline.

Mizutani et al. (2023) developed a model to assess price, flight frequency, and demand, highlighting that unifying with a higher quality brand can enhance profitability post-merger. His research focuses particularly on the Delta and Northwest cases, combining model development,

empirical data analysis, and simulation techniques to thoroughly examine strategies in airline mergers. Another study, made by Khezrimotlagh et al. (2022), employed a quantitative approach that most appropriately reflects the results of any merger. Specifically, they integrated data analysis on several airline mergers, including performance measures before and after a merger, to ascertain the productivity changes and operational efficiencies.

Knowledge gaps addressed by this research

This study addresses several important knowledge gaps within the existing literature on the Caribbean aviation market. While numerous studies have explored airline mergers and industry consolidation in larger markets such as North America and Europe, there is a distinct lack of research focusing on how these processes unfold in small, tourism-dependent Caribbean economies. The region's fragmented regulatory environment, seasonal workforce, and dependence on long-haul tourism pose distinctive challenges that are not well reflected in global models. In addition, there has been relatively little focus on how irregular aviation policies among Caribbean countries undermine operating efficiency and commercial viability. Through its exploration of these understudied domains, this research adds fresh knowledge about the structural weaknesses of Caribbean airlines and offers a region-specific explanation of how mergers, governance, labor challenges, and tourism interdependencies condition the future of the industry.

Research Methodology

Data sources

The research proceeded in several stages. First, a literature review identified key issues in the Caribbean aviation industry. The literature review included journal articles, industry reports, newspaper articles, and aviation websites. The first phase focused on gathering financial statements from Caribbean airlines, despite the limited availability of up-to-date and complete data. Research utilized historical operational data (2015-2023) from Cirium® and CAPA - Centre for Aviation, including financial statements, revenue per passenger, revenue multiples, operational costs, and projected incremental traffic/revenues.

Revenue multiple valuation approach

The second phase involved developing the basic steps for using revenue multiples in company evaluations (Beltrame & Sclip, 2023). There are three basic steps to using multiples properly in an evaluation process: 1. Selecting the group of comparable companies. The first step involves selecting airlines that are similar in terms of activity and geography to the company being evaluated. Once the sector has been narrowed down, selecting companies in the same geographic area is preferable. When selecting a comparable sample, analysts should be aware of key business model differences that could impact company valuation; 2. selecting the multiple for the evaluation. Choose the multiple that can be derived from the available financial statements; 3. valuing the target company. The average multiple is applied, as the sample size is small, and outliers are excluded.

Comparative case studies

The third phase included developing a conceptual framework for the proposed Pan-Caribbean consolidated airline system. This framework was built by analyzing consolidation impacts in other regions, such as South America, where mergers like LATAM and Avianca (Abra Group) yielded positive results in efficiency, market share, and profitability. This comparative analysis informed the assessment of the potential benefits and challenges of a unified Caribbean airline network.

Fleet and operational cost analysis

During the fourth phase, the research comprehensively reviewed individual Caribbean carriers' cost profiles, including fleet compositions and operational inefficiencies. Data on existing local carrier fleets were gathered to identify cost savings from fleet standardization and greater operating coordination. The results were incorporated in a cost-benefit calculation to approximate the probable financial returns from consolidation.

Analysis

Pan-Caribbean Airline Model

Coming together into one unified pan-Caribbean air system by the region's struggling airlines could be a viable solution for the region's aviation challenges. This will eliminate inefficiencies, rationalize networks, and reduce route duplication and market cannibalization. By integrating operations, the system would be in a position to generate coherent, optimized routings that improve regional connectivity, eliminate redundant layovers, and circuitous travel. A consolidated airline system would ensure convenient schedules, enhance accessibility, and encourage tourism inflows. Further fleet standardization would improve aircraft utilization, increase crew productivity, and lower costs, allowing airlines to operate on cost-recovery models with increasingly affordable fares.

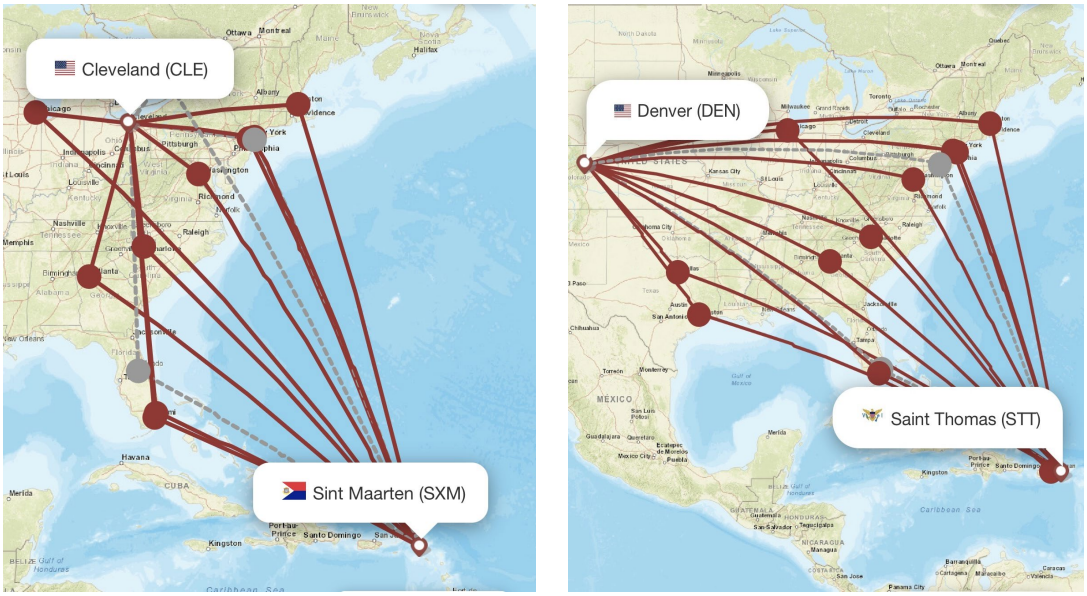
Fleet Standardization and Route Optimization

Most Caribbean countries have minimal direct international reach. Karp (2025) referred that approximately 64% of Caribbean airline traffic is to/from the US, with another 10% to/from Canada. Despite strong U.S. demand, lack of direct routes constrains growth. This limited accessibility automatically compels one toward inefficient connection, and attracting and retaining tourists is challenging. Maps (Figure 1) depict indirect flight routes from Sint Maarten (SXM) and Saint Thomas (STT) to U.S. cities, including Cleveland and Denver. The red lines illustrate current routing constraints, contributing to long travel times (6 hours 51 minutes and 9 hours 38 minutes, respectively), underscoring limited direct access from Caribbean hubs. Fleet optimization, such as deploying fuel-efficient aircraft capable of direct routes, could reduce this to 3 hours and 50 minutes for flights with A320 or A737. Similarly, the 9-hour and 38-minute journey to Denver (Figure 1) could be cut to about 5 hours from St. Thomas (STT). These

improvements would minimize layovers, lower operational costs, and enhance traveler appeal, directly addressing the region's connectivity challenges.

Figure 1

Current flight paths from Sint Maarten (SXM) (Shortest flight time: 6h 51m) and Saint Thomas (STT) (Shortest flight time: 9h 38m) to U.S. cities, illustrating indirect routes and extended travel times (flightroutes.com, n.d.)



Research has shown that regional airports are primary drivers of regional development, even if they are not profitable, as they attract investment, increase connectivity, and facilitate the economic integration of previously fragmented regions (Fornalczyk & Midera, 2025). However, there is poor intra-regional connectivity within the Caribbean. Figure 2 shows that nonstop service between San Juan (SJU) and Sint Maarten (SXM) is infrequent. Currently, this route is served exclusively by Frontier Airlines, operating three times per week with an Airbus A320neo aircraft (186-seat capacity), yielding an estimated weekly seat capacity of 558 seats. Although recent passenger volume and load factor data are not publicly available due to reporting lags, the low frequency and single-carrier operation suggest potential constraints, either from insufficient demand or operational and economic barriers to increased service. The non-stop flight duration of approximately 1 hour and 10 minutes contrasts sharply with indirect alternatives that involve 3–5-hour layovers, effectively tripling travel time (Table 1). These disparities add costs and reduce access for businesses and travelers alike, resonating deeper into structural problems of regional transportation networks. Increasing the frequency of flights, route optimization, and seamless multi-modal transit are some strategies to overcome these barriers to economic integration. By also optimizing fleets with smaller, agile aircraft tailored for short-haul routes, this flight time could be reduced to 40 minutes.

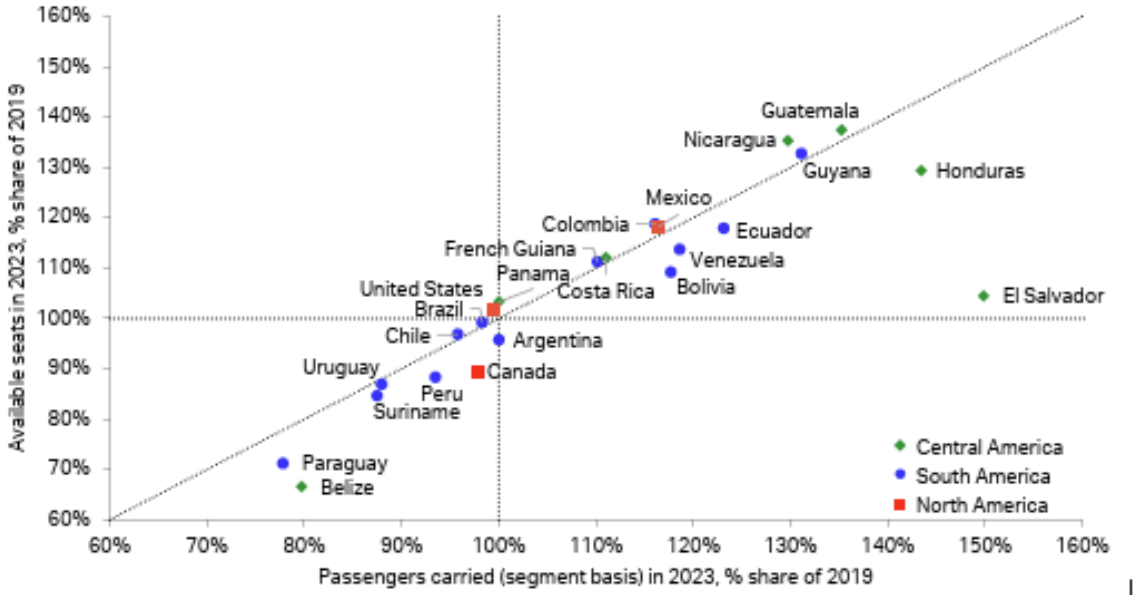
Figure 2
Poor intra-regional connectivity / Frequent nonstop service between San Juan (SJU) and Sint Maarten (SXM)

Table 1
Distance & Flight times: (SJU) to (SXM)

Via	Total flight time	Layover	Miles
Direct	1h 10 min	-	198 (309 km)
SKB Saint Kitts	4h 38 min	3h 25 min	287 (462 km)
EIS Beef Island	6h 0 min	5h 0 min	194 (312 km)

The Caribbean aviation market is also characterized by a high demand-supply imbalance, which could create excellent growth opportunities. The aviation sector in the region fails to reach its full market potential despite the high demand for air services within it. Figure 3 highlights the significant imbalance between demand and supply in Caribbean aviation, where strong travel demand is met with inadequate capacity from regional airlines. This gap has allowed foreign carriers to dominate inbound tourism traffic, while local airlines struggle with small-scale operations, high costs, and unprofitable routes. The industry's fragmentation limits connectivity and prevents Caribbean airlines from fully capitalizing on market potential. A consolidated airline system will effectively bridge this gap, providing improved connectivity, enhanced travel experiences, and increased regional tourism.

Figure 3
Market Opportunity: Caribbean demand outpaces supply (IATA, 2024)



Cost Opportunity

Fleet heterogeneity across Caribbean carriers inflates costs due to maintenance complexity, varied pilot training requirements, and inefficient aircraft utilization. Transitioning to a standardized narrow-body fleet, such as the A320 or B737 families, could reduce operational costs by up to 30%, based on global benchmarks. In addition to narrow-body aircraft for international routes, the use of standardized regional turboprops for intra-Caribbean short-haul flights would reduce unit costs, simplify crew training, and allow greater flexibility in scheduling routes. Research (Narcizo et al., 2020; Agrawal, 2024) has shown that operational efficiency gains from regional fleet commonality can be in excess of 20% on high-frequency, short-stage-length networks. A more homogenous Pan-Caribbean airline system fleet may achieve far better economies compared to the fragmented and diverse fleets currently operating in the region. Currently, many aircraft types operate under Caribbean Airlines, which significantly increases maintenance and operational costs (Table A1).

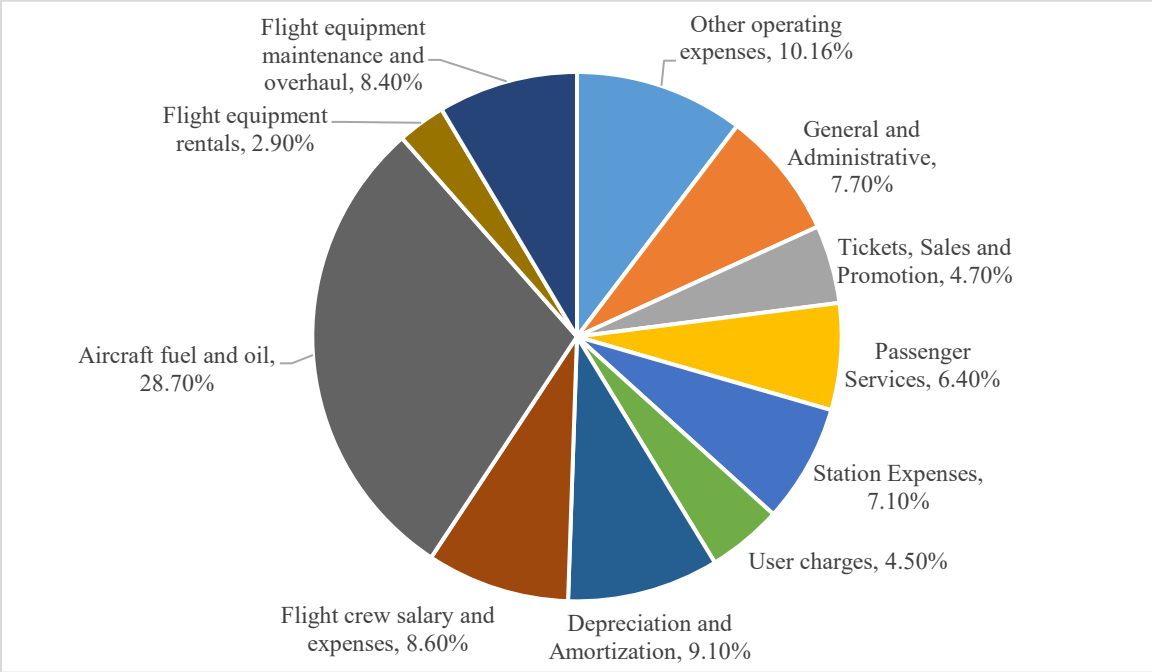
The current diversity of aircraft types within Caribbean airlines increases operational and maintenance costs. A more standardized fleet could significantly enhance cost efficiency across the region. This transition towards a homogeneous fleet could yield substantial economic benefits, as evidenced by various studies on fleet standardization. Standardizing aircraft types can reduce training and maintenance costs, as crews and technicians specialize in fewer models (Narcizo et al., 2020). Engine standardization has been shown to have a more pronounced impact on cost efficiency than airframe commonality, suggesting that focusing on engine types could yield greater savings (Merkert, 2023). Research also indicates that airlines with standardized fleets experience lower unit costs, which can enhance overall profitability despite potential trade-

offs in revenue generation (Zou et al., 2025). Empirical data from India also confirm that standardization improves operating performance and profitability, that uniform fleet types reduce complexities of scheduling and spare parts inventory, and facilitate better utilization of crew and technical manpower (Agrawal, 2024). Research in Brazil demonstrates the same results, with standardization being associated with improved operational cost control, while volatile fuel prices can lead to demand for new, more efficient models, affecting fleet composition trends (Narcizo et al., 2020).

Figure 4 analyzes airline operational cost distribution and highlights the potential impact of fleet homogeneity and shared support services on cost reduction. The Airline Cost Items Breakdown chart provides a percentage-based allocation of various expense categories, illustrating the primary cost drivers within the aviation industry.

Figure 4

Airline Cost Items Breakdown (IATA Knowledge Hub Learn, Apply, Improve, 2024)



Fleet homogeneity is projected to impact 30% of operational costs by streamlining maintenance processes, reducing spare parts inventory, simplifying crew training, and improving fuel efficiency. Standardizing an airline's fleet can lead to cost reductions in key areas such as flight equipment maintenance and overhaul (8.4%), depreciation and amortization (9.1%), and flight equipment rentals (2.9%). By minimizing variability in aircraft types, airlines can achieve economies of scale, optimize scheduling, and reduce downtime associated with maintenance and repairs.

In addition to fleet standardization, shared support services are expected to contribute to a 12% reduction in costs. This approach involves consolidating administrative, operational, and

customer service functions, leading to greater efficiency in resource utilization. Cost categories such as general and administrative expenses (7.7%), ticketing, sales, and promotion (4.7%), and station expenses (7.1%) can be optimized through centralized or shared service models. By integrating these functions across multiple locations, airlines can reduce redundancies, improve coordination, and enhance service delivery while lowering overhead costs.

Among the significant operational costs for airlines, aircraft fuel and oil account for the largest share at 28.7%, emphasizing the importance of fuel-efficient aircraft and optimized flight planning. Flight crew salaries and expenses represent 8.6% of total costs, indicating a significant labor component in airline operations. Other operating expenses constitute 10.16% of total costs, reflecting miscellaneous expenditure that could be further optimized through efficiency initiatives.

The findings suggest that fleet standardization and shared support services can reduce 42% of total operational expenses. Implementing these strategies can significantly enhance airline profitability, improve financial sustainability, and create a more competitive business model in the aviation industry.

Market and Financial Valuation

Having analyzed operational inefficiencies and the cost-saving potential of fleet standardization, we now turn to the financial dimension of consolidation. Understanding the market value of regional carriers is crucial for assessing the feasibility of a Pan-Caribbean airline model. Caribbean airlines' financial and operational consolidation presents a significant challenge due to the lack of reliable and up-to-date financial data. Among the seven airlines initially identified for analysis, excluding LIAT, Air Caraïbes, and Tropic Air, only three (Bahamasair, Caribbean Airlines, and Cayman Airways) publish financial statements, though they are outdated and incomplete.

An estimation model was developed to address this data gap using historical revenue per passenger figures and available traffic statistics. This method approximated total revenue, resulting in an estimated subtotal of approximately $500 million for the three airlines. Valuing airlines using revenue multiples involves analyzing recent industry transactions to establish a benchmark. Let’s examine two notable cases: the terminated JetBlue-Spirit merger and the completed Alaska Airlines-Hawaiian Airlines merger. In July 2022, JetBlue proposed acquiring Spirit Airlines for $33.50 per share, totaling $3.8 billion in cash. Including net debt, the enterprise value was approximately $7.6 billion. At that time, Spirit’s revenue was about $5.1 billion, resulting in a revenue multiple of approximately 1.5x. In December 2023, Alaska Airlines announced its acquisition of Hawaiian Airlines for $1.9 billion, including the assumption of approximately $900 million in debt. This valued Hawaiian Airlines at $18 per share. At the time of the merger, Hawaiian Airlines had reported annual revenues of around $2.72 billion, leading to a revenue multiple of approximately 1.0x.

Based on these transactions, revenue multiples for airline valuations have ranged from approximately 1.0x to 1.5x. Applying this range to other airlines can provide a preliminary valuation estimate. For instance, if an airline generates $3 billion in annual revenue, its valuation

might range from $3 billion (1.0x) to $4.5 billion (1.5x). Using the revenue multiple valuation approach, the estimated valuation for these three airlines (Bahamasair, Caribbean Airlines, and Cayman Airways) ranges from $400 million to $750 million. An extrapolated and highly speculative estimate places total revenue at approximately $1 billion, yielding a valuation range of $800 million to $1.5 billion. However, the financial data for the remaining four airlines - Air Antilles, InterCaribbean, Winair, and SVG Air - remains unknown, making it difficult to determine a comprehensive valuation for the entire regional airline system. The lack of financial transparency severely hinders the feasibility of a consolidation effort, as essential financial due diligence cannot be conducted with the available data. Given the challenges in executing a full merger, especially due to financial opacity and political complexity, alternative models of integration deserve close attention. One such approach is the Pan-Caribbean virtual airline model, which offers a more flexible route to operational synergy.

The virtual airline model as an alternative to consolidation

While consolidation remains a key strategy for enhancing the competitiveness of Caribbean carriers, a full structural merger may not be politically or economically feasible in the region. As such, the development of a Pan-Caribbean virtual airline model offers a pragmatic and flexible alternative. Rather than requiring ownership integration, this model emphasizes coordinated operations among existing carriers through shared services, joint scheduling, and harmonized systems. A restructured LIAT, given its extensive intra-regional route network and operational footprint, could serve as the central coordinating or "host" carrier (LIAT, 2018), though this role could also be assumed by any willing and capable partner. The virtual airline model enables fleet standardization, network optimization, and resource pooling without dissolving individual airline brands or national identities. Aircraft, potentially funded by third-party investors, would be deployed strategically across participating carriers' networks to enhance route coverage and serve underutilized or underserved markets. Common support functions such as ticketing, reservations, procurement, and maintenance would be centralized to reduce duplication and cut costs. By creating a unified customer experience and operational backbone while preserving decentralized ownership, this model allows Caribbean airlines to achieve economies of scale and improve international competitiveness in a way that is both politically viable and operationally strategic. Operational models, however, cannot succeed without robust institutional and regulatory frameworks. The following section examines the governance and implementation challenges that must be addressed to enable any form of regional airline consolidation.

Governance and Implementation Considerations

Effective governance is key to the success of any industry-wide unified program, particularly in aviation. Governance in a Pan-Caribbean airline system encompasses regulatory alignment, corporate structure, stakeholder coordination, and financial management. Caribbean governments must help, not hinder, the aviation sector's growth. (CAPA, 2024a). Without solid governance frameworks, the proposed consolidation plans could face significant issues, such as operational inefficiency, regulatory conflicts, and financial instability. One of the significant governance challenges facing Caribbean aviation is the fragmented regulatory environment. Countries have varying aviation policies, air service agreements, and tax regimes, creating

barriers to seamless operation across borders. Financial mismanagement has existed in most of the state-owned airlines in the Caribbean for decades. Strong governance arrangements must be established to prevent fiscal inefficiencies. An integrated airline system requires close coordination among governments, investors, regulatory bodies, and labor unions. A pan-Caribbean airline system would require regional cooperation among Caribbean nations. This could mean that governments and aviation stakeholders will collaborate to address challenges and devise strategies to maximize tourism inflows. By integrating operations, countries could sell multi-destination travel packages, making regional tourism a unified experience, akin to successful models in other island regions. The Caribbean could compete more effectively in the global tourism market in this context.

Implications

Economic: GDP impact, job creation, tourism growth

Consolidating a unified brand has enormous commercial benefits by uniting dispersed marketing initiatives. The adjustment enhances global awareness of the Caribbean as a travel destination, which will appeal more to tourists. As discussed earlier, enhanced connectivity is expected to stimulate tourism inflows, with added economic value through extended stays and bundled destination offerings. This integrated approach also prepares the airline for partnerships, code-sharing arrangements, and alliances, improving its global brand recognition and airline industry competitiveness. Proposed liberalization plans—like multilateral agreements, removal of tariffs, and regional integration plans such as the Revised Treaty of Chaguaramas (Kaczorowska-Ireland, 2014) would also increase the intensity of competition, expand the range of services, and enhance passenger growth. While these changes could dramatically enhance regional connectivity and economic resilience, they must be carefully managed to avoid harming national carriers.

Table 2 analyses the projected benefits of the Pan Caribbean Air Consolidated Airline System, focusing on incremental traffic and revenue generation. The table quantifies these benefits under different operational scenarios - pessimistic, likely, optimistic, and aggressive - by evaluating three key factors: Operating Efficiency, TFCs (Total Fixed Costs) reduction, and Liberalization. The data is expressed regarding additional passenger traffic and corresponding revenue increases.

Table 2
Pan Caribbean Air Projected benefits: Incremental traffic and revenues

		Operating Efficiency		TFCs Reduction		Liberalization		TOTAL
		Traffic	REV*	Traffic	REV	Traffic	REV	REV
Pessimistic	*Assumptions*	10%				12.50%		
	Amount		500		625	270		1,395
Likely	*Assumptions*	15%				20%		
	Amount		750		625	400		1775
Optimistic	*Assumptions*	20%				30%		
	Amount		1000		625	650		2275
Aggressive	*Assumptions*	130						
	Amount		1140		625	650		2415
BASE (2018)	46000 pax							

Expected improvements in operational efficiency translate into increased traffic and revenue, with improvements ranging from 10% (pessimistic) to 20% (optimistic). Secondly, for TFCs reduction, across all scenarios, a fixed revenue gain of $625,000 is considered due to reductions in total fixed costs. Regulatory liberalization, estimated to bring a 12.5% to 30% increase in traffic, yields high revenue growth, particularly in optimistic and aggressive scenarios.

The pessimistic scenario foresees an incremental total revenue of $1.395 million, with modest growth in traffic and efficiency. The probable scenario sees $1.775 million in revenue, assuming medium efficiency and liberalization enhancements. The optimistic scenario expects $2.275 million in revenue with significant liberalization improvements. The aggressive scenario, with more hopeful passenger growth and a larger net fare, forecasts $2.415 million in revenue. Realizing the modeled solutions would contribute an additional $3.3 billion to the regional GDP by 2025 and generate 207,000 extra jobs. This indicates the broader economic value of air traffic liberalization and efficiency improvements.

Environmental: Carbon footprint reduction

In addition to economic benefits, the proposed Pan-Caribbean Airline consolidation has great environmental dividends, the most prominent of which is the reduction of the region's aviation-carbon footprint. Consolidation would enable more efficient route planning, decreasing redundant flight routes that currently occur due to poor intra-regional connectivity. With efficient operations and the use of fuel-efficient, standardized planes in a consolidated system, it could have achieved lower emissions per passenger-kilometer. This would be of greatest significance

to the Caribbean, since the majority of its flights are short-haul and involve unproductive layovers, thereby contributing to total fuel use. In addition, redesigning the network and centralized planning would reduce duplicative flying of aircraft and optimize loads, both of which decrease greenhouse gas emissions. As international travel places put ever more emphasis on sustainability, this development would not only align regional air travel with worldwide environmental standards but render the Caribbean an even more appealing climate-sensitive and sustainable vacation destination.

Strategic: Global competitiveness, regional integration

In a recent study, the authors conducted analytical modeling and empirical analyses to examine whether domestic mergers can improve airlines' competitiveness in the international market. They found that a domestic airline merger can bring both "synergy" and "scale" effects to promote the merged airline's global competitiveness, reflected by an increasing route-level market share (Ma et al., 2023). Similarly, consolidating national airlines within individual Caribbean nations can create more efficient operations, with potential for resource pooling, shared fleet management, and schedule coordination. This will enable airlines to offer competitive prices, fill more seats, and enhance service reliability, reducing the need to rely on foreign carriers to provide intra-regional and international connectivity. A consolidated domestic network will also put Caribbean airlines on firmer ground to negotiate interline agreements and strategic alliances with global partners on more favorable terms, making them more competitive for long-haul traffic. Furthermore, domestic mergers can consolidate financial stability, reducing the need for government subsidies while enabling greater investment in fleet modernization.

Limitations and future research

While LATAM and Avianca consolidated into dominant airline groups, the Caribbean air transport market has factors that challenge similar consolidation. First, South American markets have larger operations, with more business-class demand and domestic connectivity opportunities. Caribbean aviation, unlike other regions, has more exposure to seasonal holiday traffic, which is more vulnerable to demand fluctuations. Second, LATAM and Avianca benefited from solid regional hubs in major economic centers like Sao Paulo and Bogota, whereas Caribbean airports operate more as point-to-point hubs. Third, with the participation of many sovereign nations, political complexity in the Caribbean introduces additional regulatory barriers compared to South America's more centralized airway systems. Although these variations do not render consolidation infeasible, they underscore the necessity for a customized plan considering the Caribbean's distinct operating environment. Last, the lack of full financial disclosure by certain airlines limits the precision of our analysis and how that may influence feasibility.

Future research could investigate the practical implementation of a virtual airline model in the Caribbean, including governance arrangements, investment channels, and regulatory harmonization. In-depth case studies of analogous models in other parts of the world might provide profound insights into best practices and possible pitfalls. Additionally, empirical examination of demand patterns, cost-sharing frameworks, and environmental impact statements would make the evidence base for informing policy choices stronger. As the region continues to

pursue sustainable and collaborative solutions to its air transport issues, such studies will be instrumental in informing both strategic planning and stakeholder coordination.

Conclusion

The Caribbean air transport industry faces fragmented operations, low intra-regional connectivity, and poor fleet management. A consolidated Pan-Caribbean airline network is a realistic solution to the abovementioned issues. Consolidation would offer the possibility of network simplification, route rationalization, and a higher frequency of service, thereby enhancing intra-regional and international connectivity.

A more integrated air transport system would yield considerable economic benefits for the Caribbean. With its greater connectivity, the system would foster tourism growth, intra-regional trade, and economic integration. Easier access to international and intra-regional destinations would make the Caribbean more competitive globally and promote higher economic resilience in tourism-dependent nations.

As previously discussed, fleet standardization could lower costs and improve operational efficiency, reinforcing the financial case for consolidation. Fleet homogeneity would enable economies of scale to support activities and purchasing, decrease operating costs, and improve profitability throughout the system. Strong public-private cooperation could drive multi-destination tourism packages. Harmonizing regional regulations would also simplify operations and provide a more efficient operating environment. Although growth and efficiency potential are obvious, realizing a Pan-Caribbean airline network requires surmounting issues of fiscal transparency, data accessibility, and political will.

Apart from economic benefits, these merger options also offer environmental benefits. Standardizing routes, eliminating duplications, and streamlining fuel consumption would lower the region's aviation carbon footprint. The consolidated system, with unified operations, would more effectively enable sustainable aviation initiatives, aligning with global progress in cleaner air travel.

Appendix A

Table A1

Current airline fleet: A mishmash of aircraft types offering huge cost economies if simplified

Airline name	ATR42	ATR72	A320	B737-8	CRJ 700	DHC-6	580	Islander	EMB -120	ERJ -145	Saab	Caravan	Citation C25B	A330 - 300/200	A350 -1000
Air Antilles		1				1									
Caribbean Airlines		5	12												
LIAT2020										2					
Cayman Airways				4		2	2				2				
Bahamasair	3	2		4											
Air Caraïbes	3	3												5	1
Winair	2					4									
interCaribbean Airways	4	1			1	1			4	3					
SVG Air						3		1					1		
Tropic Air												15			

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