
Replacing Legacy Fighter F-16 with JF-17: National Security of Pakistan, Economic Revival and Diplomacy

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DOI: <https://doi.org/10.70670/sra.v4i2.2360>

Abstract

Pakistan's security environment is defined by border conflicts, political instability, cyber vulnerabilities, terrorism, and socioeconomic concerns. Aerial dominance is considered a vital element in modern combat. Although Pakistan Airforce is equipped with modern technologies and Aircrafts like Mirage, F-7, J-10, J-35, Electronic Warfare, Transport and various trainers Aircrafts but it utilizes two principal fighter aircrafts the F-16 and the JF-17, both essential for national defense and strategic deterrence. This article offers a comparative examination of the two aircraft to evaluate their operational capabilities and performance. It further investigates whether the JF-17 has the capability to ultimately supplant the F-16 in the Pakistan Air Force. This article assesses the export potential of the JF-17 Aircraft in the International Market. It ascertains Pakistan diplomatic ties through defense agreements and improvement of state economy.

Keywords: Diplomacy, Economy, Military, International Relations

Introduction:

JF-17 Thunder is successful in catching International Eyes. After Nigeria and Myanmar, Azerbaijan is now the third nation to purchase JF-17 aircraft from Pakistan. The overall amount of the deal is \$4.6 billion for up to 40 JF-17 Aircrafts. Deal also includes munitions, pilot trainings and logistics. Libya concluded a defense package of \$4 billion which also includes 16 JF-17 Aircrafts. Saudi Arabia is also engaged in high profile discussions to finalize up to \$6 billion acquisition strategy, in which \$2 billion is purposed for purchase of jets from Pakistan. Somalia, Indonesia and Iraq are also in discussion to make Aircraft deals with Pakistan. In recent reports Bangladesh has shown interest to purchase JF-17 Aircrafts from Pakistan to modernize its Air force, the same been discussed between the Air Chiefs of the countries. The JF-17 is changing the economic landscape of Pakistan.

Historical Background

Pakistan planned to replace most of its aging fighters and some other aircraft with the multipurpose combat aircraft known as the JF-17 Thunder, which Beijing and Islamabad agreed to coproduce. Out of an anticipated 250-unit manufacturing run, the first two was constructed in China and delivered in 2007; Pakistan intends to produce and assemble a growing number of these domestically for both domestic consumption and export. Pakistan stated at the 2015 Paris Air Show that it had reached an agreement to export a JF-17 to a third country, which was reportedly Myanmar, sometimes known as Burma, and that it was in talks with eleven additional

nations to do the same. For Pakistan's military and air force, the possibility of becoming a provider of cutting-edge fighter aircraft rather than just a buyer would be a significant win(Blank, 2015). Most Third World nations see armament as necessary and feasible; arms control as a little more practical, and the first as utopian. Pakistan has considered purchasing weapons to allay its security worries. The United States has authorized the supply of sophisticated technologies and enhancements for Pakistan's F-16 fighter aircraft, valued at around \$686 million.

The main variables influencing the country's sources and types of weaponry purchases have been perceived threats from India, strategic developments along the Afghan border, developing technology, alliance with the United States, and growing ties with Beijing. Furthermore, Pakistan's desire to modernize its forces is influenced by its state-level anxieties stemming from its political, social, and economic weaknesses. Pakistan has always looked for ways to obtain better technology because of its desire to equal India's conventional military might. In an interview with *Jane's Defense Weekly* in 2006, the then-PAF head of the Air staff, Air Chief Kaleem Saadat, said that both the PAF and the Indian air force were second-generation air forces in 1990 when U sanctions were put in place lack of capabilities for airborne early warning, air-to-air refueling, real-time surveillance, beyond-visual-range ability, and standoff weaponry. But after 13 years of sanctions, Pakistan had none of the aforementioned, but India had all of them till roughly three or four years ago. The gap is this. We must close this gap in a way that prevents our neighbor from enjoying an advantage. (Chawla, 2019).

Pakistani academics and economists as well as international financial institutions have long expressed worry over Pakistan's defense expenditures. Every succeeding government, whether civil or military, has been allocating a sizeable amount of its national funds to military and defense needs. Thus, during the past 20 years, international monetary organizations and strategic thinkers have continuously put pressure on Pakistan's defense expenditure(Chawla, 2015). Because it would raise aggregate demand through an increase in employment, which would then translate into higher saving and investment through the multiplier effect, we think that defense spending in Pakistan could prove to be a growth booster. Making defense exports feasible will also address the foreign exchange problem, which is another problem facing Pakistan's economy. Since it would provide a human resource capable of supporting other contemporary, say industrial, sectors of the economy, the consequences would then spread to other areas. The research on defense economics has overlooked this perspective, particularly when it comes to Pakistan(Chhatwal, n.d.).

Aim of the Study:

The goal of the current study is to demonstrate the progress Pakistan may accomplish if its defense exports and industry are given priority. And the JF 17-thunder, Pakistan's multipurpose fighter jet, is the ideal illustration of how the defense sector can benefit the economy as a whole. Establishing diplomatic ties between Pakistan and other nations can be greatly aided by JF-17. Aim of the study is to determine which countries can buy the JF-17 from Pakistan and which is the target market for its sale and to ascertain whether JF-17 Aircraft can eventually replace F-16 Aircraft.

Methodology

This study uses a qualitative case study methodology to investigate how Pakistan's diplomacy is changing in response to the growing influence of the US and China. Pakistani air capabilities can play a pivotal role in improvement of its economy as well as security. A thorough grasp of how Pakistan's foreign policy adjusts to both regional and global developments is made possible by the case study technique, which is especially well-suited for investigating complex phenomena in their presence. This study attempts to find patterns and explanations that highlight the larger theoretical argument about the transition to strategic realism by concentrating on particular

situations. To ensure validity data for this study is gathered from a variety of sources. Pakistani policymakers' official speeches and declarations shed light on the changing priorities and narrative inside Pakistan's diplomatic circles. White papers and official foreign policy guidelines are examples of policy documents that provide an official record of strategic aims and changes throughout time. Further adding interpretative depth and contextual understanding is the professional opinion of academics, diplomats, and regional experts. These sources are supplemented by media analysis of regional and global outlets, which emphasizes diplomatic contacts and public conversation. Peer-reviewed journals, books, and institutional reports that were accessible through databases like JSTOR, Google Scholar, and institutional repositories were the sources of pertinent literature. It is especially hard to figure out what Pakistan's nuclear forces are like because there isn't any public data available. The Pakistani government has never said how many nuclear weapons it has in public, and it doesn't usually talk about its nuclear posture. Pakistan doesn't regularly release any public documents that reveal the details of its nuclear posture or policy, unlike some other countries with nuclear weapons. When these kinds of details come up in public discussions, they usually come from retired officials who are speaking for themselves. The Inter Services Public Relations (ISPR), the media branch of the Pakistan Armed Forces, is the most reliable official source on Pakistani nuclear weapons.

Theoretical Framework

In order to comprehend Pakistan's evolving foreign policy, strategic realism serves as the main theoretical framework. Strategic realism, which has its roots in the realist school, emphasizes the importance of power, security, and national interest in determining state behavior. This paradigm explains why pragmatic concerns have increasingly trumped ideological convictions for Pakistan, a state dealing with several security issues both domestically and regionally. Pakistan has recalculated its Middle East diplomacy in response to shifting regional dynamics and the increasing influence of external actors like China. This is in line with realism, which holds that states must priorities survival and the maximization of their power within anarchic international governance. Conversely, constructivism emphasizes how identities, conventions, and common ideas influence foreign policy choices.

States constantly clash with one another in some manner in a chaotic globe. In international politics, power is seen as essential, yet in this highly integrated and globalized society, the idea and characteristics of power are in change. Today, the emphasis on soft power has replaced hard power in the utilization of power. These days, hard and soft power goes hand in hand, significant organizations, and the various tactics used to achieve the state's ambitions, objectives, and aims, the government primarily manages the key characteristics of soft power.

According to theory of Realism every state is concerned with power and security, and the international system is anarchic. Every state aspires to be as powerful as possible. JF17 is crucial to bolstering Pakistan's Air security capabilities. Every state considers its own interests. The military capabilities of a country are intimately linked to its power. JF17 will undoubtedly boost Pakistan's military capabilities. Pakistan will be able to rely on its own resources with confidence. For a fair and historically relevant analysis, the study incorporates academic discourse and archive counter-narratives. It argues that Chinese military technology acted as a crucial diplomatic conduit, solidifying a long-term strategic collaboration and altering regional power dynamics, even while it acknowledges the domestic budgetary burdens and technological dependencies this alliance produced for Pakistan. The results highlight the ongoing significance of this long-standing collaboration as both countries negotiate current geopolitical changes in South Asia and the Indo-Pacific.

Literature Review:

The United States, Russia, and a newcomer, China, are expected to control the future combat aircraft market. It seems that these three nations are the only ones who can make the extremely difficult financial and technological transition from the fourth to the fifth generation of combat aircraft. China is catching up to Russian and American manufacturers, but the European players' competitive advantage will likely be reduced over time. Changes in the distribution of military and political power will also result from this. Jet aircraft designed mainly for air-to-air or air-to-ground combat are known as fighters. In addition to being crucial defensive weapons, they also enable quick, efficient, and long-range attacks, making them one of the possibly most disruptive weapon platforms. Precision-guided weapons, electronic warfare systems, and tanker refueling can significantly improve these capabilities. In addition, combat planes are used to deliver nuclear weapons. A wide range of possible buyer countries are being supplied and bid on by the small group of producing countries. Historically, India and Pakistan have depended a lot on imports to keep their militaries ready. But because of changes in the geopolitical landscape, both countries have had to put domestic defense manufacturing at the top of their list in order to gain strategic independence. In this situation, both countries have made a lot of progress in creating their own defensive systems, especially in the aerospace field(Yelwe, 2025b).

Due to economic challenges and strained relations with the US, Pakistan has recently grown more reliant on China for defense cooperation. China has become Pakistan's biggest defense partner as a result of technological transfers like as the joint production of JF-17 Thunder aircraft and military technologies, weapons, and equipment such fighter planes, missiles, and tanks. This partnership has been extremely beneficial to Pakistan in addressing regional security concerns and thwarting Indian and Afghan threats. Pakistan's military independence and regional stability will be enhanced by China's assistance, which includes nuclear and space capabilities. A strong and strategic defense alliance has been formed as their cooperation has expanded over time(Khalid et al., 2024).

In recent years, China, India, the Middle East, and a number of East and Southeast Asian nations have purchased the majority of the combat aircraft exports. Russia, on the other hand, supplies China and India. The United States is the primary supplier of combat aircraft to nations including Singapore, South Korea, Israel, and the United Arab Emirates. In recent years, Sweden has sold lesser quantities of Gripen fighters to Thailand, Hungary, and the Czech Republic. Sales of the Eurofighter to Austria and Saudi Arabia have been a touch less successful for Germany and the UK. In the future, political as well as economic factors will drive Beijing, Washington, and Moscow's rivalry for orders Wyss, M. (2011).

By deploying a low-cost, multi-role, lightweight fighter that would house contemporary electronics, the JF-17—a joint Chinese-Pakistani project—aims to lessen Pakistan's reliance on Western companies for cutting-edge combatants(Xuanyu & Hussain, 2025). It is an improvement over the country's French Mirage fighters and Chinese MiG-19/21 derivatives. The United States' imposition of military export restrictions in response to Pakistan's nuclear program and Chinese-Pakistani transfers of ballistic missile components marked a significant advancement for the JF-17/FC-1.

Despite its extremely convenient appearance, the airplane uses a variety of contemporary technical technologies to retain a lethal and healthy capability. The Forward Looking Infra-Red (FLIR) system, day/night laser designator, and self-protection radar jammer are a few of the externally carried avionics pods that can increase pilot awareness while in flight. A fixed, forward-firing, twin-barrel GSh-23-2 cannon of Russian provenance is the standard weapon; at the expense of ammunition, the bigger caliber GSh-30-2 gun may be substituted. "Mainstream" missiles, guided bombs, conventional drop bombs, and rocket pods are examples of air-to-air and air-to-ground weaponry. Naturally, there is no limit to these armament choices; any operator can

equip the JF-17/FC-1 with weapons of their choice, whether they are American-made or of Israeli, French, British, or Russian provenance Schóber, T., Necas, P., & Pulis, P. (2013). .

Air power has grown essential in our day and age, being utilized for a wide range of tasks, utilized by both the military and the civilian security sector, and being very costly. Air power is no longer limited to the use of combat aircraft or the exclusive domain of air forces. To eradicate terrorists in Afghanistan, Pakistan, and Yemen, the Central Intelligence Agency (CIA) in the United States developed its own air force. Unmanned aircraft are now used by border security agencies to monitor illegal immigration and trans-border crime, and by police forces worldwide for monitoring and surveillance. However, the cost of purchasing and maintaining aircraft has increased over time, particularly for democracies that must strike a balance between the demands of their armed forces and the more pressing social welfare needs of their own citizens Gupta, A. (2024).

For more than 50 years, South Asia has been enmeshed in an action-reaction weapons race dynamic, characterized by multiple crises and conflicts between India and Pakistan. Both nations have continued to build their conventional and nuclear armies since overt nuclearization in 1998, but India has pursued room for limited war through gradual doctrinal and capacity improvements. In order to address perceived weaknesses in its deterrence posture, Pakistan has reacted appropriately by modernizing its forces and evolving its doctrine. However, India's conventional dominance over Pakistan has diminished after the 2020 India-China Ladakh crisis, leading to a greater reliance on its latent nuclear capability and dual-use missile arsenal. While India and Pakistan are developing their strategic nuclear triads, South Asia has seen a continuous modernization and expansion of conventional forces. It has improved crisis stability and raised Pakistan's nuclear use threshold as the conventional gap between the two nuclear-armed adversaries' narrows. However, both nations now have the ability to use capabilities more assertively and take on higher risks because to doctrines, policies, and technological advancements. Multilateral agreements like the Quad, bilateral agreements like the India-US civil nuclear deal, and India's strategic alliances with Russia, the US, France, and Israel—its main suppliers of arms and military technology—all contribute to the arms race dynamics in the region. Given that Pakistan has privileged and protected access to the newest Chinese military technology, this has forced Pakistan to use its strategic ties with China and Turkey as dependable and trustworthy suppliers of cutting-edge military hardware(Ahmed, 2025).

Pakistan's National Security Dilemma vis-à-vis India

Pakistan must exercise strategic foresight, resilience, and adaptation in the face of a complex and multifaceted security environment. Terrorism, border conflicts, and more recent issues like cyberwarfare and hybrid conflicts are all concerns. Geopolitical rivalries, economic fragility, and political instability all have a significant impact on these difficulties. Therefore, a combined military, economic, and diplomatic strategy is required to address all of these issues(Z. Shah, 2025).

India and Pakistan fought a short war in May 2025. During this time, India fired regular missiles at a number of Pakistani military bases. The fight persisted for days and involved both sides firing at each other more and more after the terrorist strike in Pahalgam, Indian-administered Kashmir, on April 22. After the war, the Pakistan Air Force (PAF) and the Military Engineer Services which builds and maintains all branches of the Pakistani military, put out a number of public procurement contracts for repairs at different military bases that were damaged during the war. The list of bases included PAF Shahbaz, PAF Nur Khan, and PAF Masroor. These are where Pakistan's F-16, JF-17, and Mirage planes are based, respectively. The list also included facilities at the Sargodha complex, which is home to a missile training garrison and is located in and around the Kirana Hills. This area has a long history with Pakistan's nuclear program, and today it has underground entrances for possible weapon and missile handling. One of the things that stood out

about the bids for Sargodha was the work to fix the runway surface. This is interesting because Sargodha is also one of Pakistan's F-16 sites that used to be thought to have a nuclear role. Peace in South Asia is still dubious due to the two nuclear-armed nations' geographical disputes, ideological disagreements, unstable political climate, and military postures. India also has a numerical and technological advantage over Pakistan in the conventional military. A third factor contributes to the Indian belief that its armaments are better than those of Pakistan. The aggressive Indian military stance has been exacerbated by the country's conventional military advantage, significant defense purchases, diplomatic influence, hawkish foreign policy, rising radicalism, and nationalism in domestic politics. Under the Modi administration, strategic restraint as a guiding principle is irrelevant. One given that the Indian military is continuously purchasing cutting-edge weaponry and indicating their intention to use them, this trend is probably going to continue in the future. The events of February 2019 are crucial for envisioning a future in which India might again infringe upon Pakistan's territorial sovereignty, citing a terrorist assault as justification, but in reality driven by internal, political, and strategic considerations. India accused Pakistan-based groups of being responsible for the Pulwama terrorist attack by a Kashmiri youth on February 14, 2019, and used Mirage 2000 jets to attempt to use stand-off weapons against a claimed terrorist training camp close to Balakot in Pakistan's Khyber Pakhtunkhwa region. By deploying their standoff weapons on the Pakistani side of the international border, Indian jets violated Pakistan's sovereignty even if they were unable to hit their objective. During operation Swift-Retort, the Pakistan Air Force carried out airstrikes and dropped bombs on Indian-occupied Kashmir the following morning. In the resulting dogfight, Pakistan captured Abhinandhan Varthaman, the pilot of an Indian Mig-21 Bison, and brought it down. Six Indian Air Force troops were on board an Indian Mi-17 chopper when it was also hit by friendly fire. Independent observers questioned India's allegations that it shot down a Pakistani F-16 jet, but the country was unable to produce any evidence. The Pulwama incident, which was carried out by a Kashmiri youngster in Indian-Occupied Kashmir, appears to have been the impetus for the Balakot strike; however, the decision to execute the action may have been driven by other strategic goals. Considering India's strategic direction, these elements are probably going to be important in the future as well. Aircraft are made to fulfill specific functions and have several responsibilities. According to their primary functions, aircraft can be classified as electronic warfare, fighters, bombers, ground-attack aircraft, and surveillance aircraft. The purpose of fighter aircraft is to engage in air-to-air combat or acquire air superiority over adversaries. While ground-attack aircraft fly at a lower altitude to target ground targets like tanks and military formations, bombers are heavier, fly at a higher altitude, and carry bombs and missiles. Multi-role aircraft began to replace single-role dedicated aircraft to preserve numerical strength and reduce the expense of maintaining air forces. Nowadays, the majority of aircraft from the third and later generations are multipurpose. Air dominance, ground attack/support, anti-ship, electronic warfare, and reconnaissance are all functions carried out by multi-role combat aircraft. The range of functions that an airplane can do has increased due to advancements in the airframe. Multirole fighters are capable of carrying out many missions(Ali, 2021).

Pakistan's Diplomatic Ties with US & China:

The nations must have a better reputation in the eyes of the international community in order to preserve cordial relations with the rest of the globe. The definition of the term "image," which first appeared in the 1950s, is "the belief or notion of something that the general population possesses, or an idea, concept, mental image, or impression. The F-16 agreement is a crucial component of the overarching US-Pakistan bilateral relationship, which accounts for the continuity observed from President Biden to President Trump, although certain delays. Both parties underscore the fleet's efficacy in collaborative counterterrorism operations within the region. The recent US agreement pertains to the sale of technology intended to enhance and

modernize Pakistan's current F-16 force. A report submitted to the US Congress by the Defense Security Cooperation Agency (DSCA) on December 4, 2025 corroborated this information. It is estimated that Pakistan possesses 70 to 80 operational F-16s. Some are older yet updated Block 15 aircraft, others are former Jordanian F-16s, and some are modern Block 52+ models. The US proposal includes hardware and software enhancements for improved flight operations and aircraft electronic systems; the Advanced Identification Friend or Foe (IFF) system for distinguishing friendly from hostile aircraft; navigation improvements; spare components; and repair services. Regarding Pakistan's image, it is urgently in need of being greatly improved because it has been severely distorted due to terrorism over the last few decades. Nevertheless, it is recognized as a state that supports terrorism and giving both domestic and foreign terrorists a place to hide. Pakistan has lost almost 80,000 lives as a result of being the frontline state in the fight on terror (50,000 civilians, 6,000 security personnel, and 27,000 militants). Between 2004 and 2013, the US-led "war on terror" resulted in a staggering number of deaths. Despite Pakistan's enormous sacrifices, the West continues to view her as a disloyal collaborator. The West's insensitive and discriminatory treatment of Pakistan, an Islamic state, openly supports racism, religious bigotry, and Islamic extremism. Pakistan continues to face numerous difficulties, including terrorism, an unstable economy, a precarious state of law and order, and weak government (H. U. Khan, 2020).

Ego-driven politics is a prominent feature of international relations in the modern world, having taken on a defining role and having a large impact on diplomatic interactions with a nation's foreign policy decisions (M. S. Khan et al., 2025). The United States and Pakistan have had a complex and evolving relationship throughout history. There have been periods of collaboration, tension, and reevaluation in the formal engagement, financial partnership, military links, and regional security concerns between these two nations. Pakistan's geographic significance was justified by the U.S. security decision-makers on the basis of its proximity to the Soviet Union. Pakistan's primary aviation bases, Lahore, Karachi, and Rawalpindi, are very valuable because of their close proximity to Moscow. Washington's policymakers considered Pakistan's military, demographic, and security importance to be extremely valuable and prestigious (Gul et al., 2025). China is becoming an important regional and international player in a changing global order in which the United States of America continues to be the dominating power. China has been aggressively pursuing a peripheral diplomacy strategy since 2012 with the goal of creating a regional network that is centred on China. The political disparities amongst the regional states present serious obstacles to this strategy (Kaushiki et al., 2025).

Pakistan's foreign policy has undergone significant changes as a result of China's rise to prominence as a major global economic and geopolitical power, particularly with regard to its relations with the Middle East. At the centre of this change is the China-Pakistan Economic Corridor (CPEC), a significant project under China's Belt and Road Initiative (BRI). In addition to providing much-needed investment into Pakistan's energy and infrastructure sectors, CPEC has strategically connected China's regional goals with Pakistan's economic destiny (M. N. U. H. Shah et al., 2025).

Manufacturing Cost Comparison of F-16 and JF-17 Aircraft

An F-16 costs roughly 80 million US dollars, Dassault Rafale costs 100 million US dollars, and a JF-17 Thunder costs between 30 and 35 million US dollars to produce. In order to modernize its fleet and maintain a minimum deterrence policy against the enemy, Pakistan had to purchase a multirole aircraft. Given our strategic environment and economic circumstances, JF-17 was the best alternative available because Pakistan was unable to obtain F-16 owing to sanctions and Rafale was expensive. PAC Kamra has so far provided the PAF with around 50 JF-17 Thunder. The cost would have been \$50 million if the PAF had received the same number of Rafales. The cost of purchasing the equivalent quantity of F-16s would have been \$400 million USD. Rather,

JF-17 Thunder saved around 30 million Pakistanis each. and if the export agreements for this fighter jet come to fruition, it will generate foreign cash, increase jobs, and elevate Pakistan in the international community. Closing aircraft agreements takes a lengthy time, thus the foreign office's assistance is required. To make accords, the political leadership should use the diplomatic channels more skillfully (Khan, F. M., & PIDE).

It is crucial to comprehend the complex cost structure of an airline because, regardless of the business model—full-service network carriers or low-cost airlines—or the distance of flights—short-haul or long-haul—effective cost-saving measures must be implemented across both direct and indirect operating expenses. The insights also address insurance responsibilities, financing and leasing arrangements, and maintenance expenses. Additionally, it looks at depreciation schedules, airport and navigation fees, and different passenger amenities, emphasizing the functions of onboard Wi-Fi, cabin crew, food, in-flight entertainment, and passenger compensation systems. Additionally, it examines distribution costs and ground handling operations, with a special emphasis on the industry's transition from conventional indirect to more direct distribution channels(O'Connell, n.d.).

Export Potential of JF-17 Aircraft:

For a long time, defense exports have been essential to boosting homegrown businesses and expanding geopolitical power. These days, defense exports are seen by rising nations like China, South Korea, and India as a means of becoming well-known worldwide. China has emerged as a major provider of armaments throughout the last 20 years(Yelwe, 2025a).

Because of these jets, Pakistan had a significant aerial advantage in combat that took place beyond visual range. The upgraded JF-17 Block III Thunder jets were fitted with hypersonic missiles, particularly the CM-401 missile, which has a range of 290–400 km and is capable of defeating advanced radar and missile defense systems. One of the Advanced Air Defense Systems, the HQ-9 system, provided layered defensive coverage of key cities and military installations with its advanced radar and targeting suite. Pakistan's operational capability and battlefield awareness were enhanced by China's real-time satellite assistance. Pakistan used AI-powered monitoring and targeting systems to improve the effectiveness of its military operations. JF-17 Fighter Jets played a key role in a number of military operations, including precision strikes against Indian forward supply targets. Pakistan also utilised drones, which may have been supplied by China, for both combat and research. These technologies, which were integrated into a single military ecosystem, significantly improved Pakistan's operational performance during the battle(Muhammad et al., 2025).

The airframe, avionics, and armament systems that a jet fighter may use are among the characteristics that are used to evaluate it. The airframe of the JF-17 Thunder is stunning. It features cutting-edge avionics, and PAC has all the resources needed to place any type of weapon system on the jet. Therefore, in terms of characteristics, the JF-17 Thunder possesses every excellent fighter jet. The JF-17 Thunder's quality and export potential are demonstrated by the fact that it has performed at all of the major air shows around the world, including those in Paris, Zhuhai, and Dubai. Special missions and purposes are the focus of the JF-17's design. Its primary duties include intercepting hostile aircraft, deterring threats, and, when necessary, bombing and destroying targets. It is the most affordable jet fighter on the market. It can bring in a significant amount of foreign exchange. Additionally, the nation purchases a single plane instead of many. The JF-17 Thunder might be a significant source of increasing foreign exchange reserves if we can close agreements with three or four nations. Second, selling an aircraft is more than just a game. The buyer-seller relationship is never just about the sale in the aerospace and defense sector or end export. Additionally, the buyer will rely on the Original Equipment Manufacturer (OEM) for replacement parts, transfer of technology (TOT), and repair and maintenance. As a result, that partnership will strengthen future diplomatic contacts, trade in non-defense-related goods, and

the exporting country's political clout and influence. Additionally, a fighter jet's successful functioning draws in more customers when it is sold abroad Khan, F. "M., & Ali, A.,(2021).. In order to continue working together to produce cutting-edge defense equipment, ordnance factories have mutual trust. The current example of a close collaboration is the Heavy Industry Taxila and Norinco. In 2012, HIT and Norinco made the decision to sell other states cutting-edge military hardware. JF 17 Thunder, which was co-developed by Chengdu Aircraft and Pakistan Aeronautical Complex, is one step ahead of the list of advanced military equipment being produced(Farhad, 2025).

Operational and Combat Performance Comparison of F-16 and JF-17 Fighter Jets

The JF-17 had two engine options, but most of them came from production versions. The F-16 is a lot heavier than the JF-17, even though they are about the same size. This is largely because the F-16 is older. But the JF-17 also shows that being lighter don't always imply being better. The F-16 can carry more fuel since it has a substantially greater MTOW and a range that is almost a third larger. The F-16 also features avionics and systems that are significantly more advanced. The JF-17 does feature modern sensors, radar, and other things, but they aren't as advanced or smooth as those on the newest Viper models. The JF-17 is said to be better than the RCS in one way. Both planes can carry a lot of stuff and protect themselves well, and they both have guns. The Viper carries a 20mm Vulcan Gatling cannon, and the Thunder has a 23mm Twin-Barrel Cannon. This means that the F-16's gun is more modern and powerful, even if it is smaller. It has a quicker rate of fire, which is typically essential in fast-paced battle. Because of the F-16's MTOW, it can carry more missiles and guided bombs—almost twice as much as the JF-17. Pakistan's deal with the United States said it couldn't change the planes to carry nuclear weapons, but several credible reports later came out saying that Pakistan planned to do just that (Associated Press Citation 1989). The Biden administration agreed to a \$450 million deal in September 2022 to assist keep Pakistan's F-16 aircraft program going (US Defense Security Cooperation Agency Citation 2022). There are still too many unknowns about the F-16s and the current picture of a Ra'ad ALCM placed aboard a JF-17 to say for sure that either one is meant to carry out a nuclear strike(Kristensen et al., 2025).

Comparison of F-16 and JF-17 Aircraft

Feature	JF-17 Thunder	F-16 Fighting Falcon
Origin	Pakistan–China (co-developed)	United States
Role	Lightweight multi-role fighter	Multi-role 4th-gen fighter
First Induction	2007	1978 (continuously upgraded)
Current Variants	Block-II / Block-III	F-16C/D, F-16V (Viper)
Unit Cost	~\$25–35 million	~\$65–85 million (new)
Engine	1 × RD-93 (or WS-13 in future)	1 × Pratt & Whitney / GE
Max Speed	Mach 1.6–1.8	Mach 2.0+
Range	~1,200–2,000 km (with drop tanks)	~2,400–4,200 km
Payload Capacity	~3,600–4,000 kg	~7,000–8,000 kg
Service Ceiling	~55,000 ft	~58,000 ft
Target Market	Budget-limited countries	Advanced air forces

Conclusion:

The JF-17 Thunder is a good and cheap multirole fighter from an analytical point of view, but it can't fully replace the F-16 right now in terms of overall performance and combat readiness. The

F-16 has been in service for decades, has a better engine, a more advanced flight control system, and works better with advanced Western weaponry and sensors. These things make the F-16 better in battle beyond visual range, endurance, and high-intensity air operations. The JF-17 is still being developed, even though subsequent versions, especially Block III, have made big improvements to avionics, radar, and electronic warfare. The F-16 has been battle-tested.

JF-17 is a strategically crucial asset for Pakistan, especially for the future. Its best features are that it can be controlled by locals, is cheap, is easy to maintain, and can be changed to fit different needs. These things make it less reliant on foreign political restrictions. The plane fits Pakistan's operating needs and can be upgraded over time. The JF-17 also has a lot of potential for export because it appeals to developing countries that want a modern, inexpensive fighter jet without any restrictions on how it can be used. In the long run, ongoing technological advancements and operational experience could allow the JF-17 to take on a role more like that of the F-16. This would make it not only a symbol of Pakistan's growing defense self-reliance, but also a valuable part of its defense economy and strategic independence.

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