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IRAN IN TRANSITION

The Implications of the Islamic Republic's Changing Demographics

Richard Cincotta and Karim Sadjadpour

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Summary

In the late 1980s, Iran's revolutionary government deployed a series of contraceptive and counseling services that would become one of the world's most effective voluntary family planning programs. The country's total fertility rate—the average number of children an Iranian woman could expect to bear during her lifetime—fell from five and a half at the program's inception to two children per woman about two decades later. Consequently, Iran has entered an economically advantageous demographic window of opportunity, during which its working-age, taxable population outnumbers children and elderly dependents. This transition has important implications for the country's economic and political trajectory, as well as for U.S. policy toward Iran.

Iran's Changing Demographic Profile

- Iran's current age structure is mature compared to most Middle Eastern populations, but substantially younger than those of Japan or European states.
- This window of opportunity allows Tehran to pursue growth-friendly policies and reforms that harness its rising stock of human capital, much like the fast-growing East Asian economies that transitioned to low fertility before the Islamic Republic.
- Iran is traversing its demographic window relatively quickly—UN projections suggest that these favorable economic conditions will likely last until sometime between 2040 and 2045. Before then, Iran faces pressure to reform the country's broken social insurance system and prepare its healthcare system for a future, just twenty-five years away, when one in five Iranian adults are projected to be over sixty-five years old.
- Despite the Iranian government's latest attempts to encourage higher fertility, recent analysis of the country's 2016 census suggests that Iran's total fertility rate remains near two children per woman.

Strategic and Policy Implications

- Demography is not destiny. Like natural resources and human capital, favorable demographics must be managed properly. Iran's economic trajectory may rest on whether Tehran prioritizes its revolutionary ideology of anti-Western resistance, or instead pursues greater economic and political reintegration.

- Tehran's security establishment often views foreign investment, local entrepreneurs, and multinational corporations with suspicion. Until that changes, the business-friendly policies and coveted foreign investment that drove tremendous growth in East Asian economies will likely remain constrained in the Islamic Republic.
- The benefits of Iran's favorable demographics may be squandered if the country continues to hemorrhage its top minds and fails to proactively reform social services. Some Iranian officials estimate that 150,000 educated Iranians emigrate abroad annually, costing the country over \$150 billion per year.
- As Iran's youth bulge dissipates and the country's median age increases, the population will likely become increasingly averse to risky, violent confrontations with the regime. Consequently, political changes in Tehran could move more slowly than Washington might wish.

Introduction

The Islamic Republic of Iran has often defied the expectations of Western observers. Most were caught off guard by the collapse of Shah Mohammed Reza Pahlavi's regime in 1979, and then again just months later by the seizure of U.S. embassy staff in Tehran, the rapid consolidation of an Islamic theocracy, and the systematic elimination of its diverse opponents. Nearly a decade later, Middle East analysts in Western capitals were nearly as surprised to see Ayatollah Ruhollah Khomeini's revolutionary regime emerge intact from eight devastating years of war with Iraq, only to resume its quest to export Islamic revolution elsewhere in the Muslim world.

Western demographers have done no better. Their turn to be caught off guard did not stem from any defiant display of Islamic militancy abroad or repression at home, but from a pragmatic set of reproductive health policies and effective programs initiated during the presidency of Hashemi Rafsanjani (1989–1997). By the middle of the 1990s, Iranian demographers were reporting significant increases in the use of modern contraception among married couples in nearly every corner of the country, due to free contraception and counselling provided by state-run, voluntary family planning services. Whereas the returns from early surveys were initially met with skepticism in the West, by the late 1990s the United Nations Population Division (UNPD) had refigured its prior and latest estimates for Iran, and recalculated forward-looking demographic projections in anticipation of Iranian society's embrace of a small family norm.

By 2005, Iran's total fertility rate (TFR)—an estimate of the average number of children that a woman is expected to bear during her lifetime—had declined to about two children per woman, dropping from a peak above 6.5 children in the mid-1980s.¹ Iran's transition, from that peak to below 2.5 children per woman, remains to this day the most rapid countrywide decline in total fertility rate recorded in the UNPD estimates (from 1950 to the present).² Iran outpaced even China's decline in fertility, and did so without resorting to the coercion that featured in local applications of Beijing's one-child policy.³

Predictably, this momentous change in Iranian women's childbearing patterns set in motion a related demographic process, the age-structural transition—the change from a population numerically dominated by children, adolescents, and young adults to a population with its numerical center-of-gravity among older adults. This transition, largely driven by fertility decline, continues to reshape the age distribution of Iran's population. Now, more than a decade after Iran reached (and then dropped slightly below) the two-child

level, UNPD projections indicate that Iran's age structure is set to shift dramatically, as the country's population ages, from an outsized majority of working-age adults toward an increasingly large proportion of elderly dependents.

Demographers can be reasonably sure about the veracity of these apparent changes. By and large, Iran's adult age structures over the next two decades are quantitatively written into the relative sizes of the country's adult, adolescent, and childhood cohorts that already have been born. Mortality rates for these cohorts in Iran are known and follow predictable trends. Population-changing episodes of migration, fatal disease, and armed conflict are always possible but

Iran is midway through a favorable demographic window in which its working-age population greatly outnumbers young and elderly dependents.

not very likely. And, while no one can be absolutely certain of long-term trends in Iran's fertility trajectory, over the next two decades, the yet-to-be-born will not reach their prime working years (from ages twenty-five to fifty-four years old).

At Iran's current median age of thirty-one years, now is an opportune time to reflect on this momentous transition's effects on the world's lone Islamic theocracy, and most importantly to consider Iran's future using the

UNPD's most recent demographic projections.⁴ Iran is midway through a favorable demographic window in which its working-age population greatly outnumbers young and elderly dependents.

While conducive to boosting productivity and limiting the state's welfare obligations, these favorable demographic conditions will begin to reverse as Iran's population ages over the coming decades. Tehran should take full advantage of its increasingly educated workforce while favorable fiscal conditions persist. At the same time, Tehran should be revamping its healthcare and public pension systems to adjust to the inevitability of an increasingly older population. Most importantly, these looming demographic shifts are bound to force hard choices on the country's political leadership—whether to prioritize the economic interests of the Iranian people or the revolutionary principles of 1979.

Iran's Historic Drop in Fertility

Iran's provision of modern contraception stretches back to the government of Shah Mohammed Reza Pahlavi. Nominally directed by the Shah's sister, Ashraf Pahlavi, Iran's first family planning program was established in 1966. It received technical assistance from the U.S. Agency for International Development (USAID) but was largely ineffective. It did facilitate a modest rise in modern contraceptive use in areas of focused program effort, mostly in Iran's major cities. However, the program had few discernable effects on Iran's country-level total fertility rate, which remained above 6.0 children per woman at the dawn of the 1979 revolution.⁵ Where the program succeeded, however, was in supporting and training a dedicated cadre of public health technicians and physicians equipped to respond to reproductive health concerns, as well

as program managers and administrators, many of whom would later assume instrumental roles in the highly successful program that was implemented under the Islamic Republic.⁶

With the collapse of the Shah's regime in 1979, the Islamic revolutionary government that replaced him quickly dismantled the program and scattered its trained cadres among various offices in the Ministry of Health and Medical Education. Then, mired in a lengthy and costly war with Iraq between 1980 and 1988, Tehran's rhetoric and policies predictably turned pronatalist. Ayatollah Khomeini called Iranians to raise a "20 million man army" to sustain the defense of the Islamic Republic, while state programs boosted child subsidies for poor households.⁷ Iranian families responded. Fertility rose to its highest point—over 6.5 children per woman—near the midpoint of the war.⁸

Yet, at the close of the Iran-Iraq War in 1988, the Islamic Republic's fiscal realities forced national planners to rethink the country's demographic future. Although Khomeini had purged all professed leftists from their positions in the early postrevolution government, Iran's new constitution borrowed heavily from the socialist model, placing the fiscal burden of social progress and the economic security of the lower classes from birth to retirement squarely on the shoulders of the state. Confronted with an oil industry incapacitated by the Iraqi incursion, and left with severely crippled infrastructure elsewhere, planners at the Ministry of Economic Affairs and Finance came to regard Iran's fast-growing, youthful population as a costly strain on the expansive set of state-subsidized health and education services now promised by the new constitution.

This crisis launched discussions between economic planners and health professionals (some of them with experience from the state's pre-revolution family planning program) in Iran's central bureaucracy. By the time a redesigned family planning program was submitted to the Ministry of Economic Affairs and Finance, government planners had prepared an information campaign to argue the program's merits before the country's religious and political leaders in organized conferences and face-to-face meetings. On a parallel public track, health officials discussed the program on radio talk shows and television.⁹

With this policy groundwork laid, during the early years of the presidency of Akbar Hashemi Rafsanjani, members of the Ministry of Health and Medical Education worked with the Ministry of Economic Affairs and Finance to design, campaign for, fund, and implement a new decentralized family planning program. In Iran's vast rural areas, these services were delivered through the state-supported network of local "health houses," staffed principally by trained female technicians. In low-income urban neighborhoods, services were delivered through a network of state-subsidized clinics, and private sector pharmacies and physicians.¹⁰

At the close of the Iran-Iraq War in 1988, the Islamic Republic's fiscal realities forced national planners to rethink the country's demographic future.

To fill communications gaps in these neighborhoods, female volunteers were recruited to connect family members to their local health clinics. After visits, volunteers followed up to inquire whether women and children were receiving the services they needed and desired from the clinic, such as vacci-

Iran's total fertility rate reached the replacement level—slightly above two children per woman—between 2000 and 2005.

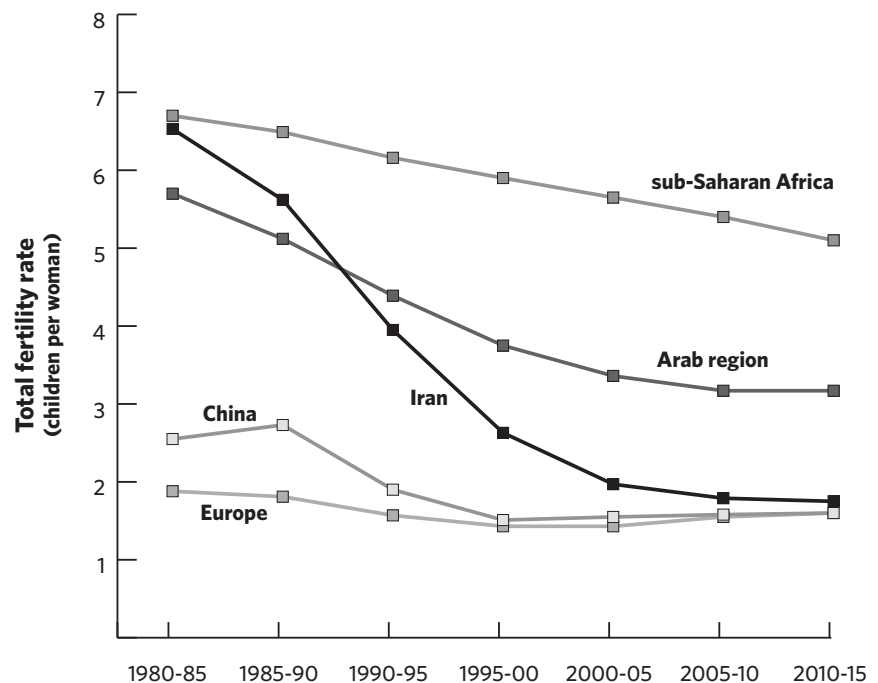
nations and contraceptives. By 2000, about 90 percent of Iran's population lived within two kilometers of a family planning service-delivery point, and mobile public-sector providers periodically serviced remote areas.¹¹

The program's initial target for success, stated in the Islamic Republic's first five-year development plan, was modest: to reach a TFR of four children per woman by 2011.¹²

Recent reviews of survey data indicate that Iran's TFR reached the replacement level (figure 1)—slightly above two children per woman—between 2000 and 2005,¹³ during Mohammad Khatami's reformist administration (1997–2005), which was highly supportive of the program. At 62 percent, modern contraceptive use by married women of childbearing age in Iran is reported to be the highest current level of use among all Muslim-majority countries.¹⁴ Moreover, Iran is among the few countries in the Middle East that manufactures condoms.

Iran's fertility decline stands in stark contrast to the stalled transitions that have beset its closest Arab allies, Iraq and Syria, as well as Afghanistan and Pakistan (see figure 1).¹⁵ Iran's fertility transition was quick to span rural-urban and ethnolinguistic geographies, as well as the urban income gap. Given the country's large, multi-ethnic population and its ruggedly diverse physical landscape, the ethnic and geographic completeness of Iran's fertility decline reflects the success of its rural public-health delivery system.

Figure 1. Iran and Select International Fertility Trends



Data: UN Department of Economic and Social Affairs, Population Division. *World Population Prospects, the 2017 Revision.*

Iran's relatively homogeneous fertility transition contrasts with the experience of other countries in the region—including Israel, Lebanon, and Turkey—where fertility differentials and minority population growth has exacerbated gaps in development, and aggravated tensions over fair political representation among different regions.¹⁶ The Iranian province of Sistan and Baluchistan, where the total fertility rate was calculated at just above 3.5 children per woman during the 2010 survey, shows the largest divergence from Iran's countrywide average. Yet, even in this expansively rural, relatively poor province in which Baluch separatists have periodically inflicted casualties on Iranian security personnel, Iran's services can claim substantial success. In the early 1980s, Sistan and Baluchistan's TFR topped 9.5 children per woman.¹⁷

The 2005 Iranian Demographic and Health Survey (IDHS-2005) was the first to fully document Iran's completed transition to an average of two-child families.¹⁸ The survey results were given a mixed reception. While the design and performance of the state-run family planning program won praise from international health organizations,¹⁹ the country's rapid transition to a small-family norm seemed to provoke the fears of domestic religious conservatives. Critics of reformist president Mohammed Khatami's administration argued that Iranian women were being lured away from their traditional roles in the home, exposing their families to what Supreme Leader Ayatollah Khamenei has described as "the negative aspects of the Western life style."²⁰

With the election of hardliner Mahmoud Ahmadinejad as president in 2005, conservative criticisms profoundly reshaped public health policy. Ahmadinejad argued that family planning was a Western conspiracy to keep Iran weak, and he inaugurated a policy in 2010 to financially incentive families to dramatically increase Iran's population.²¹ Supreme Leader Ayatollah Ali Khamenei—Iran's most powerful man—further encouraged procreation and called the regime's previous population control measures a "mistake." "Government officials were wrong on this matter," he said in 2012, "and I, too, had a part. . . . May God and history forgive us."²² By 2014, Iran had passed legislation to eliminate free contraception, to prohibit vasectomies, to enable younger marriages for women, to subsidize additional births, and to curtail Iran's unusually progressive pre-marriage education program. Companion legislation restricted women from some professional university majors.²³

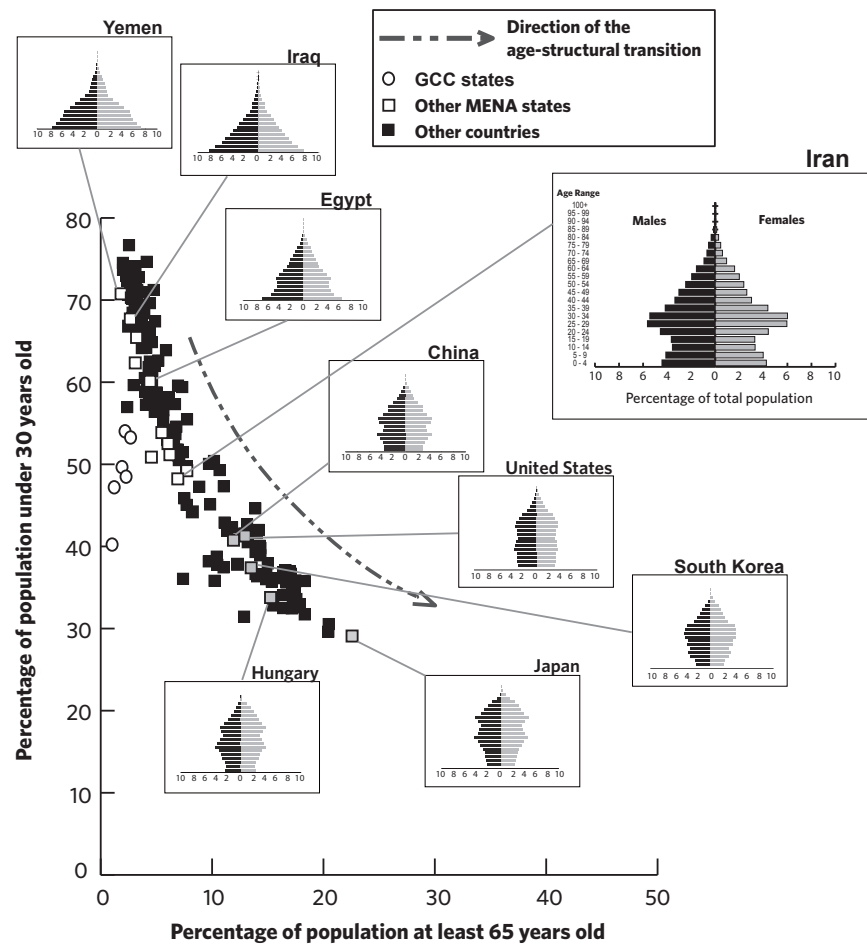
Given these policy changes and the short time that has transpired since they took effect, it is difficult to make wholly definitive statements about Iran's demographic conditions over the last few years. The results of Iran's latest Demographic and Health Survey, IDHS-2015, have yet to be released. That said, the Stanford Iran 2040 Project's analysis of recent census data suggests that the Islamic Republic likely had a total fertility rate in 2016 between 2.0 and 2.1 births per woman.²⁴ If accurate, this estimate indicates that Iranians are following the general pattern of Muslim-majority societies—remaining near the two-child level, rather than joining East Asia's plunge to below 1.6 children per woman.²⁵

Iran's relatively homogeneous fertility transition contrasts with the experience of other countries in the region.

Iran's Demographic Window

Iran is currently moving through an intermediate stage of the age-structural transition (see figure 2).²⁶ The figure depicts select countries (with populations greater than 500,000) and their positions in the age-structural transition. Each country is positioned by its population's proportion of individuals under thirty years old and the proportion of individuals aged sixty-five years and older. In contrast to Iran, many of the Islamic Republic's politically unstable neighbors reside in an earlier, youthful demographic phase (including Afghanistan, Iraq, Pakistan, Syria, and Yemen), while states with a more mature age structure than Iran occupy a later point in the transition (including China, Russia, South Korea, and the United States).²⁷ This puts Iran's age-structural position well within (what UN demographers have called) the "demographic window of opportunity," a section of the age-structural transition that is graced by low proportions of childhood dependents and old-age dependents as well as high proportions of adults in the most productive and taxable years of their lifetimes (twenty-five to fifty-four years old).

Figure 2. Iran's Position in the Age-Structural Transition (2015)



Data: UN Department of Economic and Social Affairs, Population Division. *World Population Prospects, the 2017 Revision.*

In quantitative terms, the UNPD defines this window of opportunity as the period during which children (up to fourteen years old) comprise less than 30 percent of the total population while seniors (sixty-five years and older) simultaneously comprise less than 15 percent. For most countries, this period usually begins when a country's population reaches a median age of twenty-six to twenty-seven years, and later fades, on average, at a median age of forty to forty-two years.²⁸ While this demographic window is bounded in terms of median age, its length tends to vary, lasting between four and six decades for most countries.

Generally speaking, the demographic window of opportunity spans a period when a state's institutions—particularly those most critical to development—face reasonable levels of demand for services and public goods, and it can typically rely on an ample supply of fiscal and human capital resources to fund such programs.²⁹ During this window, Iran can count on its workforce growth rates to slow to levels that should more readily match its rate of job growth, and the country's average family size should remain small enough for parents, as well as the state, to provide relatively high levels of per-child investment in education and healthcare.³⁰

Iran is advancing through its demographic window more quickly than most states. Progressing at a pace of about 0.6 years of median age annually, Iran is passing through the demographic window faster than Lebanon, Tunisia, or Turkey, but somewhat slower than some very low-fertility populations in East Asia—including China, South Korea, and Taiwan.³¹ Iran's demographic window opened sometime around 2005. If the UNPD's medium variant projection is relatively accurate, the advantages of Iran's window could fade sometime between 2038 and 2045.³² Notably, Iran already has been within the demographic window for more than a decade; during much of this time, international sanctions constrained the country's finances and trade. As Iran nears the window's end, its government will likely begin to encounter higher levels of demand for healthcare and other costly life management services from a growing proportion of senior citizens and their caregivers.

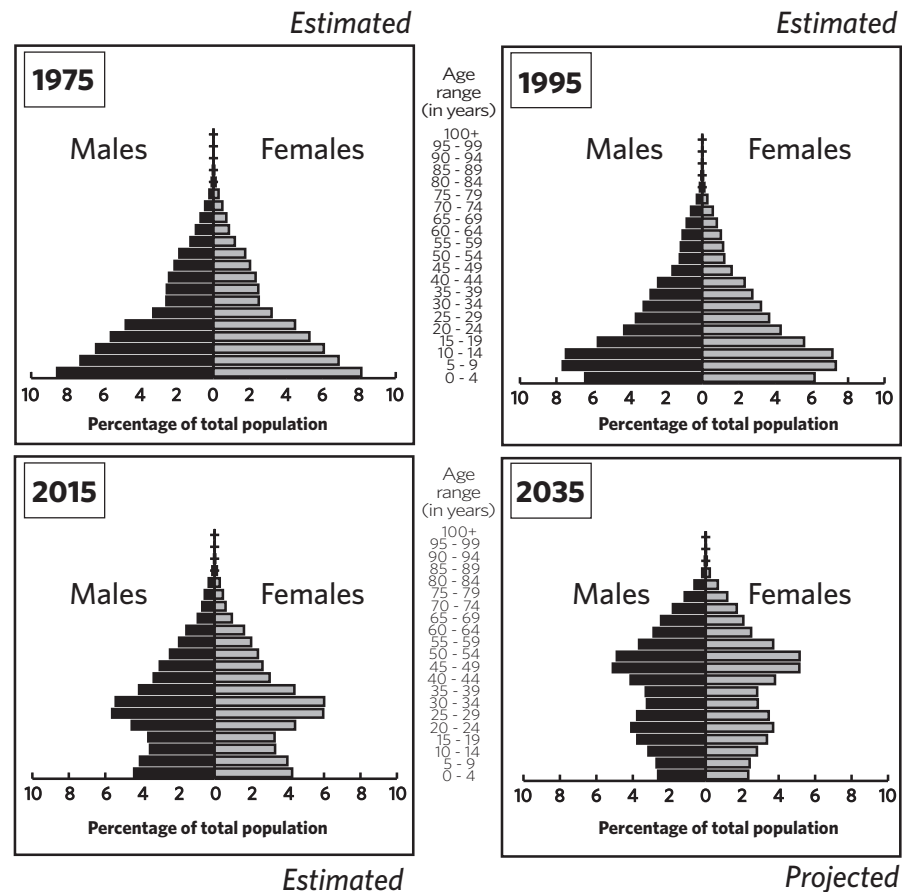
Typically, countries transit through this advantageous period just once. However, the length of a country's demographic window can sometimes be extended when its fertility rate declines quickly but then slows as it nears the two-child level—which is true of Iran's transition. This dynamic produces a generational echo (or echo boom) each time that a large group of women (a bulge) passes through peak childbearing years—usually at intervals of about twenty-five years (or a generation). Iran's population is currently experiencing such an echo boom (note the 2015 profile and projected 2035 profile in figure 3).³³

Minor booms can also be triggered by a substantial influx of migrants who bring spouses, settle permanently, and bring with them somewhat higher desired family sizes. While approximately 2.5 million Afghan refugees have at various points—due to their home country's political instability—made their

Iran is currently moving through an intermediate stage of the age-structural transition.

lives in Iran, very few have been granted Iranian citizenship. Currently, Iran seems an unlikely place for a true baby boom, such as the one experienced in the United States in the 1940s and 1950s, when fertility rose by about 1.5 children per woman.³⁴

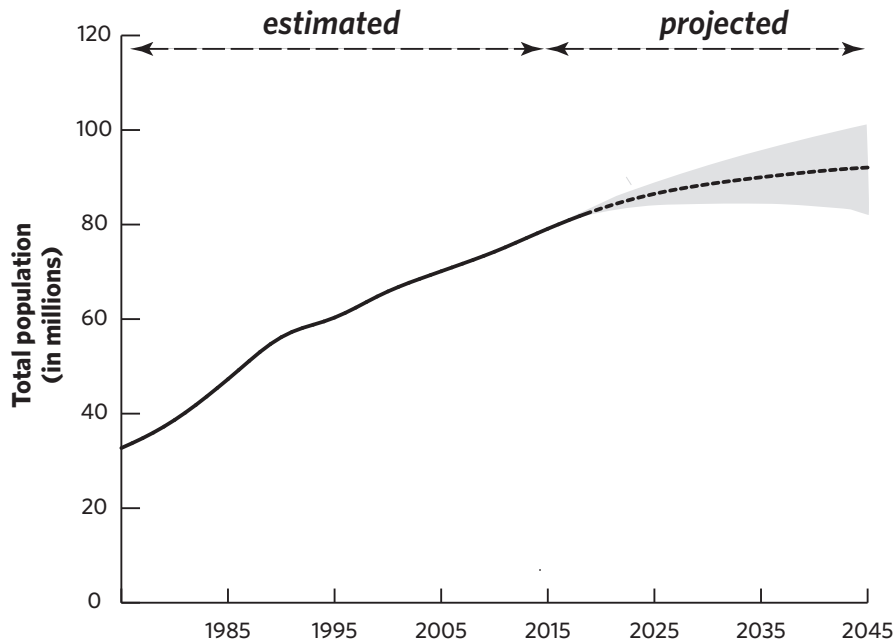
Figure 3. Demographic Profiles of Iran's Past and Future



Data: UN Department of Economic and Social Affairs, Population Division. *World Population Prospects, the 2017 Revision*.

Note: The 2035 projection uses the UN medium fertility variant.

Unsurprisingly, Iran's overall population growth rate has slowed dramatically—from its high of 4 percent per year in the early 1980s to just over 1 percent annually in 2015.³⁵ Should the UNPD's medium variant projection be realized, the country's current population of 81.2 million (as of mid-2017) will continue to grow slowly until about 2045, when it is projected to peak near 92 million (see figure 4).³⁶

Figure 4. Iran's Population

Data: UN Department of Economic and Social Affairs, Population Division. *World Population Prospects, the 2017 Revision*.

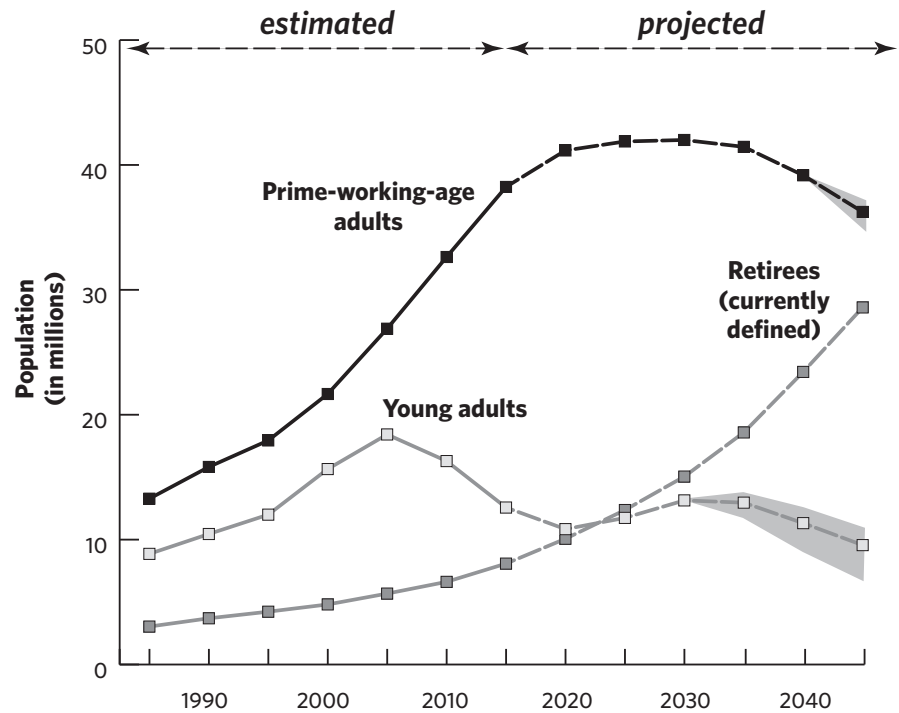
Note: The dotted line represents the UN medium fertility variant (2015–45). The shaded area around that projection shows the gap between the UN high fertility variant (upper border) and low fertility variant (lower border).

Roughly 75 percent of Iran's population lives in urban areas.³⁷ Already highly urbanized, the country's rate of urban population growth is expected to continue to decline. Nonetheless, some urban centers that feature educational and job opportunities will undoubtedly continue to attract more than their share of rural and international migrants—including Tehran and its suburbs, which the UNPD expects to grow to around 10 million by 2030.³⁸

Older and Better Educated

Iran's workforce faces three dramatic changes over the next two decades: slowing growth, aging, and rapidly rising human capital. These shifts are well under way. Iran's eighteen-to-twenty-four-year-old cohort—a group that includes new entrants into the workforce, college-bound students, newlyweds, and young recruits for Iran's armed forces—has already declined in size, from a peak of 13 million, to about 9 million in 2015 (see figure 5). The UNPD's projections indicate that this number will continue to fall, and then rise again, as Iran's ongoing echo-boom cohort passes through those ages.³⁹

Figure 5. Select Age Groups in Iran



Data: UN Department of Economic and Social Affairs, Population Division. *World Population Prospects, the 2017 Revision*.

Note: Young adults are aged eighteen to twenty-four years. Prime-working-age adults are aged twenty-five to fifty-four. The current defined ages of retirees are, for men, sixty years and older, and for women, fifty-five years and older.

Iran’s largest population bulge is peaking, in 2018, among Iranians in their late twenties and early thirties. Now comprising the majority of prime-working-age adults, this worker bulge—as it ages—will continue to advance the average age of this group until about 2035, when a smaller echo bulge of young Iranians replaces the larger bulge that will then be heading toward retirement.

Thus, in the late 2030s, the average age of prime-working-age adults could grow younger, but, quite possibly, the size of this productive group may never again be as large as it is today (see figure 5).

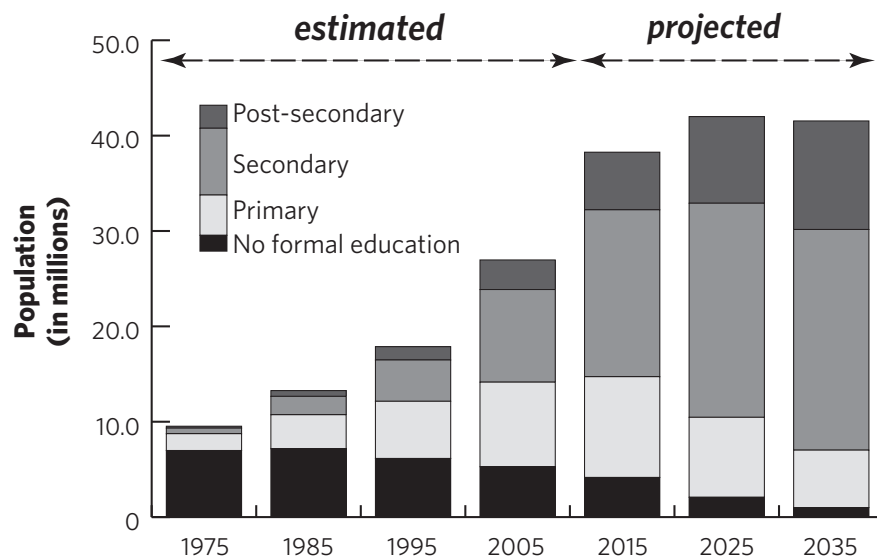
In the next forty years, the vast majority of Iran’s current worker bulge expects to retire. At the presently defined retirement ages (sixty years old for men and fifty-five years old for women) this wave of retirees is expected to approach the population of prime-working-age adults in the late 2040s, placing untold stress on Iran’s public pension and healthcare systems.

Rising per-student investment and educational attainment are common features of the shift to smaller family size.⁴⁰ In the case of Iran, educational

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transformation is projected to be dramatic (see figure 6).⁴¹ Current human capital projections generated by demographers at the International Institute of Applied Systems Analysis and the Vienna Institute of Demography suggest that, by 2035, Iran's workforce profile is likely to reach that attained by South Korea in 1995. At that point, fully two-thirds of Iran's prime-working-age adults are expected to have an upper secondary or postsecondary education.⁴²

Figure 6. Iranian Educational Attainment (Adults Ages 25-54)



Data: Samir KC et al., in *World Population and Human Capital in the Twenty-First Century*, 434-518.

It is notable that, under a clerical regime that has curtailed the legal rights and social mobility of women, educational attainment has risen even more dramatically among girls than boys. While the Pahlavi regime made strides in closing the urban gender gap in secondary education, it was the Islamic Republic that finished this difficult task in the country's vast, conservative, rural provinces. In 1975, about 84 percent of women in their prime working ages were without a primary-school education. Today that proportion is below 12 percent and declining rapidly. Moreover, 49 percent of all prime-age adults who have attained an upper level secondary or postsecondary education are women (a figure that puts Iran ahead of China and South Korea when they were at the same median age). By 2000, Iranian women already constituted the majority of students admitted to university, and this remains the case today.⁴³

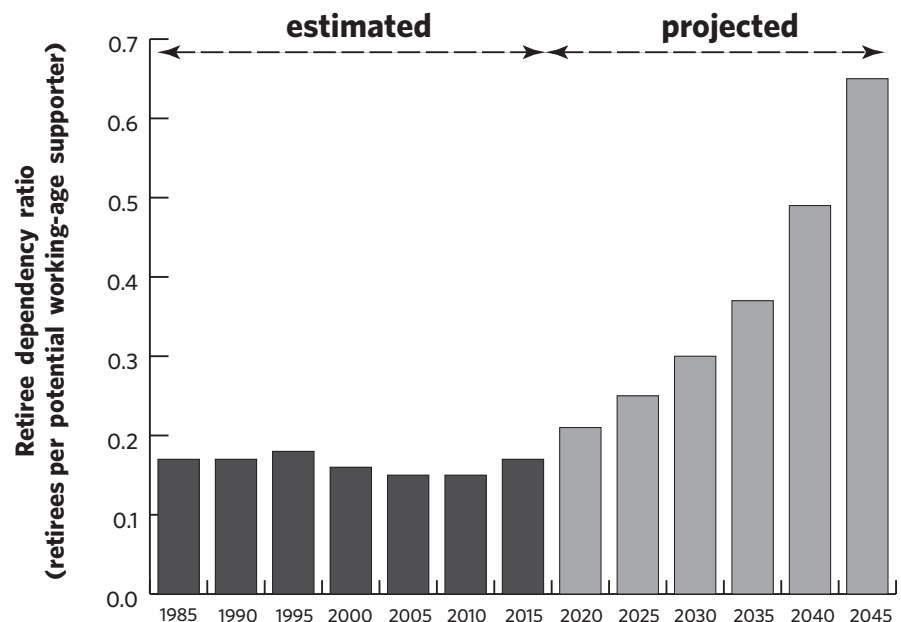
Although educational attainment among Iranian women ranges well above women in neighboring states, their participation in the formal labor force remains low—estimated at 17 percent in 2014, compared to 29 percent in Turkey and 24 percent in Lebanon.⁴⁴ Given demands for educated workers from Iranian firms, this figure stands to increase and could open a national debate about women's roles in the workplace.

Public Pension Tensions

As sizable demographic shifts take place, few of the initial benefit structures and actuarial assumptions that undergird countries' pension systems have stood the test of time. To achieve adequacy and sustainability from participants' contributions and/or investments, virtually all states must periodically readjust their retirement schedules and level of wage replacement. The rapid pace of Iran's age-structural shifts strongly signals the need for pension reform. Yet, it is not clear that the government is listening.

Iran's defined benefit social insurance system was initially designed as a pay-as-you-go public system built on mandatory contributions to a set of general, civil service, and occupational funds. Poorly designed and managed, this system has become unsustainable. Yet, because relatively few of Iran's citizens are in retirement, the fiscal damage has been bearable. That will change. Population aging is putting Iran's social insurance system into a precarious position. In just twenty-five years, one in five Iranian adults are expected to be over sixty-five years old.⁴⁵ The problem is illustrated by its rising retiree dependency ratio (see figure 7), which estimates the number of retirees for each potential working-age supporter—a proxy for the per-worker costs of supporting retirees.⁴⁶ In this ratio, retirees are citizens at or exceeding Iran's current retirement ages: sixty years old for men and fifty-five years old for women. Working-age supporters are men, aged twenty to fifty-nine years, and women, aged twenty to fifty-four years.

Figure 7. Iran's Retiree Dependency Ratio



Data: UN Department of Economic and Social Affairs, Population Division. *World Population Prospects, the 2017 Revision*.

Note: The retiree dependency ratio is computed as the sum of eligible retirees (men sixty years and older, plus women fifty-five years and older) divided by the sum of working-age adults (men between twenty and fifty-nine years, plus women between twenty to fifty-four years).

Ultimately, Iran's pension problems are old news—a legacy of the social protectionism that pervades Iran's postrevolution constitution. The Islamic Republic's Management and Planning Organization (MPO) first called attention to the system's flaws during the Khatami government, which then requested an external assessment. In the September 2003 review that followed, a team of World Bank economists found the benefits of Iran's public pension system to be overly generous and too loosely tied to recipients' lifetime earnings. They characterized the system as inequitable—paying out the most to those who needed it least.⁴⁷ Beyond these critiques, the team reported that the system covered about 50 percent of the population, leaving extensive gaps in rural coverage. In terms of funding, they regarded the system to be overly fragmented and discovered that most pension funds had been saddled with weakly performing investments in formerly state-owned enterprises. At the study's conclusion, the World Bank team submitted a set of sweeping recommendations for overhauling and managing a reconfigured social insurance system.⁴⁸

To date, none of these recommendations have been adopted. Upon taking office in 2005, then president Ahmadinejad's administration disbanded the semi-independent MPO, creating its own management office, which ignored the report for another eight years. In 2013, President Hassan Rouhani re-established the MPO but has since failed to take up any of its recommendations.⁴⁹ To date, the populists who dominate Iran's parliament, the Majlis, have failed to propose legislation that would increase contributions (for most workers, 5 percent of payroll, plus 14 percent from employers) or scale back benefits. Their most recent legislative initiative proposes that women be allowed to retire after twenty years of public service, regardless of age—a policy that could clear older women out of the teaching and biomedical professions and put further strains on the already insolvent social insurance system.⁵⁰

Few social insurance systems are as unworkable as Iran's. Retirees who contributed for over thirty years receive monthly pensions exceeding 100 percent of their average monthly salary during their last two working years⁵¹—a return that may have once been considered possible by infusing the system with windfall oil-export rents, but no longer is feasible. The authors of the 2003 World Bank report expected that the system would be insolvent within three to ten years and rapidly accrue unfunded liabilities.⁵² That is precisely what happened. Out of the system's twenty-two general and professional investment funds, only two currently produce returns that fully pay their promised pensions.⁵³ (See text box 1 for an illuminating anecdote that highlights the dysfunction of Iran's current pension system.) The remaining monthly liabilities are currently covered by the government, which pays out 76 percent of all pension disbursements.⁵⁴ In 2016, the MPO's director called again for immediate reforms to the Islamic Republic's largely insolvent social insurance system, warning that actions taken during the next five years would be critical to salvaging the defined benefit system.⁵⁵

The rapid pace of Iran's age-structural shifts strongly signals the need for pension reform. Yet, it is not clear that the government is listening.

Text Box 1: Iran's Dysfunctional Pension System

As Iranian society continues to grow older, the country's pension system will be increasingly difficult to sustain. The aforementioned 2013 World Bank report concluded that Iran's public pension system is unfair and out of sync with recipients' lifetime earnings. In some cases, it tends to disperse large sums to those whose needs may not be especially great.¹ The anecdote below illustrates this point.

One Iranian-American man had worked at the National Iranian Oil Company (NIOC) from 1943 until 1979—over 35 years—when he took an early retirement because of the revolution and the family fled Iran for the United States. For several years after the revolution, the nascent Islamic Republic—in the throes of a war with Saddam Hussein's Iraq—ceased pension payments. When the payments resumed in the mid-1980s, the amount had dropped to a meager \$100 per month.

The man's wife is a retired Iranian-American physician who still resides in the United States.² After her husband's death in 2008, once she had provided proof of identity at the Iranian Interests Section located in the Pakistani embassy in Washington, DC, the woman began again receiving her deceased husband's pension payments. By this time, the payments had risen to around \$18,000 annually, depending on fluctuations in the value of the Iran's currency. In recent years, with the devaluation of the Iranian currency vis-à-vis the U.S. dollar, the pension payments' value has dropped.

Not all pensioners have been so lucky. The same woman's father was a senior executive of the National Iranian Oil Company for over fifty years, but when he retired in 1978, his pension was never paid. Political dissidents and religious minorities have been similarly deprived of their pensions.

This story reflects the bloated, arbitrary nature of Iran's pension system. While some individuals, like this woman's father, were never paid their pensions at all, others, like the woman herself, continue to collect large sums of money from the state, despite residing in the United States and having stopped working in Iran nearly forty years ago.

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Iran's Reproductive Future

Given the policy challenges that Iran's educational and social welfare systems may face as its demographic outlook becomes less favorable in the coming decades, it is worth taking stock of the current state of Iran's reproductive health program and where it may lead. Iran's state-sponsored family planning program has been closed since 2013, ending the free distribution of modern contraception and counseling. Whereas it is understandable for a country that has achieved replacement fertility to eliminate full subsidies, there are still good reasons for Iran to maintain reproductive health counseling and a partially subsidized program. This is particularly true in the country's rural areas, and especially among the rural and urban poor whose need to time, space out, and limit births is critical to managing maternal and child health and household economies.

By contrast, Iran's new reproductive health program is focused principally on raising the fertility rate. Male and female sterilization (previously provided by the state family planning program) has been outlawed, yet all previously available reversible modern contraceptive methods remain available through private sector physicians and pharmacies.⁵⁶ Nonetheless, some Iranian public health specialists and clinicians see the closure of the public sector family planning program as a setback for reproductive healthcare.⁵⁷ Some have warned that, in a society with a widespread small family norm, steps like allowing modern contraception to become unaffordable for the poor and curtailing free counseling are likely to increase the incidence of sexually transmitted diseases and unwanted pregnancies; the latter could stimulate demand for unsafe, illegal abortions, to which Iranian medical authorities have generally turned a blind eye—such procedures already occur frequently outside of clinical settings. Clinically induced abortions are currently legal in Iran only before the nineteenth week of pregnancy, and they are only permitted in cases in which a woman's life is in danger or in which fetal abnormalities prevent viability or live birth. Such sanctioned abortions require the consent of the mother, the approval of three specialist physicians, and acceptance by a legal medical authority.⁵⁸

Despite the government's dramatic shift in policy and service provision, most demographers assume that the small family norm that has spread across Iranian society is here to stay, a fixture consistent with growing parental expectations of high educational attainment for their children coupled with rising costs of raising educated children. Recently published census-based estimates of Iran's total fertility rate in 2016—at between 2.0 to 2.1 children per woman (estimated by the Stanford Iran 2040 Project)—seem to support this assumption.⁵⁹

Tehran's Policy Choices

Iran's chances of making the most of its remaining years within the demographic window depend largely on its willingness to act quickly and decisively to both capitalize on near-term demographic opportunities and address the more distant demographic challenges of an aging population. Currently, Iran's most promising policy options are those that take advantage of its rapid growth in human capital, slowing workforce growth, and low levels of childhood dependency. A similar confluence of favorable conditions played out earlier in East Asian countries whose fertility transitions preceded that of Iran (including China, Japan, South Korea, and Taiwan). Each of these earlier examples favored the growth of technologically sophisticated export industries, opened themselves to foreign investment, and expanded university education and technical training for their citizens. Ultimately, these policies led to higher wages and low levels of unemployment, and this helped turn these economies into net capital exporters.

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Iran should expect per-capita economic growth to begin to slow in the mid-to-late 2030s, as its workforce matures.

Iran should expect per-capita economic growth to begin to slow in the mid-to-late 2030s, as its workforce matures and its median age approaches forty years old. This pattern repeated itself among the East Asian states that preceded Iran in the age-structural transition. The ongoing efforts to shore up pensions and support senior healthcare systems in these countries should serve

as a reminder to Tehran that its social insurance system is long overdue for restructuring.⁶⁰ In its current position in the age-structural transition, it is not too late for Iran to overhaul its existing system by broadening coverage, installing a benefit formula that fully accounts for salary history, scaling down benefits for the wealthy, and altering the retirement schedule. Iran might do well to encourage responsible private systems or voluntary public savings plans and health insurance that could fill coverage gaps and enhance citizens' retirement benefits. It is also an opportune time to provide incentives for young workers to save and invest, as well as to strengthen the competency of agencies that oversee retirement schemes.

Setting back retirement ages is generally the first step to broader reforms—a sensible response to increasing longevity and reduced old-age morbidity. It is among the simplest and most effective means of taking some pressure off existing pension funds and bringing in additional contributions from older workers. However, these reforms must be implemented sooner rather than later to facilitate a reasonable schedule of adjustment. If adjustments are too frequent, middle-age workers—a potentially potent source of political opposition—can find themselves chasing a repeatedly deferred target retirement date as they continue to age and work.

Cutting back the Iranian social insurance system's absurdly high replacement rate is essential. Its political shocks could be dampened by the state's creation and support of a broad system of voluntary public pensions and private retirement schemes. Moreover, Iran would do well to follow a growing group of emerging economies (including Brazil, Hong Kong, and Thailand) that have expanded mandatory systems into rural areas and the informal sector and have not only established a multifaceted voluntary public system, but have also provided incentives and effective regulatory oversight for private sector pension plans.⁶¹

When considering Iran's population aging, policymakers and analysts should keep in mind that, despite the rapid pace of its age-structural shift, by 2045, Iran is projected to experience an age structure much like Germany's in the early 2000s—with a 65-and-older population that comprises less than 18 percent of its total population.⁶² By then, Iran's economy will lack the advantages of its current age structure, but it will not yet face the ongoing challenges of Japan, where (as of 2017) seniors comprise nearly 28 percent of the population.⁶³

How a demographically mature future Iran performs economically, and how it behaves politically, could depend on Tehran's ability to adopt policies that take advantage of today's demographic opportunities and prepare Iranian society for the effects of population aging. In the interim, the Islamic Republic will confront demographic conditions that states in Europe and North America have already confronted and that the rapidly developing states of East and Southeast Asia are dealing with today. Lessons abound. Will Tehran heed them?

Political Choices: Which Iran Will Prevail?

It remains to be seen whether Iran's demographics will do more to shape its politics or vice versa. Given its vast size, human capital, and natural resources, there is little doubt that Iran has enormous economic potential. Yet whether Iran's demographic window of opportunity is exploited or squandered—or potentially even reversed—depends on Iran's political leadership. As of now, there are few signs that Tehran's rulers are seriously contemplating the difficult but key policy decisions that helped make the economic miracle of East Asia possible.

Most notably, in contrast to the cooperative relations East Asian states have cultivated with Western trading partners—particularly the United States—Iran's official slogan remains Death to America. While East Asian governments pursued business-friendly policies, Ayatollah Khamenei has derided foreign investment as a Trojan horse for regime change, and the Islamic Revolutionary Guard Corps (IRGC) tends to view both local entrepreneurs and multinational corporations as competitors if not threats. A lack of economic opportunities for Iran's citizens is compounded by limited political and social freedoms; this state of affairs has hastened Iran's massive brain drain that, coupled with onerous economic sanctions, has been a major hindrance to economic prosperity (see text box 2).

It remains to be seen whether Iran's demographics will do more to shape its politics or vice versa.

Text Box 2: Iran's Brain Drain Quandary

While there are no agreed-upon figures for Iran's brain drain problem, both independent researchers and Iranian officials agree it is an epidemic. A 2009 report by the International Monetary Fund (IMF) ranked Iran first in brain drain among ninety-one developed or developing countries.¹ Meanwhile, Iranian Minister of Science, Research, and Technology Reza Faraji Dana estimated in 2014 that approximately 150,000 educated Iranians emigrate abroad every year, a trend that amounts to an annual loss of \$150 billion for the country.²

In contrast to many countries whose emigres are often blue-collar workers, Iran's brain drain of many highly educated workers is the byproduct of the country's quality educational institutions

through the university level, followed by a lack of post-graduation economic opportunities as well as political and social freedoms. As an Iranian PhD student at Harvard put it,³

“Doing cutting-edge science [in Iran] beyond undergraduate level is very hard. You can get a fantastic technical education up to that point. But then...the research opportunities and job prospects after are very dim. The kids who are coming out of these schools can easily get a slot at any top program in the world, and they do. I also like dancing, drinking, partying, making music and listening to it (be it Opeth or Kalkbrenner), being young, and doing stupid things. It is possible to do these in Iran, but you need to do them underground. And although most of the time you are OK, if you are caught, you can be in big trouble: jail, whips, huge monetary fines.

The government is corrupt, and promotion is not merit-based. You must pretend you are more religious than you really are. If you are a woman, the scarf is mandatory in public spaces. The moral police are a pain...be it because you are out with your boyfriend or you are not covered up as they deem appropriate. There is a constant threat (or actual, from 1980-88) of war. Serious threat. Not very pleasant or easy to live in. Finally, politics are unstable. You often hear the conspiracy theorists in the public buses saying that the current government is “gone by next year.” This doesn’t really happen. But the government fears it somewhat, and they rule with an iron fist. Students and journalists are politically active and take the hardest stick. Many of my friends and acquaintances have been arrested at some point, just for a simple critical article or mere presence in a student protest. The active bunch are interrogated and put in solitary confinement.

Finally, it is economically and practically (in terms of getting a visa) hard to leave, unless you are really good at something. So those who leave are not the poor or badly educated; they can’t leave. The ones who leave are the highly educated middle or upper class. I think this is the most significant factor. In sum, Iran’s educational system is good enough to produce high-quality bachelor-level people (or wealthy intelligent businessmen), but then when they are ripe, there aren’t enough opportunities for them. On top of that there is government oppression... Iranian emigrants don’t leave to make money—you can make money in Iran. They leave in pursuit of social and intellectual gain, which causes the brain drain.”

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Iran’s outlook is not likely to change as long as seventy-seven-year-old Khamenei remains Supreme Leader. The question is what happens after he dies. Pragmatists who believe Iran must prioritize economic interests before its revolutionary ideology—much like their counterparts from 1970s China—represent a much greater share of Iranian society, as evidenced most recently by President Hassan Rouhani’s lopsided 2017 reelection. Yet self-proclaimed principlists, or hardliners—who believe Iran should continue to adhere to

revolutionary principles—still dominate the Islamic Republic’s coercive institutions, including the Revolutionary Guards, as well as other key institutions such as the judiciary and state television. What they lack in popular support they make up for in repression.

Even for a country that has undergone as profound changes as Iran has, demography is not destiny. Just as wealth in natural resources and human capital must be managed properly, so, too, must favorable demographics. As long as the organizing principle of Tehran remains political and economic resistance to the West, rather than political and economic reintegration into the international order, Iran’s potential will remain at risk of going unfulfilled.

Despite the unpredictability of Iran’s future trajectory, the country’s demographic transition has at least one important implication for U.S. policymakers: as the bulge in Iran’s youth population dissipates, it is likely to yield a more mature society with less and less of a taste for risky, violent confrontations with the regime. In other words, in the coming years and decades, political change in the Islamic Republic is less likely to come from an Arab Spring–style popular uprising, and more likely to be driven by a popularly supported reformer from within the system.

Over the last several decades, U.S. policy toward Iran has veered between attempts to change Iranian behavior and a desire to change the Iranian regime. While former president Barack Obama and his administration focused on the former, President Donald Trump and his administration’s public statements reflect a preference for the latter. The reality, however, is that the nature of the Iranian regime will likely change much slower than Washington desires or demands. In 1979, a young Iranian population experienced a revolution without democracy; today and in the future, a more mature Iranian society increasingly aspires for democracy without a revolution.

The nature of the Iranian regime will likely change much slower than Washington desires or demands.

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