

Regional differences in airline profitability: the impact of macroeconomic conditions, demand, and capacity dynamics

Regionalne razlike u profitabilnosti avio-industrije: uticaj makroekonomskih uslova, tražnje i dinamike kapaciteta

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Abstract

This paper examines regional differences in airline profitability through an integrated framework linking macroeconomic conditions, passenger demand growth, capacity development, and operational constraints. The study covers six IATA regions over the 2024–2026 period, combining 2024 observed data with 2025 estimates and 2026 forecasts derived from IATA financial outlooks and IMF economic growth projections. The analysis is based on a comparative approach and incorporates indicators of net profit margin, passenger traffic growth, capacity growth, and profit per passenger as a unit-level measure of demand monetization efficiency. The analysis is descriptive and comparative rather than econometric, while the cross-regional correlations are used as exploratory measures of association across the six IATA regions rather than for statistical inference. The findings indicate that demand growth alone is not sufficient to generate higher profitability, as market structure, capacity management, pricing discipline, and operational efficiency play a decisive role in financial outcomes. The results further show that macroeconomic growth has a stronger relationship with traffic expansion than with airline profitability, while profit per passenger provides additional explanatory value in understanding regional performance differences.

Keywords: airline industry, profitability, capacity management, profit per passenger, macroeconomic growth

Sažetak

Ovaj rad ispituje regionalne razlike u profitabilnosti avio-industrije kroz integrisani okvir koji povezuje makroekonomske uslove, rast putničke tražnje, razvoj kapaciteta i operativna ograničenja. Studija obuhvata šest IATA regiona u periodu 2024–2026 i kombinuje ostvarene podatke za 2024. godinu, procene za 2025. godinu i projekcije za 2026. godinu preuzete iz finansijskih izveštaja IATA-e i projekcija privrednog rasta MMF-a. Analiza se zasniva na komparativnom pristupu i uključuje pokazatelje neto profitne marže, rasta putničkog saobraćaja, rasta kapaciteta i profita po putniku kao jedinice efikasnosti monetizacije tražnje. Analiza je deskriptivnog i komparativnog, a ne ekonometrijskog karaktera, pri čemu se korelacije između šest IATA regiona koriste za eksplorativno sagledavanje povezanosti analiziranih pokazatelja, a ne za statističko zaključivanje. Rezultati pokazuju da rast tražnje nije dovoljan uslov za ostvarivanje više profitabilnosti, već da ključnu ulogu imaju struktura tržišta, upravljanje kapacitetima, cenovna disciplina i operativna efikasnost. Utvrđeno je da makroekonomski rast snažnije utiče na rast saobraćaja nego na profitabilnost avio-kompanija, dok profit po putniku pruža dodatnu analitičku vrednost u objašnjenju regionalnih razlika u performansama.

Ključne reči: avio-industrija, profitabilnost, upravljanje kapacitetima, profit po putniku, makroekonomski rast

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1. Introduction

The airline industry represents one of the most globally integrated and economically sensitive sectors, closely linked to broader macroeconomic trends, geopolitical factors, trade flows, and mobility patterns. Historically, periods of economic expansion have been associated with strong growth in air travel demand, while downturns have translated into immediate pressure on traffic volumes and financial performance. For instance, in several countries, economic growth drives air transport demand, while in others (e.g., Ethiopia, some developing economies), increased air transport can itself promote growth (Tolcha et al., 2020; Göçmen & Açıkel, 2025; Khanal et al., 2022; Njaya & Nikitas, 2020). However, the post-pandemic recovery phase has revealed that the relationship between growth and profitability is neither linear nor uniform across regions. Recovery paths differ by region: Asia-Pacific, North America, and Europe have distinct recovery times for passenger and freight traffic (Su et al., 2023), while domestic heavy markets recover faster than international dependent ones (Su et al., 2023; Dube et al., 2021; Li et al., 2021). According to Puhin (2024) and Amina et al. (2025) global traffic in 2023 reached ~94% of 2019 RPKs, yet the industry was only just turning from net loss to moderate profit, with large regional differences. Moreover, many airlines reported record profits in mid-2022 despite total passenger volumes still below 2019, showing profits can recover faster than traffic and not in a proportional way (Sun et al., 2023; Puhin, 2024; Amina et al., 2025). While global indicators point to a return to positive margins and sustained demand expansion, underlying regional dynamics suggest a more complex process of adjustment characterized by divergence in performance outcomes. In particular, the gradual normalization of demand and the closing of the demand-capacity gap are reshaping the mechanisms through which airlines generate profits.

In this evolving context, the focus of analysis is shifting from aggregate growth indicators toward the quality and efficiency of that growth. As capacity constraints ease and supply begins to align more closely with demand, the temporary profitability gains driven by scarcity effects are diminishing. Consequently, airlines are increasingly required to rely on pricing discipline, cost control, and network optimization to sustain financial performance. This shift highlights the importance of examining profitability not only through aggregate measures such as net profit margin (NPM), but also through unit-based indicators that capture how effectively airlines convert individual passengers into economic value. Profit per passenger, in this sense, provides an additional analytical layer that complements margin-based assessments and allows for more precise cross-regional comparisons.

The present study builds on this perspective by investigating regional airline performance through an integrated framework combining profitability, passenger demand, capacity development, and macroeconomic conditions. Using data derived from IATA regional outlooks and IMF economic projections, the analysis focuses on the 2024–2026 period as a transitional phase

between recovery and normalization. The study adopts a comparative, region-by-region approach in order to identify structural differences in performance across Africa, Asia Pacific, Europe, Latin America, the Middle East, and North America. By aligning financial indicators with traffic and macroeconomic variables, the research seeks to assess the extent to which demand growth translates into profitability and to what degree this relationship varies across different market environments. As demonstrated in the empirical analysis of this paper, regional airline performance is characterized by significant heterogeneity in both level and trajectory. Some regions combine moderate demand growth with strong profitability, while others exhibit rapid traffic expansion but limited financial gains. These patterns suggest that airline profitability is increasingly shaped by structural and operational factors rather than by demand conditions alone (Antanasković et al., 2026). Accordingly, the central objective of this study is to contribute to a more nuanced understanding of airline industry dynamics by examining how demand, capacity, and macroeconomic conditions interact with region-specific characteristics to determine financial outcomes. This study addresses the following research question: to what extent does passenger demand growth translate into airline profitability across regions, and how does this relationship change when profitability is measured at both aggregate (NPM) and unit (profit per passenger) levels?

2. Literature review

The academic literature on airline industry performance has traditionally emphasized the strong linkage between air transport demand and macroeconomic growth. Many demand models and causality studies take passenger or cargo traffic as dependent variables and GDP (or GDP per capita) as the key explanatory proxy for economic growth (Ozmec-Ban & Škurla Babić, 2023; Ozmec-Ban et al., 2025; Choi, 2023). A substantial body of research identifies gross domestic product (GDP) as a primary driver of passenger traffic, with revenue passenger kilometers (RPK) closely tracking economic cycles. A recent systematic review of passenger demand forecasting states that “GDP is a primary driver of aviation demand,” and notes that most studies model demand using GDP, GDP per capita, income, and population as core economic variables (Zachariah et al., 2023). Ozmec-Ban et al. (2025) further identify that a US study using a temporal causal model finds that domestic revenue passenger kilometers are directly caused by GDP, industrial production, population, recession probability, and other macro indicators, linking RPK explicitly to the economic cycle. This relationship is typically explained by the income elasticity of air travel demand, as well as by the role of aviation in facilitating trade, tourism, and business activity (Zhang & Graham, 2020; Law et al., 2022). Empirical evidence across different markets confirms that the relationship between aviation and macroeconomic activity operates through several channels. Studies have linked GDP, tourism expenditure, trade, and regulatory conditions to passenger demand, while evidence from Europe, North America, Australia, and Asian markets also indicates that the relationship may be bidirectional, with

air transport itself contributing to tourism, trade, and economic activity (Law et al., 2022; Adedoyin et al., 2020; Balsalobre-Lorente et al., 2021; Brugnoli et al., 2018; Khanal et al., 2022; Tsui et al., 2021). Taken together, this literature supports the role of GDP as an important macroeconomic correlate of aviation demand, but does not imply that stronger macroeconomic or traffic growth necessarily translates into higher airline profitability.

However, subsequent research has increasingly challenged this assumption by demonstrating that profitability in the airline industry is influenced by a broader set of factors beyond demand alone. For example, Gössling & Humpe (2024) notice that for global airlines, an analysis of 1978–2022 shows aviation generated only US\$0.94 profit per passenger despite strong long-term growth in traffic, concluding airlines are “unlikely to become profitable under scenarios of continued volume growth”. Also, a study of profitable airline growth, analyzed by Maung et al. (2022), finds full-service network carriers face a tradeoff: capacity growth tends to reduce operating profits, whereas many low-cost carriers can grow and improve profitability simultaneously, due to different business models. Cost-side variables, particularly fuel prices and labor expenses, have been identified as major determinants of financial outcomes, often offsetting revenue gains generated by traffic growth. Lee (2019) confirms this and describes fuel as the largest component of airline operating expenses and “major variable cost”, while Ginieis et al. (2020) confirm its significant and negative influence on profitability. Further, Lee (2019) explains that rising oil prices put carriers under “intense financial pressure” and require hedging or efficiency gains to protect returns. In addition, market structure plays a critical role. The degree of competition, regulatory constraints, and market liberalization can significantly affect pricing power and yield management. For example, Kerkemeros et al. (2023) mention that in U.S. routes, “quiet life” monopolies and duopolies show systematically different prices from markets with the same structure but different competitive histories, implying that market structure and its evolution shape the exploitation of market power. Airlines operating in highly competitive environments may struggle to convert demand growth into higher margins, while those in more concentrated or strategically positioned markets may achieve stronger profitability even under moderate traffic conditions. Taken together, these studies indicate that traffic growth and profitability represent distinct dimensions of airline performance: demand influences the potential revenue base, while financial outcomes remain associated with cost conditions, competitive structure, business models, and the ability to generate value from available traffic.

More recent studies, particularly in post-crisis and post-pandemic contexts, emphasize the importance of capacity management in shaping airline profitability. A panel study of global airlines (2015–2020) finds that during COVID 19, financial performance is significantly affected by ASK, RPK, passenger load factor, and aircraft count, alongside passenger numbers (Czerny et al., 2021). This

explicitly ties capacity deployment and utilization to financial results in the crisis period. The same study notes that seat distancing rules (blocking seats) harmed revenues despite demand, underscoring that how capacity is configured can destroy yield even when flights operate. Global recovery analyses highlight that some markets surpassed pre pandemic performance through careful matching of capacity (seats, frequencies) to recovering demand and achieving high load factors, which is associated with returning to profitability (Puhin, 2024; Sun et al., 2023). During recovery phases, temporary imbalances between demand and supply can generate short-term margin improvements, but these effects tend to diminish as capacity normalizes. A dynamic network DEA of 26 airlines (2019–2022), according to Wu et al. (2024), shows operational efficiency (ASK/RPK) stays high, but financial efficiency lags, with only partial recovery by 2022, suggesting that restoring capacity does not automatically restore margins; revenue and financial stages remain weaker. These findings suggest that capacity deployment and utilization play an important role in the relationship between passenger demand and financial performance, particularly when supply conditions change rapidly, as during the post-pandemic recovery.

The literature has also expanded toward unit-level performance indicators, particularly yield and unit revenue measures, which provide more detailed information on the relationship between traffic and revenue generation (Özaydın, 2024; Ertuğrul & Özdarak, 2025). However, revenue-based unit measures do not directly indicate how much net financial value remains after the costs associated with carrying passengers are taken into account. Profit per passenger provides a conceptually distinct perspective by relating net profit to passenger volume, allowing regional differences in financial value generation to be compared independently of differences in market scale. Although this indicator cannot identify the specific sources of profitability and does not capture variation among individual airlines within a region, its inclusion alongside NPM, RPK growth, and ASK growth provides an additional unit-level perspective on regional financial performance. The research gap addressed in this study therefore lies in the limited use of profit per passenger within regional comparative analyses that jointly consider macroeconomic conditions, traffic growth, capacity development, and aggregate profitability.

3. Methodology

This study examines regional airline performance through an integrated comparison of net profit margin (NPM), passenger demand growth, capacity growth, and macroeconomic growth across the six IATA regions: Africa, Asia Pacific, Europe, Latin America, the Middle East, and North America. Given the limited number of observations, the study does not aim to establish causal relationships, but rather to identify structural patterns and comparative differences across regions. The analysis is built directly from the Regional Roundup tables published in IATA’s June 2025 and December 2025 financial

outlook releases (International Air Transport Association [IATA], 2025a, 2025b). In order to preserve traceability and avoid unsupported reconstruction, the 2024 regional NPM values are taken from the June 2025 release, while the 2025 estimated NPM values and the 2026 forecast NPM, demand, and capacity values are taken from the December 2025 release (IATA, 2025a, 2025b). Passenger market performance is proxied by IATA's regional revenue passenger kilometer (RPK) growth rates, which are the directly reported demand YoY indicators in the selected releases. Capacity is proxied by available seat-kilometers (ASK) growth, and the analysis centers on the 2026 forecast capacity profile because that is the common forward-looking capacity measure reported across all regions in the final Regional Roundup tables. In addition, profit per passenger is included as a unit-level profitability indicator derived from IATA regional estimates, defined as total net profit divided by the number of passengers carried. This metric serves as a proxy for the efficiency of value extraction at the passenger level and complements aggregate margin indicators. While it enables meaningful cross-regional comparisons, it does not capture intra-regional variation or differences across airline business models.

The macroeconomic layer uses the IMF October 2025 real GDP growth figures as regional proxies aligned as closely as possible to the airline regions (International Monetary Fund [IMF], 2025a, 2025b, 2025c, 2025d, 2025e). Africa is proxied by Sub-Saharan Africa, Asia Pacific by Asia and Pacific, Europe by Europe, Latin America by Latin America and the Caribbean, the Middle East by Middle East and Central Asia, and North America by North America (IMF, 2025a, 2025b, 2025c, 2025d, 2025e). These IMF categories are not identical to IATA's airline market regions, but they are consistent official macro aggregates and therefore provide a transparent benchmark for comparing economic momentum with airline profitability, passenger demand, and capacity growth. The analysis is descriptive and comparative rather than econometric. It covers all six regions included in the IATA regional framework. Cross-sectional Pearson correlations are calculated for the 2026 forecast to examine the direction and relative magnitude of associations between GDP growth and NPM, capacity growth, and passenger demand growth. Because the correlation analysis is necessarily based on six regional

observations, the coefficients are used for descriptive comparison rather than statistical inference and are not interpreted as evidence of causality. This is especially important because airline profitability is influenced not only by macroeconomic growth, but also by pricing power, cost inflation, fuel exposure, supply-chain constraints, market structure, fleet availability, currency volatility, and regulatory conditions. To complement the regional comparison, selected operational evidence is incorporated for Europe based on EUROCONTROL data, providing additional insight into how network-level constraints and traffic management conditions can influence profitability beyond macroeconomic and capacity indicators.

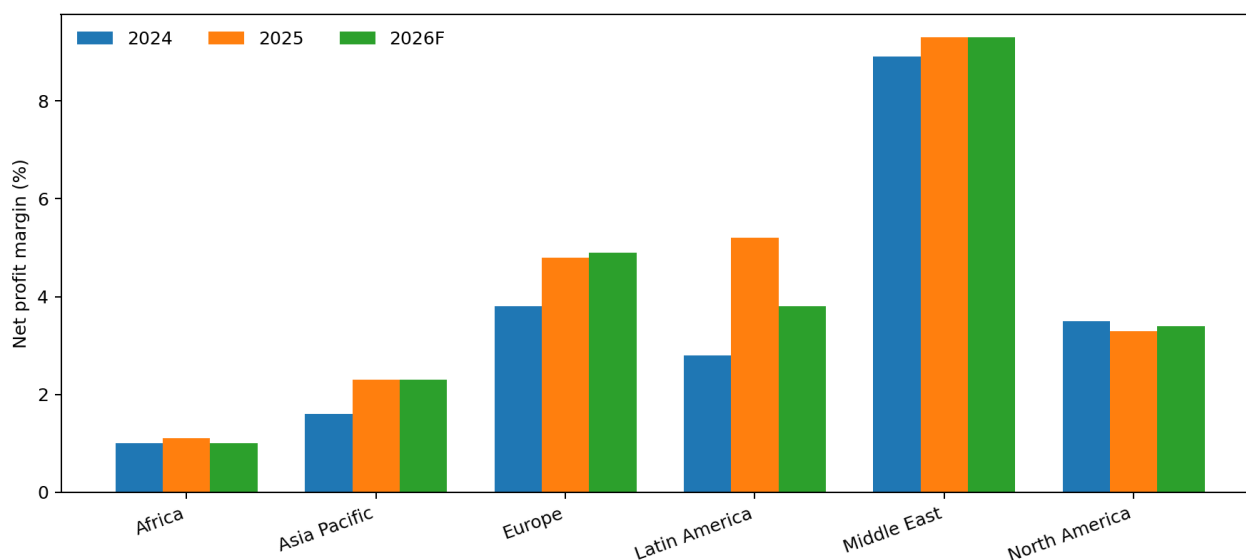
4. Results

In the following analysis, 2024 values represent observed outcomes, 2025 values are estimates, and 2026 values are forecasts; consequently, interpretations of 2026 refer to projected rather than realized regional outcomes. Table 1 and Figure 1 show that regional airline profitability follows a distinctly uneven pattern rather than a uniform industry-wide trajectory. The Middle East records the highest NPM in 2024 and in the 2025 estimate and is forecast to retain this position in 2026, with NPM increasing from 8.9% in 2024 to an estimated 9.3% in 2025 and remaining at a forecast 9.3% in 2026. Europe forms a second tier, improving from 3.8% in 2024 to 4.8% in 2025 and 4.9% in 2026F. North America is materially less dynamic but relatively stable, moving from 3.5% in 2024 to 3.3% in 2025 and 3.4% in 2026F. Asia Pacific improves from 1.6% to 2.3% and then stabilizes, while Africa remains structurally low-margin at 1.0%, 1.1%, and 1.0%. Latin America shows the sharpest fluctuation: the region moves from 2.8% in 2024 to 5.2% in 2025 before moderating to 3.8% in 2026F. The central implication is that regional profitability is highly segmented. Headline industry strength does not imply homogeneous financial performance across markets. The observed differences in margins coexist with substantial variation in demand and capacity growth, while factors such as market structure, pricing power, cost control, and capacity discipline, identified in the literature as relevant profitability determinants, may provide additional explanations for these regional differences.

Table 1. Regional profitability, passenger demand, and capacity indicators

Region	NPM 2024	NPM 2025	NPM 2026F	Demand 2025 YoY	Demand 2026F YoY	Capacity 2026F YoY
Africa	1.0%	1.1%	1.0%	8.0%	6.0%	5.7%
Asia Pacific	1.6%	2.3%	2.3%	9.0%	7.3%	7.1%
Europe	3.8%	4.8%	4.9%	6.0%	3.8%	3.8%
Latin America	2.8%	5.2%	3.8%	5.8%	6.6%	6.5%
Middle East	8.9%	9.3%	9.3%	6.4%	6.1%	5.4%
North America	3.5%	3.3%	3.4%	0.4%	1.5%	1.0%

Source: Author's calculation based on International Air Transport Association (2025a, 2025b)

Figure 1. Net Profit Margin by Region, 2024-2026F

Source: Author's calculation based on International Air Transport Association (2025a, 2025b)

A region-by-region reading highlights the contrast between volume growth and profit capture. Africa posts the lowest NPM throughout the period despite relatively strong demand growth, indicating that traffic expansion alone does not overcome the region's persistent structural constraints. Asia Pacific is the strongest passenger growth engine, yet its margins remain moderate, implying that rapid traffic recovery and scale do not automatically convert into superior profitability. Europe's pattern is analytically different: traffic growth moderates, but margins continue to improve, signaling a mature market in which disciplined capacity allocation and comparatively strong yields matter more than simple

volume expansion. Latin America appears to have reached a cyclical high point in 2025, followed by normalization in 2026F, which suggests that the 2025 margin spike should not be read as a stable long-run level. The Middle East combines robust demand, controlled capacity growth, and the strongest profit profile, which points to the strategic importance of hub economics, network connectivity, and supportive operating conditions. North America, by contrast, demonstrates that a region can maintain positive margins even under weak demand growth, but only through pricing discipline and cost management rather than strong traffic momentum.

Table 2. Net profit per passenger – regional comparison

Region	2024 (\$/pax)	2025 (\$/pax)	2026f (\$/pax)	% 24→25	% 25→26f
North America	10.1	9.5	9.8	-5.94%	3.16%
Europe	8.0	10.6	10.9	32.50%	2.83%
Asia Pacific	2.3	3.3	3.2	43.48%	-3.03%
Latin America	4.1	7.3	5.7	78.05%	-21.92%
Middle East	28.5	28.9	28.6	1.40%	-1.04%
Africa	1.2	1.4	1.3	16.67%	-7.14%

Source: Author's calculation based on International Air Transport Association (2025a, 2025b)

Extending the previous results, the per-passenger profitability data further reinforces the divergence between traffic growth and value capture across regions. While margins (NPM) indicate overall profitability, the net profit per passenger metric reveals how effectively each region monetizes individual demand units. The Middle East remains the clear outlier, sustaining exceptionally high profit per passenger levels with only marginal fluctuations. This pattern indicates substantially higher financial value generated per passenger than in the other regions, although the available regional data do not identify the specific mechanisms responsible for this difference. Europe shows a consistent increase in profit per passenger alongside rising margins despite moderating traffic growth. This pattern indicates stronger value capture per passenger, while the relative contributions of yield, cost management, and capacity discipline cannot be isolated from the available regional

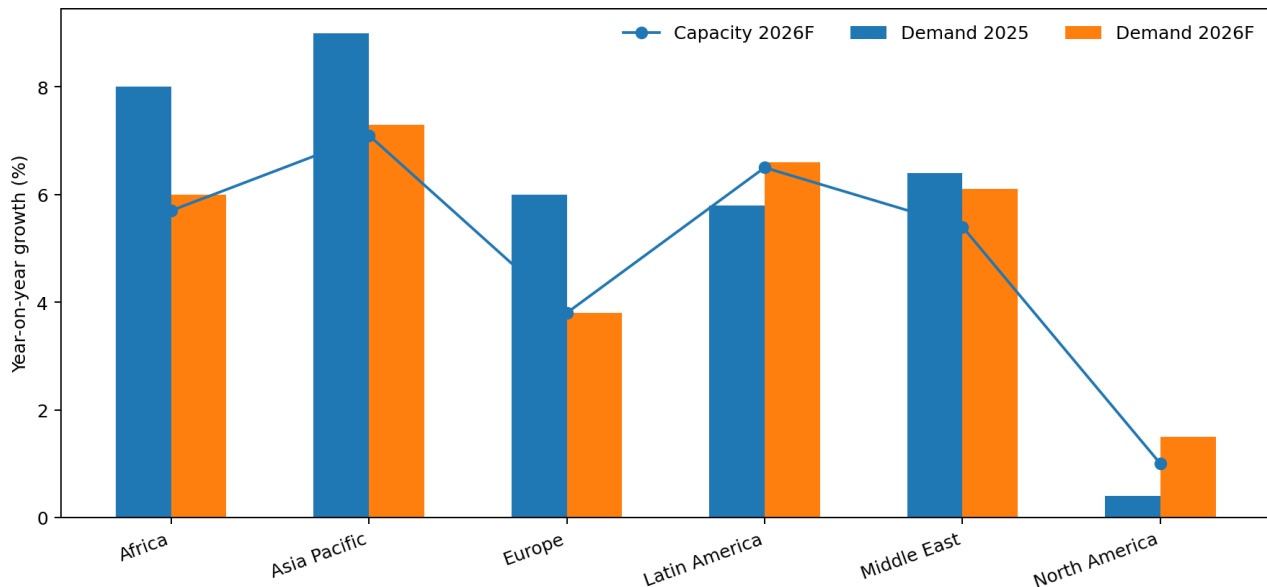
data. North America, in contrast, experiences a decline in profit per passenger despite relatively stable margins, suggesting emerging pressure on unit profitability even as overall financial performance remains solid.

Asia Pacific demonstrates strong improvement in profit per passenger between 2024 and 2025, followed by slight stabilization, which aligns with its broader recovery narrative: rapid traffic expansion coincides with improved, but still moderate, profitability per passenger. Latin America exhibits the most pronounced volatility, with a sharp increase in profit per passenger in 2025 followed by a notable correction in 2026F, reinforcing the interpretation of a cyclical peak rather than a structurally sustained margin level. Africa remains the weakest region in absolute terms, with only marginal gains in profit per passenger, highlighting that even improving margins do not materially change its low profitability base.

Importantly, the comparison shows that high percentage increases in lower-performing regions do not translate into convergence with leading regions, as absolute profitability gaps remain substantial. Overall, the combined evidence suggests that regional airline performance is shaped less

by demand growth alone and more by structural factors determining pricing power, cost efficiency, and network economics, with profit per passenger serving as a critical complement to margin-based analysis.

Figure 2. Passenger demand and 2026 capacity by region



Source: Author's calculation based on International Air Transport Association (2025a)

Figure 2 deepens the interpretation by placing passenger demand alongside the 2026 capacity outlook. The strongest demand profile in 2025 is in the Asia Pacific at 9.0%, followed by Africa at 8.0%, the Middle East at 6.4%, Europe at 6.0%, Latin America at 5.8%, and North America at only 0.4%. In 2026F, the ranking is expected to change only slightly: Asia Pacific should remain the strongest at 7.3%, Latin America and the Middle East are projected to remain robust at 6.6% and 6.1%, Africa to hold at 6.0%, Europe is expected to slow to 3.8%, and North America to remain the weakest at 1.5%. The 2026 capacity profile is broadly aligned with 2026 demand, but not perfectly. Asia Pacific and Latin America show capacity growth of 7.1% and 6.5%, almost matching their demand growth, while Europe is forecast to reach an exact balance, with both demand and capacity growth at 3.8%. Africa still shows a modest positive demand-capacity spread, as does the Middle East, whereas North America combines low demand with very low-capacity expansion. The broader implication is that the industry is operating in a more normalized environment than in the immediate post-pandemic recovery phase: capacity is no longer

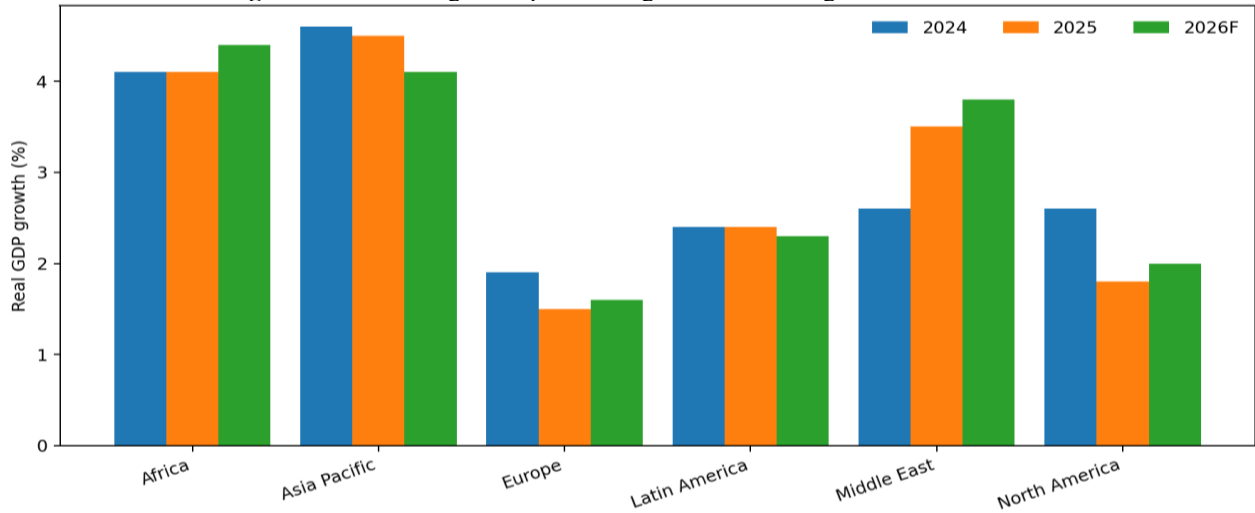
massively lagging demand in most regions. This helps explain why future profitability depends less on scarcity effects and more on execution, network quality, and cost structure.

The demand-capacity relationship also clarifies why similar growth rates can generate different margins. Europe and North America do not lead the sample in demand growth, yet both sustain relatively solid margins because capacity is tightly managed. Asia Pacific and Africa exhibit stronger demand but weaker margins, which indicates that higher traffic growth is being partially absorbed by competitive pressure, cost inflation, or weaker yield conversion. Latin America's profile shows that respectable demand and near-matched capacity can still coincide with very volatile margins when financial restructuring and currency effects are material. The Middle East is the clearest example of successful traffic monetization: its demand remains high, capacity growth is restrained, and NPM stays far above all other regions. In this sense, Figure 2 suggests that the quality of growth matters at least as much as the quantity of growth.

Table 3. Calculating the overall performance rating

Airline region	IMF proxy	GDP 2024	GDP 2025	GDP 2026F
Africa	Sub-Saharan Africa	4.1%	4.1%	4.4%
Asia Pacific	Asia and Pacific	4.6%	4.5%	4.1%
Europe	Europe	1.9%	1.5%	1.6%
Latin America	Latin America and the Caribbean	2.4%	2.4%	2.3%
Middle East	Middle East and Central Asia	2.6%	3.5%	3.8%
North America	North America	2.6%	1.8%	2.0%

Source: Author's calculation based on International Monetary Fund (2025a, 2025b, 2025c, 2025d, 2025e)

Figure 3. IMF GDP growth proxies aligned to airline regions, 2024 – 2026F

Source: Author's calculation based on International Monetary Fund (2025a, 2025b, 2025c, 2025d, 2025e)

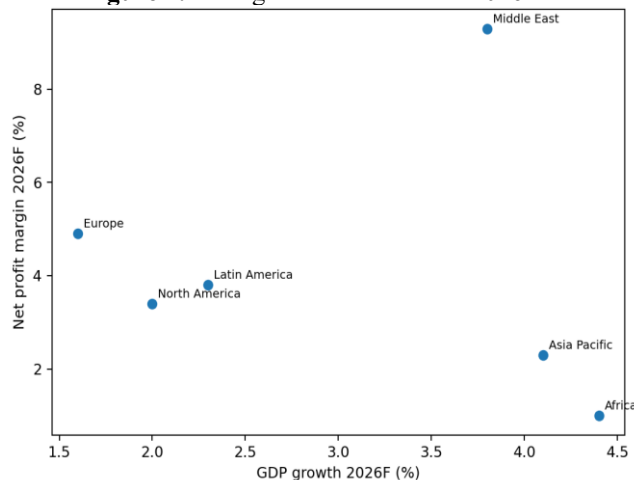
Table 3 and Figure 3 provide the macroeconomic benchmark. According to the IMF proxies, Asia Pacific has the strongest broad GDP performance in 2024 and 2025 at 4.6% and 4.5%, before expected easing to 4.1% in 2026F. Africa is also comparatively resilient, holding at 4.1% in 2024 and 2025 and projected to accelerate to 4.4% in 2026F. The Middle East improves from 2.6% in 2024 to 3.5% in 2025 and is expected to further improve to 3.8% in 2026F, while Europe remains subdued at 1.9%, 1.5%, and 1.6%. Latin America is stable but modest at 2.4%, 2.4%, and projected 2.3%, and North America decelerates from 2.6% in 2024 to 1.8% in 2025 with only a mild rebound expected to 2.0% in 2026F. These GDP profiles align more clearly with passenger demand than with profitability. Asia Pacific and Africa combine stronger macro momentum with stronger demand growth, while North America's softer macro trajectory is consistent with its weak demand numbers. Europe, however, is the most revealing counterexample: despite a soft GDP profile, its airline margins remain strong. This shows that GDP is an important contextual driver of traffic, but is not sufficient to explain margins.

The comparison suggests three broad descriptive patterns. Asia Pacific and Africa combine comparatively strong GDP and passenger-demand growth with relatively low margins. Europe and North America combine weaker macroeconomic and traffic growth with positive and comparatively stable margins. The Middle East combines relatively strong passenger demand with the highest profitability indicators in the sample, while Latin America displays comparatively strong demand alongside greater variation in estimated and forecast margins. These patterns identify clear differences in regional outcomes but do not, by themselves, establish the underlying causes of those differences.

Table 4. Cross-sectional correlations across regions based on 2026 forecast values

Variable pair	Pearson r
GDP 2026F vs NPM 2026F	-0.14
GDP 2026F vs Capacity 2026F	0.62
GDP 2026F vs Demand 2026F	0.68
NPM 2026F vs Capacity 2026F	-0.08

Source: Author's calculation based on SPSS, International Air Transport Association (2025a), and International Monetary Fund (2025a–2025e)

Figure 4. GDP growth and NPM in 2026F

Source: Author's calculation based on SPSS, International Air Transport Association (2025a), and International Monetary Fund (2025a–2025e)

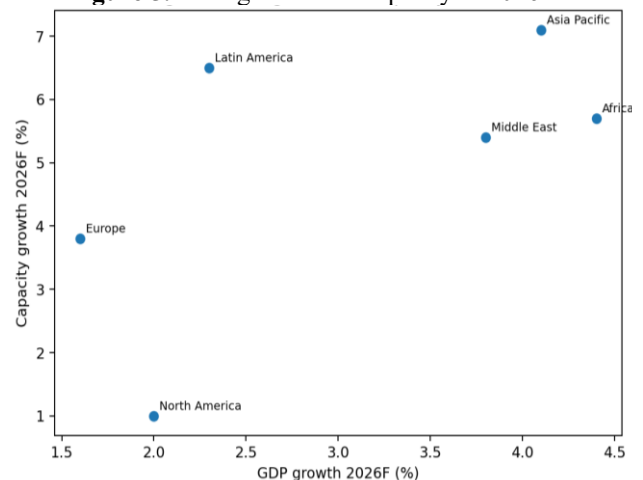
Figure 5. GDP growth and capacity in 2026F

Table 4, together with Figures 4 and 5, summarizes the cross-regional associations visible in the descriptive data. The cross-sectional association between GDP growth and passenger demand in 2026F is positive and comparatively strong ($r = 0.68$), and the relationship between GDP growth and capacity growth is also positive ($r = 0.62$). Within the regional comparison, these coefficients indicate that higher GDP growth is associated with higher passenger demand and capacity growth in the 2026 forecast. By contrast, the correlation between GDP growth and NPM in 2026F is slightly negative ($r = -0.14$), effectively indicating no meaningful positive relationship in this small regional sample. This result should not be misread as evidence that macro conditions are irrelevant. Rather, the weak GDP–NPM association suggests that regional profitability cannot be inferred from macroeconomic growth alone. Other factors identified in the literature, including carrier strategy, route structure, yield management, supply constraints, labor costs, fuel exposure, and exchange-rate conditions, may contribute to the observed differences in profitability.

The near-zero GDP–NPM association represents an important descriptive result of the regional comparison. It is consistent with the observed pattern in which regions with stronger GDP growth do not necessarily occupy the highest positions in the profitability ranking. Asia Pacific and Africa have stronger GDP and demand profiles than Europe, yet they do not produce higher margins. Europe and the Middle East record higher NPM despite weaker or comparable macroeconomic growth, indicating substantial differences in the relationship between traffic growth and financial performance across regions. This distinction explains that macroeconomic strength supports the demand base, but profit realization depends on the industrial and operational architecture of the region. The same logic applies to capacity. Because the correlation between demand and capacity in 2026F is very high, supply is evidently tracking market conditions closely. Nevertheless, similar capacity growth can coexist with very different margins, showing that the profitability effect of capacity depends on how efficiently that capacity is deployed and monetized.

Table 5. Directly measured regional patterns and possible interpretive explanations

Region	Directly measured pattern	Possible interpretation based on the literature
Africa	NPM remains close to 1%; demand growth is comparatively strong; forecast demand growth slightly exceeds capacity growth in 2026.	Cost, market, or infrastructure constraints may limit the conversion of traffic growth into profitability.
Asia Pacific	Strongest demand growth; improving but comparatively low NPM; forecast demand and capacity growth are closely aligned.	Competitive intensity and rapid capacity restoration may contribute to weaker profit conversion.
Europe	Rising NPM; moderating demand growth; forecast demand and capacity growth are both 3.8%.	Yield conditions, cost management, and capacity discipline may contribute to comparatively stronger profitability.
Latin America	Estimated NPM peaks in 2025 and moderates in the 2026 forecast; demand remains comparatively strong.	Currency conditions, restructuring, and market-specific financial factors may contribute to margin volatility.
Middle East	Highest NPM and profit per passenger; robust demand; forecast demand growth exceeds capacity growth.	Network structure, hub characteristics, and pricing conditions may contribute to higher value capture.
North America	Relatively stable NPM; weakest demand growth; limited forecast capacity expansion.	Restrained capacity growth and pricing or cost management may contribute to margin resilience.

Source: Author's

At the same time, the EUROCONTROL report warns that this profitability is exposed to operational frictions that are not visible in GDP, RPK, or ASK alone (EUROCONTROL, 2026). The European case therefore provides an illustrative example of how operational conditions may add a further dimension to the relationship between demand, capacity, and profitability that is not captured by GDP, RPK, or ASK indicators alone.

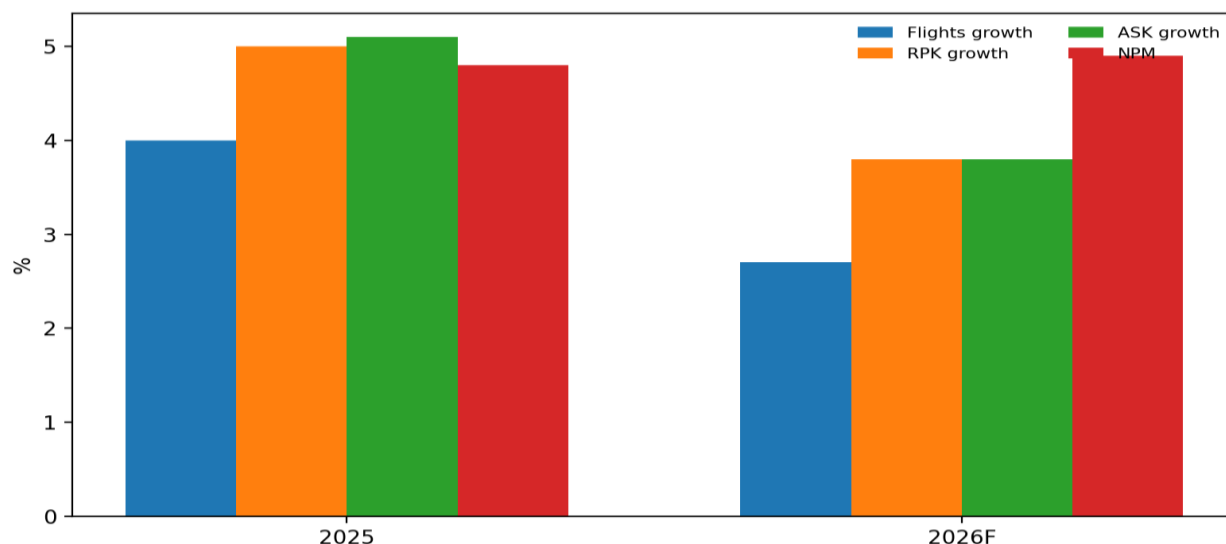
Overall, the regional comparison points to three main patterns. First, the industry is moving from post-pandemic

recovery toward normalization, with passenger demand growth remaining positive but moderating across most regions. Second, GDP growth shows a stronger positive cross-regional association with passenger demand and capacity growth than with NPM. Third, the projected closer alignment between demand and capacity growth in 2026 suggests that regional profitability differences cannot be assessed through traffic growth alone, particularly as temporary post-pandemic supply–demand imbalances diminish.

Table 6. Europe: financial, traffic, and operational indicators from IATA and EUROCONTROL

Indicator	2025	2026F	Interpretive value
Flights growth (EUROCONTROL)	4.0%	2.7%	Operational activity normalizes and 2026 is revised down
RPK growth (IATA Europe)	5.0%	3.8%	Demand continues to grow but at a slower pace
ASK growth (IATA Europe)	5.1%	3.8%	Capacity aligns closely with demand by 2026F
Net profit margin (IATA Europe)	4.8%	4.9%	Strong profitability despite slower volume growth
En-route service units (EUROCONTROL)	5.8% growth	n/a	Operational cost intensity rises faster than flights

Source: Author's calculation based on International Air Transport Association (2025a) and EUROCONTROL (2026)

Figure 4. Europe: financial, and operational indicators, 2025 – 2026F

Source: Author's calculation based on International Air Transport Association (2025a) and EUROCONTROL (2026)

5. Conclusion

This study examined regional differences in airline profitability by comparing macroeconomic growth, passenger demand, capacity development, NPM, and profit per passenger across six IATA regions. The results show substantial variation between traffic growth and financial performance: regions with stronger passenger-demand growth do not necessarily record higher margins or profit per passenger. GDP growth shows a stronger positive cross-regional association with passenger demand and capacity growth than with NPM, while profit per passenger reveals substantial differences in the financial value generated per passenger across regions.

The 2026 forecasts also point toward closer alignment between passenger demand and capacity growth across most regions, suggesting further normalization of supply conditions following the post-pandemic recovery. These values are forecasts rather than realized outcomes and should therefore be interpreted as conditional expectations based on the assumptions underlying the IATA and IMF projections. If the projected alignment materializes, regional profitability differences are likely to become less associated with temporary demand-capacity imbalances and more dependent on other structural and operational conditions. Regional heterogeneity remains substantial. The Middle East records the strongest profitability indicators, Europe combines moderate traffic growth with comparatively strong margins and rising profit per passenger, while Asia Pacific and Africa demonstrate that stronger traffic growth can coexist with lower profitability. These contrasts support the inclusion of profit per passenger alongside NPM, as the two indicators provide complementary perspectives on regional financial performance.

The integration of operational evidence further strengthens the interpretation of these results. The European case demonstrates that even in a context of balanced demand and capacity, operational complexity

can increase due to factors such as rerouting, longer average flight distances, and higher service unit intensity. These dynamics imply that cost pressures may persist or even intensify independently of traffic growth. Consequently, profitability outcomes may diverge from what would be predicted based solely on macroeconomic and traffic indicators. This reinforces the broader conclusion that airline performance is shaped not only by demand and capacity alignment, but also by the efficiency and resilience of operational execution.

Despite the robustness of the analytical framework, several limitations must be acknowledged. First, the analysis relies on IATA regional data and IMF GDP proxies, which, while consistent and widely used, are not perfectly aligned in their regional definitions. The use of macroeconomic proxies introduces an unavoidable degree of approximation, particularly in regions with heterogeneous economic structures. Second, the dataset is descriptive rather than econometric, and the correlation analysis is based on a limited number of regional observations, which constrains the statistical generalizability of the findings. Third, the use of forecast data for 2026 introduces uncertainty, as projections are contingent on assumptions regarding fuel prices, geopolitical stability, demand conditions, and fleet availability. As such, the results should be interpreted as conditional expectations rather than definitive outcomes. Finally, the analysis does not explicitly incorporate cost-side variables such as fuel price volatility, labor costs, or airline-specific strategic differences, all of which play a critical role in shaping profitability. These limitations point directly to several avenues for future research. First, future studies could construct fully harmonized regional datasets by aggregating country-level GDP data to match IATA regional definitions more precisely, thereby reducing reliance on proxy measures. Second, the analysis could be extended through econometric modeling using panel data techniques to formally estimate the relationships between GDP, demand, capacity, and profitability over time. Third, incorporating cost-side

variables, particularly fuel prices, labor costs, and capital expenditures, would provide a more complete explanation of profitability dynamics. Fourth, further research could expand the operational dimension beyond Europe by integrating global air traffic management data, enabling a more comprehensive assessment of how network constraints affect airline performance. Finally, as actual data for 2026 becomes available, a retrospective validation of the forecast-based findings would be highly valuable, allowing researchers to assess the accuracy of current projections and refine analytical models accordingly.

In conclusion, the airline industry is entering a phase in which growth remains positive but increasingly constrained, and in which profitability depends less on the pace of demand expansion and more on the efficiency and resilience of operational and strategic execution. The transition from recovery to normalization, as observed in the 2024–2026 period, highlights the need for integrated analytical approaches that account for macroeconomic conditions, traffic dynamics, and operational realities simultaneously. These findings reinforce the importance of complementing traditional demand- and margin-based analyses with unit-level profit measures to better capture the true efficiency of airline performance across heterogeneous regional markets.

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