

Iran and U.S. Strategy: Looking Beyond the JCPOA

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Regardless of what nations declare, their real-world strategy tends to evolve one crisis at a time and focus on the issues that drive that particular crisis to the exclusion or partial indifference of other key factor and needs. In practice, the Biden administration's present focus on Iran as a threat is driven by its effort to return to the Joint Comprehensive Plan of Action (JCPOA) with Iran and to make it a fully functioning agreement – with little public attention to the other factors that must shape U.S. strategy towards Iran and the Gulf.

The administration seems to pay far less attention to what will happen after such an agreement to return to the JCPOA is or is not reached; if the other developments in Iran's politics and strategy; if the other developments in its military forces; and if its role and influence in nearby powers like Syria, Lebanon, Iraq, and Yemen. Iran's potential new trade for oil in its agreement with China seems to get only marginal attention – as does China's strategic dependence on imports of Gulf oil.

More broadly, the Biden Administration seems to be following the Trump Administration in phasing down the U.S. presence in the MENA region – especially in the Gulf – on the basis of its “defeat” of the ISIS Caliphate and its need to allocate resources to Asia.

The U.S. does seem to pursue some kind of strategic partnership with Iraq – although in a vague and half-hearted way. However, its strategy for the rest of the Gulf, the Levant, and North Africa has not clearly evolved beyond shifting away from the Trump Administration's focus on getting more burdensharing revenues. There are words to the contrary, but – as yet – they seem to be little more than a political cloak for a lack of substantive action.

If the U.S. is to succeed in both preventing an Iranian nuclear program and helping to bring some form of stability to the Gulf and MENA region, it needs to broaden its approach to the Iranian nuclear program and to focus on the overall military balance in the Gulf as well as the trade-offs that Iran must make between its nuclear and missile programs.

At the same time, the U.S. must recognize that the Iranian missile threat, Iran's influence over key neighbors like Syria and Iraq, and Iran's capabilities for asymmetric maritime warfare in the Gulf must be considered in shaping both U.S. efforts to negotiate a nuclear agreement and reach some form of more stable military balance in the region.

The Uncertain Nature of the Joint Comprehensive Plan of Action (JCPOA)

The full details of the JCPOA negotiations are not public, and it is still unclear whether the U.S. can reactivate the JCPOA, and – if so – what form the JCPOA will then take. So far, however, a range of important technical issues have not been fully addressed in public.

These issues involved in revising and expanding the JCPOA include:

- Can the JCPOA be extended in time and scope? If so, how?
- What happens to all of the uranium enriched beyond the JCPOA limits, including some now enriched to 60% – close to the levels of enrichment used in the first U.S. nuclear weapons although it should be noted that the first uranium weapon used 60 kilograms of

highly enriched uranium (HEU) and was scarcely small or ideally suited to a missile warhead?

- Is the Arak plutonium reactor fully modified to eliminate the risk of producing weapons grade plutonium or an effective weapon or explosive device using weapons grade Plutonium?
- What happens to Iran's improved centrifuges, where some already have proved to be far more effective than the earlier models and a ninth improved version is reported to have been designed?
- What new inspection agreement will exist and how effective will it be?
- What will the new estimate be for some form of Iranian nuclear break out – either as a fission capable device or actual weapon in terms of days, months, or years once the revised agreement goes fully in to force.
- Will the time limits on given types of activities in the agreement change?
- What rules – if any – will now apply to the “snapback” of UN and other sanctions if Iran does violate the agreement or fails to update if its time limits expire? Will U.S. unilateral withdrawal be replaced by better agreed rules for mutual enforcement?

Focusing on Enrichment to the Exclusion of Creating Actual Nuclear Weapons and Forces

There has been some public mention of options for modifying the JCPOA, but one critical issue has not been addressed. To what extent has Iran actually been able to preserve many of the advances it made in its breakout capability to quickly produce fissile material, and to what extent will it still be able to covertly work on nuclear weapons design if it does accept some version of the JCPOA? It is one thing to limit Iran's ability to proliferate, and it is quite another for Iran to actually give up its search for nuclear weapons and all its contingency capabilities.

Some compromise is almost inevitable if Iran is to agree. The JCPOA is sometimes criticized for having limits that have been part of every real-world arms control agreement. No important arms control agreement meets all the needs of all the parties involved, all needs in regularly updating, and all need in keeping up with changing technologies.

At the same time, 2021 is not the late 1990s. The JCPOA was signed on July 14, 2015, but it was originally conceived at a time when Iran had not demonstrated its present level of technical skill, and it was still possible to focus almost exclusively on enrichment and the production of fissile material rather the key aspects of Iran's other nuclear weapons capabilities.

It was possible at the time the JCPOA was signed to largely ignore the fact that U.S. and allied intelligence had long concluded that Iran was lying when it claimed to not have any form of active nuclear weapons program. Iran had never publicly admitted to a nuclear weapons program, and Iran's Supreme Leader, Ayatollah Ali Khamenei, had issued a fatwa on August 9, 2005, stating that the production, stockpiling, and use of nuclear weapons was forbidden under Islam and that Iran would never acquire such weapons.

Reporting on Iranian activity by the International Atomic Energy Agency (IAEA) had already cited a number of activities and facilities that raised questions about such claims after 2005. Iran's claims then became far more questionable in January 2018, when Israeli Mossad agents seized a

100,000-document archive of Iranian nuclear weapons development data that contained documents on a Project Amad that had been stored 15 years earlier in 2003, when the Iranian nuclear weapons program had been formally cancelled.

Several months later, Israel held a press conference where it claimed the Iranian archive contained documents that showed that Iran had received actual weapons design data from a foreign source – which may have been Pakistani scientist Abdul Qadeer Khan. Israel claimed that the archive also showed that Iran had worked in testing implosion devices, in making fissile grade metal, and in testing neutron initiators.

While Iran has denied the authenticity of the archive, there are reports that it documents contain the fingerprints of at least one well-known Iranian physicist. The IAEA has also partly confirmed some of these claims. Iran placed a massive metal container in its Parchin nuclear research site outside Tehran, where it only allowed IEA inspectors in after a long delay to clean out the site, remove topsoil and trees, and pave over it with asphalt. Israel stated that the archive examined challenges in integrating a nuclear weapon into a warhead for the Shahab-3 Iranian missile, proposed sites for possible underground nuclear tests, and described plans to build an initial batch of five weapons.

Israel also claimed the documents showed that while the Project Amad program had been formally canceled in 2003, senior Iranian scientists had continued their work on key aspects of weapons design, which were hidden in other military research efforts – although they did not find any examples. It stated that the documents in the archive described a series of meetings in late 2003 where Project Amad’s managers planned ways to keep the program’s scientists working with nuclear-relevant research after the initiative was terminated.

The archive also showed that Iran’s Organization of Defensive Innovation and Research, whose Farsi acronym is SPND, was to become the platform for research in nuclear weapons-related fields, such as neutron generation, and in training of new scientists as well as keeping weapons related experiments covert. “Let there be no mistake: the amount of personnel in the overt and covert parts will not decrease,” one Iranian official wrote in a memo dated September 3, 2003. “The structure will not become smaller, and every sub-project will supervise both its overt and covert parts.”

This history helps explain why the current JCPOA ignores the weaponization and many of the delivery system aspects of Iran’s capabilities to go from obtaining fissile material to designing and deploying effective nuclear weapons – either covertly or after openly breaking any renewed agreement. It also helps to explain why the official public debate over the content of the JCPOA is so limited.

- There is no reliable open source assessment of how far Iran has gotten in nuclear weapons design – or open source report on what Israel may or may not have learned from the Iranian material it obtained. There also is no open source assessment of Iran’s ability to carry out covert tests of design features, subcomponents, or full-scale that do not involve fissile material, or of its ability to move quickly or immediately to reliable high yield fission or boosted weapons.
- There is no reliable open source assessment of how far Iran has gone – if at all – in testing a possible aircraft delivery mode for a nuclear weapon – and more realistically – a nuclear missile warhead or its current real-world capability to reliably build a nuclear weapon. There has been no supporting open source analysis of the extent to which Iran has – or

could potentially – carry out covert tests of design features, subcomponents, or full-scale designs that do not involve fissile material.

- There is no reliable open source estimate of whether Iran would have to conduct a given series of tests of an actual nuclear explosion or explosions to produce a real-world weapons delivery capability.

An Iranian Nuclear Breakout Race and Its Consequences

More than that, there has been no serious analysis of what could be done to prevent an Iranian nuclear weapons breakout if Iran decided upon one in the future, although it seems likely that Iran would either have to acquire at least several actual nuclear armed weapons systems covertly or would be vulnerable to military preemption once it moved towards actual weaponization and deployment:

- There seem to be no open source estimates of Iran’s vulnerability to preemptive conventional or nuclear strikes if it overtly or covertly goes from acquiring highly enriched material to actual possession and deployment of a weapon.
- There seem to be no open source estimates of how Iran would attempt to deploy its initial nuclear weapons, what force levels it would try to build, what kind of concealment it might use, and how this would affect weapons safety and reliability.
- All of the open source data on Iran’s missile performance seem to use nominal estimates of missile range rather than test data, and most do not specify even a real-world or warhead payload capability and configuration. They also do not address the nature and sophistication of actual conventional warhead capability and reliability, capability to transfer technical knowledge to nuclear warheads, and real-world capability to openly or covertly deployed a nuclear warhead as a substitute.

These are critical issues at a time when Secretary Blinken has talked publicly about Iran moving towards a point where it could get enough highly enriched material to enrich to weapons grade in a matter of weeks, when estimates of its current capabilities are as low as three months; where its centrifuge programs have advanced to the point where small, covert, and interactive enrichment centers could be far more effective and easier to conceal; and where Iran might test a large device using relatively low levels of enrichment simply to show it had a nuclear “weapon.”

This raises the real-world issue of whether Iran would ever risk claiming it had a nuclear weapon that it never actually tested, whether an actual test would reveal its level of weapons design capability, and what amount of force it would calculate to limit the risk of a preemptive Israeli or other strike to acceptable limits.

At the same time, one has to consider the kinds of futures that may emerge if Iran actually does decide to weaponize. These could include a near Iranian nuclear monopoly in the Gulf, a regional race to proliferate by the wealthier Arab countries, Israeli conventional or nuclear preemption (or a major increase in Israel’s nuclear forces), and a U.S. effort at extended deterrence. So far, nuclear proliferation has not produced regional nuclear arms races outside of Europe, and isolated proliferators like North Korea seem sufficiently unlikely to use their weapons.

At a minimum, a nuclear armed Iran would confront a nuclear armed Israel, raising all of the first and preventive strike issues that can increase the risk of escalation. Depending on the timing, however, a nuclear arms race could begin relatively quickly in the Gulf. Pakistan now has enough

surplus fissile material to sell weapons to Arab states, and Gulf states are already exploring nuclear reactors – and Saudi Arabia and the UAE have at least studied nuclear options. An Iranian attempt at nuclear break out that did not result in preemption seems unlikely to result in any stable form of nuclear deterrence or stability, and the consequences would be grim.

Any use of nuclear weapons anywhere in the world would be a massive tragedy, but the Gulf and Levant are regions where one weapon can do existential damage to the current character of most nations. The Gulf and Levant also contain countries where one major urban center is a critical part of the nation's political, social and economic structure.

More broadly, the region provides some 40% of world exports of crude oil, some 15% of world exports of refined products, and a substantial and growing volume of natural gas exports. Any war that escalated to nuclear levels could critically affect the flow of petroleum exports to the global economy. Moreover, even the United States – with its major increase in domestic oil and gas production – still has a massive amount of indirect imports of Gulf oil and gas in the form of Chinese, Japanese, Korean, Taiwanese, and other manufactured goods that are dependent on the steady flow of such Gulf exports.

Conventional Precision Strike versus Nuclear Proliferation

One option that Iran, the U.S., Israel, and Arab states might consider is to allow Iran to use its growing conventional missile strike capability as an alternative deterrent and defense. While it may initially seem counterintuitive, the conventionally armed, precision strike Iranian missile and UCAV programs that many have tried to include in the arms control limits in the JCPOA may actually offer a more stable and far less dangerous alternative, and one that is more compatible with the other aspects of what some have called its “forward defense” strategy. They may present a higher risk of actual use, but the consequences are likely to be far smaller. In fact, allowing Iran to go on developing such systems may be one key to having it back away from actual nuclear proliferation.

The key problem for Iran in relying on any form of Iranian nuclear deterrence or strike is the resulting level of escalation. As Henry Kissinger once stated, “the threat of committing suicide is not an adequate deterrent to being murdered.” Any Iranian nuclear threat can inspire Israel preemption or a U.S. commitment to some form of extended deterrent and create a process of escalation that results in devastating nuclear attacks on Iran.

If the JCPOA negotiations are put in the broader context of some effort to reduce the overall level of tension in the region, Iran's current strategy of focusing on gaining influence in neighboring states and with non-state actors, of creating a massive capability for irregular warfare in or near Gulf waters, and of relying on a growing force of conventionally armed precision strike systems may offer both Iran and the region a far safer option than Iran acquiring a nuclear weapon or nuclear force.

In some ways, Iran can also achieve a far safer form of strategic leverage by being constantly on the edge of “break out” than it can be by actually producing a vulnerable initial nuclear explosive and then its weapons capability. It can use even the tacit threat of reverting to nuclear weapons development, influence and intimidate with far less risk of nuclear preemption, and continue to expand its precision conventional attack capabilities while trading its acceptance of a JCPOA-like agreement for some degree of relief from sanctions.

These also are proven capabilities that Iran already possesses, rather than ones that require Iran to invent new efforts or for its neighbors to accept threats that are not already growing in place. **Figure One** shows that Iran has already demonstrated that it can use precision conventional strikes to hit at critical Saudi oil facilities and use the Houthis in Yemen to carry out similar attacks. This use of conventional weapons may inspire attacks in kind, but this is the kind of escalatory exchange that Iran may calculate it can safely use – or try to use – to achieve its strategic goals, compensate for its lack of modern air power, and use directly or through its allies to put pressure on America’s strategic partners and indirectly on the U.S.

Moreover, parts one and two of **Figure Two** show that Iran does not have to rely on any one strike or delivery system, and that it can still make use of its older unguided delivery systems. Iran can fire volleys over time and complicate any missile defense by firing volleys of different conventionally-armed missiles and drones, including older, cheaper non-precision systems. It can carry out large numbers of tests of its actual missiles and warheads against simulated targets, fire or have allies fire missiles against actual targets to demonstrate its capabilities, and steadily improve its ability to actually carry out effective strikes empirically and using a range of missiles and UCAV/drones.

Iran also has some advantages in terms of strategic depth, although this advantage is limited, given the range of modern strike aircraft. Many critical Arab infrastructure and U.S. and Arab military facilities are near the Gulf coast. Most are relatively open to contractor or loosely controlled civil workers. In practice, this means that targeting does not require advanced satellite or other reconnaissance assets. Anyone with a cell phone or dedicated small device can walk up to a critical, high cost, long replacement lead time component and get precise GPS coordinates and an image.

This means Iran has the potential ability to create the equivalent of SIOP-like water/desalination, electric power, gas, refinery structure, port, and oil and gas pipeline and processing facilities target list and plan at remarkably low cost. It is true that the Arab Gulf states have their own air-launched precision strike systems, but – with the possible exception of Saudi Arabia – they are substantially more vulnerable, and their lack of unity undermines their collective capability to deter Iran.

Figure One: Key Iranian and Houthi Precision Conventionally Armed Missile Strikes

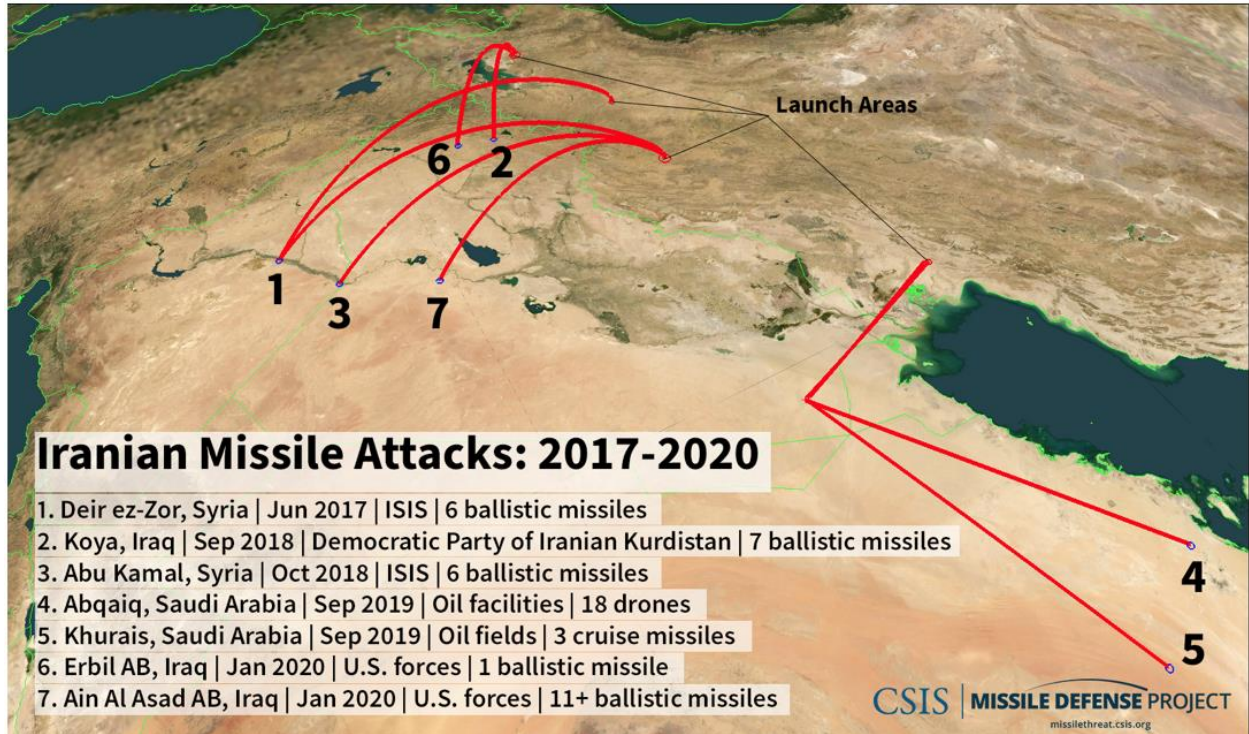
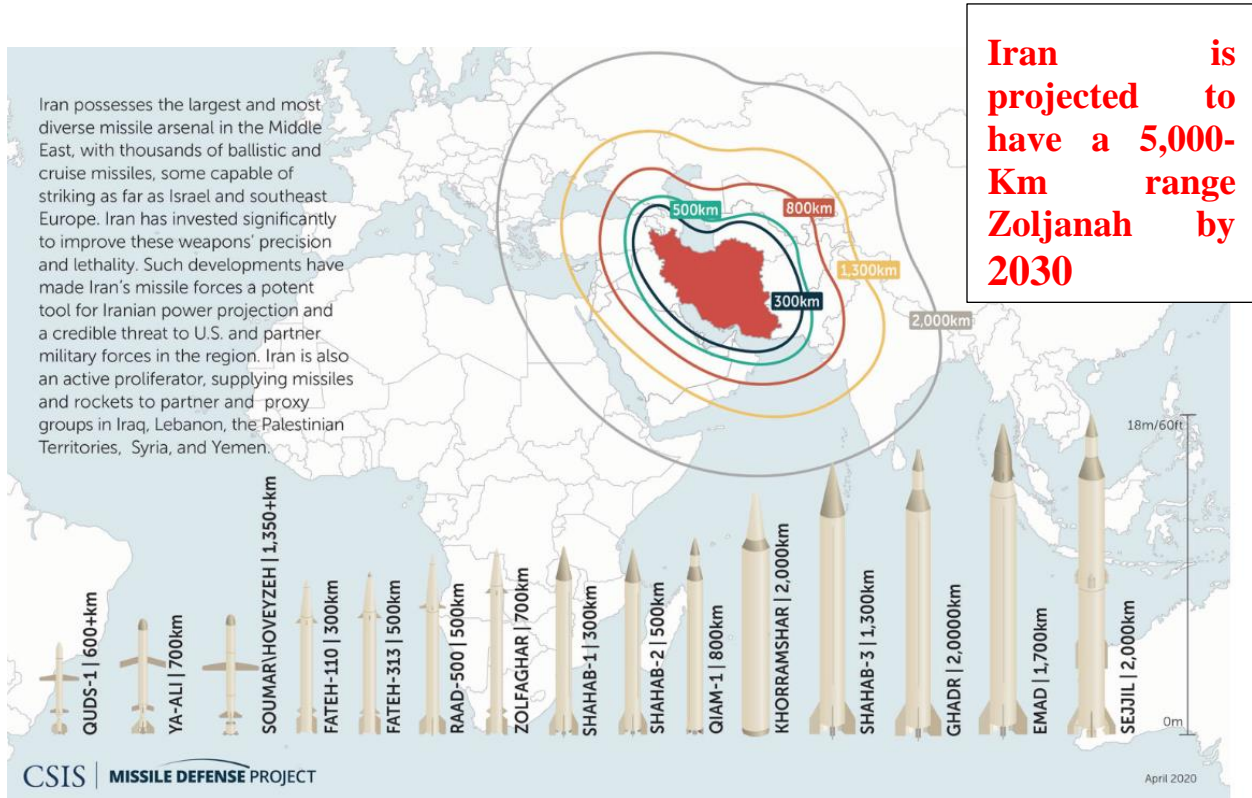


Figure Two: Key Iranian Missile Forces



Missile	Class	Range	News
Ya-Ali	Land-Attack Cruise Missile	700 km	Operational
Safir	SLV	350 km altitude	Operational
Khorranshahr	MRBM	2,000 km	In Development
Qiam-1	SRBM	700-800 km	Operational
Shahab-1	SRBM	285-330 km	Operational
Simorgh	SLV	500 km altitude	In Development
Koksan M1978	Artillery	40-60 km	Operational
Zolfaghar	SRBM	700 km	Operational
Emad (Shahab-3 Variant)	MRBM	1,700 km	In Development
Sejjil	MRBM	2,000 km	Operational
Shahab 2 (Scud C-Variant)	SRBM	500 km	Operational
Shahab-3	MRBM	1,300 km	Operational
Ghadr 1 (Shahab-3 Variant)	MRBM	1,950 km	In Development
Fateh-110	SRBM	200-300 km	Operational
Tondar 69	SRBM	150 km	Operational
Soumar	Cruise Missile	2,000-3,000 km	Operational (presumed)
Ra'ad	Antiship Cruise Missile	150 km	Operational
Fateh-313	SRBM	500 km	Operational

Note: Ranges are nominal estimates. Data on range-payload, accuracy, reliability, navigation, target recognition, and warhead options are often lacking, or based on technical estimates rather than hard data.

The JCPOA's Impact on Other Aspects of Iranian Military Priorities

Iran might still calculate that nuclear forces would provide an extra level of deterrence against U.S., Arab, or Israeli retaliatory strikes. Iran might also calculate that it would have more flexibility in using both its conventional missile and other conventional forces – including its major navy-missile-air capabilities for irregular maritime warfare in the Gulf – if it could successfully deploy a real nuclear force without being preempted or sanctioned. The practical problem, however, is that it risks preemption, triggering a local nuclear arms race, and the actual use of nuclear weapons. Moreover, even the potential Iranian capability to deploy nuclear weapons gives it deterrent leverage in continuing to build up and use its conventional missile and irregular warfare capabilities. So do its ties to the Hezbollah, Syria, pro-Iranian elements in Iraq, and Yemen.

More broadly, Iran's conventional missile developments having already made major changes in the balance of deterrent and warfighting capabilities in the Gulf. This helps explain why Iran has resisted any efforts like the JCPOA restraints on its missile forces so strongly. Iran has faced major limits on its arms imports since the fall of the Shah in 1979. Much of its land order of battle is equipped with armor that dates back to the 1970s, many of its other land weapons date back to the Iran-Iraq War or are aging and relatively mediocre systems.

Iran's only major holdings of the most modern land weapons are short range, tactical guided missile systems. The bulk of its land forces are also far better armed and equipped for defense in depth than maneuver outside Iran. Kuwait and Iraq certainly have some vulnerabilities, but Iran has only limited capabilities to threaten other Gulf states if the U.S. actively supports its Arab strategic partners.

Iran's major surface ships have been heavily modified, but they are still floating museums in many ways, and their service ability is often uncertain. Its submarines and submersibles pose a moderate threat, but have their own operating limits, and only its anti-ship missiles, smart mines, and smaller naval combat ships pose a serious threat. The same is true of its limited amphibious capabilities. It would have to use commercial ferries in a permissive environment to make major movements of land forces across Gulf waters.

Iran is acquiring the S-300 surface-to-air missile system and a far more advanced overall sensor and air defense command and control system from Russia. However, its air force is in many ways as much a military museum as its major surface ships. In contrast, the Arab Gulf states not only have potential reinforcement from the U.S., Britain, and France, but massive combat aircraft modernization programs supported by steadily longer-range, precision-guided air strike systems like the Storm Shadow.

Figure Three shows both how old the present Iranian Air Force is and the massive level of modernization in Gulf Air forces. Bahrain already has 38 combat capable aircraft, including 20 F-16C/Ds; Kuwait has 66 combat capable aircraft, including 39 F/A-18C/Ds; Oman has 63 combat capable aircraft, including 23 F/A-16C/Ds and 12 Typhoons; Qatar has 33 combat capable aircraft, including 12 Mirage 2000s and 23 Rafales; Saudi Arabia has 443 combat capable aircraft, including 81 F/A-15C/Ds, 66 Tornado IDS, 12 Tornado GR-1As, and 7 E-3s; and the UAE has 156 combat capable aircraft, including 78 F/A-16E/Fs and 66 Mirage 2000s.

Iran's missile programs do not give it an advantage over Gulf Arab air power, they are critical to giving it any substitute for the age and wear of most of its other weapons systems, and critical parts of its infrastructure and economy are as vulnerable to air strikes with longer-range precision missiles like Storm Shadow or a variety of U.S. air delivered systems and cruise missiles.

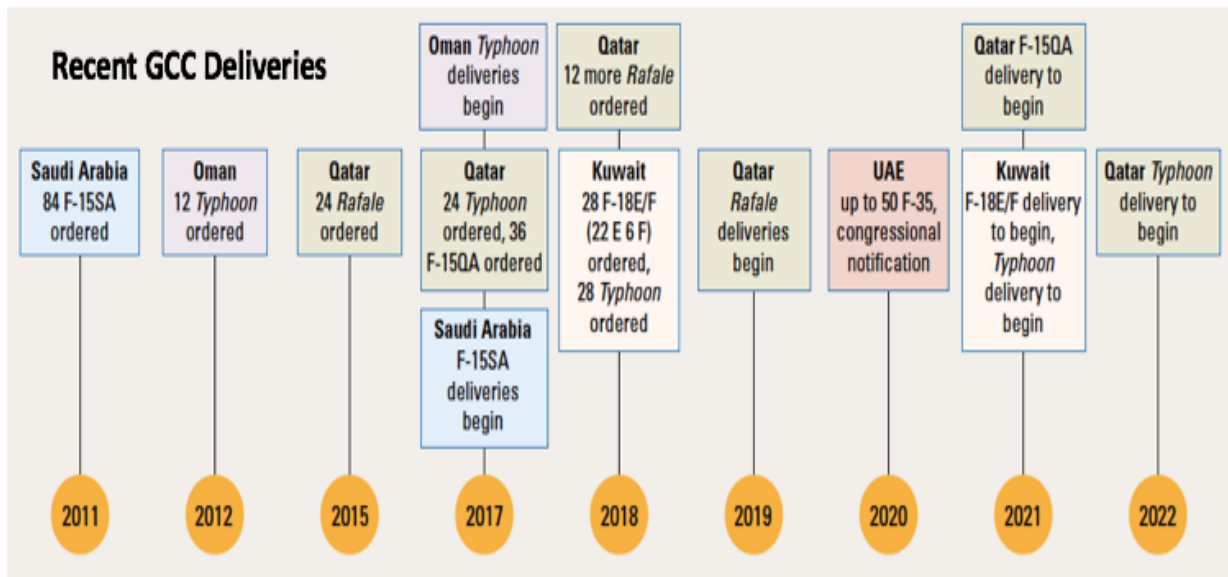
Iran’s only way to compensate for its conventional weakness is conventionally armed, precision-strike missiles, and it can scarcely give them up as part of the JCPOA. And once again, firing large numbers of unguided missiles to cloak its precision strikes and potentially deny its neighbors missile defenses the ability to know which incoming missile is a precision strike system could actually allow Iran to use its older and more obsolescent missiles to make its more modern systems more effective.

Figure Three: Iran’s Aging Air Force vs. Arab Gulf Air Modernization

Iran Holdings –

**333 Aircraft inventory,
All from 1960s to 1990.
Operational status
unclear**

FTR 183+: 20 F-5B *Freedom Fighter*; 55+ F-5E/F *Tiger II*; 24 F-7M *Airguard*; up to 43 F-14 *Tomcat*; 35 MiG-29A/UB *Fulcrum*; up to 6 *Azarakhsh* (reported)
 FGA 88: 62 F-4D/E *Phantom II*; 10 *Mirage F-1E*; up to 6 *Saegheh* (reported); up to 7 Su-22M4 *Fitter K*; 3+ Su-22UM-3K *Fitter G*
 ATK 39: 29 Su-24MK *Fencer D*; 7 Su-25K *Frogfoot* (status unknown); 3 Su-25UBK *Frogfoot* (status unknown)
 ASW 3 P-3F *Orion*
 ISR: 6+ RF-4E *Phantom II**



Source: IISS Military Balance, 2021

Credible Conventional Gray Area Deterrence

While it is far from clear that Iran's new hard(er)-line leadership will accept such an option, an Iranian focus on conventional precision missiles and UCAV forces also seem to offer a better broader deterrent than nuclear weapons when linked to Iran's other gains in influence and asymmetric warfare – whether or not it was linked to some form of ongoing effort to preserve some form of a nuclear breakout capability.

Iran has already demonstrated that it is safest when it escalates in gray area operations using the Hezbollah and the Houthi. At the same time, it is clearly least safe when it pushes Israel towards preemption, its Arab neighbors towards proliferation, and the U.S. towards extended deterrence. It has made major strategic gains already in building its ties to Syria and the Hezbollah, and its ties to Iraq at least represent an option. The Houthi continue to make gains over the Yemeni government in exile and Saudi forces, and Yemen too may become a lasting zone of influence.

The word *may* is critical in referring to such Iranian partners. To paraphrase Prince Felix of Schwarzenberg, Iran may eventually be astounded by Assad's ingratitude – along with that of the Hezbollah, some of Iraq's current leaders, and the Houthi. This does, however, currently seem unlikely in at least the near term. Moreover, Israel is likely to shift the intensity of its focus on Iran the moment it feels it can safely ignore an “existential” Iranian nuclear threat and Assad begins to more aggressively reassert himself. Israel already has targeted arms shipments and missiles in Syria.

This still leaves the U.S., Saudi Arabia, and the UAE as major challengers to Iran – and the massive Gulf conventional arms race described earlier in play. At the same time, the Gulf Arab arms race has so far done little to actively engage or threaten Iran, and it is now vastly more expensive on the Arab side than on Iran's, without promising the Arab side any major gains in a major war. The Arabs may well deter, but they do not particularly threaten.

If one looks only a few years into the future, Iran may create a far more stable military balance in the region. It will then be able to deter its Arab neighbors by posing a major conventional precision missile threat, and it already can combine its influence over Syria and Yemen with its major capability for maritime gray area warfare in the Gulf. It has proved for some years that it can pressure and threaten its Arab neighbors with low-level attacks by its mix of air and land-based anti-ship (or coastal and offshore facility) missiles, IRGC small craft and submersibles, smart mines, and other naval systems. It cannot risk some form of serious war without involving the U.S. or potentially limiting its own oil exports out of the Gulf but – ideology aside – it has no reason to. Limited gray area pressure largely meets Iran's needs.

As noted earlier, the ability of Iran's current Supreme Leader and newly elected President to accept this level of mutual deterrence is a very different issue. At the same time, one should be a bit careful about assuming that everything they say about rejecting nuclear weapons is hypocritical. There is considerable evidence that they had backed away from the Shah's nuclear program until Iraq attacked Iran with nerve and mustard gas during the Iraq War, Iraq started its own missile war, and it became clear that Iraq was working on its own nuclear weapons program.

Iran also has realized that it is not going to deploy its own nuclear forces in significant numbers without provoking a major regional reaction, and it is not clear by how much Iran could win any race to acquire nuclear weapons, or what winning would really accomplish. The irony is that Pakistan might sell better nuclear weapons to the Arab (and Sunni) side far faster.

Iran's hardline regime will also have to choose between a nuclear and non-nuclear posture where it can never be sure what the economic cost will be or what the end result will be in terms of popular support for the regime. The April 2021 economic analysis of Iran by the World Bank attached as an Annex at the end of this commentary may not be as dismal as the "maximum pressure" sought by President Trump, but it can scarcely be reassuring. Moreover, Iran's new elected President Raisi did make the economy a campaign issue, and Iran has opened up talks with its Arab Gulf neighbors.

No one can afford to be optimistic about Iran accepting such changes – and trading conventional precision strike for nuclear proliferation – particularly right after a major victory for the hardline regime, but it may be possible. Certainly, it offers at least some leverage in improving the JCPOA and making it more negotiable. It is scarcely a risk-free proposal, but even the worst ultimate consequences would also be far less dangerous.

Annex One: World Bank: Iran, Islamic Republic, April 2021

www.worldbank.org/en/country/iran/publication/economic-update-april-2021

Years of sanctions and the COVID-19 pandemic have mounted pressures on the Iranian economy. Fiscal space remains constrained due to a decline in oil revenues and the cost of COVID-19 mitigation measures, which caused a surge in government debt. Restricted access to foreign reserves due to US sanctions led to a sharp exchange rate depreciation, which in turn heightened inflation. Job losses through the pandemic and high inflation deteriorated welfare, particularly that of already vulnerable households.

Over the last decade, bouts of GDP growth have been jobless and primarily driven by the oil sector. Real GDP has declined to the same level of a decade ago and the country failed to benefit from growth opportunities like periods of high oil prices (2010-2014) and a highly educated young population that could boost productivity. Job creation has fallen short of meeting labor supply and despite a persistent low labor market participation rate (44 percent average) the rate of unemployment has been in the double dig-its. Unemployment has been especially high among the youth, female, and the highly educated (23.7, 15.9 and 14.3, respectively in Q4-2020). Despite some progress towards economic diversification, high public sector presence continues to inhibit job creation and capital formation by the private sector.

Iran is grappling with the COVID-19 health crisis. With more than 1.7 million cases and 61,000 deaths, as of mid-March 2021, Iran remains the worst affected country in the Middle East and North Africa region. After stricter lockdown measures were announced in late-2020 confirmed new cases remained stable and daily deaths fell below 100 persons. A gradual relaxation of measures raises the likelihood of a fourth wave of COVID-19 cases. Vaccinations started in February 2021 for 10,000 frontline medical workers, but full coverage of the 84 million population will take time.

COVID-19 and years of economic sanctions amplify previous economic challenges. The sharp decline in hydrocarbon revenues since 2019/20 combined with the economic and health costs of the pandemic resulted in a large burden on government finances and amplified existing structural challenges. Inflation has remained high since 2018/19 (36 percent YoY on average). The pandemic severely affected jobs and incomes in many labor-intensive activities, including high-contact services and the informal sector.

Recent developments

Despite an initial COVID-19 induced shock to GDP, a strong rebound in mid- 2020 led to a modest economic expansion in 2020/21. Iran's GDP is now estimated to expand by 1.7 percent in 2020/21. The COVID-19 output loss since Feb 2020 was less pronounced than in other countries as Iran's economy had already contracted by 12 percent over the previous two years. The economic recovery in Q3 and Q4-2020 was stronger than expected both in oil and non-oil sectors, which grew by 16 percent and 3.1 percent YoY, respectively. The increase in oil GDP vis-à-vis a decline in exports suggests that oil production was largely directed to domestic consumption and storage in Q3 and Q4-2020. The non-oil sector rebound was driven by the manufacturing sector as the exchange rate depreciation made domestic production more price competitive. Discouragement from the labor market, reflected in lower economic participation, drove the unemployment rate down to 9.4 percent in Q4-2020, despite the employment level falling by over 1 million YoY.

COVID-19 expenditures and plummeting oil revenues increased the fiscal deficit-to-GDP ratio to its highest rate in decades. Government revenues in Apr-Dec 2020 (9M-2020/21) were only 55 percent of the budget approved amount for the entire 2020/21. Similarly, only 14 percent of the anticipated oil income materialized due to both lower oil export volumes and prices. Higher health and social assistance costs from the COVID-19 pandemic pushed total expenditures up by 28 percent YoY. As such, the fiscal deficit is estimated to increase to over 6 percent of GDP and public debt to surpass 50 percent of GDP in 2020/21. The fiscal deficit in 9M-2020/21 was primarily financed through bond issuance (70 percent), followed by sales of assets and withdrawals from strategic reserves.

Inflationary pressures increased in 2020/21 as the rial depreciated due to a limited foreign exchange supply and heightened economic uncertainty. Inflation resurged to over 48 percent (YoY) in February 2021.

Since April 2020, the Iranian currency lost half of its value due to US sanctions on accessing reserves abroad. Hopes of sanctions relief after the US elections led the rial to gain about 15 percent of its value. The exchange rate volatility and government financing operations also had negative spillovers in the stock market.

Recent economic developments have add-ed stress on low-income households and stalled poverty reduction. Poverty in-creased by 1 percentage point from 2017/18 to 2018/19 reaching 14 percent, before the COVID-19 pandemic. The loss in household incomes through the pan-demic and rising living costs due to inflation are estimated to raise poverty by 20 percentage points. A range of social protection measures have been introduced in response. While they partially compensate for the lost incomes, their real value will erode with continued high inflation.

Outlook

Iran's economic outlook hinges on the evolution of the COVID-19 pandemic and the pace of global economic recovery. The GDP recovery is projected to be slow and gradual due to a slow vaccination rollout and weak demand from regional trading partners. Inflation is forecast to decrease but remain above 20 percent on average in

the medium term. With limited fiscal space and high inflation, economic pressures on poor households will continue. Better targeting of cash transfers can help reduce mitigation costs.

In the absence of a pickup in oil revenues, the fiscal deficit is projected to remain high in the medium term. A slow economic recovery would translate into similarly slow growth in non-oil revenues. Higher reliance on bond issuance, especially in the form of short-term bonds, would increase interest payment and amortizations costs. Further government debt issuance and sales of public assets could increase financial contagion risks in the stock market and place additional stress on the undercapitalized banking sector.

Risks to Iran's economic outlook relate to the recovery path from the pandemic and the prospects of geopolitical developments. The pace of vaccination (purchase and distribution), resurgence in the number of cases such as those from new COVID-19 strains, and subsequent lock-down measures could weigh down on economic activity and prolong the acute phase of the crisis. The burden of further economic deterioration would be felt the most by the poor and vulnerable and in-crease poverty. Upside risks relate to the possibility of partial sanctions relief which could boost economic activity, as the economy has chronically operated below potential capacity.