

ELECTRONICS SECTOR

Sector Overview

The growth of the Turkish electronics industry is deeply embedded in the structure and success of Turkey's industrial revolution. The country has developed from an exporter of agricultural products to a major contributor to the clothing, consumer durables and automotives in European markets. In the last of these, the role of electronics is critical and Turkey has been developing rapidly its use of them. But Turkey is a user of components – for inclusion in goods to be sold in Turkey or exported – more than a producer of them. Over 95% of the electronic components used by the Turkish manufacturers are imported.

The Turkish electronics sector started with the assembly of imported components in the 1960s and took off in the 1980s. It has grown to become an industry manufacturing \$8.1 billion of goods in 2005, importing \$10.8 billion worth of goods and exporting \$4.4 billion. These figures include consumer and defence electronics, and office and telecommunications equipment.

The growth of the telecommunications industry has been supported by proper and consistent long-term policies, which started from 1965, and focused on developing the industry's research capability in collaboration with Northern Telecom of Canada. For its part, demand for consumer electronics was stimulated by the start of colour television broadcasting in 1982, and the expansion of the area receiving broadcasts. Private channels began to develop as of 1990s, increasing demand for colour TV receivers at the expense of demand for the video players that had been popular in the 1980s.

The most important event for the sector was the launch of two GSM networks in 1994 and 1995. This has led to a rapid expansion in GSM penetration, with 26 million subscribers as of end-2002 and about 43 million as of end-2005. The emergence of Turkey as a production base for automotive and white and brown goods became another factor to trigger the electronics market.

Market Size

The electronics market was worth \$14.5 billion in 2005. This figure includes components, consumer electronics, telecommunications, professional and industrial equipment, defense and information technology, but do not include white goods or automotives.

The market has grown fast in the last decade, showing the same volatility as the economy as a whole, and exports being of increasing importance. The economic crises of 2000 and 2001 halved demand by 40% and hit hard production and imports, taking both down to 1997 levels. Demand dropped from \$8.1 billion in 2000 to \$4.9 billion in 2001 and 2002. The slump in the domestic market was mitigated by a slight increase in exports, from \$1.4 billion to \$1.5 billion. The demand, however, has pulled up since 2002 – to \$6.7 billion in 2003 and \$14.5 billion in 2005. Likewise, exports increased from \$2.4 billion in 2002 to \$4.4 billion in 2005.

TURKISH ELECTRONICS SECTOR, 2000-05				
\$, million				
	Production	Imports	Exports	Demand
2000	2.910	6.577	1.391	8.095
2001	2.298	4.118	1.515	4.901
2002	2.663	4.485	2.411	4.737
2003	3.544	6,045	2.833	6.756
2004	6.814	8.940	4.029	11.725
2005	8,150	10,835	4,445	14,540

Source: TESID (The Turkish Electronics Industrialists Association)

The sector is led by consumer electronics which accounted for 58% of overall electronics production and 69% of exports in 2005. About 95% of consumer electronics production comes from TVs, but output of satellite receivers and DVD players is growing. Audio-video cassettes, once the second leading product group following TVs, have been in decline. Between 2000 and 2005, components subsector demand grew by 76% to reach \$2.1 billion and component imports rose by 40% to \$1.98 billion.

The ratio of exports to imports is low in all subsectors except consumer electronics, where Turkey has had a particular export success.

BREAKDOWN OF DEMAND, 2000-05						
\$, million						
	2000	2001	2002	2003	2004	2005
Components	1,219	1,076	1,460	1,787	2,431	2,149
Telecommunications	2,895	1,180	805	971	2,282	2,826
Professional&Indus. Equip.	1,216	1,126	935	1,337	2,332	3,777
IT	1,596	912	1,062	1,523	1,930	2,699
Consumer Electronics	1,130	580	256	890	2,371	2,690
Defense*	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total	8,095	4,901	4,737	6,756	11,725	14,540

Source: TESID
**: Defense imports are not provided by Tesid. "Total"s in this table are calculated as per the totals provided in the other tables above.*

Production of consumer electronics has grown impressively since the late 1980s. The Turkish producers of televisions and other brown goods – Arcelik, Beko, Profilo Telra and Vestel – are rapidly developing to become of world-scale. Unstable local demand has forced manufacturers to become export-oriented. They have met international quality-assurance standards and established good distribution channels in their export markets. They were assisted by the Customs Union agreed with the EU in 1996. Turkish producers have so far fought off allegations of dumping on the European markets. Turkish electronics firms have gone more global in scope. Arçelik made new investments in 2002 including the purchase of Brandt's Bloomberg factory in Germany, and the Electra Bregenz company of Austria with its two brands Bregenz and Triola. Arçelik has also acquired the UK brands Leisure and Flavel and SCArctic of Romania. It plans further investments in Eastern Europe and has recently started an €58 million investment in Russia to produce refrigerators and washing machines in 2006. Meanwhile Beko is looking to Eastern Europe, India and Far East for new plants. Beko has bought Grunding and Profilo Telra has been producing Philips branded TV sets in

Turkey since 2002. In July 2005, Beko announced its plans to transfer one of its TV production lines to Russia to establish a 700,000 units/year facility. Vestel built a TV manufacturing plant with an annual production capacity of 1 million in Russia in 2002 and a \$30 million refrigerator and washing machine plant in 2005 to double the TV production capacity to 2 million at its Russian operation. In addition, the company announced plans to set up an assembly line in India to meet the demand for low-cost Vestel TVs and is developing plans to produce in China. Ekinciler, the connector and cable harness producer, has also set up a production facility in Russia.

TV set manufacturers forecast consolidation in the Turkish market, among both manufacturers and importers as well as substantial changes in the distribution channels. Imported brands used to be preferred over local brands despite limited after-sales service but Turkish brands have now won respect.

BREAKDOWN OF PRODUCTION, 2000-05						
\$ million						
	2000	2001	2002	2003	2004	2005
Consumer Electronics	1,480	1,083	1,421	2,211	4,293	4,725
Telecommunications	624	503	452	412	975	1,250
Professional&Industrial	255	215	230	280	460	965
IT	200	205	215	236	427	460
Defense	215	204	240	278	433	450
Components	136	88	105	125	225	300
Total	2,910	2,298	2,663	3,544	6,814	8,150

Source: TESID

Foreign Trade

Though Turkey has a flourishing consumer electronic sector, it is weak in components and industrial electronics. In 2005, imports rose by 21% (to \$10.8 billion) and exports rose by 10.3% (to \$4.4 billion). In 2004, corresponding growth rates were 48% and 42%, respectively. About 69 % of exports was accounted by consumer equipments and 17% by telecommunication equipments, while the biggest share in imports belonged to professional and industrial equipments by 29%, followed by telecommunications equipments by 21.5%.

All segments of the electronics industry are highly dependent on imports: In 2005, the components sector met 92% of the demand through imports, while import dependency changed between 83 and 85% in the computers and other professional & industrial equipments. The increase in imports had been driven by booming demand for mobile handsets starting from 1994 when GSM was introduced. Manufacturers of consumer equipments put strategic emphasis on plasma and LCD TVs to by-pass dependency on imported picture tubes.

The export orientation of the sector is striking in consumer and defense electronics. Türk Telekom and the Turkish Armed Forces have long incubated, collaborated with and procured from local telecommunications and defense companies. Only the consumer electronics sector is the product of private sector initiative. Turkish TV producers, namely Beko (Koc Group), Vestel (Zorlu Group) and Profilo Telra, have obtained 15% of world market and over 60% of the European market. Large production capacities, which help reduce fixed costs and provide bargaining power in

material procurement, are a key factor behind the Turkish companies' success. In addition, low labor costs, a wide product design range, and good logistics also help sustain Turkish manufacturers against competition from their European and Far Eastern competitors. Transportation is the biggest advantage of the Turkish TV manufacturers against the Chinese TV makers.

On the other hand, the local telecommunications sub-sector, because it was oriented to the needs of PTT/ Türk Telekom, long lagged behind other segments in exports. In 1991, only 9% of telecommunications production was exported. In the 1990s, as Türk Telekom reduced its purchases, manufacturers were driven to find new markets, exporting 61% of their output in 2005.

BREAKDOWN OF FOREIGN TRADE, 2003-05						
\$ million						
	Imports			Exports		
	2003	2004	2005	2003	2004	2005
Components	1,735	2,310	1,983	72	104	133
Consumer elect.	617	992	1,051	1,937	2,913	3,085
Telecom. equipment	1,096	1,911	2,340	537	603	764
Other prof.&industrial	1,260	2,183	3,163	203	310	351
Defense	-	-	-	50	56	53
Computer	1,335	1,544	2,297	32	42	58
<i>Total</i>	<i>6,045</i>	<i>8,940</i>	<i>10,835</i>	<i>2,833</i>	<i>4,029</i>	<i>4,445</i>

Source: TESID

Prospects

The Turkish electronics sector is far from being saturated. The young population of the country and ever- growing urbanization rate coupled with low penetration rates (26% in fixed line telephone services, 55% in mobile telecommunications and approximately 14%in internet) in all the sub sectors of the electronics industry adds to the market potential.

Additionally, having obtained a market share of between 15-20% yet, the Turkish producers of consumer equipments are optimistic about further export growth. Some TV manufacturers expect strong growth in exports particularly after 2006. Meanwhile, international white and brown goods and automotive manufacturers eye Turkey as an alternative production base. These factors, coupled with positive developments in the IT and telecommunications sectors, are expected to enhance the competitiveness of the Turkish electronics industry in the medium term.

Turkish manufacturers of consumer equipments are very much dependent on component imports – mostly from the Far East. Overall 90% of raw materials are imported, and about 80% of these raw materials are not produced at all in Turkey. Co-operation between these producers on component specifications could allow investments in production facilities large enough to command the necessary economies of scale. Both in this area and in other areas there is good scope for collaboration between Turkish and European firms.

The factors which will increase the dynamism of Turkey's electronics sector are as follows:

- ✓ The Turkish producers of televisions and other brown goods - Arçelik, Beko, Profilo Telra and Vestel - are rapidly developing to become of world-scale. The Turkish producers of consumer equipments are optimistic about further export growth. The high growth prospects in the component demand by consumer durables has led some manufacturers turn to imports due to lack of sufficient local production capacity.
- ✓ International white and brown goods manufacturers are **relocating** and eye Turkey as an alternative production base. Far Eastern companies, including Pioneer and LG increasingly seek Turkish partners for joint production. The Chinese TV producer Konka has already started procing in Turkey and plans to move to its new premises worth \$100 million.
- ✓ **In automotive**, Turkey is one of the strong candidates together with Eastern European countries to become a production base. It is forecasted that a total 2.3 million automotive will be produced in this region in 2006, increasing to 3.8 million by 2010.
- ✓ Electronics manufacturers are now able to import, with either lower or no tariff rates, certain raw materials or intermediary inputs, after submitting the required documentation to the Turkish Standards Institute. This follows the entry into effect in January 2003 of the **suspension list**, which was prepared in cooperation with the EU aiming to increase competitiveness of domestic companies.
- ✓ The policies of the Turkish **Armed Forces**, sometimes in collaboration with TUBITAK, to support the Turkish electronics industry in reaching the required technological level to supply its critical security needs.
- ✓ The **Public Procurement** Law's allowance of a price advantage of up to 15% for local firms. Unless and until amended the definition of 'local' means that only Turkish firms without foreign partners will benefit from the advantage the law allows.
- ✓ In telecommunications, with the end of the monopoly of Turk Telekom in voice communication and infrastructure in January 2004, and its privatization in mid-2005, local and international investors have been investing in other forms of communication and developing plans for value added services. Licensing as regards long-distance telephone service was started in May 2004 and operators have been licensed. Further, licensing regarding the fixed wireless access services, cable services, MVNO, etc are in progress.

- ✓ E-Transformation Turkey and e-government projects ² will create a lucrative demand for ICT companies, paving the way for large e-Government projects with large amounts of public funding and fueling internet use and content creation.
- ✓ The enactment of the Law on Electronic Signature, which took effect in 2004, and the draft Law on the Electronic Communications will enhance e-commerce and e-government applications. The first three institutions have been awarded authorizations as “electronic certificate service providers” and the first implementations have been launched.
- ✓ Government promises to support small and medium enterprises, which in turn may create demand especially for the IT products and services. There are approximately 3 million SMEs in Turkey and, an estimated 90% have no IT infrastructure. This also creates an unsaturated potential market for the IT sector.

Against this, there remain some problems in the implementation of laws to protect intellectual property, insufficient R&D capability and a high dependency of imports of the raw materials required for components and of the components themselves. State institutions such as TUBITAK and the State Planning Organization have long identified measures required to encourage the R&D base of the electronics industry, but implementation of such measures has been mixed.

² Comprising 73 actions, the e-Transformation Turkey Project Short Term Action Plan was put into effect in 2003. The major component of this is the e-government, which was launched in January 2003 with MERNIS, the Central Birth Registry Processing System.

In the field of **e-government**, Turkey has instituted a number of projects designed to increase the share of the population who use Internet for public services from the 3% determined by the National Productivity Centre in 2003 closer to the 10-20% range applying in western Europe. In addition to MERNIS, other areas of e-government include land registry, pharmaceutical prescriptions, vehicle taxes, and the automation of tax offices and Ministry of Justice records. In order to realize these objectives and to ensure the success of the project, a new coordination unit, Information Society Department, within SPO was established. The government is encouraging foreign direct investment into the sector. It also aims for Turkey to become a service provider for outsourcing.