Yale SCHOOL OF MANAGEMENT

Southwest Airlines Co. (LUV) – Company Report

Report Date: November 26th, 2023

Performance Rating: SELL

Price per Share (as of November 26th, 2023): $24.87

Target Price per Share: $15.56

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1. COMPANY OVERVIEW

Founded in 1967, Southwest Airlines Co. is the world's largest low-cost carrier measured by passengers carried annually. The airline employs over 60,000 people and is headquartered in Dallas, Texas. The airline also has major operating bases in Atlanta, Chicago, Denver, and Houston. It operates scheduled services to multiple destinations in North and Central America, focusing primarily on domestic routes and adhering to a point-to-point operational model. It is not part of any major alliance such as Star Alliance or OneWorld

Southwest Airlines is renowned for its unique approach to air travel, known as the "Southwest Effect." This approach centers on providing passengers with low fares, excellent customer service, and a simplified travel experience. The airline's commitment to cost leadership is evident in its strategies, including efficient aircraft utilization, quick turnaround times at airports, and a fleet consisting mainly of Boeing 737 aircraft. However, Southwest faces some challenges including the highly competitive U.S. airline industry, jet fuel price fluctuations, labor disputes, and adverse economic conditions.

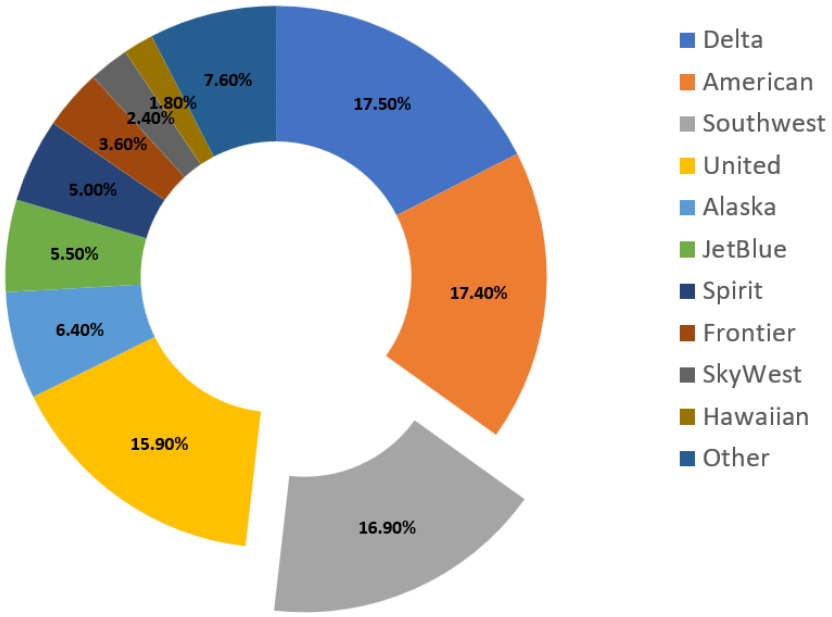


Figure 1: Airline Domestic Market Share August 2022 - July 2023. Source: Bureau of transportation statistics

2. THE PILOT SHORTAGE SITUATION

In our previous reports (Alaska Airlines and Hawaiian Airlines), we highlighted the impact of high jet fuel prices on sales margins and profitability. In this report, we have chosen to dedicate a section to another significant challenge that is affecting negatively the airline industry's profitability: **The Pilot Shortage**.

According to a Skift article published in September 2023, this problem started during the pandemic when airlines had to reduce their operations and offered buyout packages, early retirement, and voluntary leave. For example, Delta Airlines reduced its staff by 20% (roughly 17,000 employees) by August 2020. Some analysts estimate that since the beginning of the pandemic, roughly 10,000 pilots have left the industry. After 2020, airlines started

increasing their operations again, but the number of pilots has not increased at a high rate, leading to the pilot shortage. According to a TheStreet article published in September 2023, North American airlines currently require at least 12,000 more pilots, and the U.S. Air Force has 1,500 fewer pilots than it would like.
Although it has been suggested that airlines could open their own training academies, and pilots from other countries are applying to fly in the U.S., some analysts forecast that this problem will persist until after 2029. The next figures obtained from Olyver Wyman studies show trends of the pilot's Supply vs. Demand (surplus/shortage) situation:

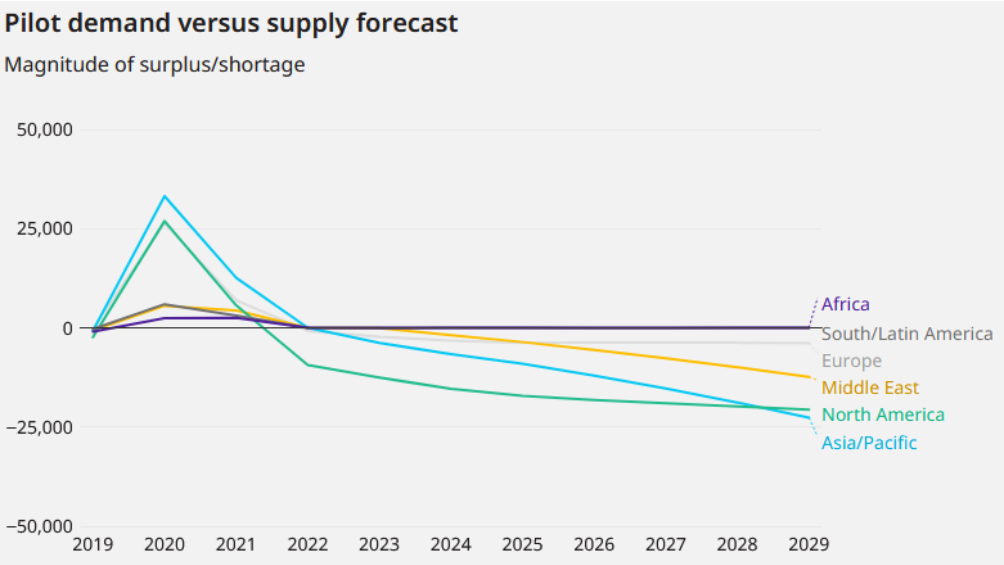


Figure 2: Global Pilot Demand and Supply. Source: Oliver Wyman Analysis

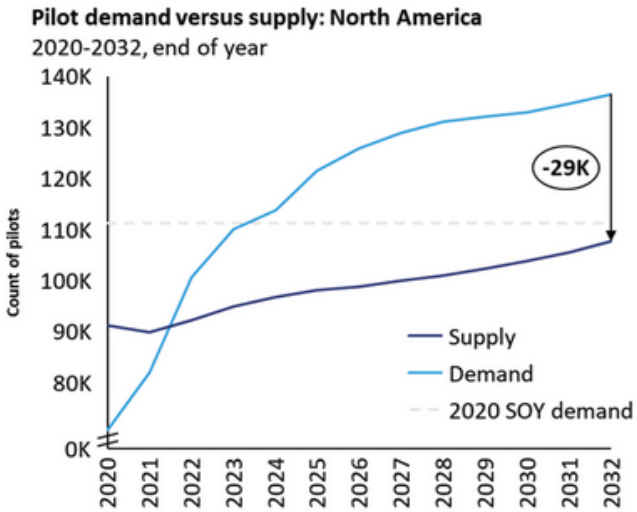


Figure 3: North America Pilot Demand and Supply. Source: Oliver Wyman Analysis

As we will show in the next section, this situation will impact negatively on the Operating Expense of Southwest (and on the airline industry as a whole), which will maintain the sales margin levels below those of the pre-Covid period. The next table shows the fact that during the first three quarters of 2023, the salaries of the four major airlines have increased faster than the Available Seat Miles (ASMs, capacity) vs. the same period of 2022.

Airline	Item	Q123 2022	Q123 2023	YoY variation
United	Salaries ($ Million)	8,466	10,946	29.3%
Airlines	ASMs (000,000)	183,564	217,606	18.5%
American	Salaries ($ Million)	9,773	10,891	11.4%
Airlines	ASMs (000,000)	194,264	207,950	7.0%
Delta	Salaries ($ Million)	8,832	10,838	22.7%
Airlines	ASMs (000,000)	173,720	203,571	17.2%
Southwest	Salaries ($ Million)	6,771	7,991	18.0%
Airlines	ASMs (000,000)	110,978	124,810	12.5%

Table 1: Variations in Salaries and ASMs

We have included a few links to some interesting recent articles that talk about what airlines are doing to get new pilots and about the power that pilot unions have in the airline industry.

American Airlines Dangles $250,000 Bonuses to Poach FedEx and UPS Pilots

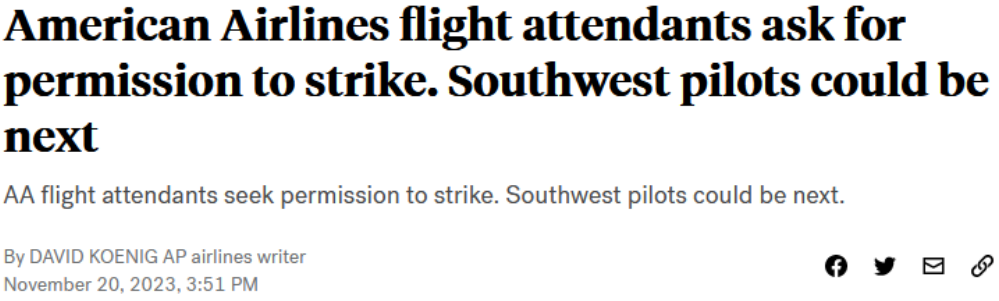
Passenger airlines are on a hiring spree for aviators with enough experience to fill the captain's seat

By Alison Sider Follow *and Esther Fung* Follow

Nov. 8, 2023 8:04 am ET

The Wall Street Journal, November 8th, 2023

https://www.wsj.com/business/airlines/american-airlines-dangles-250-000-bonuses-to-poach-fedex-and-ups-pilots-f9dd18fe



American Airlines flight attendants ask for permission to strike. Southwest pilots could be next

AA flight attendants seek permission to strike. Southwest pilots could be next.

By DAVID KOENIG AP airlines writer
November 20, 2023, 3:51 PM

ABC News, November 20th, 2023

https://abcnews.go.com/Business/wireStory/american-airlines-flight-attendants-permission-strike-southwest-pilots-105046117

3. METHODOLOGY AND VARIABLES USED FOR OUR VALUATION

* The data about cash flows, the recordings of Earnings Calls, and data available on balance sheets and income statements were retrieved from FactSet and from 10-Ks and 10-Qs.

Available Seat Miles (ASMs)

This indicator represents capacity (supply), and it is the number of miles flown times the seats available across the fleet. To forecast future ASMs starting in 2024, we computed the average percentage growth per year from 2011 to 2022 (excluding 2020 and 2021) and obtained 6.23%. Management did not give much detail in the last earnings call, but they mentioned that capacity is expected to be up 6% to 8% in 2024 and that the long-term plan is having a mid-single-digit growth level. For this reason, we decided to use the 6.23% that we obtained as future growth of ASMs. For Q4 of 2023, we used management's estimation of +21% vs. Q4 of 2022, which means a total +14.62% for 2023. (ASMs = Seats * Miles)

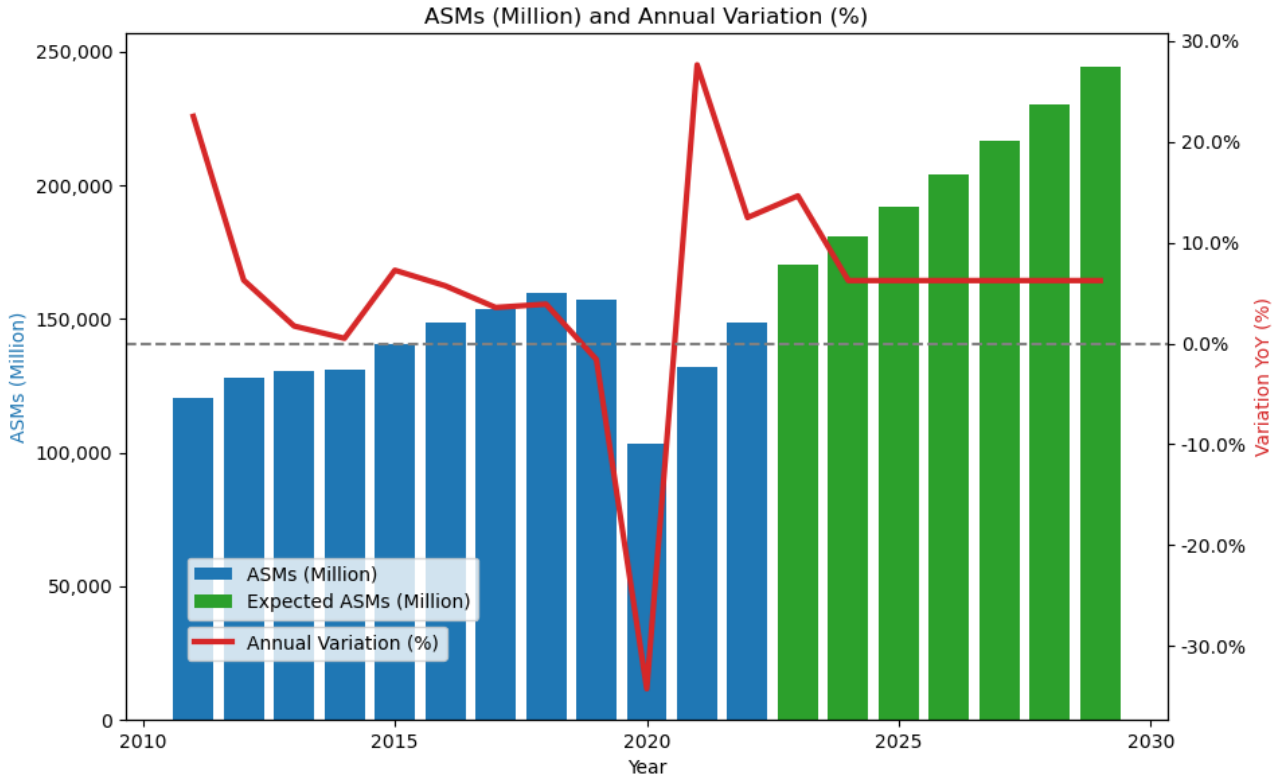


Figure 4: ASMs

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
ASM (Million)	131,004	140,501	148,522	153,811	159,795	157,253	103,456	132,006	148,467	170,172	180,770	192,028	203,987	216,692	230,187	244,523
% Var ASM	0.5%	7.2%	5.7%	3.6%	3.9%	-1.6%	-34.2%	27.6%	12.5%	14.6%	6.2%	6.2%	6.2%	6.2%	6.2%	6.2%

Table 2: ASMs Forecast

COGS (Operating Expense)

To forecast COGS, we initially chose to decompose this item into three components: Salaries, Fuel, and Other COGS. Additionally, given that costs are correlated with the level of operations measured through total ASMs, we computed the ratios of these three items over ASMs. This will allow us to decompose changes in COGS into two different effects. The first effect is the one produced by changes in the level of operations (variations in ASMs), and the other one is the effect of changes in the "price" of each item (for example, Total Salaries depend not only on variations of ASMs but also on the availability of pilots and crew members, and Total Fuel depends on variations of ASMs and variations of Jet Fuel Price).

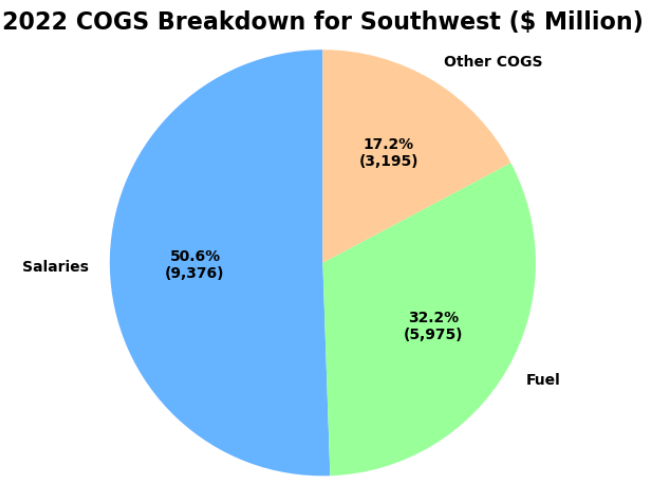


Figure 5: 2022 COGS (Operating Expense) Breakdown

The ratio of **Salaries over ASMs** in the third quarter of 2023 increased 4.46% vs. the same period of 2022 and we decided to use this same percentage increase over the fourth quarter of 2022 to obtain the fourth quarter of 2023. This generates Salaries over ASMs of 6.63 USD cents for 2023. This increase is supported by the pilot shortage, which is generating increases in salaries at a faster level than the increases in ASMs. As a matter of fact, the total amount spent on **Salaries** in Q3 of 2023 ($2,728 million) increased 17.5% vs. the same period of 2022, while ASMs increased only 12.5%. To forecast the years after 2023, we observed that Salaries over ASMs increased on average 4.15% from 2010 to 2019, but this number does not represent the current situation. For that reason, to forecast increases in Salaries over ASMs we used **5.00%** starting in 2024, which is the increase from 2022 to 2023. This number incorporates the situation of the pilot shortage.

To forecast **Fuel over ASMs**, we applied the increase from 2022 to 2023 in Q3 to Q4 of 2022, and obtained a total of 3.55 USD cents for 2023. To forecast the years after 2023, we looked at forecasts in Jet Fuel Prices. The first forecast that we used was obtained from BMI (a Fitch Solutions company). The second forecast was obtained from CME Group, which reports futures of Jet Fuel. We computed the average price variation per year of both forecasts and used that as future growth of Fuel over ASMs.

To forecast **Other COGS over ASMs**, we observed that this ratio remains stable around the average from 2009 to 2019 of **1.70 USD Cents**. Therefore, we used this number for the years after 2023. For 2023, given that we know Q1, Q2, and Q3, we estimated Q4 using the percentage increase of Q3 2023 vs. Q3 2022, over Q4 2022.

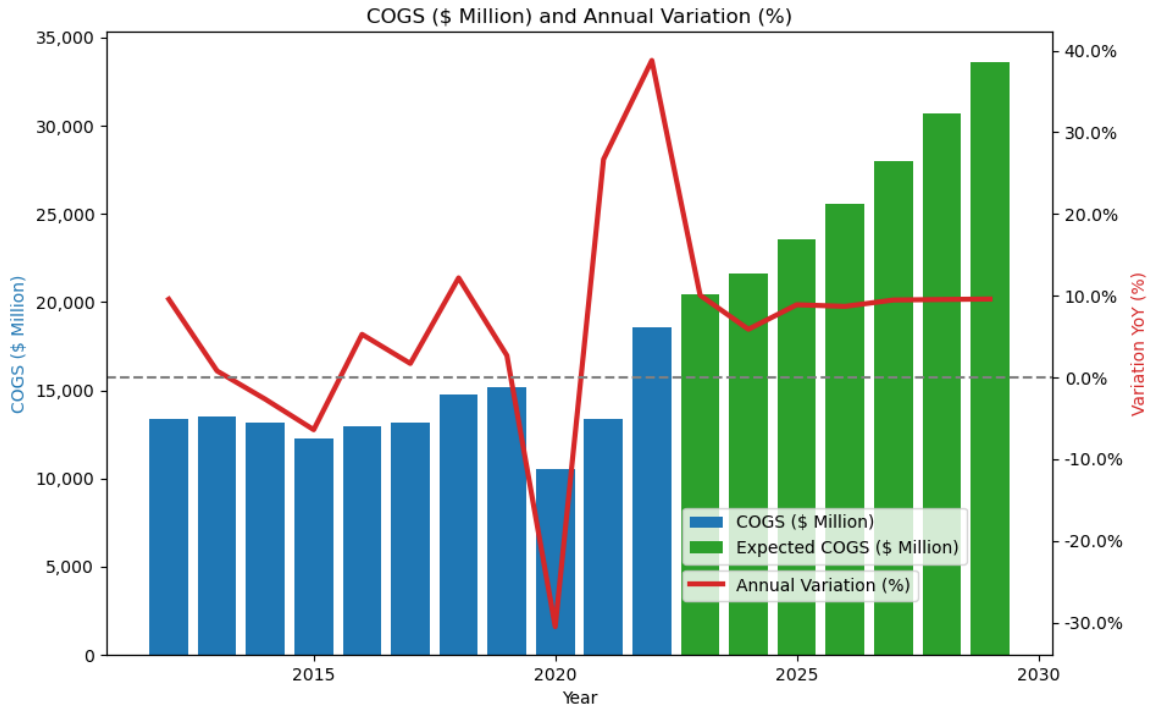


Figure 6: COGS (Operating Expense)

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Salaries/ASMs (USD cents)	4.1	4.5	4.6	4.7	4.8	5.3	6.6	5.9	6.3	6.6	7.0	7.3	7.7	8.1	8.5	8.9
% Var Salaries/ASMs	7.4%	9.5%	0.6%	3.9%	0.8%	10.2%	24.8%	-10.9%	7.7%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Fuel/ASMs (USD cents)	4.0	2.6	2.6	2.7	2.9	2.8	1.8	2.5	4.0	3.5	3.3	3.2	3.2	3.2	3.2	3.2
Var Jet Fuel Price (BMI)											-4.3%	0.9%	-1.9%	0.0%	0.0%	0.0%
Var Jet Fuel Price (CME)											-10.3%	-3.9%	-3.1%	0.0%	0.0%	0.0%
Var Jet Fuel Price (Average)											-7.3%	-1.5%	-2.5%	0.0%	0.0%	0.0%
Other COGS/ASMs (USD cents)	1.8	1.6	1.6	1.2	1.6	1.6	1.8	1.7	2.2	1.8	1.7	1.7	1.7	1.7	1.7	1.7
Total COGS/ASMs (USD cents)	10.0	8.8	8.7	8.6	9.2	9.7	10.2	10.1	12.5	12.0	12.0	12.3	12.5	12.9	13.3	13.8
ASMs (Million)	131,004	140,501	148,522	153,811	159,795	157,253	103,456	132,006	148,467	170,172	180,770	192,028	203,987	216,692	230,187	244,523
Total COGS ($ Million)	**13,146**	**12,305**	**12,954**	**13,175**	**14,780**	**15,176**	**10,547**	**13,362**	**18,546**	**20,411**	**21,614**	**23,536**	**25,583**	**28,008**	**30,679**	**33,623**
% Var COGS	-2.7%	-6.4%	5.3%	1.7%	12.2%	2.7%	-30.5%	26.7%	38.8%	10.1%	5.9%	8.9%	8.7%	9.5%	9.5%	9.6%

Table 3: COGS (Operating Expense) Forecast

Sales

To forecast sales, we needed to define and estimate different indicators:

1. *Load Factor (LF):* This is the ratio between RPMs (Revenue Passenger Miles, which is a measure of demand) and ASMs, and represents the level of occupancy of the seats of the airplanes. To forecast Q4 of 2023, we used the average LF of Q4 from 2009 to 2019 and obtained 81.87%. To forecast LFs for 2024 and future years, we observed the historical LFs and concluded that they remain very stable around the average from 2011 to 2023 (excluding 2020 to 2022) of **82.32%**. We used this number for future Load Factors. It seems that it is standard in this industry to have a Load Factor between 80% and 85%. For example, Alaska Airlines and Hawaiian Airlines had Load Factors of 84.61% and 84.00% respectively during a similar period. (LF = RPMs/ASMs)

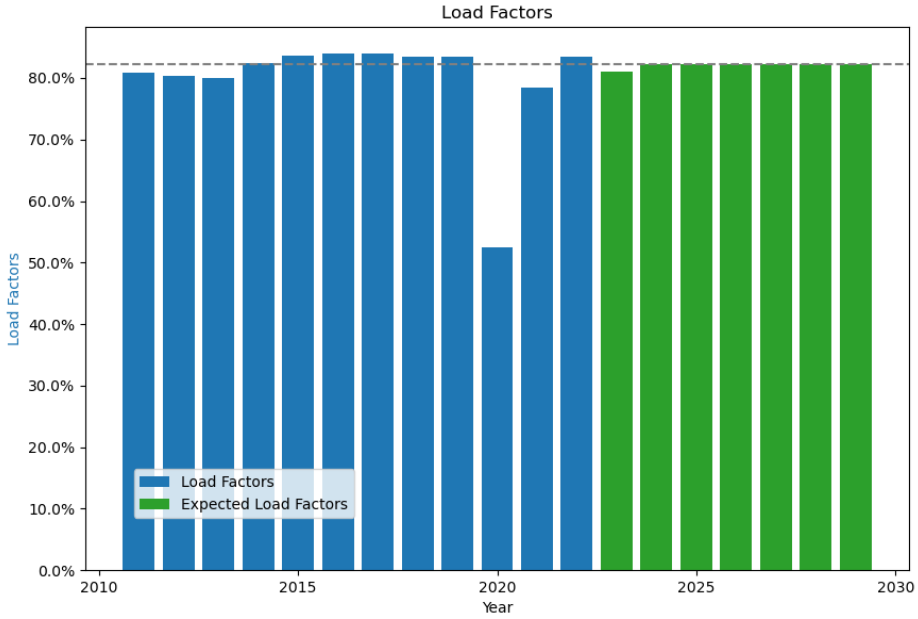


Figure 7: Load Factors

2. ***Operating Revenue per ASMs (RASM):*** This is the ratio between revenue and ASMs. (RASM = Sales/ASMs)

3. ***Effective Yield (Eff Yield):*** This is a measure of how profitable each passenger that flies with the airline is. It is measured as the ratio between Revenue and RPMs, and it is also equivalent to RASM over LF.
(Eff Yield = Sales/RPMs = RASM/LF). To forecast the Effective Yield we conducted a linear regression of percentual variations of **Effective Yield** vs. percentual variations of **ASMs** (this explains changes in prices given changes in supply), percentual variations of **COGS** (this explains the effect that changes in the costs of the airlines have over prices), percentual variations of U.S. **domestic flights** (this explains the effect of competition in the airline prices; data and forecast for this was obtained from IBISWorld) and percentual variation of U.S. **Corporate Profit** (this explains the effect that the U.S. economy has over prices; data and forecast for this was obtained from IBISWorld). The period used for the regression was from 2010 to 2019. The formula obtained for this regression is:

$$\Delta\% \, EffYield \; = \; 1.89\% - 0.20 \, \Delta\% ASMs + 0.14 \Delta\% COGS - 0.45 \Delta\% DomFli + 0.37 \Delta\% Corp \, \mathrm{Pr}$$

The adjusted R-squared was 84.43%. The negative sign in the ASMs coefficient means that Southwest has to decrease prices when it increases capacity (in other words, it is necessary to decrease prices to increase demand). The COGS coefficient implies that the company is able to pass on some of the cost increase to its passengers by increasing prices (this makes sense for the whole industry, because all the airlines suffer from higher jet fuel prices and from the pilot shortage). The Domestic Flights coefficient implies that when the number of flights in the whole industry increases, prices go down because of the competition between airlines for passengers. Finally, the coefficient of U.S. Corporate Profit implies that when the U.S. economy increases, airlines are able to increase prices and increase their profitability per passenger.

Finally, given that we have forecasts of ASMs, Load Factors, and Effective Yield, it is possible to compute the forecast of Sales starting in 2024. For Q4 of 2023, we used the information provided by management in the report of third quarter 2023 results. They mentioned that RASM in Q4 will be roughly –10% vs. Q4 of 2022, so we used this number to forecast RASM for Q4 of 2023.

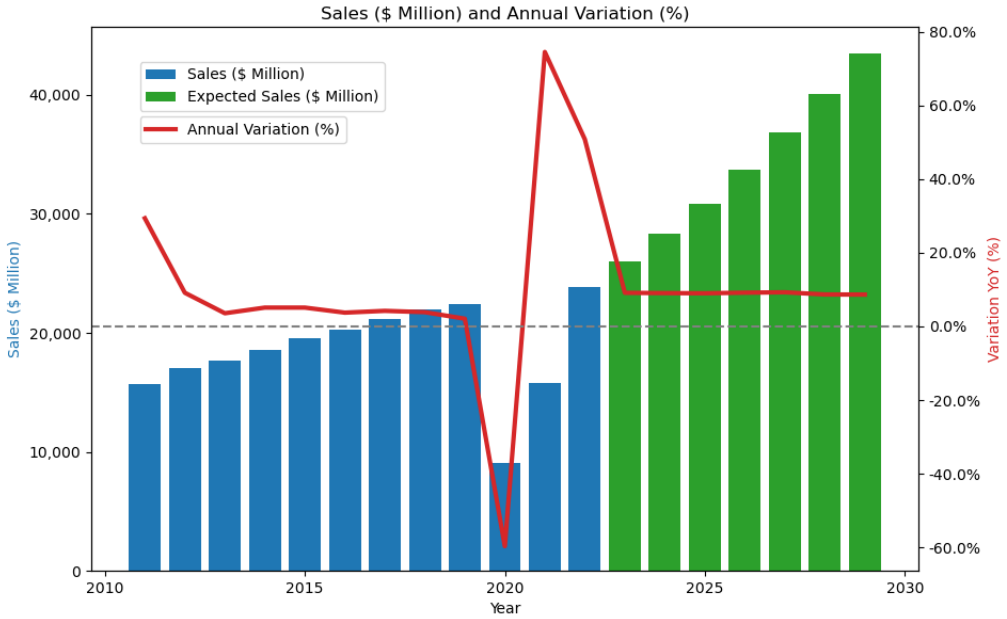


Figure 8: Annual sales ($ Million)

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
ASM (Million)	131,004	140,501	148,522	153,811	159,795	157,253	103,456	132,006	148,467	170,172	180,770	192,028	203,987	216,692	230,187	244,523
RPM (Million)	108,035	117,500	124,798	129,041	133,322	131,345	54,221	103,561	123,843	137,815	148,815	158,084	167,929	178,387	189,497	201,299
Load Factor	82.5%	83.6%	84.0%	83.9%	83.4%	83.5%	52.4%	78.5%	83.4%	81.0%	82.3%	82.3%	82.3%	82.3%	82.3%	82.3%
Eff Yield ($ cents)	17.2	16.7	16.4	16.4	16.5	17.1	16.7	15.2	19.2	18.9	19.0	19.5	20.1	20.7	21.1	21.6
% Var ASM	0.5%	7.2%	5.7%	3.6%	3.9%	-1.6%	-34.2%	27.6%	12.5%	14.6%	6.2%	6.2%	6.2%	6.2%	6.2%	6.2%
% Var COGS	-2.7%	-6.4%	5.3%	1.7%	12.2%	2.7%	-30.5%	26.7%	38.8%	10.1%	5.9%	8.9%	8.7%	9.5%	9.5%	9.6%
% Var Dom Trips											0.9%	1.8%	1.8%	1.7%	1.8%	1.7%
% Var US Corp Profit											-0.2%	4.2%	4.7%	4.5%	3.1%	2.9%
% Var Effective Yield	1.5%	-2.9%	-2.1%	0.1%	0.5%	3.6%	-2.2%	-8.7%	26.1%	-1.9%	1.0%	2.6%	2.8%	2.9%	2.3%	2.3%
RASM ($ cents)	14.2	14.0	13.8	13.8	13.7	14.3	8.7	12.0	16.0	15.3	15.7	16.1	16.5	17.0	17.4	17.8
Sales ($ Million)	**18,605**	**19,556**	**20,288**	**21,146**	**21,965**	**22,426**	**9,048**	**15,790**	**23,814**	**25,987**	**28,340**	**30,891**	**33,723**	**36,850**	**40,048**	**43,511**
% Var Sales	5.1%	5.1%	3.7%	4.2%	3.9%	2.1%	-59.7%	74.5%	50.8%	9.1%	9.1%	9.0%	9.2%	9.3%	8.7%	8.6%

Table 4: Sales Forecast

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Sales ($ Million)	18,605	19,556	20,288	21,146	21,965	22,426	9,048	15,790	23,814	25,987	28,340	30,891	33,723	36,850	40,048	43,511
COGS ($ Million)	13,146	12,305	12,954	13,175	14,780	15,176	10,547	13,362	18,546	20,411	21,614	23,536	25,583	28,008	30,679	33,623
Gross Profit ($ Million)	**5,459**	**7,251**	**7,334**	**7,971**	**7,185**	**7,250**	**-1,499**	**2,428**	**5,268**	**5,576**	**6,726**	**7,355**	**8,140**	**8,842**	**9,369**	**9,888**
Sales Margin	29.3%	37.1%	36.1%	37.7%	32.7%	32.3%	-16.6%	15.4%	22.1%	21.5%	23.7%	23.8%	24.1%	24.0%	23.4%	22.7%

Table 5: Gross Profit and Sales Margin Forecast

The pilot shortage is putting pressure on prices through three distinct channels. The first one is by **variations of ASMs** lower than what Southwest (and the other airlines) would like in an unconstrained environment. The second one is through higher **COGS** which are passed on to passengers directly via prices. The third one is

through lower **competition** and **trips** in the industry as a whole. It is necessary to mention that in our valuation all of this is considered in the inputs to forecast Effective Yield. In summary, the final result of having the pilot shortage and higher jet fuel prices is lower sales margins than those of the pre-Covid period.

SG&A (Other Operating Expense)

For SG&A, we used the average of the ratio of SG&A over Sales from 2016 to 2023 (excluding 2020 and 2021). We obtained a ratio of **12.90%**. To forecast Q4 of 2023, we used the historical contribution (from 2009 to 2019) of the fourth quarter to the total of the year.

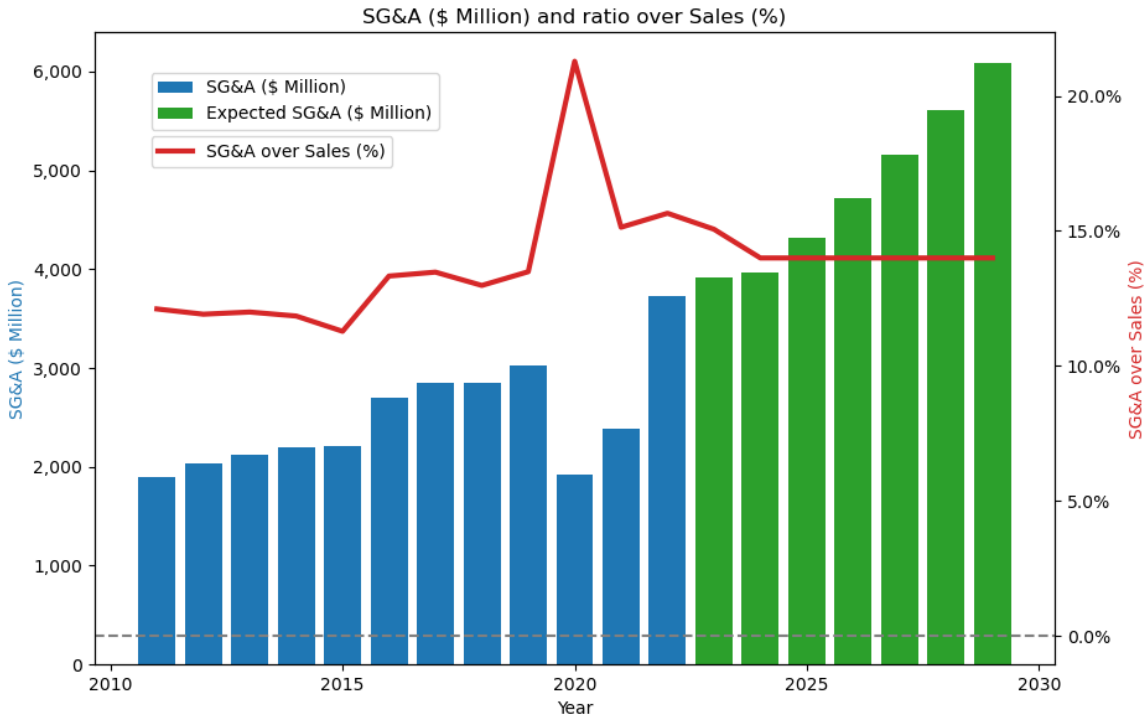


Figure 9: SG&A

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Sales ($ Million)	18,605	19,556	20,288	21,146	21,965	22,426	9,048	15,790	23,814	25,987	28,340	30,891	33,723	36,850	40,048	43,511
SG&A ($ Million)	2,204	2,206	2,704	2,849	2,851	3,025	1,926	2,390	3,728	3,914	3,967	4,324	4,721	5,158	5,606	6,091
SG&A/Sales	11.8%	11.3%	13.3%	13.5%	13.0%	13.5%	21.3%	15.1%	15.7%	15.1%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%

Table 6: SG&A forecast

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Sales ($ Million)	18,605	19,556	20,288	21,146	21,965	22,426	9,048	15,790	23,814	25,987	28,340	30,891	33,723	36,850	40,048	43,511
COGS ($ Million)	13,146	12,305	12,954	13,175	14,780	15,176	10,547	13,362	18,546	20,411	21,614	23,536	25,583	28,008	30,679	33,623
Gross Profit ($ Million)	5,459	7,251	7,334	7,971	7,185	7,250	-1,499	2,428	5,268	5,576	6,726	7,355	8,140	8,842	9,369	9,888
SG&A ($ Million)	2,204	2,206	2,704	2,849	2,851	3,025	1,926	2,390	3,728	3,914	3,967	4,324	4,721	5,158	5,606	6,091
EBITDA ($ Million)	3,255	5,045	4,630	5,122	4,334	4,225	-3,425	38	1,540	1,662	2,759	3,031	3,419	3,684	3,763	3,797

Table 7: EBITDA Forecast

CAPEX, PP&E, and D&A

To forecast Q4 2023's CAPEX, we used the information provided by management in the last earnings call. We know from the last 10-Q that CAPEX during the first three quarters of 2023 was $2,835 million, but management mentioned that CAPEX during 2023 will be roughly $3,500 million, so we estimated $665 million for Q4 of 2023. To forecast future CAPEX, we used the values of future capital commitments associated with the deliveries of Boeings 737. These numbers were provided by management in the report of Q3's results.

To forecast PP&E (gross) we added the value of CAPEX per year to the value of PP&E (gross) at the end of each previous year.

To estimate D&A, we computed the historical ratio of D&A over PP&E (net) at the end of the previous year and used this ratio (which is 7.20%) for the future. For Q4 2023, we used the average historical contribution of the fourth quarter to the total of the year.

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
PP&E Gross ($ Million)	22,513	24,685	26,464	28,229	29,256	29,062	29,466	29,164	32,378	35,417	37,517	39,217	41,017	43,617	46,517	51,817
Acc. Dep. ($ Million)	8,221	9,084	9,420	9,690	9,731	10,688	11,743	12,732	13,642	14,776	16,262	17,793	19,336	20,897	22,533	24,260
PP&E Net ($ Million)	14,292	15,601	17,044	18,539	19,525	18,374	17,723	16,432	18,736	20,641	21,255	21,424	21,681	22,720	23,984	27,557
CAPEX ($ Million)	1,828	2,143	2,147	2,249	1,976	1,027	515	511	3,946	3,500	2,100	1,700	1,800	2,600	2,900	5,300
ASMs ($ Million)	131,004	140,501	148,522	153,811	159,795	157,253	103,456	132,006	148,467	170,172	180,770	192,028	203,987	216,692	230,187	244,523
D&A ($ Million)	938	1,015	1,222	1,218	1,201	1,220	1,255	1,272	1,351	1,494	1,486	1,531	1,543	1,561	1,636	1,727
D&A/PP&E Net LY	7.0%	7.1%	7.8%	7.1%	6.5%	6.2%	6.8%	7.2%	8.2%	8.0%	7.2%	7.2%	7.2%	7.2%	7.2%	7.2%

Table 8: CAPEX, PP&E, and D&A Forecast

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Sales ($ Million)	18,605	19,556	20,288	21,146	21,965	22,426	9,048	15,790	23,814	25,987	28,340	30,891	33,723	36,850	40,048	43,511
COGS ($ Million)	13,146	12,305	12,954	13,175	14,780	15,176	10,547	13,362	18,546	20,411	21,614	23,536	25,583	28,008	30,679	33,623
Gross Profit ($ Million)	5,459	7,251	7,334	7,971	7,185	7,250	-1,499	2,428	5,268	5,576	6,726	7,355	8,140	8,842	9,369	9,888
SG&A ($ Million)	2,204	2,206	2,704	2,849	2,851	3,025	1,926	2,390	3,728	3,914	3,967	4,324	4,721	5,158	5,606	6,091
EBITDA ($ Million)	3,255	5,045	4,630	5,122	4,334	4,225	-3,425	38	1,540	1,662	2,759	3,031	3,419	3,684	3,763	3,797
D&A ($ Million)	938	1,015	1,222	1,218	1,201	1,220	1,255	1,272	1,351	1,494	1,486	1,531	1,543	1,561	1,636	1,727
EBIT ($ Million)	2,317	4,030	3,408	3,904	3,133	3,005	-4,680	-1,234	189	168	1,272	1,500	1,876	2,123	2,127	2,070

Table 9: EBIT Forecast

Working Capital

To estimate future variations of working capital that will affect the free cash flows starting in 2023, we used the historical average from 2010 to 2019 of the ratio between variations in working capital vs. sales. The value that we obtained is **–2.69%**.

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Changes in WC ($ Million)	-48	-38	-649	-407	-940	-523	-1,583	-69	-1,442	-698	-762	-830	-906	-990	-1,076	-1,169
D WC/Sales	-0.3%	-0.2%	-3.2%	-1.9%	-4.3%	-2.3%	-17.5%	-0.4%	-6.1%	-2.7%	-2.7%	-2.7%	-2.7%	-2.7%	-2.7%	-2.7%

Table 10: Variations of Working Capital Forecast

Debt Repayment, Interest Expense, and Cost of Debt

Currently, Southwest has **$9,273 Million in Debt** (the detail of the coupon rates, maturities, amounts outstanding, and ISIN numbers of the bonds can be found in the table below). This is 62.56% of the total market capitalization. Additionally, the company has **$11,733 in Cash & Short-Term Investments** and its current rating is **BBB** according to S&P (this rating was obtained from FactSet). However, on December 7th, 2022, Southwest's management presented during the Investor Day that they plan to reduce the leverage of 46% to the low-to-mid 30% range. At that time, the market capitalization was roughly $22 Billion, which means a debt target of about **$7,144 Million**. For this reason, we assumed that Southwest will repay its debt without issuing new debt until they reach this target. We are forecasting that after they reach this target, they will issue debt as necessary to maintain this new level of debt. Although Southwest has enough Cash and Cash Equivalents to repay all its debt, they will need leverage to fund their CAPEX.

Additionally, although the current **Effective Interest Rate** is roughly **2.59%**, it does not represent the current environment with higher interest rates than those of the past. For that reason, we are computing future Effective Interest Rates assuming that the Interest Rate of the debt issued in the future will be roughly the current risk-free rate. The Risk-free Rate that we are using is **4.49%**, which is the yield of the 5-year Treasury Note (TRYUS5Y in FactSet).

Finally, from the table with the details of Southwest's Debt we observe that the weighted average of the yields to worst of the bonds traded in the market (which were obtained from FactSet) is **5.07%**. We used this number as the **Cost of Debt**. Additionally, to value the Other Debt (the one that is not publicly traded), we assumed a Yield of 5.07% and an interest rate that makes the total Effective Interest Rate equal to the 2.59% that we calculated before.

Debt Instrument	YTW (%)	$ Million Outstanding	Coupon rate (%)	Payment freq.	Previous coupon	Next coupon	Maturity	Present Value ($ Million)
US844741BG22	3.03	1,611	1.25	Semi-Annual	Nov-23	May-24	May-25	1,560
US844741BJ60	6.00	1,302	5.25	Semi-Annual	Nov-23	May-24	May-25	1,259
US844741BC18	5.63	300	3.00	Semi-Annual	Nov-23	May-24	Nov-26	283
US844741AN81	6.24	100	7.38	Semi-Annual	Sep-23	Mar-24	Mar-27	101
US844741BK34	5.75	1,727	5.13	Semi-Annual	Jun-23	Dec-23	Jun-27	1,709
US844741BE73	5.89	300	3.45	Semi-Annual	Nov-23	May-24	Nov-27	278
US844741BF49	5.84	500	2.63	Semi-Annual	Aug-23	Feb-24	Aug-29	428
Total	5.07	5,840						5,619
Other Debt		3,433					2031	2,511
Total Debt	**5.07**	**9,273**	**2.59**					**8,130**

Table 11: Detail of Southwest's Debt

Year	2023	2024	2025	2026	2027	2028	2029
Total Debt ($ Million)	**9,266**	**9,266**	**7,144**	**7,144**	**7,144**	**7,144**	**7,144**
Debt Repayment ($ Million)	85	0	2,913	300	2,127	0	500
Debt Issued ($ Million)	0	0	791	300	2,127	0	500
Debt Repayment (Net, $ Million)	85	0	2,122	0	0	0	0
Debt at Old Rate ($ Million)	9,266	9,266	6,353	6,053	3,926	3,926	3,426
Debt at current Rf ($ Million)	0	0	791	1,091	3,218	3,218	3,718
Effective Interest Rate	2.59%	2.59%	2.80%	2.88%	3.45%	3.45%	3.58%
Interest Expense ($ Million)	**242**	**240**	**230**	**206**	**246**	**246**	**256**

Table 12: Interest Expense and Debt Repayment Forecast

Non-operating Income - Unusual Expenses, Effective Tax Rate, Income Tax, and Net Income

To forecast **Non-operating Income and Unusual Expenses** starting in 2024, we used the average of the difference between the two variables from 2009 to 2022, which is **$137 Million**. For Q4 of 2023 we used one fourth of this number ($34 Million).

Regarding the Effective Tax Rate, in the last earnings call presentation we observed that management is using **23%**, so we will use that number.

Therefore, taking into consideration all our previous forecasts, our estimates of future Net Income are on the next table:

Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Sales ($ Million)	18,605	19,556	20,288	21,146	21,965	22,426	9,048	15,790	23,814	25,987	28,340	30,891	33,723	36,850	40,048	43,511
COGS ($ Million)	13,146	12,305	12,954	13,175	14,780	15,176	10,547	13,362	18,546	20,411	21,614	23,536	25,583	28,008	30,679	33,623
Gross Profit ($ Million)	5,459	7,251	7,334	7,971	7,185	7,250	-1,499	2,428	5,268	5,576	6,726	7,355	8,140	8,842	9,369	9,888
SG&A ($ Million)	2,204	2,206	2,704	2,849	2,851	3,025	1,926	2,390	3,728	3,914	3,967	4,324	4,721	5,158	5,606	6,091
EBITDA ($ Million)	3,255	5,045	4,630	5,122	4,334	4,225	-3,425	38	1,540	1,662	2,759	3,031	3,419	3,684	3,763	3,797
D&A ($ Million)	938	1,015	1,222	1,218	1,201	1,220	1,255	1,272	1,351	1,494	1,486	1,531	1,543	1,561	1,636	1,727
EBIT ($ Million)	2,317	4,030	3,408	3,904	3,133	3,005	-4,680	-1,234	189	168	1,272	1,500	1,876	2,123	2,127	2,070
Interest Expense ($ Million)	126	94	77	44	85	51	302	432	301	242	240	230	206	246	246	256
Non-Op. Inc-Un. Exp. ($ Million)	-371	-456	-923	-596	81	3	726	2,991	839	591	137	137	137	137	137	137
EBT (Pre tax-Income)	1,820	3,480	2,408	3,264	3,129	2,957	-4,256	1,325	727	517	1,169	1,407	1,807	2,013	2,018	1,951
Income Taxes ($ Million)	681	1,299	1,268	-93	700	656	-1,182	348	188	119	269	324	416	463	464	449
Net Income ($ Million)	**1,139**	**2,181**	**1,140**	**3,357**	**2,429**	**2,301**	**-3,074**	**977**	**539**	**398**	**900**	**1,084**	**1,392**	**1,550**	**1,554**	**1,502**

Table 13: Net Income Forecast

Risk-free Rate

For the risk-free rate we used the yield provided by FactSet for the five-year Treasury Note (TRYUS5Y). This value is **4.49%** per year.

Excess Return on the Market

The number that we are using is **6.43%** per year, which is the effective annual excess returns of the U.S. Market between 1927 and 2022.

Equity Beta and Discount Rate of Equity

To determine the equity beta to use for our valuation, we observed the rolling betas (using regressions with 60 months each of past data) of Southwest. We concluded that the current level of beta is close to its historical average, even when we take into consideration the period before Covid. For that reason, we decided to use the current equity beta, which is 1.1399. The data used to estimate the betas was retrieved from Yahoo Finance.

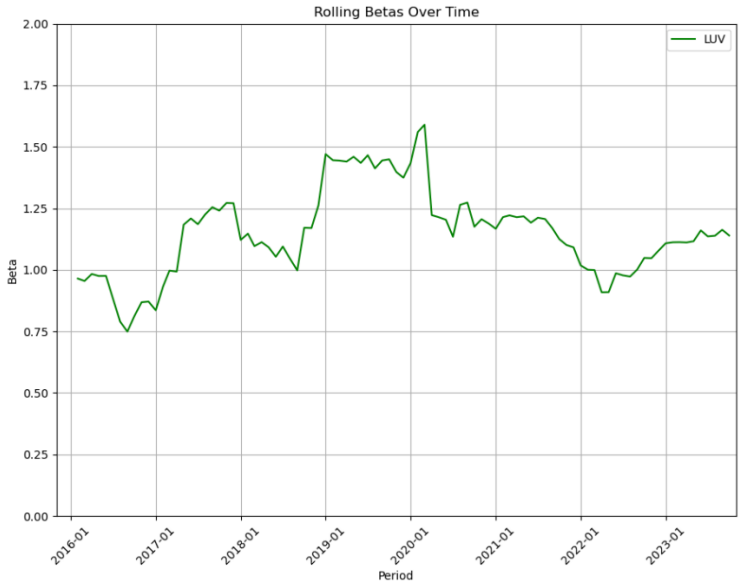


Figure 10: Rolling betas

R_F	β_E	$R_M - R_F$	R_E
4.49%	1.1399	6.43%	11.8192%

Table 14: Cost of Equity

Free Cash Flows, Discount Rates, and Adjusted Present Value (APV)

Given that we are assuming that the level of debt will decline over time and that the effective interest rate will increase, we will value the firm using the APV method. To use this approach, we need to find the unlevered discount rate. This is, finding rA that satisfies:

$$r_E = r_A\left[1+\frac{D}{E}\left(1-\frac{T_C r_D}{1+r_D}\right)\right]-r_D\left[\frac{D}{E}\left(1-\frac{T_C r_D}{1+r_D}\right)\right].$$

We solved it and found a value of **9.4461%**.

Parameter	Value
Risk-free Rate	4.5%
Excess Return on the Market	6.4%
Equity Beta	1.1
Cost of Equity (rE)	11.8%
Cost of Debt (rD)	5.1%
PV of Debt (D, $ Million)	8,130
Market Cap (E, $ Million)	14,823
Effective Tax Rate Tc	23.0%
(D/E) (1 - (Tc rD/(1 + rD)))	0.54
Unlevered discount rate (rA)	9.4%
Terminal Growth	2.0%

Table 15: Inputs and estimates for the APV valuation

For the Free Cash Flows, we used the following formula:

$$FCF = (EBIT + Non-op.Income)(1 - T_c) + D\&A - CAPEX - \Delta WC$$

To discount the free cash flows, given that we are in Q4, we will not discount the number of Q4 2023, and we will discount the free cash flows of 2024 considering half of one year. After 2024, all the discount factors increase by one plus the unlevered discount rate over the discount factor of the previous year. For the terminal value, we used the average of the Free Cash Flows from 2024 to 2029 and applied a 2% terminal growth rate in perpetuity.

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023 Q123	2023 Q4	2023	2024	2025	2026	2027	2028	2029	2029 Terminal
EBIT + NOI-UE ($ Million)	3,574	2,485	3,308	3,214	3,008	-3,954	1,757	1,028	1,097	-337	759	1,409	1,637	2,013	2,260	2,264	2,207	
Effective Tax Rate	37%	53%	-3%	22%	22%	28%	26%	26%	22%	20%	23%	23%	23%	23%	23%	23%	23%	
(EBIT+NOI-UE)x(1-Tc) ($ Million)	2,240	1,176	3,402	2,495	2,341	-2,856	1,296	762	857	-268	585	1,085	1,260	1,550	1,740	1,743	1,699	
(+) D&A ($ Million)	1,015	1,222	1,218	1,201	1,220	1,255	1,272	1,351	1,107	387	1,494	1,486	1,531	1,543	1,561	1,636	1,727	
(-) CAPEX ($ Million)	2,143	2,147	2,249	1,976	1,027	515	511	3,946	2,835	665	3,500	2,100	1,700	1,800	2,600	2,900	5,300	
(-) D WC ($ Million)	-38	-649	-407	-940	-523	-1,583	-69	-1,442	-719	21	-698	-762	-830	-906	-990	-1,076	-1,169	
Free Cash Flow ($ Million)	**1,150**	**900**	**2,778**	**2,660**	**3,057**	**-533**	**2,126**	**-391**	**-152**	**-567**	**-724**	**1,233**	**1,921**	**2,199**	**1,692**	**1,556**	**-704**	**17,675**
Discount Factor										1		1.05	1.14	1.25	1.37	1.50	1.64	1.64
Present Value ($ Million)										**-567**		**1,179**	**1,678**	**1,755**	**1,233**	**1,036**	**-429**	**10,758**

Table 16: Free Cash Flows and Present Value

To estimate the Tax Shield per year, we multiplied the Interest Expense and the Effective Tax Rate. Given that the Interest Expense is known for 2024 and that it has the same risk of debt, we will discount it using the cost of debt (with the half-year adjustment). For the years after 2025, we are forecasting that the company will issue debt to reach its target leverage, but the company will be able to issue new debt only if it has a good performance. Therefore, the discount factors of the tax shield will increase every year by one plus the unlevered discount rate. In other words, the discount factors will increase by one plus the discount rate of the operating assets, because there is risk associated with the future values of debt. For the terminal value, we applied a terminal growth rate of 2% to the tax shield in 2029.

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023 Q123	2023 Q4	2023	2024	2025	2026	2027	2028	2029	2029 Terminal
Interest Expense	94	77	44	85	51	302	432	301	179	63	242	240	230	206	246	246	256	
Effective Tax Rate	37%	53%	-3%	22%	22%	28%	26%	26%	22%	20%	23%	23%	23%	23%	23%	23%	23%	
Tax Shield ($ Million)	**35**	**41**	**-1**	**19**	**11**	**84**	**113**	**78**	**39**	**13**	**56**	**55**	**53**	**47**	**57**	**57**	**59**	**790**
Discount Factor										1		1.03	1.12	1.23	1.34	1.47	1.61	1.61
Present Value ($ Million)										**13**		**54**	**47**	**39**	**42**	**38**	**37**	**491**

Table 17: Tax Shield and Present Value of Tax Shield

Finally, the enterprise value, estimated market capitalization, and share price are:

Item	Value
PV of Free Cash Flows ($ Million)	16,644
PV of Tax Shield ($ Million)	760
Enterprise Value ($ Million)	**17,404**
PV of Debt ($ Million)	8,130
Estimated Market Cap ($ Million)	**9,274**
Shares Outstanding (000,000)	596
Estimated Price per Share ($)	**15.56**

Table 18: Enterprise Value and Estimated Market Capitalization

The market value that we obtained is lower than the current market capitalization by 37.43%, therefore our recommendation is to **SELL.**

- The stock price has fallen 36.72% in the past 12 months, which indicates that the market is incorporating the information of the new scenario for this industry, which includes higher fuel prices and higher labor costs (therefore, lower sales margins) than in the past.
- We believe that Southwest is overvalued because the pilot shortage is a relatively new problem and the market as a whole has not been able to understand how serious it is and for how long it will last. It is true that part of the increase in costs will be passed on to the passengers, but airlines cannot increase their prices indefinitely. The industry is very competitive and higher prices can influence the behavior of customers. For example, if travel expenses become significant, some companies might easily replace flights with virtual meetings.
- Finally, from December of 2022 to July of 2023 the Short Interest measured as the number of shares shorted divided by the number of shares outstanding increased from 1.5% to 4.4%. Although these numbers are lower than those of American Airlines and Hawaiian Airlines (both have financial problems and present short interests over 10%), Southwest's numbers show a trend with an increasing short interest.

Figure 11: 12-month Share Performance: Yahoo Finance

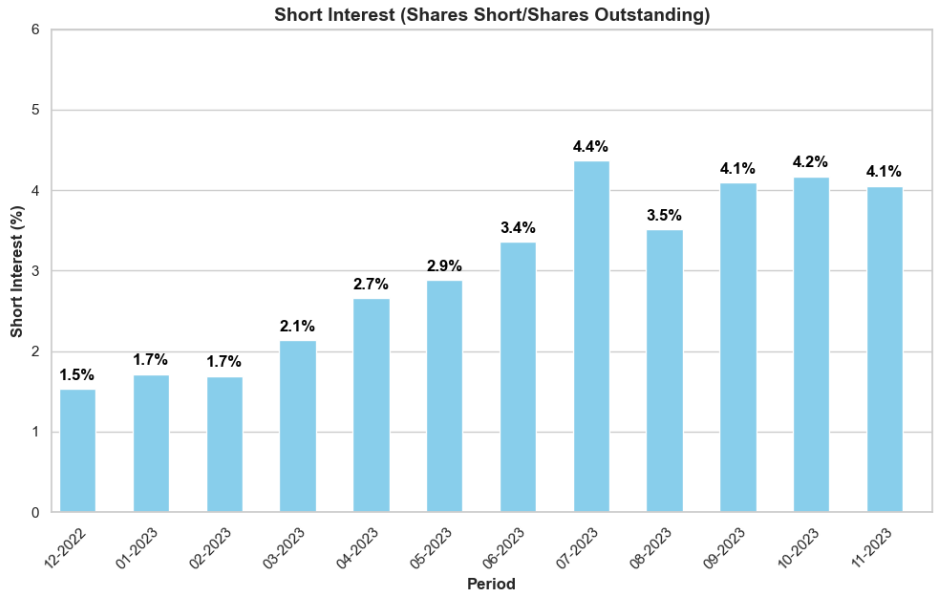


Figure 12: Southwest's Short Interest over time. Data from MarketBeat

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