



**Boeing AH-64 Apache:
Identifying Operations Opportunities:
United States, France or Brazil**



Case Summary

The Boeing Defense, Space & Security (BDS), part of The **Boeing Company** (NYSE: BA), produces the **AH-64 Apache** is a four-blade, twin-engine attack helicopter with a tailwheel-type landing gear arrangement. The Boeing Company is considering setting up a new plant to meet increasing demand in the attack helicopter space. The client has considered three sites to setup operations – **Brazil, France** and the **US**, and needs help in deciding which one to choose.



Executive Summary

The scope of this consulting project was to analyze the American, French, and Brazilian business environment and make recommendations on whether Boeing should go ahead and set-up operations in one of the countries to meet increasing demand in the attack helicopter space. After structuring our consulting engagement with our client, we began to work on the project by using a wide range of consulting methodologies to find important information about the potential investment destination. Our team conducted a SWOT analysis, PESTLE analysis, as well as Porter's Five Forces analysis of Boeing. The information from the analysis formed the basis of our findings and final recommendations for our client. We classified our findings in two categories, the challenges and benefits of investing in the specific country. After further research of Brazil and France we found that building the Apache plant in those places wouldn't be ideal and for more specifications one could see the information used in this presentation. Therefore, the best option for Boeing to set up its AH-64 Apache plant would be in the United States due to its economic and political relations with the major buyers of the helicopter.

Agenda

- Industry Analysis
- Company & Product Overview
- Business Approach
- Political & Strategic Approach
- Recommendation

The Boeing Company

- Headquartered out of Chicago Boeing employs more than 160,000 across the US and in 70 countries
- World's largest aerospace company and leading manufacturer of commercial airplanes, defense, space, and security systems
- Supports airlines and U.S. allied government customers in more than 90 countries
- Produce:
 - Commercial and military aircraft
 - Weapons
 - Electronic and defense systems
 - Satellites
 - Launch systems



Source: [Boeing](#)

Boeing-Porter's Five Forces

Threat of New Entry

- Low
- There is high barriers to entry.
- Skilled Human resources.
- High investments in the supply chain and operations.

Supplier Power

- Moderate Power
- Boeing relies on suppliers for materials as titanium and aluminum.

Competitive Rivalry

- High Level
- Lot of competition in the industry

Customer Power

- Moderate low
- High Switching Costs
- High level of technological innovation

Threat of Substitution

- Low
- Number of aircraft manufacturers is low.
- The company is always loaded with orders.

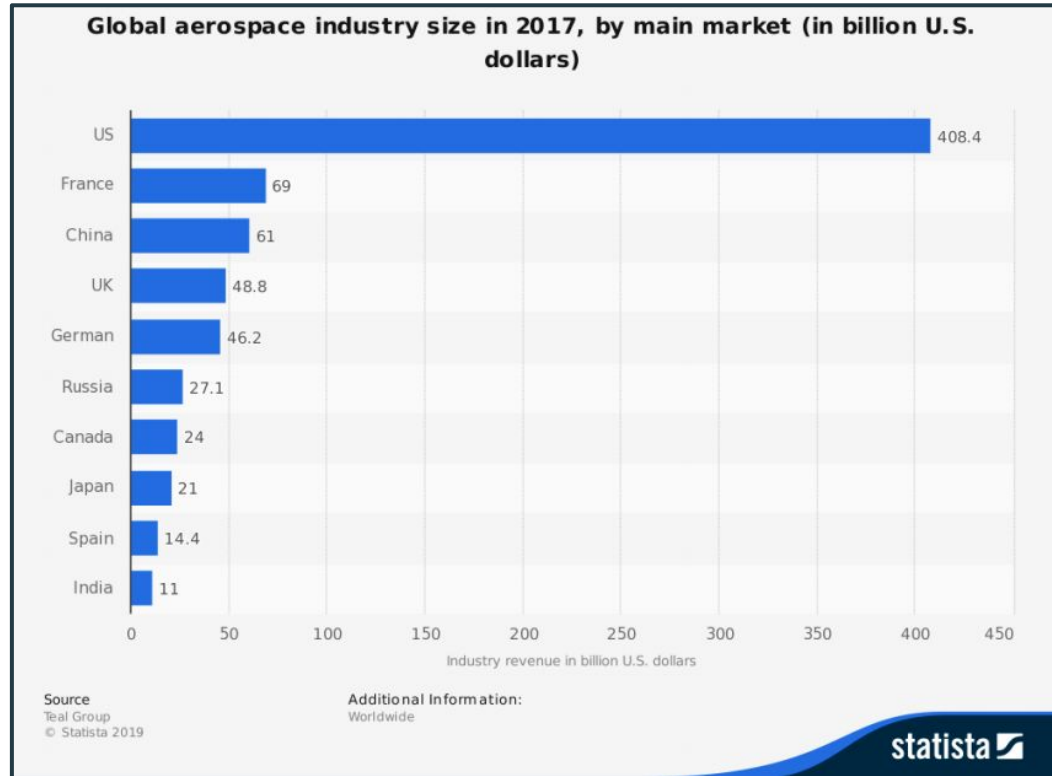
Source [Deloitte](#)

1.

**The Industry, Company and Product
Overview**

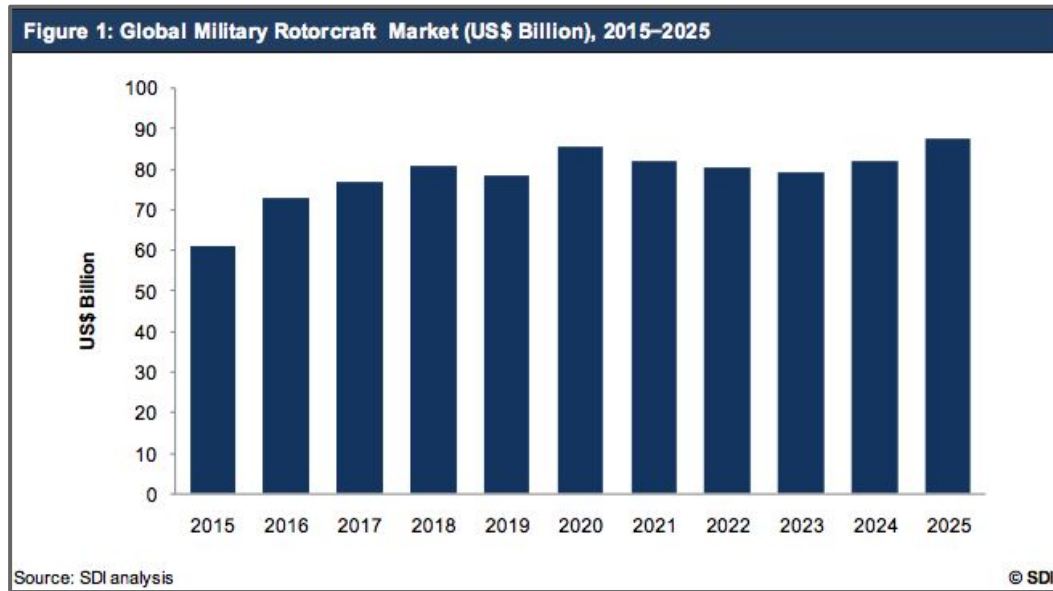
The Aerospace Industry

- According to the *Global aerospace industry size in 2017, by market* the US is the biggest market for aerospace products with 408 b. USD, France is the second with 69 b. USD and Brazil is not on the top 10 list.



Analysis of the Rotorcraft Market

- The Rotorcraft Market is anticipated to register a Compound annual growth rate of 5.3% over the forecast period 2018-2023 (Defence and Aerospace Week, 2018).



- According to the *Strategic Defence Intelligence Report*, the global rotorcraft market is expected to remain steady, with slight increase in demand in 2025.

The Military Helicopter Demand

- The global military helicopter market is estimated to register a CAGR of nearly **8.4%** during the forecast period of 2018 to 2023.
- Demand for military helicopters is driven by “rapidly evolving global geopolitical dynamics & equations marked by increasing threat from extremism, terrorism, resurgence of conventional state based threats, compounding nature of overall threat perception, political instability across some regions and withering down of traditional, rule based world order” (Defense & Aerospace Week, 2016).

Demand Forecast per Region

- **China:** China’s 2018 defense budget grew 8.1 percent year over year to US\$175 billion, which is the largest increase in the past three years. The country’s defense expenditure is projected to grow in the range of 9–10 percent in the near future.
- **France:** Military spending in France is projected to increase by 5 percent per year until 2022.
- **India:** The 2018–19 the defense budget for the country grew by 7.7 % from the 2017–18 budget to US\$43.8 billion.
-

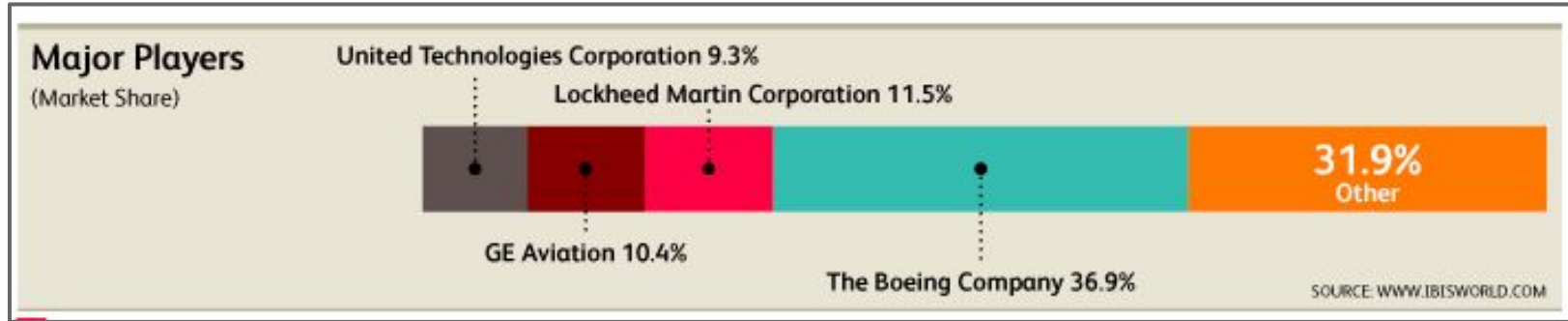
The Boeing Company

SWOT Analysis

Strengths: <ul style="list-style-type: none">● Strong Research and Development Capabilities● Strengthen Competitiveness● <u>Geographic Diversification Minimizes Business Risks</u>	Weaknesses: <ul style="list-style-type: none">● Larger Dependence on Subcontractors and Suppliers● Declined Liquidity Position
Opportunities: <ul style="list-style-type: none">● Positive Outlook for Commercial Aviation● <u>Growing Global Aerospace and Defense Market</u>	Threats: <ul style="list-style-type: none">● Intense Competition in the Defence Aircraft Market and the● Airline Industry● Fixed-Price Contracts <p style="text-align: right;">Source: Market Line</p>

According to the presented SWOT analysis, the Boeing company possesses strength in geographic diversification. The company serves government customers in more than 150 countries. Additionally, “Boeing employs more than 153,000 people across the United States and in more than 65 countries”(Boeing, 2019).

The Boeing Company



- According to Ibis World, the Boeing Company holds 36.9% of the global Aircraft, Engine and Parts Manufacturing industry.

The AH-64 Apache

- First AH-64A was delivered to the U.S. Army in January 1984 (Boeing, 2019).
- In 2017 The Boeing Company and the U.S. government signed a **five-year, \$3.4 billion contract** through which the Army, and a customer outside the U.S., will acquire the latest Apache attack helicopter.
- Boeing has delivered more than 2,200 Apaches to customers around the world since the aircraft entered production (Boeing, 2019).
- The US Army under its FVL plan, wants to develop replacements for UH-60 Black Hawk, **AH-64 Apache**, CH-47 Chinook and OH-58 Kiowa helicopters which will lead to the growth of the market (Defence and Aerospace Week, 2018).
- “Turkey’s Undersecretariat for Defence Industries (SSB) signed a contract with Turkish Aerospace Industries on February 22 as part of the country's effort to indigenously developed a new 10-tonne heavy attack helicopter, which is likely to compete in the future with the Boeing AH-64 Apache” (Ghanaian Times, 2019).

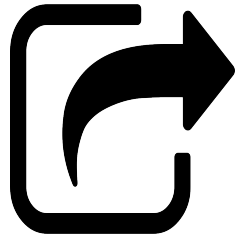


Source: [Boeing](#)

The AH-64 Apache Product/Research Analysis

- The US is one of the major AH-64 Apache customers. Therefore, this plan calls for production to remain within the US considering security issues of producing them outside of the US, and incurring transportation costs from other production sights such as France and Brazil.
- The AH-64 Apache is an aircraft that is no longer considered to drive the future demand of the rotorcraft market.
- The AH-64 Apache has international competition (TURKEY) that aims to replace its technology. Due to such intense competition, investment in foreign production sights of the Apache AH-64 would not be a strategic move.

The Arms Industry General Overview



Main Arms
Exporters:
#1 US
#3 France
#27 Brazil



Top Importers:
Saudi Arabia,
Egypt, UAE



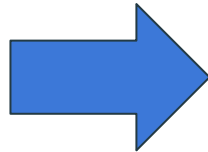
US Export grew
25% (2013-2017)

The Company and Product Overview

Demand

- Saudi Arabia: 3.3 billion contract
- U.A.E: 45 Apache Helicopter - 3.5 billions
- 60 deliveries in the 1Q of 2019

Customers



Source: [Boeing](#)



2.

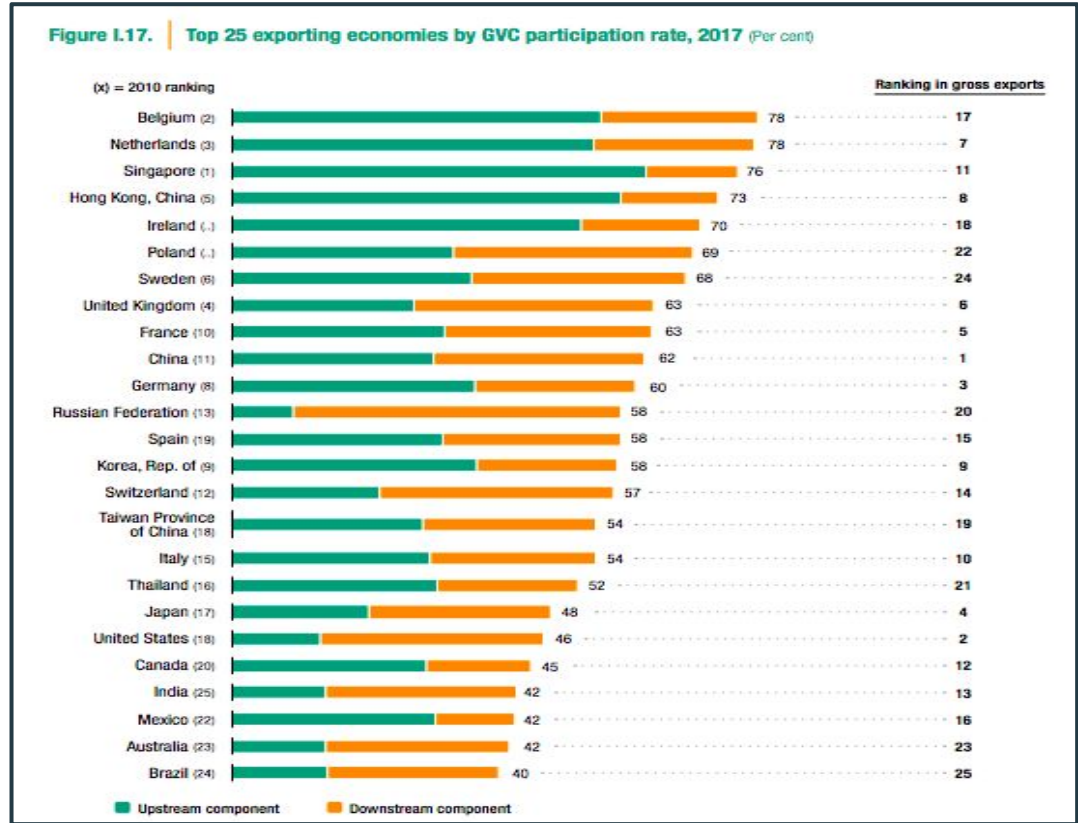
**The Business Approach
of Setting Operations in ether
United States, France or Brazil**

Top Exporting Economies

In business perspective, the top exporting economies of the countries analyzed for boeing are

- 1) France
- 2) United States
- 3) Brazil

Therefore, France is the country with the most exporting “experience”. In terms of setting operations, it is important to know if the specific location/country specializes in exporting which can indicate its stability and institutional health.



Economic Comparisons



In order to perform a business analysis of investment in France, Brazil and United States, we compared each country based on 7 distinct economic measures, that show economic performance and business perspective in the three countries:

1. **FDI Attractiveness Index:** Annual survey which tracks the impact of likely political, economic, and regulatory changes on the foreign direct investment intentions and preferences of CEOs, CFOs, and other top executives of Global 1000 companies.
2. **Ease of Doing Business:** serves as the basis for ranking economies on their business environment. It is an indication of an economy's position relative to that of other economies. The score takes into consideration, time to start a company, procedures to transfer a property etc.
3. **Industrial Production Index:** Monthly economic indicator measuring real output in the manufacturing, mining, electric and gas industries, relative to a base year. Investors could read it as a sign of a coming downturn or as a sign of coming stimulus.
4. **Manufacturing PMI:** The score provides information about current and future business conditions to company decision makers, analysts, and investors. It is calculated based on 400 companies in 19 industries and considers, new orders, inventory levels, production, supplier deliveries, and employment.
5. **GDP Growth:** Broad measurement of a nation's overall economic activity
6. **Corruption Rank:** It is a combination of different international surveys and assessments of corruption, collected by a variety of reputable institutions. It demonstrates public sector corruption.
7. **Human Capital Index:** Amount of human capital that a child born today can expect to acquire by age 18. Consists of the knowledge, skills, and health that people accumulate throughout their lives.

FDI Attractiveness

The 2018 Foreign Direct Investment Confidence Index

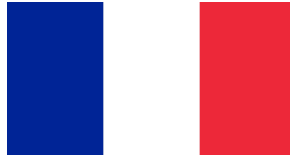
#1

United States



#7

France



#25

Brazil



Source:
ATKearney

Economic Comparison Values

INDEX	FRANCE	UNITED STATES	BRAZIL	BEST CHOICE
EASE OF DOING BUSINESS	32	8	109	United States
IPI	103.9	104.4	96.8	United States
MANUFACTURING PMI	49.60	52.4	52.8	Brazil
GDP GROWTH	1.8%	2.3%	1%	United States
CORRUPTION RANK	21	22	105	France
HUMAN CAPITAL INDEX	.8	.8	.6	France & US

Business Approach Recommendation



From the Business/Economic perspective it makes the most sense for Boeing to maintain the production in the United States of America. The decision was made because out of the 7 economic indicators, the US was top in 5.

Decision explained:

- In terms of Foreign Direct Investment, the US leads in investor confidence. Based on the data, it can be determined that in terms of political, economic, and regulatory areas investors prefer and are most confident in investing in the US.
 - This is very important as setting a new plant is an FDI investment and the US is 7 spots higher than France and 25 than Brazil.
- In comparison to other economies, the US is the best in starting a new business/investment, especially in transferring property and starting operations. That is very important in opening a new plant, and starting production.
- The US also was the top country in terms of the IPI index, meaning that the US has the highest production output out of the 3 countries. The index is important in understanding the flow and health of the economy.
- The US is also the fastest growing economy from the three analyzed countries. This fact shows economic potential and a positive outlook for production and investments as the economy is expanding.
- In terms of the Human Capital Index, the US has the same high score as France. It shows, that the US population has the same skill/economic potential as France, however better than Brazil.

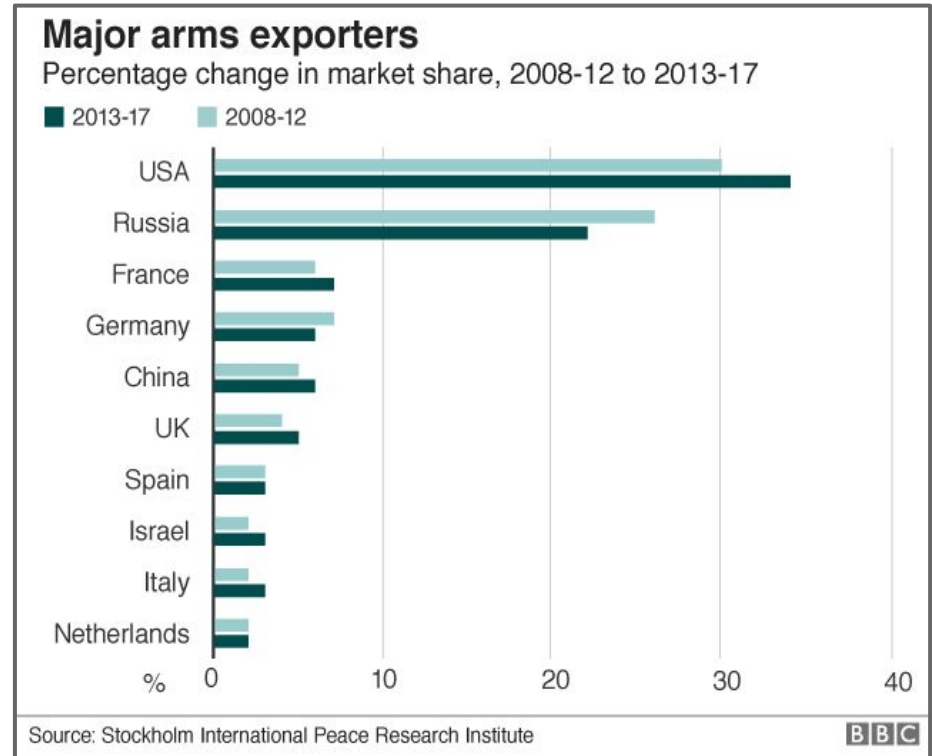
3.

**The Political and Strategic Approach
of Setting Operations in ether
The United States, France or Brazil**

The US Arms Export Strategy

- “US weapons sales to foreign governments **rose by 33 % in 2018**. Strategy of the Trump administration to sell more weapons and ask allies to pay more for their defence” (Manson, 2018).
 - The strategy of the US government is to promote domestic military production and keep the dominant position of being the major arms exporter, as can be seen in the chart.
- “US officials have spent months consulting with industry on how best to cut red tape and shuttling between potential buyers and international arms fairs to encourage them to buy US equipment rather than cheaper Russian or Chinese versions”(Manson, 2018).

Source: [Financial Times](#)

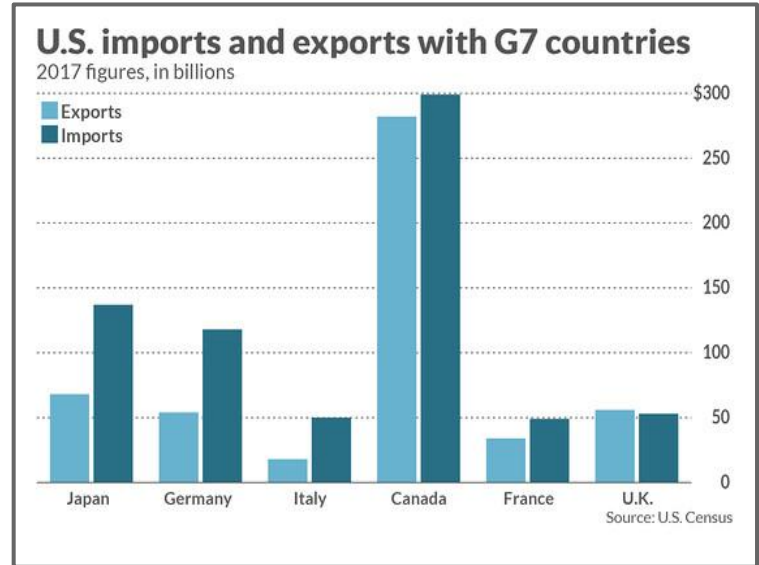


The tariff war between the EU and US

- The EU sponsored main aircraft makers “illegally”
- Trump’s administration will impose import tariffs of \$11 billion
 - Import tariffs on goods produced in France, Germany, Spain & UK
 - Tariffs on steel and aluminium already exist



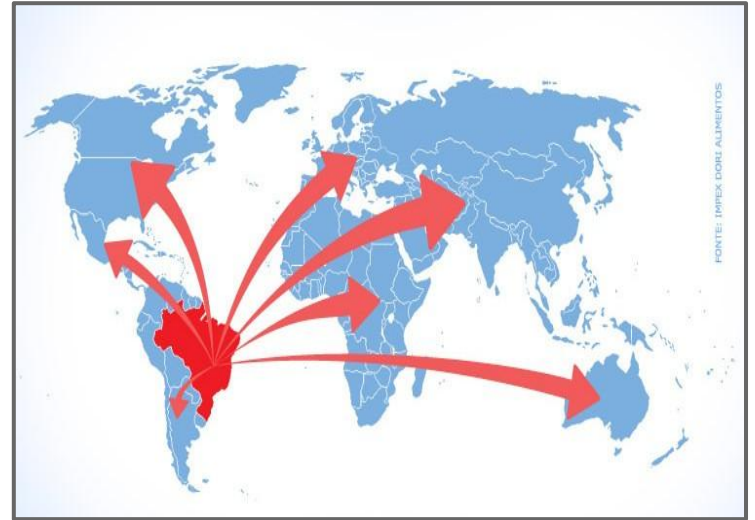
**Trade inconsistency between
US and France (EU)**



Source: Bloomberg

Brazil's Strategic Approach

- In 2016, U.S. and Brazilian officials inaugurated a bilateral Defense Industry Dialogue
 - designed to improve coordination with the private sector and facilitate trade in the defense industry
- United States is Brazil's **second**-largest trading partner
- Brazil's main imports from the United States are aircraft, machinery, and petroleum products



Source:



USA PESTLE

01	Political Factors	<ul style="list-style-type: none">• No political instability, political environment is favorable for investors• Low rate of corruption
02	Economic Factors	<ul style="list-style-type: none">• High vocational income rate• Stable currency• High labor cost• Corporate tax is at 21%
03	Social Factors	<ul style="list-style-type: none">• Is up-to-date in global trends and international brands• Culture of spending and excess
04	Technological Factors	<ul style="list-style-type: none">• Strong infrastructure• Increased investments in tech. infrastructure to meet global standards• Rising tech-based culture.
05	Legal Factors	<ul style="list-style-type: none">• Easy to perform business and most attractive for FDI investments.• Low corruption• Fast-pace of decision-making
06	Environmental Factors	<ul style="list-style-type: none">• Incentives to keep negatives externalities at a low.• Rich in natural resources such as metal

BRAZIL PESTLE

01

Political Factors

- No political instability, political environment is favorable for investors
- High rate of corruption, one has to pay bribes to establish new businesses

02

Economic Factors

- High FDI inflow and large population
- Reduce the risk of currency devaluation
- Low labor cost
- Corporate tax is at 25%

03

Social Factors

- 20% of the population lives below poverty line
- Is up-to-date in global trends and brands
- Southern and Southern Eastern most developed regions

04

Technological Factors

- Weak infrastructure
- Increased investments in tech. infrastructure to meet global standards
- Only semiconductor fabrication plant in Latin America

05

Legal Factors

- Non-codified and codified statutes
- Slow-pace of decision-making

06

Environmental Factors

- At the forefront in adopting environmentally friendly initiatives
- Two sustainable cities
- Deforestation

FRANCE PESTLE

01

Political Factors

- Member of the EU & stable democracy
- France is investing heavily in R&D. Since 2007, its spending has been increasing every year.

02

Economic Factors

- France offers direct access to the single European market and EU partners
- qualified, adaptable workforce

03

Social Factors

- YELLOW VEST PROTEST: Very volatile worker focus/force, due to intense protests of the working class.

04

Technological Factors

- Airbus Headquarters and production plants.
- Trained aviation workforce.
- 30% tax credit for R&D initiatives.

05

Legal Factors

- According to OECD France Has Highest Taxes of Any Wealthy Country.
- Low level of corruption

06

Environmental Factors

- country focuses on protecting the land and the species- Leader in UN in terms of climate change. Makes it difficult for manufacturing investment.

Economic Relationship Saudi Arabia

France

- France is the 3rd largest investor in Saudi Arabia with \$15 billion of investments.
- 80 French companies have an active presence in the Kingdom.
- From 2008 to 2017, Saudi Arabia was the second biggest purchaser of French arms, with deals totaling more than 11 billion euros (\$12.6 billion)

United States

- Saudi Arabia is the top destination for U.S. arms, with U.S. defense sales to the kingdom totaling close to \$90 billion since 1950, according to the Pentagon.
- During his May 2017 trip to the kingdom, Trump signed a series of arms deals expected to total some \$350 billion over a decade.

Brazil

- Diversify the two-way trade with Brazil
- Saudi's reform plan Vision 2030 aims to diversify the local economy
- Saudi Arabia was the top destination for Brazilian poultry exports, with a 15.39% share of total
- Early stages of manufacturing aircrafts in Brazil for military training

Source: [ANBA](#)

4.

Recommendation

Investment Decision

1. Businesswise United States is the best option for Boeing.
2. Demand from Middle East & Saudi Arabia's relationship with USA for arms is key.
3. Tariffs with EU will deter investment.
4. Plant investment in the US exists



Thank you!