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IRAN

CONSUMER ELECTRONICS REPORT

INCLUDES 5-YEAR FORECASTS TO 2019

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Iran Consumer Electronics Report Q3 2015

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BMI Research
Senator House
85 Queen Victoria Street
London
EC4V 4AB
United Kingdom
Tel: +44 (0) 20 7248 0468
Fax: +44 (0) 20 7248 0467
Email: subs@bmiresearch.com
Web: http://www.bmiresearch.com

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BMI Industry View

BMI View: *Homegrown devices have greater potential than international products in Iran, owing to international sanctions that prevent many companies from selling products in the country. We believe the outlook for 2015 will continue to reflect these restrictions although the growing availability of 3G will boost demand for smartphones. Iran's large population offers considerable growth potential and opportunities for companies looking to expand. However, the government's continued interference with internet services and content and its attempt to establish a 'national internet' will limit appetite for computers and broadband services, although many Iranians may well remain unaware of the differences.*

Headline Expenditure Projections

- **Computer sales:** USD5.1bn in 2014 to USD7.1bn by 2019; low PC penetration means significant potential, but the high cost of devices remains a barrier to rapid growth.
- **AV and gaming device sales:** USD2.4bn in 2014 to USD3.2bn in 2019; digital broadcasting offers opportunities, but demand is likely to be weakest in this segment.
- **Handset sales:** USD2.0bn in 2014 to USD2.7bn in 2019; increased competition in the 3G market with multiple operators should drive smartphones demand in the country but the low-cost segment is likely to be the main driver.

Key Trends And Developments

The 3G market will develop, as **MTN Irancell** launched services in August 2014, followed by the country's first 4G network in December. We also expect market leader **MCI** to launch during 2015, as well as potential new LTE licences being granted by the regulator.

Despite the easing of sanctions on communications devices, the tightening of sanctions on Iran's financial sector in early 2013 has made it more challenging for vendors to source internationally branded products directly from East Asia. Many have resorted to importing products via the Middle East and Turkey, with higher customs tariffs.

In the AV market replacement TV set purchases will be driven by the roll out of digital TV broadcasting. Iran launched its first digital TV channel in early 2012 after developments gathered pace in 2011. Larger screen sizes and increased features will encourage consumers to upgrade their existing sets as products become more readily available following the easing of sanctions. The switch to digital TV will provide short-term impetus to market growth.

SWOT

Iran Consumer Electronics SWOT

Strengths	▪ Iran had a population of 78.5mn at the end of 2014 and the country has the potential to be the leading consumer electronics market in the Middle East. ▪ Iran's youthful and tech-literate population is increasingly well informed about the latest technology trends and brands. ▪ Over two-thirds of Iranians live in urban areas, which bodes well for strong retail growth and broadband access. ▪ The expansion of 3G and 4G services, launched by multiple operators.
Weaknesses	▪ High tariffs on some imported electronics products (eg 60% for mobile handsets). ▪ Local electronics distribution sector is small-scale and fragmented, making it hard for regional vendors and distributors to build channels to market. ▪ Large grey market of pirated goods entering the country through Pakistan, Afghanistan and Iraq. ▪ Political environment creates risk for vendors.
Opportunities	▪ Lifting of US handset sanctions will boost competition and should accelerate smartphone adoption. ▪ Mobile handset sales will continue to increase, with subscriber penetration forecast to grow from 141.5% in 2014 to 163.7% by 2019. ▪ Increased competition and coverage in the mobile data market should drive smartphone sales. Individual retailers of international consumer electronics brands, particularly Apple, are increasingly well-organised, offering their own warranties and services tailored to Iranian consumers. ▪ The election of moderate president Hassan Rouhani in June 2013 may lead to an improvement in trade relations with the West, facilitating the flow of electronic devices into Iran.

Iran Consumer Electronics SWOT - Continued	
	▪ Government drive to encourage local production, particularly of handsets, could help vendors willing to form partnerships.
Threats	▪ The tightening of sanctions on Iran's financial system since early 2013 has made it more difficult for local retailers to source international brands directly from Hong Kong, Singapore and Malaysia. ▪ Failure to control parallel imports and inflow of inferior computer components and accessories. ▪ Political tensions between Iran and the West could limit opportunities for multinational corporations and create an element of unpredictability.

Political

Political SWOT Analysis

Strengths	▪ Since the overthrow of the Pahlavi family in 1979, there has been some reduction in the level of political corruption, while wealth distribution has improved marginally. ▪ The Revolutionary Guard and Basij militia are fiercely loyal to the supreme leader, helping to maintain social stability. ▪ Sanctions relief will boost economic growth notably.
Weaknesses	▪ The country has one of the poorest human rights records in the region, and authorities do not hesitate to quell dissidents. A number of journalists and anti-government protesters are being held in custody. ▪ While decision-making ultimately rests with the supreme leader, the regime is heavily fragmented, and consensus is hard to reach. ▪ Widespread perceptions of electoral fraud during the course of June 2009's presidential elections have damaged the regime's legitimacy in the eyes of many Iranians.
Opportunities	▪ The Majlis (parliament) is more than just a rubber stamp; the move by 150 parliamentarians (out of 290) to hold former president Mahmoud Ahmadinejad accountable for his handling of the economy in March 2012 is a positive indication that checks exist. ▪ The victory of moderate cleric Hassan Rouhani in Presidential elections in June 2013 is leading to a significant improvement in relations with the West. ▪ The long term potential in Iran across a range of sectors is enormous given a large population, well-educated workforce and pent-up demand.
Threats	▪ Despite progress in nuclear talks, the prospect of further US and EU sanctions and the possibility of a military strike by the US or Israel cannot be dismissed. ▪ Youth unemployment is high.

Political SWOT Analysis - Continued	
	▪ The strong influence of the Revolutionary Guards within the political and economic arena will continue to present a challenge to reform.

Economic

Economic SWOT Analysis

Strengths	▪ Iran has the world's second largest proven oil reserves after Saudi Arabia, and the world's second largest proven gas reserves after Russia. ▪ Oil and gas aside, Iran is rich in other resources and has a strong agricultural sector.
Weaknesses	▪ Local consumption of hydrocarbons is rising rapidly; this, coupled with ageing technology in the sector, will have a negative impact on its oil and gas exporting capacity. ▪ International sanctions discourage foreign oil companies from bringing much-needed technical knowledge and equipment to maintain oil output levels.
Opportunities	▪ The gas sector remains underdeveloped despite significant improvements in recent quarters, and there is considerable room to maximise this source of revenue. ▪ A shortage of housing, provides opportunities for investment in residential construction.
Threats	▪ Lower oil prices will have a marked impact on the economy. Although an Oil Stabilisation Fund exists to protect the economy at times of weaker oil prices, it has increasingly been used to fund government overspending and could be close to empty. ▪ Capital flight could accelerate should negotiations on the nuclear programme fail.

Operational Risk

SWOT Analysis

Strengths	▪ Iran boasts high numbers of skilled graduates in technical fields such as engineering, construction and science. ▪ The transport network offers good internal and cross-border connections, and is currently able to meet the country's supply chain needs. ▪ The banking sector is relatively well developed, allowing extension of finance and credit to citizens. ▪ A well established intelligence agency and robust counter-terrorist capabilities deter attacks in most areas of the country.
Weaknesses	▪ Costs of employment are increases because the Iranian Labour Code affords workers a high level of protection and generous benefits. ▪ The costs of inland transportation, as well as the risk of congestion and traffic accidents disrupting supply chains, is raised due to reliance on the road network as the dominant freight mode. ▪ There is widespread corruption and heavy handed censorship, which will pose unforeseeable operational costs and limit business activities. ▪ The expansion of IS in Iraq poses a significant risk to Iran's security.
Opportunities	▪ The literacy rate of the labour force is increasing as the benefits of investment in primary school education are filtering through. ▪ The development of road and rail connections with Iran's neighbours highlights the country's potential to develop into key transit point for East-West trade. ▪ Relaxing of sanctions is resulting in greater foreign direct investment inflows. ▪ There is potential to combat the drug supply into Europe through programmes in Iran.

SWOT Analysis - Continued	
Threats	▪ The availability of highly skilled labour is restricted as the brain drain results in an exodus of technically qualified workers. ▪ The risk of electricity and water shortages will be enhanced due to growth in energy- and water-intensive agricultural, mining and manufacturing industries. ▪ Lax intellectual property protection carries the threat of patent theft, fraud or infringement, leading to profit losses. ▪ Even if sanctions are lifted, the difficult operating environment in Iran, typified by high taxes and widespread corruption, will continue to deter investors.

Industry Forecast

BMI View: *We have left our forecasts unchanged as the dynamics of the Iranian market play out as expected, although the prospect that the sanctions will be lifted this year adds strong upside to the market. The greater availability of 3G and 4G services, expected during the forecast period, will drive growth of mobile equipment and to a lesser extent PCs through dongles and we expect that the potential removal of US sanctions will also have a positive effect on the market. We expect the market to reach a size of USD12.9bn at the end of our forecast period, in 2019.*

Table: Consumer Electronics Overview (Iran 2013-2019)

	2013	2014e	2015f	2016f	2017f	2018f	2019f
Consumer electronics sales, exports and domestic sales, USDmn	8,829.76	9,428.53	10,189.07	10,978.67	11,633.51	12,288.36	12,943.20
Consumer electronics sales, computers, exports and domestic sales, USDmn	4,738.22	5,069.89	5,475.48	5,858.77	6,268.88	6,678.99	7,089.11
Consumer electronics sales, consumer electronics, exports and domestic sales, USDmn	2,245.55	2,351.69	2,502.74	2,660.56	2,831.51	3,002.46	3,173.41
Consumer electronics sales, communications, exports and domestic sales, USDmn	1,846.00	2,006.94	2,210.85	2,459.35	2,533.13	2,606.91	2,680.69

e/f = BMI estimate/forecast. Source: National sources, BMI

BMI expects the consumer electronics market to expand at a compound annual growth rate (CAGR) of 6.5% between 2015 and 2019. We expect strong growth in mobile handsets sales, particularly in terms of smartphones, once the 3G market becomes more competitive. Strong growth of 3G services is demonstrated by MTN Irancell's recent claims that the number of data subscribers on its network has increased to more than 21mn since launching 3G and 4G services last year, including 7mn on its 3G and 4G networks. This growth will also be sustained by strong ongoing growth in AV devices and computers. Mobile handsets have the advantage of being sold per mobile connection and households will likely have several devices. We forecast that market penetration will reach 164% by 2019. Even taking into account the size of the population, the level of GDP and the removal of restrictions on the import of some devices, the market will not reach its full potential in the short to medium term.

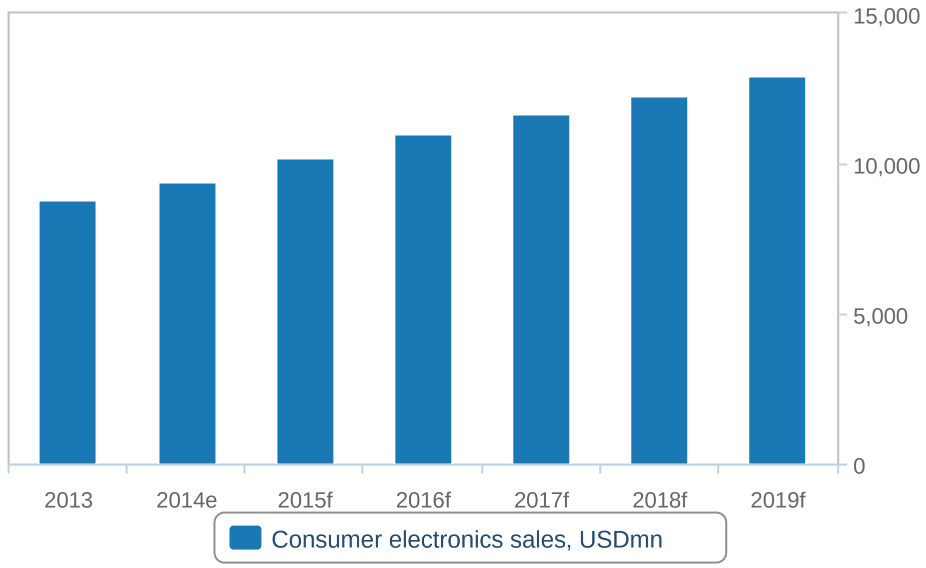
However, potential lifting of the sanctions will add upside to the market. BMI believes easier access to US and other international brands will erode the dominance of Samsung and LG in the consumer electronics market. While many Iranians have been able to find iPhones and other popular products through specific retailers, abroad or on the black market, the establishment of formal distribution networks should help bring down the cost of these devices, in turn supporting greater demand. A broader based easing of sanctions will also enable vendors to target the enterprise and government sectors, which we expect will generate rising demand for hardware as the economy recovers.

Meanwhile, inflation has a particularly important impact on consumer electronics, whose components are usually priced in US dollars and therefore become much more expensive in local currency terms for end buyers when inflation rides high. As the gradual lifting of sanctions curbs inflation, imported devices should become more affordable for Iranian consumers, giving a boost to all vendors.

Exporting to Iran remains a huge logistical challenge while key trade routes are closed and restrictions still apply to the financial sector and many vendors have been unwilling to invest without the greater certainty provided by a wider sanctions relief agreement. US vendors are not the only ones waiting for greater stability; even leading Chinese PC vendor Lenovo stated in early 2014 that it would wait for an agreement between Western nations and Iran before formally expanding into the country.

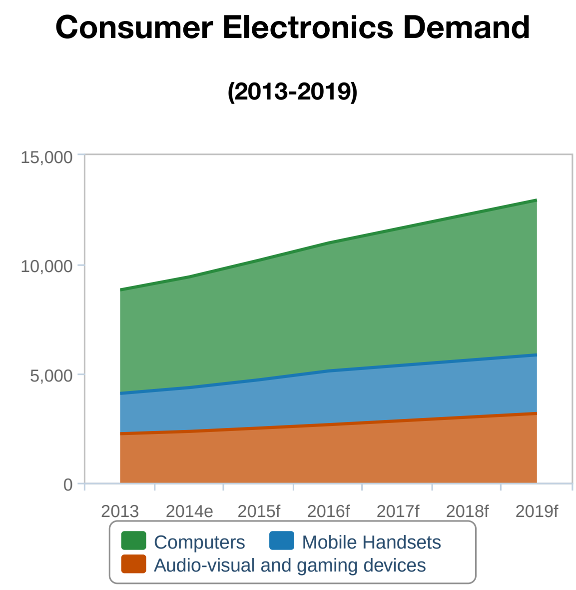
Consumer Electronics Demand

(2013-2019)



e/f = BMI estimate/forecast. Source: National sources, BMI

On the back of sanctions relief, we forecast economic growth will pick up from an estimated 0.5% contraction in 2014 to 0.6% and 2.9% growth in FY2015 (fiscal year running from March 21 2015 to March 20 2016) and FY2016, respectively. Inflationary pressures will moderate slightly; we forecast consumer price index (CPI) inflation to fall from 22% in FY2014 to 15% in FY2016.



e/f = BM estimate/forecast. Source: National sources, BMI

Improving macroeconomic conditions and high base effects will contribute to declining price pressures over the coming quarters, while a decision to cut cash subsidies payments will also contribute to lowering price pressures. However, a recent move to slash energy subsidies will result in higher transportation and fuel prices. We expect price growth to remain high, reducing household income for spending on discretionary purchases.

In the longer term, Iran has a number of positive characteristics that provide consumer electronics opportunities. The steadily growing population will support private consumption growth, while demand for consumer electronics will also be fuelled by new technologies (such as the introduction of digital TV) and expanding internet and mobile telecoms penetration. However, opportunities in the market, for domestic and foreign vendors alike, remain constrained by the huge size of the 'grey' market, particularly for mobile handsets.

Despite downside risks associated with the current political uncertainty, during **BMI**'s 2015-2019 five-year forecast period Iran's market for digital devices should see overall growth. Iran's economy is expected to maintain a marginal upwards trajectory, however, high inflation will continue to be a burden on consumers.

Computer hardware is estimated to have been the biggest consumer electronics market category in 2014 and is expected to account for about 54% of spending for the duration of our five-year forecast period. Government spending will help drive the market, while demand will also be strong in the SME and consumer segments. Spending will rise at a CAGR of 6.9% through to 2019, with an emphasis on notebooks and netbooks, which currently account for over 70% of sales.

AV devices are estimated to have been in second place for consumer electronics market spending in 2014, at 25% of the total. The government's campaign to implement digital broadcasting will drive opportunities in the medium term. Video devices such as TV sets, digital cameras and optical disc players account for about 76% of demand. Growth areas will include LCD TV sets and Blu-ray players, with an overall AV spending CAGR of 6.2% projected.

Mobile handsets are estimated to have accounted for about 21% of total spending in 2014, but this area is potentially the most dynamic segment of the market, particularly after the removal of sanctions on US handset imports in May 2013. The end of **RighTel's** exclusivity period for 3G services has seen the number two operator in the market, **MTN Irancell,** launch 3G services in August 2014, quickly followed by the launch of the country's first 4G network in December 2014. We expect market leader **MCI** to launch 3G services in 2015, despite some political opposition and this will further drive the market. The appearance of Chinese vendors, such as **Huawei** and **Lenovo,** is also conducive to growth, as they propose affordable smartphones in the market. As such, we expect the market to grow strongly during the forecast period, with handset sales growing by a CAGR of 6% and smartphones sales by 10.9%.

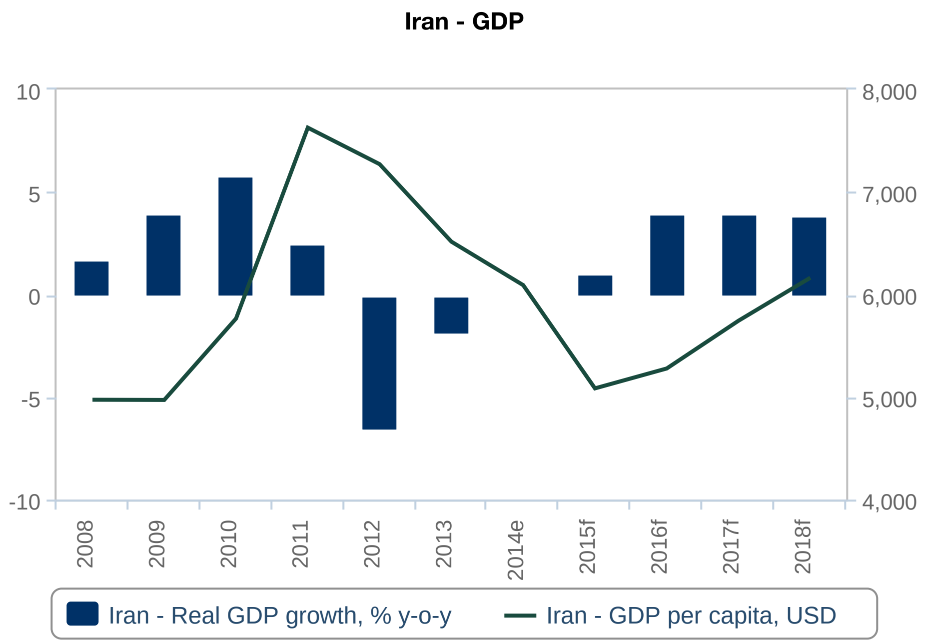
Macroeconomic Forecasts

Economy To Grow Again On Sanctions Relief

BMI View: *After three years of stagnation and recession Iran's economy will return to growth in 2015. This will be primarily due to sanctions relief as we expect an agreement to be reached over the country's nuclear programme. Overall, we expect real GDP growth of 3-4% from 2016 onwards, driven increasingly by fixed investment and net exports.*

Our expectation for sanctions to be unwound on Iran from Q315 will provide a significant boost to the country's economy. Sanctions across sectors such as on shipping, banking and oil will be relaxed as Iran complies with Western powers' demand over the dismantling of its nuclear programme. On the back of this we forecast Iran's economy to return to growth in 2015, following three years of recession. The impact of the unwinding of sanctions will be tempered by growth in imports, and because sanctions on the key oil sector will not lead to a significant uptick in exports until 2016 at the very earliest. In addition, years of underinvestment across all sectors will mean that although growth will reach around 4.0% over the coming years, a booming economy is off the cards as the recovery is tempered by logistical and bureaucratic issues.

Noticeable Boost From Nuclear Deal

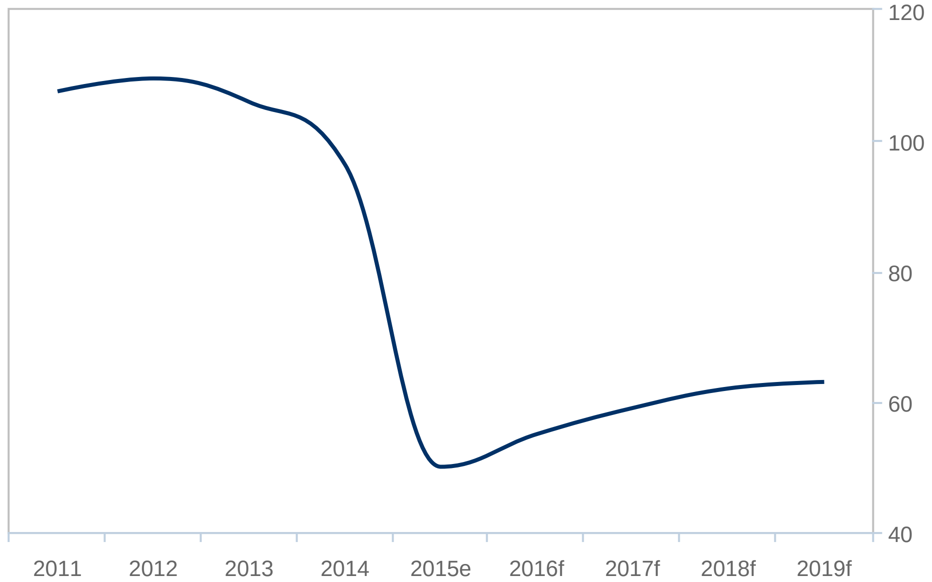


e/f = BMi estimate/forecast. Source: BMI, UN

In addition, lower oil prices will play a key role in limiting the impact of the unwinding of sanctions. We forecast oil prices to average USD53/bbl in 2015 and USD57/bbl in 2016 as a result of global oversupply. This will ensure government spending and private consumption growth will be relatively low. Fixed investment and exports will become increasingly important growth drivers, though this will be a slow process as opposed to a sudden jump once sanctions are eased. Indeed, while we expect President Hassan Rouhani's administration to undertake significant efforts to reform to the economy, the effects will be limited by a persistently opaque business environment, domestic resistance to opening up the economy and the slow political process.

Sanctions Relief To Mitigate Weaker Oil Prices

Global - OPEC Basket Average Price (USD/bbl)



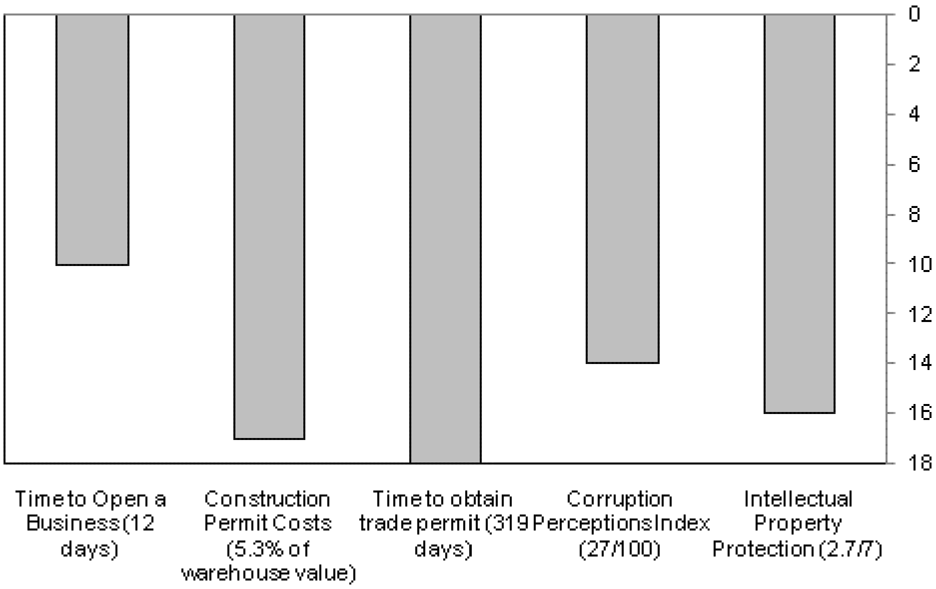
f = BMI forecasts; Source: BMI

Private Consumption Outlook: A reduction in sanctions bode well for private consumption over the longer term, however, this positive impact is unlikely to be felt until 2016 at the earliest. Subsidy cuts, high inflation and a depreciating rial, factors which we expect to continue over 2015, have dampened consumer demand substantially and will weigh on growth for the coming quarters. We forecast real growth of 2.0% and 4.0% in 2015 and 2016, respectively. The inflationary environment will improve, but persistently elevated price pressures will continue to hit purchasing power.

Government Spending Outlook: Lower oil prices will push Iran into a sustained fiscal deficit, averaging 4.0% of GDP over the coming three years. In response, we expect the government will quicken subsidy reforms and privatisation plans, however, this will be insufficient to prevent sustained deficits over the coming years.. As a result, government spending will remain subdued, which we forecast to increase by -3.0% and 1.0% in 2015 and 2016, respectively. *(See: 'Sustained, But Manageable, Budget Deficits Coming' April 10).*

Impediments Remain For Investment

MENA - Rankings Indicators Of Business Environment (2013)



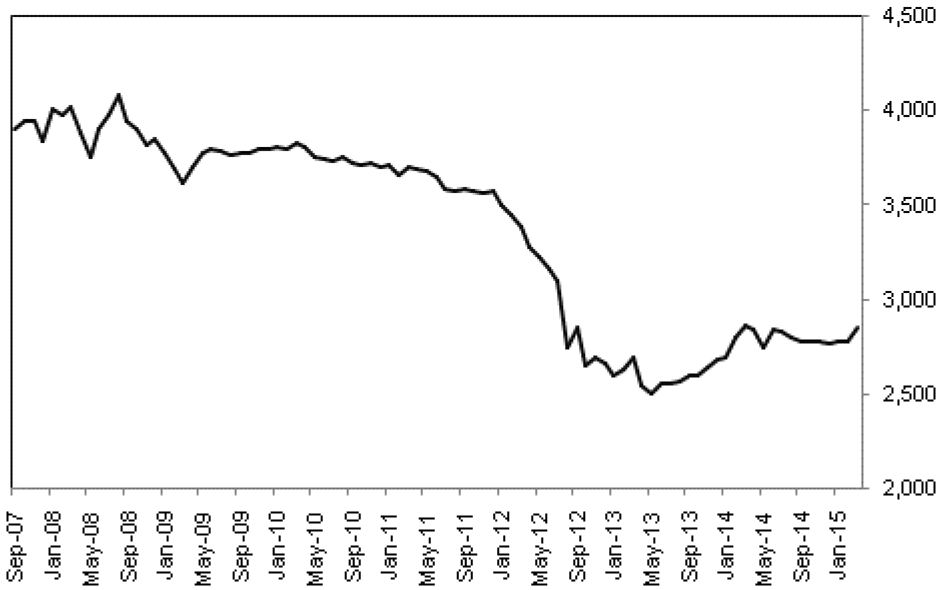
Source: BMI. NB Out of 18 MENA countries, excludes West Bank. For CPI and IPP, higher number is better.

Fixed Investment Outlook: Given Iran's dire need for investment as well as the myriad of opportunities across a range of sectors, gross fixed capital formation (GFCF) will be a key beneficiary of any reduction in sanctions, particularly for infrastructure.

Russian and Chinese companies have built a strong presence in Iran, particularly as a result of Western sanctions. However, we are starting to see growing interest from other international players in Iran, including Korean companies such as **GS Engineering & Construction** which has started surveying the Iranian market, looking for opportunities in gas infrastructure in particular. Furthermore, Arab, French, and Turkish companies are showing greater interest in returning to the Iranian construction market, with the awarding of the construction of the USD1.8bn Tabriz-Bazargan Highway to Turkish **Bergiz Insaat** in January 2015. With regards to regional players, we anticipate Omani and Qatari companies will show an interest in Iran, as well as Dubai-based **Arabtec**. Overall we forecast real growth in GFCF of 1.0% and 4.0% in 2015 and 2016 from an average of -3.1% over 2010-2014.

Slight Improvement...

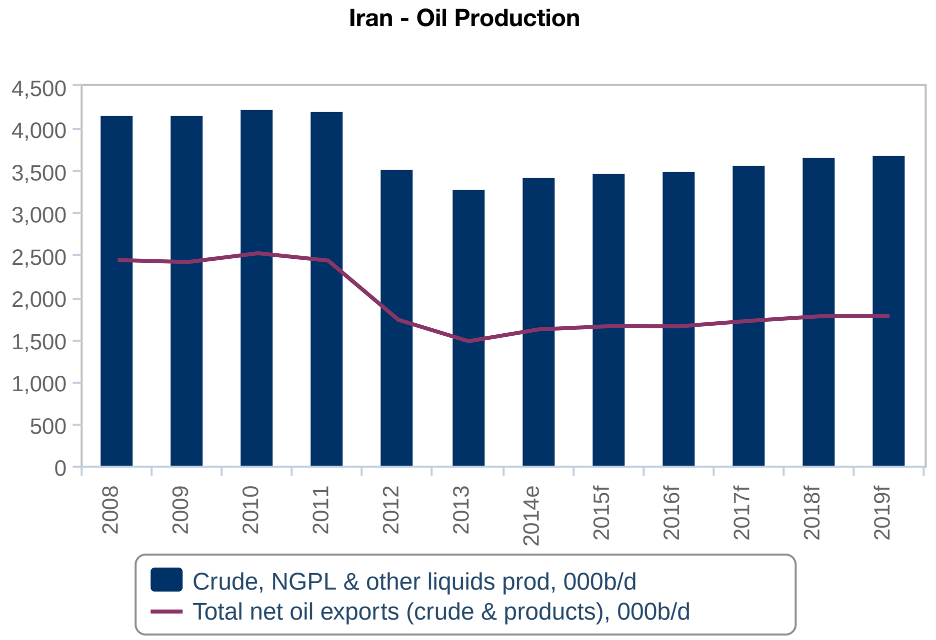
Iran, Oil Production, '000bbl/d



Source: IEA, BMI

However, a host of factors will hinder a more rapid expansion of fixed investment. Foreign companies in nearly every sector have recently expressed interest in returning to the Iranian market, but a key impediment will be Iran's difficult operational environment, with high levels of bureaucracy providing a significant barrier to trade and the utilities infrastructure struggling to meet demand. Iran scores poorly overall in the BMI Operational Risks Index, with 41.5 out of 100 ranking the country 13th out of 18 states in the MENA region. Indeed, Iran is a regional laggard across indices such as corruption and bureaucracy, factors which will not improve with a relaxation in sanctions.

... But Longer Term Growth Is Marginal



BMI/EIA

Net Exports Outlook: As we have previously outlined, Iranian oil exports will not suddenly increase from Q315 when a deal is announced. Sanctions on oil will take several months to be relaxed and years on underinvestment will weigh on export potential. In addition, as we have noted previously, several logistical and production difficulties preclude us from forecasting for a quick return of Iranian crude to the market.According to the International Energy Agency, total oil production expanded by 2.3% y-o-y in March, compared with a 2.1% increase in 2014. Low base effects and an uptick in condensates exports - which are not subject to international sanctions - will lead to an acceleration of energy export growth this year. We also factor in a steady incremental increase in Iranian exports, as Iran offloads oil in floating storage and slowly ramps-up production, progressively adding to oversupply in the oil market.

Import growth will remain muted over the coming quarters as we expect continued deprecation of the rial even with a deal over Iran's nuclear programme. However, once the economy begins to pick up speed from 2016 onwards, we expect import growth to head higher as consumer demand increases.

Table: Economic Activity (Iran 2010-2019)

	2010	2011	2012	2013	2014	2015e	2016f	2017f	2018f	2019f
Nominal GDP, USDbn	429.4	575.4	555.8	504.7	478.0	404.2	424.8	467.8	507.7	549.2
Real GDP growth, % y-o-y	5.8	2.5	-6.6	-1.9	0.0	1.0	4.0	4.0	3.9	4.1
GDP per capita, USD	5,766	7,628	7,272	6,516	6,092	5,085	5,279	5,745	6,164	6,594
Population, mn	74.5	75.4	76.4	77.4	78.5	79.5	80.5	81.4	82.4	83.3
Unemployment, % of labour force, eop	13.5	13.3	13.1	13.0	11.0	10.0	10.0	10.0	10.0	9.0

National Sources/BMI

Table: GDP By Expenditure (Iran 2012-2019)

	2012	2013	2014e	2015f	2016f	2017f	2018f	2019f
Private final consumption, IRRbn	2,999,816.0	3,513,034.6	4,356,163.0	5,445,203.7	6,643,148.5	7,872,131.0	9,131,671.9	10,592,739.5
Private final consumption, USDbn	245.9	195.4	168.6	175.7	184.5	207.2	228.3	252.2
Private final consumption, real growth % y-o-y	-1.7	-1.0	3.0	2.0	4.0	4.5	4.0	4.0
Government final consumption, IRRbn	715,016.5	962,204.9	1,202,756.1	1,443,307.3	1,717,535.7	1,992,341.4	2,271,269.2	2,634,672.2
Government final consumption, USDbn	58.6	53.5	46.6	46.6	47.7	52.4	56.8	62.7
Government final consumption, real growth % y-o-y	-7.2	1.6	4.0	-3.0	1.0	2.0	2.0	4.0
Fixed capital formation, IRRbn	2,443,180.6	3,490,657.1	3,005,140.7	3,179,685.8	3,457,146.7	3,769,754.0	4,123,129.2	4,502,417.6
Fixed capital formation, USDbn	200.3	194.1	116.3	102.6	96.0	99.2	103.1	107.2
Fixed capital formation, real growth % y-o-y	-12.3	-11.3	3.0	1.0	4.0	4.5	5.0	5.0
Exports of goods and	1,656,188.0	3,161,244.1	4,281,699.4	2,742,566.4	3,624,794.8	4,212,747.6	4,788,513.7	5,258,451.0

GDP By Expenditure (Iran 2012-2019) - Continued

	2012	2013	2014e	2015f	2016f	2017f	2018f	2019f
services, IRRbn								
Exports of goods and services, USDbn	111.4	120.3	128.9	138.3	148.8	160.3	172.8	186.4
Exports of goods and services, real growth % y-o-y	-13.3	5.0	3.0	0.2	4.0	3.0	3.0	3.0
Imports of goods and services, IRRbn	1,381,800.0	2,553,261.2	1,757,353.4	1,830,024.8	1,977,877.7	2,153,663.1	2,340,346.7	2,538,519.1
Imports of goods and services, USDbn	89.7	97.2	104.9	113.0	121.7	131.1	141.2	152.2
Imports of goods and services, real growth % y-o-y	-16.1	-16.0	-5.0	-1.0	3.0	4.0	4.0	4.0
Net exports of goods and services, IRRbn	274,388.0	607,982.9	2,524,345.9	912,541.7	1,646,917.1	2,059,084.6	2,448,167.0	2,719,931.9
Net exports of goods and services, USDbn	21.7	23.0	23.9	25.3	27.1	29.2	31.6	34.3
Net exports of goods and services, real growth % y-o-y	-8.0	40.5	11.1	1.2	4.8	2.2	2.2	2.1

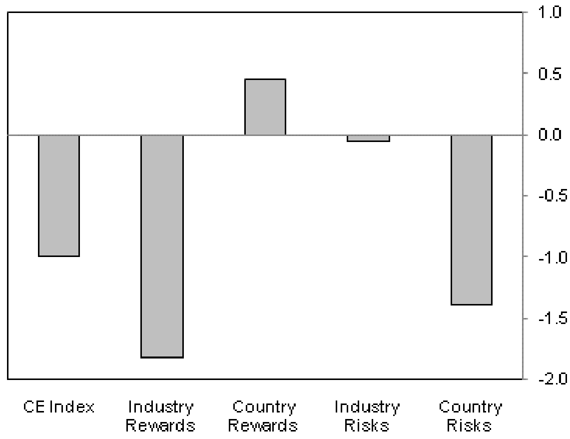
BMI/UN

Industry Risk Reward Ratings

BMI View: *The region's consumer electronics market continues to be driven by mobile devices, such as smartphones or tablets, though there is evidence of a longer-term replacement cycle, especially for the latter form. Operators will continue to roll out advanced data networks in the region, but the dichotomy between high and low-ends, and the high level of already equipped consumers, alongside more difficult macroeconomic conditions, mean that sector growth will be lower than in previous years.*

Industry Rewards And Country Risks Driving Change

MEA Risk/Reward Index Scores Sequential Change, Q315



Source: BMI

BMI has updated its consumer electronics risk/reward index (RRI) for the MEA region, with the overall score for the 10 countries we track dropping one point to 51.7. There was also a change in terms of the rankings, with Israel continuing its progression by joining Qatar at the top, having moved from third to second in our previous index. Saudi Arabia moves up two places to fourth, while Kuwait and South Africa all dropped one place, and lower down, Iran and Oman switched positions at eighth and ninth respectively, with Egypt continuing at the bottom.

The drop in the overall index score was due to declines in both the industry rewards and country risks scores, dropping 1.8 points and 1.4 points respectively, while the country rewards score improved by half a point and the industry risks score remained stable. The latter two categories have seen little or positive change because the global macroeconomic outlook is positive in the region, despite the impact of lower oil prices, and the risks for vendors, relating to counterfeiting or illegal sales (of products which yet to officially launch), have not changed, especially for high-end devices. As for the former categories, they were both impacted by the future outlook in each market. Industry rewards utilise our five-year growth outlook, and while we still believe there will be growth in the region, it will be lower, especially in the long-term, as we expect most citizens to be equipped with the relevant devices, making the overall market slightly less attractive. Country risks consider the security situation and future economic growth, and while conflicts remain in the region, especially in Iraq, Syria and Yemen, all with wider regional implications, it is the economic outlook which has negatively impacted the score. Some of the more oil export-reliant economies have cut down on subsidies, making first necessity goods more expensive, and this will in turn negatively impact consumer spending on those markets, including consumer electronics.

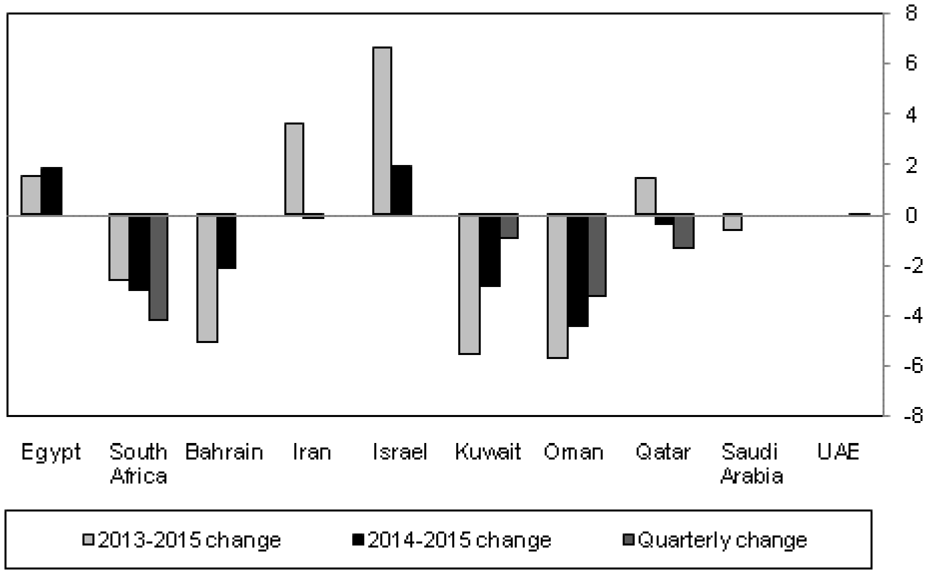
Oman is a clear example of a country whose growth historically relied on oil exports, using rising prices to invest in different parts of the economy. The lower oil prices have made that model redundant, at least in the short-term, and our country risk team has downgraded the country's real GDP growth outlook, from 4.5% annualised between 2009-2013, to 3.2% in 2015. Added to lower state subsidies, this will impact spending on consumer electronics, as well as on other sectors of the economy, and this is why Oman's score decreased by 3.2 points this quarter, driven by an 18-point decline in its country risks score; most notably, it has been overtaken by Iran.

Only South Africa's score dropped more sharply, by 4.2 points, driven by a decrease of 10 points in its industry rewards score, and two points for country risks. The economic outlook for the country remains weak, especially in terms of currency depreciation, with our country risk team forecasting a dollar will equal ZAR14.07 in 2019, compared to ZAR10.85 in 2014. Added to a revision of historical data, we believe that consumer electronics growth will be lower over the next five years, as low economic growth, and more expensive devices through currency depreciation will impact consumer spending and the overall market. This is why South Africa dropped to sixth in our latest rankings.

Kuwait and Qatar are the other two countries whose scores dropped, by 0.9 and 1.3 points respectively. Both markets were impacted by lower industry rewards scores, as we are more bearish about the respective growth prospects for consumer electronics. Kuwait is hindered by its small size, while Qatar is impacted by lower sales in computer hardware, including PCs, notebooks, tablets and accessories, which were not totally offset by growth in smartphones, underpinned by increased 4G penetration in the country. This drop by Qatar means it is joined at the top by Israel, even though its score did not change on a quarterly basis. Israel continues to take advantage of high GDP levels, driving high-value sales, and continuous investment into infrastructure, thanks to military involvement and a large start-up community.

Qatar Bucks The Trend

MEA Risk/Reward Index Scores Change, Quarterly, One Year And Two Years



Source: BMI

The longer-term trends, either one year or two years, also give some interesting insights into the outlook for each market. We notice that Saudi Arabia and the UAE's scores have been the most stable, leveraging their size to grow the consumer electronics markets, with the former using its oil reserves and the latter leveraging its diversified economy to ensure that consumer spending remains high in each country. In terms of outperformers, Israel is joined by Iran and Egypt. Both countries have large populations, and even though consumer spending remains low, there is a demand for low-end devices in those markets, as providers start developing new technologies. Iran could be further boosted by the end of sanctions, as we expect a deal in July 2015 to improve the economic outlook for the sales of consumer electronics products. Looking at underperformers, South Africa, Oman and Kuwait are joined by Bahrain, which suffers from its small domestic consumer market and long product replacement cycles. Qatar is the only market whose long-term trend is better than the short-term, which we discussed previously. We believe Qatar will improve, as the building and rolling out of new infrastructure in time for the 2022 World Cup will boost demand.

Table: MEA Consumer Electronics Risk/Rewards Index, Q315

	Rewards		Risks				
Country	Industry Rewards	Country Rewards	Industry Risks	Country Risks	Consumer Electronics Index	Rank	Previous Rank
Israel	53.3	67.5	65.0	80.3	63.0	1	1
Qatar	48.3	82.5	70.0	68.6	63.0	1	2
UAE	53.3	80.0	65.0	54.1	61.4	3	3
Saudi Arabia	53.3	45.0	55.0	71.6	54.8	4	6
Kuwait	40.8	80.0	55.0	55.1	54.7	5	4
South Africa	43.3	50.0	57.5	67.5	51.0	6	5
Bahrain	37.5	52.5	50.0	53.3	45.5	7	7
Iran	46.7	47.5	30.0	33.4	42.5	8	9
Oman	34.2	40.0	57.5	50.8	41.4	9	8
Egypt	40.0	22.5	52.5	54.4	39.8	10	10
Average	*45.1*	*56.8*	*55.8*	*58.9*	*51.7*	-	-

Scores out of 100, with 100 the best. The Consumer Electronics (CE) Index is the principal rating. It comprises two sub-indices, Rewards and Risks, which have a 70% and 30% weighting respectively. In turn, the Rewards index comprises Industry Rewards and Country Rewards, which have a 65% and 35% weighting and are based on growth/size of the CE industry (Industry) and the broader economic/socio-demographic environment (Country). The Risks index comprises Industry Risks and Country Risks, which have a 40% and 60% weighting and are based on a subjective evaluation of barriers to entry and the regulatory environment (Industry) and the industry's broader country risk exposure (Country), which is based on BMI's Country Risk Index. The index structure is aligned across all industries for which BMI provides Risk/Reward Indices. Source: BMI

Middle East And Africa Risk/Reward Index - Q315

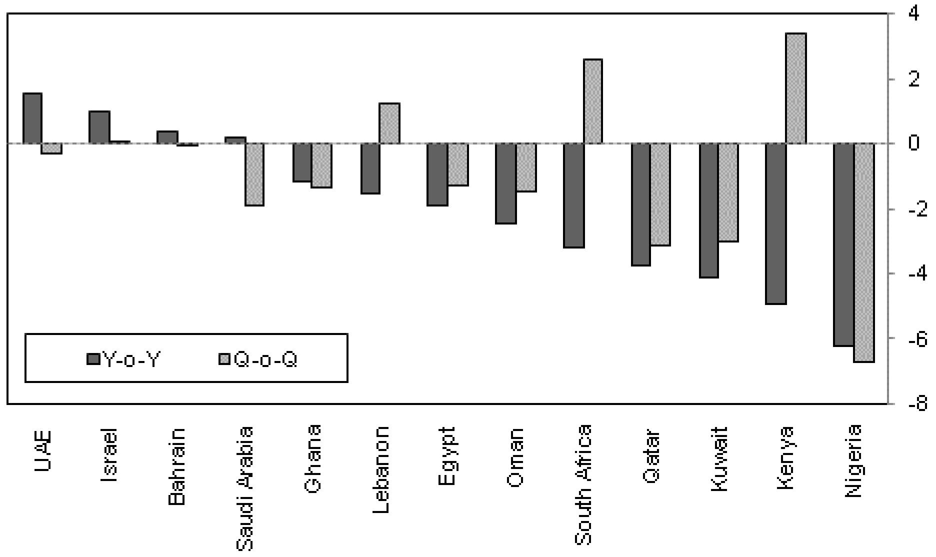
There has been some shuffling in the rankings in this quarter's update to the Middle East and Africa (MEA) IT Risk/Reward Index (RRI), though no country has dropped out of a top five or top 10 position. Israel held its spot at the top, reflecting its mature IT software and services market, wealthy consumer base and stable political environment. The UAE pulled ahead of Qatar into second place, as its more diversified economy compared to other GCC peers has mitigated any impact of lower oil prices on government, enterprise and consumer demand for services.

Nigeria was the biggest loser this quarter, falling from seventh to ninth place, as **BMI**'s Country Risk team made a sharp downward revision to our GDP growth outlook, from 5.6% to 3.9% for 2015, given its reliance on oil exports for around 70% of government revenue. This will constrain the government's ability to spend on IT, even though we expect the wider ICT sector to remain an important element in the government's plan to boost economic inclusion and development over the next five years. Ghana also posted a further decline in its score this quarter, falling below Lebanon into twelfth place on our RRI table, as the Cedi's depreciation again gathered speed in the run-up to an IMF agreement in early April, a trend which we expect to continue throughout 2015 as Ghana's current account deficit widens.

Each country's overall IT score is based on four distinct categories evaluating the growth prospects for hardware, software and IT services vendors across the region. The Industry Rewards category evaluates the growth potential and maturity of the market, based on our proprietary forecasts, as well as the level of government initiative in development of the IT sector. Our Country Rewards rating assesses the potential for consumers and businesses to spend on IT products and services based on a number of key macroeconomic indicators, including GDP per capita and the rate of urbanisation. These factors are important gauges for the level of consumer demand for IT products and services in any given market. The Industry Risks category reflects the strength of intellectual property (IP) protection and ICT policy in a market, an important determinant in the rate of software piracy and counterfeiting. Finally the Country Risks category assesses external factors that could affect a country's overall investment outlook and consequently the growth prospects for the IT sector. These factors include short-term external and financial risk, trade bureaucracy, legal frameworks and corruption perception.

Macro And Political Headwinds Take Their Toll

Quarterly And Annual Change To IT RRI Scores (points), Q315



Source: BMI

A comparison on year-on-year (y-o-y) and quarter-on-quarter (q-o-q) change to each country's overall IT score in the Q315 update shows that the IT growth outlook and wider business environment for most markets have worsened over the last three to 12 months. Both on a quarterly and an annual basis, there have been no changes to any country's Industry Risks score and only minor changes in the Country Rewards category.

For all five African countries in our index, as well as Kuwait, Qatar and Lebanon, the Industry Rewards score is the prime source of the drag on their IT scores over the last year. For the most part, this is owing to the slowdown in GDP growth brought about by lower commodity prices, as mentioned above for Nigeria. Kenya, as a net oil importer, is the exception to this norm and instead benefits from lower prices, which drove up its Country Reward score and resulted in its strong q-o-q gains. The big y-o-y drop in Kenya's score meanwhile reflects a downgrade to its IT growth forecast when the government abandoned its school laptop programme earlier in 2015.

Another issue of electricity shortages continues to plague Sub-Saharan Africa (SSA), and in South Africa in particular **BMI**'s Country Risk team made a downward revision to our short-term GDP growth forecast owing to the negative impact of rolling blackouts on most industries. This has a direct impact on the IT sector, through the additional cost of alternative energy solutions, and an indirect one, as customers across other industries divert spending from IT to more critical electricity solutions. Nevertheless, the maturity of South Africa's IT sector and ongoing investments in fibre broadband networks in key business districts mean it remains by far the most attractive market in SSA.

For Kuwait and Qatar, the slump is owing to slight downward revisions to our IT forecasts for the two countries, in light of lower oil prices and some tightening of budgets across various sectors. But they both remain within our top five for the region and are important markets to IT firms aiming to establish themselves across the GCC. This is illustrated by **Avaya** and **IBM** opening new offices in Qatar and Kuwait, respectively, in April 2015.

With the exception of Qatar and Kuwait, Middle Eastern countries' scores showed an opposite pattern to their African counterparts. The UAE, Saudi Arabia, Bahrain and Israel recorded net y-o-y gains in the Industry Rewards category, as their governments and enterprises continue to invest in modernising their IT systems. For example Saudi Arabia's Justice Ministry deployed a **Symantec** data recovery solution and the UAE's **Al-Futtaim Group** implemented the **SAP** Ariba solution in April 2015, while Bahrain's Ministry of Health selected **Azimuth** to implement a new Enterprise Asset Management solution to improve staff and patient safety services. Smart city initiatives are also beginning to gather speed in the region; since the beginning of 2015, **Msheireb Properties** signed a smart city agreement with **MEEZA**, **Etisalat** and **Huawei** established a partnership on M2M and IoT and **Cisco** was selected to consult Dubai Design District on its smart city project, where it aims to roll out 130 initiatives across at least 11 new buildings.

However all six GCC countries recorded losses in the Country Risks segment, as external risks relating to rising regional tensions threaten stability. The proxy war unfolding between Saudi Arabia and Iran in Yemen, with tensions also spreading into Bahrain and the rest of the region, too, is the main source of the declining scores. Saudi Arabia's sharp q-o-q loss reflects further political uncertainty, as new ruler King Salman bin Abdulaziz reshuffles the country's top leadership, in a move that strays from traditional succession policies. Nevertheless, the heavier weighting towards Industry Rewards compared to Country Risks in our index means that the UAE, Bahrain and Saudi Arabia were able to record y-o-y gains, despite rising external risks. By contrast, with losses across both categories, Qatar and Kuwait were the Middle East's underperformers over the last 12 months.

Table: MEA IT Risk/Reward Index - Q315

	Industry Rewards	Country Rewards	Industry Risks	Country Risks	IT Rating	Rank	Previous Rank
Israel	55.0	100.0	65.0	68.2	69.6	1	1
UAE	57.5	90.0	60.0	64.0	66.9	2	3
Qatar	50.8	100.0	55.0	62.5	65.5	3	2
Saudi Arabia	52.5	75.0	55.0	58.7	59.4	4	5
Kuwait	40.8	100.0	40.0	60.5	58.8	5	4
Bahrain	31.7	85.0	57.5	55.3	52.1	6	6
South Africa	55.0	45.0	45.0	58.2	51.9	7	8
Oman	33.3	65.0	52.5	51.9	46.7	8	9
Nigeria	50.0	30.0	45.0	44.2	43.5	9	7
Egypt	48.3	30.0	45.0	48.3	43.4	10	10
Lebanon	30.0	65.0	20.0	47.2	40.5	11	12
Ghana	38.3	35.0	40.0	51.1	40.0	12	11
Kenya	41.7	10.0	55.0	36.6	34.6	13	13
Average	*45.0*	*63.8*	*48.8*	*54.4*	*51.8*		

Scores out of 100, with 100 the highest. The IT Risk/Reward Rating comprises two sub-ratings 'Rewards' and 'Risks'. Scores are weighted as follows: 'Rewards': 70%, of which Industry Rewards 65% and Country Rewards 35%; 'Risks': 30%, of which Industry Risks 40% and Country Risks 60%. The 'Rewards' rating evaluates the size and growth potential of an IT market in any given state, and country's broader economic/socio-demographic characteristics that affect the industry's development; the 'Risks' rating evaluates industry specific dangers and those emanating from the state's political/economic profile, based on BMI's Country Risk Ratings, that could affect the realisation of anticipated returns. Source: BMI

Market Overview

BMI View: *BMI estimates PC market sales of USD5.475bn in 2015, rising to USD7.1bn by 2019. BMI has upgraded its outlook for the Iranian market as it appears that the sanctions that have been crippling Iran's economy for years, could be lifted later this year. Despite limited broadband access, we believe the market has strong growth potential as the government rolls out its own internet network and household computer penetration increases. Notebooks will drive the market and tablets will be increasingly important and the expansion of mobile data networks will drive the demand for dongles.*

Computers

Asian vendors have taken advantage of the gap left by US companies not allowed to sell directly to Iran. Compared with many markets there is a much stronger presence of companies such as **LG**, **Samsung**, **Acer**, **Sony** and **Toshiba**. However, there are changes to the market after an August 2013 decision to lift restrictions on selling consumer electronics to Iran. **Apple** lifted restrictions on those consumers buying devices with the intention of taking them to Iran. It is likely that there will be futher significant changes to the market. In the likely event that Iran reaches an agreement with the West over its nuclear programme in mid-2015, the consumer electronics and e-commerce markets will be the first within the ICT sector to benefit from sanctions relief.

Despite US consumer electronics companies' increased ability to compete with their dominant Asian counterparts, many have yet to expand operations into the country. Exporting to Iran remains a huge logistical challenge while key trade routes are closed and restrictions still apply to the financial sector and many vendors have been unwilling to invest without the greater certainty provided by a wider sanctions relief agreement. US vendors are not the only ones waiting for greater stability; even leading Chinese PC vendor Lenovo stated in early 2014 that it would wait for an agreement between Western nations and Iran before formally expanding into the country. Further to this, EMEX, a Dubai consumer electronics retailer has told local media that it is interested in entering the Iranian market.

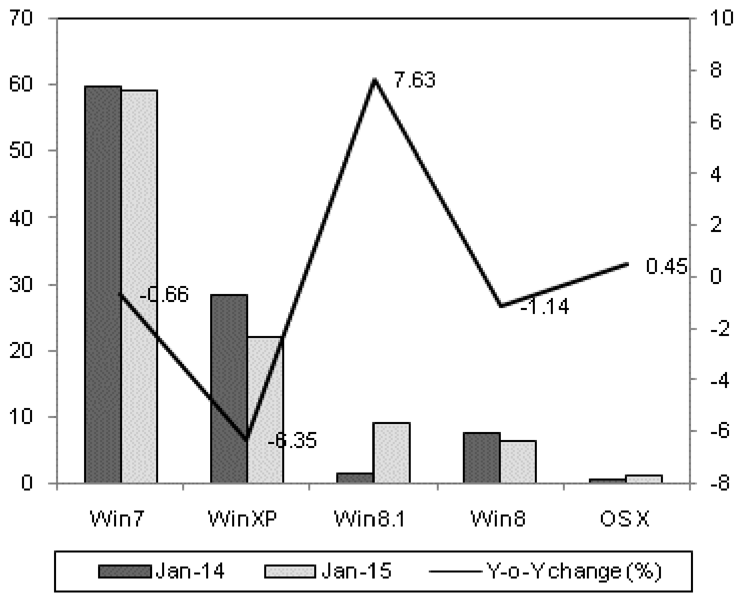
Until now the lack of international production and imports has led to growth in the manufacture of locally made computers. Until recently, barring a few high-end brands, most computers in Iran were assembled locally. Customers can purchase computer parts from specialists markets or malls where customised computers are assembled. Assembly is a major feature of the market and a large portion of the computer hardware market is concerned with parts, particularly monitors and accessories such as printers.

In contrast to the more diverse landscape in most Middle Eastern markets, Iran is dominated by just two vendors, LG and Samsung. Local electronics firm **Maadiran Group** began to manufacture LG monitors in Iran over a decade ago and LG has a premium position in the market, while Samsung has a smaller but significant market share. Recently, Maadiran planned to produce AOC monitors from **TVP** in Iran, on a semi-knocked down (SKD) basis, positioning the brand between LG and Samsung. **BMI** believes easier access to US and other international brands will erode the dominance of Samsung and LG in the consumer electronics market.

Despite the US trade embargo on Iran, printers from leading global vendor **HP** are readily available in Iran, as was revealed by the recent controversy surrounding HP's distributor **Redington**. Stung by the bad publicity, HP said that it would tighten sales restrictions on Redington to prevent it from selling printers to retailers in Iran. However, it is doubtful whether HP can do much to prevent its printers from selling there. Redington laid the foundation for the popularity of the HP printers brand a decade ago, famously decorating its offices in Tehran with giant colourful maps created by HP printers. Meanwhile, there is fierce competition for Iran's buoyant computer accessories market.

PC Browsing Traffic By OS

2014-2015 (market share and yearly change)



Source: Statcounter, BMI

Table: Computers - Demand (Iran 2012-2019)

	2012	2013	2014e	2015f	2016f	2017f	2018f	2019f
Computer hardware sales, USDmn	4,513	4,738	5,070	5,475	5,859	6,269	6,679	7,089
PC sales, USDmn	3,924	4,120	4,409	4,761	5,095	5,451	5,808	6,164
PC sales, '000	3,721	4,055	4,542	5,133	5,748	6,438	7,128	7,818
- Notebooks, '000	2,790	3,123	3,588	4,157	4,656	5,215	5,774	6,333

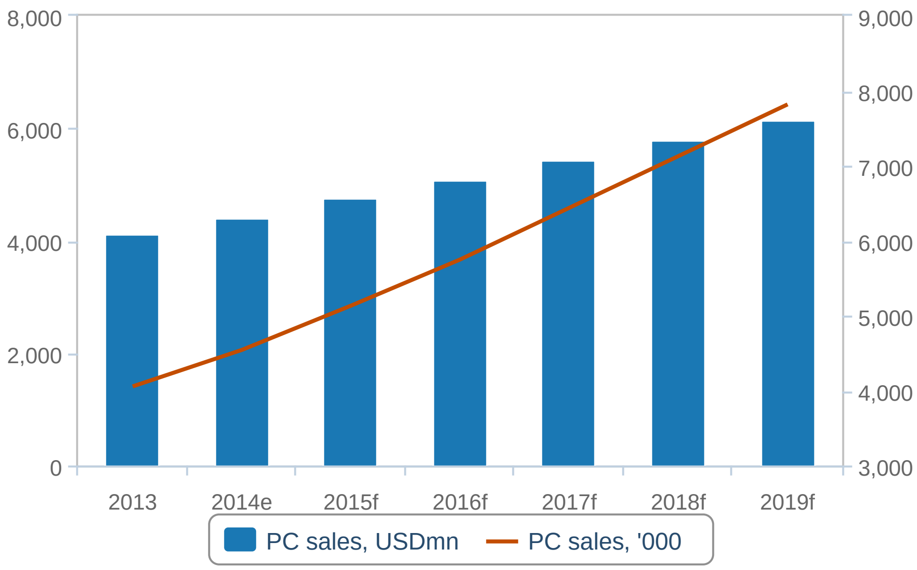
e/f = estimate/forecast. Source: BMI

BMI forecasts that the computer and accessories market will continue to account for the largest proportion of Iran's consumer electronics market, at more than 54% of total sales, right through our five-year forecast period to 2019. We estimate that total computer hardware sales reached USD5.1bn in 2014, rising to USD7.1bn in 2019. A broader easing of sanctions will enable vendors to target the enterprise and government sectors, which we expect will generate rising demand for hardware and as the economy recovers. This will be driving the computer hardware market growth in Iran.

PC penetration remains low, lower than other markets in the region, with a slow growth trajectory in recent years as a result of more stringent sanctions affecting the market directly and via the impact on the wider economic environment. However, on the back of sanctions relief, we forecast economic growth will pick up from an estimated 0.5% contraction in 2014 to 0.6% and 2.9% growth in FY2015 (fiscal year running from March 21 2015 to March 20 2016) and FY2016, respectively. We forecast single-digit revenue growth in 2015, at just under 8% and expect revenue growth to display strong growth, with a compound annual growth rate (CAGR) of 6.9% in US dollar terms for our forecast period.

Computers: Demand

(2013-2019)



e/f = BMI estimate/forecast. Source: National sources, BMI

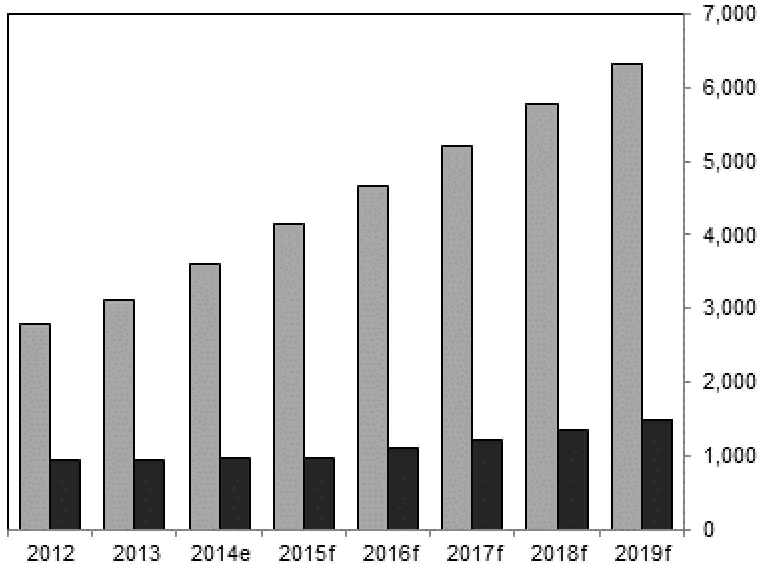
While shipments growth is underperforming compared to many other regional markets, Iran is seeing a number of trends in common with its regional peers. There is a shift to greater use of mobile computing devices including notebooks and netbooks and potentially of tablets in future. As a result, desktops now account for only around one-third of sales and this share is expected to fall further over the forecast period, while PC unit sales will grow in absolute terms to 7.8mn units by 2019.

BMI expects notebook shipments (including tablets) to increase to 6.3mn units in 2019, from 3.6mn in 2014, with a CAGR of 12%. The popularity of netbooks echoes trends in other emerging markets, but with more limited competition from tablets volumes have been sustained for longer. However, there is a threat to netbooks from new form factors, including tablets and hybrids. This trend should be considered in the context of local specifics. For instance, with imported products more expensive and at times difficult to obtain, the extent to which Iranian consumers can shift to tablets and hybrids is subject to uncertainty. Given the dominance of local assembly, we expect the decline in desktop sales to be less pronounced than in other regional markets.

The government and commercial segment dominates computer purchases, with more than 50% of the total market. Over the next few years, computer sales should be boosted by government procurement for education projects and other uses, with e-government initiatives helping to fuel spending, along with privatisations. There should also be growing investment by private companies, particularly in modernising sectors such as telecoms and banking. Despite its huge potential, the small to medium-sized enterprise (SME) market will be relatively constrained by its lack of access to investment compared with other countries in the region.

Computers - Segmental Demand

2012-2019 ('000)



e/f = estimate/forecast. Source: BMI

BMI expects the market to remain on a low growth path as a result of sanctions and political and economic uncertainty. Several other factors will have a bearing on whether the computer market achieves its potential. High tariffs and the government trade embargo have a significant impact on the market, which remains dominated, in the desktop segment, by local assembly, with monitors procured from warehouses and computer parts malls. Trade sanctions could have an impact on the volume of imports from the UAE, although it is reported that higher income consumers have found ways to acquire desirable hardware internationally.

AV Devices

Iran's AV devices market is dominated by multinational brands such as Sony, Samsung, **Sharp**, LG and Toshiba. Maadiran is becoming an important player via its expanded manufacturing facilities 80km outside Tehran. High tariffs on some products and the trade embargo have allowed local manufacturers to gain a foothold in the market. It is likely that this will change however, once the sanctions are lifted. The regional competitive landscape has evolved over the last two years, with Samsung moving into a strong position across a range of product groups including plasma and LCD TV sets, LCD monitors, micro hi-fi and DVD recorders.

The leading local TV set manufacturer is Maadiran Group, which in 2006 launched its X-Vision brand. The company claims it is now the third-largest LCD TV brand in Iran. Samsung was understood to have claimed top spot in the LCD TV set market ahead of main multinational rivals Sony, LG, **Philips** and Sharp. In Iran, Samsung has built success on localisation of production, marketing and sales activities, as well as brand building, such as its 'silk carpet' campaign, which emphasises the slim size of its LED TV set.

In the Middle East Sony is estimated to have a 15-20% share, while LG and Sharp have around 10%. Samsung and LG placed a lot of expectation on LED TVs, although demand was limited to high-end consumers initially. The launch of local digital TV should benefit sales.

The emergence of the LCD TV market opportunity has prompted a range of consumer electronics vendors, including Sony, Sharp, **BenQ**, **Nikai**, LG and **JVC**, to negotiate new, or strengthen existing distribution deals to expand their presence in Iran. In 2010 Sharp launched an LCD TV assembly plant in Iran, in partnership with Maadiran Group. The facility marked a new stage in cooperation between Sharp and Maadiran that dates back to 1964. The plant will make digital TV sets with sizes of between 32 and 55 inches. Sony was launching its Bravia range of LCD TV sets, after negotiating a distortion agreement with a new channel partner. Sony has already established a service centre in Iran. JVC established a liaison office in Tehran to provide marketing support to local partners and planned to further boost its presence through establishing its own network of retail outlets. According to the company, Iran was already its most significant single market in the Middle East.

Vendors and distributors were continuing to invest in retail expansion. **Panasonic** said that it would provide strong support for branding in the region despite the economic downturn. Panasonic was aiming for a 25% share in the 37-inch-plus flat panels television market, with its Viera LCD range with energy saving features leading the campaign. Among other challengers is Asian consumer electronics leader BenQ, which has said that Iran is its third largest market in the Middle East, generating 15-20% of annual revenue. The company manages the market from Dubai and has considered investing in assembly plants in Iran in the past, only to be deterred by the security risks.

In the digital camera segment, Samsung has also made regional advances, due to the popularity of its multimedia compact cameras. New models such as the i8 support functions such as PMP, MP3 playback, travel information and text viewers.

Table: AV - Demand (Iran 2012-2019)

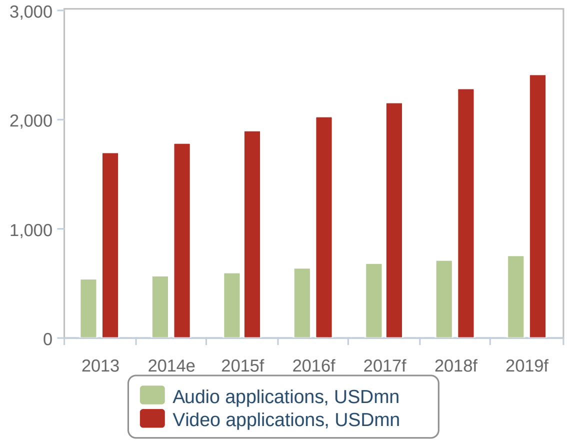
	2012	2013	2014e	2015f	2016f	2017f	2018f	2019f
AV and gaming device sales, USDmn	2,182	2,246	2,352	2,503	2,661	2,832	3,002	3,173
- Video applications, USDmn	1,658	1,707	1,787	1,902	2,022	2,152	2,282	2,412
- Audio applications, USDmn	524	539	564	601	639	680	721	762
LCD TV set sales, '000 units	631	757	893	1,072	1,286	1,543	1,801	2,058
Digital camera sales, '000 units	317	320	326	339	356	374	392	410

e/f = estimate/forecast. Source: BMI

BMI expects the AV market will underperform over the medium term, but in this sector too overturning of the sanctions can have a positive effect as the market's size is sufficient to attract interest from regional and global vendors. Newer products such as LCD TVs continue to gain in popularity, but demand is limited by affordability, while supply chain hurdles remain an issue. Nevertheless, consumers are keen to get their hands on the latest products, with flat screen TVs bolstering demand. A more open market would see faster growth, particularly if accompanied by improved economic performance with an easing of sanctions. However, under our existing forecast the market is still expected to see a CAGR of 6.2%, reaching USD3.2bn by 2019.

AV: Demand

(2013-2019)



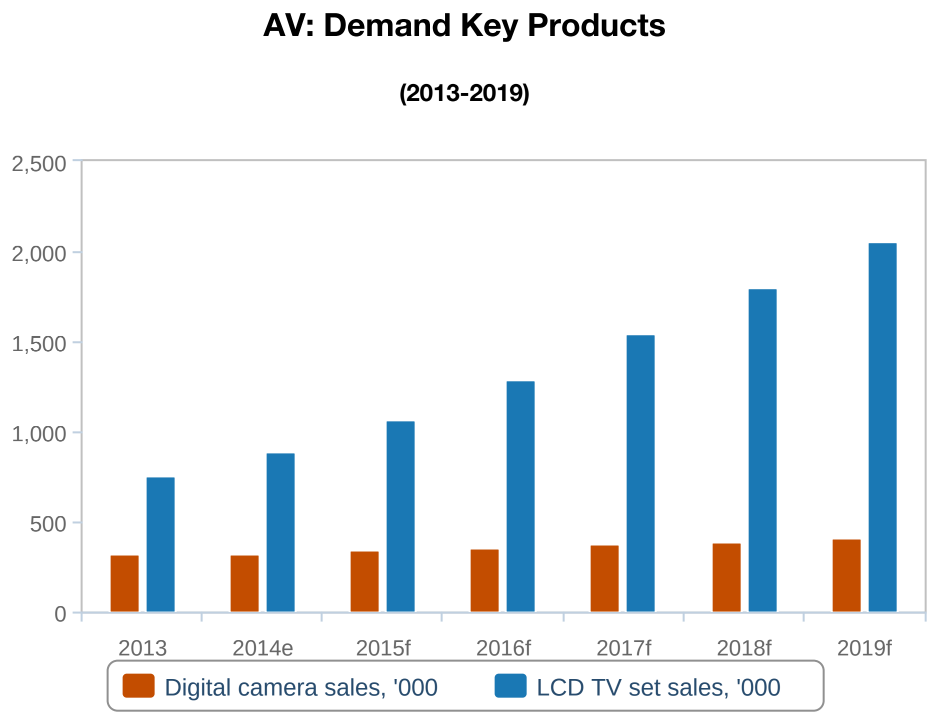
e/f = BMI estimate/forecast. Source: National sources, BMI

In addition to boosting the economy, lifting of sanctions is likely to also have an impact on inflation. Inflation has a particularly important impact on consumer electronics, whose components are usually priced in US dollars and therefore become much more expensive in local currency terms for end buyers when inflation rides high. As the gradual lifting of sanctions curbs inflation, imported devices should become more affordable for Iranian consumers, giving a boost to all vendors.

The sector currently remains restricted by the small scale and fragmented nature of the retail channel, but there is progress. For instance, Maadiran Group has made significant investment in domestic production facilities and it claims to have the largest single consumer electronics manufacturing facility in the region.

Another boost to growth could come from a decision by the government to launch a process of migration from analogue to digital broadcasting. This should stimulate a rise in TV set purchase rates as well as boost demand for set-top boxes. TV sets will be the main driver of AV category sales growth over the forecast period as consumers upgrade and trade their old models for digital. The potential TV set market was estimated at around 893,000 LCD TV set units in 2014. Demand for video applications is forecast to continue to rise, with revenue projected to rise to around USD2.4bn by 2019.

Sales of LCD and plasma sets have increased as prices have fallen substantially. The demand for higher quality TV viewing experiences has seen demand for 42-inch and 50-inch plasma TV sets increase substantially. There is reportedly particularly strong demand in Iran for screens of 46-inches or more, rather than the 32-inch set which dominates elsewhere, which only accounts for around one-third of demand. At the same time, vendors are aware that TV sets are no longer purchased simply for watching broadcasts and newer models from Samsung and other vendors include 'smart' capability allowing people to enjoy downloaded content.



e/f = BMI estimate/forecast. Source: National sources, BMI

In January 2012, Iran opened 'N (Display) which was claimed to be the first digital TV-channel in the country. The broadcasting is in Farsi and the channel broadcasts local and foreign movies and TV series.

To try and maintain sales volumes, TV set vendors will also focus on product innovation, with drivers including improved display quality and wider screens, as well as design and features such as wireless technology. Regional vendors placed a lot of expectation on LED TVs to drive revenue, as LCD TV prices declined, although demand for LED sets has thus far been limited to high-end consumers.

Elsewhere in the AV market, digital cameras are forecast to sell at around 28,260 units a month in 2015. Consumers are becoming more ready to upgrade their cameras to digital, or to buy a better digital camera when new features become available, especially as average selling prices decline. Seven- and eight-megapixel models remain the most popular in the compact segment regionally but demand for 12-megapixel models is growing. However, over the medium term sales of digital cameras face the downside risk of consumers choosing to settle for the camera on their smartphone.

Revenue from audio devices was estimated at around USD564mn in 2014 and is expected to rise to USD762mn within the forecast period, with home theatre systems accounting for the largest share of revenue.

We expect the Sony PlayStation3 to be the number one gaming console in the region, with **Nintendo** Wii and **Microsoft** Xbox the other major players. The release of next generation games consoles from Sony and Microsoft in late 2013 could have been expected to boost the market; however the availability in Iran is uncertain and, as such, the release is not a factor we are including in our forecast for the time being.

Mobile Handsets

Mobile handsets have the greatest potential for volume growth, as the form factor has the greatest potential to reach a wide range of consumers. The launch of 3G services has kickstarted real demand for smartphones. **BMI** believes that many Iranians have smart devices but do not make use of their mobile data potential as access to the network is still limited to certain areas of the country. As US sanctions on consumer electronics were lifted in May 2013, there is some potential for an uptick in growth.

On May 30 2013, the US lifted sanctions on the sale of mobile phones and other communications devices, software and services in Iran. It is not yet clear what impact this will have on the local handset market, with devices still available under previous sanctions via back channels. In April 2015, Iran made headway in negotiations to lift the economic sanctions. On April 2, members of the P5+1 - the US, the UK, France, Russia, China plus Germany - agreed to lift sanctions against the Islamic Republic once a final deal on its nuclear programme is reached. Further, **BMI** believes the slow development of the local 3G market means demand for high-end devices from the likes of Apple are not likely to have wide appeal, but will remain restricted to a wealthy urban group, many of which have already acquired devices by circumventing sanctions. Nonetheless, the lifting of sanctions is expected to boost competition and push down prices.

Nokia has traditionally been the top selling brand in Iran, with a share estimated as high as 60%. However, accurate estimates are all but impossible to obtain, not least because of the large grey market. In recent years, as is the case in most of the markets in which it operates, Nokia has faced a strong challenge from its main rivals, particularly Samsung, but also emerging leaders of the smartphone market such as LG, **HTC** and most recently **Huawei**, as well as local producers.

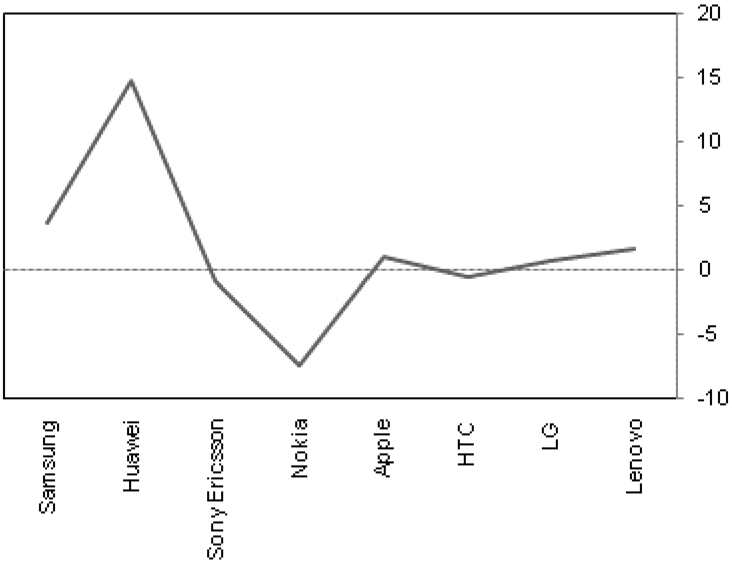
Stacounter illustrates the fall of Nokia, which has seen its share of browsing traffic decrease from 215.06% to 7.57% between April 2014 and 2015. Samsung remains the market leader, with a share of 30.1%, but it has been outperformed in the market by Huawei, which grew by 14.72pp in the period to reach 21.7%. The rise of Chinese vendors is also illustrated by **Lenovo**, which has the third strongest growth in the period but still remains a small player with an overall share of 2.53%. Chinese manufacturers can take a lead in the Iranian smartphone market because they provide affordable devices to consumers and have the experience of their domestic market, which has followed similar trends in terms of smartphone adoption through low-cost handsets.

We expect the market to continue to grow with the expansion of both 3G and 4G networks, as **MTN Irancell** has joined **RighTel** in offering advanced mobile networks and **MCI** is likely to follow suit in 2015. Furthermore, the Iranian regulator also plans to auction specific LTE licences during the year.

In the face of sanctions on consumer electronics imports, Iran sought to make up the deficit by increasing local production. In the year to March 2012, Iran was expected to manufacture around 5mn handsets, according to local industry estimates, equivalent to around a quarter of the estimated local market. **Hamrah Gooya Aryand Communication Company**, which sells handsets under the GLX brand, currently has an annual production capability of 1.8m units. In 2007, LG started producing handsets in Iran in partnership with the Maadiran Group. The agreement was shrouded in secrecy, but Maadiran said it had begun producing five models of handsets under licence from LG. Maadiran had been a long-term distributor for LG. LG's motives for entering the market likely included avoiding the steep tax on imported handsets and the opportunity presented by the Iranian market as relatively un-penetrated by the major rival brands. LG said that it planned to produce 2mn handsets a year, with some exported to other markets in the Middle East. In January 2015, it was reported that Iran was producing around 1.5mn mobile handsets a year.

Iran's Mobile Browsing Traffic By Vendor

2014-2015 (market share and yearly change)



Source: Statcounter, BMI

Table: Mobile Communications (Iran 2013-2019)

	2013	2014e	2015f	2016f	2017f	2018f	2019f
Cellular Mobile Phone Subscribers, '000	100,965.7	111,062.3	118,836.7	124,778.5	129,769.6	133,662.7	136,336.0
Mobile Phone Subscribers/100 Inhabitants	130.4	141.5	149.5	155.1	159.4	162.3	163.7
3G & 4G phone subscribers, '000	1,600.0	9,920.0	18,947.2	27,473.4	34,067.1	39,177.1	41,527.8
Domestic mobile handset sales, USDmn	1,845.65	2,006.94	2,210.85	2,459.35	2,533.13	2,606.91	2,680.69
Domestic mobile handset sales, '000	21,102.57	22,790.77	24,614.03	26,583.16	28,338.89	30,165.39	31,991.89
Domestic smartphone sales, '000	456.00	525.00	644.00	763.00	882.00	1,001.00	1,120.00

e/f = BMI estimate/forecast. Source: National sources, BMI

We raised our forecasts for handset sales as we expect wider 3G network availability, stimulated by the lifting of US sanctions on consumer electronics exports to Iran. The decision, made in May 2013, was widely seen as a goodwill gesture ahead of the June 2013 Iranian elections. We estimate handset sales of USD2.007bn in 2014, an increase of 8.7% from 2013.

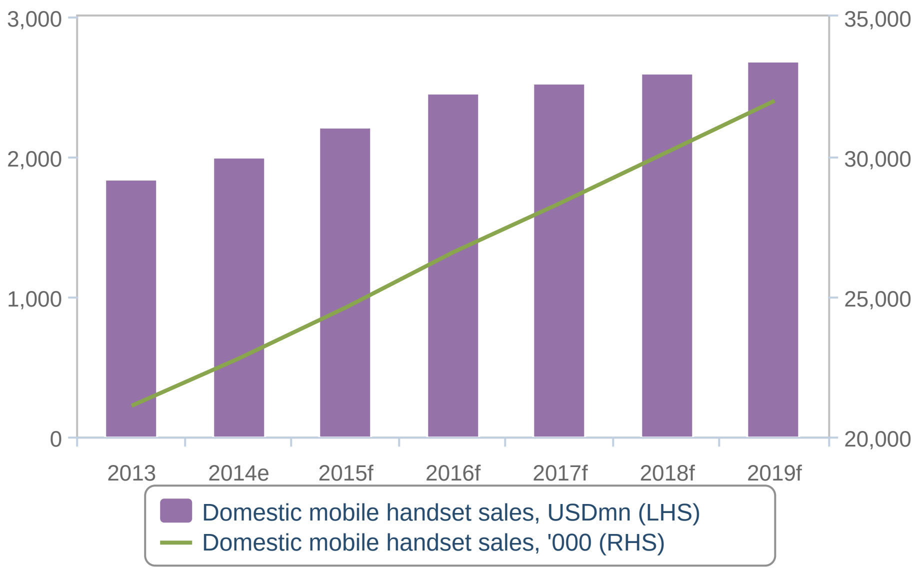
BMI expects volume growth to remain strong over the duration of our forecast period, reaching 32mn devices sold in 2019 as consumers upgrade to gain access to some of the latest devices. In addition to increasing volumes, wireless data services will increasingly be used as mobile infrastructure is put in place, encouraging demand for feature phones in the mass market and demand for smartphones from higher income consumers.

Although the mobile handset market trails behind the computer market in Iran in terms of value, in volume terms mobile handsets are the largest market in Iran. Lower prices make mobile handsets affordable to a wider share of the country's population. Mobile penetration rates suggest there is still growth potential for devices, but the grey market factor makes the true market size very difficult to estimate. Mobile handsets are also the most dynamic market, with the arrival of 3G services catalysing sales of smartphones and featurephones. While many Iranians have been able to find iPhones and other popular products through specific retailers, abroad or on the black market, the establishment of formal distribution networks should help bring down the cost of these devices, in turn supporting greater demand. The launch of 3G and 4G networks in the market is likely to drive further growth in the segment, as operators look to increase data usage amongst their customers.

Mobile handset revenue is expected to grow to USD2.7bn by 2019, driven by the replacement market and the shift to higher value featurephones and smartphones. A key aspect to keeping the market growing will be improving mobile network coverage. Mobile penetration rates in urban centres are much higher than for the country as a whole and therefore the biggest growth opportunity for handset vendors will be driven by the expansion of mobile networks into rural areas. A sizeable portion of Iran's population remain without reliable communication services, particularly outside the major cities.

Mobile Handsets: Demand

(2013-2019)

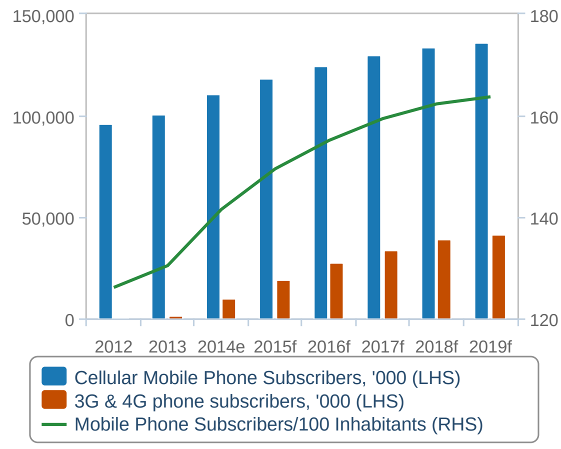


e/f = BMI estimate/forecast. Source: National sources, BMI

The weighting of new users towards lower income rural areas will mean a continuation of the downward trend in handset prices. Mobile handsets are readily available from city kiosks at prices of USD20-50. Many of these models come with an equivalent value of call credits, meaning they are in effect free to consumers. Moreover, in rural areas, around 10,000 rural communication centres have been set up, offering local people inexpensive or free access to communications.

Industry Trends - Mobile

(2012-2019)



e/f = BMI estimate/forecast. Source: Operators, BMI

In urban areas, many subscribers have sophisticated demands in terms of design and functions. There is demand for music phones, particularly given the youthful make up of the market and for functions such as MP3/MP4 support, high-resolution cameras and camcorders. With over 50% of Iranians under the age of 30, the country is expected to become an important market for value-added and data services. This is despite continued government control over the use of multimedia messaging services (MMS).

Smartphone/PDA revenue is expected to grow to USD1.4bn by 2019. In 2012 it was suggested that 9% of all mobile phone users in Iran were using an iPhone. This is another sign that, despite the US-led sanctions, multinational brand handsets were finding their way into Iran via third-party channels. However, the extent to which this user base has purchased official devices or replicas is not clear.

Iran's mobile operators will put an increasing emphasis on upgrading existing customers to higher value services, such as data and postpaid contracts. The arrival of MTN in the 3G market, as well as 4G, will drive growth in the market and the potential arrival of market leader MCI will also be positive in terms of smartphone sales.

Competitive Landscape

Due to sanctions imposed by the US and its allies in Iran, the country's consumer electronics market is very different from most in that it includes a large grey market. Aside from the three major supermarket chains, **Carrefour** spin-off **Hyperstar** and local **Refah** and **Shahrvand**, **BMI** understands that the large majority of electronic devices in Iran are sold in small shops owned by individual traders. In Tehran most of these shops are concentrated in the Capital Computer Complex, where more than 350 traders sell devices to an increasingly tech-savvy population. According to the CEO of **RadanMac**, despite US sanctions, by 2013 there were around 100 unofficial **Apple** retailers operating in Tehran. These individual merchants source their products through underground trade routes, either directly from Hong Kong, Singapore and Malaysia, or via Dubai or Turkey.

International Company

Table: Hyperstar

Address	Shahid Sttari Boulevard, Tehran; and Sepidan Street, Shiraz
Company history	Hyperstar launched in Iran in 2009. It is a hypermart based on Carrefour's model, though has no association with the French company. The Hyperstar chain was established by Dubai-based Majid al-Futtaim (MAF) which is Carrefour's franchisee in the Middle East. Hyperstar was the first large supermarket chain to open in Iran. When the first location opened in Tehran, MAF reported that the store had an average of 10,000 visitors a day. In 2013 MAF stated on its website that there were three Hyperstar superstores in Iran, of which one was in Tehran and another in Shiraz. The company currently has 59 retail outlets.
Products and services	Based on the Carrefour model, Hyperstar sells everything from food, to home decoration, clothing and electronics. In the electronics section, Hyperstar sells large and small home appliances, audiovisual equipment, PCs (including tablets) cameras and mobile handsets. Hyperstar sells both local and international consumer electronics brands, such as Dell, LG, Sony, Samsung and Iranian brand Pars.
Company developments	In 2012 MAF Hyperstar LLC sold its operations in Iran and Syria to its parent company, MAF Capital LLC. This followed net losses of AED143.5mn for its Iranian operations during the year ended December 2012, down from net profits of AED49.9mn the previous year. The sharp decline in profit was likely due to inflation of the Iranian rial and foreign exchange losses.In May 2013 MAF Holdings bought out Carrefour Group's 25% share of MAF Hypermarkets LCC for EUR530mn (USD716mn) and extended its exclusive franchise partnership with the French company until 2025.

Source: Hyperstar, BMI

Local Company

Table: Refah Chain Stores Co

Address	RCS Head Office, 19 Shahid Sarparast St, West Taleghani Ave, Felestine Square, Tehran
Company history	Refah is a supermarket chain established in 1995 with some 160 branches throughout the country. Though smaller than hypermarkets such as Hyperstar, Refah is based on a similar model and sells everything from food to cosmetics, clothing, textiles, household appliances and consumer electronics. Refah also has an online store.
Products and services	In the consumer electronics section Refah sells televisions, computers, notebooks, cameras, printers, fixed-line telephones and other audiovisual equipment. Refah sells local brands and international electronics brands, such as Sony, Panasonic, Sharp, Samsung and LG. Refah does not advertise the sale of mobile phones on its website, but these may be available in store.
Company developments	Not available.

Source: Refah Chain Stores Co, BMI

Industry Trends And Developments

BMI View: *Iran has the potential to be the Middle East's largest consumer electronics market as a consequence of its size and population. The real prospect that the US led international sanctions will be lifted in 2015 adds upside to the market.*

BMI believes the lack of availability of some devices and the time required to develop manufacturing facilities, makes regional leadership unlikely. The authorities have allowed limited access to social networks and in January 2013 announced they were in the process of refining a filtering programme, with a view to enabling access to web-based social networks. Early 2014 saw the government call on China to help build a restricted 'national' internet. Software will facilitate restricted access to US networking websites **Twitter** and **Facebook**. A respite in the block on Twitter lasted just one day in September 2013 and **BMI** does not expect the government to open up the market in the near term. Iran began piloting a new Internet censorship programme in late 2014, where instead of fully blocking access to sites such as Facebook and Twitter, 'smart filtering' allows access to the sites but blocks any content deemed unethical or politically sensitive. Iran's Communications Minister stated that the system would be fully operational by June 2015.

The government said that although it will introduce the compromise, the internet will remain subject to censorship to avoid the infiltration of controversial material. We expect consumers to continue to face considerable restrictions as Iran develops its own private state-controlled internet.

For some vendors Iran accounts for 20-40% of regional demand in some product categories. Products made in the US or carrying a substantial amount of US components are subject to the US trade embargo. US companies such as **Dell** and **HP**, as well as global handset vendors such as **Sony** that feature US-patented technology in their products, are restricted in their local market operations, although the lifting of sanctions related to certain US technology products in 2013 changed the picture somewhat.

Lifting Sanctions Does Not Guarantee Strong Sales

In May 2013, the US lifted sanctions on the sale of mobile phones and other communications devices, software and services in Iran. The easing of sanctions was intended to provide Iranians with tools to help promote political freedom ahead of a national election. This allowed US and other vendors to tap into some of the latent potential in Iran's telecoms market, but **BMI** believes that high end smartphone sales will be limited by the fact that **Tamin Telecom** had exclusive rights to offer 3G services until September 2014 and the government remains intent on controlling the political environment, which could result in internal restrictions on devices. However, the lifting of the sanctions has allowed popular devices such as **Apple**'s iPhone and iPad as well as other handsets and tablets with US parts to be sold legally in Iran for the first time since 1992.

There now seems to be a real prospect that the sanctions will be lifted. On April 2, members of the P5+1 - the US, the UK, France, Russia, China plus Germany - agreed to lift sanctions against the Islamic Republic once a final deal on its nuclear programme is reached. In the likely event that Iran reaches an agreement with the West over its nuclear programme in mid-2015, the consumer electronics and e-commerce markets will be the first within the ICT sector to benefit from sanctions relief. This will be underpinned by an improving outlook for Iranian consumers and online retailers' experience navigating logistically challenging markets, but high taxes and Internet censorship means risks will still ride high.

The sanctions on consumer electronics and communications software had been criticised by the National Iranian American Council on the grounds that they help the government limit citizens' freedom of communication and ability to develop a civil society, while doing little to curb Iran's nuclear programme. However, the embargo did not mean products from US vendors were unavailable for sale in Iran. For instance, in July 2012 it was reported that around 100 stores selling Apple's products were understood to be operating in Tehran despite US sanctions. Shops selling a range of products, including laptops, iPods and iPads, have reported an increase in demand since 2009 and sell the devices at prices similar to those seen in the US. Stores source stock from the Middle East, while customers can take advantage of Apple's App Store. Although devices may be available, there are still problems for handset vendors. In April 2013, **Samsung** confirmed plans to block access to its mobile app store in Iran from May 2013. The move, believed to be part of international sanctions over Iran's nuclear programme, urged customers to update their apps before the cut-off date of May 22 2013. Samsung notified its customers by email that the online marketplace will be out of action, although the statement cited only 'legal barriers' as the reason for the move, rather than sanctions.

Although handsets are set to be the biggest area of growth in consumer electronics in Iran, limited 3G service means an immediate surge in high end smartphone sales is unlikely. Tamin Telecom is Iran's smallest mobile operator, having only launched commercial services in 2011, yet it had exclusive rights to offer 3G services until September 2014. **MTN Irancell** was the second operator to launch 3G services in August 2014 and it followed suit by launching the country's first 4G network in December 2014. **MCI**, with the State as its main stakeholder, has not been given authorisation yet to launch advanced data networks, despite its plans to migrate customers onto these networks. **BMI** believes the reason for the lack of approval might be due to political tensions, as many conservative scholars have strongly argued against 3G networks and even issued a fatwa when **RighTel** won the exclusive rights to launch 3G services. However, with MTN focusing on increasing the number of data subscribers, we expect coverage and uptake to grow in the coming years. Only eight months after its 3G services launch, MTN Irancell claimed that the number of data subscribers on its network has increased to more than 21mn, including 7mn on its 3G and 4G networks.

Devices are widely available due to the multi-layered web of distribution channels in the Middle East. Of critical importance to the Iranian market is the re-export hub of Dubai, which supplies up to 90% of the consumer electronics products on sale in the country. In 2012 a survey found 16% of Iranian smartphone users and around 9% of total mobile users, possessed a black market iPhone and other Apple products such as the iPad are also widely used. **BMI** expects the grey market to remain a significant driver of high-end device sales in Iran.

There has been an increasing tendency for Iran to move away from US-dominated IT and consumer electronics industries. In December 2012 Iran rolled out its own video-sharing website Mehr, operated by the Islamic Republic of Iran Broadcasting (IRIB). The website allows people to share short videos and access IRIB-generated material. The website is aimed at promoting Iranian culture and attracting Farsi-speaking users. It serves as an alternative to YouTube, which is banned in the country as its content is considered inappropriate. While US vendors are restricted from direct involvement in the market, their Asian rivals, in particular, have fewer inhibitions. Many, including Samsung, **LG** and **Sharp**, have hastened to take advantage of the opportunity presented to them by building up distribution and even production strength in the country. South Korean electronics firms are not directly affected by the latest international sanctions, which do not include restrictions on sale of electronics goods. However, the tightening international web of economic sanctions targeted at Iran has raised concerns that doing business in Iran could become more difficult. Chinese vendors, such as **Huawei** and **Lenovo**, have seen growth in the market recently, as they are allowed to trade normally in the market. They have also taken advantage of the growing demand for smartphones and data services by selling affordable devices in the market as the 3G and 4G markets start launching. The devices may also be popular in the black market because of their cheap prices.

There has been strong speculation that the Iranian Revolutionary Guard Corps (IRGC) is heavily involved in Iran's black market for mobile phones and other electronics goods. The size of Iran's smuggling industry has been estimated at as much as USD12bn, with the IRGC understood to control a large part of that.

Market Characteristics

Tehran is Iran's largest consumer electronics market and a number of souks spread across the city specialise in various products. Other major regional centres include Rabriz and Mashhad in the north, Esfahan in central Iran and Shiraz in the south. Consumers from smaller towns and rural areas tend to commute to the larger towns and cities to buy consumer electronics goods, particularly foreign brands.

Because of the youthful population, with those under 30 making up over half of the total population, Iran is considered by distributors to be a 'brand-conscious' market, even compared with other leading markets in the region, with most consumers prepared to pay a premium for a known brand. The market remains price sensitive, with per capita GDP of USD8,067 and USD13,935 at purchasing power parity (PPP).

Investment in telecommunications infrastructure since 1995, with a growing number of telephone lines and mobile and broadband subscribers, also helps to fuel demand for consumer electronics devices.

Tariffs

In the past few years the government's import tariffs policy has added to the uncertainty in the market. In 2006, Tehran imposed a 60% tariff on imported handsets, a sharp raise from just 4% previously. The purpose was to support domestic manufacturing and encourage foreign vendors to invest in local production. Although the policy did achieve some results, by the government's admission they fell short of targets, as many vendors continued to regard Iran as a complex and risky investment destination. One of the main results was probably to encourage piracy. In 2009, the government lowered the tariff again, to 25%, in an attempt to reduce the flow of smuggled handsets, but by the government's own admission in 2010, without much obvious success.

The government imposes high taxes on many other, although not all, consumer electronics goods and home appliances. Vendors must also pay an additional 10% surcharge when using foreign shipping companies. For many non-US vendors, the solution has been to invest more in local production while continuing to distribute those products for which import tariffs are lower. Consumer electronics leader **BenQ**, for example, employs **Iran Nara** to carry out semi-knocked down (SKD) assembly of its monitors in Iran, while partnering **Farzanegan** to distribute products not subject to high customs duties, such as notebooks, cameras and projectors.

The government has occasionally hinted at lowering tariffs, given criticism that Iran lacked the ability to meet domestic demand. However, most observers doubt that the government has any plans to significantly revisit its tariff policy.

Other Trade Barriers

One of the central facts of the Iranian market for vendors and distributors has been the US trade embargo. This has affected a large number of big names in IT and consumer electronics including **Dell**, **AMD**, **Intel** and **HP**. In reality, owing to the multi-layered nature of the Middle East's consumer electronics distribution channel, it is difficult for vendors to prevent their goods ending up in Iran. Vendors usually require end-user certification for big account sales, but it is far more difficult if not impossible for product flow to be tracked for volume sales.

Many regional managers of companies affected by the US embargo do regard Iran as coming within their purview, although they cannot actively promote sales to Iran or conduct marketing. However, the grey nature of market sales can land companies in trouble. HP received criticism following reports of the mass availability of its printers in Iran through distributor **Redington**.

Another risk is the possibility of UN sanctions in relation to Iran's alleged nuclear programme or other issues. This possibility has likely had an (albeit difficult to quantify) effect on vendors' willingness to invest. **Daewoo Electronics** is one company that recently made the decision to suspend plans to invest in assembly plants in Iran due to the political situation. This is despite the fact that Iran is one of Daewoo's largest markets in the Middle East. Daewoo will continue to serve the market through an exclusive channel relationship with Tehran-based distributor **Parcon Electronics**.

Vendors must also be aware of Iran's sensitivities. In January 2008, the government endorsed a bill that would sanction foreign companies doing business with Israel, in the face of Israel's action in Gaza. The sanctions were to apply to companies that 'invest in the occupied lands [of Palestine] or help the Zionist regime'. The bill could affect companies such as **Samsung** and other vendors involved in the Iranian market. There are also cultural sensitivities to navigate in a country whose paranoia has been exacerbated by what is seen as international bullying in the form of sanctions. In early 2012 the authorities looked set to ban all Samsung products in response to one of its products featuring in an Israeli television ad that was deemed offensive. Earlier, Iran had ordered that all billboards featuring South Korean companies including Samsung and **LG** be taken down, but the order was rescinded after the South Korean embassy protested.

Future Prospects

Iran is generally considered to be the largest markets in the region, but the rate of growth may have slowed in the last one to two years. While anecdotal evidence is difficult to back up, given the difficulty of gathering official statistics, in Q308, Saudi Arabia overtook Iran to become Dubai's largest export market. Previously, Iran had been the largest export market, according to Dubai figures.

If the market has slowed, then this is likely due to a number of factors including stagnant purchasing power and underdevelopment of the local channel, which remains dominated by small players. In the current economic climate, Dubai suppliers have taken a conservative view on extending credit to Iranian clients given the lack of insurance cover. The trade embargos have also likely had an effect, especially on the banking side.

Significance To Vendors

Political sensitivities complicate vendors' responses to the Iranian market. Vendors affected by the US embargo are unable to build up channel programmes, cultivate retail or distributor support in the country or conduct marketing. For less affected vendors, such as Samsung and LG, Iran is a big opportunity, but is also a challenge due to the complex nature of the local channel. The import tariff hikes have also had a big effect. Perhaps due to these difficulties, Iran has sometimes been perceived as a market where vendors or distributors offload old stock.

Iran dominates regional exports from Dubai, which is the hub for the regional consumer electronics trade. About 40% of Dubai trade is accounted for by re-exports and since the 1980s Iran has been a major destination. According to data from the Dubai Chamber of Commerce and Industry, Iran was Dubai's main export destination between 2002 and 2006, accounting for a 15% share of total exports from Dubai. Iran imported electronics goods worth AED94.3bn during that period, although the market grew by less than the 28% annual average growth of total exports.

Retail Sector

Iran remains dominated by diffuse networks of small retailers, which acts as an impediment to channel development. In the UAE and even in the smaller Gulf Co-operation Council (GCC) countries, more organised retail outlets such as hypermarkets and specialist electronics stores have come to account for around 40-60% of sales. A recent development has been the growth of big box retailing associated with 'power retailers' such as **Sharaff**. In Iran, however, the souk still reigns. In Tehran, a number of souks specialise in products such as AFV systems (Jomhouri) and small domestic appliances (Shariati). Large hypermarkets and retail chains do not really exist in Iran in the same way as in the UAE or Saudi Arabia.

This fragmented channel means higher prices for consumers, while eating into margins for retailers and distributors. Certainly, the situation presents a challenge to tier-one distributors and vendors, which would usually aim to build share in a country by working with the 'power retailers' and hypermarkets. Instead, vendors have to identify key players in each city and then create marketing and sales programmes. The lack of an organised retail channel also means lower service levels, which undermines the ability of official goods to compete with pirate products. There is hope, however, of more structure in the retail channel. Three larger government-owned retailers, **Refah**, **Ekta** and **Shahrvand**, have expanded their consumer electronics ranges and offerings. Some consumer electronics vendors, such as **JVC,** have outlined plans to launch their own networks of retail outlets in Iran in conjunction with local distribution partners.

Production

Iran responded to the tightening sanctions by trying to restrict imports of non-essential goods and boost local production. In the 1970s Iran had an emerging electronics industry, which was considered by some to be on a par with South Korea's. However, the main focus of the electronics industry during the past 30 years has been military applications, with most electronics firms coming under the supervision of the Defence Industries Organisation. Particularly as a result of the Iran-Iraq war, most big electronics companies were reorganised to focus on defence applications. In the past few years, however, as the domestic consumer electronics market has grown, a number of industrial complexes have been retooled for the civilian market. Typical products include TV sets as well as computer products and peripherals.

Organisations with a military background include **Pars Electric Manufacturing**, one of Iran's oldest electronics manufacturing establishments. Another is **Iran Electronics Industries**, one of the leading electronic firms and one that is sometimes mentioned in reports investigating Iran's alleged weapons of mass destruction (WMD) programmes. The firm makes a range of consumer electronics products and for a while assembled mobile handsets under licence from Belgian company **Sagem**. However, the major domestic consumer electronics manufacturer is **Maadiran**, a distributor of multinational brands such as LG, which also assembles products such as handsets and LCD monitors for those brands, in addition to having its own brand in several product areas.

Two major factors have encouraged the development of consumer electronics production in Iran over the past few years. First, the government has taken steps to encourage domestic production of products for which there is sizeable domestic demand, notably mobile handsets. Second, Asian manufacturers in particular have taken moves to establish assembly operations in Iran. The main decision factors for these companies have been the growing local market, reduced competition from US rivals and a desire to avoid heavy import taxes. A number of multinationals have set up production facilities in special economic zones, including **Daewoo**, Samsung and **Panasonic**.

A major landmark came in 2007, when the government imposed a 60% tariff on handset imports and encouraged domestic companies to hold talks with foreign vendors to explore cooperation possibilities. The government also set a number of production targets. Yet domestic supply remains unable to come close to satisfying the strong domestic demand for consumer electronics products.

In January 2015, it was reported that Iran produced 1.5mn mobile phones a year, through the award of licences to 11 firms by the government. However, it was also reported that only two of these firms were active.

AV

Iran's AV device production capacity is growing in scale and sophistication. The local industry started to develop in the 1990s and by the early 2000s there were about five manufacturing plants in Iran producing a range of colour and black and white TV sets. However, the tubes generally had to be imported from abroad.

Mobile Handsets

Mobile handset production is a government priority but remains small in relation to the size of the market. The industry hopes that this level of production will have an impact on demand for smuggled goods and low-cost Chinese brands.

Despite an investment by LG, the government has admitted that the results of its drive to create a major handset production base had fallen short of expectations. The government has said that illegal import of mobile phones has been one of the obstacles to domestic production, exacerbated no doubt by higher import tariffs. Despite LG leading the way, other handset vendors have appeared more cautious about major investment in Iran.

Distributors

Because of the risks associated with local manufacturing, success in Iran for most vendors comes down to development of a strong partner network. However, many vendors fail due to a lack of proper in-country understanding and because they choose the wrong partners. The distribution chain in Iran is longer than in many other countries in the region. Typically a big reseller will sell quantities to sub-distributors that will then sell to smaller dealers. With several medium to large distributors in Iran, they distribute to a further 6,000-7,000 dealers. The channel is also less structured than elsewhere, with less segmentation, as resellers do not really specialise in particular areas.

The distribution channel is less streamlined than in the Gulf countries. A large number of distributors supply a complex channel of resellers, wholesalers and local agents, who in turn supply a fragmented retail market. Major distributors travel to Dubai and from there products are taken to the free trade zones and then to Iran through organised channels. Most shipments move from Dubai to Iran and the free trade zones of the islands of Kish, Kashan and Shabhar, from where they enter Iran through the south.

There is also a sizable grey market channel, although some believe this is declining in significance due to more direct vendor involvement in the market and increasing government action to curtail the market for illegal goods. Two common points of entry are via the Pakistani and Afghan borders or from the north via Turkey by way of Iraq.

Channel development has been one victim of the trade embargoes, as Iranian dealers lack the services and benefits their counterparts in other countries receive, such as access to local programmes, sales incentives and so on from US vendors. Some distributors and dealers take on training and service development themselves, but many lack the capability to do so.

In Iran the local distributors for leading brands include Samsung Electronics (distributing Samsung products) Redington Gulf (HP) Pars (Sony) Maadiran (LG) and Parcon Electronics (Daewoo).

Regulatory Development

BMI View: *The transition from analogue to digital broadcasting has been chosen as the major reform to be carried out in the media sector.*

Digital Broadcasting Migration Under Way

Iran launched its digital migration in 2010 and in 2011 state broadcaster Voice and Vision announced that three new channels would be launched by the end of the year using digital systems. The capital cities of all provinces were to be equipped with digital transmitters. At the time of writing, digital antennas have so far been installed in Ardabil, Namin and some parts of Raza'I, Nir and Meshkinshahr.

The reform also continued to be implemented at a local level. Officials in West Azarbaijan Province launched several projects that provided residents of Orumieyeh Township with 15 digital TV and 10 digital radio channels. A total of 750,000 residents of the province were reportedly able to watch a wide selection of digital channels. Another project was aimed at making 180 transmitters operational to provide 348,985 residents of 12 townships of the province with access to more digital channels. As of August 2011, it was reported that 17 provinces of Iran had been provided with the services.

In October 2013 the Deputy Head of the Islamic Republic of Iran Broadcasting (IRIB) announced the Iranian state broadcaster planned to launch eight new satellite TV channels by early 2014.

Iranian Internet Controls Grow

Iran would serve as an internet service provider to other countries by March 2013, according to Infrastructure Communications company deputy head Mehdi Karimi Neyestani. This development was to take place after the first phase of the Europe-Persia Express Gateway (EPEG) a communications highway connecting Europe with Eastern Asia, which started operating in March 20 2013. Iran was to be upgraded from the current Tier3 level (internet service consumer) to Tier2-level (internet service provider) after the official inauguration of this project, Neyestani said.

The country was reported to be consulting China for its National Internet Network, it was reported in January 2014. State control over content does not look to be weakening and will, to some extent, affect demand for more high-end devices for consumers who can afford them and can manage to bring them into the country.

Iran began piloting a new Internet censorship programme in late 2014, where instead of fully blocking access to sites such as Facebook and Twitter, 'smart filtering' allows access to the sites but blocks any content deemed unethical or politically sensitive. Iran's Communications Minister stated that the system would be fully operational by June 2015.

The development of advanced data services has been hindered by political opposition, with many conservative scholars disapproving of 3G services as being against Islamic values and having the potential to create unrest in the country. This is perhaps why MCI, with the State as its stakeholder, has yet to be granted authorisation to launch 3G services in the market, unlike some of its competitors.

Local Production Of Mobile Handsets

The government has renewed calls to strengthen local production of mobile phones to ensure that the domestic market is not dominated by foreign vendors. A Ministry of Industries and Mines official said that the market should not be 'conveniently accessible' to products of other countries. However, the major challenge for the local mobile phone industry is understood to be smuggling, with estimates that as many as 80mn smuggled mobile phones exist in the domestic market.

In January 2015, it was reported that Iranian firms produced 1.5mn mobile phones a year, through the governmental awards of licences to 11 firms.

New Mobile Operator

In November 2011 the third Iranian mobile phone operator, **RIGHTEL**, was officially launched in Tehran. In April 2010 **Tamin Telecom** had been formally awarded a licence to provide 2G and 3G mobile telecoms services in Iran after securing a joint concession in December 2008 at a cost of USD399mn. Tamin was offered an exclusivity period of three years to provide its 3G services, according to the Communication Regulation Agency (CRA). In February 2013 the operator's 3G exclusivity period was extended by a year, to September 2014. **BMI** believes the operator's subscriber base gives it third place in the market, behind **MCI** and **MTN Irancell**.

RIGHTEL lost in exclusivity in August 2014, When MTN Irancell launched its 3G service. The operator followed suit by being the first to roll out a commercial LTE network, available from December 2014, as it looks to take advantage of increased demand for internet services. MTN launched 3G and 4G services with refarmed spectrum in the 1.8GHz band and the regulator is reported to be auctioning LTE frequencies in the first half of 2015.

Five-Year Plan

Information and communication technology (ICT) had a central role in Iran's national development plan. The plan has a number of ICT-related targets for increasing internet users, telephone subscribers and mobile subscribers and these have the potential to drive the market for electronics devices. The government wants to encourage the development of electronic services such as e-government, e-health, e-commerce and e-learning. Various cooperation projects have been launched between the Ministry of ICT and other relevant departments. A related goal is the development of a national electronics and IT production base, through the encouragement of foreign investment. A particular priority of the last two years has been to encourage domestic mobile handset production, through attracting multinationals such as **LG** to invest.

Company Profile

Maadiran Group

Company Overview

The 100% privately owned Maadiran Group is one of Iran's largest consumer electronics and IT firms. It was established in 1963 as Iran Office Machines Company Ltd. Its product range spans IT products (monitors, notebooks/netbooks, accessories, printers) office equipment (cash registers, calculators, copiers, printers) banking machines, consumer electronics (LED/LCD TVs, mobile phones) and solar panels. Since 2004 the group has exported its locally manufactured products, particularly LG monitors, to other markets in the Middle East.

Structure

The Maadiran Group consists of three subsidiaries: IOMCent (sale and distribution of imported products) IOMInd (sale and distribution of its own manufactured products) and IOMServ (after-sales services for products sold). It has 18 wholly owned service centres and 25 distribution centres nationwide and a total of 7,802 outlets with 1,802 dealers and 6,000 sub-dealers. It has 500 official service centres.

Maadiran Group serves as sole exclusive distributor for a number of brands in the Middle East and Commonwealth of Independent States (CIS). The company's first exclusivity deal was signed with Sharp in 1964. Besides the products it manufactures on licence, Maadiran has its own brand of printers, PC accessories and TV sets including LCD TV sets. Maadiran Group has launched a number of wholly owned brands in the region.

The year 2006 saw the launch of X-Vision, which the company claims is now the third largest LCD TV brand in Iran. In 2007, Maadiran Group began mass production of five models of LG phones, adding to existing contracts for the assembly of LG monitors, Epson dot matrix printers and Olivetti's bank slip printer. LG is an important brand for Maadiran. The year 2008 saw the launch of MEVA, the group's computer peripherals, consumables and lifestyle brand.

Strategy

On the distribution side, an important part of Maadiran's value proposition is built around high levels of service. Maadiran promotes its ability to have a technician at the customer's premises within two hours of receiving a call. This level of service has allowed it to achieve exclusive distribution agreements with LG, Olivetti, Sharp, Asus, Acer, Epson and Plustek.

Maadiran also builds its growth strategy around regularly strengthening its portfolio of consumer electronics and IT brands with new technologies. In 2008, Maadiran said it would be producing and selling AOC brand monitors in Iran, after a search to select a new brand to complement LG and Samsung. Maadiran already produces monitors for LG. In 2008, Maadiran also launched a line of PC accessories from MEVA. However, following the success of its LCD TV brand, Maadiran will also continue to focus on its own products.

Maadiran has gradually expanded its production operations, which began in 1994 when the company became the first Iranian CKD monitor producer. The company also operates what it has described as the most modern plastic injections factory in the Middle East, with 14 injection machines.

In 2013, Maadiran said that its production capacity had increased dramatically and that it had become the largest electronics manufacturing operation in the Middle East with its facility in Hashtgerd (80km from Tehran). Annually, it is able to produce 1.6mn DVB-T products (set-top boxes/USB devices) 800,000 monitors, 250,000 Touch & PC POS, 150,000 all-in-one PCs, 400,000 LCD/LED TVs, 60,000 thin-client PCs, 30,000 printers and 20,000 interactive whiteboards.

Maadiran had stated goals to increase its number of retail outlets to 9,000 by the end of 2014 and to manufacture more than 300,000 LCD/LED/3D TVs under the X.VISION and Sharp brands in 2014, up from 171,000 in 2013.

Financial Data

In 2012/13 (fiscal year ending March 2013), Maadiran reported a market share of 13% for LED/LCD TVs, 61% of the monitor market, 58% of set-top boxes/USB devices, 16% of inkjet printers, 98% of dot-matrix printers, 76% of copiers, 5% of notebooks and 3% of all-in-one PCs. No further updates were released in the company's August 2014 presentation.

Company Details

- Maadiran Group
- 3 Aftab St
  Khoddami Ave

  Vanak Sq

  Tehran

  Iran
- Tel: +98 (21) 8862 3700
- Fax: +98 (21) 8862 3728
- www.maadiran.com

Electronic Industries (IEI)

Company Overview

Established in 1973 and owned by the state, IEI is one of the major producers of electronic systems and products in Iran. It has a number of subsidiaries, offering over 100 electronics products, with 5,200 trained engineers. The company's background is in electronics with a military application, but in recent years it has also moved into some consumer electronics fields. With its state background, the company has sometimes featured in Western reports concerning Iran's alleged weapons of mass destruction programmes.

Structure

IEI currently has six subsidiaries, with each specialising in the production of a blend of products with military and consumer applications. IEI subsidiary Iran Electronic Research Centre produced telecoms products including the assembly of mobile handsets under licence from Belgian company Sagem. The main subsidiaries and consumer electronics products areas of each subsidiary, not including military applications, are as follows:

Shiraz Electronics Industries (SEI):

- Computer peripherals

Iran Communication Industries (IEI):

- Telecommunications products
- Electronic components

Electronic Components Industries (ECI):

- Semi-conductors (transistors and ICs)
- Electronic credit cards
- Multilayer, single and double sided PCBs

Information Systems Of Iran (ISI)

- Computer hardware installations
- Design and implementation of networks
- Software migration
- Consultancy services

Iran Electronic Research Centre (IERC):

- Telecoms products

Strategy

IEI produces around 100 different types of electronic products. Over the years, the company has attempted to develop more consumer electronic manufacturing capabilities. Currently, its manufacturing capabilities are claimed to include:

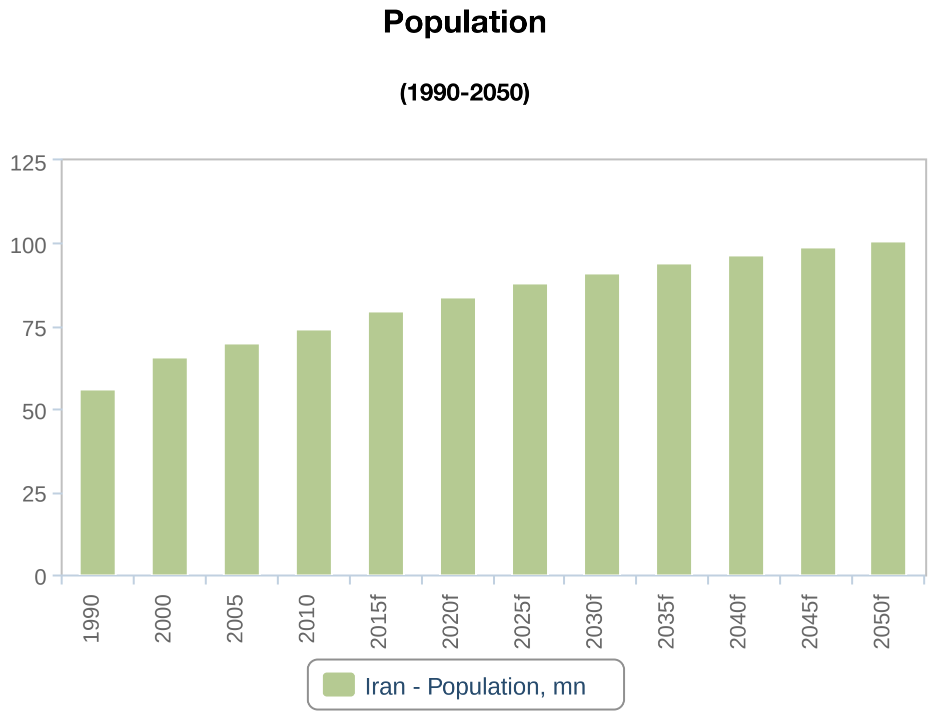
- Electro-optics and laser including all types of lenses, glasses and metallic mirrors, prisms and all types of coating.
- Information and communication technology including capability of manufacturing all types of PC and PABX.
- Automatic assembly lines with automatic insertion machines and surface mounted technology.
- Multi-layer printed circuit board design and production of up to 16 layers and all types of rigid and flexible boards.
- Smart credit cards and SIM card production line.

Financial Data	Annual revenue is in the region of over USD10mn.

Demographic Forecast

Demographic analysis is a key pillar of **BMI**'s macroeconomic and industry forecasting model. Not only is the total population of a country a key variable in consumer demand, but an understanding of the demographic profile is essential to understanding issues ranging from future population trends to productivity growth and government spending requirements.

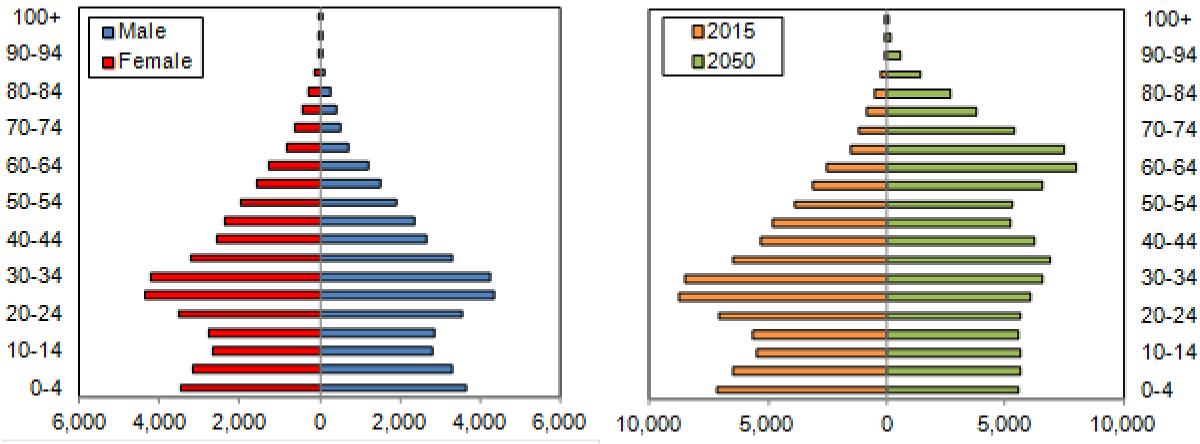
The accompanying charts detail the population pyramid for 2015, the change in the structure of the population between 2015 and 2050 and the total population between 1990 and 2050. The tables show indicators from all of these charts, in addition to key metrics such as population ratios, the urban/rural split and life expectancy.



f = BMI forecast. Source: World Bank, UN, BMI

Iran Population Pyramid

2015 (LHS) & 2015 Versus 2050 (RHS)



Source: World Bank, UN, BMI

Table: Population Headline Indicators (Iran 1990-2025)

	1990	2000	2005	2010	2015f	2020f	2025f
Population, total, '000	56,361	65,911	70,152	74,462	79,476	84,148	88,064
Population, % change y-o-y	na	1.6	1.2	1.3	1.3	1.1	0.8
Population, total, male, '000	28,807	33,504	35,917	37,656	39,915	42,307	44,213
Population, total, female, '000	27,554	32,406	34,235	36,805	39,560	41,840	43,850
Population ratio, male/female	1.05	1.03	1.05	1.02	1.01	1.01	1.01

na = not available; f = BMI forecast. Source: World Bank, UN, BMI

Table: Key Population Ratios (Iran 1990-2025)

	1990	2000	2005	2010	2015f	2020f	2025f
Active population, total, '000	28,945	40,290	48,583	53,034	55,945	58,184	60,945
Active population, % of total population	51.4	61.1	69.3	71.2	70.4	69.1	69.2
Dependent population, total, '000	27,415	25,620	21,569	21,427	23,530	25,964	27,118
Dependent ratio, % of total working age	94.7	63.6	44.4	40.4	42.1	44.6	44.5

Key Population Ratios (Iran 1990-2025) - Continued							
	1990	2000	2005	2010	2015f	2020f	2025f
Youth population, total, '000	25,543	22,850	18,115	17,585	19,140	20,362	19,984
Youth population, % of total working age	88.2	56.7	37.3	33.2	34.2	35.0	32.8
Pensionable population, '000	1,872	2,770	3,453	3,841	4,389	5,601	7,134
Pensionable population, % of total working age	6.5	6.9	7.1	7.2	7.8	9.6	11.7

f = BMI forecast. Source: World Bank, UN, BMI

Table: Urban/Rural Population And Life Expectancy (Iran 1990-2025)							
	1990	2000	2005	2010e	2015f	2020f	2025f
Urban population, '000	31,748.6	42,210.8	47,393.5	51,332.8	55,362.4	59,374.4	63,078.7
Urban population, % of total	56.3	64.0	67.6	68.9	69.7	70.6	71.6
Rural population, '000	24,613.2	23,700.3	22,758.8	23,129.5	24,113.9	24,774.2	24,985.6
Rural population, % of total	43.7	36.0	32.4	31.1	30.3	29.4	28.4
Life expectancy at birth, male, years	61.2	68.7	70.0	71.3	72.8	74.2	75.5
Life expectancy at birth, female, years	65.8	70.6	73.1	75.1	76.6	78.0	79.2
Life expectancy at birth, average, years	63.4	69.6	71.5	73.1	74.6	76.0	77.3

e/f = BMI estimate/forecast. Source: World Bank, UN, BMI

Table: Population By Age Group (Iran 1990-2025)							
	1990	2000	2005	2010	2015f	2020f	2025f
Population, 0-4 yrs, total, '000	9,312	6,316	5,483	6,555	7,146	6,751	6,148
Population, 5-9 yrs, total, '000	8,905	7,552	5,476	5,416	6,507	7,116	6,729
Population, 10-14 yrs, total, '000	7,324	8,981	7,154	5,613	5,487	6,494	7,105
Population, 15-19 yrs, total, '000	5,822	8,800	9,247	7,215	5,643	5,466	6,474
Population, 20-24 yrs, total, '000	4,697	6,932	9,143	8,993	7,067	5,595	5,424
Population, 25-29 yrs, total, '000	4,054	5,315	6,859	8,704	8,726	6,997	5,541
Population, 30-34 yrs, total, '000	3,535	4,442	5,202	6,521	8,484	8,649	6,937
Population, 35-39 yrs, total, '000	3,030	3,886	4,693	5,210	6,497	8,410	8,579
Population, 40-44 yrs, total, '000	2,123	3,372	4,112	4,833	5,262	6,431	8,333
Population, 45-49 yrs, total, '000	1,620	2,857	3,421	4,032	4,757	5,193	6,353

Population By Age Group (Iran 1990-2025) - Continued

	1990	2000	2005	2010	2015f	2020f	2025f
Population, 50-54 yrs, total, '000	1,526	1,929	2,800	3,244	3,895	4,665	5,101
Population, 55-59 yrs, total, '000	1,393	1,431	1,766	2,637	3,109	3,788	4,548
Population, 60-64 yrs, total, '000	1,140	1,322	1,336	1,639	2,500	2,985	3,652
Population, 65-69 yrs, total, '000	898	1,145	1,257	1,279	1,550	2,340	2,813
Population, 70-74 yrs, total, '000	507	825	1,055	1,129	1,143	1,369	2,090
Population, 75-79 yrs, total, '000	269	508	654	802	876	902	1,105
Population, 80-84 yrs, total, '000	135	203	347	413	528	598	637
Population, 85-89 yrs, total, '000	48	66	112	172	216	290	343
Population, 90-94 yrs, total, '000	10	17	21	38	63	84	119
Population, 95-99 yrs, total, '000	1	2	3	4	8	15	22
Population, 100+ yrs, total, '000	0	0	0	0	0	1	2

f = BMI forecast. Source: World Bank, UN, BMI

Table: Population By Age Group % (Iran 1990-2025)

	1990	2000	2005	2010	2015f	2020f	2025f
Population, 0-4 yrs, % total	16.52	9.58	7.82	8.80	8.99	8.02	6.98
Population, 5-9 yrs, % total	15.80	11.46	7.81	7.27	8.19	8.46	7.64
Population, 10-14 yrs, % total	13.00	13.63	10.20	7.54	6.90	7.72	8.07
Population, 15-19 yrs, % total	10.33	13.35	13.18	9.69	7.10	6.50	7.35
Population, 20-24 yrs, % total	8.34	10.52	13.03	12.08	8.89	6.65	6.16
Population, 25-29 yrs, % total	7.19	8.06	9.78	11.69	10.98	8.32	6.29
Population, 30-34 yrs, % total	6.27	6.74	7.42	8.76	10.68	10.28	7.88
Population, 35-39 yrs, % total	5.38	5.90	6.69	7.00	8.18	9.99	9.74
Population, 40-44 yrs, % total	3.77	5.12	5.86	6.49	6.62	7.64	9.46
Population, 45-49 yrs, % total	2.88	4.33	4.88	5.42	5.99	6.17	7.22
Population, 50-54 yrs, % total	2.71	2.93	3.99	4.36	4.90	5.54	5.79
Population, 55-59 yrs, % total	2.47	2.17	2.52	3.54	3.91	4.50	5.17
Population, 60-64 yrs, % total	2.02	2.01	1.90	2.20	3.15	3.55	4.15
Population, 65-69 yrs, % total	1.59	1.74	1.79	1.72	1.95	2.78	3.19
Population, 70-74 yrs, % total	0.90	1.25	1.50	1.52	1.44	1.63	2.37
Population, 75-79 yrs, % total	0.48	0.77	0.93	1.08	1.10	1.07	1.26
Population, 80-84 yrs, % total	0.24	0.31	0.50	0.55	0.66	0.71	0.72

Population By Age Group % (Iran 1990-2025) - Continued

	1990	2000	2005	2010	2015f	2020f	2025f
Population, 85-89 yrs, % total	0.09	0.10	0.16	0.23	0.27	0.34	0.39
Population, 90-94 yrs, % total	0.02	0.03	0.03	0.05	0.08	0.10	0.14
Population, 95-99 yrs, % total	0.00	0.00	0.00	0.01	0.01	0.02	0.03
Population, 100+ yrs, % total	0.00	0.00	0.00	0.00	0.00	0.00	0.00

f = BMI forecast. Source: World Bank, UN, BMI

Methodology

Industry Forecast Methodology

BMI's industry forecasts are generated using the best-practice techniques of time-series modelling and causal/econometric modelling. The precise form of model we use varies from industry to industry, in each case being determined, as per standard practice, by the prevailing features of the industry data being examined.

Common to our analysis of every industry, is the use of vector autoregressions. Vector autoregressions allow us to forecast a variable using more than the variable's own history as explanatory information. For example, when forecasting oil prices, we can include information about oil consumption, supply and capacity.

When forecasting for some of our industry sub-component variables, however, using a variable's own history is often the most desirable method of analysis. Such single-variable analysis is called univariate modelling. We use the most common and versatile form of univariate models: the autoregressive moving average model (ARMA).

In some cases, ARMA techniques are inappropriate because there is insufficient historic data or data quality is poor. In such cases, we use either traditional decomposition methods or smoothing methods as a basis for analysis and forecasting.

BMI mainly uses OLS estimators and, in order to avoid relying on subjective views and encourage the use of objective views, **BMI** uses a 'general-to-specific' method. **BMI** mainly uses a linear model, but simple non-linear models, such as the log-linear model, are used when necessary. During periods of 'industry shock', for example poor weather conditions impeding agricultural output, dummy variables are used to determine the level of impact.

Effective forecasting depends on appropriately selected regression models. **BMI** selects the best model according to various different criteria and tests, including but not exclusive to:

- R2 tests explanatory power; adjusted R2 takes degree of freedom into account;
- Testing the directional movement and magnitude of coefficients;
- Hypothesis testing to ensure coefficients are significant (normally t-test and/or P-value); and
- All results are assessed to alleviate issues related to auto-correlation and multi-co linearity.

Sector-Specific Methodology

BMI's insurance reports provide detailed insight into insurance markets globally, examining both the present conditions in and prospects for each market. Incorporating the most up-to-date information available from sources such as industry regulators, trade associations, comparable information from other countries and **BMI's** own economic and risk data, our analysts provide a comprehensive picture of the insurance sector. The principal focus of the reports is on gross written premiums, to which 'premiums' refers unless otherwise stated.

The following are considered in our reporting of the sector:

- **BMI** considers health insurance to be included in the non-life sector. As such, in instances where sources report health insurance as part of the life sector, the required adjustments are made to conform to our standardised definitions.
- Where a market contains a significant inward reinsurance sector, these accepted premiums are considered as part of the non-life sector and are classed within the 'Other' category of our non-life breakdown.
- Life insurance contains all long-term savings products that are legally structured as insurance products and therefore do not contain pension plan contributions and other long-term saving schemes that are not legally constituted as being within the insurance sector

Life

In projecting life insurance premiums, the following are considered:

- The likely development of population.
- The likely development of life density (life premiums per capita).
- Wider macroeconomic trends.

In some instances, further factors are considered, including:

- Maturity of the life insurance sector.
- Competitive and regulatory environments.
- Life density in nearby markets at similar levels of development.

Non-Life

In projecting non-life insurance premiums on a line-by-line basis, the following are considered:

- The likely development of nominal GDP.
- The likely development of non-life penetration (non-life premiums as a percentage of GDP).
- Autos sector data, typically passenger car fleet size.
- Banking sector data, typically Client Loans figures.
- Shipping/Freight data, typically freight tonnage.
- Household stratification data, typically number of permanent properties.
- Healthcare data, typically private health expenditure.

In some instances, further factors are considered, including:

- Maturity of the non-life insurance sector.
- Competitive and regulatory environments.
- Non-life penetration in nearby markets at similar levels of development.

Reinsurance and Net Premiums

When forecasting the size of reinsurance markets, the following are considered:

- Historic levels of reinsurance coverage in both life and non-life sectors.
- Projected development of the life and non-life sectors.
- Prevalence of reinsurance in similar markets.

Where applicable, 'net premiums' refers to net written premiums and is considered as gross written premiums, less the cost of reinsurance. In some instances, source data is reported according to different definitions of 'net premiums'. In these cases, this data is used and forecasts for net premiums and reinsurance are made separately.

When forecasting net premiums independently of the reinsurance market, the following are considered:

- Historic levels of net premiums in both life and non-life sectors.
- Projected development of the life and non-life sectors.

At a general level we approach our forecasting from both a micro and macro perspective, taking into account the expansion plans of relevant domestic and international firms, as well as wider economic outlook. In this regard, **BMI** macro variable projections, such as output, consumption, investment, policy, and GDP growth are employed.

Burden of Disease

The 'burden of disease' in a country is forecasted in disability-adjusted life years (DALYs) using **BMI's** Burden of Disease Database, which is based on the World Health Organization's burden of disease projections and incorporates World Bank and IMF data.

Risk/Reward Index Methodology

BMI's Risk/Reward Index (RRI) provides a comparative regional ranking system evaluating the ease of doing business and the industry-specific opportunities and limitations for potential investors in a given market.

The RRI system divides into two distinct areas:

Rewards: Evaluation of sector's size and growth potential in each state, and also broader industry/state characteristics that may inhibit its development. This is further broken down into two sub categories:

- Industry Rewards (this is an industry specific category taking into account current industry size and growth forecasts, the openness of market to new entrants and foreign investors, to provide an overall score for potential returns for investors).
- Industry Rewards (this is a country specific category, and the score factors in favourable political and economic conditions for the industry).

Risks: Evaluation of industry-specific dangers and those emanating from the state's political/economic profile that call into question the likelihood of anticipated returns being realised over the assessed time period. This is further broken down into two sub categories:

- Industry Risks (this is an industry specific category whose score covers potential operational risks to investors, regulatory issues inhibiting the industry, and the relative maturity of a market).
- Industry Risks (this is a country specific category in which political and economic instability, unfavourable legislation and a poor overall business environment are evaluated to provide an overall score).

We take a weighted average, combining market and country risks, or market and country rewards. These two results in turn provide an overall risk/reward rating, which is used to create our regional ranking system for the risks and rewards of involvement in a specific industry in a particular country.

For each category and sub-category, each state is scored out of 100 (100 being the best), with the overall risk/reward index a weighted average of the total score. Importantly, as most of the countries and territories evaluated are considered by **BMI** to be 'emerging markets', our rating is revised on a quarterly basis. This ensures that the rating draws on the latest information and data across our broad range of sources, and the expertise of our analysts.

BMI's approach in assessing the risk/reward balance for infrastructure industry investors globally is

fourfold:

- First, we identify factors (in terms of current industry/country trends and forecast industry/country growth) that represent opportunities to would-be investors.
- Second, we identify country and industry-specific traits that pose or could pose operational risks to would-be investors.
- Third, we attempt, where possible, to identify objective indicators that may serve as proxies for issues/ trends to avoid subjectivity.
- Finally, we use **BMI's** proprietary Country Risk Ratings (CRR) in a nuanced manner to ensure that only the aspects most relevant to the infrastructure industry are incorporated. Overall, the system offers an industry-leading, comparative insight into the opportunities/risks for companies across the globe.

Sector-Specific Methodology

In constructing these ratings, the following indicators have been used. Almost all indicators are objectively based.

Table: Indicators

Rewards	
Insurance market rewards	**Rationale**
Non-life premiums, 2014 (USDmn)	Indicates overall sector attractiveness. Large markets more attractive than small ones.
Growth in non-life premiums, five years to end-2018 (USDmn)	Indicates growth potential. The greater the likely absolute growth in premiums the better.
Non-life penetration, %	Premiums expressed as % of GDP. An indicator of actual and (to an extent) potential development of non-life insurance. The greater the penetration the better.
Non-life segment measure of openness	Measure of market's accessibility to new entrants. The higher the score the better.
Life premiums, 2014 (USDmn)	Indicates overall sector attractiveness. Large markets more attractive than small ones.
Growth in life premiums, five years to end-2018 (USDmn)	Indicates growth potential. The greater the likely absolute growth in premiums the better.
Life penetration, %	Premiums as % of GDP. An indicator of actual and (to a certain extent) potential development of life insurance. The greater the penetration the better.
Life segment measure of openness	Measure of market's accessibility to new entrants. The higher the score the better.
Country rewards	
GDP per capita (USD)	A proxy for wealth. High-income states receive better scores than low-income states.
Active population	Those aged 16-64 in each state, as a % of total population. A high proportion suggests that market is comparatively more attractive.
Corporate tax	A measure of the general fiscal drag on profits.
GDP volatility	Standard deviation of growth over 7-year economic cycle. A proxy for economic stability.
Financial infrastructure	Measure of financial sector's development, a crucial structural characteristic given the insurance industry's reliance on risk calculation.
Risks	
Regulatory framework	
Regulatory framework and development	Subjectively evaluates de facto/de jure regulations on development of insurance sector.
Regulatory framework and competitive landscape	Subjectively evaluates impact of regulatory environment on the competitive landscape.
Country risk (from BMI's Country Risk Ratings)	
Long-term financial risk	Evaluates currency volatility.
Long-term external risk	State's vulnerability to externally induced economic shock, which tend to be principal triggers of economic crises.
Policy continuity	Evaluates the risk of sharp change in broad direction of government policy.
Legal framework	Strength of legal institutions. Security of investment key risk in some emerging markets.

Indicators - Continued	
Rewards	
Bureaucracy	Denotes ease of conducting business in a state.

Source: BMI

Weighting

Given the number of indicators/datasets used, it would be inappropriate to give all sub-components equal weight. Consequently, the following weighting has been adopted:

Table: Weighting of Indicators

Component	Weighting, %
Rewards	70, of which
- Industry rewards	65
- Country rewards	35
Risks	30, of which
- Industry risks	40
- Country risks	60

Source: BMI