

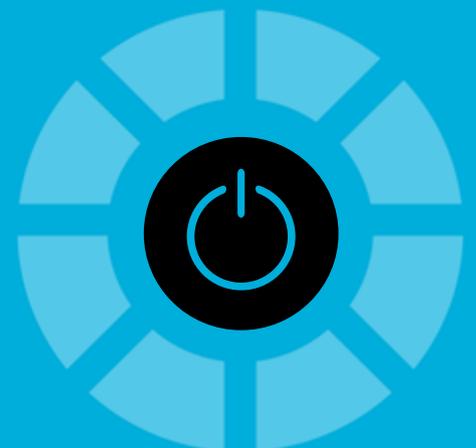
Q2 2014

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IRAN

CONSUMER ELECTRONICS REPORT

INCLUDES 5-YEAR FORECASTS TO 2018





Iran Consumer Electronics Report Q2 2014

INCLUDES 5-YEAR FORECASTS TO 2018

Part of BMI's Industry Report & Forecasts Series

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BMI Industry View

***BMI View:** While we believe there is some scope for upside potential to our growth forecasts, we do not expect the effect to be seen before the end of 2014. The opening up of the 3G market to other players should drive demand for smartphones in the medium- to long-term, and we expect the lifting of sanction in 2013 to begin to take effect on market growth and the availability of devices towards the end of 2014. Iran's large population offers considerable growth potential. However, we believe the government's continued interference with internet services and content will limit the appetite for computers and broadband services, although many Iranians will be unaware of the differences.*

Headline Expenditure Projections

- **Computer Sales:** US\$5.1bn in 2014 to US\$6.7bn by 2018; low PC penetration means significant potential, but the cost of devices remains a barrier to rapid growth .
- **AV and Gaming Device Sales:** US\$2.4bn in 2014 to US\$3.0bn in 2018; digital broadcasting offers opportunities, but demand is nevertheless likely to be weakest in this segment.
- **Handset Sales:** US\$2.0bn in 2014 to US\$2.6bn in 2018; the slow development of 3G services by telecoms operators will slow the potential for smartphones, but increased competition in the 3G market from 2014 poses upside risks in the long term.

Risk/Reward Rating

Iran's score was 38.8 out of 100, the second lowest in the region, ahead of only Egypt and nearly ten points behind Oman in eighth position. Iran's score is dragged down by its Industry Risks and Country Risks scores: in both categories Iran has the lowest score in the region.

Key Trends & Developments

The 3G market continues to be held back in Iran, with the two largest operators having a combined market share of 99%, and they will continue to be restricted to EDGE and GPRS services into 2014. We therefore expect the smartphone market will only gain significant growth momentum from 2014 and into 2015.

Finally, 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, which resulted in 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 January 2012 after developments gathered pace in 2011. Larger screen sizes and increased features will encourage consumers to upgrade their existing sets. The switch to digital TV will provide short-term impetus to market growth.

SWOT

SWOT

Strengths

- Iran's GDP is more than double that of Saudi Arabia and it had a population of more than 77.5mn at the end of 2013, creating the potential for it 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.
- Two-thirds of Iranians live in urban areas, a circumstance that bodes well for strong retail growth.
- The working age population - the major consumer group - is growing at about 3% a year.

Weaknesses

- Slow development of 3G services is impeding growth of the smartphone market.
- 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 channel to market.
- Large grey market of pirate 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 over the medium term.
- Mobile handset sales will continue to increase, with subscriber penetration forecast to grow from 120% in 2013 to 138% by 2017.
- Once Rightel's monopoly over the 3G market expires in 2014, increased competition and coverage in the mobile data market should drive smartphone sales. Individual retailers of international consumer electronics brands, particularly Apple, are

SWOT - Continued

increasingly well-organised, offering their own warranties and services tailored to Iranian consumers.

- The election of moderate president Hassan Rouhani in June 2013 may improve trade relations with the West, facilitating the flow of electronic devices into Iran.

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, resulting in higher customs fees.
 - Failure to control parallel imports and inflow of inferior computer components and accessories.
 - Government drive to encourage local production, particularly of handsets, could help vendors willing to form partnerships.
 - 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.
- 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.
- 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 entirely.
 - Youth unemployment is high.
 - The strong influence of the Revolutionary Guards within the political and economic arena may present a challenge to reform over the long term.
-
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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, and there is considerable room to maximise this source of revenue.
 - A growing population, combined with a shortage of housing, provide opportunities for investment in residential construction.
- Threats**
- A decline in global oil prices would 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 continue, particularly should negotiations on the nuclear programme fail.
-

Business Environment

Business Environment SWOT Analysis

- Strengths**
- The Foreign Investment Promotion and Protection Act gives some protection to foreign investors and now allows relatively good terms for the repatriation of profits.
 - Although stifled in the years since the Islamic Revolution, Iranians have traditionally been renowned for their entrepreneurial skills - a factor that is potentially a strong pull for foreign investors.
- Weaknesses**
- Progress on the privatisation front remains slow despite some recent encouraging signs.
 - Foreign firms are currently unable to own Iran's hydrocarbon resources. The resultant 'buy back' deals offer less advantageous terms than those elsewhere, limiting hopes of new investment.
- Opportunities**
- As part of the fourth five-year development plan 2005-2009, the government ended tax and customs concessions afforded to the country's quasi-statal bonyads, or foundations.
- Threats**
- UN, US and EU sanctions on Iran's banking and energy sectors are making it very difficult for foreign companies to undertake financial transactions with Iranian entities, and much riskier to invest in the hydrocarbon sector.
 - Central bank supervision of charitable funds will be stepped up sharply after it emerged that a number of these funds had collapsed due to indiscriminate lending practices.
-

Industry Forecast

Table: Consumer Electronics Overview

	2012	2013e	2014f	2015f	2016f	2017f	2018f
Consumer electronics sales, exports and domestic sales, US\$m	8,331.57	8,829.76	9,428.53	10,189.07	10,978.67	11,633.51	12,288.36
Consumer electronics sales, computers, exports and domestic sales, US\$m	4,512.59	4,738.22	5,069.89	5,475.48	5,858.77	6,268.88	6,678.99
Consumer electronics sales, consumer electronics, exports and domestic sales, US\$m	2,182.14	2,245.55	2,351.69	2,502.74	2,660.56	2,831.51	3,002.46
Consumer electronics sales, communications, exports and domestic sales, US\$m	1,636.84	1,846.00	2,006.94	2,210.85	2,459.35	2,533.13	2,606.91

BMI research

We have left our forecasts unchanged as the dynamics of the Iranian market play out as expected. We do not expect the impact of the removal of US sanctions to really have an impact until late 2014 but do believe there will be an uptick in sales, particularly from vendors that have not previously targeted the market. We expect growth in 2014 to see the market reach US\$9.4bn, rising to US\$12.3bn at the end of our forecast period.

Over the medium term, **BMI** expects the consumer electronics market will expand at a CAGR of 6.9% 2014-2018. We expect strong growth in mobile handsets sales over the medium term, particularly in terms of smartphones once the 3G market becomes more competitive from 2014, and sustained by strong ongoing growth in AV devices and computers in the latter years of our forecast. Mobile handsets have the advantage of being sold per mobile connection and households will likely have several devices. Even with the removal of restrictions on the import of

Consumer Electronics Demand (2012-2018)



BMI research

some devices the market's growth will not reach its full potential even given the size of the Iranian population and the country's GDP.

Considering the positive fundamentals in Iran such as large population, low penetration of devices and the potential for economic development, we would expect a market with Iran's characteristics to achieve higher growth rates. However, the US-led drive to tighten sanctions against Iran resulted in the US National Defense Authorisation Act (NDAA), which took effect in January 2012 and limited growth. The act imposed sanctions on companies trading with Iran and in 2012 appeared to be having some impact on the market. Vendors such as **Huawei** and **Nokia Systems and Network** announced plans to scale down business in the country. In August 2012, Nokia closed its operations in the country. In April 2013 **Samsung** announced it would be closing its app store to Iranian customers in May, in line with sanctions. The removal of the sanctions restricting imports of handsets in May 2013 is a development we expect to boost market growth, however it is not clear at the time of writing the scale of the impact on the market.

Sanctions have also hit the wider economy, with knock-on effects for Iranian consumers including rampant inflation and the weaker rial. This impedes the purchase of imported digital lifestyle products. We forecast CPI in Iran to average to 34.0% and 27.0% in in FY2013/14 and FY2014/15, respectively. Improving macroeconomic conditions and high base effects will contribute to declining price pressures decline over the coming quarters. While a decision to cut cash subsidies payments will contribute to lowering price pressures, a recent move to slash energy subsidies will result in higher transportation and fuel prices in H214. As we expect price growth to remain high, these factors will reduce household income available for spending on consumer electronics and other discretionary goods.

As noted above, looking beyond the sanctions shows Iran to have a number of positive characteristics for a booming consumer electronics markets. For instance, Iran's steadily increasing population will support private consumption growth, while demand for consumer electronics will also be fuelled by new technologies and expanding internet and mobile telecoms penetration. Moreover, despite some government attempts to combat it, opportunities in the Iran market, for domestic and foreign vendors, remain restricted by the huge size of the 'grey' market, particularly for mobile handsets

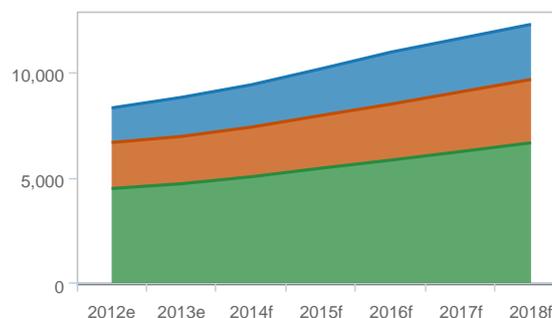
Despite downside risks associated with current political uncertainty, during **BMI's** 2014-2018 five-year forecast period, Iran's market for digital devices should report overall growth. Iran's economy is expected to retain a marginal upwards trajectory, boosted mainly by high oil prices. However, high inflation will continue to be a burden on consumers. Regulatory uncertainty will, however, continue to inhibit the development of markets opportunities such as 3G handsets.

Computer hardware will be 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 to 2018. Meanwhile, government spending will also help drive the market, while demand will also be strong in the SME and consumer segments. Spending will grow at a CAGR of 6.8% through 2018, led by notebooks and netbooks, which currently account for about 67% of sales.

AV devices will remain second for consumer electronics market spending in 2014, at 26% of the total. The government's campaign to implement digital broadcasting will drive opportunities. Video devices such as TV sets, digital cameras and VCR players account for about 76% of demand. Growth areas will include LCD TV sets and Blu-ray format DVD players, with an overall AV spending CAGR of 5.3% projected.

Mobile handsets will account for about 21% of total spending in 2014 but is potentially the most dynamic segment of the market, particularly after the lifting of sanctions on US handset imports in May 2013. Mobile penetration is lower than in many other countries in the region, and the development of the 3G

Consumer Electronics Demand (2012-2018)



■ Iran - CE, communications, exports & domestic sales, USDmn
 ■ Iran - Audio-visual & gaming devices, demand, USDmn
 ■ Iran - CE sales, computers, exports & domestic sales, USDmn

BMI research

market has been constrained by the exclusive 3G rights awarded to the smallest operator **Tamin Telecom**. This means there is untapped growth potential, and once the 3G market becomes more competitive from 2014 we believe there is scope for rapid proliferation of smartphone ownership. We forecast spending growth at a CAGR of 9.1% 2014 to 2018.

Macroeconomic Forecasts

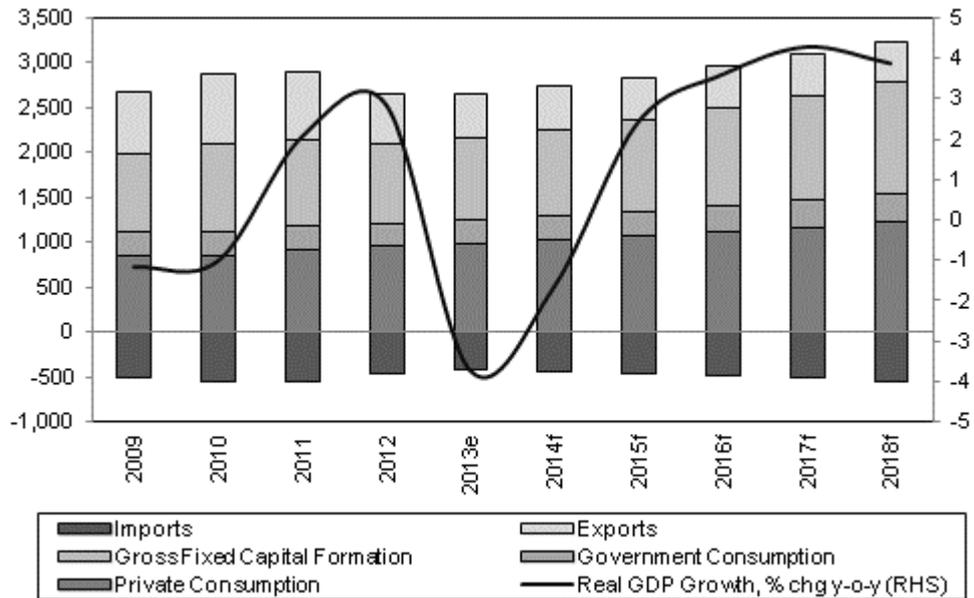
Economic Analysis

***BMI View:** We project Iran's economy to expand by 2.8% and 3.4% in real terms in 2014 and 2015, respectively, from our estimate of a 3.5% contraction in 2013. Improving relations with the West and better macroeconomic management, coupled with low base effects, will lead to an improved outlook for exports and increased business and consumer confidence. That said, the macroeconomic outlook will remain highly susceptible by developments in negotiations on the nuclear programme.*

We forecast Iran's economy to expand by 2.8% and 3.4% in real terms in 2014 and 2015, respectively, from our estimate of a 3.5% contraction in 2013. Iran and the 5+1 powers (the United States, Russia, China, France, Britain and Germany) clinched an interim deal on the Islamic Republic's nuclear programme on November 24, including gains of approximately US\$7bn in sanctions relief (see *'Interim Nuclear Deal: Key Implications', November 25 2013*). This will result in an improved outlook for exports, as well as increased confidence among investors and consumers. In addition, we see macroeconomic management improving significantly during the presidency of Hassan Rouhani, which will lead to a gradual decline of price pressures over the coming years. We see private consumption and fixed investment as the major drivers of growth in 2014 and 2015.

Private Consumption And Fixed Investment Driving Growth

Iran - Components of GDP (IRRtrn) & Real GDP Growth



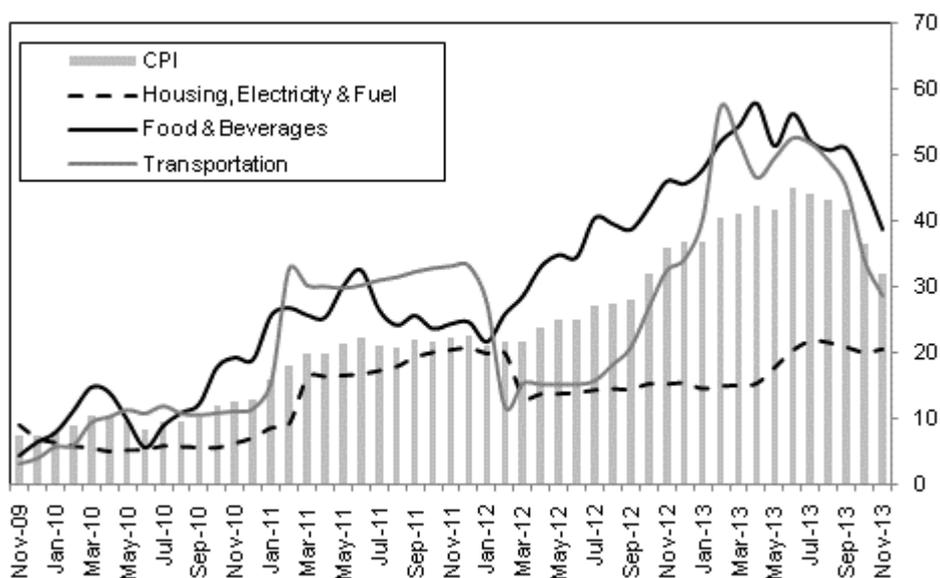
Source: BMI, United Nations. F=BMI Forecasts

Private Consumption Outlook

We project private consumption to increase by 4.0% in 2014 and 5.0% in 2015, compared to our estimate of 3.0% growth in 2013. A combination of high base effects, improving macroeconomic conditions and the government's efforts to tackle inflation will ensure that consumer price index inflation (CPI) gradually declines over the coming quarters. We forecast the headline inflation print to average 26.0% in FY2014/15 (fiscal year running from 21 March 2014 - 20 March 2015), from our projection of 35.0% in FY2013/14. In addition, improving relations with the West and Rouhani's pledge for macroeconomic reform will contribute to increasing investors' and consumers' confidence.

Inflationary Environment Improving Gradually

Iran - Components Of CPI, % chg y-o-y



Source: BMI, Central Bank of Iran

This is not to say, however, that private consumption growth will accelerate drastically over the coming quarters. We expect fiscal policy to be contractionary in FY2014/15 (*see below*), and we do not expect private sector activity to increase at a rapid pace as long as the outcome of nuclear talks remains uncertain. This will ensure that unemployment levels - which currently stands around the 20% level according to unofficial estimates - will remain relatively elevated for the foreseeable future.

Government Spending Outlook

The government will undertake a relatively contractionary fiscal policy in FY2014/15, as the administration seeks to trim an elevated budget deficit. That said, we do not expect cuts in areas such as healthcare, public services and education to be too radical, as Tehran seeks to maintain public support to its rule. We project government consumption increasing by 1.5% and 3.0% in 2014 and 2015, respectively.

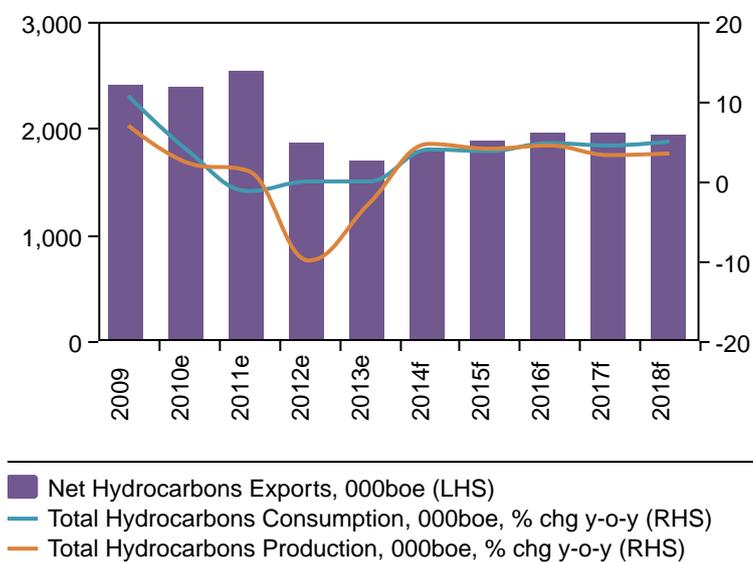
Fixed Investment Outlook

Growth in gross fixed capital formation has been significantly hampered by international sanctions, an opaque business environment and a challenging macroeconomic picture over the past few years. The improving macroeconomic environment and renewed business confidence will in our view contribute to an uptick in investment over the coming quarters, and our Infrastructure and Construction research team sees real growth in the construction industry returning to positive territory as a result. Recent developments have also seen renewed interest by foreign in the Iranian market. As an illustration, German pharmaceutical major Merck said on December 31 2013 that it is considering partnering an Iranian drugmakers to manufacture drugs in the country, while Finland-based Outotec, which provides technologies and services for the metal and mineral processing industries, revealed interest to invest in Iran's iron-ore and pelletising development projects on December 27.

That said, a measure of caution is to be warranted. For one, we do not expect a significant uptick in foreign investment until a longer-term agreement on the nuclear programme is found. Moreover, the continuation of banking and hydrocarbon sanctions will limit investment by domestic companies. We forecast fixed investment expanding by 5.0% in 2014 and 6.0% in 2015, respectively.

Recovering Gradually

Iran - Hydrocarbon Exports



Source: BMI

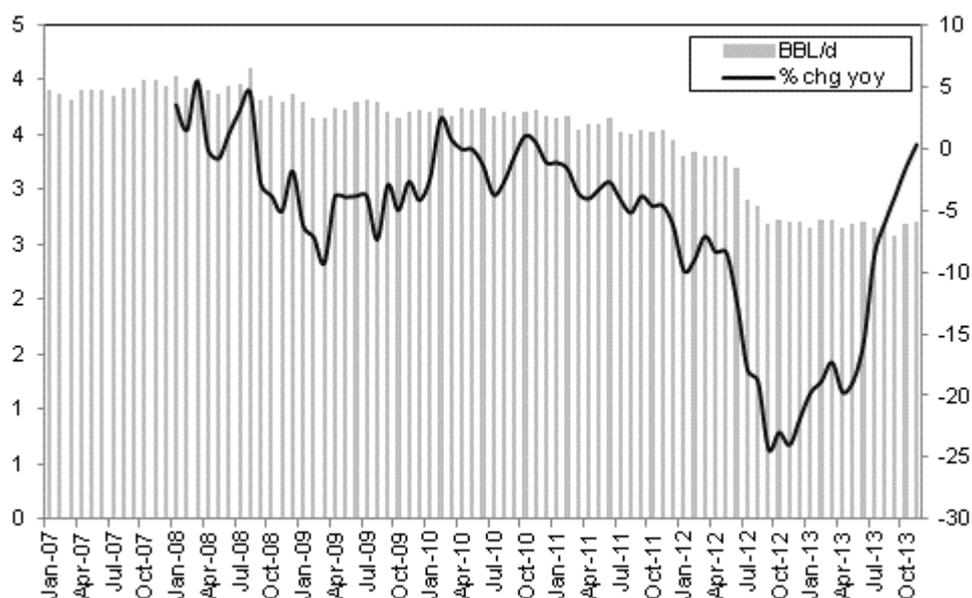
Net Exports

Iran's external position will remain weak over the coming quarters. We see total exports declining by 1.0% in 2014 and 2.0% in 2015, compared to our estimate of a 11.0% decline in 2013. Much of the improvement will result from improving oil exports - which accounted for 85.0% of total exports in 2010.

According to the International Energy Agency, oil production increased by 0.4% y-o-y to 2.71mn bbl/day in November 2013, having declined an average of 11.7% y-o-y over the first 11 months of 2013. The recent interim deal on nuclear sanctions offers a measure of optimism whereby several international companies are reportedly discussing with Iranian officials a potential return of investments should the sanctions be relieved. In addition, we note that the deal could provide an easing of the ban on European shipping insurance for Iranian oil, which would result in a slight increase of oil exports from Iran to major customers like India and South Korea to at least the level permitted under current the sanctions regime. That said, we remain cautious about the prospects for Iranian energy exports in 2014, given that a significant easing of oil sanctions would only come as part of a broader, final settlement, which would in our view be at a minimum 6-12 months away.

Oil Production On The Mend

Iran, Oil Production, Million Barrels per Day (LHS), % chg y-o-y



Source: IEA, BMI

The fall in value of the rial and international sanctions have resulted in a sizeable decline in total imports over the past few quarters. Although the value of the rial will remain volatile over the coming quarters (*see 'IRR: Nuclear Talks Triggering Volatility In 2014', December 11 2013*), a gradual appreciation in the open market coupled with an uptick in economic activity will lead to a return to import growth in 2014, which will offset the improvement in the outlook for exports. We forecast total imports expanding by 5.0% in 2014 and 6.0% in 2015, from our estimate of a 10.0% contraction in 2013.

Risks To Outlook

The macroeconomic outlook will remain highly susceptible by developments in negotiations with the West on the country's nuclear programme over the coming years. We see three potential scenarios in negotiations. One sees talks continuing without key developments over the next 24 months, another a major breakthrough within 6 to twelve months, and a third a breakdown in talks within the same time frame (*see 'US - Iran Talks: Three Scenarios', October 1*). Should the second or third scenario play out, this could prompt us to significantly revise our forecasts.

Table: Iran - Economic Activity

	2011	2013	2013e	2014f	2015f	2016f	2017f	2018f
Nominal GDP, IRRbn 1,2	5,598,126	6,715,880	8,923,880	11,528,456	13,832,654	16,299,152	18,677,770	21,208,475
Nominal GDP, US\$bn 1,2	527.3	550.6	435.3	466.7	628.8	679.1	849	964
Real GDP growth, % y-o-y 1,2	3	-1.9	-3.5	2.8	3.4	3.5	4.2	4.2
GDP per capita, US\$ 1,2	6,991	7,204	5,621	5,948	7,911	8,441	10,427	11,705
Population, mn 3	75.4	76.4	77.4	78.5	79.5	80.5	81.4	82.4

Notes: ^e BMI estimates. ^f BMI forecasts. ¹ Year Begins in March (Iranian calendar). Sources: ² UN/BMI; ³ World Bank/UN/BMI.

Industry Risk Reward Ratings

Risk/Reward Ratings

The 10 countries in **BMI's** Consumer Electronics (CE) analysis for Middle East and Africa present a mixed bag of upside and downside risks for CE vendors based on a number of macroeconomic, regulatory and industry-specific factors, including consumer income levels and spending power, demographics, intellectual property (IP) protection and access to high speed internet services. The disparity in market characteristics is reflected by the relatively wide range of the region's aggregate scores, with the top and bottom ranked countries recording scores of 61.5 and 38.8 respectively.

There were only two changes to our rankings this quarter compared to the previous quarter. The changes led to a slight fall in the average regional average score from 52.4 to 51.9. The average scores in the Industry Rewards, Country Rewards and Country Risks categories declined this quarter, while that of the Industry Risks category was unchanged. Israel moved ahead of Kuwait to take third position, while Iran dropped to 10th position following an increase of Egypt's score which moved it into ninth. Qatar and the UAE retain the top two positions on our table in that order, partly due to the high consumer spending in both countries. Iran and Egypt occupy the bottom two positions on our table owing to weak Country Risks and Country Rewards scores respectively.

Industry Rewards

BMI's CE Industry Risk rating assesses the size of the domestic CE market in terms of annual sales, annual sales growth over our forecast period, ending in 2018, CE sales per capita and the level of ICT development. This category recorded the lowest regional average score this quarter at 47.3. Qatar, the UAE and Saudi Arabia recorded the joint highest score of 53, while South Africa and Israel were the only other countries with a score greater than 50. The wealthy Gulf countries have high per capita sales, with strong demand for high-end products, including smartphones, tablets and smart TVs, in those markets, boosting the overall sales figures. Israel's score in this category is boosted by the high level of development of its ICT sector, with the country's broadband penetration rate estimated at nearly 30% by the end of 2013. For its part, South Africa has a large market size and high annual sales growth forecast owing to the size of its population and the increasing take-up of high-end devices.

Bahrain, Egypt and Oman recorded scores of 40 or less in the Industry Rewards category this quarter. While Oman and Bahrain are held back by low annual sales growth and ICT development compared to other Gulf countries, Egypt's large population and relatively low demand for high-end products on the back of the

political and economic crisis in the country since 2012 are impacting on its sales per capita figure. We therefore highlight an upside risk to the country's score in this category following a return to political stability and economic growth.

Iran has the highest likelihood to see an increase in its Industry Rewards rating in the future. The country's ongoing talks with the international community over its nuclear ambitions and the easing of sanctions is set to drive growth in the CE market, which had previously relied on reseller and grey markets in the Middle East and Asia. Furthermore, the country's two biggest mobile operators expect to win 3G concessions from the government, a development that will drive the take-up of smartphones, tablets and other data-enabled devices.

Country Reward

The Country Reward rating also assesses four main factors which directly impact the demand for CE products. These are demographics, proportion of urban population to total population, the richest 10% as a proportion of the total population and GDP per capita. Qatar, the UAE, Kuwait and Israel, all of which have GDP per capita of more US\$30,000 and urban populations of more than 85% of total population, have the highest scores in this category in that order. The CE markets in these countries are characterised by high patronage of modern CE devices, from smartphones and tablets to connected TVs, home theatre sets and high resolution digital cameras, as well as high replacement rates of CE devices. Egypt lags the rest of the region in this category with a score of 22.5, compared to 37.5 by recorded by Oman, its nearest peer in this category. Egypt was the only country with GDP per capita of less than US\$5,000 at the end of 2013, according to **BMI** estimates, while the country's urban population make up only 43.7% of the total population of the country, compared to 62.4% in its nearest peer South Africa.

Industry Risks

The main factors we assess in the Industry Risk category are barriers to entry and government CE policies. Iran scored poorly in this category owing to international sanctions. The sanctions have also created a large grey market in the country served by suppliers from Asia and other markets in the region. This has been a major barrier for global CE brands looking to tap into the market's potential given the country's population of almost 80mn and GDP per capita of more than US\$7,000. That said, **BMI** holds the view that moves to ease the international sanctions on Iran will remove some market entry barriers, raising the prospects of an upgrade of the country's score in this category in subsequent updates.

The presence of a sizeable grey market is a common feature in most markets in the region. This is partly due to weak government regulation and border control, as well as high demand for inferior goods among low income consumers. Grey markets and product counterfeiting are less prevalent in the wealthier Gulf countries and Israel where higher income levels and the existence of established formal distribution channels limit the appetite for inferior products.

Country Risks

The Country Risks category assesses wider macroeconomic factors such as short-term economic and financial risks, and impact of trade bureaucracies on the CE market. The regional average score of 58 reflects the capability of many countries in the region to weather economic and financial risks owing to strong external account balances. The oil-rich countries perform better in this category, although Iran has been hamstrung by the international embargo on its oil. Again, we highlight the significant upside risk to the country's score in this category with an increase in oil output and earnings helping to rebuild the country's external reserves.

Table: MEA CE RRR - Q2 2014

Country	Industry rewards	Country rewards	Industry risks	Country risks	CE rating	Rank	Previous rank
Qatar	53.3	80.0	70.0	51.3	61.5	1	1
UAE	53.3	80.0	65.0	54.1	61.4	2	2
Israel	52.5	62.5	65.0	79.0	61.2	3	4
Kuwait	48.3	77.5	55.0	55.1	57.5	4	3
Saudi Arabia	53.3	45.0	55.0	71.6	54.8	5	5
South Africa	51.7	42.5	50.0	62.2	51.1	6	6
Bahrain	40.0	52.5	50.0	52.6	46.5	7	7
Oman	37.5	37.5	60.0	70.8	46.2	8	8
Egypt	38.4	22.5	50.0	59.1	39.6	9	10
Iran	45.0	42.5	30.0	24.1	38.8	10	9
Average	47.3	54.3	55.0	58.0	51.9	-	-

Scores out of 100, with 100 highest. The Consumer Electronics (CE) Rating is the principal rating. It comprises two sub-ratings 'Limits of potential returns' and 'Risks to realisation of returns', which have a 70% and 30% weighting respectively. In turn, the 'Limits' rating comprises Consumer Electronics Market and Country Structure, which have a 65% and 35% weighting and are based upon growth/size of the CE industry (Market) and the broader economic/socio-demographic environment (Country). The 'Risks' rating comprises Market Risks and Country Risk, which have a 40% and 60% weighting and are based on a subjective evaluation of barriers to entry and the regulatory environment (Market) and the industry's broader Country Risk exposure (Country), which is based on BMI's proprietary Country Risk Ratings. The ratings structure is aligned across the 16 Industries for which BMI provides Business Environment Ratings methodology, and is designed to enable clients to consider each rating individually or as a composite, which depends on their exposure to the industry in each particular state. For a list of the data/indicators used, please consult the appendix at the back of the report. Source: BMI

Market Overview

Computers

BMI forecasts PC market sales of US\$5bn in 2014, rising to US\$6.7bn by 2018. 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 remains low. We believe notebooks will drive the market, and that tablets will become increasingly important to the markets expansion although the lack of widespread 3G services will limit the potential of these devices for truly on-the-go demand.

Asian vendors have taken advantage of the gap left by US companies that are 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. .

The lack of international production and import led to growth in the manufacture of locally-produced computers. Until recently the majority of computers in Iran were assembled locally, barring a few high-end brands. Customers would purchase computer parts from specialists markets or malls where customised computers could be assembled. Assembly remains a major feature of the market and a large portion of the computer hardware competitive landscape is concerned with parts, particularly monitors, and with accessories such as printers.

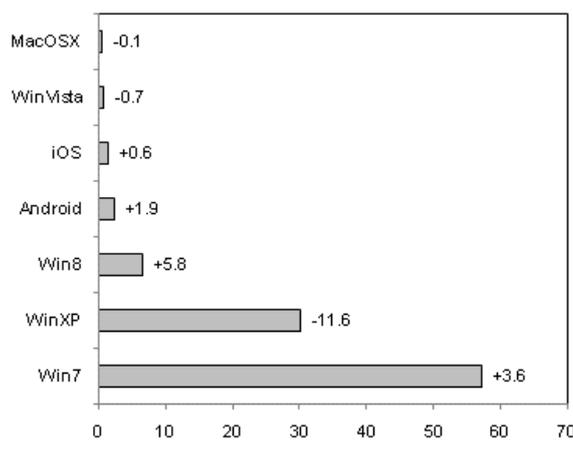
In contrast to the more diverse landscape in most Middle Eastern markets, the Iranian market is dominated by just two vendors, LG and Samsung. Local electronics firm **Maadiran Group** began to manufacture LG monitors in Iran over a decade ago and LG has a premium position in the market, while Samsung has a lower positioning. Recently, Maadiran announced its plan to produce AOC monitors from **TVP** in Iran, on an SKD basis, positioning the brand between LG and Samsung.

With many US vendors unable to sell directly into Iran, East Asian computer vendors are able to take advantage. Toshiba was among the first foreign brands to be available on the market. Toshiba, Sony and other Japanese brands gained a local following for its high picture quality. More recently, South Korean and Taiwanese vendors have moved into a stronger position. LG, Samsung and **BenQ** have all built up a presence in Iran, forming partnerships to establish SKD facilities in the country and conducting some final assembly processes there. These vendors have also rolled out channel programmes in Iran's major cities.

Despite the US trade embargo on Iran, printers from global leading 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 has said that it will 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 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 (%) And Y-o-Y Growth (pps)

2012-2013



Source: Statcounter

Table: Computers - Demand, 2011-2018

	2011	2012	2013e	2014f	2015f	2016f	2017f	2018f
Computer Hardware Sales (US \$mn)	4,424	4,513	4,738	5,070	5,475	5,859	6,269	6,679
PC Sales (US\$mn)	3,847	3,924	4,120	4,409	4,761	5,095	5,451	5,808
PC Sales (000)	3,477	3,721	4,055	4,542	5,133	5,748	6,438	7,128
- Notebooks (000)	2,504	2,790	3,123	3,588	4,157	4,656	5,215	5,774

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

BMI forecasts the computer and accessories market will continue to account for the largest proportion of Iran's consumer electronics market, at over 50% of total sales, right through our five-year forecast period to 2018. We estimate total computer hardware sales reached US\$4.74bn in 2013 as the market recovered from a slowdown in 2012. However, the market will continue to underperform its potential as a result of the implications of sanctions for imported hardware and the economic environment.

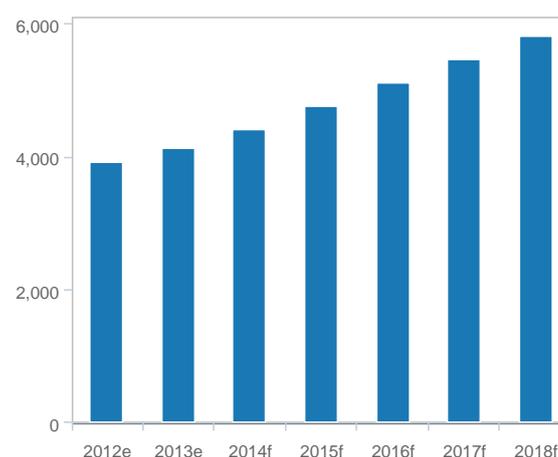
Iranian PC penetration remains low, trailing that of other markets in the region, with a slow growth trajectory in recent years as a result of more stringent sanctions affecting the market directly and via the impact on the wider economic environment. As such

there remains untapped potential for growth but the outlook is challenging so long as sanctions remain in place and political tensions remain unresolved. Continued economic and political uncertainty, closely related to the threat of international sanctions, and instability in local channels make Iran a challenging market to target. We forecast single-digit revenue growth in 2013, and thereafter we expect revenue growth to remain modest, with a CAGR of 6.8% in US dollar terms for our forecast period (2014-2018).

While shipments growth is underperforming many other regional markets, Iran is still experiencing a number of trends in line with its regional peers. For instance, there has been a shift to greater utilisation of

Computers: Demand

(2012-2018)



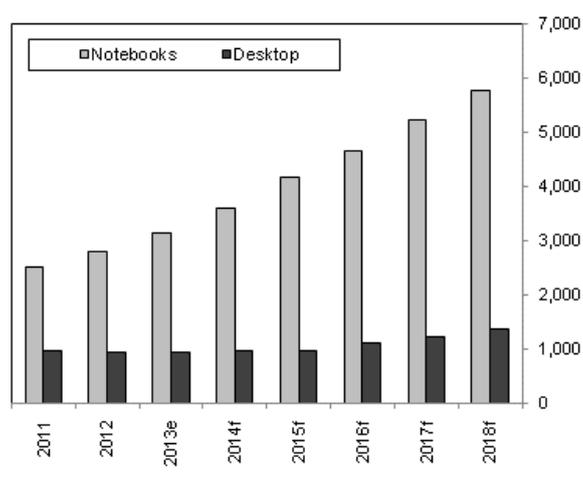
e/f = BMI estimate/forecast. Source: BMI

mobile computing devices including notebooks, netbooks, and potentially tablets in the coming years. As a result desktops now account for 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 7.1mn units by 2018.

BMI expects notebook shipments (including tablets) will increase to 5.8mn units in 2018, from 4.1mn in 2014, growing at a CAGR of 13%. The popularity of netbooks in Iran echoes trends in recent years in other emerging markets, but with more limited competition from tablets volumes have been sustained for longer. However, over the medium term there is a threat to the 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 access at all, the extent to which Iranian consumers are offered the chance to 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 MENA markets.

Computers - Segments Demand ('000)

2010-2017



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

The government and commercial segment dominates computer sales, with more than 50% of the total market. Over the next few years, computer sales should continue to receive a boost from 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, however, continue to be relatively constrained by that sector's lack of access to investment compared with other places in the region.

As noted already, **BMI** expects the market to remain on a lower growth path as a result of sanctions and political and economic uncertainty. Several other environmental 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. Meanwhile, trade sanctions could have an impact on

huge volume of imports from the UAE, although it is reported that higher income consumers have found means of acquiring desirable hardware internationally.

AV Devices

The AV devices market in Iran 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 of Tehran. High tariffs on some products and the trade embargo have allowed local manufacturers to gain a foothold in the market. 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 first and leading local TV set manufacturer is Maadiran Group, which in 2006 launched its X-Vision brand. The company claims 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 region, 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 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. Meanwhile, in February 2010, Sharp launched an LCD TV assembly plant in Iran, in partnership with Maadiran Group. The new facility marked a new stage in cooperation between Sharp and Maadiran that dates back to 1964. Sharp hoped that the assembly plant would help it to get products to market faster. The plant will make digital TV sets with sizes of between 32" and 55". 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 and over 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 represents its third largest market in the Middle East, generating 15-20% of annual revenue. The company manages the market from Dubai, but 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 in the past couple of years, 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. In 2009 Samsung launched a number of point and shoot digital still cameras in the region, marketed as offering higher end features at more affordable prices. The WB500 flagship model offered a 10x optical zoom and 24mm ultra-wide lens. As recently as 2006, Samsung did not feature among the top three regional digital camera vendors, which were Sony, **Olympus** and **Canon**, accounting for nearly 56% of shipments.

Table: AV - Demand, 2010-2017

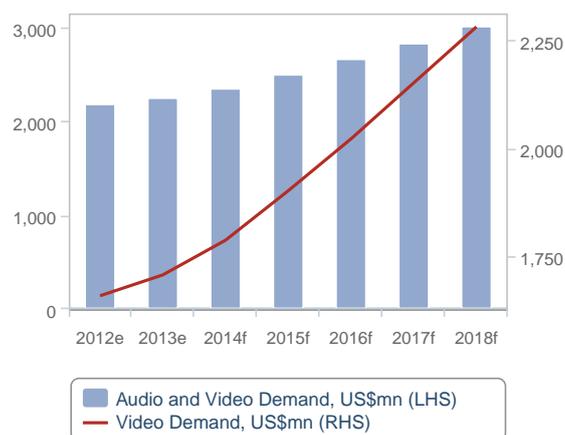
	2011	2012	2013e	2014f	2015f	2016f	2017f	2018f
AV & Gaming Device sales (US \$mn)	2,180	2,182	2,246	2,352	2,503	2,661	2,832	3,002
- Video applications (US\$mn)	1,657	1,658	1,707	1,787	1,902	2,022	2,152	2,282
- Audio applications (US\$mn)	523	524	539	564	601	639	680	721
LCD TV Set Sales (000 units)	509	631	757	893	1,072	1,286	1,543	1,801
Digital Camera Sales (000 units)	326	317	320	326	339	356	374	392

e/f = estimate/forecast. Source: BMI

BMI expects the AV market will underperform over the medium term due to similar constraints as those affecting the computer hardware market: sanctions and the wider business environment make operations in the country very difficult. Despite these challenges, the size of the market 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 a lack of affordability, while supply chain hurdles remain an issue. Nevertheless, Iranian 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 US\$2.2bn market is still expected to grow at a CAGR of 5.3%, with the market reaching US\$2.8bn by 2017.

AV: Demand

(2012-2018)



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

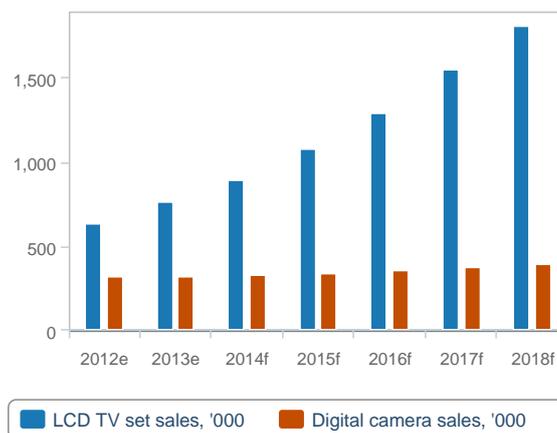
The market will be constrained for the foreseeable future by the US-led international sanctions, indirectly via their impact on the purchasing power of ordinary Iranians rather than on direct restrictions on device imports. The EU and US banking sanctions have fuelled Iran's runaway inflation and led to a collapse in the value of the rial, which has caused 20% to 50% rises in the cost of foreign-made products. A further devaluation of 8% in February 2012 created a further burden on household incomes that reduced the affordability of imported AV products for Iranian families.

The extent to which a lack of affordability for imported hardware will be compensated by boosts in domestic production are uncertain. The sector remains restricted by the small scale and fragmented nature of the retail channel, but there is progress. For instance, **Maadiran Group** has domestic production facilities that have been ramped up and it claims to now run the largest single consumer electronics manufacturing facility in the region.

Another boost to growth could come from the decision by the Iranian 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 addressable TV set market is estimated at around 757,000 LCD TV set units in 2013, while total TV set sales were projected at around 5.3mn units. Demand for video applications is forecast to continue to rise, with revenue projected to rise to around US\$2.15bn by 2017.

AV: Demand Key Products

(2012-2018)



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

Sales of LCD and plasma sets have increased as prices have fallen substantially over the last couple of years. 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, only accounting 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 USB connections, allowing people to enjoy downloaded content.

The gradual roll-out of digital TV at regional and township levels, a process that gathered pace in 2011, should stimulate replacement set purchases. 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. In 2011, regional vendors placed a lot of expectation on LED TVs to drive revenue, as LCD TV prices declined, although demand for LED sets was limited to high-end consumers initially.

Elsewhere in the AV market, digital cameras are forecast to sell at around 26,700 units a month in 2013. 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 faces the downside risk of consumers choosing to settle for the camera on their smartphone, which could erode volumes.

Finally, revenue from audio devices is estimated at around US\$539mn in 2013 and is expected to rise to US\$680mn within the forecast period, with home theatre systems accounting for the largest share of revenue. With 59% of sales the Sony PlayStation3 is currently the number one gaming console in the region, with **Nintendo Wii** and **Microsoft Xbox** the other major players. The release of the next generation games consoles from Sony and Microsoft in Q413 could provide a boost to the market, however the availability in Iran is highly uncertain and, as such, it 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 that has greatest potential to reach a wide range of consumers, as well as households having more than one device. The launch of 3G services may kickstart real demand for smartphones but **BMI** believes that many Iranians have smart devices that 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, but we do not expect the impact to be felt before the end of 2014.

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. Further, **BMI** believes the slow development of the local 3G market means that demand for high-end devices from the likes of Apple are not likely to have wide appeal, but remain restricted to a wealthy urban group, many of which have already acquired their desired devices by circumventing sanctions. Nonetheless, the lifting of sanctions is expected to boost competition and push down prices.

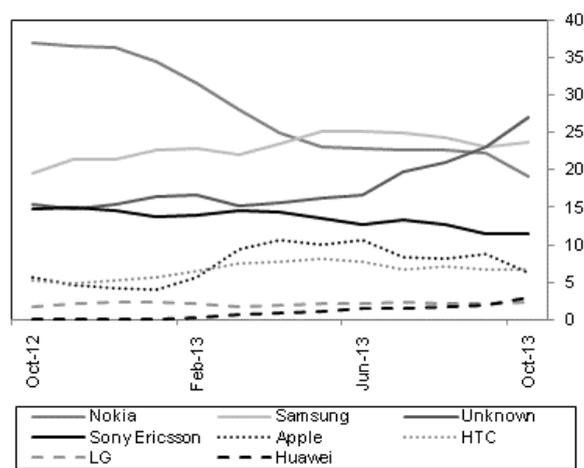
Nokia has traditionally been the top selling brand in Iran, with a share as high as 60%. It should be noted that accurate estimates are impossible to get, given the large grey market. In recent years, as is the case across the majority of markets in which it operates, Nokia has faced a strong challenge 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 a growing sector of local production.

Browsing traffic data by vendor from Statcounter illustrate the threat to Nokia, at least in the 3G enabled/ smartphone market. Nokia handsets accounted for nearly 37% of mobile browsing traffic in October 2012, a figure that fell to 19% by October 2013. Meanwhile, Samsung handsets share of browsing traffic increased from around 19.6% to 23.8% over the same period. Between April and June 2013, around the time when the US eased sanctions on consumer electronics exports to Iran, **Apple's** share of mobile traffic browsing rose from under 6% to more than 10%, but then gradually dropped to 6.2% by October 2013. Unfortunately Statcounter's data do not reveal which vendors are benefiting the most from Nokia's downfall, as by far the biggest winner was the 'unknown' category, which increased its share from 15.4% to 27% in the 12 months to October 2013. However, of the Chinese vendors, Huawei has performed the best, bringing its share of browsing traffic up from 0.1% in October 2012 to nearly 3% a year later. **BMI** expects this is related to the company's increased focus on the Middle Eastern consumer electronics market, having opened a regional distribution hub in Dubai in early October 2013.

Using additional data from Statcounter, there has been a clear trend away from Symbian, with users switching to Android devices - benefiting Samsung, **HTC**, LG, Huawei and **Sony Ericsson**. Symbian and Android accounted for 24.5% and 27.8% of mobile browsing traffic, respectively, in October 2012. By October 2013, Symbian's share had dropped to 12% while Android's had risen to more than 52%. Nokia's Series40 OS, used on its Asha featurephones, saw its share of browsing traffic decline slightly from 11.3% in October 2012 to nearly 8.7% by October 2013. From this data **BMI** believes Nokia is losing its competitive edge in the mid-range featurephone market as well as in the high-end smartphone market, following the trend in other markets where Samsung's mid-range devices have made a major dent in Nokia's market share.

Iran Mobile Browsing Traffic By Vendor (%)

October 2013



Source: Statcounter

Despite the US-led sanctions on imports to Iran in place until May 2013 for many technology-related devices, most major international handset brands found their way into the country by third-party channels. In August 2012, Nokia ended its direct operations in Iran, to ensure compliance with the tightening

sanctions and protect its access to more important markets. Iranian consumers are still clearly able to acquire Nokia devices.

Meanwhile, Samsung was apparently the second most popular handset brand in Iran, according to a 2012 survey by Chimigi, with a 20% share of the market, followed by Sony (16%) and HTC (20%). In April 2013 Samsung announced it was closing its app store to Iranian users in May to keep in line with sanctions. The company has not stated what impact this has on its popularity.

In the face of sanctions Iran has sought to make up the deficit by increasing local production. In the year through to March 2012, Iran was expected to manufacture around five million handsets, according to local industry estimates, equivalent to around one-quarter of the estimated local market. **Hamrah Gooya Aryand Communication Company**, which retails handsets under the GLX brand, currently has an annual production capability of 1.8m units.

Like other vendors, Nokia's sales in Iran are complicated by local channel conditions. In the past, Nokia and its distributors have been accused of using the Iranian market as a dumping ground for old models. Nokia's dominance in the region has been built on a number of factors, including customisation and a high release rate. Nokia also scored well on form factor and design and winning a reputation for technological innovation, introducing Bluetooth handsets into the regional market before most other vendors. In Iran, Samsung has kept up an aggressive series of releases since 2004, releasing models with multimedia features such as cameras and camcorders, MP3 players, memory sticks and colour screens. Samsung was hoping to grow by focusing on localisation and by pressing home its advantage with camera phones such as its popular innov8 models and with smartphones.

Samsung regards the Middle East as one of its leading markets for touchscreen smartphones. The Middle East is one of Samsung's leading markets for touchscreen high-end models. Globally, Samsung claims a 25% share of the touchscreen segment.

A significant challenge comes from LG, which in 2007 started producing handsets in Iran in partnership with local electronics leader **Maadiran Group**. The agreement was shrouded in secrecy, but in 2007 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 motivations 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 two million handsets a year, with some exported to other markets in the Middle East.

Table: Mobile Communications (Iran 2012-2018)

	2012	2013e	2014f	2015f	2016f	2017f	2018f
Cellular Mobile Phone Subscribers, '000	87,300.0	93,236.4	98,271.2	103,184.7	107,931.2	112,464.3	116,738.0
Mobile Phone Subscribers/100 Inhabitants	114.2	120.4	125.2	129.8	134.1	138.1	141.7
3G & 4G phone subscribers, '000	2,000.0	3,840.0	6,144.0	8,601.6	10,321.9	11,354.1	11,354.1
Domestic mobile handset sales, USDmn	1,636.84	1,845.65	2,006.94	2,210.85	2,459.35	2,533.13	2,606.91
Domestic mobile handset sales, '000	19,719.94	21,102.57	22,790.77	24,614.03	26,583.16	26,583.16	26,583.16
Domestic mobile handset sales, 3G, '000	173.00	356.00	425.00	544.00	663.00	782.00	901.00

National Sources/BMI

We have kept our forecasts unchanged this quarter as we have already factored in the upswing from the lifting of US sanctions. The US made the decision in May 2013, widely considered a move designed as a goodwill gesture ahead of the June 2013 elections. The lifting of sanctions will have a positive impact on the market, however we believe it will be limited in the short term due to the slow development of 3G services and the fact that high income Iranian consumers have found means of acquiring desirable handsets in recent years despite sanctions. We now forecast handset sales of US\$1.846bn in 2013, an increase of 12.8% from 2012.

BMI expects volume growth to remain strong over the duration of our forecast period, reaching 26.6mn devices sold in 2018 as consumers upgrade to gain access to some of the latest devices. In addition to increasing volumes, wireless data services will increasingly be used over mobile infrastructure, encouraging demand for feature phones in the mass market and demand for smartphones from higher income consumers.

Although the mobile handset market trails the computer market in Iran in terms of value, in volume terms, mobile handsets are the largest market in Iran. Part of the explanation for the volumes in the handset market is the fact lower prices make them more 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 difficult to estimate.

It is also the most dynamic market, with the arrival of 3G services catalysing sales of smartphones and featurephones. However, with 3G services currently a monopoly for smallest operator **Tamin Telecom** the

market is failing to fulfil its potential. **MCI** and **MTN Irancell**, the country's two major operators with a combined market share of more than 95%, are still operating on 2G EDGE and GPRS networks with maximum download speeds of 60Kbps. Most high end smartphones use nano-SIMs and we believe MCI and Irancell will probably not adopt nano-SIM technology on their networks until they can launch 3G services, meaning there will likely be very limited scope for usage of high end smartphones until late 2014 or 2015. Growing economic difficulties, including inflation and cuts in subsidies, as well as the impact of sanctions, have constrained demand for high-end phones in recent years. Until recently, Iran saw demand for smartphones such as **Apple's** iPhone and **BlackBerry** handsets rise, however, under tighter sanctions it became more difficult to acquire high-end handsets. Although not all applications are accessible on such products, possession of these handsets is seen as a status symbol.

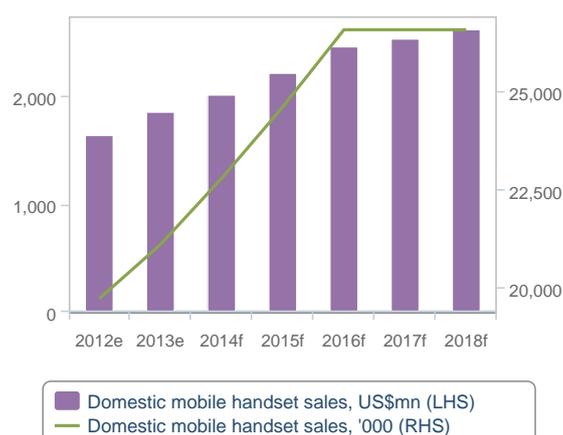
In November 2011, the third Iranian mobile phone operator, **RITEL**, was officially launched in Tehran, boosting growth by intensifying the competition between operators. We believe there is scope for further growth despite the high penetration rate, with the Iranian market housing a number of inactive SIMs and multiple SIM cards, which is responsible for the inflated penetration rates. It should be remembered that the bulk of mobile subscriptions in Iran are made up of prepaid users. Strong prepaid growth will continue as operators introduce special promotions and campaigns. The trend towards strong prepaid growth is expected to continue, particularly as the operators expand their networks into rural areas, where service coverage remains limited. However, while prepaid is leading mobile growth, it has also given rise to a number of inactive subscribers, meaning penetration rates may be significantly lower than forecast.

Mobile handset revenue is expected to grow to US\$2.6bn by 2018, with the replacement market and shift to higher value featurephones and smartphones compensating for the declining pool of first-time buyers.

A key aspect to keeping the market growing will be improving mobile network coverage. Mobile penetration rates in major urban centres are much higher than for the country as a whole, and therefore the

Mobile Handsets: Demand

(2012-2018)



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

biggest growth opportunity for handset vendors will be driven by expansion of mobile networks into rural areas. It is important to remember that sizeable portions of Iran's population remain without reliable communication services, particularly outside the major urban centres.

The weighting of new users towards lower income rural areas will mean a continuation of the downward trend in handset prices. Already mobile handsets are readily available from city kiosks at prices of between US\$20-50. When it is considered that many of these models come with an equivalent value of call credits, then 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.

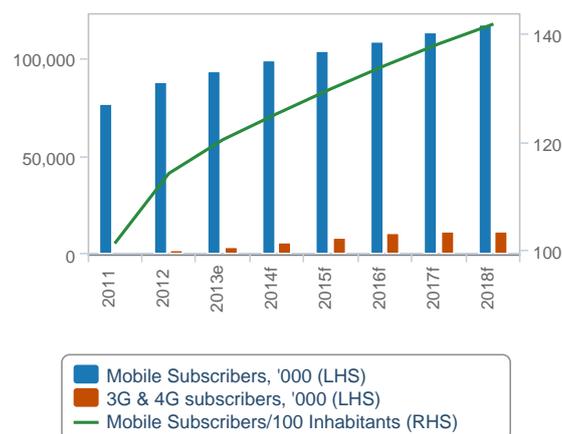
Meanwhile, in urban areas, many subscribers have sophisticated demands in terms of design and functions. There is demand for music phones, particularly given the youthful complexion of the market and for functions such as MP3/MP4 support, high-resolution cameras and camcorders. With over 50% of Iranians under the age of 24, Iran 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 US\$1.1bn by 2017. In 2012, it was suggested that 9% of all mobile phone users in Iran were using an iPhone. This is another indicating that, despite the US-led sanctions, multinational brand handsets are finding their way into the country by third-party channels. However, it is not clear the extent to which this iPhone user base has purchased official devices or replicas.

Over the medium term Iran's mobile operators will put an increasing emphasis on upgrading existing customers to higher value services, such as data and postpaid contracts. **BMI** has declined to change its forecasts for the development of Iran's 3G handset market. There are currently concerns over the regulatory handling of the 3G market in Iran, given that only one operator has been awarded a licence and a second is

Industry Trends - Mobile

(2011-2018)



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

not due for a period of three years. This could dent demand for mobile value-added services, which the government is keen to encourage the growth of as a tool to help economic growth.

Unfortunately, the regulatory authority has stated that it would not be licensing a second operator to offer 3G for a further three years, since allowing **Tamin Telecom** to offer 3G services in 2010. Tamin Telecom was formally awarded a licence to provide 2G and 3G mobile telecommunications services in Iran in April 2010. However, it was not until late November 2011 that services were launched, under the **Rightel** brand. Tamin Telecom is being offered an exclusivity period of three years to provide its 3G services, according to the Communication Regulation Agency (CRA).

The state has given its support to 3G, praising the greater network capacity and wider bandwidths that it supplies, as well as the variety of services that it can support. Rapid progress is not expected, but, given that the state is keen to study the 3G policies used in other states before making a decision on future licences. The state also said any decision on 3G licensing would be based on consumer demand and technical feasibility studies.

Industry Trends And Developments

Due to the size of its economy and population, Iran has the potential to be the Middle East's largest consumer electronics market. However, for the foreseeable future a restrictive regime and international sanctions will continue to hold back the potential of the market.

There is potential for the development of local manufacturing capabilities, but **BMI** believes the availability of some devices and the time required to develop manufacturing facilities, makes this scenario unlikely. The authorities in Iran have allowed limited access to social networks and in January 2013 authorities in Iran announced they were in the process of refining a filtering program, with a view to enabling access to web-based social networks in the country. Early 2014 saw the government call on China to help build a restricted internet. Software will facilitate restricted access to US networking websites **Twitter** and **Facebook**. A brief 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.

The government said it will introduce the compromise, although 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. This has included the issuance of a fatwa by four Iranian ayatollahs against RightTel, the sole 3G provider in the country. **BMI** believes this will remain a barrier to market growth.

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 **Motorola**, **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. US businesses and politicians have, however, expressed frustration that some other countries, notably China, have failed to back more expansive UN sanctions. China has continued to expand its commercial interest in Iran.

Lifting Sanctions Does Not Guarantee Strong Sales

On May 30 2013, the US lifted sanctions on the sale of mobile phones and other communications devices, software and services in Iran. The easing of sanctions is intended to provide Iranians with tools to help promote political freedom ahead of the country's upcoming national election. **BMI** believes this will allow American and international vendors to tap into some of the latent potential in Iran's telecoms market, but that high end smartphone sales will be limited by the fact that **Tamin Telecom** has exclusive rights to offer

3G services until 2014 and the government remains intent on controlling the political environment, which could result in internal restrictions on devices.

The US sanctions on consumer electronics and communications software had been criticised by the National Iranian American Council of helping the Iranian government limit citizens' freedom of communication and ability to develop civil society, while doing little to curb its nuclear programme. Lifting sanctions was part of a bid by the US government to develop goodwill among the Iranian people before the national election in June 2013. Whatever the motivation, the decision is a step in the right direction for the Iranian telecoms and consumer electronics market, and will allow popular devices such as **Apple's** iPhone and iPad as well as other handsets and tablets with American parts to be sold legally in Iran for the first time since 1992.

Although handsets are set to be the biggest area of growth in consumer electronics in Iran we caution that limited 3G service in Iran 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 has exclusive rights to offer 3G services until 2014. **MCI** and **MTN Irancell**, the country's two major operators with a combined market share of almost 99%, are still operating on 2G EDGE and GPRS networks with maximum download speeds of 60Kbps. Most high end smartphones use nano-SIMs and **BMI** believes MCI and Irancell will probably not adopt nano-SIM technology on their networks until they can launch 3G services. This means there will likely be very limited scope for usage of high end smartphones until late 2014 or 2015.

Effects Of Trade Embargo

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 US consumer electronics company **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 by using foreign email accounts and gift cards.

While 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, which is believed to be part of international sanctions over the country'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.

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 in 2014.

In 2012, the US-led push for tighter sanctions on Iran appeared to be intensifying, making it more difficult for multinational vendors to do business in the country. The US National Defense Authorization Act (NDAA) which took effect in January 2012, imposes sanctions on companies trading with Iran 60 days after its enforcement. This means that companies exporting to Iran after early March could expect consequences in terms of their business with the US. Among others, South Korean vendors have felt an impact, with reports in early 2012 of Samsung and **LG** posters in Tehran being torn down.

Meanwhile, other companies, such as telecoms equipment vendor **Nokia Siemens Networks**, have announced that they will not take on any new business in Iran, as of January 2012. More surprisingly, Chinese mobile communications products vendor **Huawei** has also said that it would not take on new customers in Iran, and will limit business activities with existing customers. This reflects the importance of the US market to Huawei. However in 2012 Huawei was at the centre of controversy when it was alleged that one of its Iranian partners had tried to sell embargoed American antenna equipment to an Iranian mobile phone operator.

In early January 2013 Rwandan IT services provider **Skycom Tech** was accused of planning to supply US computer manufacturer **HP's** technology to a mobile communications firm in Iran. The firm in question is a partner of Chinese consumer electronics company Huawei, and may be charged with breaking US trade sanctions with Iran. Huawei has denied any involvement with Skycom Tech's bid.

There has been an increasing tendency for Iran to move away from US dominated IT and consumer electronics industries. This was further demonstrated in December 2012 when 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 Persian-speaking users. The website serves as an alternative to **YouTube**, which was

banned in the country in mid-2009 as its content is considered inappropriate by the Islamic regime. 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.

South Korean banks have voluntarily followed the US government's actions and virtually stopped all financial transactions with Persian banks. Leading South Korean electronics vendor Samsung initially said it did not expect its business in Iran to be affected, as the company sends money to its Iran operation through banks in Dubai. However, in June 2012, South Korea imposed curbs on electronics exports to Iran, to reduce its risk of payment defaults as Western sanctions disrupt Iranian oil exports. The South Korean move, which means that new deals will be approved only if payment terms are within 180 days, highlights the growing risk of doing business with Iran.

Even if vendors are not directly affected by the sanctions however, they must contend with other challenges presented by the Iranian channel including credit risk and the small-scale nature of most local retailers. Perhaps inevitably the embargo has helped encourage large-scale piracy, which undermines vendors, as well as government attempts to encourage domestic manufacturing of products such as mobile handsets. The total value of goods smuggled into Iran has been estimated at between US\$2 to 4bn a year, with electronics goods from Dubai being a significant component.

There has been strong speculation that Iran's Revolutionary Guard Corps 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 US\$12bn, with the Revolutionary Guards understood to control a large part of that.

The Revolutionary Guard's involvement dates back to the end of the Iran-Iraq war when the government approved a plan for the Guards to open companies. Free trade areas were established in the islands of Kish and Qeshm, across the Gulf from Dubai, which were the source of many TV sets, radios and other electronics products entering the country. There have also been reports of illegal ports in Southern Iran, and gates at Tehran's airport operated outside of Custom's control.

Market Characteristics

Growth in Iran's consumer electronics market is being driven by fundamental demographic trends. Overall population growth may have eased to around 1.2% annual growth, but owing to the demographic curve, the population entering the work force is rising by about 3% a year.

In the past decade, Iran has seen the emergence of a new generation, which has grown up with the internet and satellite television and is increasingly aware of global consumption trends and foreign brands. Iran's population has also become more urban, with around two-thirds of the population now living in cities, up from 47% in 1976.

Iran is also a youthful country, with at least 40% of the population is believed to be under the age of 30. Nearly two-thirds of the country's population is aged 39 or younger. In 2009 there were 15.5mn households in Iran with an average of 4.8mn persons per household. By 2014 it is estimated there will be 13.8mn households with an average of 5.7 persons per household.

Tehran is Iran's largest consumer electronics market and a number of souks spread across the city specialise in various products. However, there are other major regional centres in 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 town and cities to buy consumer electronics goods, particularly foreign brands. Four major provinces make up around 40% of Iran's population in what is the third most populous country in the Middle East, after Egypt and Turkey.

Perhaps because of the youthful 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 country has a higher purchasing-parity adjusted GDP than either Egypt or Turkey. However, the market remains price sensitive, with per capita GDP of US\$4,950 and US\$11,478 (PPP).

Investment in telecommunications infrastructure in Iran 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 affecting the market. In 2006, Tehran imposed a 60% tariff on imported handsets, which represented a sharp raise from a level of just 4% previously. The purpose of the move was to support domestic manufacturing and encourage foreign vendors to invest in Iranian 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 also 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 with **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 the country lacked the ability to meet domestic demand. By some analyses, the effective tariff rate on mobile handsets in the past two years, due to various loopholes and exemptions, may have been more in the region of 20%. 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 alike is 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 the Iranian market. 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 the Iranian market as coming within their purview, although they cannot actively promote sales to Iran or conduct marketing. However,

the grey nature of Iranian market sales can land companies in trouble. Recently, HP received criticism following reports of the mass availability of its printers in Iran through distributor **Redington**. Vendors may be reluctant to expose themselves to similar bad publicity in future.

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) affect on the willingness of vendors to invest in Iran. **Daewoo Electronics** is just 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, Iran's government endorsed a bill that would sanction foreign companies doing business with Israel, in the face of the 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 stood to potentially affect companies such as Samsung and other vendors involved in the Iranian market.

There are also cultural sensitivities to navigate in a culture whose intrinsic paranoia has been exacerbated by what is seen as international bullying in the form of sanctions. In early 2012, Iran authorities looked set to ban all Samsung products from the country 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 they withdrew the order after the South Korean embassy protested.

Future Prospects

Iran is generally considered to be the largest market in the region, but there is some suggestion that 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 about the market, it is notable that 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, in the last couple of years.

Significance To Vendors

As described above, 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 represents a big opportunity, but also a challenge due to the complex nature of the local channel. The import tariffs hikes have also had a big effect. Perhaps due to these difficulties, Iran has sometimes been perceived as a market where vendors, or their distributors, offload old stock.

Iran dominates regional exports from Dubai, which is the hub for regional consumer electronics trade. About 40% of Dubai trade is accounted for by re-exports and since the 1980s Iran has emerged as one of the major destinations. According to data released by 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 slower than the 28% annual average growth of total exports. In H108, statistics from the Dubai World's Statistics Department showed that Iran topped the list of re-export destinations for goods in the electronics category. However, in Q308 Iran was overtaken by Saudi Arabia as the key destination for all re-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 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. For example, 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 the country in the same way as in the UAE or Saudi Arabia.

This fragmented channel means higher prices for Iranian 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 such as Mashhad and Tabriz 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 of more structure in the retail channel. Three larger government-owned retailers, **Refah**, **Ekta** and **Shahrvand**, have recently expanded their consumer electronics ranges and offerings. There was speculation that **Carrefour** would open more outlets in Iran in the near future; reportedly it could open as many as 14 stores in the country by 2012. Meanwhile, 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 has 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 that of 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.

Such 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 in the country and one that is sometimes mentioned in reports investigating Iran's alleged weapons of mass destruction programmes. The firm now 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 Iranian government has taken steps to encourage domestic production of products for which there is sizeable domestic demand, notably mobile handsets. Secondly, several 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 February 2010, the Iranian government announced that it paid some US\$4.09bn from the Forex Fund reserves as a capital fund to support domestic producers in key sectors. The facility was made available to 904 manufacturing units, with companies in the electronics sector among the recipients. The establishment of the fund followed a cabinet directive in mid-June 2009 that US\$5bn should be allocated to help expand domestic industries.

AV

Iran's AV device production capacity is growing in scale and sophistication. In 2010, a production line for the production of super-slim LED TVs was inaugurated in Ahvaz in the Khuzestan province for the first time in the country.

The local industry started to develop in the 1990s with the first LCD projector, from Sharp, being manufactured in 1991 and the first CRT monitors in Iran from LG in 1993. 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.

In February 2010, Sharp launched a LCD TV assembly plant in Iran, in partnership with Maadiran Group. The new facility, which will make digital TV sets with screen sizes of between 32" and 55", marked a new stage in a cooperation between Sharp and Maadiran that dates back to 1964. The official opening of the plant was attended by Iran's Minister of Industry.

Mobile Handsets

Mobile handset production is a government priority but remains small in relation to the size of the market. However, production is expected to expand steadily in 2011/2012 with local industry estimates that local

handset manufacturing reached five million units in the year through 2012. The industry hopes that this level of production will have an impact on demand for smuggled goods and low-cost Chinese brands.

Despite LG's investment, the government recently admitted that the results of its drive to create a major handset production base in Iran 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. At the same time, 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 the Iranian market 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 just go for products they see and like and stock up, without really specialising in particular areas.

Certainly 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 onto 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 decreasing in significance somewhat 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 Pakistan and Afghanistan borders or from the north via Turkey by way of Iraq.

Meanwhile, 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.

The lack of vendor-led development has had a big effect on the channel's health in the long term, and vendors rely on distributors for marketing and promotional strategy. Many vendors are also wary of accepting payments from local banks, although vendors such as LG and Samsung with a significant local presence are understood to be more willing to do this.

Table: Iran Distributors For Leading Brands

Samsung	HP	Sony	LG	Daewoo
Samsung Electronics	Redington Gulf*	Pars	Maadiran	Parcon Electronics

Source: BMI

Regulatory Development

Digital Broadcasting Migration Under Way

The transition from analogue to digital broadcasting has been chosen as the major reform to be carried out in the media sector. Iran launched its digital migration in 2010, and in 2011 the 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.

Meanwhile, the reform also continued to be implemented at a local level in various regions, reaching a number of townships. 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.

Iranian Internet Controls Grow

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

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 any time soon and will, to some extent, affect the demand for more high-end devices for consumers that can afford them and find a way to bring them into the country.

Local Production Of Mobile Handsets

The Iranian government has renewed calls to strengthen local production of mobile phones to ensure that the domestic market is not dominated by foreign vendors. An official of the Ministry of Industries and Mines 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 2009 the tariff for import of mobile phones was lowered to 25%, in an attempt to discourage smuggling, but the results were understood to have been limited. Despite the smuggling issue, however, the government is still proceeding with plans to develop local production.

New Mobile Operator

In November 2011, the third Iranian mobile phone operator, **RITEL**, was officially launched in Tehran and with this development customers should receive a boost from increased competition. In April 2010, **Tamin Telecom** had been formally awarded a licence to provide 2G and 3G mobile telecommunications services in Iran after securing a joint concession in December 2008 at a cost of US\$399mn. Tamin Telecom 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 another year, to September 2014. **BMI** believes the operator's subscriber base gives it third place in the market behind MCI and MTN Irancell.

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. In qualitative terms, the government wants to encourage the development of electronic services such as e-government, e-health, e-commerce and e-learning. To this end, 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.

Competitive Landscape

Due to sanctions imposed by the US and its allies on Iran, the country's consumer electronics market is unique from most, in that it is large grey market. Aside from the three major supermarket chains, Carrefour spin-off **Hyperstar** and local **Refah** and **Shahrvand**, BMI believes the large majority of electronic devices in Iran are sold in small shops owned by individual traders. In Tehran, the most of these shops are concentrated in the Capital Computer Complex in Tehran, where more than 350 traders sell devices to an increasingly tech-savvy population. According to the CEO of RadanMac, despite US sanctions on Iran, by 2013 there were approximately 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 BoulevardTehran;Sepidan StreetShirazIran
Company History	Hyperstar first launched in Iran in October 2009. Hyperstar 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, whose consumers had until then been served by individually owned small shops. When the first location opened in Tehran, MAF reported that the store had an average of 10,000 visitors a day. In 2009, the Financial Times reported that Dubai's MAF invested US\$60mn into Iran's first Hyperstar, and planned to expand to 15 branches by 2015. By 2013, MAF stated on its website that there were three Hyperstar superstores in Iran, of which one was in Tehran and another in Shiraz.
Products And Services	Based on the Carrefour model, Hyperstar sells everything from food, to home decoration, clothing and electronics. In the electronics section, Iran's 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	During 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 it Iranian operations during the year ended December 2012. This was down from net profits of AED49.9mn in December 2011. 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 (US\$716mn) 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 OfficeNo. 19 Shahid Sarparast St.West Taleghani AveFelestine SquareTehran
Company History	Refah is a supermarket chain established in 1995 with approximately 160 branches throughout the country. Though smaller than hypermarkets such as Carrefour, 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. As well as local brands, Refah sells 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

Company Profile

Maadiran Group

Company Overview The 100% privately owned Maadiran Group is one of Iran's largest consumer electronics and IT firms. The group 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 started to export its locally manufactured products to other markets in the Middle East, particularly LG monitors.

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 14 wholly owned service centres and 22 distribution centres nationwide, and a total of 6,902 outlets with 1,799 dealers and 5,103 sub-dealers. It also has 447 official service centres.

Maadiran Group serves as sole exclusive distributor for a number of brands in the Middle East and CIS countries. The company's first exclusivity deal was signed with Sharp in 1964. Besides the products it manufactures on licence, Maadiran also 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.

2006 saw the launch of X-Vision, which the company claims is now the third largest LCD TV brand in Iran. In 2006, Maadiran produced what it claimed was the first domestically produced LCD TV set in Iran.

2008 saw the launch of MEVA, the group's computer peripherals, consumables and lifestyle brand. In 2009 the company claimed that the Iranian market share for MEVA in its product categories was 15%.

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 bank slip printer. LG is an important brand for Maadiran. In 2008, the company was targeting the production of 850,000 LG-branded LCD and CRT monitors and planned to increase its volume to 940,000 in 2009. Maadiran was also licensed to produce around 14,000 dot matrix printers for Epson annually.

In March 2013 Maadiran opened a new sales service centre, with a total area of 8,000m², across four floors. The centre will act as a repair facility, service hub call centre, customer care and training centre.

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. In 2008, the company claimed an average response time of one hour and 30 minutes. 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 the Iranian market, 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.

Meanwhile, Maadiran has gradually expanded its production operations, which began in 1994 when the company became the first Iranian CKD monitor producer, in the city of Hashtgerd, 80km outside Tehran. 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 stated its production capacity had increased dramatically to become the largest electronics manufacturing operation in the Middle East with its facility in Hashtgerd (80km from Tehran). It is able to produce 1.6mn DVB-T products (set-top boxes/USB devices) annually, 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.

Financial Data

In 2012/13 (fiscal year ending March 20) Maadiran reported a market share of 16% for LED/LCD TVs, 65% of the monitor market, 68% of set-top boxes/USB devices, 19% of inkjet printers, 98% of dot-matrix printers, 73% of copiers, 19% of notebooks and 5% of all-in-one PCs. No further updates have been released.

Electronic Industries (IEI)

Company Overview Established in 1973, IEI is presently one of the major producers of electronic systems and products in Iran. It has eight 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 maintains 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 the 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 & ICs)
- Electronic credit cards
- Multilayer, single & 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 US\$10mn.

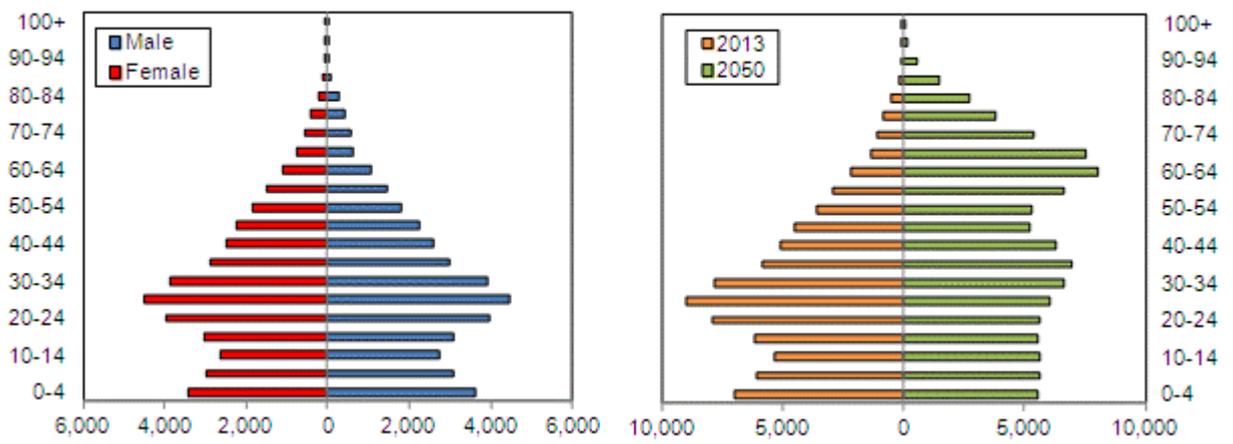
Demographic Forecast

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 key to understanding issues ranging from future population trends to productivity growth and government spending requirements.

The accompanying charts detail Iran's population pyramid for 2013, the change in the structure of the population between 2013 and 2050 and the total population between 1990 and 2050, as well as life expectancy. The tables show key datapoints from all of these charts, in addition to important metrics including the dependency ratio and the urban/rural split.

Population Pyramid

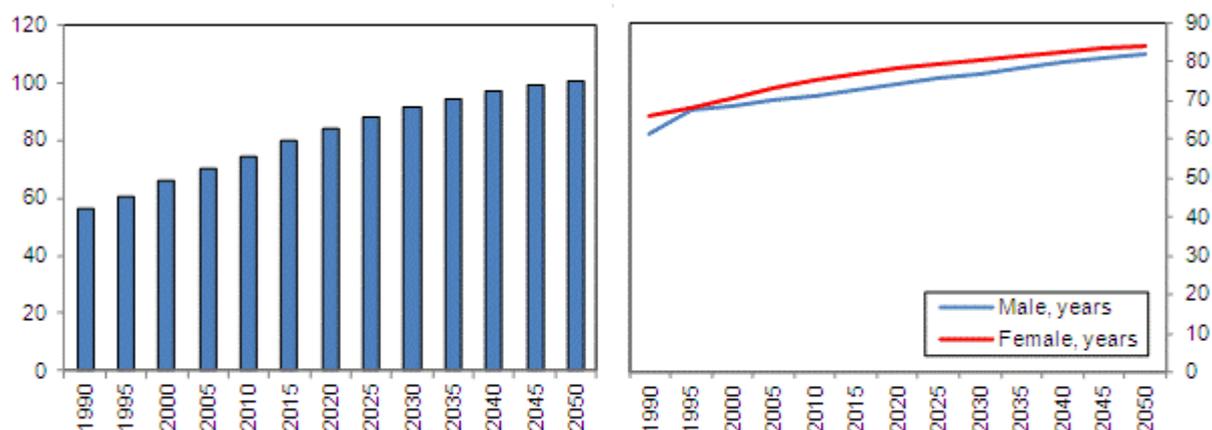
2013 (LHS) And 2013 Versus 2050 (RHS)



Source: World Bank, UN, BMI

Population Indicators

Population (mn, LHS) And Life Expectancy (years, RHS), 1990-2050



Source: World Bank, UN, BMI

Table: Iran's Population By Age Group, 1990-2020 ('000)

	1990	1995	2000	2005	2010	2013e	2015f	2020f
Total	56,362	60,468	65,911	70,152	74,462	77,447	79,476	84,149
0-4 years	9,313	7,568	6,317	5,484	6,556	7,034	7,146	6,751
5-9 years	8,906	8,983	7,552	5,477	5,416	6,046	6,507	7,117
10-14 years	7,325	8,837	8,981	7,155	5,613	5,357	5,488	6,494
15-19 years	5,823	6,885	8,801	9,248	7,216	6,124	5,644	5,467
20-24 years	4,698	5,222	6,932	9,143	8,994	7,904	7,068	5,596
25-29 years	4,054	4,429	5,316	6,859	8,705	8,978	8,727	6,998
30-34 years	3,536	3,901	4,443	5,202	6,521	7,789	8,485	8,650
35-39 years	3,031	3,393	3,886	4,693	5,210	5,858	6,497	8,410
40-44 years	2,123	2,888	3,372	4,113	4,833	5,057	5,263	6,431
45-49 years	1,621	1,956	2,857	3,421	4,033	4,495	4,758	5,193
50-54 years	1,527	1,469	1,930	2,801	3,245	3,605	3,896	4,665
55-59 years	1,393	1,396	1,431	1,767	2,638	2,933	3,110	3,788
60-64 years	1,140	1,265	1,322	1,336	1,640	2,159	2,500	2,986
65-69 years	899	995	1,146	1,258	1,279	1,379	1,551	2,340
70-74 years	507	717	826	1,056	1,130	1,129	1,143	1,369

Iran's Population By Age Group, 1990-2020 ('000) - Continued

	1990	1995	2000	2005	2010	2013e	2015f	2020f
75-79 years	269	344	509	654	803	858	877	902
80-84 years	136	147	203	347	413	482	528	598
85-89 years	49	56	66	113	173	198	217	290
90-94 years	11	14	17	22	39	54	64	85
95-99 years	2	2	3	3	5	7	9	16
100+ years	0	0	0	0	0	1	1	1

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

Table: Iran's Population By Age Group, 1990-2020 (% of total)

	1990	1995	2000	2005	2010	2013e	2015f	2020f
0-4 years	16.52	12.52	9.58	7.82	8.80	9.08	8.99	8.02
5-9 years	15.80	14.86	11.46	7.81	7.27	7.81	8.19	8.46
10-14 years	13.00	14.61	13.63	10.20	7.54	6.92	6.90	7.72
15-19 years	10.33	11.39	13.35	13.18	9.69	7.91	7.10	6.50
20-24 years	8.34	8.64	10.52	13.03	12.08	10.21	8.89	6.65
25-29 years	7.19	7.32	8.06	9.78	11.69	11.59	10.98	8.32
30-34 years	6.27	6.45	6.74	7.42	8.76	10.06	10.68	10.28
35-39 years	5.38	5.61	5.90	6.69	7.00	7.56	8.18	9.99
40-44 years	3.77	4.78	5.12	5.86	6.49	6.53	6.62	7.64
45-49 years	2.88	3.23	4.33	4.88	5.42	5.80	5.99	6.17
50-54 years	2.71	2.43	2.93	3.99	4.36	4.65	4.90	5.54
55-59 years	2.47	2.31	2.17	2.52	3.54	3.79	3.91	4.50
60-64 years	2.02	2.09	2.01	1.90	2.20	2.79	3.15	3.55
65-69 years	1.59	1.65	1.74	1.79	1.72	1.78	1.95	2.78
70-74 years	0.90	1.19	1.25	1.50	1.52	1.46	1.44	1.63
75-79 years	0.48	0.57	0.77	0.93	1.08	1.11	1.10	1.07
80-84 years	0.24	0.24	0.31	0.50	0.55	0.62	0.66	0.71
85-89 years	0.09	0.09	0.10	0.16	0.23	0.26	0.27	0.34
90-94 years	0.02	0.02	0.03	0.03	0.05	0.07	0.08	0.10
95-99 years	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.02

Iran's Population By Age Group, 1990-2020 (% of total) - Continued

	1990	1995	2000	2005	2010	2013e	2015f	2020f
100+ years	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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

Table: Iran's Key Population Ratios, 1990-2020

	1990	1995	2000	2005	2010	2013e	2015f	2020f
Dependent ratio, % of total working age	94.7	84.3	63.6	44.4	40.4	41.1	42.1	44.6
Dependent population, total, '000	27,416	27,664	25,621	21,569	21,427	22,544	23,530	25,965
Active population, % of total	51.4	54.3	61.1	69.3	71.2	70.9	70.4	69.1
Active population, total, '000	28,946	32,805	40,290	48,583	53,035	54,903	55,946	58,184
Youth population, % of total working age	88.2	77.4	56.7	37.3	33.2	33.6	34.2	35.0
Youth population, total, '000	25,543	25,388	22,850	18,116	17,586	18,436	19,141	20,363
Pensionable population, % of total working age	6.5	6.9	6.9	7.1	7.2	7.5	7.8	9.6
Pensionable population, total, '000	1,872	2,276	2,770	3,454	3,842	4,108	4,390	5,602

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

Table: Iran's Rural And Urban Population, 1990-2020

	1990	1995	2000	2005	2010	2013e	2015f	2020f
Urban population, % of total	56.3	60.2	64.0	67.6	68.9	69.4	69.7	70.6
Rural population, % of total	43.7	39.8	36.0	32.4	31.1	30.6	30.3	29.4
Urban population, total, '000	31,749	36,424	42,211	47,394	51,333	53,726	55,362	59,374
Rural population, total, '000	24,613	24,045	23,700	22,759	23,129	23,722	24,114	24,774

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

Methodology

Industry Forecast Methodology

BMI's industry forecasts are generated using the best-practice techniques of time-series 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, which 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.

We mainly use OLS estimators and in order to avoid relying on subjective views and encourage the use of objective views, we use 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:

- R^2 tests explanatory power; adjusted R^2 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);
- All results are assessed to alleviate issues related to auto-correlation and multi-collinearity.

BMI uses the selected best model to perform forecasting.

Human intervention plays a necessary and desirable role in all our industry forecasting. Experience, expertise and knowledge of industry data and trends ensure that analysts spot structural breaks, anomalous data, turning points and seasonal features where a purely mechanical forecasting process would not.

Sector-Specific Methodology

Consumer Electronics forecasting is complicated due to the fragmented nature of the market, with little transparency of vendor data and low apparent agreement between many sets of figures in terms of market definition, base and methodology. Individual variables taken into account in creating each forecast include:

- Economic context, and GDP and demographic trends;
- Technological developments, and diffusion rates;
- Underlying demand trends;
- Telecommunications market developments
- Projected GDP share of industry;
- Maturity of market structure;
- Regulatory developments and government policies;
- Exogenous events.

Estimates for each industry segment are calculated using government statistics, where available, and our own macroeconomic and demographic forecasts.

Sources

Sources used in electronics reports include national ministries, statistics agencies, ICT regulatory bodies, national industry associations, officially released company results and figures and international and national industry news.

Risk/Reward Rating Methodology

BMI's Risk/Reward Ratings (RRR) provide 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 RRR 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)
- Country 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)
- Country 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 industry and country risks, or industry 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 Rating 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: Consumer Electronics Risk/Reward Ratings Indicators

Indicator

Rewards

Industry Rewards

Consumer electronics sales, US\$m

Sales per capita, US\$

ICT development

Growth, %

Country Rewards

Urban/rural split

Young population

Richest 10%, % of total

GDP per capita, US\$

Risks

Industry Risks

Barriers to entry

Government consumer electronics policies

Consumer Electronics Risk/Reward Ratings Indicators - Continued

Indicator

Country Risks

Short-term economic risk

Real PC growth, volatility

Short-term financial risk

Trade bureaucracy

Institutions

Source: BMI

Weighting

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

Table: Weighting Of Indicators

Indicator	Weighting (%)
Rewards	70, of which
Industry Rewards	65, of which
Consumer electronics sales, US\$mn	50
Sales per capita, US\$	16
ICT development	16
Growth, %	16
Country Rewards	35, of which
Urban/rural split	25
Young population	25
Richest 10%, % of total	25
GDP per capita, US\$	25
Risks	30, of which
Industry Risks	40, of which
Barriers to entry	10
Government consumer electronics policies	10
Country Risks	60, of which
Short-term economic risk	10
Real PC growth, volatility	10
Short-term financial risk	10
Trade bureaucracy	10
Institutions	10

Source: BMI

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