Strengthening Science and Technology Policies for SME Development in Turkey

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Opportunities for Private Sector Involvement

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PREFACE

The past years have marked a period of intense activity and change in Turkey. Following the financial crisis in 2001, and the elections in 2002, Turkey has managed to turn the tide of political and economic volatility to the current situation of relative stability and improved performance in a number of areas. GDP growth is up while inflation is down, and the conditions for doing business have been ameliorated. At the same time, changes in the global environment and rigorous requirements of a future EU accession have necessitated a greater focus on enhancing innovation and securing long-term competitiveness in the Turkish economy.

The rising importance of being able to access, transform and exchange knowledge, coupled with Turkey's priority of becoming a member in the European Union, has led to a number of assessments and reviews of Turkey's situation in regards to innovation policies – and their impact on firms' ability to innovate and grow.

In mid-2003, following a series of initial discussions on this issue, IKED initiated a review of innovation and technology policies, and their impact on small and medium-sized enterprise (SME) development, in Turkey.[1] This project, "Strengthening Innovation and Technology Policies for SME Development in Turkey", aims to strengthen the conditions for the development of knowledge-based enterprises, and improve the foundation for an innovative and internationally competitive business sector in Turkey.

This report represents the results from the first year of work carried out by IKED including describing Turkey's current position relative to other countries in the region, identifying the key challenges to promoting innovation in the economy – particularly in the development of innovative SMEs, and highlighting specific actions where the private sector has the opportunity and is called upon to take a more active role.

The purpose of this report is to serve as a basis for discussion, primarily with Turkish private sector organisations, in order to agree on the key priorities for action to support innovation in Turkey and to identify initiatives where these organisations can help catalyze change going forward.

The authors would like to thank both the project sponsor, the Union of Chambers and Commodities Exchanges of Turkey (TOBB), as well as numerous other organisations in Turkey who have provided both inspiration through their ongoing work and valuable input to this report, in particular the Turkish Technology Development Foundation (TTGV), the Turkish Industrialists' and Businessmen's Association (TÜSIAD), the Turkish Foundation for Small and Medium Business (TOSYÖV), Competitive Advantage Turkey (URAK), the first Innovation Relay Centre in Turkey (IRC-EGE), the Small and Medium-sized Industry Development Organisation of Turkey (KOSGEB) and the World Bank.

[1] The project "Strengthening Innovation and Technology Policies for SME Development in Turkey" was initiated in May 2003 through a Steering Group Meeting conducted with leaders at the Union of Chambers and Commodities Exchanges of Turkey (TOBB).

EXECUTIVE SUMMARY

The last half century has seen a far-reaching transformation of Turkey that has been accompanied by a significant strengthening of economic development and social well-being. However, today, Turkey finds itself at a critical juncture. The growing weight of, and policy emphasis on, innovation and knowledge as drivers of competitiveness and growth brings major opportunities – also for countries that are generally not considered to be at the forefront of knowledge creation or innovative capacity. Turkey's drive for membership in the European Union – where innovation is viewed as a key to long-term competitiveness in the region – promises further gains in terms of economic growth, political stability, and private sector performance. However, none of these processes are certain to be completed, or to bring the alleged gains, unless focus and momentum are maintained and appropriate action undertaken.

In light of overriding structural changes underway, Turkey's future prosperity and welfare will crucially depend on the ability of its citizens, companies and institutions to be able to generate, access, and utilize knowledge and information. Turkey has a clear possibility to rise to the challenges and seize the opportunities emerging with a globalised, knowledge-based economy and thus ensure a continued amelioration in the well-being of its people. Alternatively, if the necessary conditions are not put in place, Turkey faces the very real risk of falling behind, and thus seriously endangering the progress achieved so far. This would happen at a time when its neighbours, partners and competitors in Europe, Middle East, Asia, and Latin America, among others, are rapidly putting in place the mechanisms for reaping the benefits of the knowledge-based economy. A slow-down or failure to establish the appropriate framework conditions for a knowledge-based economy would neither aide Turkey's prospects being on its own, nor facilitate its regional and economic integration with the European Union.

Turkey's current position relative to other countries in the region…

Turkey has made great strides at improving both its political and economic systems. Although there are a number of areas still to be resolved (as enumerated in the latest European Commission report on Turkey's progress to accession in October 2004), the improvement trends and level of dynamism on both the political and economic fronts stand out when compared to other European neighbours.

Economic and political stability, as well as ensuring a level playing field, are prerequisites for building an environment in which individuals, firms and other actors, both foreign and domestic, are willing to invest in Turkey's future. However, improvement in these areas – while necessary – is not a sufficient condition for ensuring Turkey's future prosperity and transition to the knowledge-based society. Turkey must also succeed in addressing a number of challenges on the micro level. Areas such as R&D investment, the knowledge intensity of manufacturing and trade, capital market development and internationalisation of the private sector are areas in need of urgent attention.

In general, Turkey is making strides in the area of innovation, proven by the positive trends in the European Innovation Scoreboard, yet is facing a challenging road ahead given its low starting position and the number of high priority concerns that remain to be addressed. The government is confronted with the added challenge of organising itself more effectively, as the current governance of innovation policy results in long lead times to reach consensus, confusion over areas of responsibility, and a discontented private sector. Public sector institutions need to define clearer areas of responsibility and create closer linkages with the private sector in order to better understand and address firms' needs and help them strengthen long-term competitiveness – both for individual companies and the country as a whole. In today's world, there are few 'independent

variables' or 'autonomous players'. Rather, the competitive advantage of a country is dependent on multiple, interdependent factors – not least of which its leaders' ability to act on issue areas in a coordinated and collaborative fashion. Governance of innovation policy needs to reflect this.

Key challenges to promoting innovation in the economy – particularly in the development of innovative SMEs…

There is a strong entrepreneurial culture in Turkey, and as in all other European countries, small and medium sized enterprises (SMEs) form the backbone of the private sector – representing by far the largest percentage of companies and employment in Turkey. The existence of a critical mass of innovative, internationally competitive SMEs that have the ability and willingness to grow will be a critical condition for Turkey's future growth and prosperity. SMEs play an important role in Turkey – fuelling the economic growth, providing flexibility, engaging in bridge-building between Turkey and the European Union, and promoting employment. However, despite this recognition, unfavourable framework conditions prevent SMEs from developing sufficiently. Official start-up rates of new businesses are very low in Turkey, in particular in and around the suburban areas, although it should be borne in mind that there are extensive activities in the informal sector and that lack of reliable entrepreneurial data further complicates comparisons in this field. Inadequate access to finance for entrepreneurial companies and weak international profiles among SMEs are identified as two of the main obstacles for securing a supportive SME environment in Turkey. Policy action is required in order to improve the business climate, especially for small firms.

Based on the preliminary analysis, IKED lists the following key challenges to innovation and SME development in Turkey:

- Forming a more coordinated and functional structure for innovation policy governance
- Improving the national ICT infrastructure
- Developing local/regional action plans for innovation
- Fostering better conditions for SME growth and entrepreneurial activity
- Strengthening the supply chain of financial sources and investors
- Facilitating foreign direct investment and strengthening absorptive capacity of the domestic economy from spillover effects
- Continuing to strengthen economic and political stability and rule of law
- Promoting increased awareness of and participation in EU Programmes on terms that balance opportunities for cross-broder knowledge flows and restructuring with the costs of growing administrative burdens

Turkey must address a number of challenges to strengthen its basis for innovation, competitiveness and growth. The situation calls for a national strategy and action plan to enhance innovation capacity, in which better conditions for SME-development and more active involvement by the private sector constitute critical elements.

Areas where the private sector has the opportunity to take a more active role…

The private sector (chambers of commerce, employer and trade associations, financial organisations, companies and family trusts) in Turkey offers a wealth of entrepreneurial drive, financial resources and strong leaders throughout the country. These assets should be levered, together with public policy action, to strengthen business conditions and growth prospects for

SMEs. In turn, stronger enterprises and closer constructive and transparent public-private sector collaboration aid innovation prospects and create a more appealing environment for foreign direct investment.

The private sector (through its chambers and trade associations) has the most-developed regional and local networks and is therefore best able to gauge the specific needs of companies – particularly the smaller companies which do not yet have a broad network themselves. The role of collecting and conveying companies' needs to the public sector in a systematic and structured way has high importance. It is this link that better enables the public sector to prioritise action areas, and strengthens the national innovation system.

The roles of analysts and mediators can be employed in many specific activity areas. Of greatest importance for private sector engagement and action are:

- Analysing and communicating the needs for SME financing and organising opportunties for entrepreneurs and investors (domestic and foreign) to meet/develop business relations
- Sponsoring and participating in entrepreneurship training/education programmes
- Determining priority areas for improvement in the business environment (legal and regulatory environment, fiscal incentives, etc.)
- Providing more up-to-date and relevant statistics in order to benchmark, track progress and evaluate various initiatives
- Raising awareness of enterprise development programmes, and the importance of innovation for economic growth
- Setting guidelines and highlighting "showcase examples" of entrepreneurship, good business practice, growing regional clusters, international linkages, etc.

Some organisations are already taking a leading role in these areas.[2] However, continued structured, and well-coordinated efforts are needed.

Given Turkey's accomplishments to date, its enormous potential, and strategic importance in both a European and global context, it is critical that Turkey's leaders focus policy instruments at addressing the main barriers to promoting the development of innovative companies. It is equally important to realize that these actions cannot be accomplished by any single actor alone – the public and private sectors will need to work together to tackle the macro, as well as the micro-level issues hampering their country's advancement and its acceptance into the European Union.

[2] TOBB has recently signed a memorandum of understanding with the World Bank for collaboration on the production of an Investment Climate Assessment. TOBB will conduct a survey of approximately 1000 enterprises concerning productivity and the investment climate, which will serve as a tool for analysis and policy dialogue between the private sector and government.

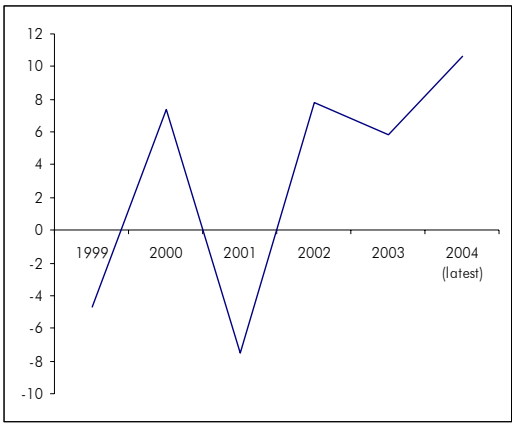
INTRODUCTION

Turkey's Improving Performance

Over the last half century, Turkey has managed a far-reaching transformation that has been accompanied by significant improvement in economic development and social well-being. In the words of Gürüz and Pak, in this period,

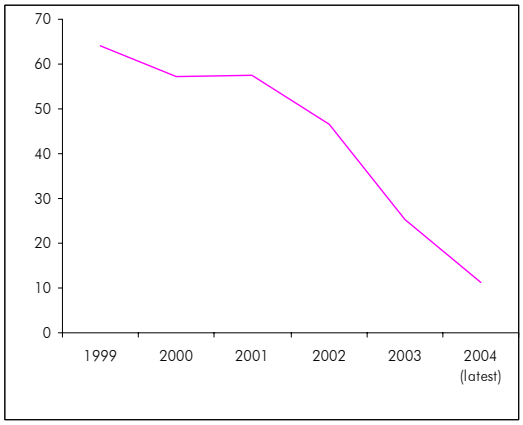
> *…Turkey has successfully transformed herself from an essentially agriculture-based, closed economy relying on import-substitution and with a predominantly rural population, to a relatively industrialized country with an export-competitive economy, predicated upon free-market forces and with a population the majority of which is now living in urban centres* (Gürüz and Pak, 2003, p.6).

Figure 1: GDP is volatile, yet stabilizing (% real GDP growth rate)



Source: European Commission (2004a)

Figure 2: Annual inflation rates are decreasing (% annual average inflation rate)



Source: European Commission (2004a)

According to the Human Development Index (HDI) compiled by the United Nations, the level of human well-being in Turkey increased more rapidly than the world average between 1975 and 1998 (UNDP, 2001). The economy strengthened further over the last decade, which is noteworthy when considering the significant economic and political turbulence that plagued the international scene and, even more so, neighbouring areas and important markets for Turkey. Since the financial crisis of 2001 and the elections of 2002, Turkey has managed to make strides both towards establishing a stable economic environment (see Figures 1 and 2) and a more efficient political structure. Growth rates are stabilising and inflation rates decreasing. Recent IMF and World Bank reports have praised Turkey on the results of most recent reform efforts. The international markets have also marked their approval. Both Fitch and Standard and Poors have increased Turkey's long-term currency ratings and sovereign rating earlier this year. An S&P credit analyst expressed that

> *The improvement in Turkey's creditworthiness reflects the progress that the government is making on both the economic and political fronts toward restoring durable macroeconomic stability* (Istanbul Metropolitan Municipality, 2004).

Similarly, in its most recent annual evaluation of Turkey's progress towards accession, the European Commission observed that

> *Turkey has achieved significant legislative progress in many areas, through further reform packages, constitutional changes and the adoption of a new Penal Code…Turkey has made further*

> *considerable progress towards being a functioning market economy, in particular by reducing its macroeconomic imbalances…Important progress has been achieved in increasing the transparency and efficiency of public administration…Furthermore, important steps have been taken in facilitating the inflow of FDI and in improving the legal framework for privatisation* (European Commission, 2004a).

Turkey continues to ambitiously pursue EU membership. Latest reports indicate that a plan for accession is a near certainty. Coupled to an accession plan are various challenges related to economic stabilisation, adoption of laws and regulations, meeting various new standards, and pursuing an innovation strategy that will help Turkey converge to the levels of other European member nations. The goal of EU cohesion represents a particular challenge for Turkey – starting from such different framework conditions and low performance levels compared to other EU member and candidate countries. Some of the challenges arising with accession could be addressed or tackled with support of EU funds[3]. However, one should not expect miracle cures. EU funds are not a panacea but, in fact, associated with considerable administrative costs and downside effects due to the time end effort which are re-allocated from productive activities towards acquiring subsidies. Further, demands are tough, as the steadily improving performance by European neighbours means that the bar continues to be raised.

The latest reports from the European Commission seem to indicate that Turkey will be given a date for initiating accession talks in 2005. Assuming the mainstream scenario, the process of accession, including passing necessary legislation, is estimated to take approximately ten years, giving Turkey a potential entry date of 2015 (FitchRatings, 2004a). This suggests that Turkey must still manage "on its own" for some time, which entails serious challenges in the current international regime for global trade and investment issues.

One building block of Turkey's strategy for ensuring long-term economic prosperity and political stability is the country's striving to adapt to the fundamental technical and social changes associated with the rise of the knowledge-based economy[4] (KBE). This brings a range of new opportunities and challenges related to innovation, which Turkey must manage, but currently does not appear fully equipped for.

A Changing Environment: Opportunities and Challenges

The world economy has undergone a number of profound changes over the last decade. These are reflected in concepts such as "the new economy", the "learning society", the "information society" and the "knowledge-based economy". Some of the expectations created in the process fell flat to the ground at the turn of the millennium, as the business cycle turned, equity valuations – not only of the high-tech sector but much more broadly – came tumbling down around the world, as flows of foreign direct investment dried up, and multilateral trade negotiations turned sour.

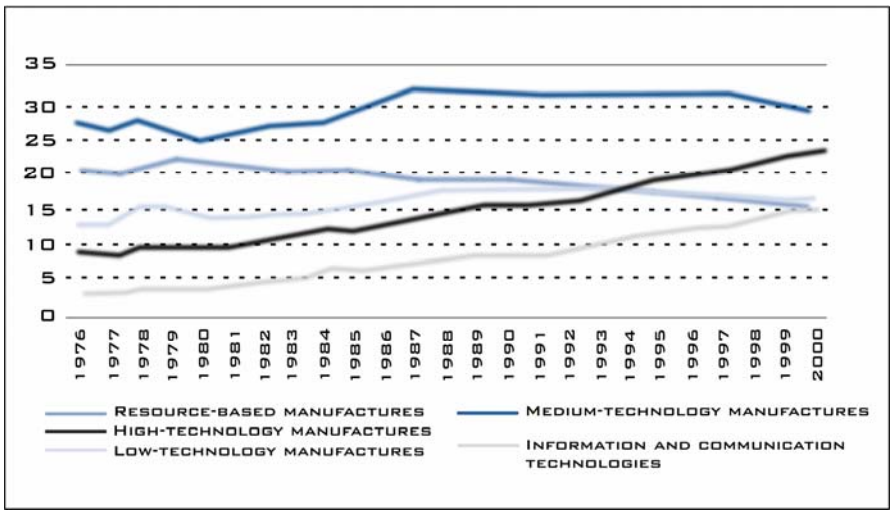
The fact is that the world economy did not witness any general strengthening of long-term productivity growth even at the peak of the "new economy" era of the late 1990s. As far as we can measure, productivity growth was lower in the 1990s than in the 1980s, when it was lower than in the 1970s, and so on. On the other hand, there are a number of ongoing developments the effects of which are not easily quantified, such as rapid quality improvements in a number of

[3] Europe has shown its commitment to Turkey's eventual membership through the steady increase in the amount of financial assistance pledged by the Commission over the coming years: €250 million in 2004, €300 million in 2005 and €500 in 2006.

[4] The term *knowledge economy* was coined by The World Bank and the OECD in the late 1990's, and is used to refer to an economy that encourages its organizations and people to acquire, create, disseminate and use existing and new knowledge more effectively for greater economic and social development. The primary catalyst of global economies has transformed from agricultural to industrial to information/knowledge. In order to promote growth and economic development in a knowledge-based economy, factors such as collaboration/networking, R&D, information and communications technology (ICT), innovation and commercialization of research, must be prioritized.

industries, and an expansion of new service sector segments where productivity is hard to measure. In fact, associated with the knowledge economy, the mounting difficulties of measuring economic growth and welfare are masking the accelerating rise of new determinants of economic performance, of the competitiveness of nations, and of the prosperity of millions of people around the world.

Figure 3: Changes in the Composition of International Manufactured Trade According to Technology



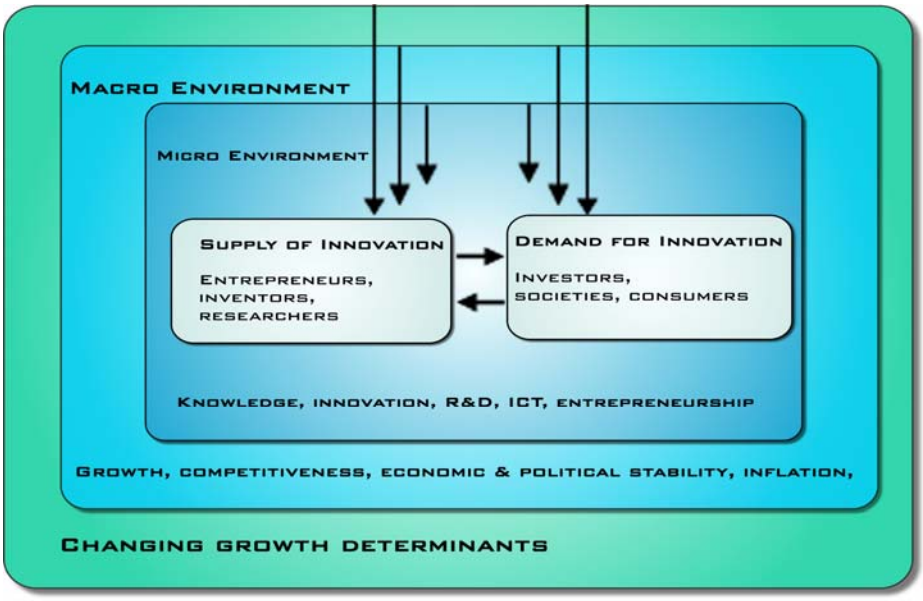
Source: UNCTAD (2002)

The fundamental change that is underway is linked to the collapse in the costs for diffusing and making use of information. This leads to a massive expansion in the availability of codified data. There is a potential for new technologies, and for knowledge on how to access markets, partners, suppliers, etc. to be diffused worldwide, to any corner of the world, in a way never seen before. As a consequence, as seen in Figure 3, international trade is increasingly tilted towards products with high skill- and technology-content. Similar observations are easily made at industrial- and firm-level; areas intensive in technology and skill are on the increase.

There are many opportunities associated with the rise of the knowledge-based economy – both for countries and companies. SMEs, in particular, have the opportunity to make use of new information and communication technologies (ICT) to broaden their international contact with both customers and partners. The ability to make use of the new opportunities is not a given, however. New skills are needed, as are organisational changes. New means of establishing trust over the internet have to be mastered. More than anything else, firms and individuals around the world need to be able to innovate, that is, develop and implement new commercially viable ideas. As new determinants for economic growth are appearing, increased focus is put on the role of innovation.

Science and technology provide great new opportunities for innovation by supplying hitherto untapped sources of knowledge. At the same time, innovators, entrepreneurs and traders must be able to connect to both consumers and sources of capital to fuel their growth - new ideas must be developed in tandem with the rise of new needs on the part of real customers, and supported with financing and business services in order to ensure the commercial realization of these ideas.

Figure 4: Knowledge-Based Economy Changing Growth Determinants



Source: IKED

As shown in Figure 4, a wide range of factors, including both macro- and microeconomic conditions have an effect on the supply and demand of innovation. Intellectual property rights, the financial market structure, human capital and investments are some of the factors determining the pace of innovation worldwide, and countries must be equipped with sufficiently-developed conditions on all levels if they want to capture the benefits arising from the knowledge-based economy.

In the European Union, the past decade has seen an increasing focus on promoting innovation as a driver of national (and European-wide) competitiveness. In November 1996, the European Commission adopted the First Action Plan for Innovation in Europe, following the debate stimulated by the Green Paper on Innovation launched in December 1995. The Action Plan provides a general framework for action at the European and Member State level to support the innovation process. A limited number of priority measures are identified, focusing on three main areas for action: fostering an innovation culture, establishing a framework conducive to innovation, and gearing research more closely to innovation at both national and Community level (European Commission, 1996).

From this action plan, programmes focused on promoting innovation within and between member countries were formed, primarily within the EU's Framework Programmes for research and technological development. For instance, the current Framework Programme[5] (FP6) is focused on creating an internal market for science and technology (the European Research Area, or ERA) in order to foster scientific excellence, competitiveness and innovation through the promotion of better cooperation and coordination between relevant actors at all levels. The 2000 Lisbon Summit reiterated the view of European heads of state that economic growth increasingly depends on the provision of knowledge, that many of the present and foreseeable challenges for industry and society can no longer be solved at national level alone, and that there needs to be a better leveraging of European research efforts in order to secure the future competitiveness of the European region. The hopes and expectations for European competitiveness have been raised.

[5] More detailed information about the Sixth Framework Programme can be found on the FP6 home page: http://www.cordis.lu/fp6/whatisfp6.htm

The growing weight of, and policy emphasis on, innovation and knowledge as drivers of competitiveness and growth in Europe puts particular and increasing pressures on many of the new EU member states and the candidate countries, and any other countries that are generally not considered to be at the forefront of knowledge creation or innovative capacity.[6] Thus, besides facing the global challenges connected to KBE, Turkey must also handle the specific issues arising from being a candidate country.

As will be shown in this paper, for several reasons, Turkey faces a particularly arduous journey in this context. After the financial crisis in 2001, Turkey continues to undergo a massive economic stabilisation programme. Struggling against widespread perceptions of political corruption and lack of transparency, Turkey has taken long strides towards improving and maintaining political and economic stability, and addressing the ever-increasing demands of the knowledge-based economy. Through a number of strategic and vision-setting papers, as well as several ambitious programmes[7], Turkey has been able to prove its resolve and begin turning the tide of public opinion. Yet there are still a number of hurdles ahead.

This paper argues that today, Turkey finds itself at a critical juncture. It has a clear possibility to rise to meet the challenges and seize the opportunities emerging with a globalised, knowledge-based economy and thus ensure a continued rise in the well-being of its people. Alternatively, if the necessary conducive conditions are not put in place, Turkey faces the very real risk of falling behind, and thus seriously endangering the progress it achieved so far. This would happen at a time when its neighbours, partners and competitors in Europe, Asia, and Latin America, among others, are rapidly improving the mechanisms for reaping the benefits of the knowledge-based economy. A slow-down or failure to establish the appropriate framework conditions for a knowledge-based economy would neither aide Turkey's prospects being on its own, nor facilitate its integration with the European Union.

Following this line of argument, the challenges that Turkey is facing with regard to its basic economic and political foundations are arising at a time when stability in these areas is becoming an ever more important prerequisite for stimulating investment and encouraging innovation. Turkey's leaders need to continue their efforts to stabilize the political and economic macro environment in order to establish confidence and encourage investment. Yet this is only the first step. Turkey must also succeed in addressing a number of challenges on the micro level.

In today's world, there are few 'independent variables' or 'autonomous players'. Rather, the competitive advantage of a country is dependent on multiple, interdependent factors – not least of which include its leaders' ability to act on issue areas in a coordinated and collaborative fashion. Thus, Turkey's ability to address the challenges of establishing a stable political and economic environment, setting- up the appropriate framework conditions to instill confidence in the business environment, and catalyzing innovation in the economy is dependent on a concerted effort of multiple actors, working across sectors or domains in a systemic, inclusive and transparent manner (see Box 3 in Chapter 2).

The president of the Union of Chambers of Commodity Exchanges of Turkey (TOBB), highlighted that the current level of productivity increases will not, by itself, be sufficient to ensure continued growth. Turkey is in need of investments to "*realize technological renovation in Turkish industry*." It is the private sector's responsibility "*to be aware of the necessity for doing business in a different environment from the past*" and the government's responsibility to "*remove obstacles standing in the way of the entrepreneur*" (TOBB, 2004, p.1-3).

[6] A recent assessment of the challenges facing some of the new EU member countries in this context can be found in Schwaag Serger and Hansson (2004).

[7] These include, for example, several *assessments* of Turkey's situation with regard to the knowledge economy and innovation (e.g. European Commission (2003a), Guruz and Nam (2003), TÜSİAD (2003a), and the World Bank (2004a)), as well as *programmes* addressing the challenges associated with KBE (including, for example, *eTransformation Turkey Project* led by SPO-ISD, *Vision 2023 Project* led by TÜBITAK, *Industrial Technology Development Project* led by TTGV, *Technology Development Support for SMEs* led by KOSGEB, etc.).

The report will discuss the interdependent nature of catalyzing innovation and is structured as follows: After describing Turkey's macroeconomic sitution and overall position in the changing international context of KBE, an overview of Turkey's activities and results achieved in regards to innovation and technology will be presented. This will be followed by an analysis of SMEs' contribution to the Turkish economy, and a description of their role as enablers and catalysts of innovative activities. After a discussion of the factors hindering innovation in SMEs, a summary of the key challenges and barriers to innovation in Turkey, as a whole, will be presented. Finally, the paper will present a set of recommendations for strengthening innovation policies to spur growth and innovation thorugh SME development, highlighting the opportunities for action from the private sector in Turkey.

CHAPTER 1: MACROECONOMIC STABILITY AND A LEVEL PLAYING FIELD

Introduction

> *Although it is certainly not true that macroeconomic stability alone can increase the growth rate of a nation, it is no less true that macroeconomic disarray kills its growth prospects.* (Sala-I-Martin in World Economic Forum, 2003a, p.xii)

A number of factors will determine to what extent Turkey will be able to adjust successfully to and transform itself into an innovative and knowledge-based economy. Overall, the degree to which Turkey will be able to create an environment that is conducive to generating, accessing and using knowledge and information will depend, first, on the establishment of long-term economic and political stability, and, second, a level playing field throughout the country.

Investment in technology and its commercialisation is typically associated with high fixed costs and risks. A positive decision to engage in innovative activity relies on the anticipation that this will result in a market position, and monopolistic rents, in the early stages following a break-through, which are large enough to compensate for the costs and risks encountered in the initial stage. At the same time, a decision not to engage in such efforts means foregoing initial costs and the possible exploitation of gains.

Economic and political stability are vital prerequisites for ensuring willingness among individuals and firms to invest in assets for the future. Conversely, economic and political instability can deter individuals and firms from investing in education or in long-term high-risk research, both of which take years, sometimes decades, to pay off. In the emerging knowledge economy, even traditionally 'low-tech' products, processes and services become more knowledge-intensive and thus require substantial, and often long-term investments, by individuals, companies and institutions, in education, R&D and technological development.[8]

Long-term economic stability

In recent decades, the Turkish economy has been characterized by "short spurts of growth followed by financial crises, then by stabilization policies attempting to restore growth" (OECD 2002a, p.27). Since the late 1990s, this cycle appears to have accelerated, and in the past five years Turkey has undergone a period of particularly high economic instability marked by severe banking, financial and economic crises, the latter of which were partially triggered by external shocks. As a result, GDP growth has been very volatile, ranging from a 7.8% increase in real GDP growth in 2002 to a 7.4% decrease in 2001 (see Table 1).

[8] One example of a traditionally 'low-tech' product which today involves 'high-tech' production, marketing and/or distribution processes is clothing (Hennes & Mauritz state-of the art inventory management and logistics system).

Table 1: Selected Macroeconomic Trends for Turkey

	1998	1999	2000	2001	2002	2003	Average 1998-2002
Real GDP growth	2.8	-5.0	7.4	-7.4	7.8	5.8	1,12
Population growth	1.75	1.71	1.66	1.61	1.57	1.01	1,66
GDP per capita in Purchasing Power Standards (PPS), €	5700	5500	6000	5400	5700	5800	
GDP per capita in Purchasing Power Standards (PPS), % of EU-15 average (EU-15=100)	29.4	27.0	27.7	24.1	24.7	24.9	
Inflation (consumer price index), % change	84.6	64.9	54.9	54.4	45.0	28.1	

Source: Eurostat, European Commission (2004a)

Aside from being volatile, Turkish economic growth has lagged significantly behind population growth, averaging around 1.66% in the past five years, resulting in a marked decline in per capita income in recent years. In addition, there are strong indications of widening social and regional disparities (see also Box 1).

Box 1: Bipolar Nature of the Turkish Economy

Extreme regional disparities constitute a particular challenge for Turkish policymakers. Turkey's different regional areas effectively span two tiers of economic development. The first tier is made up of the three major metropolitan areas (Ankara, Istanbul and Izmir) and many coastal areas where income is by far the highest in the country, infrastructure is most well-developed, and access to knowledge is most widespread. The second tier, almost exclusively to the east of Ankara, is comprised of areas where income is below Turkey's average, enterprises are formed primarily out of need rather than opportunity, and where infrastructure, communications, educational facilities and business services are significantly less developed. The Marmara region accounts for approximately one third of Turkey's total GDP. In the richest province in Turkey, Kocaeli, GDP per capita is nearly three times the national average, while in the four poorest provinces, GDP per capita is less than one third of the national average.

The extreme differences among the regions pose a problem for policymakers, entrepreneurs and investors. Whereas policymakers aim for a better standard of living for the general population and consistent levels of development, particularly in the areas of education and infrastructure, entrepreneurs and investors aim to reap the highest return on investment (and focus activities in those geographical areas with the most promise). Entrepreneurs and investors help the most developed regions become more developed, while policymakers struggle to spread the wealth. There is a risk that these two groups take actions that, in effect, counteract each other.

The fact that the Turkish economy is so delineated also poses a problem for attracting foreign investment. Given the alternative investment opportunities in other European countries (with lower regional variations in development), Turkey has to offer other distinct advantages in order to win over investors. This dichotomy is a concern not only in connection with economic development and attraction of FDI, but also with political, religious and human rights considerations – which also influence competitiveness, and play a role in European countries' acceptance of Turkey as a prospective member of the EU.

Responding to the recent escalation of crisis and instability, in the past two years the Turkish government has embarked on a much more ambitious programme than previously to strengthen the Turkish economy and address the causes of past crises (OECD, 2002a). The result has been a remarkable improvement in stability, including markedly reduced inflation as seen in Figure 2. In addition, there are signs of increasing political stability. Together, these two factors give rise to

optimism when it comes to laying the critically important economic and political foundation for a functioning economy. It is greatly needed in the light of the recent tragic terrorist attacks, and the fact that the integration process with the European Union is a long journey.

Long-term trends, however, show that despite Turkey's increased focus and significant progress on establishing both the stable political and economic foundations, as well as the building blocks for enabling innovation, much work is still ahead. Thus, comparing GDP per capita, Turkey ranks well below countries such as Poland and Mexico, for example (see Table 2). Furthermore, the gap between Turkey's GDP per capita in Purchasing Power Parity (PPP) and that of the EU-15 average has widened since 1998. As for Turkey, 1998 was the year of highest GDP value, while other European countries had their economic peak in 2002. As a result, Turkey's GDP as a percentage of the EU-15 average fell from 29% in 1998 to 25% in 2003.

Table 2: Comparative Macroeconomic Indicators

	Population 2003 (million)	**GNI per capita 2003** (US$)	**GDP per capita 2003** (PPP $)	**GNI per capita** (Year of highest value)	**Human Development Index 2002**
Leaders					
United States	291	37 610	37 500	2002	0.939
Sweden	9	28 840	26 620	2002	0.946
Finland	5	27 020	27 100	2002	0.935
Sample EU					
Ireland	4	26 960	30 450	2002	0.936
Germany	83	25 250	27 460	2002	0.925
Poland	38	5 270	11 450	2002	0.850
Sample non-EU					
Turkey	**71**	**2 790**	**6 690**	**1998**	**0.751**
Russia	143	2 610	8 920	1989	0.795
Ukraine	48	970	5 410	1989	0.777
Mexico	102	6 230	8 950	2000	0.802
Thailand	62	2 190	7 450	1996	0.768

Sources: World Bank (2004b), UNDP (2004)

Ensuring a level playing field

Apart from economic and political factors, the level of transparency and equality of the economy plays a key role in establishing "faith in investments" for both foreign and domestic investors and should therefore be considered another major issue in Turkey. Informality and corruption constitute significant barriers to economic development and innovation. This is due to several factors. Firstly, informality and corruption, if widespread, may thwart the willingness of individuals and companies to accept the risks that are inherent to innovation processes. Secondly, informality and corruption benefit traditional sectors and firms at the expense of new ones. In a recent report, the McKinsey Global Institute found that informality was significantly more widespread in the traditional segment of the Turkish economy, thus creating a non-level playing field favouring the traditional over the modern segment. The result is a disincentive for companies in traditional segments to modernize or innovate, and unfulfilled potential in labour productivity and economic growth.

Box 2: Informality and Corruption

Informality is regarded as the evasion of regulatory obligations that incur significant costs. There are several types of informality:

- **Tax-related** – evasion of value-added tax (VAT and income taxes by not reporting all business activities
- **Labour market-related** – evasion of social security obligations and minimum wage payments by not reporting all employment or full employment working hours
- **Product market-related** – evasion of minimum product quality requirements, property rights, and/or hygiene standards that would increase the cost of goods or services

Source: McKinsey Global Institute (2003)

According to World Bank estimates, Turkey's informal economy accounts for 32 % of Gross National Income. Of the OECD countries, and including the EU Candidate Countries, the informal economy is only larger in Latvia, Romania and Bulgaria (see Table 3). Turning to corruption, as estimated by the Transparency International Corruption Perceptions Index, Turkey has the lowest score of all OECD countries, including again the EU Candidate Countries, indicating high levels of corruption. Corruption indices tend to be based on opinion surveys, and can thus be biased due to differences in perceptions of corruption across countries (for cultural or other reasons, citizens of a country might perceive corruption to be much higher than it actually is). However, similar to the economic theory of rational expectations, if there is a widespread perception among a population that corruption in its country is a significant factor, then this will have a significant effect on business and investment decisions, even if corruption is in fact not as rampant as perceived.

Table 3: Informality – International Comparison (selected countries)

Country	GNI per Capita (PPP$) 2003	Informal Economy (% GNI) (2003)	Corruption Perceptions Index Score 2004[1]
United States	37 500	8.8	7.5
Norway	37 300	19.1	8.9
Switzerland	32 030	8.8	9.1
Denmark	31 213	18.2	9.5
Ireland	30 450	15.8	7.5
Austria	29 610	10.2	8.4
Belgium	28 930	23.2	7.5
Japan	28 620	11.3	6.9
Netherlands	28 600	13.0	8.7
Australia	28 290	15.3	8.8
United Kingdom	27 650	12.6	8.6
Germany	27 460	16.3	8.2
France	27 460	15.3	7.1
Finland	27 100	18.3	9.7
Italy	26 760	27.0	4.8
Sweden	26 620	19.1	9.2
Spain	22 020	22.6	7.1
Greece	19 920	28.6	4.3
Slovenia	19 240	27.1	6.0
Portugal	17 980	22.6	6.3
Czech Republic	15 650	19.1	4.2
Hungary	13 780	25.1	4.8
Slovak Republic	13 420	18.9	4.0
Poland	11 450	27.6	3.5
Lithuania	11 090	30.3	4.6
Latvia	10 130	39.9	4.0
Bulgaria	7 610	36.9	4.1
Romania	7 140	34.4	2.9
Turkey	6 690	32.1	3.2

Sources: World Bank (2004b, 2004c) and Transparency International: http://www.transparency.org/cpi/2004/cpi2004.en.html#cpi2004

1: Relates to the perceptions of the degree of corruption as seen by business people, academics and risk analysts, and ranges between 10 (highly clean) and 0 (highly corrupt). (Turkey's score is based on 14 surveys from independent institutions)

The significant degree of 'informality' (i.e. firms which are able to save costs by evading tax obligations, labour market and product market regulations – see definition above) and corruption (insufficient enforcement of existing laws and regulations) has led to a distrust in the country's public institutions and a general feeling of "helplessness" in changing the conditions. Comparing the degree of informal activity with other countries, Turkey ranks high. Generally, one can say that, the better a country's economic performance, the less common is informality.

In recognition of credible fiscal adjustment efforts by the government and progress on structural reforms, the Fitch ratings service recently raised Turkey's sovereign ratings one notch[9] from B to B+, with a stable outlook (FitchRatings, 2004b). Yet even with this deserved boost in the credit rating and outlook for Turkey, the nation's current rating still places it in a peer group with Brazil, Indonesia, Iran and Ukraine – rather than with the other candidate countries to the EU (see Box 2). This is just one indication of concern over the stability of policy reforms, and that more needs to be done to increase investor confidence in Turkey.

Table 4: Long-Term Sovereign Ratings for Central/Eastern Europe & CIS (as of 16 April 2004)

Country	Long-Term Foreign Currency Rating	Foreign Currency Outlook	Long-Term Local Currency Rating
Azerbaijan	BB-	Positive	BB-
Bulgaria	BB+	Positive	BBB-
Croatia	BBB-	Positive	BBB+
Czech Republic	A-	Stable	A
Estonia	A-	Positive	A+
Hungary	A-	Negative	A+
Kazakhstan	BB+	Positive	BBB-
Latvia	BBB+	Positive	A
Lithuania	BBB+	Positive	A
Moldova	B-	Stable	B
Poland	BBB+	Positive	A+
Romania	BB	Stable	BB+
Russia	BB+	Stable	BB+
Slovakia	BBB+	Positive	A
Slovenia	A+	Positive	AA
Turkey	B+	Stable	B+
Turkmenistan	CCC-		
Ukraine	B+	Stable	B+

Source: FitchRatings (2004b)

The latest edition of the Global Competitiveness Report noted a marked improvement in public institutions indicators in Turkey (World Economic Forum, 2003b). While this is encouraging, a lot of work remains to be done to lay a foundation of trust and general confidence in public institutions, the political and the regulatory system. Strengthened trust and confidence in turn are vital prerequisites for a favourable climate for enterprise development and investment in Turkey.

Corruption places a disproportionate burden on start-up businesses, as they are particularly dependent on capital. SMEs wishing to modernize simply cannot afford breaking traditional practices. The individual entrepreneur is discouraged from acting and assuming risk, as it seems impossible to reap any reward.

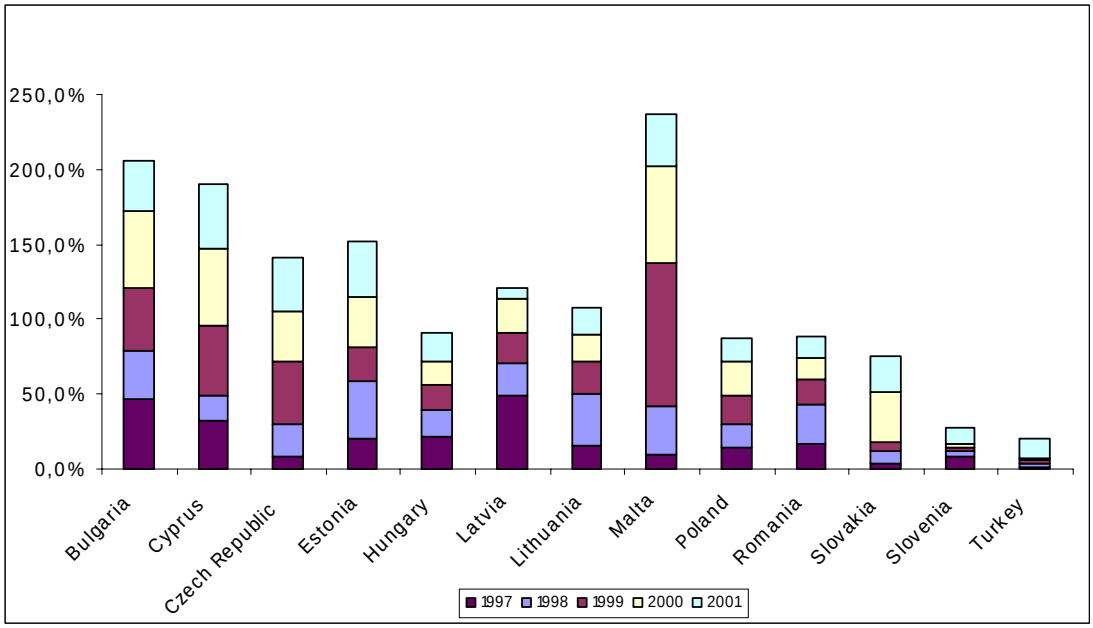
One aspect that deserves attention in this context is the relatively low rate of foreign direct investment (FDI) into Turkey when compared with other countries (see Figure 5). In the Inward FDI Performance Index compiled by UNCTAD, Turkey ranks as low as 112th out of 140 economies (for the years 1999-2001).[10] In addition to its poor actual FDI performance, according

[9] The highest possible ranking is AAA. A is better than B; B is better than C. The greater number of letters indicate a higher the ranking (e.g. AAA is better than AA; AA is better than A). The + and – signs are used to indicate a bit higher or lower within the same letter grade (e.g. B+ is better than B; B is better than B-).

[10] The Inward FDI Performance Index ranks countries by the FDI they receive relative to their economic size. It is the ratio of a country's share in global FDI inflows to its share in global GDP (UNCTAD, 2003). For further information, see http://www.unctad.org/Templates/Page.asp?intItemID=2468&lang=1 .

to UNCTAD's analysis, Turkey also has a low estimated potential for attracting inward FDI.[11] Combining its performance with its potential, rather than being grouped with the majority of industrial, newly industrialising or advanced transition economies, Turkey in this ranking finds herself in the lowest category of 'FDI under-performers', alongside countries such as Ethiopia, Rwanda and Zimbabwe, among others. This represents a gross underestimation of Turkey's potential, at least as seen from a medium to long-term perspective.

Figure 5: Inward FDI Flows (% of gross fixed capital formation)



Source: UNCTAD (2003), FDI/TNC database

The poor track record in attracting FDI has been of concern to politicians and businessmen alike, particularly since targeted efforts aimed at improving the legal and regulatory framework surrounding FDI have failed to increase significantly investment flows into Turkey. According to the McKinsey Global Institute, the low rate cannot be explained by overt regulatory barriers to FDI in Turkey. Global macroeconomic and political instability deter foreign investors from putting their money into some rising, otherwise promising markets (McKinsey Global Institute, 2003). On the other hand, a recent analysis by the IMF concluded that the difficulty of Turkey in attracting FDI to a significant extent emanates from the country's inability to provide the transparency and favourable business conditions required to encourage investment in the country. In the IMF's assessment of fiscal transparency in the EU Accession countries, Turkey was the only country having negative observations across the board[12], and was one of three countries, Bulgaria and Latvia being the other two, judged as having inadequate consideration of fiscal risks in general (Allan and Parry, 2003). Significant regulatory and institutional reform is most probably still required for reducing transaction costs and investor uncertainty.

Inward FDI – or lack thereof – is not only a question of the magnitude of investment flows but, even more importantly, the behaviour of foreign investors and the ability of domestic actors to interact with them in a way that can enable mutually beneficial exchanges. When confidence in the long-term outlook is not there, foreign investors become less inclined to transfer R&D-facilities, accumulate local skills and engage in fully committing local partnerships. All this

[11] The Inward FDI Potential Index captures several factors (apart from market size) expected to affect an economy's attractiveness to foreign investors.
[12] Observations on fiscal transparency were made in the areas of medium-term budgeting and analysis, accounting and data quality, off-budget fiscal activity and intergovernmental relations.

reduces the value of the foreign investment actually obtained, which can create a vicious circle as it risks undercutting public confidence in international investments and relations.

It should be stressed that FDI cannot be and should not be viewed as a magical cure for domestic economic problems (see also chapter 4). However, persistent difficulty, as experienced by Turkey, in attracting FDI – particularly in the absence of significant legal or regulatory obstacles – is a warning signal that other factors are creating a general environment that is deterring key actors from investing in the Turkish economy.

Summary

Economic and political stability, as well as ensuring a level playing field are vital prerequisites for ensuring a general environment in which individuals, firms and other actors, both foreign and domestic, are willing to invest in Turkey's future. This chapter has argued that Turkey needs to continue its efforts in both areas. However, improvement in this respect, while necessary, is not a sufficient condition for ensuring Turkey's future economic prosperity and its transition to the knowledge-based society. In the next chapter, we take a closer look at the innovative capacity of the Turkish economy.

CHAPTER 2: TURKEY'S STRIDES TOWARDS INNOVATION AND COMPETITIVENESS

Introduction

The previous chapter has shown that, while the work is not finished, recently Turkey has shown great determination and progress in establishing a stable economic environment conducive to enterprise development and growth. However, given the structural changes currently reshaping the world economic order, frequently summed up in the term knowledge-based economy or society as explained in the introduction, Turkey cannot rely on macroeconomic stability and favourable legal framework conditions alone to ensure the development of a dynamic, and internationally competitive business sector.

In particular, the rapidly growing importance of knowledge for welfare and competitiveness puts increasing focus on firms' and countries' ability to innovate. Institutional and organisational conditions, access to knowledge, capital and labour markets, managerial capabilities and other human capital issues, incentive structures and attitudes are some examples of factors that will strongly affect the extent and pace of enterprise development in general, and of SME development in particular. In the words of the European Commission:

> *Competition through innovation appears to be as important as price competition as a reaction by enterprises to market pressures. In many business sectors, an enterprise that allows itself to lag behind in the race to generate new or improved goods and services, and better ways to produce or run them, is putting its future on the line…While research is a major contributor to innovation, if there is no entrepreneurial action, there is no value creation. It is the enterprise that organises the creation of value. With the shortening of product cycles, enterprises face the need for more capital-intensive investment and must put more emphasis on the ability to react quickly. For enterprises, innovation is a crucial means to create competitive advantage and superior customer value.* (European Commission, 2003b, p.6)

As countries develop economically – and given equal access to global markets, the rapid pace of technological change, the trend towards shorter product life cycles, and, more generally, the growing importance of knowledge – the ability to innovate becomes an increasingly critical determinant of international competitiveness. In advanced nations today, competitive advantage "… must come from the ability to create and then commercialize new products and processes, shifting the technology frontier as fast as their rivals can catch up" (Porter and Scott, 2003, p.1). Gradually, the ability to innovate has thus become accepted as a crucial prerequisite of enterprise development and entrepreneurship, and concepts such as 'innovation policy' and 'innovation systems' are increasingly attracting the attention of policymakers worldwide (see Box 3).

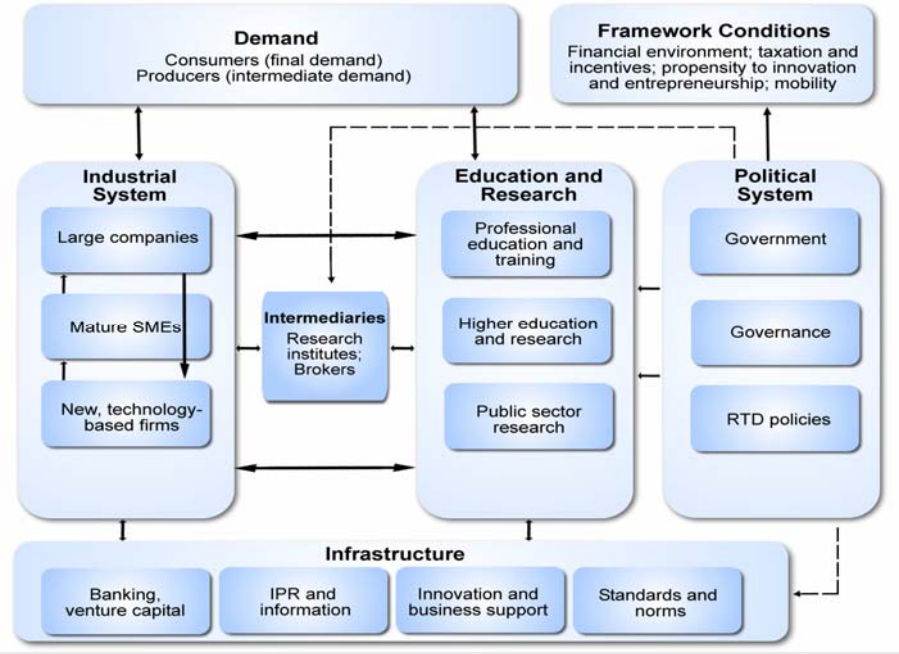
Box 3: On Innovation and Innovation Systems

The European Commission defines innovation as "the renewal and enlargement of the range of products and services and the associated markets; the establishment of new methods of production, supply and distribution; the introduction of changes in management, work organization, and the working conditions and skills of the workforce" (European Commission (1995)). Traditional perspectives have viewed innovation as closely related to science and technology. In practice, however, innovation can take many forms, including commercialisation of science and technology as well as the development and implementation of new ideas more generally, as in the form of organizational change or inventing new ways of doing things.

Rather than being a one-dimensional, linear process leading from certain input factors, innovation is the result of efforts by multiple actors, and is enhanced by their constructive interactions. The concept of innovation has evolved from a linear model having R&D as the starting point, to the systemic model in which innovation arises from complex interactions between individuals, organisations and their operating environment (European Commission 2003c). The notion of innovation system aims to broaden the scope of the policymaker to encompass the factors and reforms that may be most important for freeing up the potential for innovation, irrespective of in which policy domain they are found. Furthermore, the term 'innovation system' has emerged to capture the interrelated role of different actors, markets and institutions (Andersson et. al., 2004a).

Based on the innovation system approach, innovation policy is a horizontal policy approach encompassing a wide range of areas and instruments that cut across traditional policy domains. Areas that could be mentioned in this context are taxation and incentive structures, ICT access and penetration, R&D investment and commercialization, networks and clustering, business environment, technology upgrading, foreign direct investment, education, attitudes and social capital, etc. (see also figure below).

Innovation System Model



Source: Arnold et al (2001)

A number of factors affect countries' and firms' innovative capabilities:

- access to knowledge,
- the ability to transform knowledge into competitive products and services,
- the willingness to innovate (in terms of products, processes and organisational changes)

The above-mentioned factors, in turn, are strongly influenced by a range of national, regional and locally determined conditions. The table below summarizes some these critical conditions and identifies some of the indicators which might be useful for assessing the extent to which these conditions are fulfilled.

Table 5: Key Determinants for Innovative Capabilities

Key determinants	**Contributing factors**	**Indicators**
Access to knowledge	▪ national science base (strength and access through industry-academic cooperation) ▪ private sector R&D ▪ ability to tap into international sources of knowledge generation through ICT (information and communications technology)	▪ expenditure on R&D ▪ scientific publications ▪ researchers in the labour force ▪ ICT access and usage (telephone, mobile phone, internet penetration) ▪ ICT expenditure as & of GDP ▪ human development indicators ▪ international cooperation on R&D
The ability to transform knowledge into products and services	▪ human capital ▪ competitive private sector ▪ access to capital ▪ innovative activities	▪ education statistics ▪ patenting activity ▪ venture capital supply ▪ FDI ▪ international competitiveness rankings ▪ growth/development of SMEs ▪ sector composition of manufacturing ▪ level and composition of foreign trade
The willingness to innovate	▪ stable economic and political conditions ▪ entrepreneurship ▪ incentive structures ▪ collaboration between private sector and academia ▪ clustering and international networking activities	▪ political and macroeconomic framework conditions (GDP growth, inflation, corruption, informal economy, etc.) ▪ number of start-ups ▪ number/performance of incubators, science or techno parks (or the like) ▪ regional development and clustering activities ▪ changes in firm organisation, including firm demography

Source: IKED

While the above table is neither set in stone nor exhaustive, it does provide a useful guide or scoreboard for policymakers seeking to assess or benchmark Turkey's situation and to identify principal policy challenges and areas for policy action. In this chapter, we assess Turkey's innovation capacity and performance and identify some areas of particular interest to decision-makers. Following the examination of some key indicators and/or determinants of

innovativeness, we look at how innovation policy is designed, organised and implemented in Turkey.

Innovation performance in Turkey

While it may be easy to acknowledge the importance of competitiveness and innovative capacity for a country's long-term prosperity, measuring and comparing innovation is another thing entirely. A number of indicators have been developed in recent years, aimed at capturing and measuring countries' and firms' innovative capacity, such as, for example, investment in R&D, patents, levels of internet access and penetration, science and technology graduates, etc. There are many caveats when it comes to assessing both how much a country invests in innovation, or innovation inputs, and what returns it gets on this investment ('what it gets out of it'), or innovation outputs.

Having pointed out some of the weaknesses of the existing indicators (see Box 4), one cannot dismiss them, particularly given the current lack of other aids for policy formulation. Furthermore, some indicators do provide quite useful insights into both the priorities of and the demands on policy-making, even in countries marked by wide regional and other forms of diversity. One such indicator is R&D, which remains one of the most important and most internationally comparable indicators of a country's innovative capacity and potential. Regarding R&D, however, one should be careful to disaggregate the data to look at its different components, and also use complementary indicators or data to analyze how R&D relates to other activities which are essential for innovation, such as upgrading of relevant skills in the work force, organizational change, entrepreneurship, incremental innovation, and so on (Black and Lynch, 2000; OECD, 2001a). Some of the indicators required are simply not available in Turkey today, at least not in a way that allows for satisfactory comparison with other countries. This is one of the areas where cooperation with international organizations can be useful. However, the most important thing is for Turkey itself to become more aware of what knowledge is needed from a policy perspective.

Box 4: The Indicator Problem

Existing innovation indicators and innovation surveys (see, e.g. Godin, 2003 and Salazar and Holbrook, 2003) display considerable weaknesses, especially for economies in a development or transition stage but also in the case of developed countries. Innovation surveys tend to measure activities and input rather than output. R&D is a measure adding up several different kinds of activities and, it should be underlined, is not equivalent to innovation. Another aspect is that innovation surveys fail to capture organizational, process and services innovation, or innovation in the public sector (Godin, 2003). Finally, while innovation policy today recognizes the importance of effective linkages and networks, "innovation surveys throw little light onto how these networks are created, function and develop over time" (Salazar and Holbrook, 2003).

Another significant problem which is not unique to innovation indicators, but which is highly relevant for policymakers seeking to design effective innovation policies, is the fact that they are not suitable for economies characterized by bipolarities, in terms of large regional differences or large spreads regarding innovativeness, as is the case in Turkey. Both Turkey's regional disparities and the differences between its modern and traditional segments are considerably larger than for the other OECD countries, including the other EU Candidate Countries, make it a clear example of a bipolar economy.

The available innovation statistics can be misleading, since they cannot reflect the dual nature of the Turkish economy, but capture only the average composed of very highly developed, competitive, innovative firms and sectors on the one hand, and very traditional firms and sectors with low productivity and innovative capacities, on the other hand. (Even within the same sector, there are large discrepancies between the level of productivity and innovation).

The more homogenous a country is, in terms of economic development and innovative capacity, the more suitable the existing innovation indicators and surveys. In order for emerging economies and economies with high regional and segment disparity to be able to make sound innovation policy decisions, there is a clear need for the development of new and / or improved indicators of innovation. In particular, countries, such as Turkey, should work towards, and could benefit considerably from, joint initiatives aimed at improving regional innovation indicators.

While innovation indicators should therefore be used with caution, they nonetheless serve as important proxies for measuring both the capacity and the progress a country is making towards increased innovativeness, and, hence, increased growth and international competitiveness.

In comparison with selected other countries, according to these indicators, Turkey is shown to be ranked near the bottom in most of the indicators that are listed in the table below (Table 6). Turkey has dramatically lower numbers, or shares, of internet users, PCs per inhabitants, patent applications and researchers as a percentage of the labour force, than nearly all EU member countries, including the new EU members and other candidate countries. When it comes to investment in R&D, at around 0.6% in 2000, Turkey's gross expenditure on R&D as a percentage of GDP is lower than in most EU member countries (new and old) and the other candidate countries. Only Latvia, Romania, and Cyprus have lower Gross Domestic Expenditure on R&D (GERD) as a percentage of GDP. When compared with the other OECD countries, only Mexico's R&D expenditure relative to GDP is lower.

Table 6: Turkey in International Comparison
(selected innovation, science and technology indicators)

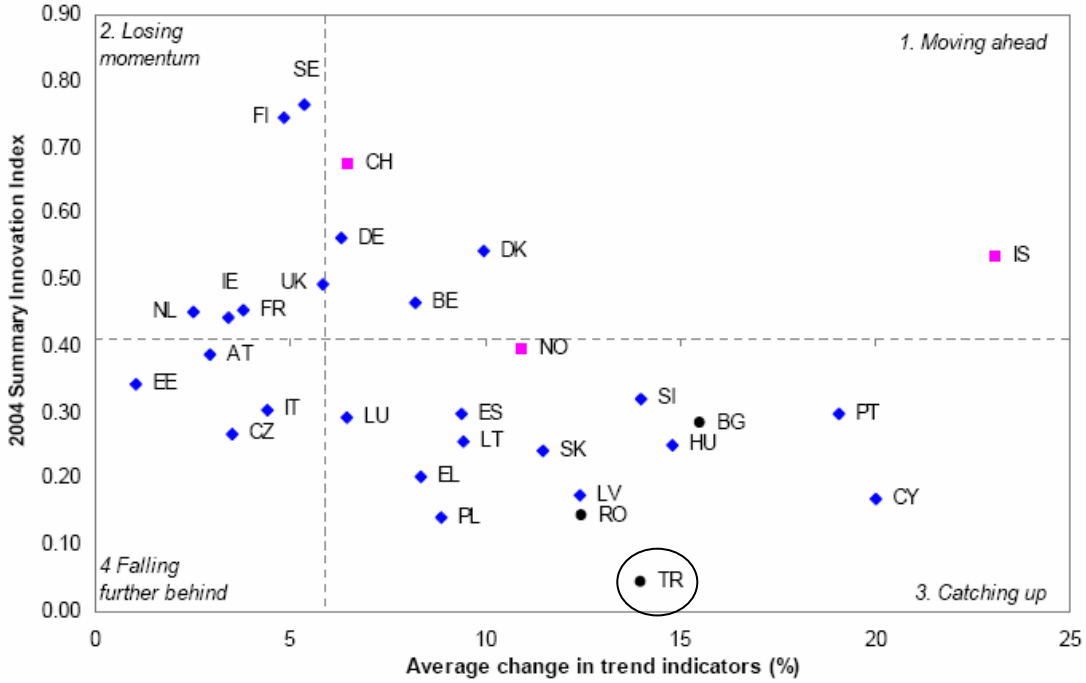
	internet users per 10.000 inhab. *2003*	PCs per 100 inhab. *2003*	mobile phone subscribers per 100 inh. *2003*	EPO patent applications per million inh. *2002*	researchers per 1000 total empl. *2000*	GERD as % of GDP *2001*
US	5514	65,9	54,3	154,5	8,6 ('99)	2,82
Japan	4489	38,2	68,0	166,7	9,7	3,09
Finland	5089	44,2	90,1	310,9	15,1	3,40
France	3656	34,7	69,6	147,2	7,1	2,20
Germany	4727	43,1	78,5	301	6,7	2,49
Poland	2325	10,6	45,1	2,7	3,7	0,67
Sweden	5731	62,1	88,9	311,5	9,6 ('99)	4,27
Turkey	**806**	**4,5**	**40,8**	**1**	**1,1**	**0,64 ('00)**
UK	4231	40,6	84,1	128,7	5,5 ('98)	1,9
EU-15	*3847*	*37,1*	*86,4*	*158,5*	*5,8*	*1,93*

Sources: columns 1-3: International Telecommunications Union (ITU); EPO patent applications per million inhabitants: Eurostat; researchers per 1000 employed and GERD as % of GDP: OECD (2003a).

Given the above cursory view of Turkey's innovative capacity in international comparison, it is not surprising that in the European Union's most recent Innovation Scoreboard (EIS), Turkey currently ranks among the lowest in the summary innovation index13. The EIS benchmarks countries to a range of indicators including education levels, ICT access and usage, R&D expenditure, and venture capital investment, among others. In addition to providing a snapshot view of innovative capacity and performance, the EIS seeks to capture the development, or trend, of countries in these areas. When it comes to the trend, Turkey is among the top performers in the "catching up" quadrant (see Figure 6).

[13] The Summary Innovation Indux-2 (SII-2) uses only the twelve most widely available indicators of the EIS (all five human resources indicators, all six knowledge creation indicators and ICT expenditures), and covers all countries.

Figure 6: Overall Country Trend by Summary Innovation Index-2 (2003)

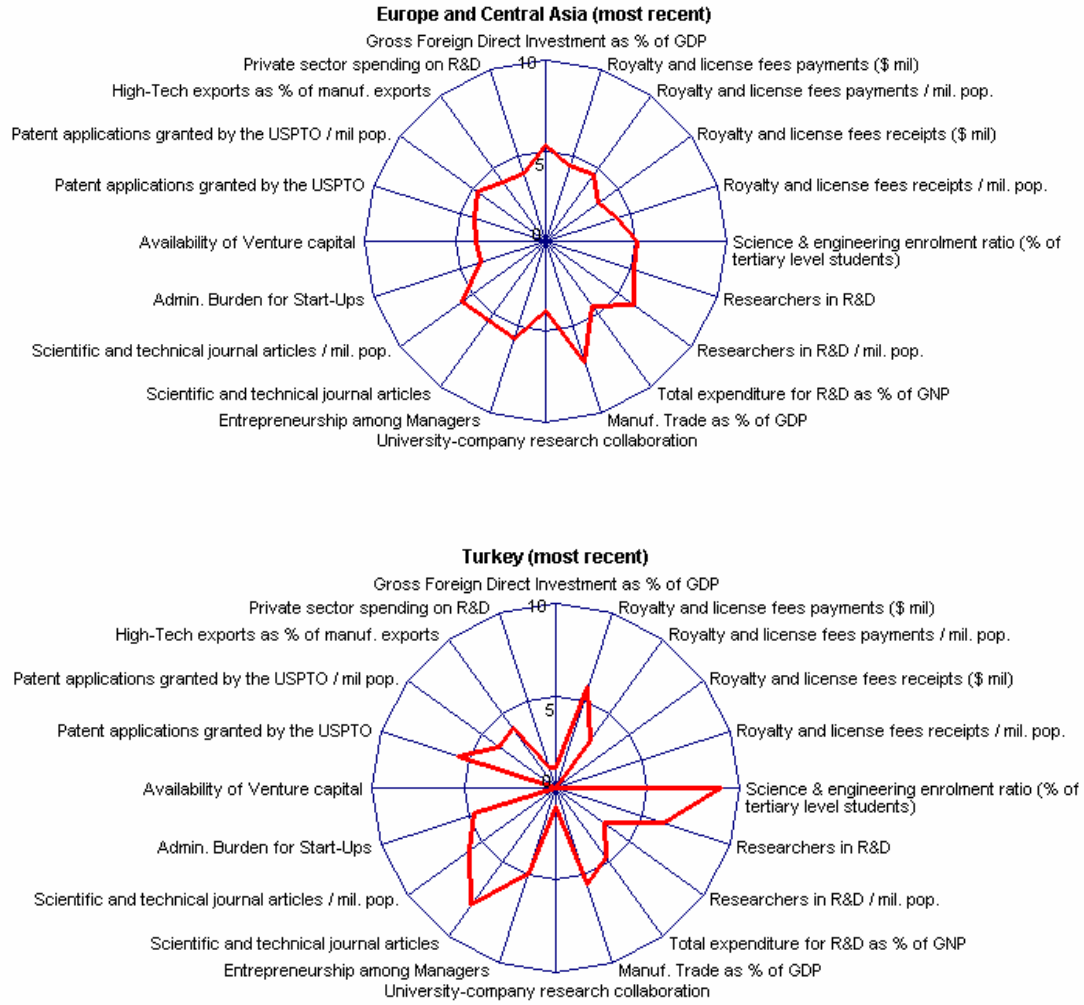


Source: European Commission (2004b)

In fact, of the ten new member countries and three accession countries, Turkey ranks among the top three trend leaders for the following three indicators: business R&D/GDP, USPTO patents/population, and high-tech manufacturing value-added share. While these positive trends in national performance are encouraging, and indicate that, at least in some areas, Turkey is on the right track, they should not give rise to complacency. Rather, it is important to bear in mind that in many of these indicators, Turkey started out from extremely low levels. Furthermore, in some areas, particularly when it comes to ICT, it is possible that some of the 'catch-up' can be explained partially by the fact that many Western European countries are reaching levels of saturation where there is very little room left for substantial increases, rather than Turkey making substantial progress. For example in the case of mobile phone subscribers, some countries are approaching levels close to 90%.

Another benchmark of Turkey's ability to compete in the knowledge-based economy is provided by the World Bank's Knowledge Assessment Scorecards which evaluate Turkey's general position relative to other countries in the Europe and Central Asia (ECA) region. These scorecards reveal Turkey's relative strengths and weaknesses. In comparison to the ECA scorecard, Turkey displays a relative strength in the areas of science and engineering enrolment at tertiary level, and scientific and technical journal articles. Turkey is also a bit stronger in the areas of Patent applications and royalty and license fee payments. However, in a number of other areas, Turkey's position is much weaker than the ECA average: royalty and license fee receipts, researchers in R&D (per million population), university-company research collaboration, availability of venture capital, private sector spending on R&D, and gross foreign direct investment (see Figure 7 below). Overall, the Turkish scorecard is relatively stronger at inputs (e.g. S&T enrolment) and weaker on the outputs (e.g. high-tech exports) than other countries in the region (World Bank, 2004a).

Figure 7: World Bank Knowledge Assessment Scorecards for Turkey and ECA Region



Source: World Bank (2004a)

Both the European Innovation Scoreboard and the World Bank Knowledge Assessment Scorecard point out Turkey's weak position in several innovation indicators. A number of these indicators may not show the true picture of the situation in Turkey (see Box 4). Nevertheless they highlight the most pressing issue areas for action.

In the following sections, we have selected a few areas that deserve special attention when examining ways for enabling and promoting an innovative economy in Turkey. These are also areas where we see room for improvement and for initiatives by government, private sector or academia, and, ideally, for joint initiatives bringing together two or more stakeholders or key actors in the Turkish innovation system. Some of the areas, having general relevance to supporting innovation in the Turkish economy, will be addressed in the sections below, while others, having more specific relevance to small and medium-sized enterprises (SMEs), will be discussed in the next chapter.

Access to Knowledge

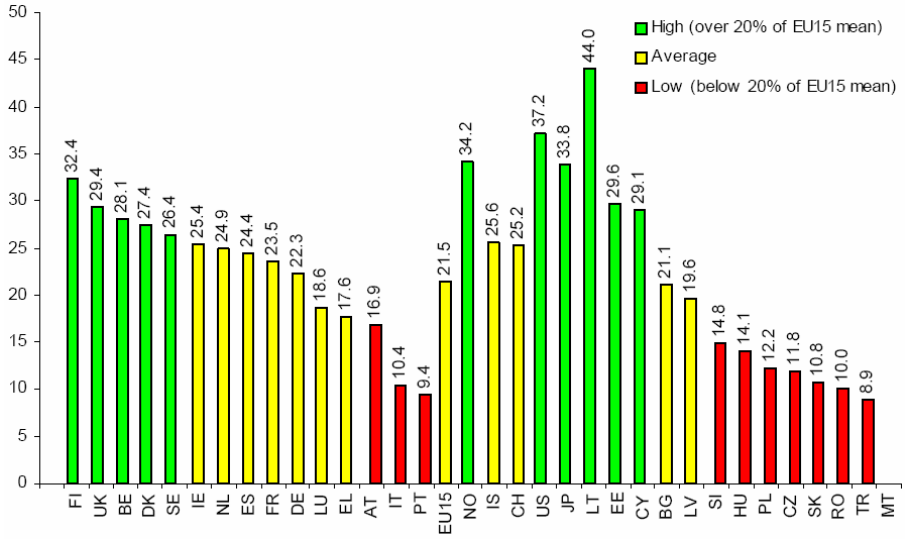
The main input factors contributing to innovation, such as education levels, the national science base and the spread of ICT are included in this category. Turkey has a relatively weak human

capital and R&D base. In addition, the relatively low ranking on a number of ICT indicators points out the difficulty for the general population to access to the knowledge that exists.

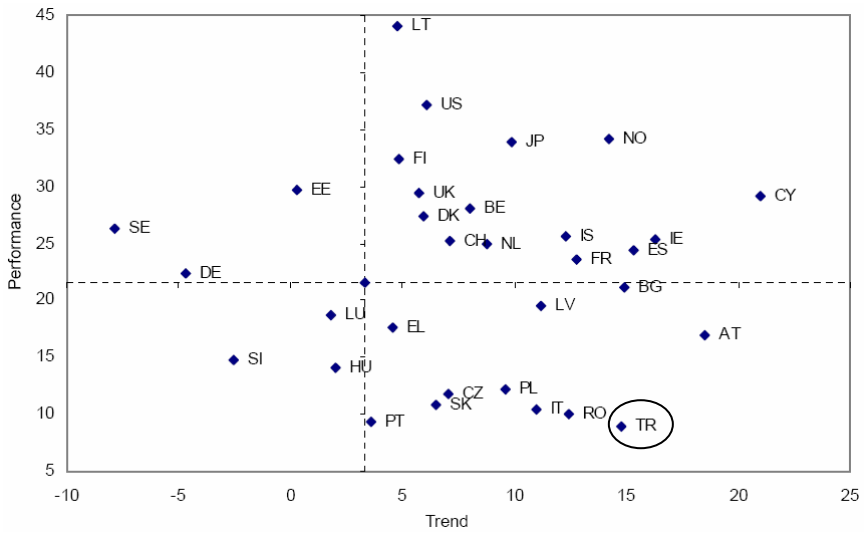
Human Capital

Judging by most indicators, Turkey's human capital base is considerably weaker than in most other European countries. This is reflected in the comparatively low share of the population with tertiary education, for example (see Figure 8). However, Turkey has illustrated improvements in this area, showing a positive trend in the human capital indicators available.[14]

Figure 8: Population with Tertiary Education (% of 25-64 years age class)



Trend for Population with Tertiary Education (% of 25-64 years age class)



Source: European Commission (2003d)

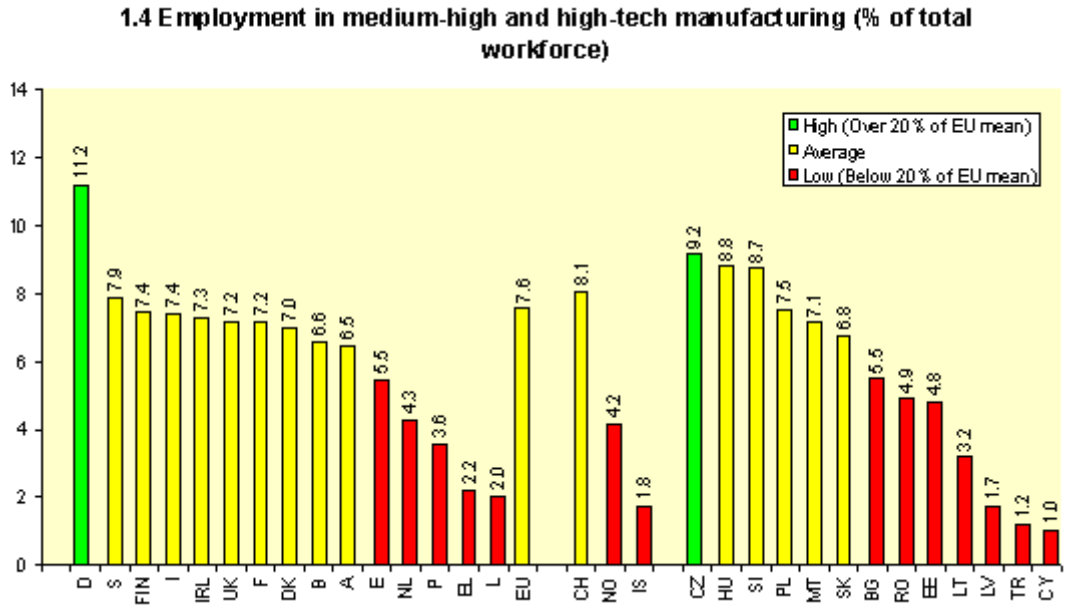
When considering its overall low scores on innovation capacity, Turkey performs relatively well in another human capital indicator, new science and engineering (S&E) graduates. Thus, the share of new S&E graduates in Turkey is higher than in a number of EU countries, including Luxembourg, Greece, Switzerland, the Czech Republic, and Hungary. Accordingly, the World

[14] Turkey has shown improvement in two out of the five areas; data for the remaining three areas is lacking.

Bank Knowledge Assessment Scorecard highlights science and engineering enrolment as an area of relative strength for Turkey.

Nonetheless, overall, Turkey's human capital inputs are clearly well below the EU average. Even more importantly, there are strong indications that Turkey is not using its human capital resources efficiently. When it comes to the share of the total workforce employed in hi- and medium-tech manufacturing, for example, only Cyprus has a lower share than Turkey (see Figure 9). It is not the quantity, but the quality of education, training and use of human capital that matters crucially.

Figure 9: Employment in Medium-High and High-Tech Manufacturing (% of total workforce)



Source: Eurostat

Furthermore, unemployment statistics reveal that unemployment rates are disproportionately higher among the members of the labour force with higher education levels than among people with little education (see Table 7). This indicates, firstly, that the available human capital resources are not as strong as perceived, or are not used effectively. It may be that precious resources are being wasted. A second important concern is that education and training are not attuned to the needs of the economy – that universities are not producing graduates with the skills that are in demand. It appears that the mechanisms which are currently being used to adjust the supply of graduates in different disciplines in order to be consistent with the demand/growth strategies are not functioning properly. This phenomenon has implications for productivity and innovativeness, as well as creating considerable dissatisfaction in an important segment of the population (World Bank, 2004a).

Table 7: Unemployment among Labour Force by Age and Educational Level

Age group	Illiterate	No diploma	Primary	Junior (inc. Junior voc.)	High (inc. High voc)	College+	Average
15-19	10.1	15.5	9.8	27.3	62.2	0.0	15.0
20-24	8.2	14.3	12.0	53.0	45.1	30.9	17.8
25-29	6.5	14.3	8.8	8.8	23.1	10.5	9.7
30-34	5.0	6.5	7.5	9.3	10.7	3.3	6.7
35-39	8.0	6.0	7.1	8.2	10.5	3.0	6.5
40-49	6.6	14.2	12.4	11.1	17.8	3.7	10.2
50-59	4.2	8.0	8.0	13.1	13.2	5.1	7.2
60+	2.8	2.1	2.0	16.7	0.0	0.0	2.3
Average	3.3	6.0	7.5	19.4	26.4	7.5	8.5

Source: Labor Force Survey

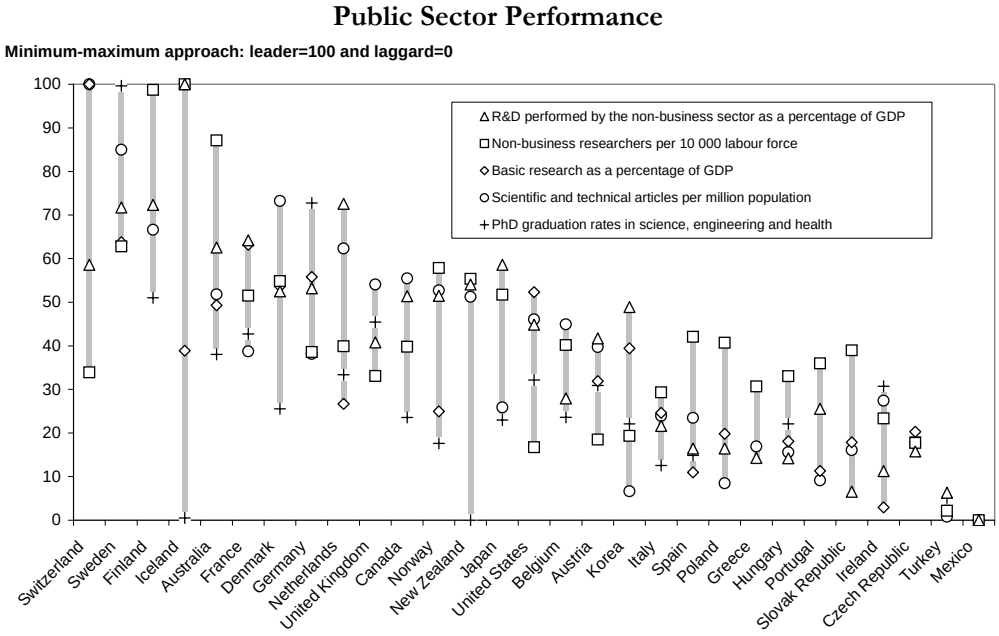
Source: World Bank (2004a)

Another area where Turkey faces great challenges concerns entrepreneurial capacity and management skills. Turkey's weakness on this point is felt particularly acutely by SMEs. We will return to this aspect in the following chapter.

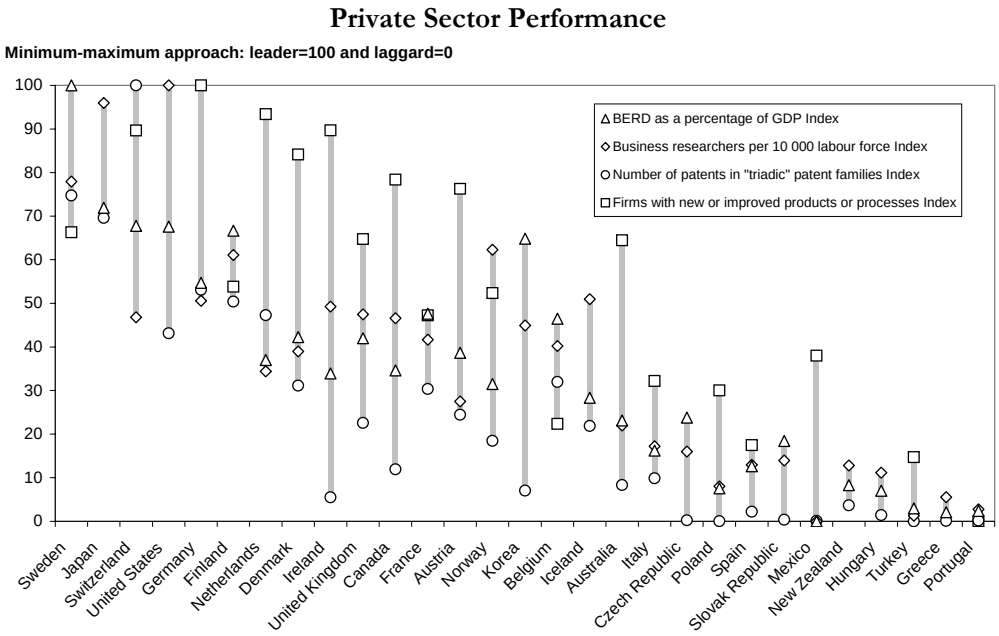
Investment in R&D

Investment in R&D is generally viewed as the best proxy for innovation capacity. Turkey performs well below other countries, particularly in the public sector (see Figure 10 below). Comparing the research and development activity, existence of business researchers, patent activity and innovative activity on firm levels among OECD countries, it is seen that countries like Sweden, Japan and the US are in the absolute lead position. At the other end of the activity curve is Turkey with insignificant level of patents and business researchers. Although investment levels are low for both the public (0.36% of GDP) and private (0.27% of GDP) sectors, R&D investment in the private sector (with an 85% increase from last year) is experiencing the greatest growth (European Commission, 2003d). Coupled to low investment levels, Turkey has the added issue of low levels of collaboration between the public and private sectors (we will return to this later).

Figure 10: Country Performance in Industrial Innovation



Note: The presentation is based on the "minimum-maximum method", which normalises each indicator in a way that it ranges between 0 (if a country is the laggard) and 100 (leader). Countries that are not shown have half or more or the information missing.



Source: OECD (2002b)

ICT and Economic Development

As stressed from the outset, a crucial determinant of future economic welfare is the ability to participate in - and benefit from - ICT. ICT is one determinant of productivity and is attaining growing importance for the competitiveness of any nation. A large portion of the US productivity gains in recent years can be attributed to ICT. When contrasting the EU and US productivity growth in the past decade, the recent European Competitiveness Report 2003 observed that "[a] key determinant of the superior US productivity performance relates to ICT

investment and use" (European Commission, 2003d). However, a number of countries within the EU have also been shown to reap significant economic benefits from both the production and the use of ICT. Some of the most advanced are in fact a group of smaller countries found in the European Union, notably Finland, Denmark, Sweden and the Netherlands.

ICT constitutes an important new channel or instrument for gaining market access. Conversely, failure to make use of this instrument constitutes a powerful barrier to entry. This is already experienced by SMEs in developed countries. Whereas it used to be possible to communicate via handwritten notes and fax, today everybody must master the art of communicating and interacting over the internet.

Although Turkey has rapidly improved its ability to access and use ICT, there is still considerable room for improving its overall ICT capacity (see 6 above). Again, it should be pointed out that the indicators fail to capture the large differences in ICT usage and access in Turkey with areas or pockets with high levels of usage and access (mainly middle and high income earners and companies in metropolitan areas) standing in stark contrast to the rest of the country where usage and access tend to be very low. Although internationally comparable data is hard to obtain, the variation in ICT access and usage generally mirrors the large regional and sectoral disparities that characterize Turkey. Thus ICT usage and access can be assumed to vary more widely in Turkey when compared with the OECD and other EU Candidate Countries. Notwithstanding these limitations, however, the indicators correctly point to a strong and urgent need for Turkey to act to improve the access and usage of ICT in the country as a whole.

Coupled to the challenge of increasing access and usage is the challenge of ensuring the secure exchange of information. Around the globe, this issue is coming under greater scrutiny. One of the big hurdles to capturing the potential benefits of the digital world is the increase in cyber crimes and misuse of ICT. Means to address some of the problems are available, but their application and implementation is impeded by the presence of a severely fragmented playing field. Whereas countries, regions and various stakeholders are adopting divergent positions on what should be done by different actors, individual governments as well as private actors are moving ahead launching their own solutions. The risk is that this will lead to technological "lock-in", low efficiency, and the exclusion of newcomers from existing networks. There is also the outlook that responses to cyber crime will be increasingly ineffective and insufficient, resulting in growing misuse and serious consequences not only for the digital world itself, but also for the international economy more broadly. More and more transactions can be undertaken on the net and thus increasingly bypass, and undercut, mainstream institutions for orderly exchange.[15]

[15] IKED, in close cooperation with a few partner organizations, has prepared a project and possible setup for international cooperation, which aims to explore new ways for addressing the issue of improving security and trust in the digital world, and move towards more orderly conditions for use of ICT and electronic commerce. This topic was addressed at the Business Symposium at the OECD Ministerial Meeting in Istanbul (June 2004). More information can be found on the Global Trust Center home page: **http://www.globaltrustcenter.com/**

Box 5: ICT Usage and Trust

A clear challenge for policymakers in any country seeking to strengthen ICT capacity and usage is linked to the issue of trust. A troubling aspect in this context is that ICT and electronic commerce is becoming viewed as increasingly susceptible to misuse, especially in the case of online payments over the Internet (Computer Security Institute, 2001). There are mounting risks associated with:

- Data confidentially, availability and integrity.
- Consumer and merchant authentication.
- Non-repudiation and liability in the case of fraud.
- Costs from failure.
- Interoperability requirements.

Misuse gives rise to direct costs for firms and individuals, but also indirect costs associated with loss of flexibility, goodwill, market positions, strategic opportunities, etc. As the opportunities for on-line transactions gradually enter more and more areas of economic activity, inability to counter misuse may undercut confidence in legislation as well as prevailing market forces in non-digital spheres as well.

There is a range of requirements for ensuring security, which vary from the perspective of supply and demand impulses (Centeno, 2002). Requirements include confidentiality, availability, integrity, authentication, repudiation, and liability. On a more fundamental level, requirements are related to human nature. Traditional face-to-face exchanges are influenced by a spectrum of cultural, institutional and practical means to build security and trust (Arrow, 1974). When these are violated, because body-language and other symbols are used in asymmetric ways, communication fails (Bjerke, 1999).

As is well-known, any human relationship is subjected to short-term strains. The prospect of continued interactions may, for instance, be important for enforcing co-operative behaviour (Axelrod, 1984). Building trust is associated with people enabling other people to believe in the mutual long-term benefit of their relationship. This is particularly demanding when it comes to global trade between countries that have diverging history and practices. The new digital instruments, when put to appropriate use, carry a remarkable potential for overcoming traditional barriers to transactions and interactions (Andersson et. al.., 2004b). At the same time, trade in networks requires replacing the traditional mechanisms for trust-building with new ones applying to the digital world, as well as creating new tools to manage the specific risks of the open network environment and e-commerce. To master these aspects, a country like Turkey needs to engage in international cooperation and networks aimed at capturing the new digital opportunities, and countering the risks.

Source: Andersson et al (2004c)

Ability to Transform Knowledge

The main output factors from investments (including, for example, education and R&D) in innovation are new products, services, processes or ideas which can either increase productivity or be commercialised/sold. These innovations must be implemented, generally by implementation in a company context. The ability to transform knowledge can be seen in indicators such as entrepreneurial/business skills, the knowledge intensity of industrial output and trade, the growth/development of companies, and capital market activity (particularly venture capital). Turkey has a young and ambitious population, with budding entrepreneurial skills, yet there is still a lack of adequate business skills to utilise available (venture) capital resources. Turkey's productive output is still focused on low-tech, high labour-intensive product/service segments. Although productivity and trade is on the rise, Turkey needs to

increase focus on higher value-added segments in order to ensure long-term competitiveness of its enterprises.

Composition of Manufacturing and Trade (Knowledge Intensity of Industry)

Companies are viewed as a key element of a country's ability to transform knowledge into competitive products and services. A company that can continually develop products/services to meet domestic or international demand can secure a competitive edge vis-à-vis its competitors. Yet, a distinction can be drawn between short-term and long-term success. Those companies that continue to innovate and develop unique competitive advantages are those who will survive and be successful in the long-term. Those that compete solely on low price, or some other temporary advantage, without the ability to innovate, are likely to be outperformed by competitors, and thus have lower chances of survival. On a national level, the composition of manufacturing and trade both provide some indication of a country's ability to develop its internal business sectors to meet market demands, and its ability to integrate with external markets.

As mentioned earlier, Turkey has been successful in transforming its economy from a primarily agricultural-based to an export-oriented industrial economy. Manufacturing and services represent about 90% of GDP. The leading sectors are chemical, petroleum and plastic products; textiles and leather; food and beverages; fabricated metal products; electrical machinery and equipments; motor vehicles and basic metals (see Table 8). Among these, textiles and motor vehicles are the biggest exporters (TÜSIAD, 2003b).

Table 8: Manufacturing Industry's Profile, 2000 (period average, sectoral breakdown)

	Av. No. Of Workers**	Gross Value Added*	Exports**
Total Manufacturing Industry	**633 384**	**37,769** USD mio	**32,673** USD mio
Total Manufacturing Industry	**100**	**100**	**100**
Food, Beverages and Tobacco	16	16	5
Apparel, Leather and Footwear	37	17	38
Chemical, Petroleum and Plastic Products	8	27	9
Basic Metal	5	6	9
Fabricated Metal Products	8	8	9
Motor Vehicles and Other Transport	5	8	12
Other Manufacturing	17	19	17

* "Annual Manufacturing Industry Statistics, 2000", SIS

**State Institute of Statistics, State Planning Organization 2002

Source: TÜSIAD (2003b)

However, as shown in Table 9 below, when comparing the sectoral composition of manufacturing industry value-added with a selection of OECD countries, Turkey has one of the lowest percentages of high and medium-high technology value-added (with a sum of 26.9% in 1996 which is slightly higher than Portugal's 20.7% and Greece's 19.6%).

Table 9: Sectoral Composition of Manufacturing Industry Value-Added in Some OECD Countries

	High Technology		Medium-High Technology		Medium-Low Technology		Low Technology	
	1980	1996	1980	1996	1980	1996	1980	1996
USA	10,8	15,9	31,6	32,1	27,1	21,7	30,5	30,4
Germany	9,2	9,7	34,7	37,4	31,3	31,8	24,8	21,2
France	9,4	12,0	29,3	28,9	30,2	28,8	31,1	30,3
Italy	5,2	6,1	29,2	27,1	28,4	27,7	37,2	39,1
UK	10,9	14,0	32,2	30,0	24,9	21,1	32,1	34,9
Greece	3,2	6,0	12,1	13,6	30,7	26,7	54,0	53,8
Portugal	4,0	4,4	14,6	16,3	31,9	21,3	49,3	57,0
Spain	4,6	6,9	25,2	31,2	30,3	29,5	39,9	32,4
South Korea	9,2	18,5	17,3	29,0	29,8	30,9	43,7	21,6
Turkey*	5,2	5,3	20,7	21,6	38,5	34,8	35,7	38,4
OECD Average	9,2	13,1	30,3	31,4	28,8	25,4	31,8	30,0

* 1990-1996

Source: State Planning Organisation 2003

This is not so remarkable in itself. However, when looking at the trend over time, it emerges that Turkey has invested increasing amounts in low-technological intensive sectors – with the share of investments in low-technology sectors increasing from less than 30% to 42% between 1990 and 1997 – during a period where the contribution of these sectors to overall value-added declined. During the same time period, the share of investments in high-technology intensive sectors fell from 3.6% to 2.5% (see Table 10).

Table 10: Distribution of Value-Added and Investments in Turkish Manufacturing Industry According to Technological Intensity Classification of Sectors (1990-1997)*

Value-Added								
Technology Groups	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*
High	5,21	6,28	5,73	6,18	5,54	4,89	5,25	4,34
Medium-High	20,65	20,1	21,27	22,17	21,17	22,08	21,58	23,27
Medium-Low	38,48	36,09	35,78	35,07	36,22	36,27	34,8	38,7
Low	35,66	37,74	37,22	36,58	37,07	36,76	38,37	33,69
Investment								
Technology Groups	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*
High	3,62	7,11	3,26	4,67	2,77	2,93	3,14	2,46
Medium-High	17,08	25,82	21,86	24,65	26,12	18,13	21,32	23,91
Medium-Low	50,16	34,07	44,39	32,01	34,34	36,95	31,57	31,76
Low	29,14	33	30,5	38,67	36,78	41,99	41,23	41,86

*Covers public sector and private sector companies employing more than 10 workers; excludes aerospace industry (classified under the high technology sector)

Source: State Planning Organisation (2003)

Overall, it can be stated Turkish investments have shifted towards low-technology intensive sectors and Turkish exports (Table 11) continue to be concentrated in labour-intensive, low-skill industries[16], at a time when, on a global scale, high-technology manufactures have become the fastest-growing export segment in global manufactured trade (see Figure 3). This is not to say that high-technology products ought to become the focus of Turkey's production and trade, but rather that Turkey should seek a good return on its investments, promoting innovation and moving up the value chain in those sectors where a competitive advantage exists.

[16] World Bank, 2003a; borrowed from Michael Peneder (2001), *Entrepreneurial Competition and Industrial Location*, Edgar Elgar, Cheltenham, UK. **Taxonomy I** (factor inputs) is divided into five categories where category 1=Mainstream, 2=Labour-intensive industries, 3=Capital-intensive industries, 4=Marketing-driven industries, and 5=Technology-driven industries. **Taxonomy II** (labour skills) is divided into four categories where category 1=Low-skill industries, 2=Medium-skill/blue-collar workers, 3=Medium-skill/ white-collar workers, and 4=High-skill industries.

Although Turkey has increased the share of advanced industrial commodities and decreased the share of agricultural products, continued efforts are necessary to strengthen this trend and thus ensure fulfilling the growth potential of the economy.

Table 11: Foreign Trade and Industry Groupings

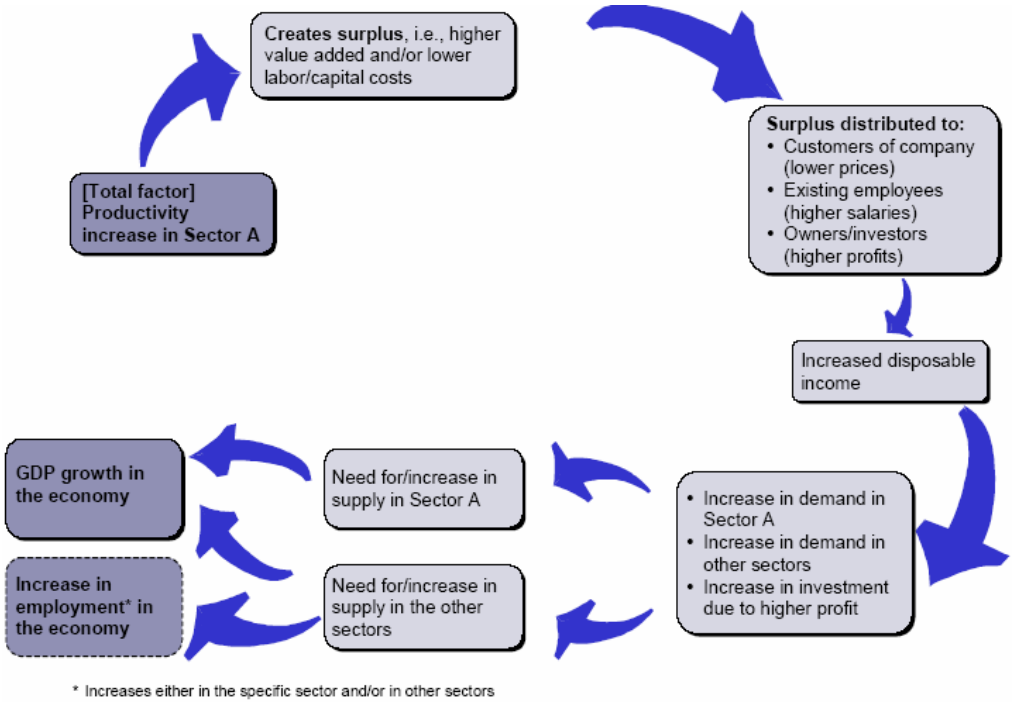
EXPORTS (USD million)[1]	Taxonomy I[2] *factor inputs*	Taxonomy II[2] *labour skills*	1996	1997	1998	1999	2000	2001	2002
General Total			**23 224**	**26 261**	**26 974**	**26 587**	**27 774**	**31 334**	**35 762**
Articles of apparel knitted or crocheted	1	1	3 569	3 962	4 234	3 787	3 729	3 641	4 424
Articles of apparel not knitted or crocheted	2	1	2 154	2 321	2 476	2 414	2 506	2 639	3 229
Motor vehicles, parts and accessories thereof	5/3	2	812	676	797	1 474	1 593	2 335	3 177
Electrical machinery and equipment	2	3	1 328	1 449	1 847	1 647	1 978	2 260	2 742
Boilers, machinery and mechanical appliances	4/1	2/4	806	982	1 164	1 272	1 418	1 745	2 124
Iron and steel	3	1	1 750	1 988	1 590	1 542	1 624	2 070	2 104
Made-up textile articles	2	1	621	806	934	944	1 021	1 055	1 245
Articles of iron and steel	3	1	506	611	662	605	697	976	1 234
Edible fruits	4	1	1 138	1 309	1 294	1 247	1 030	1 201	1 164
Cotton, cotton yarn and cotton fabrics	3	1	644	674	784	777	713	843	802
IMPORTS (USD million)[1]	**Taxonomy I[2]** *factor inputs*	**Taxonomy II[2]** *labour skills*	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**
General Total			**43 627**	**48 559**	**45 921**	**40 671**	**54 503**	**41 399**	**51 270**
Mineral fuels and oils	3	3	5 917	6 068	4 509	5 377	9 541	8 339	8 966
Boilers, machinery and mechanical appliances	4/1	2/4	8 463	9 154	8 928	6 390	7 817	6 304	8 073
Electrical machinery and equipment	2	3	2 966	3 850	4 401	5 098	6 113	3 636	4 334
Iron and steel	3	1	2 776	2 962	2 769	2 056	2 778	1 797	2 879
Plastics and articles thereof	1	1	1 653	1 927	1 943	1 822	2 179	1 733	2 375
Motor vehicles, parts and accessories thereof	5/3	2	2 693	4 130	3 728	3 094	5 467	1 827	2 326
Organic chemicals	3	3	1 572	1 704	1 627	1 626	2 037	1 625	1 873
Pharmaceutical products	5	4	412	551	720	858	1 035	1 088	1 437
Cotton, cotton yarn and cotton fabrics	3	1	721	1 045	995	671	1 080	950	1 289
Optical instruments and apparatus	5	3	974	1 079	1 145	1 027	1 242	953	1 081

[1] TÜSIAD, 2003
[2] World Bank, 2003a; borrowed from Michael Peneder (2001), *Entrepreneurial Competition and Industrial Location*, Edward Elgar, Cheltenham, UK

Labour Productivity and Competitiveness

Productivity growth is the engine of economic growth, demonstrated time and again in developed and developing economies alike. As illustrated in Figure 11 below, increases in productivity lead to higher value-added and/or lower costs, which in turn lead to increases in quality, output, employment and general economic growth.

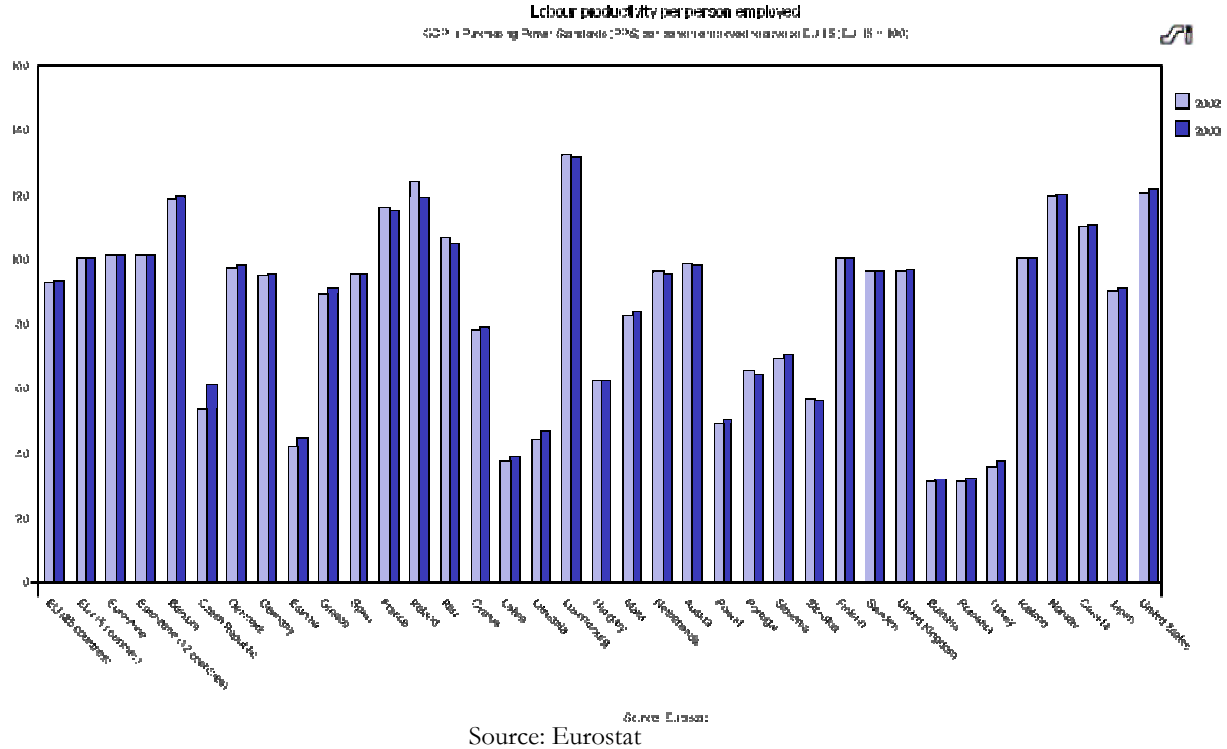
Figure 11: Virtuous Cycle: Productivity Growth Leading to Economic Growth



Source: McKinsey Global Institute (2003)

In Turkey, productivity performance is weak: labour productivity is at 30% of the U.S. level and 40% of the enlarged European Union (EU-25). As shown in Figure 12 below, Turkey only outperforms Bulgaria and Romania on this indicator. In modern segments, skill levels are high, and world class players are present, but in traditional segments, modern operational and marketing techniques are scarcely known. Labour productivity in the traditional segment of a sector can be as low as 20 percent of benchmark levels, yet it is this segment that accounts for more than half of employment in the sector (McKinsey Global Institute, 2003).

Figure 12: Labour Productivity per Person Employed
(GDP in PPS per person employed relative to EU-15)



Source: Eurostat

This combination of low productivity combined with high share of output drives down Turkey's total performance. In international rankings of competitiveness, Turkey ranks near the bottom in comparison to other countries in the region. As illustrated in Table 12 below, showing international rankings of growth and business competitiveness[17], Turkey ranks relatively low on both the Growth Competitiveness Index (GCI) and Business Competitiveness Index (BCI), namely 65th and 52nd out of 102 countries, respectively.

[17] Published annually by the World Economic Forum, the *Global Competitiveness Report* constitutes one widely-recognised effort at systematically measuring and comparing countries' competitiveness and innovative capacity. The Growth Competitiveness Index (GCI) and the Business Competitiveness Index (BCI) combine hard data and data from Executive Opinion Surveys, conducted with leading executives and entrepreneurs to gauge the current perceptions of the business environment in their country. The GCI aims to show the potential for the world's economies to attain sustained economic growth over the medium and long term, as measured in three broad categories: the macroeconomic environment, the quality of public institutions, and technology. The microeconomic foundations of productivity are comprised of two interrelated areas: the sophistication with which domestic companies or foreign subsidiaries operating in the country compete, and the quality of the microeconomic business environment in which they operate. This is what the BCI tries to capture.

Table 12: Comparative Competitiveness Rankings

Country	Growth Competitiveness Index (2004 rank out of 104)	Business Competitiveness Index (2004 rank out of 104)
Finland	1	1
United States	2	2
Sweden	3	4
Denmark	5	7
Germany	13	3
Ireland	30	22
Estonia	20	27
Malta	32	50
Slovenia	33	31
Lithuania	36	36
Hungary	39	42
Czech Republic	40	35
Slovak Republic	43	39
Latvia	44	49
Poland	60	57
Croatia	61	72
Bulgaria	59	75
Romania	63	56
Turkey	66	52
Russian Federation	70	61
Macedonia	84	83
Ukraine	86	69
Serbia	89	85

Source: World Economic Forum (2004)

Until Turkey's leaders are able to create the appropriate incentives to encourage investments in modernisation and productivity improvements, low productivity will continue to plague the economy and discourage the few companies striving to innovate from undertaking such initiatives.

Willingness to Innovate

The willingness to innovate encompasses those factors relating to the environment. Does the country have a stable economic environment in which to operate? Are framework conditions conducive to acting on an idea – starting and running one's own company? Are there business support mechanisms in place? Is the legal, regulatory and tax system overly complex or not? Are there special programmes or initiatives that are particularly beneficial (e.g. that support a specific type of investment or collaboration)? Are there incentives for working with other companies or other stakeholder groups (e.g. universities or research institutions)? Turkey is increasingly aware of the changes necessary to improve its business environment – to encourage both domestic companies and foreign investors to initiate and develop their business in Turkey. There have been several actions taken recently to encourage innovation in Turkey (including a new law reducing the amount of time it takes to establish a company), yet there are still issues to be resolved. Discontent with high corporate tax rates and the total tax burden, as well as unsuccessful attempts to support university-industry research collaboration are among the main challenges to developing an environment more conducive to innovation in Turkey.

Business Environment in Turkey

The World Bank Group has recently initiated the Doing Business project[18], aimed at tapping private sector initiative to motivate reforms through benchmarking the regulatory environment for business. The focus is on domestic, primarily smaller companies, and the analysis is based on assessments of laws and regulations, with input from and verification by local experts (World Bank, 2004c). The project currently assesses the business environment through the analysis of seven topics: starting a business, hiring and firing workers, registering property, getting credit, protecting investors, enforcing contracts, and closing a business.

Table 13: Snapshot of Business Environment - Turkey

	Turkey	Regional Average	OECD Average
Starting a Business			
Number of Procedures	8	9	6
Duration (days)	9	42	25
Cost (% GNI per capita)	26.4	15.5	8.0
Min. Capital (% GNI per capita)	0.0	51.8	44.1
Hiring and Firing Workers			
Difficulty of Hiring Index	44	31.3	26.2
Rigidity of Hours Index	80	51.5	50.0
Difficulty of Firing Index	40	42.3	26.8
Rigidity of Employment Index	55	41.8	34.4
Firing Costs (weeks of wages)	112	38.3	40.4
Registering Property			
Number of Procedures	8	6	4
Time (days)	9	133	34
Cost (% property per capita)	3.3	3.1	4.9
Getting Credit			
Cost to Create Collateral (% of income per capita)	19.9		7.7
Legal Rights Index (0-10; higher scores indicate laws better designed to expand credit)	1		5.4
Credit Information Index (0-6; higher values indicage more credit information available)	4		2.0
Public Credit Registry coverage (borrowers per 1000 capita)	32		6.3
Private Bureau coverage (borrowers per 1000 capita)	300		46.7
Protecting Investors			
Disclosure Index (0=low disclosure, 7=high disclosure)	2		
Enforcing Contracts			
Number of Procedures	22	29	19
Time (days)	330	412	229
Cost (% of debt)	12.5	17.7	10.8
Closing a Business			
Time (in years)	2.9	3.3	1.7
Cost (% of estate)	8	13.1	6.8
Recovery Rate (cents on the dollar)	25.7	30.5	72.1

Note: All index values between 0 and 100 (unless otherwise noted)
Source: World Bank (2004c)

On these seven indicators (see Table 13), Turkey seems to be performing fairly well, relative to the regional average, on all five areas. In particular, starting a business in Turkey appears to both

[18] More information on this project, and the *Doing Business* database, can be found at: http://rru.worldbank.org/DoingBusiness/

take less time and require much less starting capital than in other countries. The recent law on starting a business reduces both the duration and cost of starting a business even further, putting Turkey near the top in the region for this indicator (see Table 14). Moreover, in international comparisons Turkey is improving in terms of reforms in the field. Turkey has reformed recently in the area of administrative requirements for new companies, suggesting that already existing government agencies should process the application of business registration, in stead of forming new licensing bodies (World Bank, 2004c).

Table 14: Regional Benchmarking for Starting a Business

Region or Economy	Number of Procedures	Duration (days)	Cost (% GNI per capita)	Min. Capital (% GNI per capita)
Europe & Central Asia	9	42	15.5	51.8
OECD: High income	6	25	8.0	44.1
Albania	11	47	32.2	41.3
Armenia	10	25	7.0	4.5
Austria	9	29	6.0	64.1
Azerbaijan	14	123	14.7	0.0
Belarus	16	79	25.3	44.3
Belgium	4	34	11.3	14.1
Bosnia and Herzegovina	12	54	46.2	65.0
Bulgaria	10	32	10.3	116.6
Croatia	12	49	14.4	24.4
Czech Republic	10	40	10.8	44.5
Denmark	4	4	0.0	48.8
Estonia	6	72	7.5	49.7
Finland	3	14	1.2	29.3
France	7	8	1.1	0.0
Georgia	9	25	13.7	54.5
Germany	9	45	5.9	48.8
Greece	15	38	35.2	125.7
Hungary	6	52	22.9	86.4
Ireland	4	24	10.3	0.0
Italy	9	13	16.2	11.2
Kazakhstan	9	25	10.5	32.7
Kyrgyz Republic	8	21	11.6	0.6
Latvia	7	18	17.6	41.4
Lithuania	8	26	3.7	62.8
Macedonia, FYR	13	48	11.6	89.5
Netherlands	7	11	13.2	66.2
Norway	4	23	2.9	28.9
Poland	10	31	20.6	237.9
Portugal	11	78	13.5	39.5
Romania	5	28	7.4	0.0
Russian Federation	9	36	6.7	5.6
Serbia and Montenegro	11	51	9.5	120.3
Slovak Republic	9	52	5.7	46.1
Slovenia	10	61	12.3	19.0
Spain	6	108	16.5	16.9
Sweden	3	16	0.7	36.9
Switzerland	6	20	8.6	33.2
Turkey	**8**	**9**	**26.4**	**0.0**
Ukraine	15	34	17.6	113.9
United Kingdom	6	18	0.9	0.0
Uzbekistan	9	35	17.0	21.9

Source: World Bank (2004c)

However, there is still much discontent among business owners and managers regarding the taxation system in Turkey. In particular, companies complain that the tax burden on corporations

is too high and, perhaps more importantly, it is too inconsistently collected. According to TÜSIAD,

> *The gradually growing failure in collection of income and corporation taxes tips some significant points. As of 2001, the share of withholding taxes in income tax reached 37% in wages and 95% in total. Concentration of income tax in the same period indicates that first 1500 corporate taxpayers (0.26% of total corporate taxpayers) provide 85% of total corporate taxes. This indicates that the development of a systematic structure in the tax system is hampered; the legality principle of taxation is harmed; and that the current tax system provides and incentive to evasion* (TÜSIAD, 2003c, p.10).

The latter point reiterates the need to address the problems connected with the informal economy, and to work towards creating a business environment that is supportive of domestic companies, and conducive to foreign investment. Widespread perceptions or expectations of corruption, a large informal economy, and economic and political instability can create uncertainty and disincentives and thus seriously undermine or offset favourable laws and regulations for doing business in a country.

Science-Industry Collaboration

Science-Industry collaboration is an important element of national innovation. As discussed in Box 7 below, it is difficult for any single actor or stakeholder group to succeed in influencing national innovation performance. Investment and commercialisation of research, in particular, is an area requiring concerted efforts in order to be successful. Collaboration in this area is especially important for countries, like Turkey, with low levels of gross R&D investment. In order for Turkey to reap rewards most effectively, industry needs to work more closely with research and other scientific institutions.

At present, there is a very low level of collaboration between science and industry. In the 2002-2003 Global Competitiveness Report, Turkey was ranked 71st out of 80 countries with regards to university/industry research collaboration (World Economic Forum, 2003a). In its recent Knowledge Economy Assessment, TÜSIAD also discusses the issue of poorly-functioning university-industry collaboration (TÜSIAD, 2003a). To address this issue, the government has kicked-off a number of initiatives, including incubators, techno parks and technology development zones.

Few of these initiatives have proven particularly successful thus far. Reasons for this include primarily the lack of interest and demand from companies, and the lack of long-term policies and implementation methods. Companies are not perceived as being interested in R&D. To spur companies' interest, the government enacted the Law on Technology Development Zones (TDZs) in June 2001 (see summary in Box 6). This law aims at strengthening cooperation between universities, research institutions and the productive sector in order to introduce innovations in products and production methods, raise the quality or standard of products, increase productivity, decrease the cost of production, etc. As an incentive to companies to establish themselves in these TDZs, the law provides for temporary exemptions from both personal income and corporate taxes.

Box 6: The Law on Technology Development Zones in Turkey

The Law of the Technology Development Regions (Law No. 4691) was enacted on 26th June, 2001, with the aim of creating technological information through the cooperation of universities, research institutions and the productive sector in order to:

- give industry in Turkey a structure for international competition and export
- introduce innovations in products and production methods
- raise the quality or standard of products
- increase productivity
- decrease the costs of production
- commercialise technological knowledge
- support production and entrepreneurship
- enable SMEs to adapt to new and advanced technologies
- create opportunities of investment in technology intensive areas by taking into account the decisions of the Science and Technology Higher Council
- create job opportunities for researchers and qualified persons
- help the transfer of technology
- provide the technological infrastructure which will quicken the entry of foreign capital which, in turn, will provide advanced technology.

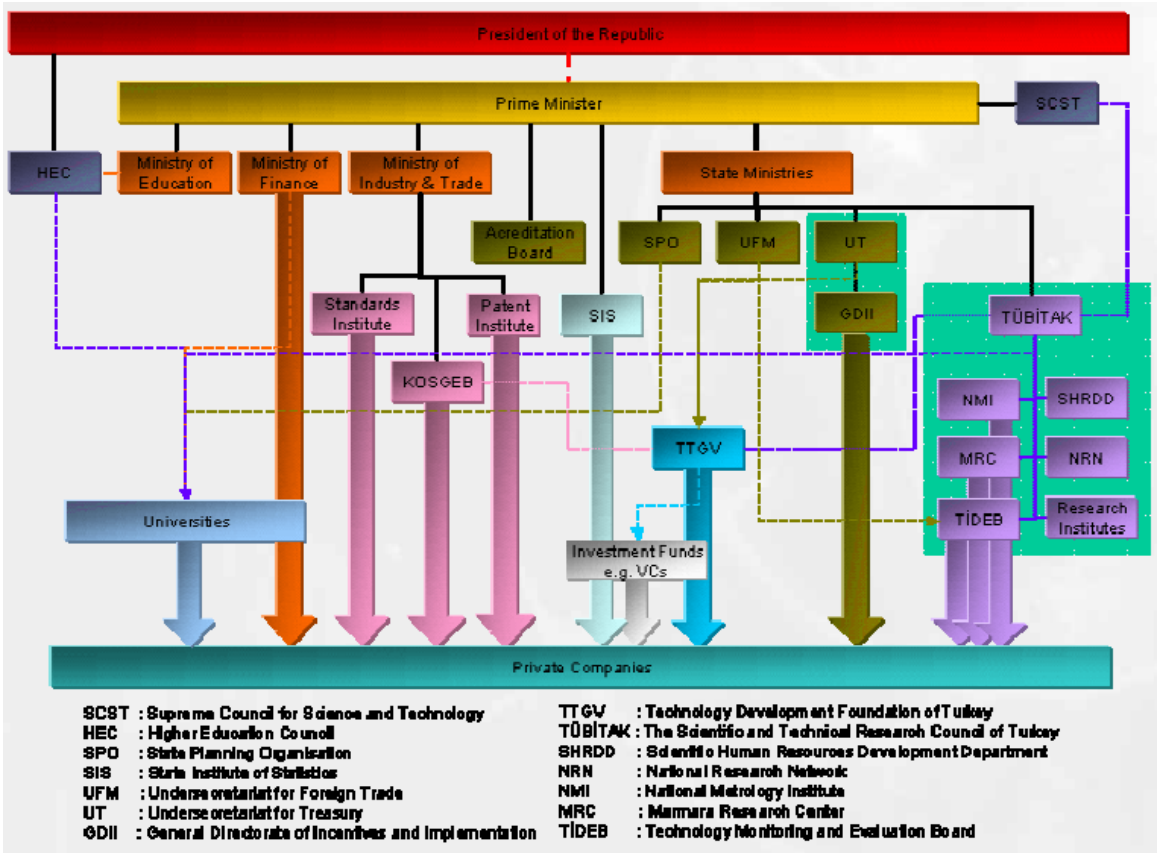
Since its inception, the law has lead to the establishment of several new Technology Development Zones (TDZs) throughout Turkey.

There is much debate as to the consequences of this law. For some, it is viewed as a necessary measure to spur collaboration between industry and science/universities; for others, it is viewed merely as an expensive land development programme for universities. Whatever the opinion, the conclusion is the same: other measures, tailored more specifically to regional and specific stakeholder needs, are motivated to strengthen collaboration and spur innovation and technology development between these groups.

Innovation Governance

An illustration of the Turkish innovation system is shown below in Figure 13. Coded in dark blue, orange and dark green, the institutions related to the management of science, technology and innovation on a national level are found, and it is here related policies and tools for implementing polices are decided and coordination is provided. There are many institutions involved on this level, and the very centralized structure has also been described as a pyramid turned upside down (TÜSIAD, 2003a). In pink, actors such as TURKAK, DIE and Turkish Patent Institution carry out monitoring and assessment activities. Despite the high numbers of actors, this level lacks independent assessment institutions which can increase the functionality on a national level. The institutions in blue, purple and white are the more operative levels providing hands-on support services for SMEs including finance, mentoring, R&D support programmes and techno parks. These institutions have been criticized for not being fully effective in implementing initiatives and infrastructure (ibid).

Figure 13: National Innovation System in Turkey



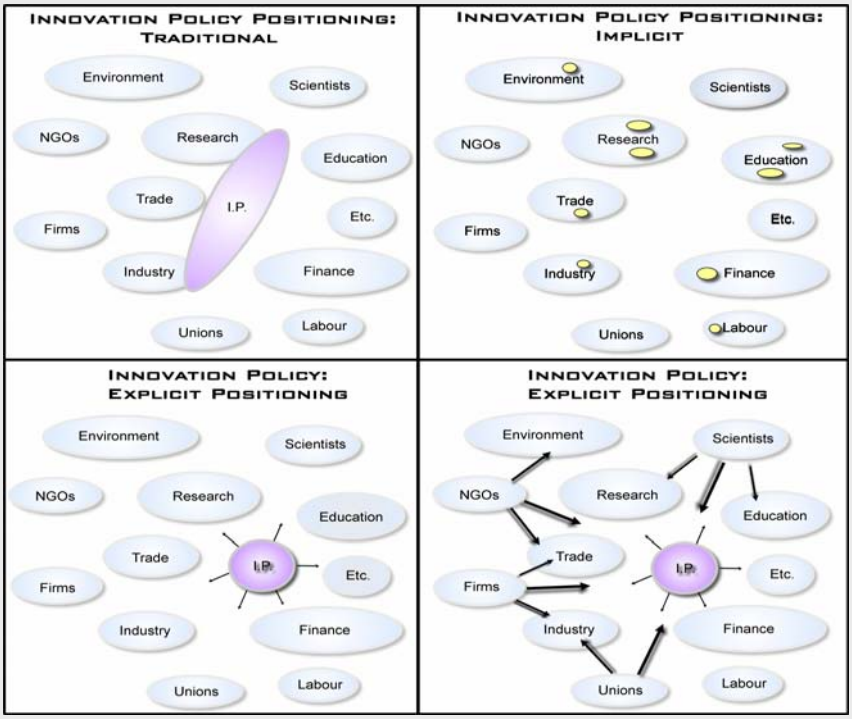
Source: TÜSIAD (2003a)

When seeking to design and implement effective policies for innovation and enterprise development, policymakers must take into consideration the different key competencies of and challenges for LSEs, on the one hand, and SMEs, on the other hand. At the same time, policymakers must be aware of the importance of synergistic relationships between LSEs and SMEs as a precondition for economic growth and competitiveness.

SMEs require support through policies designed to meet their specific needs and to address the particular obstacles facing them. At the same time, policymakers must strive to link enterprise policies (both those geared for SMEs and LSEs) together with innovation policies, as part of their national innovation system (see Box 7 below).

Box 7: On Innovation Policy Governance

In practice, there are sharp differences between countries in the way that innovation policy is designed and implemented. Some of these depend on the political colour of governments and, e.g., the way in which they favour market-oriented or government-sponsored programmes. Beside this, and often more stable than which political configuration is at the top at a particular point in time, innovation policy is subjected to systematic differences between the influence of traditional policy perspectives. The figures below provide schematic illustrations of alternative situations. According to the "traditional positioning", the responsibility of innovation policy (blue domain) is placed somewhere between the ministries (in green) in charge of education, research and industry. Some countries practice more of an "implicit" approach, however, where responsibilities are spread out, resulting in a shared sense of ownership but typically also resulting in coordination problems. A newer and generally more successful approach is that which brings an "explicit" responsibility not dominated by any traditional policy domain, but with sufficient clout to allow for coordinated concerns and initiatives across ministries. As the final figure shows, there is not only the task of bringing together departmental interests, but also of allowing for, and orchestrating, the impetus of multiple relevant stakeholders.



Which of these approaches are practiced crucially matter for what weight is attached by national governments to different kinds of issues and concerns. A direct influence by the Ministry of Industry, for instance, tends to account for high priority to public-private partnership and that appropriate room is left for private sector interests even in government-led initiatives. A more active role for the Ministry of Finance will account for stronger emphasis on indirect, horizontal policy instruments rather than public funding or fine-tuning with incubators or science parks.

A strong engagement by the Ministry of Education in research and innovation will place priority on basic rather than applied research, and will likewise emphasise supply-side aspects of human capital accumulation rather than the demand side. In between the extremes, shared forms of responsibility will produce outcomes that in part depend on which room is left for these different influences to dominate.

National governments themselves will have some difficulty having perspective on the strengths and weaknesses that result from the asymmetric influence of one ministry or the other. Nevertheless, they may be aware of some consequences, and thus try to push to other actors – such as regional/local authorities or the private sector – the responsibilities for those tasks which are likely to suffer. The other actors are likely to be more aware, as they are closer to and can witness the practical consequences of a bias in policy. They may thus from their end try to push for compensating mechanisms or undertaking themselves actions which are then better handled that way. Governments assume the overall responsibility, however, for assuring governance structures that include such considerations. Thus, irrespective of the way in which national governments organise the cross-cutting horizontal aspect of innovation policy, putting in place incentives that encourage systematic learning on the part of the different stakeholders how to refine and leverage their contributions to clusters should be viewed as a priority.

Excerpt from Andersson et. al.(2004c)

Although SMEs have specific characteristics that drive the demand for policy measures tailored to them, they should not be treated as an independent or isolated group, but rather as an integral component of a functioning innovation system. SMEs, as an economic entity, constitute an important dynamic element of the innovation system, through their potential for renewal – either within existing companies or through the appearance and disappearance of companies –, growth and dynamism. SME policies should be aimed at enabling a critical mass of SMEs to be innovative, to compete internationally and to grow, rather than at necessarily preserving existing firms. This systemic approach contrasts with traditional SME promotion strategies, which rely heavily on direct and subsidized provision of financial and non-financial services to SMEs. Government's role is to create an enabling environment for SME competitiveness and to develop markets for SME relevant services, rather than substituting for them (Hallberg, 2000). The role for government in this area, as for policy intervention in general, should thus be motivated by different types of market, government and policy imperfections or failures.

In Turkey, policies devoted to support and develop enterprises rely on the principle of ensuring constant development of the SMEs, and supporting innovation activities so that they can compete in the global market. This work is ensured through a network of public and semi-public organisations. The organisations are mainly structured as national organisations operating under the supervision of the national government. Some of them are managed jointly with members of other public or private institutions. In short, the operative organisations are categorized as either:

- **National organisations** provide support to SMEs through networks of local support centres (Small Enterprises Development Centres and Technology Development Centres), Universities, Banks, Unions, and Associations (EICC Local Business Consultants System)

- **Private associations** of companies sometimes provide SMEs support services locally, or specifically depending on the industry's sector

- **National organisations operating as local bodies** for EU's development and information programmes (Euro Info Correspondence Centre- EICC, EUREKA, UNIDO, Hungarian Academy of Sciences, UBYT-International Scientific Publications Promotion Programme, TÜSEP- International Scientific Meetings Promotion Programme).

The Turkish national innovation services consist of mainly publicly funded SME support organisations. Besides public funding, other key financial sources are the European Commission and international organisations. Local funding does not play a significant role. The organisations provide local services through decentralised networks such as support centres, banks, unions, associations and universities.

Despite some ineffectiveness in the innovation system structure, Turkey has made progress in following the approach of the EU SME policy, and from 2003 the country has been associated with the EC Sixth Framework Programme on Research devoted to local research and technology development. TÜBITAK is acting as the national contact point of Turkey. However, there is room for improvement in a number of areas. The European Commission outlines the necessity for developing and implementing a national SME strategy in line with the European Charter for SMEs and the multi-annual programme for enterprise development and entrepreneurship including strengthened business environment for SMEs, and in particular enhanced access to financing. These are the main areas where Turkey faces major remaining challenges connected to SME development. Some of the policy-related activities that have been implemented in order to fulfil the outstanding issues are results of collaborations between the various national SME support organisations and are listed below in Box 8.

Box 8: Examples of Implemented SME Policies

- Work coordinated by the Ministry of Industry and Trade under the heading "Formation of companies" reduces the phrases required when forming a new company.

- In order to encourage entrepreneurship, KOSGEB has carried out activities targeting universities and students considering starting their own business. Another KOSGEB programme "Entrepreneurship Training Project" has been designed to develop SMEs by increasing capacities used in the process of formulating national SME policies.

- The Credit Guarantee Fund has been assigned to solve the problems related to SME guarantees. Up until 2002, the fund has provided guarantees surety ships for euro 38.5 million in 1028 companies. TOBB, TESK, TOSYOV, MEKSA, KOSGEB and HALBANK are partners in the Credit Guarantee Fund.

Summary

Overall, Turkey remains in a challenged position with regard to innovation and long-term competitiveness indicators. Of concern is the slow development of ICT infrastructure, allowing the broader population access to knowledge, and the low overall level of investment in R&D. Coupled to this, the low level of collaboration between industry and universities/research institutions points to the challenge that Turkey faces of reaping effective benefits from the R&D investments made. There is a generally low level of knowledge intensity in both production and trade, with a large proportion of goods in low-tech, high labour-intensive sectors. This may lead to increased trade levels in the short term, but will likely lead to problems with international competitiveness if firms cannot upgrade their technological capacity and ability to innovate. Given that there does not seem to be an adequate base of entrepreneurs willing and able to change this situation, the indicators on sectoral composition and trade are quite discouraging. Although there are positive trends in business environment indicators (in particular in relation to starting a business), there is still much concern over taxation and incentives provided to industry to promote research collaboration.

In general, Turkey is making strides in the area of innovation, proven by the extremely positive trends in the European Innovation Scoreboard, yet is facing a challenging road ahead as there

continues to be a number of high priority concerns to address. The government is confronted with the added challenge of organizing itself more effectively, as the current innovation governance lends to long lead times to reach consensus, confusion over areas of responsibility, and a discontented private sector who doesn't know exactly what to do or where to turn to receive the support and mobilize the action that they need. As mentioned at the beginning of the chapter, it is the private sector that drives both output and innovation. SMEs have a particularly important role in Turkey – serving as the main employer, and the most flexible source of innovation in the country. In the next chapter, we will discuss the situation of SMEs in Turkey, and address the key challenges they face with regard to innovation.

CHAPTER 3: CATALYSTS FOR INNOVATION – SMES IN TURKEY

Introduction

Policymakers worldwide have increasingly realized the key role of innovation – and innovation policy – for competitiveness, economic development and growth.[19] Similarly, there is a widespread consensus among decision-makers that small and medium-sized enterprises (SMEs) are important both for job creation and GDP growth and that they provide an important and unique breeding ground for innovation and thus for national competitiveness (Bresnahan et al., 1999; Audretsch and Thurik, 2001; European Commission, 2002a; European Commission, 2003b). Each actor group in the innovation system has specific competencies to offer and roles to play (see Box 3 and Box 7). Within the private sector, different types of companies can meet the challenges arising from knowledge based economies in diverse ways. Some of challenges are best handled by big, already established firms which enjoy economies of scale and scope. At the same time, in the era now arising, many of the things that used to require a central location and great scale may now be done in the periphery, at small size.

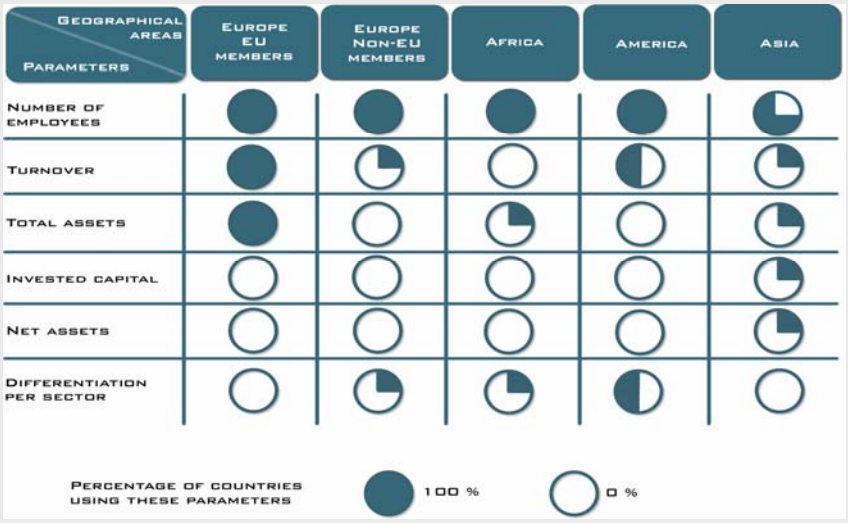
The Rising Importance of SMEs Globally

Globalization and ICT development give rise to striking new options in the development of SMEs. Not only can a company locate its branches in different parts of the world and tie the organisation together through ICT. In theory, a small company can address the entire world market in its particular niche. The key is the combination of the advantages of flexibility at small size and the economies of scale and scope that can be captured at the level of networks of partners and customers, where outsourcing of a number of functions allow for more effective concentration on core business. The new opportunities for networking and cluster development are now observable in all sorts of industries and countries around the world.

A dynamic and competitive SME sector is pivotal for economic renewal and employment. SMEs are generally considered the best "training ground" for entrepreneurship and management skills, have the flexibility to respond quickly to changing demands, and are able to implement new ideas and form new partnerships more easily than larger companies. Given the right framework conditions, SMEs can serve as incubators for new ideas, exercising their ability to act quickly and flexibly, taking advantage of the full range of national resources (irrespective of geographical location), and engaging in experimentation more easily than big, established firms. At the same time, SMEs face many barriers to their growth and development and challenges such as lack of capital and international networks are felt more acutely by smaller companies worldwide.

[19] What constitutes innovation is a complex matter, and measuring and comparing innovation is a subject area still very much under development. Traditional perspectives have viewed innovation as closely related to science and technology. In practice, however, innovation can take many forms, including commercialization of science and technology as well as the development and implementation of new ideas more generally, as in the form of organizational change or inventing new ways of doing things. Innovation is thus the key not only to economic progress, but also to identifying new solutions to pressing social issues, such as an ageing population or environmental degradation.

Box 9: What are SMEs?



The SME definition depends very much on the geographical region. As various definitions are applied distortions occur when comparing global SME data (see below). However, the number of employees represents the most common driver, and in Europe turnover is prevalently used.

According to the European Commission, SMEs are defined as all enterprises employing less than 250 employees and earning less than €50 million in revenue (or having a total net worth of less than €43 million). In addition, no more than 25% of the capital or voting rights may be held by one or more enterprises which are not themselves SMEs. There are three size classes of SMEs; *Micro Enterprises* with less than 10 employees, *Small Enterprises*, between 10-49 employees and *Medium-sized Enterprises* with 50-249 employees (European Commission, 2002a)

Source: INSME (2002), EU-Commission (2002a).

Also in Europe, growing attention is paid to the role of SMEs. The Lisbon Council Meeting in March 2000 set out an ambitious target for Europe to become the most competitive and dynamic knowledge-based economy during the next decade. Following the Lisbon Summit, the resulting "European Charter for Small Enterprises" is a milestone for recognizing the number and relevance of SMEs in Europe, as well as for developing specific programmes and policies for them. The Charter outlined ten key areas for further EU support and action including strengthening the technological capacity of small enterprises, entrepreneurial education and training, improved legislation and regulation, and availability of business skills. Concrete actions on these key areas are detailed within the "Multiannual Programme for enterprise and entrepreneurship, and in particular for small and medium-sized enterprises (2001-2005)", which is reviewed annually. Mirroring their rising importance for employment, innovation and growth, there has been an increasing focus among policymakers on SMEs. As stated by the former European Enterprise Commissioner:

> *Small and Medium Sized Enterprises form the backbone of the European economy. They are key to entrepreneurial spirit and innovation in the EU and thus crucial to ensure EU competitiveness. A proper definition of which enterprises are SMEs makes it easier to identify their needs and to develop efficient policies to compensate for the specific problems linked to their small size. This is vital for the competitiveness of an enlarged European Union, its growth and employment.* (Erkki Liikanen, former Enterprise Commissioner for the EU, 8 May 2003, Brussels)

However, the European Union is not alone in highlighting the significance of SMEs in economic growth and competitiveness. As detailed in Box 10 below, many international organizations and regional policymaking fora have, through their charters and programmes, emphasized the importance for policies and activities developed to suit the specific needs of this group of enterprises.

Table 15: Employment in Non-primary Private Enterprises

Table 2.2: Employment in non-primary private enterprise, Europe-19, USA and Japan, 1998

	Europe-19	USA	Japan (1996)
	%		
SMEs			
– Micro	34	11	n/a
– Small	19	19	n/a
– Medium-sized	13	16	n/a
– Total	66	46	33
LSEs	34	54	67
All enterprises (1 000)	118 310	108 120	57 350
Occupied persons per enterprise	6	19	10

Source: Estimated by EIM Business & Policy Research; estimates based on Eurostat's SME Database. Also based on European Economy, Supplement A, June 2001 and OECD: Economic Outlook, No. 65, June 2001; Office of Advocacy, U.S. Small Business Administration, based on data provided by the U.S. Department of Commerce, Bureau of Census, Statistics of U.S. Businesses.; Japanese Small Business Research Institute.

Source: European Commission (2002c)

When comparing European SMEs to those in countries such as the US and Japan, it is evident that size and structures differ among them. The average number of occupied persons per enterprise ranges from 6 in Europe-19, to 10 in Japan, and 19 in the USA (see Table 5). More striking, however, are the differences in the size-structure of the enterprise sector. While in Europe-19, SMEs account for approximately two-thirds of total employment, this figure amounts to only 46 % in the USA, and 33 % in Japan. Thus, SMEs appear to play a greater role in employment growth and in the economic structure in Europe (European Commission, 2002c).

Box 10: Overview of Selected Multinational Charters/Programmes for SMEs

OECD Bologna Charter
In June 2000, the OECD organized the first international, ministerial-level conference on SMEs: *Enhancing the Competitiveness of SMEs in the Global Economy: Strategies and Policies*. The Bologna Conference highlighted best practices to improve the competitiveness of SMEs in the context of the globalised, knowledge-based economy. A key outcome of the conference was the adoption of the *Bologna Charter on SME Policies* by the governments of almost 50 OECD member and non-member economies and the initiation of the *Bologna Process*. A 2nd OECD Ministerial Conference on SMEs was held in Istanbul June 4-5, 2004.

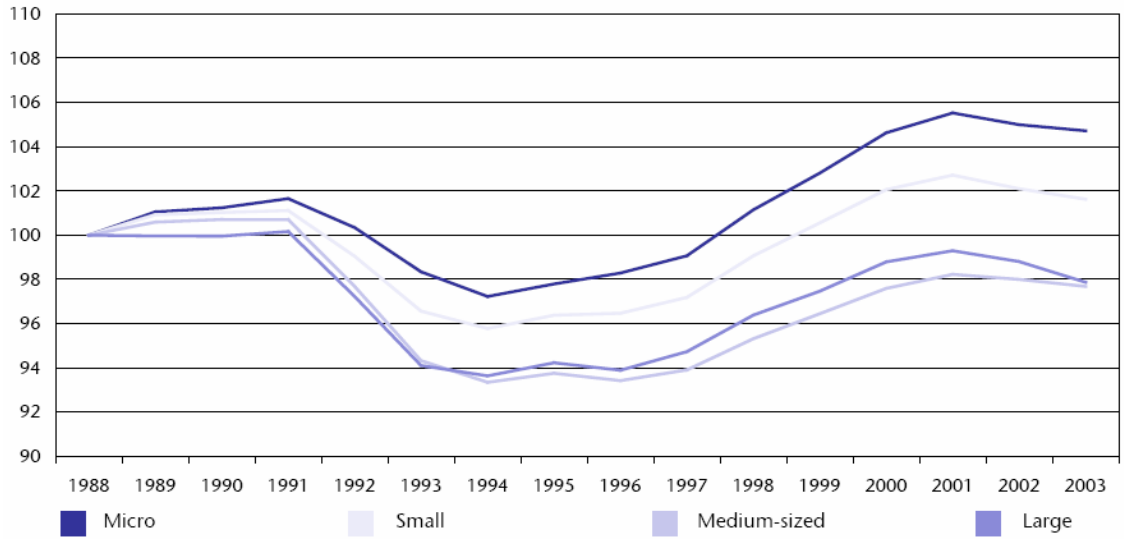
INSME
The International Network for SMEs (INSME) is a non-profit association open to international membership, whose mission is to stimulate transnational cooperation and public and private partnership in the field of innovation and technology transfer to SMEs. INSME's role is to create a link between SMEs, Policy Makers and Intermediaries by acting as an information hub, a facilitator for alliances, a promoter of networking, and a catalyser for international cooperation and political dialogue. INSME is promoted by the Italian government within the Bologna Process.

EU Lisbon Meeting and European Charter for SMEs
The Lisbon Council Meeting in March 2000 set the goal for the European Union to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth, more and better jobs, and greater social cohesion. The EU recognized SMEs' role as drivers for innovation, employment and social integration, and endorsed the *European Charter for Small Enterprises* in June 2000 in order to improve the situation of small business in the EU by stimulating entrepreneurship, evaluating and adjusting existing measures, and ensuring that policymakers take due consideration of small business needs.

Maribor Declaration
In the Candidate Countries, the *CC Best report* summarized good practice in promoting entrepreneurship and competitiveness. In February 2002, the Commission invited all 13 Candidate Countries to Maribor (Slovenia) to endorse the European Charter for SMEs. The Maribor Declaration was signed in April 2002, and is the Candidate Countries' acknowledgement of the Charter as the basis for action to support and develop small enterprises, as well as their statement of interest in participating in the reporting process on the implementation of the Charter.

Istanbul Declaration
On the 25 June of 1992 in Istanbul, the Heads of States or Governments of Albania, Armenia, Azerbaijan, Bulgaria, Georgia, Greece, Republic of Moldova, Romania, Russian Federation, Turkey and Ukraine signed a Summit Declaration heralding the coming of the Black Sea Economic Cooperation (BSEC). From the very outset of their co-operation the Member States of the BSEC have paid particular attention to the development of small and medium-sized enterprises (SMEs) and entrepreneurship. While convening seminars and workshops on SMEs within the BSEC region, some Member States suggested that following the CEI Declaration on *Small and Medium-sized Enterprises at the Dawn of the 21st Century*, somewhat a similar initiative should be elaborated and adopted by the BSEC countries highlighting the achievements in the field of entrepreneurship and SME-sector and pawing the way to foster the acceleration of the transition to a market economies and creating a better enabling environment for private sector and SME-development. Based on the Istanbul declaration, this suggestion was approved and recommendations for the development of the SME sector were formed in 2001.

Figure 14: Employment Growth by Size-class, Europe-19 (1988-2003)



Source: European Commission (2003e)

In Europe, employment growth has been fastest within micro enterprises (see Figure 14). This trend seems to be even more marked in the candidate countries, where micro enterprises represent an even larger proportion of enterprises, however.

The result of recent developments from SME activities are reflected in the increase in SMEs' share of employment. Between 1988 and 2001, employment in SMEs in Europe-19 grew by 0.3% on average, while it shrank by 0.1% in Large Scale Enterprises. In addition, in this period, SMEs also experienced a higher growth in profitability (0.5%) than LSEs (0.3%). Undoubtedly, SMEs are of critical value for economic growth prospects in both developed and transition economies. In EU-countries, they account for 99.8% of all enterprises, two-thirds of all jobs and export 13% of their turnover (European Commission, 2002b). However, the above described SME characteristics are even more marked in the new member and candidate countries[20], where SMEs account for 72% of total employment (compared to 66% average for Europe-19). The difference is concentrated in micro enterprises, which account for 40% of employment in the candidate countries compared to 34% in Europe-19 (European Commission, 2002b).

Nevertheless, the value of SMEs is not only as employment generators. They play an imperative role in strengthening economic performance, something which has been important particularly during the general economic slowdown. In transition economies, SME have already replaced numerous jobs lost during periods of reconstruction and downsizing of former large state-owned enterprises. In addition, by nature SMEs contribute to the democratisation and decentralisation processes in transition economies. They increase flexibility when providing goods and services, help to increase the competitiveness in national economies and spread risk in the general business environment.

Small and Medium Sized Enterprises (SMEs) and Innovation in Turkey

Turkish SMEs have played an imperative role in the privatisation wave speeding up the development with their flexibility and private sector involvement. Also, by taking an important part in cross-border activities and networks, SMEs facilitate a significant bridge-building process between Turkey and countries in the European Union, increasing the mutual understanding of

[20] The 10 new Member Countries are: Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovak Republic, and Slovenia. The three candidate countries are: Bulgaria, Romania, and Turkey.

cultural differences between Turkey and other regions. In addition, a flourishing SME sector could also play a key role in overcoming the deep regional disparities characterising the Turkish economy and SMEs serve as the principal "training ground" for entrepreneurial activity and pave the way for increased innovative activity.

Definitions and Statistical Difficulties

Regardless of the overall recognition of SMEs in Turkey, no clear-cut and commonly used SME definitions exist (a shortage closely connected to the mentioned indicator problem), and the definition has not yet been aligned with the European classification. In effect, different development agencies and SME organizations have adopted diverse criteria for defining SMEs throughout Turkey. For instance, Chambers of Commerce & Industries, Halk Bank, The Turkish State Institute of Statistics (DIE), The State Planning Organization (SPO), Chamber of Industry and the Small and Medium Industry Development Organisation (KOSGEB)[21] are using somewhat different criteria for defining SMEs.[22]

However, even in the light of lacking comparable measures in this field, there is little doubt that SMEs account for a significant role in the Turkish economy. According to the OECD definition of SMEs, Turkish SMEs represent 99.5% of all establishments, 61.1% of employment and 27.3% of value added in manufacturing sector (OECD, 2002c). In addition, SMEs have a market capitalisation of around 50% of GDP and export 8% of their turnover (EU-Commission, 2002c; KocBank, 2002). There is no doubt that SMEs are important for the country's economic development, and as emphasized in the 2001 Regular Report on Turkey's Progress towards Accession by the European Commission:

> *Small and very small family companies are the backbone of the Turkish economy. Micro-enterprises [with less than ten employees] are of particular importance. These mainly family enterprises are dynamic and flexible in finding market niches and benefit from cheap inputs from the informal economy. It is probably this category of enterprises which provides some core stability to the otherwise highly volatile Turkish economy.* (European Commission, 2002d, p.59).

As smaller companies are central in the Turkish economy (resulting from privatization and a more outward focus on Europe), there is a need for policymakers to better understand their current situation and the barriers to their growth and development – in order to form appropriate policy mechanisms to support SMEs (and enterprise development in general). In this process, policymakers are facing challenges in terms of lacking reliable data on SMEs. The lack of SME statistics is a major barrier for developing the sector, resulting in little or no transparency for policymakers as well as for other actors working with SMEs. Increased data collection on SMEs is therefore of great importance for the economy to improve performance. Based on the available data on entrepreneurship in Turkey, the current situation with regard to entrepreneurial capacity and innovativeness of SMEs will be addressed in the following sections, and some of the most acute challenges preventing SMEs from fully exploring their potential are identified. Notably,

[21] KOSGEB was established in 1990 by the Ministry of Industry with the aim of increasing the competitiveness of SMEs. It is a semi-autonomous public institution (see also www.kosgeb.gov.tr)

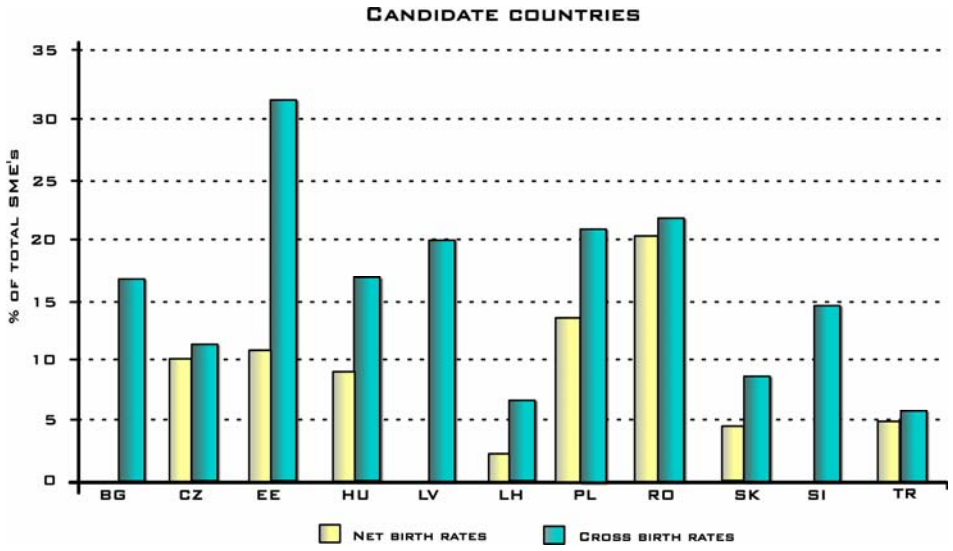
[22] The various classifications of SMEs in Turkey result in rather different definitions. For instance, the Istanbul, Chamber of Industry (ISO) classifies the industry as small-sized enterprises having 1-19 workers and medium-sized enterprises having 20-99 workers. KOSGEB classifies the industry into three categories based on the number of full time employees, thus small-sized industrial enterprises having 1-50 workers, medium-sized industrial enterprises having 51-150 workers and large industrial enterprises having more than 150 workers. Halk Bank classifies SMEs as companies with less than 250 employees. Meanwhile, in the EU micro-sized firms have 0-9 workers, small-sized firms have 10-49 and medium-sized firms have 50-249 employees.

limited statistics have unfortunately caused difficulties in accessing new data in the following sections.

Firm Creation in Turkey

Regardless of the present strengths of SMEs, the available evidence points to the prevalence of severe shortcomings in the Turkish business environment impeding their further development. Turkey benefits from a strong entrepreneurial culture, especially in the rural areas where families play an important role in new business formation and self employment. But when comparing Turkish entrepreneurial activity to similar activities in other transition economies, we see in Figure 15 that the overall start-up rate of new businesses in the period 1995-2000 is not particularly high in the Turkish case.

Figure 15: Start-up Rates for New Enterprises (1995-2000)



Note: Data are based on national sources that differ in definitions. They represent an average in the period 1995-2000.

Source: EU-Commission (2002e)

Between the period 2003-2004, around 31000 new firms were started throughout the country. Noticeably, the start-up rate is somewhat higher outside the capital and other large cities resulting in a higher number of new businesses in suburb and rural areas. As seen in Table 16, a large part of new businesses in 2003-2004 were formed in the rural areas outside Istanbul, Ankara and Izmir. In total, 43% of all new businesses in Turkey were started in other provinces than Istanbul, Ankara and Izmir. The remaining 57% of new companies are found in Istanbul, Ankara or Izmir, which are cities that encounter around 26% of the total Turkish population (The State Institute of Statistics, 2004). According to the State Institute of Statistics 2004, entrepreneurs in rural areas are more likely to start a business in wholesale, retail trade, motorized vehicles, furniture, diverse renting and working activities. Such sectors general represent a higher degree of low-tech and traditional firms, which tend to require less start-up resources enabling the entrepreneur easier to more easily start a new business.

Table 16: Number of Start-ups by Regions in Turkey (2003-2004)

	TURKEY		**ISTANBUL**		**ANKARA**		**IZMIR**		**OTHER PROVINCES**	
Entrepre-neurial activity	*Opened (total)*	*Closed (total)*	*Opened*	*Closed*	*Opened*	*Closed*	*Opened*	*Closed*	*Opened*	*Closed*
Numbers	31054	5172	11915	2501	3814	577	2201	393	13124	1701
Activity in % (of total)	100%		38%		12%		7%		43%	
Survival rate % (regionally)		84%		79%		85%		82%		87%

Source: The State Institute of Statistics (2004); IKED

Generally, start-ups will only thrive if they are either serving a new, additional demand, where they are not immediately exposed to direct competition, if they soon become as efficient as incumbent firms, or if they are as or more efficient than incumbents from the beginning. Having started up a new enterprise in 2003-2004, around 84% of the newly born firms survive. As shown in Figure 16 below, the difference between the gross birth rates and net change of enterprise population (enterprise birth-rate minus death-rate) is fairly low, indicating that those entrepreneurs starting up their own businesses tend to stay operative.

From a regional perspective in Turkey, new businesses increase their chance for surviving if they are located outside the larger cities, as up to 87% of new companies survive in other provinces compared to only 79% in Istanbul. Indicating a higher enterprise formation in the Turkish rural zones in contrast to urban areas, the enterprise survival rates, are also higher in the rural areas. One explanation for this could be less innovative firms are more frequently started in the rural areas, whereas firms based on more innovative initiatives are likely to be created in the urban areas. As will be discussed below, innovative firms have more difficulties in developing their economic business activities, indicating that this type of business more often face problems in sustaining and surviving.

Figure 16: Business Survival Rates in Candidate Countries (1995-2000)

	N° of entries	Birth rate %		N° of exits	Death rate %		Net rate %	
		Enterprise	Employment		Enterprise	Employment	Enterprise	Employment
Bulgaria	53,964	16.6	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Cyprus	N.A.	N.A.	2.7	N.A.	N.A.	1.7	N.A.	1.0
Czech Republic	158,707	11.2	N.A.	14,612	1.0	N.A.	10.2	N.A.
Estonia	9,849	31.8	8.0	6,555	20.7	6.7	11.1	1.3
Hungary	137,004	17.0	6.6	64,498	7.9	2.4	9.1	4.2
Latvia	2,625	6.7	4.1	1,347	4.6	1.4	2.1	2.7
Lithuania	13,073	19.7	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Malta	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Poland	236,609	20.8	N.A.	80,367	7.2	N.A.	13.6	N.A.
Romania	84,277	21.6	8.9	4,425	1.1	1.2	20.4	7.7
Slovakia	31,902	14.3	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Slovenia	9,995	8.8	N.A.	5,110	4.5	N.A.	4.3	N.A.
Turkey	72,631	6.0	N.A.	14,964	1.1	N.A.	4.9	N.A.

Source: EU-Commission (2002a)

Comparing the ability for new businesses to survive in Turkey with similar figures in other emerging economies, it is confirmed that business tend to stay alive more often in Turkey (see Figure 16). In fact, only Turkey, Romania and Czech Republic have "death rates" under 1.1, whereas Estonia, Hungary, Latvia, Poland and Slovenia all have higher death rates (up to 20.7%) for new enterprises. So, although the overall start-up rate of new businesses is relatively low in Turkey, the survival rate is relatively high and in particular in the cities. Given the apparently relatively favourable conditions for SMEs to survive within the country, attention should then be focused on how to increase the actual number of start-ups and how to foster enabling conditions supportive for the business environment and the private initiative in Turkey. However, before turning to these crucial questions, we will have a closer look at the SME characteristics.

Innovative and Non-Innovative Firms

The 2002-2003 Global Competitiveness Report grouped countries into "innovating economies" or "core innovators" on the one hand, and "non-innovating economies" or "non-core" innovators, on the other (Sala-I-Martin in World Economic Forum (2003a); Blanke et al. in ibid.). Countries in the former group are characterized by the fact that "growth is largely driven by their capacity to innovate because they are close to the technological frontier", while countries in the latter group depend more on adoption of knowledge or technology developed abroad. The threshold dividing the two groups is set at 15 patents per million inhabitants. According to this classification, Turkey clearly falls into the category of non-innovating economy.

These are worrying signals that need to be taken seriously by Turkish decision-makers. At the same time, however, one needs to be careful not to draw hasty conclusions. In fact, it is IKED's firm position that economies cannot and should not be divided into "innovating" and "non-innovating", nor should indicators be used to assign countries to one group or the other. Traditional industries, and traditional forms of knowledge, carry tremendous importance and potential for further development, given appropriate conditions. This requires special attention.

In Turkey as elsewhere, it is important to distinguish between different kinds of entrepreneurial activity. Firm creation processes and chances of survival after the start-up phase strongly depend on the 'profile' of the entrepreneur. The elements characterising this profile refer to gender, age, level of education and previous working experience (either as an employee, manager or entrepreneur). These features vary according to the sector of activity and the size of the firm created. In addition, while some entrepreneurial activity conceals necessity-based motives, others

refer to entrepreneurs whose primary motive is one of opportunity. In effect, start-up rates are frequently higher in developing economies and rural areas, where necessity-based motives such as unemployment act as a strong push-factor. On the contrary, pull factors such as independency and economic opportunities tend to be the driving forces when starting up own businesses in developed economies. Studies show that economic growth is not merely dependent on the start-up rate as such, but rather on the nature of the firm (Reynolds et al, 2003). In particular, the start-up rates for high-tech, innovative and opportunity-based firms often bring high growth rates, and the presence of factors enabling innovative firms in industries is therefore essential for any successful economic growth strategy.

Comparing micro level innovative activities in Europe and Turkey, it is found that the proportion of innovative enterprises is lower in Turkey. Whereas 45% of European businesses are characterised as innovative and of those most in industry, less than 1/3 of Turkish firms (both SME and LSE) are perceived as innovative, according to the State Institute of Statistics, and this figure is even smaller for SMEs (see also Figure 18). These figures mirror the country's lower innovation capacities as discussed in Chapter 2 as could be expected. However, to improve the conditions for innovation, it is necessary to include the barriers for innovative activity.

Figure 17: Enterprises With Innovative Activities in Turkey, manufacturing sector (1998-2000)

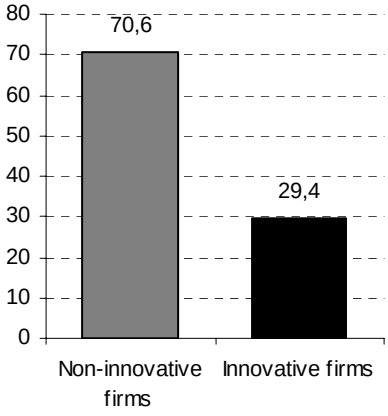
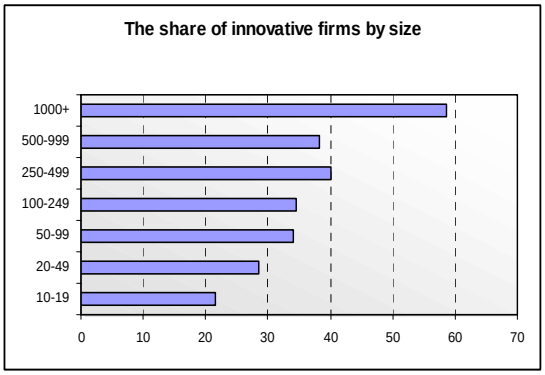


Figure 18: Innovative Firms in Turkey, by size in manufacturing sector (1998-2000)



Source: The State Institute of Statistics (2000)

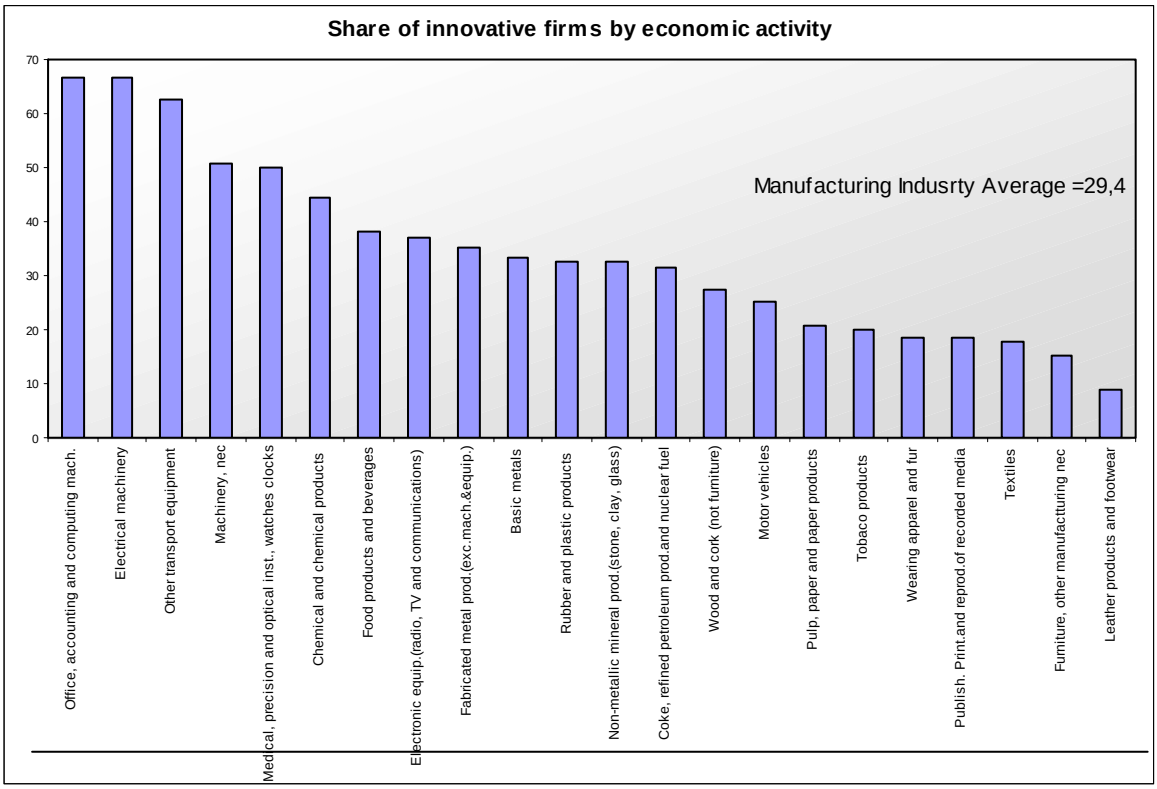
The proportion of innovative companies increases with firm sizes. While the propensity of undertaking technological innovation activity is around 20% for firms with 10-49 employees, it doubles to 40% for the firms with 250-999 employees and 59% for the firms with 1000 or more employees. Therefore, larger forms are more apt to conduct innovative activities compared to their smaller counterparts. This situation is, nevertheless, not unique for Turkey. Also in Europe, smaller firms are less innovative compared to LSE. Similarly, the evaluation of innovation policy in six Candidate Countries commissioned and published by the European Commission in 2001, found that "… despite expectations that large enterprises would be replaced by new innovation-oriented SMEs, large firms continue to undertake the majority of innovation activities…" (European Commission, 2001).

One possible explanation could be that larger firms have the required resources to perform and develop innovative activities, whereas smaller firms don't. SMEs tend to lack the financial resources, the technological or management know-how, and the networks that would allow them to invest, or otherwise be actively involved in, substantial R&D activities (either in-house or in collaboration with research institutions or networks). Furthermore, small firms lack the resources to invest in organizational change warranted by market developments. On the other hand, it is

necessary to implement structures supportive for inducing innovative activity. In this respect, smaller firms seem to be more conducive for implementing changes due to their smaller size and more flexible organization. For instance, the proportion of administrative workers is higher in larger companies compared to SMEs, which is also found among Turkish firms indicating more organizational rigidities (The State Institute of Statistics, 2000).

In Turkey, not surprisingly, most innovation is found within computer and electrical machinery with more than 60% of the firm carrying out innovative activity, whereas only around 10% of firms in textile, furniture and leather industries are characterized as innovative (The State Institute of Statistics, 2000). However, with the overall highest start-up rates in rural areas with entrepreneurial companies mainly occupied within low innovative activities as furniture production and wholesale, these major differences between industries should be appropriately addressed when designing policy for developing innovation in Turkey.

Figure 19: Share of Innovative Firms, by economic activity (1998-2000)



Source: The State Institute of Statistics (2000)

Nevertheless, when mapping the barriers for innovation among SMEs in Turkey, the environment should be taken into account as discussed previously. Actually, the primary barriers to innovative activity are all related to external economic factors. According to the Technological Innovation Activity Survey 2000, both SMEs and LSE in Turkey view excessive perceived economic risk, high cost of innovation and lack of appropriate finance as main factors hampering innovation activities (see Table 17). Not unexpectedly these factors are viewed as slightly more critical among the smaller firms.

These primary barriers hampering innovative activity in firms are the same within European countries. When broken down by enterprise size class, it becomes apparent that the smaller the enterprise, the more they have problems with financial means, whereas the larger the enterprise, the more other barriers (e.g. skills of employees, finding a market for products/services, etc.) have a higher relative importance (Jürgenson et.al, 2003).

Table 17: Factors Hampering Innovation in Turkey (% of total manufacturing enterprises)

Hampering FACTOR	**SMEs**	**LSE**	**Total**
Excessive perceived economic risks	17.05	16.1	17
High Cost of innovation	17.88	17.37	17.7
Lack of appropriate source of finance	14.8	13.77	14.7
Innovation easily chopped by other companies	7.08	5.3	7.0
Organisational rigidities	6.3	6.9	6.4
Lack of qualified personal	7.93	7.7	7.7
Lack of information on technology	6.4	6.47	6.4
Lack of information on markets	5.53	5.8	5.5
Resistance from employees	2.23	3.9	2.3
Fulfilling regulations, standards	8.0	7.5	8.2
Lack of customer responsiveness to new products	4.38	5.5	4.5
No need regarding previous innovation activities	2.45	3.63	2.6

Note: The data for SMEs and LSE is a calculated average based on source data.
Source: The State Institute of Statistics (2000)

However, removing the economic barriers for entrepreneurial firms does not solve the problems alone. Another aspect in Turkish firms is the managerial capacities. When comparing the reliance on professional management in Turkey with other countries, it is found that senior management positions are likely to be held by families or relatives to the entrepreneurs. In this respect, Turkey is ranking number 70 next to Guatemala, Bulgaria, Panama, Uruguay and Greece, whereas Australia, United Kingdom, Finland and United States are more opt to have professional managers to run the companies (World Economic Forum, 2003a). Also, according to a recent report from the Turkish Industrialist's and Businessmen's Association (TÜSIAD), education on entrepreneurship is a very recent phenomenon and is still quite limited. Supporting institutions for entrepreneurs do not have satisfactory human and capital resources. The number of consultancy firms serving entrepreneurs is inadequate (TÜSIAD, 2003b). Recent programmes providing credits/guaranteed funds to small businesses have experienced a lack of demand. This seems to indicate that besides the lack of capital, the lack of people with adequate entrepreneurial skills to make use of the capital that is available is also critical.

Women Entrepreneurship, the Untapped Resources

Until the 1990s, women's entrepreneurship in Turkey did not attract much attention, applying to governmental as well as non-governmental organizations. Public and professional organizations that focus on the promotion of SMEs as an appropriate strategy for national development have almost always targeted men, better-off firms and certain sectors such as manufacturing where males predominate (Ozar, 2003). Women entrepreneurship, which has been on the rise in most developed countries over the last decade (OECD, 2001b), and especially in the expanding service sector, remains weak in Turkey.

With the recent economic crises and the consequent rise in unemployment there is now a growing interest in promoting women entrepreneurship as an alternative to unemployment and poverty. This rising awareness does not yet appear sufficiently strong for the authorities to engage in any consistent sustained effort to remove the barriers to women in business, based on a view that women represent a source of skills and innovation. The participation of women in the labour force and in entrepreneurship remains comparably low on average.

Table 15: Unemployment Rates for Men and Women (urban & rural, 2000-2001)

		2000		2001	
		ILO-Definition	Broad-Definition	ILO-Definition	Broad-Definition
All	Total	7.78	11.59	8.45	11.56
	Male	7.29	10.58	8.06	10.84
	Female	9.36	14.78	9.70	13.80
Urban	Total	9.24	13.41	10.16	13.77
	Male	8.05	11.37	8.88	11.92
	Female	13.93	21.09	15.37	21.04
Rural	Total	4.07	6.88	4.43	6.24
	Male	5.02	8.23	5.68	7.68
	Female	2.04	3.97	2.04	3.45

Source: Turkish Economic Association (2004)

As shown in Table 15, the unemployment rate is higher for woman in urban areas than in rural areas. According to the OECD, more than 50% of women in employment (about 5.5 million) are unpaid family workers, mostly in the agricultural sector (OECD, 2001). Following the economic crisis of 2001, total unemployment has grown rapidly reaching 10% in total and 13% in the urban areas. Looking at the period between 1998 and 2003, the unemployment numbers for women are even more discouraging. Thus, female unemployment figures in the first half of 2003 in the urban areas reached 17.5% compared to 2.1% in 1998.

Evidence shows that in Turkey the number of women entrepreneurs compared to men entrepreneurs is markedly low. Even though, recently, the number of women entrepreneurs has been growing at a faster rate than men entrepreneurs, the share of women entrepreneurs is only 14% in total and 8% in the urban areas. The share of women entrepreneurs as a percentage of female employment in general indicates that women are much less likely to become entrepreneurs than men. Thus, the share of women entrepreneurs represents only 13.1% of the women workforce compared to 35.4% for men (Ozar, 2003).

Generally, an increase in the number of women entrepreneurs is hampered by the prevalence of male-dominated networks, lack of micro-credit schemes adapted to specific features and barriers facing women, and the disproportionately damaging combined impact of the prevailing regulatory burdens on entrepreneurship by women. More should be done in the areas of education, skills upgrading, and institutional and regulatory practices to increase the potential economic value of women in their capacity as workers, entrepreneurs and innovators.

Summary

SMEs play an important role in Turkey fuelling the economic growth, providing flexibility, engaging in bridge building between Turkey and the European Union and promoting employment. However, despite this recognition, SMEs face severe framework conditions preventing them from developing sufficiently.

Comparing entrepreneurial capacity in Turkey with other emerging economies, the start-up rate of new businesses is very low in Turkey and in particular in and around the urban areas. Women are likewise comparably weakly represented, in part reflecting impediments repressing their economic opportunities more generally. As in a number of other countries, innovative SMEs are

particularly faced with severe challenges hampering them from sufficiently developing their economic activity.

In order to promote innovation and to provide improved conditions for innovative firms in Turkey, the main obstacles identified above such as access to finance and lack of internationalisation among Turkish SMEs, are addressed in more detail in the following chapter.

CHAPTER 4: BARRIERS TO INNOVATION IN TURKISH SMES

Introduction

As discussed, small and medium enterprises play a paramount role in the Turkish economy, while at the same time struggling with major challenges including political instability and cultural attitudes preventing them from fully exploiting their potential. However, in order to succeed with national and regional growth strategies forming competitive and innovative firms, sufficient conditions for entrepreneurship and innovation must be in place for SMEs throughout the country. As noted above, financial issues are often mentioned as a key factor hindering the development of innovation in Turkey. At the same time, the Turkish SME sector must adapt itself to globalisation and hence increase its ability to compete internationally and benefit from the global development. Hence, in the following sections, we discuss the current situation for SMEs divided into two parts. First, we address access to innovation finance and venture capital in Turkey, and secondly we examine the SME sector's capability to promote internationalisation and exports.

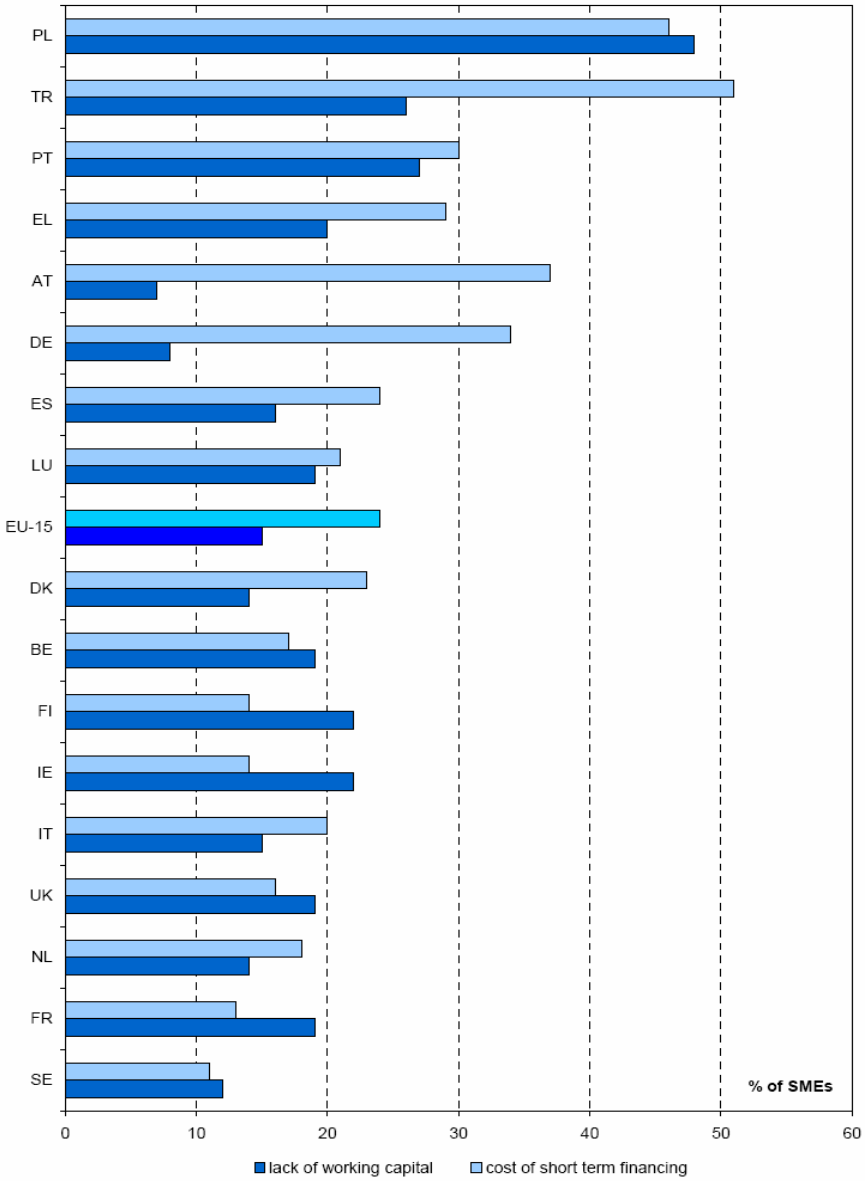
Financing Enterprise Development in Turkey

In order to increase entrepreneurship's contribution to competitiveness, a highly developed kind of entrepreneurial activity – based on innovation and opportunity – must be encouraged. As shown in the latest World Bank study "Doing Business 2005", the environment greatly influences the interest in starting companies, and business-friendly environments tend to foster more entrepreneurial activity (World Bank, 2004c). Hence, not only should entrepreneurial companies play a greater role in societies, they should also have access to favourable conditions allowing them to develop their economic activities. But flawed business environments – characterised by financing obstacles, collateral requirements and high interest rates – prevent companies from realizing their growth potential (European Commission, 2003f). In addition, these factors tend to affect SMEs more than LSEs. It is actually a widely-recognized fact that the sensitivity of firm growth to cash flow rises as company size falls, and that scarce access to finance is a major barrier for growth in SMEs. A somewhat similar conclusion is found in the Global Competitiveness Report 2003, which describes how firms' access to finance - including venture capital and local equity market availability - is one of the conditions for international competitiveness which is currently worsening (World Economic Forum, 2003b). Consequently, to improve firm performance and ensure economic growth, initiatives that can strengthen innovative companies' access to finance are absolutely paramount.

Turkish Financial Support System

In Turkey, lack of capital for SMEs has been a major problem for decades, which is partly explained by weak economic policies, the lack of economic transparency, the size of the informal economy and high inflation and interest rates provided by banks. In the latest Regular Report on Turkey, the European Commission observes that access to finance for SMEs is underdeveloped and a major barrier for Turkish SMEs (European Commission, 2004a).

Figure 20: Lack of Financing as an Obstacle for SMEs



Source: European Commission (2003g)

As shown in a cross-country comparison presented in Figure 20, it is obvious that access to finance is a more acute problem for SMEs in Turkey than in any other European country. The cost of short term financing, in particular, is perceived as a major obstacle among Turkish SMEs. Some reasons for this are found in the development of the Turkish financial support system and the Turkish economy as a whole.

Box 11: On Financing Enterprise Development

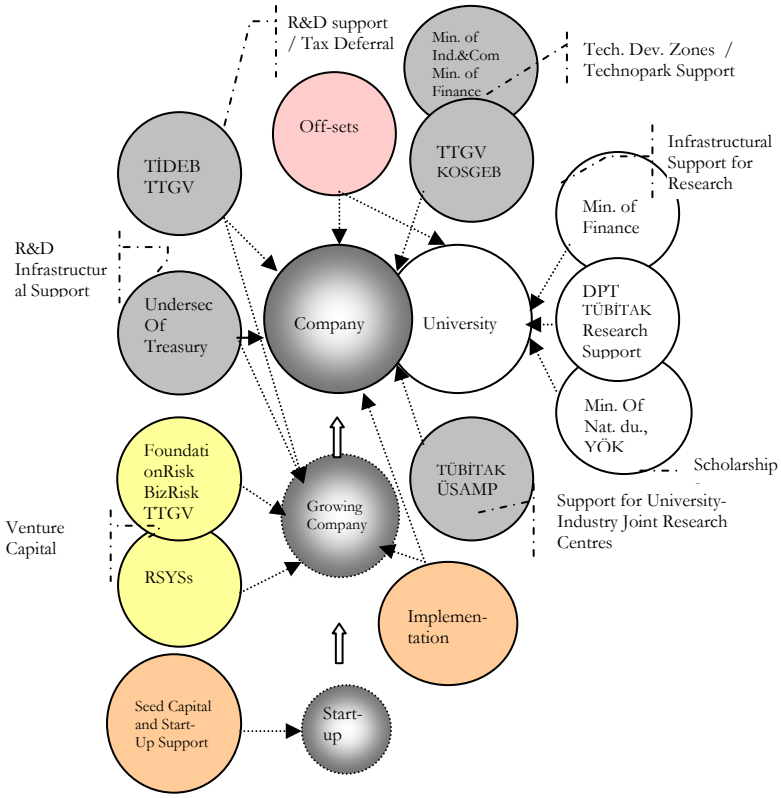
Generally, innovative enterprises face greater difficulties accessing innovation finance in comparison with more traditional firms. The reason for this inequality is innovative companies' high reliance on intangible assets such as patents, R&D and human capital which makes them a high-risk investment. Moreover, low profitability and short track records tend to make them unsuitable to raise equity through a public listing. For more traditional and non-innovative companies, the situation is somewhat different. Building on solid and more dependable resources, such firms represent a reduced risk. Lower capital requirements enable banks to be less reluctant to provide financing. In addition, given smaller capital requirements, non-innovative firms are more likely to find internal financing resources supportive for development. As a result, various kinds of venture capital investors are seen as the most suitable financial partner for innovative companies because of both their financial and non-financial involvement in portfolio companies (Andersson et al, 2004d).

After the innovative firm has passed through the early development stage, it requires a further injection of capital to fund the growth of its manufacturing and distribution capacity as well as to fund further R&D. Venture capitalists alleviate the uncertainty and informational asymmetries linked to young emerging businesses by actively vetting firms intensively before providing capital and monitoring them afterwards. Various types of venture capital investors exist and are important for businesses in different development stages. However, certain conditions for fostering venture capital must be put in place. Basically, the objective of venture capitalists is to maximise rates of return on their investments. A viable exit mechanism where venture capitalists can turn illiquid stakes in private firms into realised return is extremely important for the development of the venture capital industry. Essentially, there are two common exit mechanisms available: an initial public offering (IPO) where the young company issues shares to the public; and a trade sale where the young company is sold to a larger one. Whatever the alternative, a successful exit mechanism is critical to the existence of a vibrant venture capital market.

Private equity and venture capital investments create significant economic value. For instance, experience from the US show the scale and economic impact of venture capital over 30 years. According the National Venture Capital Association (NVCA), in 1970-2000, American venture capitalists invested $273.3 billion in 16,278 companies. Venture-backed companies employed 7.6 million people and generated $1.3 trillion in sales during 2000. Read more on the NVCA's homepage: http://www.nvca.com. It was also seen that venture capital-backed firms had approximately twice the sale, paid almost three times the federal taxes, generated almost twice the exports, and invested almost three times as much in R&D as did the average non-venture capital-financed firm. Also in Europe, venture capital is one of the most powerful engines for growth and a critical constraint for entrepreneurship. The European Venture Capital Association (EVCA) shows a close relationship between venture capital efforts and growth in venture-backed firms. An astonishing 95% of European venture-backed firms said they either would not have existed or would not have developed so fast without venture investments. In addition, venture-backed firms seem to outperform non venture-backed firms in terms of economic growth. The difference between them is outstanding in early development stages and within high-tech firms, where annual growth rates amount to 70% for venture-backed firms compared to 10% for a comparable sample of firms financed by non-venture investors (Kjærgaard and Borup, 2004).

Turkey's financial services industry is in an early stage of development, and credit markets are dominated by banking (accounting for over 85% of financial system assets), while capital markets are dominated by government securities (accounting for over 90% of trading). For some years, political instability and lack of confidence in public management have forced the public sector to borrow at high interest rates and have thereby exhausted an important portion of the financial resources potentially available for SMEs. As government securities account for an increasing percentage of banks' assets, banks are subjected to increased risk from any perceived or actual risk of sovereign default. In addition, seed and start-up risk capital is only weakly anchored in the Turkish financial support system. Early-stage entrepreneurs go through high-risk periods before reaching the point of breakeven. However in Turkey, this period of business development is particularly intricate for SMEs, as they have very poor access to qualified early-stage investors.

Figure 21: Main Actors in the Turkish Financial Support System



Note: Missing links (brown) and weakest links (yellow) in financial support mechanisms for companies. Offsets exist (pink), but are not used.

Source: TÜSIAD (2003a)

As shown in Figure 21, there is an absence of financial and support mechanisms available to enterprises during periods of commercialization and product development (TÜSIAD, 2003a). Especially for start-ups and growing firms, the lack of capital is acute. Consequently, Turkish firms seeking to avoid losing lucrative business opportunities have been forced to take the risk of investing in long-term projects with short-term and expensive bank loans. The private sector has been paying, in real terms, more than 20% in interest, and medium and long-term loans are almost non-existent (PDF Corporate Finance, 1999). This situation creates the problem of capital shortages, which can only be resolved by strengthening short-term capital inflows, reinforcing economic stability, and encouraging increased foreign and domestic investments in the sector.

Following the crisis in the banking sector in 1994 and again in 2000-2001 (when private banks have financed public debt), credit availability to SMEs has been limited. Generally, the Turkish

banking sector is very reluctant to engage in SME lending due to high risk and lack of experience with this type of lending. In 1998, 44% of SMEs received their most recent credit from a bank, and the remaining businesses fulfilled their financial needs through other means. According to KocBank, the situation is somewhat worse; it estimates that only 3-4% of industrial SMEs receive bank credits (KocBank, 2002). The Turkish banking sector is small compared to the size of the economy. The total assets of all banks (including commercial banks) amount to just over 48% of GNP, compared to the total assets of commercial banks/GNP ratio of 147% in Italy and 241% in Holland (PDF Corporate Finance, 1999). This situation is not likely to improve with Basel II (see Box 12). On the contrary, it is expected that a new and more stringent SME rating culture will emerge in banks throughout the countries applying Basel II (EU-Commission, 2003f).

Box 12: Basel II

The Basel capital accord sets international capital adequacy standards for banks. In 1988, the Basel committee on Banking Supervision established a method of relating capital to assets, using a simple system of risk weights and a minimum of capital ratio of 8%. The original Basel I has been modified and the final version Basel II should come into effect at the end of 2006.

The new capital requirement rules will support the improvement of banks' risk management, measurement and control. The increase in risk awareness of banks can lead to an expanded use of banks' internal rating systems which may influence banks' information requirements concerning their SME clients. A goal of the internal rating system is to make loan pricing more accurately reflect the level of firm risk. That is to say, stable and profitable companies will pay less, riskier ones will pay more. In the long run, the information requests will lead to a new rating culture where SME perform structured business analysis, revenue and production forecasts etc. Although Basel II sets standards for internationally active banks, these standards have been widely applied to domestic institutions in the G10 and have been adapted in over 100 countries. Moreover, the content of Basel II will be transferred into European practice by EU directives and will be obligatory for all credit institutions within the EU.

Read more about the Basel II on http://www.bis.org

To encourage more bank lending activity, a Credit Guarantee Fund – providing guarantees on up to 50% on SME loans – has been set up, and some special export guarantees have been offered by banks. In addition, to meet the financial needs among early-stage businesses, KOSGEB participates in the *Credit Guarantee Fund of Turkey*, which has guaranteed 36 million euro of loans. KOSGEB also participates in the Partnership to SME Investments, which provides capital and advisory services to SMEs and offers with very low-interest loans to SMEs. The programme *Capital Investment Partnership* aims at increasing venture capital investments (EU-Commission, 2002d). Moreover, KOSGEB has agreed with two public banks to supply soft loans to SMEs. Such initiatives are not sufficient for innovative firms, however.

In competitive environments, SMEs need assistance in developing company culture, management and marketing know-how, and production technology in addition to capital injections. Through active involvement, private equity and venture capital investors (in contrast to banks) tend to fuel these elements when investing in companies. In addition, the increased importance of internationalization and the impact of global processes in the Turkish economy serve as obstacles for economic growth if Turkish SMEs are not prepared for engaging and competing with foreign companies.

The Turkish Private Equity and Venture Capital

After the global economic downturn, venture capital markets around the world have started to regain their strength, and venture capital activity is currently rising in most economies. In effect, private equity and venture capital investments are the fastest increasing financial instruments and important tools as promoters of innovation and entrepreneurial activity. However, unlike other emerging capital markets in countries such as Greece and Poland, the Turkish private equity and venture capital market is a new phenomenon. Venture capital activity is still underdeveloped in Turkey, and figures show that the industry has not yet grown to its potential size.

Until 1995, there was no significant activity in the Turkish private equity market. Total invested capital reached approximately $100 million at the end of 1999. In 2000 alone, a similar amount was invested following parallel trends around the world and responding to the more conducive investment environment in Turkey. Still, even this record is small compared to the potential development in the country.

After the 2001 crisis, the Turkish private equity activity was almost non-existent, and many newly-founded and sensitive funds pulled out of the market or merged with other funds following the global consolidation movement. In the following period, activity continued at a rate of less than $40 million on an annual basis. In 2003, slightly less than $250 million in private equity capital was invested cumulatively. In comparison, if Turkey had the same private equity investments to GDP ratio as many European economies, the 2001 investments alone should have been close to $500 million (Bosut, 2003).

Box 13: Some Key Developments in the Turkish PE and VC Industry

1991
The first organized attempt to raise a private equity fund targeting Turkey was undertaken by a joint effort of Bankers Trust and Turkpetrol Holding in 1991. This first attempt failed with the decision of Bankers Trust to return the raised $50m to investors as a result of its changed commitment to Turkey at the time.

1993
Legislation was passed with the aim of promoting venture capital. A few Turkish banks tried to capture the opportunity, but most efforts failed after the 1994 financial crisis. All of the VC funds except "Vakýf RSYO" failed to begin operations. Vakýf RSYO performed an IPO in 1999.

1995
Sparx Asset Management established its Turkish office to make investments in public and private companies. Sparx invested a total of $40m into seven Turkish companies. Sparx finalised two of its investments (Ünal Tarým and Arat Tekstil) after an investment period of two years and achieved remarkable returns in two IPOs. On the other hand, the investment in Aba Ambalaj went sour. Currently, Sparx owns shares in GSD, Tekstilbank, Rantleasing, Eka Elektronik and a biotechnology firm.

1999
Macro-stabilization programmes were introduced and led to qualified venture capitalists returning from abroad in order to build up a Turkish market.

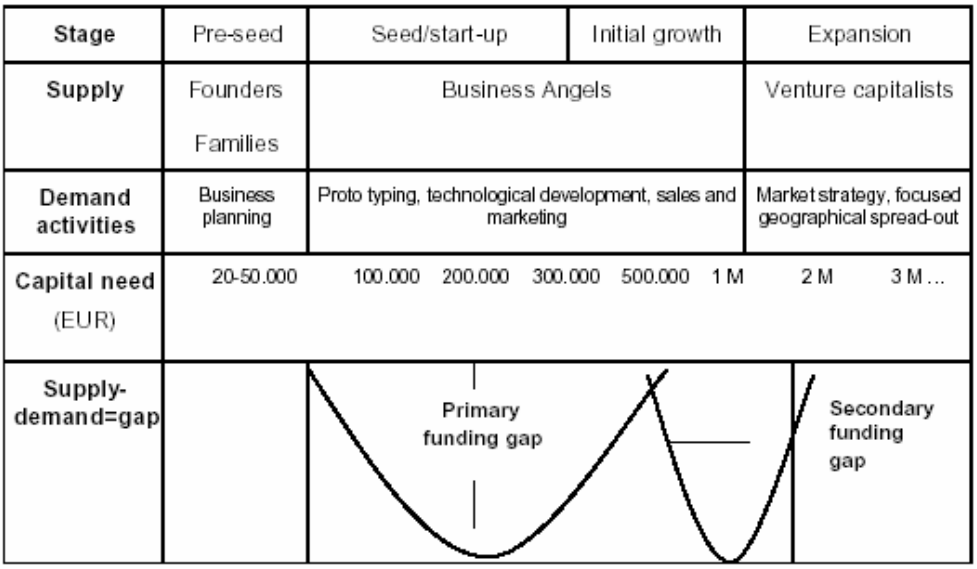
2000
The Turkish Venture Capital Association was formed and laid the ground for a common playing field and joint "rules of engagement" in the immature Turkish private equity market. AIG Blue Voyage invested in Galatasaray's sports equipment and accessories company (Sportif AS) and a cinema chain (AFM) in 2000. AIG has continued operations in Turkey since 1999 and has analysed more than one hundred companies.

Source: Turkish Venture Capital and Private Equity Association (2004); Bosut (2003)

In Turkey, the supply chain of financial investors is far from sufficiently developed as shown in Figure 21. However, while some entrepreneurs can choose between bank or venture capital finance, once the entrepreneur has decided on venture capital, a range of factors – including location in the business life cycle, investment size and industry – determine the specific type of investor (see Figure 22 below).

Whereas capital markets play a somewhat pivotal role for financing in later stages of business development, private individual placements dominate the early stages when funding resources are scarce and companies struggle to overcome the so-called 'valley of death'. In this period, informal private investors – or business angels – can have a major impact by investing financial and non-financial assets in young, high-risk companies. Informal venture capital is offered through conditions of anonymity, and information flows therefore often work inefficiently.

Figure 22: The Supply of Risk Capital



Source: Gullander and Napier (2003)

In an attempt to reduce the market imperfections plaguing informal markets, communities and platforms referred to as business angel networks (BAN) can make important contributions to mobilising substantial pools of informal venture capital, which otherwise would remain fragmented or invisible in the market. By creating communication channels, and offering, screening and training competencies that are tailored to specific local development opportunities, business angel networks can facilitate early-stage investments by stimulating both the demand and supply of risk capital. Business angel networks do not emerge naturally, however. Due to the informal and invisible character of the market, coupled with prevailing institutional barriers, a "top-down" approach is often required for kick-starting the market.

Public authorities tend to drive the initial creation of the network structures – especially in immature markets where angel networks are new, unknown types of organisations. Then, once the business angel network market has matured, new actors enter the field demanding and creating initiatives based on their experience as outsiders (or even insiders) in the existing network structure (Gullander and Napier, 2003). In Turkey, business angel networks are not a developed and integrated part of the innovation system, preventing early-stage companies from getting in contact with this type of investor. Public intervention can be useful to kick-start the Turkish venture capital market and to reduce the economic risk for private investors.[23]

When it comes to entrepreneurial businesses in later stages, immature pension systems make it hard for them to meet larger institutional investors. Some local legislation has been implemented in order to create improved investment incentives, especially targeting institutional investors. In 1993, Venture Capital Investment Trusts legislation was passed by the Capital Markets Board to promote private equity in Turkey. This new legislation gives tax breaks to investment companies by allowing them to operate totally free of corporate taxes and to establish under less strict conditions. An important milestone in the Turkish financial markets is the launch of the private pension scheme in 2001. Following this initiative, eight leading life insurance companies have been granted approval for transforming into pension companies, and one has been set up as a

[23] A thorough discussion on the role of governments in venture capital markets can be found in Napier (2004) or on the World Bank's Knowledge Economy Development Gateway at: http://www.developmentgateway.org/node/130667/sdm/docview?docid=932271

pension firm. However, more should be done to fuel pension fund investments in the Turkish private equity market.

Box 14: VC Funds and Pension Funds in Turkey

In Turkey, when starting a new venture capital or private equity fund, $1 million is required, and the funds must go public within three years.

Pension funds are established for investments to be made from contributions collected by the company (pursuant to and under pension contracts) and administrated within the individual pension accounts on behalf of the participants – in accordance with principles of risk diversification and fiduciary ownership.

In Turkey, pension funds are not very developed and do not have a legal entity. In addition, they may not be established and used for any purpose other than that set forth in the Law No. 4632 on Private Pension Savings and Investment System which came into effect in October, 2001.

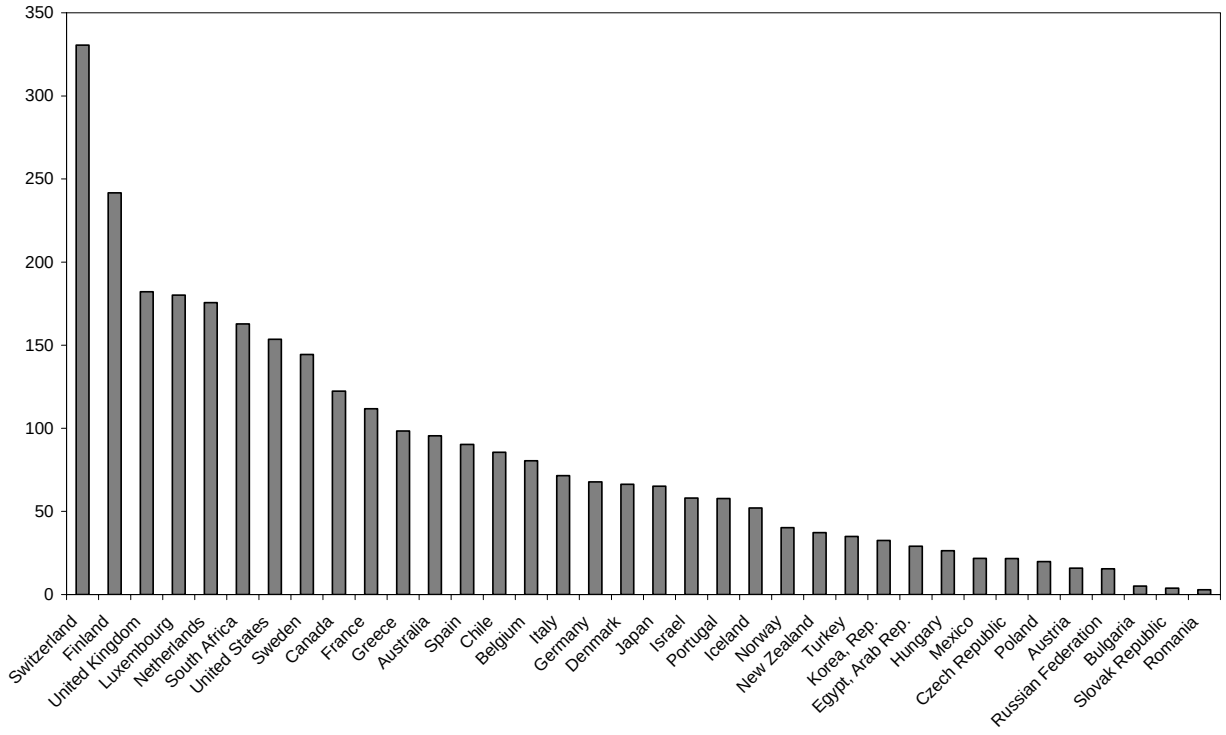
Source: OECD (2003b)

Another critical issue is exit possibilities for investors. Sufficient exit opportunities are fundamental for private and institutional investors prior to investing in new companies. In Turkey, although the national stock market in Istanbul offers some exit possibilities, the impact has generally been limited. The exit market is immature, and the industry has experienced only few successful exits, where most of the trading takes place in very large issues. Similar to other emerging markets, IPO has hardly been the most likely exit route in Turkey. For example, in 1998 and 1999, only 3% of all private equity exits in Eastern Europe were IPO exits. In 2003, a total of 262 companies were listed at the Istanbul Stock Exchange (ISE) with a market capitalisation of $35 billion. However, despite the fact that international investors have difficulties in realising a public offering, the situation is gradually improving. In Turkey, 12 IPOs were made on ISE in 2004 compared with only 3 in 2003 (Istanbul Stock Exchange 2004).

In the past decade, ISE launched two new markets. The Second National Market was launched for those SMEs, which could not meet the listing requirements in the First National Market. With more flexible listing requirements on the secondary market, SMEs do not have to have a certain amount of issued capital or profit before taxes in order to be considered for the secondary market. In addition, in 1996 a New Company Market was launched. This market was formed to enable young companies with growth potential to offer their stocks to the public via the ISE, which enables trading of such stocks in an organized market. It encourages newly-established companies while offering new alternatives to investors willing to increase their earnings by taking relatively high risks.

The *New Companies Market* promotes the transfer of idle funds in the economy to these young and dynamic companies, providing capital for their investments which, in turn, will contribute to the development of the capital markets in Turkey. In 1998, ISE signed a Memorandum of Cooperation with KOSGEB. Within the framework of this protocol, bilateral work is carried out in order to enable SMEs to offer their stocks to public and derive benefit from capital markets. In 1999, ISE signed a Memorandum of Cooperation with the Istanbul Chamber of Industry (ISO) with an aim to increase the efficiency of capital markets in allocating funds for Turkish Industry and increasing its competitiveness.

Figure 23: Stock Market Development (market capitalisation as a proportion of GDP, 2000)



Source: OECD (2003c)

Evidently, as shown in Figure 23, the market capitalisation on the Turkish Stock market is very low compared to other OECD countries. Turkey ranks 12th followed by countries such as Korea, Egypt, Poland and Austria. Besides IPO, trade sale is another possible way of exiting, but such action requires large firms with resources to invest – which again entails the attention of large international and multinational firms. In this respect, foreign direct investment (FDI) plays an imperative role. (FDI in Turkey will be discussed in greater detail in the sections below.)

The Informal Economy's Negative Influence on Investments

The strong informal sector also plays a very critical role for investors. As discussed in Chapter 1, the level of transparency and formalised economic activity plays a key role in establishing "faith in investments" for both foreign and domestic investors and should therefore be considered another major issue in Turkey. Reducing the informal economy is fundamental for strengthening venture capital in Turkey. Informality and corruption constitute significant barriers to economic development and innovation as investors – foreign investors in particular – shun non-registered businesses. However, previous attempts taken to shrink the informal economy have not been successful, and new initiatives should be well-organized and anchored in the sector. For instance, the desire to reduce the informal sector coupled with the wish to improve the public debt resulted in the so-called "One-Day-Law" in 2000. This law was implemented by the former Minister for Economics and required all Turks to declare all their properties over night. The following days and weeks, more than $50 million fled the country – leaving behind an economy in even greater crisis. Acknowledging the importance of the informal economy as an obstacle for SME development, polices should be taken to reduce its size. Such policies should not only be required from the government's side, but also involve a more bottom-up approach with SME intermediaries and development agencies demanding more formalised and registered businesses prior to assisting the single firm. While a heavy reduction of the informal sector is needed in order to attract venture capitalists in Turkey, it is also expected that increased venture capital

activity in Turkey will somehow result in more formal economic activity, as their requirements for transparency and registration will discourage SMEs from staying in the informal sector.

Management Orientation in SMEs

As discussed previously, there is an imbalance between the demand and supply of jobs and human capital in Turkey, and venture capital can be viewed similarly. It would be wrong to assume that it is all a matter of capital, however. According to interviews carried out with venture capital fund managers in Turkey, the shortage of capital for entrepreneurial firms is due both to risk-averse investors and to low investment-readiness among business owners. Hence, entrepreneurs need further education and training in order to better match investors' investment preferences. In addition, market places and match-making events would improve awareness about and access to investors.

Promoting Innovation and Internationalisation on Firm Level

As with entrepreneurial firms in other countries, Turkish SMEs tend to lack an understanding of the investment process, and are therefore not ready for full transparency and shared control with investors. Many family-owned businesses are too small for a meaningful exit in terms of trade sale or IPO, and domestic investors express difficulties with the deal-flow (e.g. the supply of entrepreneurial firms) both in terms of quantity and quality (Bosut, 2003).

Accordingly, the difficulties in the quantity and quality should be solved in order to improve the level of investment readiness among SMEs. Besides innovation perspectives, growth prospects, international markets and SME profiles are factors that investors prioritise highly when deciding where to place their capital. However, according to KocBank, Turkish SMEs sell 8% of their turnover abroad, which is lower than the EU average of 13% for SMEs (KocBank, 2002; EU-Commission, 2002a).

Figure 24: Exports of Goods and Services in Emerging Markets (% of GDP)

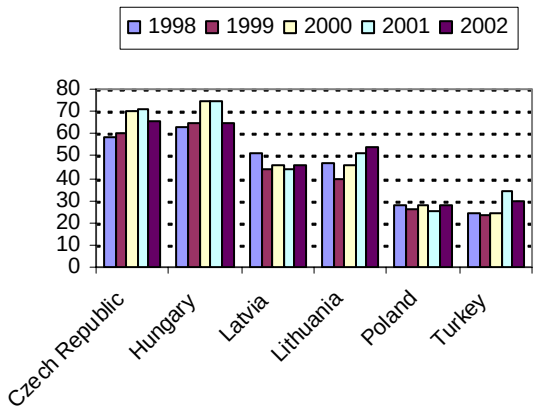
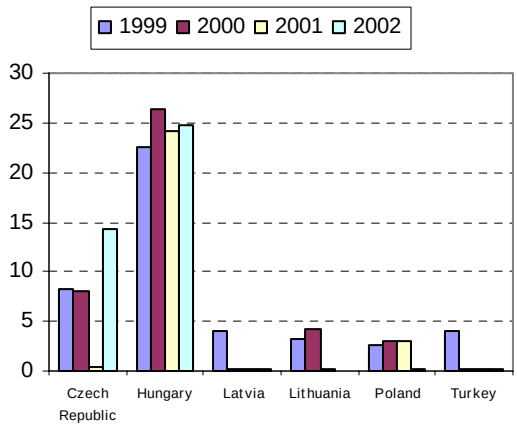


Figure 25: High Technology Exports in Emerging Markets (% of manufactured exports, 1999-2002)



Source: World Bank and EBRD (2004)

Although Figure 24 and 25 show data from both SMEs and LSEs, they indicate that the export level of high technology products and services for Turkish enterprises is low compared to other emerging economies. Moreover, when the Turkish companies do export their products, only a small proportion consists of high technology. In comparison with the Czech Republic, Hungary,

Latvia, Lithuania and Poland, Turkey has exported the lowest levels of high-tech products and goods during 2000-2002 (see Figure 25). Internationally-oriented activities, products and markets are important for Turkey in many aspects. International flows of capital and products will develop the domestic industrial structures and business environment. But the informal sector also plays an important role in this respect. While strategies for internationalisation are likely to be more easily-implemented in LSEs (as they already are part of formalised networks and structures and tend to be occupied with higher productive businesses), the informal activities dominating many SMEs will prevent small businesses from following this development.

Internationalisation through Foreign Direct Investments (FDI)

Situated in the crossroad between Europe and Asia, Turkey has many attractions to offer international investors. The geographical position alone creates many lucrative business opportunities, and FDI activity is growing in importance. Most international investment companies enter the country through the purchase of Turkish companies or by establishing a joint venture with a local company rather than making direct investments. In this way, the domestic experience, local contacts, established distribution channels, production plants and existing infrastructure of the local company can be exploited. Thus, mergers between Turkish and international firms are most common FDI modes in Turkey. Internationalisation in local companies is strengthened through FDI activities, and FDI can ensure long-term benefits in local companies as the lasting interest in a direct investment typically involves the establishment of manufacturing facilities, bank premises, warehouses and other permanent organisations abroad.

Box 15: What is FDI?

Foreign Direct Investment (FDI) is categorized as new cross-border investments (e.g. Greenfield investments), mergers and acquisitions (M&A) or joint ventures between foreign and domestic companies made to attain control of a foreign enterprise. To be classified as FDI, the investment must exceed 10% of equity in the foreign company. Driven by the growth of international production and an ongoing liberalisation of FDI and trade polices, the global FDI reached record-high levels in the 1990s with an annual average investment of around $1 trillion before peaking in 2000. However, starting in 2000, equity valuations have fallen sharply, private equity markets have dried up, and 2001 represented the greatest decline in global FDI in 30 years (UNCTAD 2002).

In recent decades, contributions from FDI in the form of capital inflows, employment opportunities and an expanded basis for tax revenue got the upper hand. Most crucially, FDI has become viewed as a key source of spill-over effects from the transfer of technology and a range of skills in research, production and marketing. Attention has shifted to country strategies for offering conditions that enhance the business environment for FDI: those that can boost the absorptive capacity of domestic firms, or the intensity of networking in order to induce greater transfers of technology and skills from Multinational Enterprises (MNEs) to local industry (Mudambi, 1999).

Compared to other countries, FDI activity is very limited in Turkey. Foreign investors are cautious to enter the country. High persistent inflation rates, high public deficit, macroeconomic and political instability, and slow progress in expected reforms and privatization prevent international investors from engaging in the Turkish private equity market (Bosut, 2003).

Table 19: Inflows of Foreign Direct Investments in Emerging Markets

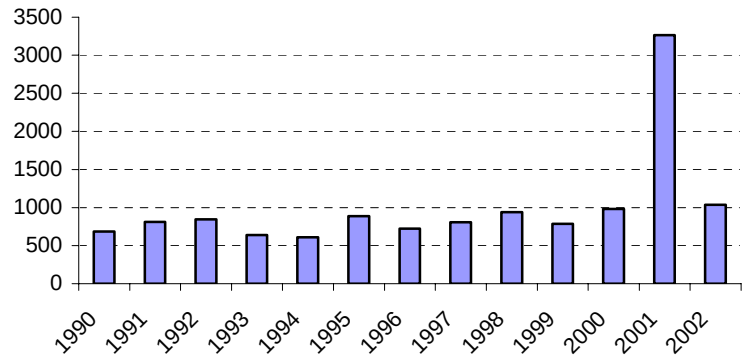
Country	US$ Mill in 2002
China	49308
Czech republic	9319
Poland	4119
Slovak Republic	4012
India	3449
Malaysia	3203
Romania	1106
Turkey	1037
Croatia	981
Hungary	854
Ukraine	693

Source: IMF and World Bank (2003)

The outlook for FDI in emerging economies is unevenly spread. In 2002, inflows in Turkey were well below inflows in other emerging economies in Eastern European and South-East Asian countries such as the Czech Republic, Poland and Slovak Republic (see Table 19). In fact, FDI distribution has been uneven over the past decade. For instance, Hungary, which has a population of only 15% and GNP of only 23% compared to Turkey, received 2.5 times the FDI flow that Turkey got in the late 1990s. Political uncertainty, unstable and inefficient legal and regulatory frameworks, unfavourable macroeconomic conditions (mainly high inflation), corruption and competition from other countries in the area have been raised as main reasons for not investing (or investing less than otherwise) in Turkey (IMF and World Bank, 2003).

Although global FDI flows declined sharply in 2001, the transition economies in Central and Eastern Europe still remained immune to this general downturn. The effect of FDI to economies can easily be observed. In 1990-1999, GNP per capita increased by 125% in Poland, 56% in Hungary, 70% in Slovenia, and 120% in the Czech Republic. However, in the same period, GNP per capita increased by only 19% in Turkey reaching USD 3,200. However, while the global FDI flow has gained increasingly rapid momentum, FDI in Turkey has stagnated for more than a decade. FDI flows have constantly been below US$1 billion per year and less than 1% of GDP. Exceptionally, the flow boosted in 2001 due to comprehensive privatisation activities in Turkey as shown in Figure 26.

Figure 26: FDI in Turkey, (1993-2002, US$M)



Source: World Bank (2004a)

As discussed in Box 16, FDI should not only be viewed positively. Still, Turkey could be a magnet for FDI given is large market size, skilled labour and industrial competitiveness.

However, having significant potential of market-seeking FDI, this potential is unlikely to translate into concrete outcomes unless political and economic risks are alleviated. Following the rapid FDI expansion in 1990s, investors are re-evaluating their investments in a number of countries in light of falling profitability and perceived greater risks, and Turkey is perceived as a risky country to enter with FDI (IMF and World Bank, 2003).

Generally, investment climates are defined as the policy, institutional and behavioural environments – both present and expected – that influence the perceived returns and risks associated with investment in terms of both quantity and productivity of investment flows. Any given investment climate depends on a wide array of factors including macroeconomic and trade policies, infrastructure, governance and institutions. As discussed, these factors help explain both the strong potential attractiveness of Turkey as a location for FDI as well as the shortcomings that have led Turkey to remain so far below its potential in this area (Dutz, 2003).

Foreign investors broadly agree that among other things, FDI will be driven by both the global economic development and the business prospects of each individual firm. Thus, preparing a country for increased FDI activity is not merely a matter of adjusting and improving macroeconomic stability and conditions. It is also a question about acting on a micro level by raising the investment-readiness in local firms and making them more attractive for domestic and foreign investors.

Box 16: Some Key Factors for Increasing FDI Activity

Stability
Stable political environment, as well as conditions that support physical and personal security is an important benchmarking factor.

Domestic Investment Regime
Corruption and governance concerns have a significant bearing on investment prospects. The domestic investment regime and the business environment including business licensing system, tax regime, the attitude and quality of bureaucracy are important for foreign investors.

Growth Possibilities
Domestic market size and growth prospects of the host country play an important role in affecting investment location since FDI in EMCs is increasingly being undertaken to service domestic demand rather than to tap cheap labour.

Infrastructure
The availability of infrastructure is critical.

Local Capital Markets
Developed local capital markets and sufficient chains of financing and secondary markets supplying finance for businesses are an important precondition for supporting robust FDI activities.

Source: IMF and World Bank (2003)

In order to increase the FDI activity level, Turkey should stabilize the political environment, improve domestic investor regimes, increase focus on market sizes and growth prospects in companies, and develop the local capital markets. Provided with increased inflow of foreign direct investment, Turkey will see the capital scarcity and high cost of capital for SMEs gradually resolved. In addition, foreign direct investment, made for long-term financial and strategic partnership purposes, will not exit the country rapidly. The partnerships will provide

management and technological know-how, access to new markets, new product groups and support for institutionalization among Turkish businesses boosting the competitiveness in industrial and productive sectors. Moreover, foreign investors will share the partner's future and thus contribute to the development towards stability, even in the political arena as they will also execute lobbying activities in the countries they invest in.

However, this argumentation is two-fold. To ensure that FDI has positive spill-over effects in Turkey, FDI should not only be invested in multinational enterprises or LSEs, but should also be allocated to smaller entrepreneurial firms and SMEs. On the other hand, as discussed previously, the level of investment readiness is not sufficiently high among Turkish SMEs to attract domestic investors. Growth perspectives and internationalisation must be improved in order to encourage FDI in Turkish SMEs.

As shown, domestic institutional investors do not play an imperative role in Turkey's financial markets – stemming from immature private pension funds and insurance markets. Substantial parts of potential capital sources are kept outside the country due to past gains on unregistered economic activity combined with scepticism of the Turkish economic and political system. Most foreign institutional investors require a track record, confirming qualified private equity investors in the Turkish market, before investing in the country. However, given the immature domestic private equity market, such attractive track records are often lacking. In addition, international funds covering Turkey find it hard to close deals due to lengthy negotiation and due diligence procedures, complicated by the lack of availability and accuracy of information, legal structures and cultural differences between the foreign investors and local Turkish firms.

Regardless of the difficulties in developing both domestic and foreign investments, it is perceived that FDI could kick-start the somewhat under-developed domestic capital formation. By locating large funds in the Turkish market, domestic investors would be able to increase activity and find experienced and qualified investment partners. On the other hand, increased domestic private equity activity would also attract more foreign investors. Thus, given that macro-economic conditions are in place and the level of investment readiness among Turkish companies is improved, domestic and foreign investors could develop the Turkish market together.

Developing Innovative Clusters and International Networks

As stated earlier, realising the potential of SMEs requires networking, or clustering, where flexibility at firm level is combined with economies of scale and scope in wider-collaborating groupings of firms. While this applies to all countries, the state of cluster development in each country and each region varies markedly. Clusters, and particularly innovative clusters, are a key instrument for strengthening the innovative capacity and the competitiveness of SMEs:

> *By increasing SMEs' access to technology, capital, product markets, among other things, strategic alliances and other partnerships, as well as networks and clusters enable SMEs to combine their generally inherent flexibility and ability to adapt quickly with the advantages of scale and scope generally only available to large corporations* (OECD, 2002c).

Strengthening innovative cluster initiatives is not just a matter of promoting networking or ICT. Rather, successful clusters tend to involve fruitful cooperation between business, academia and government, with a strong element of knowledge creation and application which is highly collaborative and inter-linked. At the same time, sheltering and provision of special favours is counter-productive; successful clusters combine collaboration and processes of genuine, fair competition. They are essential to the development of new technology-intensive industries as well as to the upgrading and maintenance of traditional industries, which often can shift onto

trajectories of expansion with higher-value added through the new means to innovate and gain access to markets. Related factors which play an important role in successful clusters are industry-science relationships, inter-firm collaboration, public/private partnerships, and globalisation. Further, dynamic links between complementary activities and industries are increasingly needed. Traditional manufactured products increasingly need to be supplemented by crucial services in logistics, information-management related to specific customer needs, after-sales service and so on.

In recent years, there are signs of increasing awareness in Turkey of the importance of innovative clusters and clustering for economic development and particularly for enabling the development of competitive and dynamic SMEs. Thus, among other things, KOSGEB, recently commissioned a national analysis of clusters in Turkey. TTGV[24] provides training and network support services to SMEs. Another example is the creation of a non-profit organization, Competitive Advantage Turkey (URAK), which has worked with mapping a number of clusters in Turkey. Also, technology development zones and centres have been established for the purpose of integrating and enhancing scientific and technological infrastructure of universities and the private and public sector adapting SMEs to new and advanced technologies. However, there is an urgent need for Turkey to ensure framework conditions and design policies – on national and regional level – that enable the development of dynamic and innovative clusters and techno parks.

Another way of enhancing internationalisation and developing a strong export profile among Turkish SMEs is through Innovation Relay Centres (IRC). The IRCs provide transnational technology transfer to SMEs through an extensive network of IRCs, clusters and business support centres throughout Europe and promote innovative products and processed produced in one region of Europe to companies in other European regions. Innovation Relay Centres can, in collaboration with various partners, fuel internationalisation processes and technology transfers by assisting SMEs in identifying potential partners abroad, bringing partners together and detecting international markets for certain high-tech products.

In May 2004, the first IRC (IRC-EGE) was opened in Turkey and from March 2004, the EU Commission provided IRCs across Europe with renewed financial support allowing for extension of IRCs in Turkey. The focus of IRCs' work has been on small firms, although not exclusively so, but in line with the priorities set out in the Sixth Framework Programme, the Commission wants to see them work more with universities and research institutes to bring research results into the network. Besides IRCs, Turkey also participates in other international and European activities promoting SMEs. For instance, KOSGEB is representing the country in the KOSGEB SME which is a network that has been set up under the scope of the European Information Centres (EIC). The EU-Commission has decided to add 28 new EICs to its existing network, and the biggest beneficiary of the new EIC networks will be Turkey, as almost 1/3 of the new centres will be based there. Moreover, based on the recommendations from the OECD meeting in Bologna 2000, a feasibility study for the International Network for SME (INSME) has paved the ground for the creation of the INSME association. INSME promotes innovation and technology transfer in SMEs through international collaboration and joint activities among governments, intermediaries and international organisations worldwide. KOSGEB is representing Turkey in this work.

[24] TTGV is an autonomous non-profit organization established in 1991with joint public and private support (see also www.ttgv.gov.tr)

Box 17: The European IRC Network

The Enterprise DG supports a network of 68 Innovation Relay Centres (IRC) spanning 31 countries, including the EU Member States and the newly associated countries. Each IRC is its region's window to the European innovation, helping companies and research organisations transfer technologies to and from the rest of Europe. Further information on the IRC network can be found on the IRC homepage http://irc.cordis.lu/.

Turkey's first IRC

IRC-EGE is the first IRC in Turkey and is established under EU Framework Programme 6 aiming to tailor its services to meet the needs of its clientele, in accordance with the regional industrial, economic and social fabric following the , while respecting the IRC objectives, as stated in the Research and Innovation Work Programme. IRC-EGE is being operated by a Consortium formed by Ege University Science and Technology Center (EBILTEM), The Aegean Region Chamber of Industry (EBSO), The Izmir Ataturk Organized Industrial Region (IAOSB) and KOSGEB.

IRC-EGE will encourage and assist local industries to identify their needs for innovative technologies, based on information obtained through surveys conducted, company visits and technical audits. It will use the IRC Network to search for external technologies and will proactively assist them to match identified local needs with European offers by dissemination of technology profiles and by partner search for the exploitation of identified technologies through transnational co-operation. IRC-EGE will also utilize IRC network, CORDIS, EUREKA and ESA to identify EU RTD results with potential for exploitation in the Aegean Region. In addition, targeted work will be done to determine innovative technologies emerging from regional industry and academia and assist them to formulate their offers on the web. IRC-EGE will take all the necessary measures to ensure that the Technology Offers produced will be of high standard and genuinely innovative.

Source: IRC-EGE (2004).

Also, Turkey has established several Free Zone areas throughout the country deemed to be outside the traditional custom borders pursuing to create more convenient business climates and increasing export-oriented investments and productions. However, the Free Trade Zones have not managed to attract to the expected amount of foreign investments nor sufficiently developed companies.

Summary

Generally, venture capital investors provide both finance and non-financial values in new companies allowing the firms to develop economically, technically and internationally through their investor network. However, while venture capital investments are increasing globally, inadequate access to finance for entrepreneurial companies, including seed and venture capital, and lacking international export profiles among SMEs were identified as main obstacles for improving the SME environment in Turkey. Policy action is required as to improve the business climate and the internationalisation and export profiles among SMEs, especially for innovative firms.

CHAPTER 5: CHALLENGES AND RECOMMENDATIONS

With the European Council decision on Turkey's accession set for December 2004, the coming year will be crucial for Turkey's general orientation, both political and economic, in years ahead. Given the structural, legal and social issues that still remain to be resolved, the key challenge is to drive a coordinated, joint and determined effort to address all the issues. However, regardless of the European Council's decision, Turkey faces significant obstacles preventing innovation and growth. These issues require urgent attention and reforms – even if negotiations with the EU should drag on. Based on the previous chapters' presentation of macro and micro economic developments and trends, and in particular the focus on small and medium-sized enterprises in Turkey, we map some of the key challenges preventing Turkey from advancing in its economic and innovation performance, and present some general recommendations.

Challenges

The continually evolving international economic environment – and the growing importance of access to, ability to transform and willingness to use knowledge for development – "raises the bar" for all countries. Turkey is facing the challenges associated with the rise of the knowledge-based economy and the subsequent importance of innovation for economic growth and competitiveness, at a time when the basic foundations of political and economic stability have not yet been fully secured. In the following sections, we present several sets of challenges: those related to the macroeconomic environment, those related to Turkey's national innovation system, and finally those challenges more specifically related to the development of innovative enterprises.

Stabilising the General Macroeconomic Environment

Although Turkey has made impressive progress since the financial crisis in 2001 – fulfilling the IMF's stabilization programme criteria and showing positive growth figures, there are still a number of hurdles to cross. Despite recent upgrades in Turkey's credit rating, there is the continued widespread perception of an instable economic environment. With a highly prevalent informal economy and highly disparate levels of development in the various regions, it remains difficult to implement fiscal measures (such as taxation) in a transparent, equitable and effective manner. As a result, certain groups of companies, generally the smaller and younger companies, are left with a disproportionate tax burden. This, in turn, leads to tax evasion and other alternative actions which cause the perception of corruption to continue. In addition, while inflation rates have been brought down dramatically, there needs to be continued focus on price stability.

This uncertain environment discourages both domestic and foreign investors from the Turkish market. Even though GDP and inflation figures present the picture of an increasingly stable and growing economy, there is still a low level of FDI, venture capital and start-ups in the country – signalling that the government must continue to implement measures to reduce the informal economy, the lack of transparency and the inequality that exists among companies, and pay greater attention to the different strengths and needs of the regions.

In the 2003 regular report on Turkey's progress towards accession, the European Commission pointed to the intellectual property rights, and other areas of company law, as well as labour market policies, as two areas where changes are needed.[25]Unemployment remains a concern –

[25] November 5, 2003 (http://europa.eu.int/comm/enlargement/report_2003/pdf/rr_tk_final.pdf), selected issues from sections B2 and B3.

particularly in the younger, well-educated segments of the population. As presented in Chapter 2, the highest rates of unemployment are among young graduates, seemingly indicating that there is a serious mismatch of skills and a waste of educational resources in the economy. The challenge here lies in identifying the sectors and functions where growth is most promising, and where qualified human resources are most needed. This requires a long-term collaborative effort of industry, universities and government.

Strengthening the National Innovation System

Turkey's position is low on both global and European indices ranking innovation and competitiveness. When broken down to the various elements playing a role in national innovation, one can see that Turkey is facing challenges in many areas.

Foremost of the challenges is the need for development of Turkey's national scientific and research base. With a current GERD of 0.64% (split relatively equally between the public and private sectors), there is a long way to go to meet the 3% GERD goal in the Lisbon agreement. Irrespective of European goals, Turkey must find ways to increase its focus on, but also its benefits from, R&D. As the key input factor to innovation in products and processes, research must be given higher priority. Yet it is not merely a matter of the public and private sectors increasing investment across the board, but working together both to identify and target research areas and to carry out research projects.

Between 1995 and 2000, Turkey's business expenditure on R&D increased at a faster pace than in any other OECD country. Nonetheless, while keeping the data problems in mind, Turkey's position relative to other member and candidate countries, looking at various indices, shows there is still a large gap to be closed, particularly with respect to science, technology and innovation. Business expenditure on R&D (as a percentage of value added in industry) remains among the lowest in OECD countries. Turkey is weak in new patent-intensive growth areas, notably ICT and biotech.

The private sector has shown its ambition in making improvements in this area (with an 85% increase in R&D investment from the previous year), yet there is very little collaboration between university (or other public sector research) sectors and industry, or other important stakeholders. For Turkey to be able to make the most of its cumulative R&D investment, public and private sector actors must work together. Companies must take the lead in identifying areas for applied research projects in order to ensure that research results are more likely to have commercial benefits. That is not to say that all research should be applied research, but rather that more collaboration and communication between academic research institutions and industry, and society at large, will result in a more effective use of the resources invested in R&D and greater likelihood of getting tangible results.

Coupled to the need for a higher investment in knowledge is the need for a broader spread of knowledge and e-preparedness through ICT. Turkey has low average computer usage and internet penetration levels. This is likely due to the regional dichotomy in Turkey, where certain geographical areas have well-developed access and other areas are entirely undeveloped. Yet the data indicates that, for whatever reason, there is not a wide enough dissemination of information in the country. Additionally, there is a lack of comparable data available to benchmark Turkey's performance in certain key aspects such as entrepreneurship, innovation in SMEs, etc. In order to inspire new ideas, provide incentives to collaborate between regions and across national borders, and catalyze the further development of the economy, there needs to be both more information and a broader access to that information in Turkey. The government is trying to

address this challenge through its e-Government initiative, yet national networks remain underdeveloped.

When it comes to innovation outputs, there are also a number of problem areas. Currently, Turkey's manufacturing and trade is predominantly in highly labour-intensive, low technology-intensive industries. In the short-term, this helps employment and output levels, but creates a long-term challenge for maintaining a competitive advantage. That is not to say that Turkey should abandon its traditional industries, but rather that entrepreneurs should continually seek new ways to add value and develop their companies and industries, and increased attention should be put on the fostering innovation at firm levels.

The challenge of increasing knowledge intensity in manufacturing and trade is linked to the challenge of promoting greater collaboration among all stakeholder groups and policy makers. As discussed in Box 3 and Box 7, innovation is more likely to come from a joint effort from multiple stakeholder groups than from independent activity from one actor. In Turkey, there is a low level of trust and collaboration between the various groups and more should be done to encourage joint efforts and collaboration between national, regional, public and private actors in this field.

An overall challenge for Turkey's innovation system is the issue of governance. While Turkey has a very well-developed institutional framework, there is a lack of coordination on innovation policy both within the public sector and between the public and private sectors. Instead of being able to "join forces" and combine available assets, the various institutions find themselves in a power struggle – battling over limited resources and prioritized/share of attention. This institutional battle leaves the target (primarily SME) clients struggling to identify which organisation they should turn to for support, and results in unclear priorities and policies, fragmented results, overlapping or double-work, and frustration from all concerned.

Fostering the Development of Innovative SMEs

In recent years, Turkey has made impressive strides to enhance its capacity with respect to management of information, innovation and conditions for small and medium-sized enterprises. Turkey has further plans to strengthen support of the development of its young, entrepreneurial workforce and encourage a more innovative and attractive business environment through a number of initiatives. Yet the current situation for companies trying to innovate and grow is wrought with challenges. SMEs, in particular, experience these challenges most acutely.

SMEs, which have proven to be the stabilizing core of the Turkish economy, face serious difficulties in pursuing innovation, growth and internationalization strategies. Access to capital is a primary barrier. The domestic private equity markets in Turkey are poorly-developed, and FDI flows are negligible. The informal economy and problems regarding rule of law partially explain the lack of investor friendly environments. The low foreign direct investment flows hamper access to international export markets, which, together with slowly developing international networks, prevents companies from developing strong, attractive export profiles. Combined with a general lack of seed and venture capital funding and mechanisms for effective internationalisation of Turkish SMEs, it is difficult to start up and develop investment-ready companies in Turkey. These shortcomings are mirrored in very limited entrepreneurial activity, and efforts should be intensified to improve conditions for start-ups.

Once started, companies suffer from the lack of appropriate business skills, competencies and attitudes which prevent them from developing. Although there are many agencies providing various services to SMEs, the service network is not well-developed outside of the three largest cities, putting companies in less-populated regions at a disadvantage.

There has been limited progress concerning the simplification of the business environment and on-line access to information and services. Legislation governing the SME sector is complex and lacks coordination. There is currently no formal and regular dialogue between the private sector and public institutions. In general, networks joining the various stakeholder groups, and promoting collaboration between industry and universities, are weak. There are significant tax burdens, and corruption represents a disproportionate burden on start-up activity. In addition, any work to improve framework conditions for SMEs in Turkey is hampered by the limited access to national and international comparable statistical SME data. Increased attention should be paid to ensuring sufficient data and definitions.

Recommendations

Beyond doubt, Turkey must address a number of challenges to strengthen its basis for innovation, competitiveness and growth. The situation calls for a national strategy to enhance innovation capacity, in which improved conditions for SME-development must constitute a critical element. According to IKED's preliminary analysis, the following should represent cornerstones on this agenda:

1) Forming a more coordinated and functional structure for innovation policy governance

a. Maintain central, high-ranking responsibility for establishing overall vision and goals, and managing implementation of action plans (as exists with BTYK), yet ensure greater involvement and anchoring of innovation plans with all stakeholder groups throughout the policy formation process and make real efforts to foster bottom-up initiatives at local level

b. Incorporate mechanisms for evaluating policies during their implementation and conduct regular checkpoints on overall progress, taking efficiency as well as effectiveness criteria into account

c. Create fora for structured high-level policy exchange and learning (both within Turkey and with other countries), while ensuring broad representation of relevant societal stakeholders and ensuring that vested interests are not allowed to dominate

d. Strengthen the national science base, combining a strengthening of conditions for basic science and for effective science-industry interplay

e. Develop incentives for more R&D investment by the private sector, including by SMEs

f. Improve existing efforts to promote collaboration between public and private sector research initiatives (e.g. technology development zones)

g. Design strategies/initiatives for promoting international cooperation on R&D and enhancing local absorptive capacity in regard to international knowledge flows, while taking action to counter the build-up of massive new administrative capacity and bureaucracy to attract foreign R&D-funding

2) Improving the national ICT infrastructure

a. Develop network of local internet access points (using existing decentralized structures – e.g. universities, chambers of commerce; see Box 18)

Box 18: Window to the Future initiative in Lithuania

In May 2002, leading Lithuanian businesses (fixed and mobile telecommunications, banks, and IT companies) came together to form the **Window to the Future** alliance. The goal was to achieve the same average internet penetration in Lithuanian as in the European Union within three years through three fields of activity: broad public access, training on computer usage and internet, development of electronic content and services relevant to civil society. At the end of 2002, the Lithuanian government joined the alliance, agreeing to establish 300 new internet access locations and allocate LTL 5.6 million to the project over three years.

During 2003, 66 public internet access points were established throughout Lithuania, enabling citizens to spend over 1.500.000 hours on the internet. A free internet training course is planned for 20.000 people. It is the alliance founders' goal that the project will prompt closer collaboration between the public and private sectors on the development of the information society, and will provide a base for local governmental institutions to act in this area…stimulating municipalities to take further steps in developing and refining public Internet access points according to local needs.

Source: Windows to the Future internet site: www.langasiateiti.lt

b. Support the current e-Government initiative

c. Develop links to European or other international ICT and information-sharing initiatives (e.g. e-Europe and Global Trust Centre)

3) Developing local/regional action plans for innovation

Box 19: VINNVÄXT - Regional Growth through Development of Dynamic Innovation Systems

VINNOVA's mission is to promote sustainable growth by financing R&D and developing effective innovation systems. VINNOVA's efforts to create effective innovation systems have international, national, sectoral and regional perspectives.

VINNVÄXT is a programme based on the idea of regional growth through dynamic innovation systems. The purpose of this programme is to stimulate the sustainable development and international competitiveness in functional regions through the long-term promotion and strengthening of the innovation system (including R&D funding) within selected strategic areas. Thus, the programme seeks to concentrate efforts and actors within a region around a strategic idea. Regions and initiatives to be included in this programme are selected in a national competition according to quality of the proposal, growth potential, and the ability to mobilize regional efforts and to secure regional co-financing, among other things. The winning teams receive up to 10 million SEK (approx. 1.1 million €) per year for 10 years from VINNOVA, plus matching regional co-funding.

VINNVÄXT differs significantly from earlier regional development initiatives in Sweden with its long-term perspective, its process support and the fact that the programme selection procedure is competitive.

Following the general positive reactions to VINNVÄXT, VINNOVA has increased its total budget of the programme from initially 400 to 600 MSEK for the ten-year period. This sum is matched by regional co-funding of at least the same amount.

a. Make use of strong, decentralized structures that already exist (in, for example, chambers of commerce) for developing and implementing local/regional action plans for innovation (see Box 19)

b. Initiate measures targeted at specific local/regional needs and leveraging specific local/regional strengths (e.g. sector/cluster development, industry-university research collaboration, etc.)

c. Increase availability of (national) services (SME business support services, grant/loan services, etc.) to more locales

4) Fostering better conditions for SME growth and entrepreneurial activity

a. Increase the general level of education among young Turks

b. Include entrepreneurship courses in schools and universities throughout Turkey

c. Arrange more match-making events and "career days" between school and university students and representatives from the private sector

d. Expand business services to include competence upgrading in SMEs (meeting specific needs through internal upskilling or strengthened networking with regard to external competence)

e. Increase awareness of innovation, growth and internationalization among Turkish SMEs

f. Intensify efforts at internationalization and promote existing trading companies (ensuring an international profile)

g. Improve the provision of comparable statistical SME data including start-up rates, survival rates, entrepreneurial firms' access to finance and aligning SME definitions

h. Increase legitimacy by service providers' requiring more formalized documentation and activities when assisting local SMEs in business development

i. Develop a comprehensive strategy to unleash the potential of female entrepreneurship

5) Strengthening the supply chain of financial resources and investors

a. Foster better opportunities for investments by reducing the informal economy

b. Encourage governmental bodies to set-up public/private venture capital tools to increase the total supply of private equity and to bridge the financial gap between early and later-stage investors (e.g. setting-up venture capital and private equity funds in public-private partnerships built on market conditions – see example in Box 20 below)

c. Encourage banks to specialize their lending to traditional and low-risk firms (leaving investments in high-risk firms up to the private equity market) and promote new lending techniques in banks (encouraging more lending to SMEs) and offer risk reduction for banks through public guarantee funds

d. Address and activate the high-risk and early stage financial and non-financial assets in the informal capital market (consisting of private investors alias business angels) by setting up meeting points and business angel networks for private investors

e. Maintain dialogue with the private sector in order to link private sector investors, development agencies, etc. through a wide spectrum of activities

f. Define certain potential high-growth markets and strengthen these segments by allocating high-risk investments through public/private arranged funds-of-funds

g. Ensure access to appropriate investor friendly infrastructure (including legal structures, tax matters and exit markets)

h. Increase the total supply of Turkish venture capital and private equity activity by encouraging institutional investors and pension funds to raise their investments in the Turkish market for innovation finance

Box 20: Good Practice example of Public Intervention in Venture Capital*

In recent years, the general view on the public sector's role in venture capital markets has transformed. Previously, it was widely viewed that the public sector should abstain from getting actively involved in capital markets, and that the market forces of supply and demand should govern capital market movements. However, recent market trends have led to a more risk-averse attitude and a decrease in funds in the earliest (seed and start-up) investment stages. This has a strong impact on the newest and smallest companies, limiting their ability to invest for innovation and growth. Within the public sector, there is growing attention to this "market imperfection", and a desire to address the financing needs of young, innovative (and most often, small) companies.

Vaekstfonden in Denmark provides a good example of constructive and successful public sector intervention to support and develop venture capital markets, providing better access to funds for newer, smaller companies.

Vaekstfonden was established in 1992 as a state-backed investment company, providing finance to fast-growing Danish companies and acting as a fund-of-fund investor in the private equity sector in the Nordic region. Its mission is to strengthen development and renewal in the Danish economy by procuring financing for promising projects in small- and medium-size businesses. Investments are focused on early stage ventures mainly within life science, med- and high-tech companies, as well as mezzanine financing to a broad range of branches. Vaekstfonden has a capital base of €400 billion, making it one of the largest players on the Danish VC market, and is the largest early-stage investor in Denmark.

A recent strategy shift in 2001 supports three main actions: the activation of passive capital base to ensure that capital reaches the segments where the financial markets hesitate to invest; establishment of a fund-of-funds to build a stronger Danish venture market; and increased use of equity in direct investments to ensure that Vaekstfonden gets its fair share of future upside returns. Vaekstfonden's three business areas include direct investments, fund-of-funds and Vaekstaution (a loan guarantee scheme for SMEs). More information about Vaekstfonden can be found on their internet site at: www.vf.dk.

6) Facilitating foreign direct investment and strengthening absorptive capacity of the domestic economy from spill over effects

a. Seek alliances with foreign investors in the region and improve the cross-border activity between Turkey and other countries in the MEDA countries

b. Strengthen linkages between foreign and domestic firms (through, for example, education exchanges, science and technology cooperation, etc.) in order to ensure knowledge transfers and spill over effects to the domestic economy

c. Enhance internationalisation in local SMEs by ensuring SMEs' position in the value chain of LSEs

7) Strengthening economic and political stability and rule of law

a. Continue efforts to make the financial environment more investor-friendly by improving sound macroeconomic conditions, information transparency and stable inflation rates

b. Attract foreign investors by increasing activity on the domestic capital markets and offering professional track records among Turkish institutional investors and fund mangers

8) Promoting increased awareness of and participation in EU Programmes

a. Engage international partners experienced in applying for and carrying out projects using EU resources

b. Make more active use of existing organisations responsible for awareness-raising of EU programmes and coordination with the EU

c. Facilitate coordination in domestic efforts, as well as international relationships, so as to pool resources, reduce risks and counter the pile-up of administrative and bureaucratic efforts which otherwise risk magnifying for the purpose of obtaining EU-subsidies

CHAPTER 6: MOVING FORWARD – OPPORTUNITIES FOR STRENGTHENED PRIVATE SECTOR INVOLVEMENT

Although Turkey has had a strong focus on addressing the challenges associated with KBE – for fostering innovation and competitiveness in order to drive sustainable economic growth, its current position on many of the indicators which gauge success is low. Despite the many public policy actions and other initiatives (see Table 20) [26], Turkey has not yet been successful in converging on the performance levels of other countries in the region. There are still areas to improve – both fundamental framework conditions which must be in place in order secure a stable macro environment, and enabling (micro) conditions which support and catalyze an innovative economy. And even though the bulk of responsibilities for establishing the right framework conditions lies with the public sector, there are a number of areas where the private sector can become more engaged.

Table 20: Selected Initiatives Supporting Development of KBE in Turkey

Initiative / Project	Organisation Responsible
- eTrade Coordination Committee (1998-2002)	Undersecretary of Foreign Trade
- KAMU-NET (1998-2002)	Prime Ministry
- Turkish Informatics Council (May 2002)	
- eTurkey Initiative (2001-2002)	Prime Ministry
- eTransformation Turkey Project (2003)	SPO-ISD
- Vision 2023 Project	TÜBITAK
- Industrial Technology Project (1999-2003)	Undersecretary of Treasury/TTGV
- Technology Development Support for SMEs	KOSGEB
- University-Industry Joint Research Centres	TÜBITAK/TIDEB
- Knowledge Economy Assessment/Project Preparation	World Bank
- Various entrepreneurship training programs	TTGV, TÜBITAK, KOSGEB, TOSYOV, etc.

Source: Presentation of State Planning Organisation at World Bank Knowledge Assessment Workshop, 5 November 2003.

The government and other public sector institutions have the overriding responsibility to understand the needs and prioritize actions to promote innovation and growth in the Turkish economy, but the public sector cannot manage alone. The private sector, as well as universities and research institutions, must also play a large role. All of these actors must work together to establish the appropriate conditions and incentives for, and remove any barriers to, catalyzing innovation across sectors and regions.

> *...(A) positive association between productivity and a number of variables measuring the potential in terms of knowledge-based activities – such as R&D intensity, human capital and specialisation in high-tech activities – indicate the importance of a knowledge base for regional competitiveness.... The common thread appears to be the potential to connect the different economic actors – both in a physical sense...and in a more intangible way through a common vision among regional stakeholders as well as through collaboration between the academic and the business world.* (European Commission (2003f), p. 13).

When it comes to ensuring Turkey's long-term ability to grow and prosper – and also to better position Turkey for future EU membership – the private sector thus has a vital role to play, both through its active cooperation with the public sector and academia in designing and supporting effective policies for innovation and enterprise development, and in devising and carrying out programmes and activities on its own initiative. Among other things, this implies prioritizing the

[26] More information on innovation policy initiatives in Turkey can also be found in European Commission (2003a).

knowledge economy and taking concrete steps to support innovation and enterprise development in order to improve Turkey's competitiveness and investment attractiveness.

In particular, this means giving increased attention to five key areas where private sector involvement is critical for Turkey's advancement on innovation performance and the development of innovative SMEs to drive economic growth and competitiveness in the long-term. TOBB, and other private sector organisations, have the opportunity to become more engaged in the formation and inaction of innovation policy through the following possible initiatives:

1) Actively Participating in the Policy-making Process

a. Anchor and promote the strategy and plans of the Science and Technology Council throughout the private sector – through internet sites, newsletters, conferences and publications – in order to raise awareness and to better understand the needs of companies with regard to innovation issues

2) Making Use of Strong Decentralized Networks to Offer Services and Catalyze Innovation throughout Turkey

a. Team with KOSGEB (and URAK) in order to enhance efforts to complete the ongoing mapping of clusters and industrial sectors throughout Turkey

b. Initiate (competitively-based) regional development programmes (possibly following the Swedish example of VINNVÄXT, see Box 19) to spur action and an outward-looking mentality among the regions

c. Sponsor Incubator/Technology Development Zone 'training camps' twice a year where representatives from these centres gather to share experiences (both good and bad) with each other, and look to other (international) examples for inspiration and new ideas

d. Involve Turkey's first Innovation Relay Centre, IRC EGE, in this process

3) Teaming with Public Sector Organisations to Strengthen the Private Equity Markets in Turkey, particularly those targeting SMEs

a. Seek dialogue with private and public sector representatives in order to initiate seed investment infrastructure such as business angel networks (BAN) for private investors in Turkey

b. Invite public and private sector venture capital and private equity actors for workshops striving at developing sound possibilities for synergies and syndications strengthening collaboration between early and later investors

c. Promote Turkish venture capital investments and seek cross-border collaboration with partners in the MEDA region, using existing international networks

4) Encouraging and Initiating Joint Entrepreneurial Research Projects and Statistical Surveys with Universities and Research Centres

a. Join forces with Turkish entrepreneurial research institutes like Marmara Research Centre in order to increase domestic data collection on entrepreneurial activity and SMEs in Turkey

b. Initiate participation in the global research project Global Entrepreneurship Monitor (GEM) in order to gather more international comparable data on the perceptions/needs of entrepreneurial activity and SMEs

c. Support and strengthen ongoing efforts at international research collaboration by seeking out additional/alternative measures, with the support of European partners (such as IPI and IKED)

5) Continuing to Promote and Engage in Sound International Business Practices

a. Seek collaboration with Turkey's first Innovation Relay Centre in EGE in order to collect and spread best IRC practice in Turkey

b. Conduct surveys to determine the demand for changes in the business/investment environment

c. Fuel the internationalisation processes in Turkish SMEs through participation in international networks and partnerships, and engage in activities provided by organisations such as INSME

d. Join forces and establish collaboration with suitable partner organisations domestically and internationally to pursue opportunities within the EU Framework Programmes as well as other relevant programmes while keeping administrative costs down

e. Strive to involve international partners and increase globalisation in ways "outside of" formal EU programmes (e.g. through sponsorship of university/research exchanges, short-term job exchanges, participation in internationally-geared training programmes, etc.)

Overall, there is no shortage of interest and dedication in Turkey's very entrepreneurial population. There is, however, a lack of an over-arching strategy to help guide the efforts of all actors involved. What is required, therefore, is a structured, coordinated, and driven effort to address these issues.

The private sector can, and should, play a key role as facilitator, but also as initiator of actions and programmes, aimed at enabling and promoting an innovative economy. There are many opportunities for increased private sector involvement, and there is much interest from other stakeholder groups in becoming more actively engaged with private sector organisations (like TOBB). The question that now arises is if there is a shared interest in collaboration on the part of the private sector. Given a stated interest in supporting initiatives to spur innovation in the Turkish economy, collaboration on these issues must also be a shared priority.

CONCLUDING REMARKS

Like other nations around the globe, Turkey is facing both opportunities as well as challenges during its development towards the knowledge-based economy – a transformation that is shifting the focus and emphasis of the policy agenda as regards growth and competitiveness. At the same time, securing a date for EU Accession is a top priority for Turkey – a priority that will keep placing high demands on the political system, economic structures, and private sector performance for years to come. Turkey is taking on these challenges at a time when there is a widespread perception that the economic and political structures (although seemingly fragile) are regaining stability, the informal economy remains powerful, regional development is imbalanced, and more coordination and cooperation within the public sector – among key public and private actors in general – is required if Turkey is to manage the issues at hand.

Although Turkey's current position on the European Innovation Scoreboard along with many other indicators of global competitiveness are at low levels, Turkey has proven its resolve in catalyzing innovation in the economy both by initiating numerous ambitious programs and by making leaps in its performance trends over the past years. Yet there is a long road ahead to reach the levels of other countries with which Turkey is now, in effect, competing. In particular, R&D investment, the knowledge intensity of manufacturing and trade, capital market development and internationalisation of the private sector all require urgent attention, based on a view of how to foster conditions for consistent long-term build-up of productive structures and assets.

A critical element for ensuring sustainable progress in these respects is joint participation and action by all main stakeholder groups. The private sector – made up of the entrepreneurs, companies and investors that are responsible for innovation output – has the opportunity and the responsibility to take on a more active role in spurring innovation in the Turkish economy. This role needs to be taken on in a way that embraces new voices and enables the articulation of an effective demand for regulatory and institutional reforms. Conditions favouring incumbents – at the expence of newcomers, and pluralism in business and innovation – need to be systematically removed.

Given Turkey's accomplishments to date, its enormous potential, and strategic importance in both a European and global context, it is critical that Turkey's leaders both understand the main barriers to promoting the development of innovative companies, and are able to dismantle those barriers through appropriate and consistent policy actions. It is equally important to realize that these actions cannot be accomplished alone – the public and private sectors will need to work together to tackle the structural, as well as the micro-level issues, and that these issues must be addressed irrespective of the country's acceptance into the European Union.

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APPENDIX I: SELECTED PUBLIC AND PRIVATE ORGANISATIONS SUPPORTING INNOVATION AND SME DEVELOPMENT IN TURKEY

ORGANISATION	DESCRIPTION
Auto Industrialists' Association (OSD)	The objectives of the OSD (formed in 1972) are to promote the improvement of the industry and the production of motor vehicles, to contribute both to the automotive sector and to the national economy, to study the problems of the sector and other joint matters, to handle and follow-up all surveys and collective works done on behalf of the sector, and to represent the sector and its members before all public authorities and institutions.
Competitive Advantage Turkey (URAK)	Competitive Advantage Turkey is primarily working with cluster development and knowledge transfer to the local business environment throughout Turkey.
Confederation of Tradesmen and Artisans of Turkey (TESK)	The most important establishment binding together small enterprises. The unions act to promote a variety of interests of its members as lobbyists and are instrumental in setting up cooperatives for building industrial estates. In some instances, they are involved in training their members. The unions are organized at the regional level in regional associations, which represent all crafts and professions, and act as channels of communication. At the national level, all the regional associations form TESK.
Export Promotion Center of Turkey (IGEME)	IGEME was established to prepare reports on the development of trade in foreign markets, coordinate the business relations on national and foreign companies and organize fairs.
Foreign Economic Relations Board of Turkey (DEIK)	DEIK wash founded in 1986 by TOBB, TUSIAD, the Turkish Foreign Trade Association, the Chambers of Agriculture, the Association for Foreign Capital Coordination, and Istanbul and Izmir Exporters Unions in order to participate in improving Turkey's external economic relations, and facilitating Turkey's integration with the world economy through bilateral business councils.
Foreign Investors' Association (YASED)	YASED is a private organization formed in 1980 whose members are business professionals from international companies operating in Turkey. Its members share a common vision and work proactively to promote a better business environment by providing information and consultation, promoting networking and communication, developing better communication channels and coordination with other organizations in the business community, and supporting initiatives through lobbying for the harmonization of Turkish legislation and business practices with international norms.
Marmara Research Centre (MAM)	MAM was established in 1972 as the first R&D institute of TUBITAK. It conducts contract research for industry in the fields of materials and chemistry, ICT, genetic engineering and biotechnology, energy systems and environment, food technology, and earth and marine sciences. MAM also operates an incubator and a technology park/free zone for high-tech enterprises.

Medium and Small Enterprises Board (OKIK)	The OKIK was established in 1988 under the sponsorship of the TOBB in order to act as an Advisory Board. OKIK is composed of executives and a large number of representatives from Government agencies.
Ministry of Education, Department of Apprenticeship for Vocational and Technical Education Development and Expansion	This department is mandated by law to open apprenticeship training centres in industrial estates having more than 100 enterprises. The centres offer technical/theoretical training as well as vocational/practical training, satisfying needs of SMEs. This department reports to the Ministry of Education.
Ministry of Industry and Trade	The Ministry of Industry and Trade is responsible for studies to facilitate and encourage the activities of SMEs, prepares credit possibilities for Industrial Estates and Organized Industrial Zones, and determines the objectives for the Turkish Industrial Policy. Patent institutes under the ministry coordinate all the activities related with the registry of patents and trademarks.
National Productivity Centre (MPM)	The MPM was established in the early 1950's as a public agency in order to improve the productivity of industrial enterprises. The centre provides services to individual enterprises and its activities are geared towards all enterprises without any priority.
Prime Ministry Under secretariat of Foreign Trade	The Under secretariat is responsible for creating legislation and regulations in order to provide transparency, a standardization of the legal base and create harmony with the EU's trade policies.
Science and Technical Research Council of Turkey (TUBITAK)	TÜBITAK, founded in 1963, is the supreme organisation in charge of promoting, developing, organizing, and coordinating R&D, regarding Turkish exact sciences fields, in line with national objectives in economic development and technical progress. TUBITAK functions under the coordination of the Prime Ministry and is a government Institution. It supports, encourage and coordinate scientific research by supporting R&D activities and innovations in industry, promoting university-industry collaborations, and establishing techno-parks to facilitate their realization and by providing scholarships and other support to researchers, and organizing contests to discover and train future scientists Governance.
Small and Medium Industry Development Organisation (KOSGEB)	KOSGEB was established in 1990 and is a public agency associated with the Ministry of Industry and Trade. KOSGEB is a semi-Governmental institution, public corporate subject to private law, and affiliated to the Turkish Republic's Ministry of Industry and Trade KOSGEB helps SMEs adapt rapidly to technological innovations by means of enhancing their efficiency, as well as, their competitive capacity in order to increase their contribution to the National economy. The organisation is structured as a Network of support centres and offers *Technology Development Centres* (TEKMERs), operate as "Business Incubators" aiming to support technology oriented development. Using strong support mechanisms, these centres seek to create new technology-oriented enterprises and to establish suitable infrastructures (for enabling these enterprises) to develop volumes and perspectives supported by consultancy in managerial, technical, and

	administrative areas.
Southeastern Anatolia Project Regional Development Association (GAP)	The Southeastern Anatolia Project (GAP) is a multi-sector and integrated regional development effort approached in the context of sustainable development. Its basic objectives include the improvement of living standards and income levels of people so as to eliminate regional development disparities and contributing to such national goals as social stability and economic growth by enhancing productivity and employment opportunities in the rural sector.
State Institute of Statistics (DIE)	DIE provides Statistical information related to SMEs. DIE has indirect help for marketing activities of SMEs both at the business planning stage and in further development stages by conducting specially designed household surveys at short intervals and quickly processing them.
State Planning Organization	The State Planning Organization (SPO) is responsible for the overall targets and strategies for national and regional long-term development, including pre-EU accession economic programs and Turkey's national program for the adaptation of the EU Acquis, as well as innovation-related issues for the period in question.
Supreme Council on Science and Technology (BTYK)	Operating at an inter-ministerial and consultative level, the BTYK annually decides on the action plan for implementation of STI policy. The BTYK designates the responsible bodies and coordinators for each policy measure. BTYK is chaired by the Prime Minister and composed of government ministers and undersecretaries and representatives of other organizations including TUBITAK and TOBB.
Technology Board	The Technology Board was established by TOBB in 1995 in order to prepare industry for the 21st century push towards university-industry collaboration. The Technology Board is comprised of representatives from the Ministry of Industry and Trade, YÖK, TÜBITAK, DPT, KOSGEB, Istanbul Technical University, Bosphorus University, Middle East Technical University, Aegean University, Nine September University, TTGV, and 11 members of Industry Chambers.
Turkish Foreign Trade Association (TÜRKTRADE)	Established in 1986, TÜRKTRADE undertakes research studies on the development of Turkey's export capacity; prepares reports on the formulation and implementation of foreign trade policies; identifies problem areas and submits appropriate proposals to the related public institutions. TÜRKTRADE communicates to its members trade information on markets, products and business opportunities from international and domestic sources; hosts foreign trade missions from abroad; provides educational programs and workshops on foreign trade techniques; organizes seminars on international trade issues; publishes reports on economic sectors and services related to foreign trade.
Turkish Foundation for Small and Medium Business (TOSYÖV)	Turkish Foundation for Small and Medium Business - was founded in Ankara on February 21, 1989 for the purpose of providing support and service to more than 200.000 Small and Medium Enterprises (SMEs) in Turkey.
Turkish Industrialists' and Businessmen's Association	Formed in 1971, TUSIAD, in accordance with its mission and in the context of its activities, initiates public debate by communicating its

(TUSIAD)	position supported by professional research directly to the parliament, the government, the media, international organizations and other states.
Turkish International Cooperation Agency (TICA)	TICA was established in 1992 to promote economic, technical, social, cultural and educational cooperation programmes; to contribute and to coordinate activities of public and private organisations involved in international cooperation; to negotiate contracts and make arrangements with national, regional and international financial organisations and financial markets in order to secure necessary funding for the realisation of programs and projects; to provide technical support to the future Development Banks to be established in the Black Sea region, South East Europe and Central European Countries.
Turkish Patent Institute (TPI)	Turkish Patent Institute is a special Government authority connected to the Ministry of Industry and Trade and is organised as a government authority having administrative and financial autonomy. It is a young and dynamic institution that has been established in 1994 in accordance with the decree Law n° 544. TPI strives at protecting industrial property in Turkey.
Turkish Standards Institute (TSE)	TSE was established to assist in the standardization of industrial products by conducting quality control.
Turkish Technology Development Foundation (TTGV)	Turkye Teknoloji Gelistirme Vakfi (TTGV) is a non-Governmental independent and non-profit Organisation established jointly by the private and public sectors (26 private sector firms, 6 public institutions, 10 umbrella organisations and 14 individuals) on June 1, 1991. TTGV aims to strengthen and to contribute in boosting Turkish Industry's competitiveness in International markets in order to develop Turkey's technological infrastructure with the objective to demonstrate Turkish Industry the benefits of investing in research and development, to facilitate and to financially support technology development by Turkish Industry and to encourage the development, application, and exploitation of new technologies, particularly, to achieve upgrading from low-quality, labour-intensive products and processes towards higher value-added goods and services By acting as a catalyst in setting up Turkish technology parks, TTGV has assumed responsibility for these establishments – created to lead the formation and development of new businesses. TTGV stimulates the creation of venture capital by sponsoring a number of venture capital funds (VCFs) in high-tech industries – commercially organized, and primarily funded by the private sector.
Union of Chambers and Commodity Exchanges of Turkey (TOBB)	The main aim of TOBB can be summarized as providing and supporting the unity and solidarity between chambers and commodity exchanges and as well as developing trade and industry sector according to their general interests, facilitating professional activities, giving priority to public approach in confidence and honesty, protecting professional ethics and discipline. The primary target audiences are medium and large industrialists, and small and medium enterprises.