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U.S Air Capabilities: The debate around the F-15EX and the F-35

Capacidad aérea de Estados Unidos: el debate sobre el F-15EX y el F-35

Abstract: This study aims to analyze the prospects of the F-15EX as a military modernization and procurement program. Since it consumes a relatively large portion of the Air Force budget, competing with other programs such as the F-35, this study proposes a comparative analysis between the two. For this, it draws on bureaucratic politics theory, defense economics, and neorealism concepts. This fundamentally descriptive and exploratory study primarily relies on recent data and official documents. The capabilities of the F-15EX are inferior to those of the F-35 despite its higher payload capacity and the ability to carry heavier supersonic weapons. The programs stand in direct budgetary competition. Is it worth investing in the F-15EX while other programs are also vying for the limited resources of the Air Force? Answering this question requires comparing the capabilities, complementarities, costs, and the true need for the program Although some argue that the F-15EX offers advantages regarding payload and specific mission profiles, this study contends that the program should receive none of its current budgetary priority. In an international system characterized by the relative distribution of power and resources, should the United States prioritize other objectives—such as the full production and deployment of the F-35, along with the development of the B-21 Spirit and the Sixth-Generation Fighter? The threat environment is evolving rapidly in the Pacific theater and in Europe.
Keywords: F-15EX, Acquisition, F-35.

Resumen: Este artículo pretende analizar las perspectivas del F-15EX como programa de modernización y adquisición militar. Dado que el F-15EX consume una parte relativamente significativa del presupuesto de la Fuerza Aérea, lo cual compite con otros programas como el F-35, este estudio propone un análisis comparativo entre ambos programas. Para ello, se basa en conceptos de la teoría burocrática, de la economía de la defensa y del neorrealismo, aunque tiene una base descriptiva y exploratoria, a partir de datos y documentos recientes. Las capacidades del F-15EX son inferiores a las del F-35, a pesar de tener una carga útil mayor y ser capaz de transportar armamento supersónico más pesado. En los presupuestos, los programas compiten directamente. ¿Merece la pena invertir en el F-15EX mientras otros programas compiten por limitados recursos de la Fuerza Aérea? Para responder a esta pregunta, es necesario comparar las capacidades de los programas, sus complementariedades, sus costes y, en última instancia, evaluar si el F-15EX es realmente necesario. Aunque se argumenta que el F-15EX tiene ventajas en términos de carga útil y misiones específicas, este artículo defiende que el programa no debería recibir la prioridad presupuestaria que tiene actualmente. En un sistema internacional marcado por el reparto relativo de recursos y poder, ¿no debería Estados Unidos dar prioridad a otros objetivos, como la producción y plena operatividad del F-35, así como el desarrollo del B-21 Spirit y del caza de sexta generación? El panorama de las amenazas evoluciona rápidamente tanto en el teatro de operaciones del Pacífico como en Europa.
Palabras clave: F-15EX, Adquisición, F-35.

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1 INTRODUCTION

Little has been written about the F-15EX, despite the important questions regarding it, from a defense economics and operational-tactical perspectives. The modernized F-15 has entered the portfolio of Major Defense Acquisition Programs, competing for scarce resources alongside other large-scale investments in different capabilities. While the United States maintains a significant advantage in the aerospace sector, growing competition and conflict make innovation and efficient resource mobilization increasingly imperative.

What are the distinctive features of the F-15EX? What is the rationale for modernizing legacy platforms at a time when the acquisition of the F-35 remains behind schedule? Moreover, regarding revenue generation and alliance-building, is export a viable option for the F-15EX?

This study investigates the F-15EX from a defense economics perspective. Its first section outlines the main aerospace capabilities of the United States, raising questions regarding strategic necessity and budgetary politics. The second section describes key premises of defense economics to frame the debate and offers an overview of major U.S. aerospace procurement programs, introducing bureaucratic theory and selected neorealist arguments to complement its analysis. The third section focuses on the F-15EX and its principal procurement rival: the F-35. The following section revisits the core questions raised in this introduction and discusses prospective scenarios. The subsequent section adopts a more empirical and descriptive approach to show the scale of U.S. airpower and to contextualize the role of defense economics in the current strategic landscape.

2 U.S AIR CAPABILITIES

The United States has been at the technological frontier of the aerospace industry for more than a century. Current projects—such as the F-35—reinforce its air superiority. However, material capabilities are always relative in the international system. An innovation-capable state such as the U.S. must constantly innovate to avoid losing its strategic edge. China has recently emerged as the most immediate threat to U.S. capabilities. I argue that China possesses what Mearsheimer (2014) terms latent power: a vast defense economy and the capacity to mobilize resources and personnel. This does not exclude its actual power as its material capabilities in aerospace continue to develop at a rapid pace.

The aerospace sector is inherently strategic. As Hartley (2014) argues, it provides vital equipment, such as fighter jets, helicopters, and bombers, in the military-strategic domain. One important question is whether such equipment is domestically supplied or procured off-the-shelf. It is also considered an economically strategic industry—more important than others for national development. It shows high technological intensity, significant R&D investment, and strong positive externalities (spillovers) for the wider economy. The aerospace sector benefits from scale and learning economies and tends to dominate the international trade. For these reasons, states support their national champions as part

of long-term strategic rivalry. Strategic industries also tend to receive sustained government funding over long horizons.

This study focuses on two fighter programs currently contending for budgetary resources within the Department of Defense: the F-35 from Lockheed Martin and the F-15EX from Boeing.

The United States maintains an extensive strategic arsenal that far exceeds conventional capabilities. U.S. defense power spans sea, air, space, and land domains and remains the most capable military force in the world by a wide margin.

To illustrate the scale of U.S. airpower—since this study focuses on the aerospace sector—a snapshot of the current Air Force inventory is informative. The U.S. possesses 970 combat-capable aircraft, including 679 fighter/ground attack units, including: 10 F-16A Fighting Falcons, 4 F-16B, 8 F-16C, 6 F-16D, 68 F-35C Lightning IIs, 8 F/A-18C Hornets, 2 F/A-18D, 323 F/A-18E Super Hornets, and 250 F/A-18F Super Hornets. Additional platforms include: 2 AT-6E Wolverine light attack aircraft; 2 AH-2 Mercy helicopters with landing platforms; and various auxiliary, cargo, and support vessels and aircraft, many of which are long-term chartered or used for training and logistics (e.g., the Dominator, Emory S. Land, Kellie Chouest, Malama, Gary Chouest, Ocean Valor, Powhatan, Lewis and Clark, Guam, Spearhead, SLNC Corsica, Stena Polaris, Pacific Tracker, Cape Ann, Kennedy, State of Maine, Empire State, among others). While many of these platforms serve logistical or training functions, the magnitude and complexity of U.S. aerospace capabilities remain unmatched.

Strategic bomber platforms also play a vital role. The U.S. maintains 20 B-2 Spirit and 52 B-52 Stratofortress. In development is the B-21 Raider, which Northrop Grumman designed to replace aging platforms and introduce advanced stealth and long-range strike capabilities. Air defense systems constitute another critical component, including the Solid State Phased Array Radar, the Space Track System, surface-to-air missiles, and air-launched missile systems. Naval aviation further enhances U.S. aerospace reach through carrier-based operations.

In 2025, the Pentagon plans to allocate $61.2 billion to airpower, which includes investments in the F-22, F-35, and F-15EX fighters; the B-21 bomber; mobility aircraft; KC-46A refueling tankers; and unmanned aerial systems. An additional $28.4 billion is earmarked for missile defense and homeland protection.

Given this already significant investment in aerospace, why continue to increase defense spending? The answer lies in bureaucratic politics and fluctuations in the external threat environment. Although the F-15EX remains far from a major share of the overall budget, it competes with other programs for limited resources. Export potential may constitute one argument in favor of its continued procurement.

A significant challenge looms regarding the future direction of U.S. defense policies, especially concerning NATO burden-sharing and support for Ukraine. Europe is making efforts to increase its own defense spending and capabilities. However, if Donald Trump is re-elected and chooses to scale back aid to Europe, this could have severe consequences, including a possible Russian victory in Ukraine and a subsequent shift in regional power balances.

Trump would likely prioritize competition with China in the Indo-Pacific—especially around the Taiwan Strait and the South China Sea. Biden, although similarly focused on China, would likely maintain a strong NATO alliance and delegate some responsibilities to European partners, especially in Ukraine.

Regardless of the administration, the Indo-Pacific will remain a strategic priority. Creating an effective deterrence framework around China—including partnerships with Japan, South Korea, Australia, and Taiwan—requires sustained military investment. Assuming resource constraints, a critical question arises within this context: how many F-15EX and F-35 aircraft are truly needed in the short to medium term?

Beyond fighters, strategic bombers such as the B-21 Raider will soon begin entering service, creating additional pressure on the Air Force budget. Moreover, in the event of a Chinese amphibious invasion of Taiwan, the U.S. would likely rely heavily on air-to-sea operations. In such a scenario, which aircraft would be ready to respond and capable of engaging at the highest operational level?

3 PREMISES OF DEFENSE POLITICAL ECONOMY

Defense outputs are typically viewed as non-rivalrous and non-excludable public goods. This applies at the national level and within alliances. Additional indicators such as performance, total sales, spillovers, and employment can also assess output. Nonetheless, the primary rationale for defense expenditure is to provide security and maintain peace.

In the United States, multiple actors are involved in the budgetary and acquisition process. Each of these actors, it is argued, pursues its own self-interest—whether in the form of budgetary authority, institutional prestige, or the protection of their organizational role (Allison, 1969; Allison; Halperin, 1972; Buchanan, 1986; Tisdell; Hartley, 2008). As Hartley (2011, p. 82) argues: "Government decisions are likely to be the result of actions in their own self-interest and seeking to influence policy in their favor."

Analysts are unable to account for all variables, especially those involving subjective factors such as ideology or personal beliefs. However, finding senior players and their institutional turf render major decisions more intelligible. In defense, these key actors include the President; the Office of the Secretary of Defense; the Armed Forces; the House and Senate Appropriations Committees; the House and Senate Armed Services Committees; the Congressional Budget Office; and the Government Accountability Office.

Bureaucracies tend to act as budget maximizers; the foundational premise of many economic models. The U.S. Congress and Secretary of Defense ultimately decide whether to approve or reject growing budgetary requests. A program can only advance under a minimum consensus between the executive and legislative branches (Dall'Agnol, 2024).

Although the Armed Forces and other bureaucracies play a privileged role in advocating for increased expenditures, the oversight of pressure groups and auditing institutions may constrain their actions. These external actors can scrutinize programs, and, in cases of controversy or inefficiency, may erode their political support—and ultimately, their funding. The success of

concurrently running programs, such as the F-15X, the F-35, and other ongoing acquisitions, must secure political backing.

Budgets constitute the primary arena of political contestation in democratic systems as they reflect the balance of political and economic forces within the broader decision-making structure. Changes in the defense budget evince multiple dynamics. In this study, the 2025 defense budget reflects a pattern of incrementalism—a common trend in defense spending. However, periods of war or intense international competition (as in Reagan's military buildup) can sharply deviate from this norm. While incrementalism generally characterizes the overall budget, it fails to necessarily apply to individual programs. As Wildavsky (1964, p. 5) famously put it:

> The victories and defeats, the compromises and the bargains, the realms of agreement and the spheres of conflict in regard to the role of national government in our society all appear in the budget. In the most integral sense, the budget lies at the heart of the political process.

According to Demarest (2017, p. 12), individual defense programs are highly susceptible to volatility due to changes in external threats, domestic political dynamics, and technical challenges. He observes:

> Contrary to expectations, budget outcomes are frequently volatile and unpredictable at the individual program level. Congressional authorizing and appropriating committees modify the Army's funding request significantly for a large proportion of programs. Budget outcomes at the program level cannot be attributed to a single explanatory factor, but rather are a result of a combination of the program's technical characteristics, actions taken by the defense industry, and traditional political considerations. The Army's ability to manage program funding and influence these powerful factors by engaging with members of Congress and professional committee staffers is related to the quality of their interaction [...] Reliable budget outcomes may be more likely when the Army requests incremental funding adjustments to existing programs [...] Program funding is markedly non-incremental, and is not confined to a particular or consistent subset of programs. Individual program funding fluctuates wildly as political and programmatic battles are won and lost, contrary to the conventional portrait of an immovable budget.

Table 1 – Evolution of Military Budget ($US Current)

$ in billions	FY 2023 Actuals	FY 2024 Request	FY 2024 CR[2]	FY 2025 Request
Base	815.9	842.0	817.3	849.8
Suplementals[1]	35.8	58.3	--	--
Total	851.7	900.3	817.3	849.8

Source: Undersecretary of Defense (2025). The Author.

A further premise is that external threat causally and positively impact the success of defense projects. In a system with a relative distribution of resources, States will refuse to lag. This arms-race logic, based on the premises of anarchy and self-help, will lead the State to mobilize more resources to establish balance, whether by strengthening their internal forces or forging alliances. (Resende-Santos, 2007; Waltz, 1979).

Table 2 – Major Aerospace Acquisition Programs

Weapon Systems		FY 2024		FY 2025	
		Qty	PB Request	Qty	PB Request
Aircraft					
F-35	Joint Strike Fighter	83	$13.6	68	$12.4
F-15EX	Eagle II	24	$3.0	18	$1.9
Air Force NGAD	Next Generation Air Dominance	-	$2.3	-	$3.3
KC-46A	Tanker	15	$3.0	15	$3.0
F/A-18E/F	Super Hornet	-	$1.8	-	$1.8
CH-53K	King Stallion Helicopter	15	$2.4	19	$2.7
E-2D AHE	Advanced Hawkeye	-	$0.6	-	$0.5
AH-64E	Apache Helicopter	42	$1.0	31	$0.7
UH-60	Black Hawk Helicopter	50	$0.9	24	$0.8
V-22	Osprey	-	$0.6	-	$0.5
FLRAA	Future Long-Range Assault Aircraft	-	$1.0	-	$1.3
MQ-4	Triton Unmanned Aerial Vehicle	2	$0.8	-	$0.8
MQ-25	Stringray Unmanned Aerial Vehicle	3	$1.0	3	$0.9
MQ-9	Reaper	5	$0.5	-	$0.3
E-7	Wedgetail	-	$0.7	-	$0.4
OA-1K	Armed Overwatch (USSOCOM)	12	$0.3	12	$0.3
Missile Defense/Nuclear Deterrent					
MDD	Missile Defeat and Defense	-	$29.8	-	$28.4
B-21	Raider	-	$5.3	-	$5.3
SSBN	COLUMBIA Class Submarine	1	$6.2	-	$9.9
Trident II	Trident II Missile Mods	-	$1.9	-	$2.5
LRSO	Long Range Standoff Weapon	-	$1.0	-	$0.8
Sentinel	Intercontinental Ballistic Missile	-	$4.3	-	$3.7

Source: Undersecretary of Defense (2025). The Author.

With an incremental increase in budget, Biden's administration decided to continue to produce Trump's sponsored F-15EX. The program, as Table 2 shows, represents neither a total nor a marginal cost that significantly impacts the budget. The main problem refers to the distribution among different programs.

4 THE F-15EX

The F-15EX is an updated and upgraded version of the historical series of jets which started with the F-15 Stike Eagle in 1989. The F-13E, for example, had more air-to-ground capability, with a second cockpit for weapon systems operators. The Air Force has 453 F-15s, including all its variants, the last of which was ordered by 2001. Exports have been a prominent feature, including countries such as Israel, Saudi Arabia, and Japan. The current version of the F-15 has stronger

airframes and more advanced sensors, processors, and flight control systems (Congressional Research Service, 2019). The F-15EX would be based on the most advanced fighters, sharing 70% of its parts with the latest Eagle produced in Qatar.

Critics have highlighted that non-stealthy aircraft fail to meet current operational and tactical challenges. They argue that bureaucratic politics, (rather than efficacy in the battlefield,) has taken place. The Air Force states that the F-35 and the F-15EX are complementary programs rather than rivals. The F-15EX can carry a greater payload, thus, enjoying increased capacity. The F-35, on the other hand, has superior stealth and sensor fusion and greater capability. Different missions can be assigned to a more modern version of the F-15EX. According to CRS (2019):

> While maintaining the planned purchase of 48 F-35As in FY2020, the Administration's FY2020 budget submission reduces outyear F-35As from the previous plan by 24 aircraft through FY2024. This may not be a direct correlation, but has led some to see a tension between the two programs. (A reduction in the number of F-35s requested in FY2020 compared to previous plans comes mainly from a reduction in Marine Corps purchases of the F-35B rather than Air Force F-35As.).

Boeing was awarded 1.2$ Billion (2020 dollars) for the first lot. The deal included an indefinite delivery worth up to $22 billion (2021 dollars), with acquisition figures going up to 200 planes. Fly-by-wire controls and advanced cockpit systems were the main innovative features of the fighter. The difference, supporters argued, was in the payload. It could carry hypersonic missiles up to 22 feet in length and over 7,000 pounds in weight. Boeing naturally defended itself from criticisms regarding capabilities, especially the non-stealth characteristic of the plane. The constituency aspect is also strong: the F-15EX program has more than 400 suppliers across 42 states, with 55,000 people in the supply chain that support the program. The plan is to double capacity to 25 per year and increase rates to three per month (36 per year). Regarding efficiency, the procurement process for the F-15EX occurred in a far smoother manner than that for the F-35.

Cost and schedule delays constantly occurred in the F-35, eventually stabilizing itself, especially after 2012. Furthermore, sustainment costs have been projected to $29,000 per flight hour (compared to F-35 $33,000). The Eagle II (F-15EX) has a unit cost of around $ 105 million per plane, a substantial achievement for a "new" jet program. FY 2025 expects the F-35 budget to total around $ 180 million.

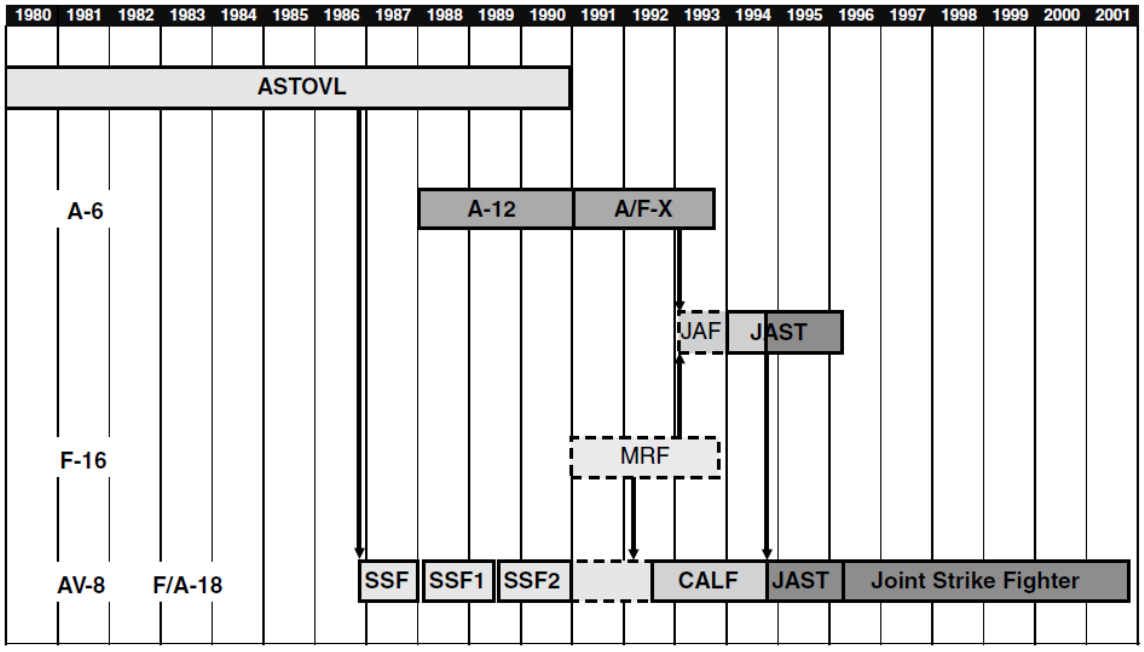
Of course, this is an upgrade rather than an innovative fighter jet. Furthermore, in defense, efficiency matters prevail over effectiveness since its main output refer to the form of security and engagement. The effectiveness criteria may include the need of major stakeholders that represent the country and operational success in engagement. Success requires stakeholder needs since they decide what resources to allocate to the project and possible cuts or cancellation. Such situation is closely related to external threat since stakeholders will avoid taking the

risk of cancelling a project needed for national defense. Furthermore, it relates to the capacity of the project of showing its feasibility. This study will fully explore the long history of the F-35 (although some points must be made).

4.1 The F-35

The F-35 program was designed to fulfill economic and military objectives. It emerged from the Clinton administration's Bottom-Up Review and was developed under the Joint Advanced Strike Technology initiative. The program aimed to consolidate and replace three major defense projects that were slated for termination: the A-12 Avenger II—which was to provide the Navy with a new stealthy carrier-based aircraft; the Air Force Multi-Role Fighter program; and the A/F-X, a planned Navy and Air Force attack/fighter aircraft (Bevilaqua, 2009; Gertler, 2012). The F-35 program was also designed to integrate ongoing efforts from the Defense Advanced Research Projects Agency Short Take-Off and Vertical Landing/Conventional Take-Off and Landing Strike Fighter program. This initiative began in the 1980s to equip a supersonic fighter with a Short Take-Off and Vertical Landing propulsion system. By the early 1990s, it evolved into the Common Affordable Lightweight Fighter program, which ultimately merged with Joint Advanced Strike Technology to form the basis for what would become the F-35 Joint Strike Fighter.

Figure 1 – The Integration of Programs into the Joint Strike Fighter



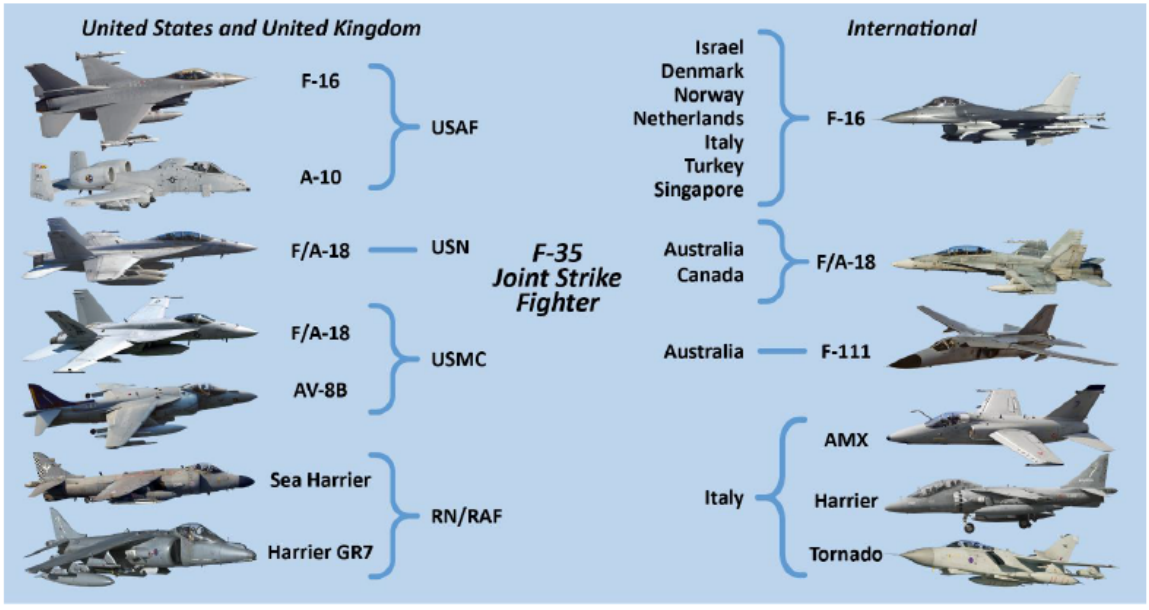
Source: Bevilaqua (2009, p. 1833).

The Joint Strike Fighter (JSF) program was envisioned as an affordable fifth-generation multirole fighter for the Air Force, Marine Corps, and Navy to avoid the cost and complexity of

developing and procuring three platforms for each service. The program included three variants: a Conventional Take-Off and Landing version—the F-35A—for the Air Force to replace the F-15, F-16, and A-10; a Short Take-Off and Vertical Landing variant—the F-35B—for the Marine Corps to replace the F/A-18 and AV-8B Harrier; and a carrier-capable version—the F-35C—for the Navy to replace the F/A-18E/F Super Hornet.

From October 2000 to August 2001, Lockheed Martin successfully showed the program's prototypes with a series of test flights, achieving notable results (Chapman, 2019; Gertler, 2012). Even before the testing phase was completed, on October 26, 2001, Lockheed Martin won the System Design and Development contract in partnership with Northrop Grumman and BAE Systems. Lockheed Martin became the primary contractor responsible for research, design, and production. Northrop Grumman built the center and aft fuselages and contributed expertise in Low Observable stealth technologies. BAE Systems supported advanced lean manufacturing, flight testing, and the sustainment of short takeoff capabilities (Abplanalp, 2017). The alternate engine program ended in 2011, and General Electric/Rolls-Royce became subcontractors to Pratt & Whitney, contributing to the development of the vertical lift system for the F-35B.

Figure 2 – Fighters to be Replaced by the F-35



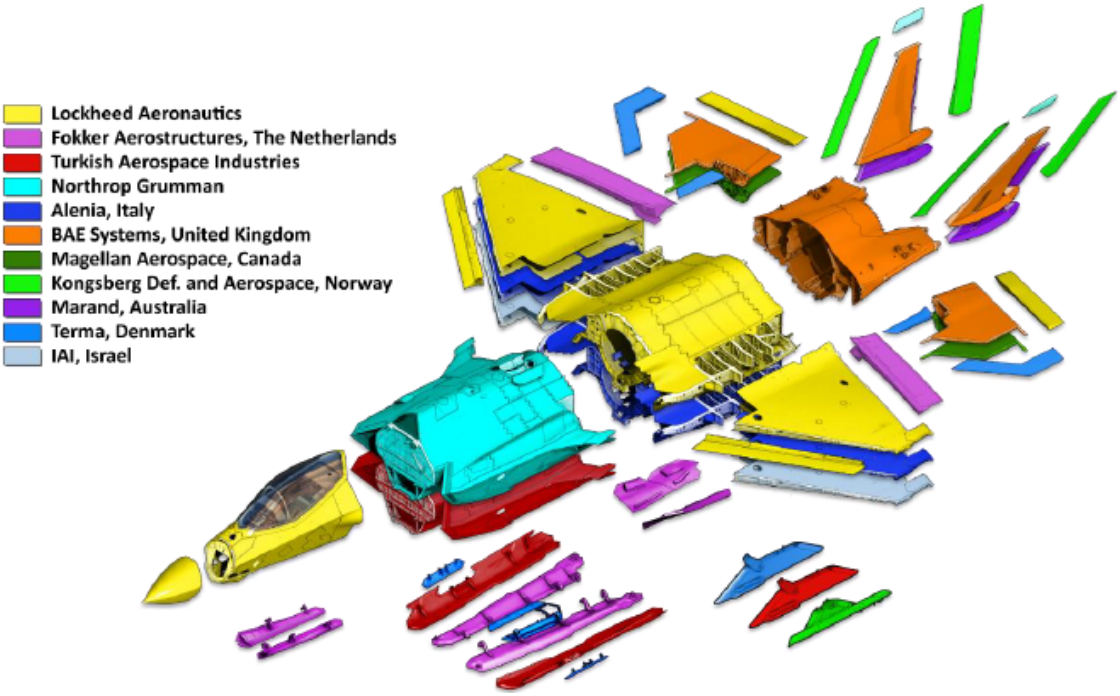
Source: Sheridan and Burnes (2018, p. 2).

It is now useful to highlight some technical features of the F-35 to enable comparisons or evaluate complementarities with the F-15EX. One of the defining characteristics of the F-35 refers to the interconnectivity of its combat systems, which were designed to synergistically generate capabilities rather than by isolated subsystems. Data from on-board sensors and off-board sources are integrated into the aircraft's central computer, providing pilots with a comprehensive and

real-time tactical picture. This level of integration facilitates situational awareness and automated decision-making. As Petrelli (2020, p. 4) explains:

> [...] detects further information needs, prioritizes them and issues new commands to the sensors considered most appropriate to satisfy these needs. Identification and tracking continue automatically in a closed loop fashion as new data from on-board or off-board sensors is acquired. These, in turn, can be either relayed to other platforms in 'open transmit' mode or, subject to data bring-back memory capability, manually recorded and stored. The results of the fusion process are provided to the pilot/vehicle interface for display, fire control for weapon support, and electronic warfare for countermeasures support.

Figure 3 – International Supply-Chain of the F-35 (2018)



Source: Sheridan and Burnes (2018, p. 2).

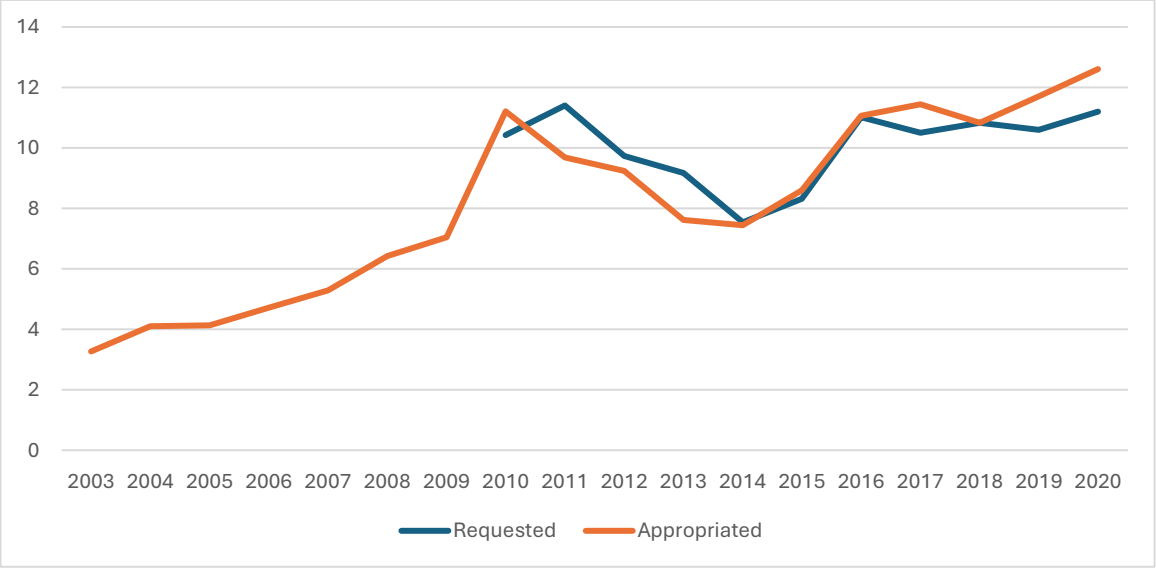
Another key feature of the F-35 refers to its stealth capability. Its program aimed to achieve an optimal balance between low observability, maneuverability, and cost control. Its edge treatments consist of carbon-loaded fiberglass honeycomb materials, which—combined with its refined geometry—significantly reduces radar cross-section (Petrelli, 2020). Furthermore, the F-35 incorporates a novel low-observable material known as "fiber mat"—carbon nanotube-infused fibers embedded into the composite skin of the aircraft—a material designed to absorb or deflect radar waves, maintaining its electromagnetic properties regardless of the

angle. As with the B-2 Spirit, this stealth architecture enhances the ability of the F-35 to penetrate contested airspace undetected.

Despite its innovative design, the F-35 program has faced major challenges regarding cost, delays, and scheduling. When the program reached Milestone B in 2001—the same year Lockheed Martin won the contract—the estimated total program cost equaled $177 billion. By the end of 2010, that figure had increased to $270.5 billion (in FY2002 dollars). On March 16, 2012, the Department of Defense approved a new Acquisition Program Baseline for the F-35 and re-authorized Milestone B. As mandated by Congress, the Department of Defense submits annual selected acquisition reports to track cost, schedule, and performance. By 2012, the total program cost was estimated at $395.7 billion, which became the reference baseline for subsequent selected acquisition reports (Department of Defense, 2011).

The plan remains to procure 2,457 aircraft, with a procurement acquisition unit cost of $112.529 million and an average procurement unit cost of $91.827 million (in FY2012 dollars).

Figure 4 – Requested vs Appropriated JSF Funding (Current $ Billions)



Source: Undersecretary of Defense (2025). The Author.

In current dollar terms, as has been shown, the cost of the F-35 has remained relatively close to its 2012 baseline. The primary reason Congress continues to authorize the program's budget—despite persistent delays and cost overruns—refers to its strategic necessity. No viable substitutes exist for the F-35 in the existing U.S. defense framework. With the growing military assertiveness of China and ongoing threats from Russia, Iran, North Korea, and other adversarial actors, the F-35 is perceived as indispensable to maintaining U.S. security. In this context, effectiveness takes precedence over efficiency. No fighter currently matches the F-35 regarding technological capabilities and integrated combat functionality. Moreover, the fact that all three branches of the U.S. military—the Air Force, Navy, and Marine Corps—are procuring the aircraft significantly enhances the political weight and institutional resilience of the program.

Chapman (2019, p. 136) observes that "despite its repeated delays, technical problems, and cost overruns, the JSF is likely to eventually be deployed by the US even if its numbers are lower than originally planned." He further contends that "technological obsolescence of combat aircraft against military enemies is even more dangerous than an expensive and long-delayed military system" (Chapman, 2019, p. 357). According to Deptula (2020), the operational demands of today's global threat environment require a fifth-generation fighter, and the F-35 meets those demands comprehensively. He emphasizes that its performance is "an easy piece of homework to grade" (Deptula, 2020, p. 1).

Likewise, Hlatky and Rice (2018, p. 34) assert that "it is becoming increasingly obvious that there is no alternative to the F-35 program" given its technological and strategic capabilities. Chapman (2019, p. 347) further argues that "JSF critics need to present economically and militarily credible alternatives to address emerging US and allied jet fighter combat operational needs against emerging threats beyond maintaining existing combat aircraft fleets."

The F-35 has thus become a cornerstone in the strategic planning of the U.S. for future combat scenarios and is instrumental in preserving its air superiority before rapidly evolving global threats.

5 WHAT DOES THE F-15X DELIVER

Given what was argued about the necessity of the F-35 in maintaining air-superiority and its inevitable acquisition dispute with the F-15EX, what is the role of the F-15EX for the next decade? Advocates of the F-15EX argue that it is a fast and cheap acquisition program. The unit cost, however, is not that cheap. However, the F-15EX has other valuable characteristic, its greater payload, can be of tactical value after a stealthy aircraft patrol, clear, and engage the airspace. In this sense, hypersonic heavy missiles will have an important deterrence role. Furthermore, exports might be a valuable source of revenue and alliance-making purposes. This can play a successful regional theatre strategic role, as it has already been played in the Middle East, for example. Finally, if the Air Force has the budget to equip itself with both fighters, that would be good. Biden did not cut the program. The probable scenario is both fighters being in the top of the Aircraft's acquisition priorities. The problem then arises when the sixth-generation fighter comes into procurement, or the B-21 Spirit starts being bought. Increases in UAV's might also pressure the defense budget. For now, however, this is just problem raising and speculation.

6 CONCLUDING REMARKS

This study compared the F-15EX to the F-35 as they are the most expensive programs in U.S Air Force. It argued that, despite some possible advantages of the F-15EX, the F-35 meets the needs of aerospace engagement and surpasses the F-15EX in crucial technologies, giving it operational advantages.

Competition among the different fighter aircraft constitutes a good way to decrease marginal costs and combine different kinds of striking capabilities. Such oligopolistic competition is more than imperfect. We are unable to rule out the hypothesis that it is compensating the Boeing loss in the F-35 contract. Air Force bureaucracies maximize budgets (Allison, 1969), also making competition imperfect. However, the U.S has guaranteed its aerospace superiority for the next decade (and probably for several decades). Besides all procurement problems, such as cost and schedule delays, the F-35 stands as the most advanced fighter in the world. It can meet the current challenge of engagement scenarios. As for alliance-making, the U.S is supporting the triple alliance between Japan, England, and Italy to build the Global Combat Air Program, a sixth-generation fighter, to be used in the European and Indo-Pacific regions. It consists of a private joint venture between the Japanese Mitsubishi Heavy Industries, the British BAE Systems PLC, and the Italian Leonardo.

The U.S is also investing in a sixth-generation fighter jet of its own, the Next Generation Air Dominance project. It plans to select its manufacture by 2024 to replace and upgrade the F-22 raptor. Northrop has announced its withdrawal from the competition, and the dispute is most likely to stand between Lockheed and Boeing. Delays and cost overruns should be expected, although weighed by interested stakeholders and international competition. The greater the threat, the more rapidly the U.S will have to innovate to maintain its superiority.

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