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AN INVESTMENT POLICY FRAMEWORK FOR TURKEY IN THE TWENTY-FIRST CENTURY[3]

In the twenty-first century, rapid developments in the global economy—led by advances in technology, the rise of service sector, and the emergence of fast-growing industries—have brought about new challenges for both advanced and emerging countries.

In the past decade, Turkey has made significant progress with the development of key industries and growing trade and investment, and today it ranks as the 17th largest economy in the world. By 2023 Turkey aims to reach $500 billion in total exports and rank among the top ten economies. However, significant challenges remain to achieve these targets. First and foremost, Turkey must adopt a new growth model, as large capital inflows that helped finance growth are expected to slow down in the post-quantitative-easing period. In this respect, Turkey must revise its investment promotion strategy to attract and facilitate both domestic and foreign investment, and enhance its medium- and high-tech exports. At present, while Turkey's exports grew rapidly between 2002 and 2012, there has not been a significant shift in the quality and technological sophistication of its exports; nor does Turkey have a strong presence in global markets.

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At the same time, Turkey initiated significant efforts towards enhancing trade and investment over the last decade. The government's commitment to shift resources from agriculture to industry and services helped increase the share of medium-technology exports, such as from the automotive sector. Major steps were taken to enhance innovative capacity and capabilities, and in the past five years government support programmes have focused largely on increasing the innovative activities of the private sector by providing grants, loans, and incentives.

Turkey's investment climate also improved considerably, while the implementation of structural reforms in the aftermath of the 2001 economic crisis strengthened Turkey's economic fundamentals and spurred the growth of the domestic private sector. In addition to its strong domestic market, Turkey's accession to the European Customs Union and integration with Europe in manufacturing contributed significantly to its exports. The surge in the number of trade agreements with other countries has also boosted Turkey's transnational trade and investment spread.

Notwithstanding this progress, Turkey has high inflation and a sizable current-account deficit. At the same time, the pace of urbanization—that played an important role in productivity gains—is bound to slow down. Short-term capital flows, heavy reliance on energy imports, the crisis in the Eurozone (Turkey's main trading partner), and political instability in Turkey's region are making the Turkish economy vulnerable to external shocks. The low domestic savings rate and low capital accumulation increase the risk of Turkey becoming stuck in the middle-income trap. Premature de-industrialization (whereby industry loses importance and there is rapid shift to services) may also hamper the development of sophistication and high-technology in manufacturing industries.

Most recently, the *Tenth Development Plan* (2014-2018), the *National Science, Technology, and Innovation Strategy* (2011-2016), and the *Industrial Policy Strategy* (2011-2014) all underscore the need for strengthening competition and industrial productivity to enhance medium- and high-tech exports. The implementation of these strategies will be decisive for Turkey to escape the middle-income gap and achieve its 2023 Vision of becoming one of the top ten economies in the world.

In order to increase trade and investment and become globally competitive, Turkey must improve its human capital pool and physical infrastructure, and strengthen its investment climate (i.e. labour market, tax system, judiciary/rule of law, and intellectual property regime). Moreover, investment strategy measures need to be mainstreamed across a broad range of sectors and horizontal policy areas. The selection of key technology-intense cross-cutting sectors can also provide an opportunity for Turkey to make the "sophistication" leap and accelerate Turkey's industrial transformation process.

This paper first briefly looks at Turkey's economic history, followed by an evaluation of Turkey's economic development and the major problems facing the Turkish economy, including the low level of high-tech exports. The next section reviews government policies and reforms in recent years. The third section is a discussion of key challenges facing investment development in Turkey. The paper concludes with policy recommendations for the adoption of a new growth strategy and smart industrial policy for Turkey to increase the sophistication of its production, especially its exports, and leap to a high-value-added economy.

AN ECONOMIC HISTORY OF TURKEY'S INDUSTRIAL TRANSFORMATION

In the early years of the Turkish Republic, industry and infrastructure (mostly railroads) investments were largely state-driven. The 1950s—characterized as the liberal turn in the Turkish economy—saw an attempt to reverse statist policies and focused on agriculture-based integration into global trade. In the 1960s and 1970s, the focus shifted from agriculture to domestic market based industry under heavy protectionism. The inward-oriented growth strategy was based on import substitution policies and expansive state planning under the State Planning Organization, (established in 1960) and development plans (the first development plan was launched in 1963). However, the productivity of growth eventually proved low due to the heavy subsidization of agriculture as well as the domination of state-owned enterprises and highly protected private conglomerates. At the same time, internal political unrest and a shortage of foreign currency nearly brought industrialization to a halt by the end of the 1970s.

The Washington Consensus, beginning in the 1980s, marked a fundamental turning point in twenty-first century global economic affairs. Broad-based privatization and liberalization reform policies stipulated by the Washington Consensus were the response to the debt crises in state-led economies in the global south, a situation that worsened following the oil price hikes in the early 1970s. The thrust of the new policy was to make financial fund flows, which were previously state-controlled and market-based.

With the emergence of the Washington Consensus, Turkey also experienced liberalization and integration into the global economy. A country with chronic current account deficits, Turkey turned to financial liberalization both to increase its domestic savings and attract foreign savings. The Turkish financial system embarked on a path toward global financial integration as the Turkish Lira became fully convertible, restrictions on capital flows were removed, and a domestic equity market was created. Moreover, along with the adoption of a broader privatization programme, the country shifted from import-substitution to export-oriented policies. Accession into a customs union with the EU in 1994 further opened the Turkish economy to transnational markets. However, economic growth was plagued by recurrent crises in the 1990s, which came about as a result of inadequate macro-economic policies and financial liberalization (the capital account opening decision, in particular) in an ill-prepared institutional and regulatory environment.

The 2001 economic meltdown—the worst crisis of the Washington Consensus era in Turkey—led to radical restructuring, as the country adopted a series of structural reforms to ensure fiscal discipline and macroeconomic stability. Moreover—along with Turkey's accession to the European Customs Union—the surge of trade agreements with other countries in the past decade boosted Turkey's transnational trade and investment reach.

The next section takes a closer look at government reform and policies (including industrial, development and other programmes) over the last decade.

GOVERNMENT POLICY IN THE 2000s

The policy framework set in place by the Turkish government in the past decade—which underscores increasing innovative capacity and capabilities and productivity outcomes—provides a solid foundation for sustainable economic development and growth. The implementation of these strategies will be decisive for Turkey to increase the sophistication of its production and its exports.

In 2010, the Ministry of Industry and Trade launched an Industrial Policy Strategy document for the 2011-2014 period[4]. The long term industrial policy vision put forward in this document is for Turkey to become "the production base of Eurasia for medium- and high-tech products." Three strategic targets were introduced to achieve this vision: *(1) Increasing the weight of mid- and high-tech sectors in production and exports; (2) Transition to high-value-added products in low-tech sectors; (3) Increasing the weight of companies that can continuously improve their skills (strong).*

Moreover, industrial policy has been aligned with the economic policy agenda, while sectoral strategies have been complemented with the creation of horizontal strategies. Improvements in eight horizontal industrial policy areas, emphasized by the Industrial Policy Strategy document, include the investment and business environment, international trade and investment, skills and human resources, SMEs' (Small and Medium Sized Enterprises) access to finance, technological development of companies, infrastructure sectors, and input costs, environment, and regional development.

Furthermore, there has been considerable progress with respect to the approach to industrial policy design, including increased interaction between different ministries and government agencies, as well as between the ministries and the private sector. The private sector has been participating in policy design processes, while participation of private sector representatives has increased in recent years.

At the same time, the industrial policy development initiative has been complemented by several sectoral strategy and action plan documents for the automotive, machinery, iron & steel and non-ferrous metals, chemicals, ceramics, and electric and electronics. There are also sectoral strategies for the pharmaceutical industry and the textiles, clothing, and leather industries that are currently waiting for approval.

The government's political commitment to improving productive capacities and capabilities of the industry can also be observed in National Development Plans[5]. The Ninth Development Plan (2009-2014) focused on improving competitiveness, while the Tenth Development Plan (2014-2018) underscores the importance of innovative activities for stable and strong growth with an emphasis on strengthening innovation capacity in manufacturing and services sectors. The Tenth Development Plan (2014-2018)[6], which can be viewed as a furtherance of the Industrial Strategy Policy document (2011-2014), identifies four strategic pillars: *(1) qualified people, strong society; (2) innovative production, stable and high growth; (3) liveable places, sustainable environment; and (4) international cooperation for development.*

The second pillar, *innovative production, high and stable growth,* provides the context for a new industrial policy and aims to achieve stable and high growth by developing a competitive, export-oriented, and private sector-led production structure vis-à-vis advances in productivity and industrialization. In order to achieve this target, the growth strategy emphasizes five principles: macroeconomic stability, human capital and labour market, technology and innovation, physical infrastructure, and institutional quality. Priority areas that

[4] Ministry of Industry of Trade, Republic of Turkey (2010). Turkish Industrial Strategy Document 2011-2014. Available at: http://www.abgs.gov.tr/files/haberler/2011/turkish_industrial_strategy.pdf

[5] Five-year development plans, passed in Parliament, have been the most prominent strategy documents setting the larger framework for all other policy documents. There are also several sub-level documents that focus on sectoral and thematic strategies, which are short-term and accompanied with action plans. These are in line with development plans, and approved by the Higher Planning Council.

[6] Ministry of Development, Republic of Turkey (2013). The Tenth Development Plan, 2014-2018, Ankara.

have been set to ensure progress in these policy areas include increasing domestic savings, strengthening price stability, financial structure and fiscal policy, improving science, technology and innovation capacity, achieving transformation in the manufacturing sector, supporting entrepreneurship and SMEs, enhancing intellectual rights, utilizing information and communication technologies, and improving logistics and transport infrastructure.

Moreover, the Tenth Plan introduces several innovative policy measures to prevent Turkey's deindustrialization including:

- *The use of public infrastructure investments as a support mechanism for promoting strategic investment involving critical technologies*
- *The use of public procurements as an efficient instrument for improving the innovation and green production capacity of domestic firms*
- *The focus on the synergy between urban transformation and the transformation of the manufacturing industry; the improvement of production and export capacity in smart building technologies, construction materials, public transportation vehicles and signalization systems*
- *The efficient use of country loan and guarantee programs for increasing the exports of capital goods and high-technology products*
- *Subsidizing via incentive programs the acquisition of foreign companies that would bring Turkey a strategic advantage in branding and moving up value chains*
- *The development of regular monitoring and evaluation systems for investment incentive practices, the measurement of macroeconomic, sectoral and regional impacts of incentive schemes, and the improvement of institutional capacities in monitoring and evaluation.*

The Tenth Plan also contains a series of sector-specific targets. In addition to an overall focus on the manufacturing industry, the Plan sets targets and policies for eleven strategic sectors, including the chemicals industry, pharmaceuticals industry, textile, clothing and leather industries, furniture industry, quarrying and mining industries, metals industry, electronics industry, medical equipment and supplies industry, machinery industry, renewable energy, automotive industry, shipbuilding industry, civil aviation and aerospace industries, and defence industry.

Moreover, for the first time, the Tenth Plan introduced numerical targets:

- *Increasing total manufacturing exports from USD 144 Billion in 2013 to USD 257 Billion in 2018*
- *Increasing the share of manufacturing industry in GDP from 15.5% in 2013 to 16.5% in 2018*
- *Increasing the share of high-tech imports from 3.7% in 2013 to 5.5% in 2018*
- *Increasing the number of triadic patents from 67 in 2013 to 167 in 2018*
- *Increasing the total factor productivity growth in industry from -0.8% in 2013 to 1.9% in 2018*

Turkey has also invested significant efforts to expand its innovative capacity and capabilities. Most of the focus in the early 2000s was on developing a research base while the most recent National Science, Technology, and Innovation Strategy (2011-2016) [7] shifted focus to transforming research outputs into value-added commercial goods and services. The new approach prioritizes the creation of more output from existing research capacity (target-oriented) and emphasizing where research and innovation efforts are most needed (demand–

[7] TUBITAK (2010). National Science, Technology and Innovation Strategy, 2011-2016. Available at: http://www.tubitak.gov.tr/tubitak_content_files//BTYPD/strateji_belgeleri/UBTYS_2011-2016.pdf

oriented approach)[8]. Priority areas include competitive sectors with strong Science, Technology and Innovation (STI) potential such as automotive, machinery and production technologies, ICT, energy, water, food, security, and space.

In addition to major strategy documents, there have been government-backed initiatives to improve the investment climate, boost investment through incentive packages, tackle regional imbalances, and strengthen industrial capacity and capabilities (i.e. human capital and R&D) that are briefly discussed below.

Investment Strategies. In the past decade Turkey has improved its standing in the Doing Business Index and Global Competitiveness Index. Following the 2001 crisis, the Turkish Council of Ministers adopted a reform program for improving the investment climate. At the same time, a public-private dialogue mechanism, *Coordination Council for Improving the Investment Climate* (YOİKK)—that brings together representatives from the private sector, bureaucracy and policymakers—was established under the Undersecretariat of Treasury. YOİKK consists of several task forces and technical committees that meet regularly to propose and monitor business climate reforms in areas such as corporate governance, employment, sectoral licensing, taxes and incentives, customs and trade, intellectual property rights (IPR), R&D, regulations and legal processes, access to finance, and infrastructure. The launching of Investment Support and Promotion Agency (ISPAT) in 2006 has also helped in facilitating investment, as well as in the dissemination of information to attract foreign investors. More recently, the new Turkish Commercial Code, which includes improvements regarding corporate governance standards and independent auditing and a new consumer protection law, was passed in 2013.

Incentive Mechanisms. Investment incentives have been widely used as part of the government's industrial policy and regional development agenda over the last decade. Incentive packages, introduced in 2004, focused on increasing investment and employment. New incentive programmes, introduced in 2009 and 2012, also aimed to increase R&D spending, value-added and the share of high-tech industries in industrial production, as well as improve product competitiveness. Additionally, there are also schemes targeting specific sectors, in particular the energy sector.

Special Incentive Zones. To increase investments, the government has established Technology Development Zones (TDZs), organized industrial zones (OIZs), and free trade zones (FTZs). The Law on Technology Development Zones, enacted in 2001, aims to increase technological knowledge, enhance R&D activities of SMEs, and develop employment opportunities for researchers. TDZs—which are designed for companies investing in R&D and high-tech fields—provide incentives including exemptions from income and corporate taxes for R&D-derived revenues and software development, and from VAT on sales of application software. OIZs—the number of which have grown to 148—provide companies with infrastructure (i.e. roads, water, electricity, etc.) and incentives such as exemptions from value-added tax (VAT) for land acquisitions, real estate duty for a period of five years, and municipality duty for construction and use of the plant, as well as low-cost water, natural gas and telecommunication services. FTZs (mostly located in the western part of the country) provide companies with exemptions from corporate taxes and VAT, 10-to-30-year operating licenses, and custom-free production.[9]

[8] The priorities of this plan are: creating incentives for the commercialization of research output, developing multi-stakeholder, multi-discipline R&D and cooperation in innovation, fostering SMEs' capacity for innovation, and activating international cooperation in science, technology, and innovation. However, while TUBITAK's expansionary budget is an encouraging sign, it is difficult to argue that the document creates implementable focus areas and priorities.

[9] Republic of Turkey, Prime Ministry Investment Support and Promotion Agency, Invest in Turkey: Special Investment Zones. Available at:

http://www.invest.gov.tr/EN-US/INVESTMENTGUIDE/INVESTORSGUIDE/Pages/SpecialInvestmentZones.aspx

Regional Imbalances. Regional policies that were adopted recently focus on increasing the competiveness of regions, as compared to early models that focused on development alone. BGUS (Regional Development National Strategy) created a policy framework that emphasizes the imperatives of both regional development and regional competitiveness. Furthermore, regional development agencies provide financial support and technical guidance for SMEs.

Skills. Skill development is widely discussed in the development plans, as well as in the industrial policy, SME, and innovation policy strategy documents. "Qualified Human Resources, Strong Society" is one of the four main pillars of the Tenth Plan. Moreover, the Vocational Qualifications Authority (MYK) was established in 2006 to develop occupational standards and a vocational qualifications system in line with the European Qualifications Framework. The National Science, Technology and Innovation Human Resources Strategy and Action Plan (2011-2016) also emphasizes the development of human resources based on the needs of the private sector and links to the education sector. The National Employment Strategy will be launched in 2014 with the joint efforts of the Ministry of Development and the Ministry of Employment and Social Security.

Research and Development Capabilities. There has been significant growth of R&D capabilities albeit starting from fairly low levels of research in terms of quantity and productivity. Gross domestic R&D expenditures (GERD), as a percentage of GDP, nearly doubled since 2002, peaking at 0.92% in 2012. The R&D activities of business enterprises is also increasingly intensive, with Business R&D expenditures (BERD) exceeding publicly financed GERD in recent years.[10]

The next chapter looks at economic progress in the last decade and major challenges facing the Turkish economy.

ECONOMIC PROGRESS—*STUCK IN THE "MIDDLE INCOME TRAP"?*

The Turkish economy has made considerable progress in the last decade. In 2013, Turkey was the 17th largest economy of the world, with a Gross Domestic Product (GDP) of USD 820 billion and GDP per capita of USD 10,782[11] . Economic growth has been driven primarily by the move from a rural to an urban economy, Turkey's increasing trade volume, and the shift from low- to medium-tech production. However, challenges remain, as there has not been a significant shift in the quality and technological sophistication of Turkey's exports; nor does Turkey have a strong presence in global markets.

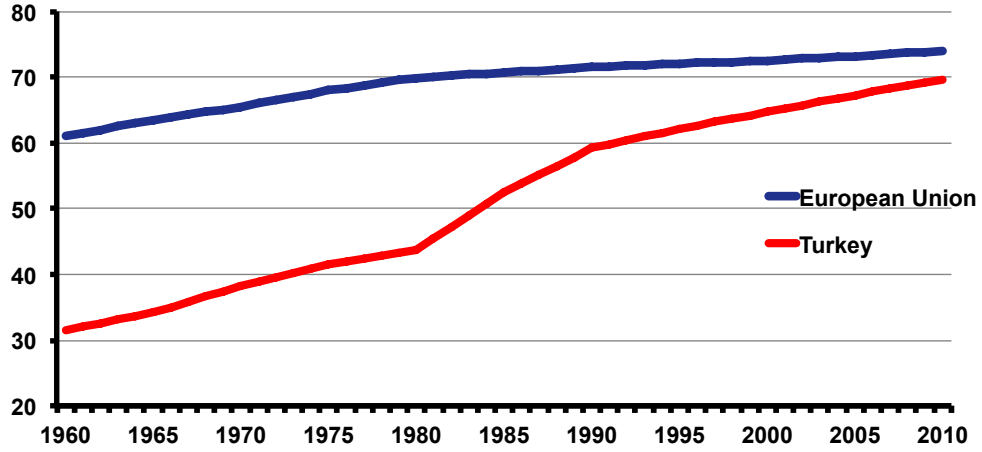
Urbanization has been a major source of economic development in Turkey. The urban population expanded dramatically in the past decade, accompanied by the development of non-agricultural sectors and the creation of an educated urban workforce. Between 1980 and 2010, Turkey's urban population increased from about 43% to 80%. This shift has been accompanied by a drop in agriculture's share in total employment, which declined from about 51% to less 25% in the same period; agriculture's share in GDP also declined from about 24%to about 10%[12].

[10] *OECD Science and Technology Indicators*

[11] *Turkish Statistical Institute.*

[12] *Turkish Statistical Institute.*

Figure 1. Urban population as a percentage of the total population in Turkey and EU countries, (%), 1960-2010



Source: *Turkish Statistical Institute*

Moreover, while the shift from low productivity agriculture to modern economic activities is viewed as an engine of higher levels of productivity and increased incomes in general, the impact of labour re-allocation has been particularly strong on Turkey's productivity growth. A study by Margaret McMillan and Dani Rodrik[13] examined the contributions of "within" and "structural change" components of productivity growth for three regions and twenty economies between 1990 and 2005[14]. The "within" component refers to the weighted sum of productivity growth *within individual sectors*. The "structural change" component shows the productivity effect of the re-allocation of labour *across different sectors.* A positive correlation between changes in employment shares across sectors and productivity levels (the term will be positive) and structural change will increase economy-wide productivity growth. Turkey ranked last among the twenty economies for the contribution of the "within" component (at 1.74% per annum). On the other hand, in terms of the contribution of "structural change" to productivity, Turkey ranked third (at 1.42% per annum) .

[13] McMillan, M. and Rodrik, D. (2011). "Globalization, Structural Change and Productivity Growth". NBER Working Paper No. 17143. June 2011.

[14] McMillan and Rodrik (2011) argue that "(w)hen labor and other resources move from less productive to more productive activities, the economy grows even if there is no productivity growth within sectors." This is the case especially for developing countries that exhibit large allocative inefficiencies (productivity gaps between different parts of the economy including rural/urban, different industries and between firms and plants) where structural change functions as an engine of growth. On the other hand, McMillan and Rodrik argue that the shift in labour flows do not have a significant impact on economic productivity in countries without large inter-sectoral productivity gaps or high and chronic unemployment.

Table 1. Decomposition of productivity growth, unweighted averages, 1990-2005

ranked by the contribution of "within"				ranked by the contribution of "str. change"			
rank	country	region	"within"	rank	country	region	"structural change"
1	CHN	ASIA	7.79%	1	THA	ASIA	1.67%
2	ZMB	AFRICA	7.61%	2	ETH	AFRICA	1.48%
3	KOR	ASIA	5.29%	3	TUR	TURKEY	1.42%
4	NGA	AFRICA	4.08%	4	HKG	ASIA	1.25%
5	PER	LAC	3.85%	5	IDN	ASIA	1.06%
6	CHL	LAC	3.82%	6	CHN	ASIA	0.99%
7	SGP	ASIA	3.79%	7	IND	ASIA	0.99%
8	SEN	AFRICA	3.61%	8	GHA	AFRICA	0.59%
9	MYS	ASIA	3.59%	9	TWN	ASIA	0.54%
10	TWN	ASIA	3.45%	10	MYS	ASIA	0.49%
11	BOL	LAC	3.37%	11	MUS	AFRICA	0.38%
12	IND	ASIA	3.24%	12	CRI	LAC	0.38%
13	VEN	LAC	3.20%	13	MEX	LAC	0.23%
14	MUS	AFRICA	3.06%	14	KEN	AFRICA	0.23%
15	ARG	LAC	2.94%	15	ITA	HI	0.17%
16	SWE	HI	2.83%	16	PHL	ASIA	0.14%
17	UKM	HI	2.47%	17	ESP	HI	0.13%
18	USA	HI	2.09%	18	DNK	HI	0.02%
19	HKG	ASIA	2.02%	19	FRA	HI	0.00%
20	TUR	TURKEY	1.74%	20	JPN	HI	-0.01%

Source: McMillan, M. and Rodrik, D. (2011) "Globalization, Structural Change and Productivity Growth." NBER Working Paper No. 17143. June 2011.

Secondly, Turkey's trade volume increased significantly in the past decade, reaching USD 403.4 billion in 2013. Between 2002 and 2013, Turkey's merchandise exports increased from USD 36 billion to USD 152 billion[15]. Its exports to the EU had a more than fourfold increase, and its total exports almost tripled. Turkey's increasing trade integration can be explained by its accession to the European Customs Union and new FTAs[16], given that nearly half of its overall exports are destined to these countries[17].

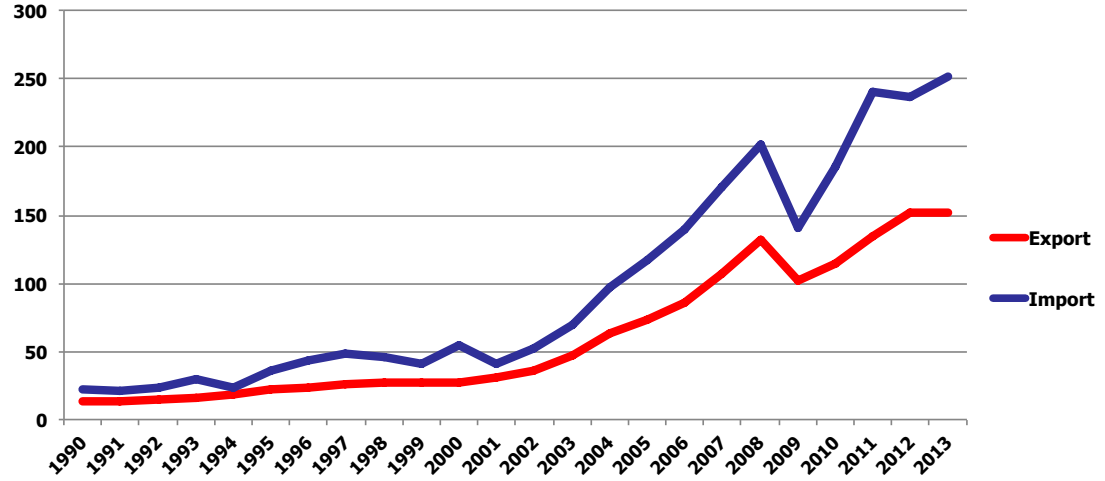
[15] *UN COMTRADE, TEPAV Calculations.*

[16] As of 2014, Turkey has 18 Free Trade Agreements (FTAs) in force, and 14 on-going negotiations.

[17] World Bank (2014). "Trading up to Higher Income: Turkey Country Economic Memorandum" Report No. 82307-TR, May 5, 2014.

Available at: http://www.worldbank.org/content/dam/Worldbank/document/eca/turkey/tr-cem-trade-eng.pdf

Figure 2. Turkey's imports to and exports from the world, *1990-2013, USD billion*



Source: *UN COMTRADE, TEPAV Calculations*

Furthermore, Turkey improved its competitiveness and its exports are a lot more diverse compared to a decade ago. The country increased the share of medium-tech exports among its total exports. In 1980 Turkey's top five export products were nuts, cotton, tobacco, yarn and grapes, while in 2010 its top five exports were motor vehicles, mineral oil, steel and iron, large and small trucks, and apparel[18].

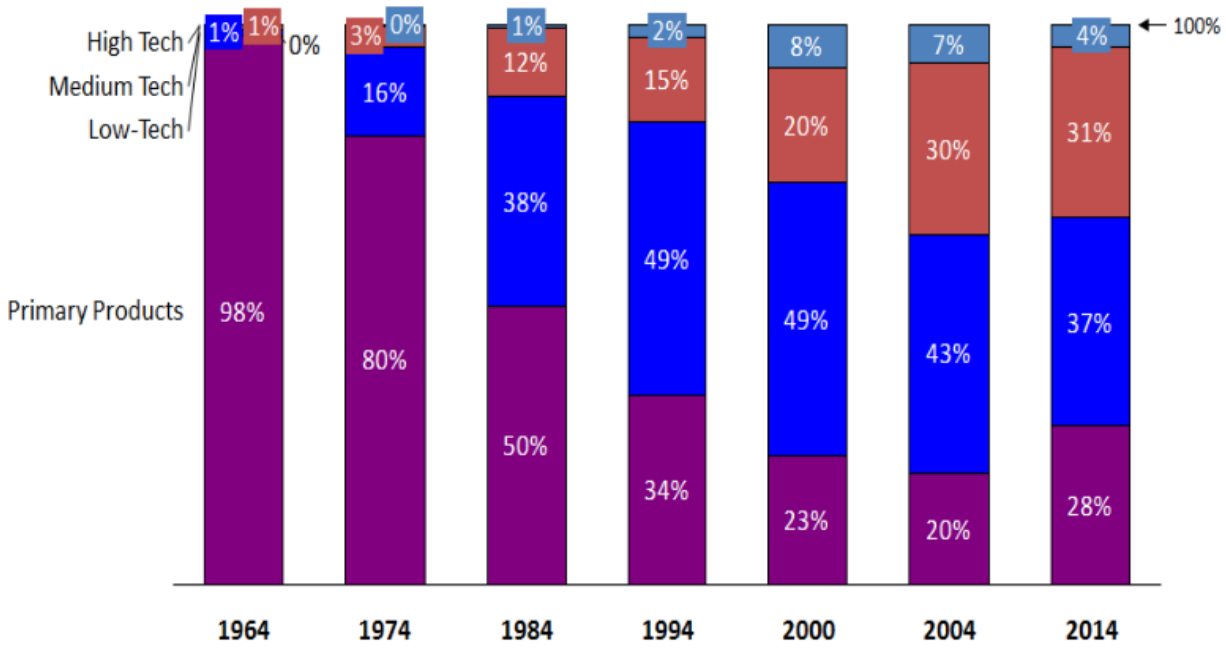
However, while Turkey increased its medium-technology exports, it did not increase its high-tech exports. In fact, the share of high-technology products in total exports dropped between 2000 and 2014, from 8% to 4% [19] (Figure 3). Turkey's export sophistication is also very low when compared to the top twenty economies in the world[20] (Figure 4).

[18] *UN COMTRADE*

[19] *UN COMTRADE, TEPAV Calculations*

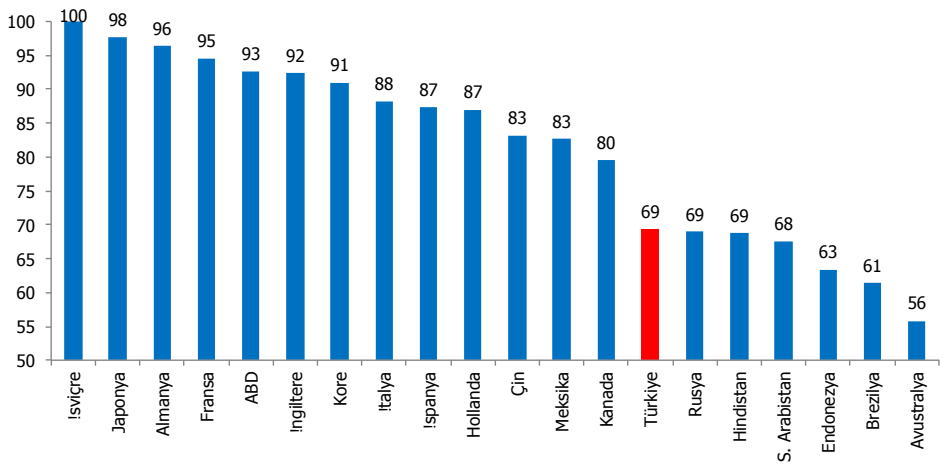
[20] *BACI Database, WDI, and TEPAV Calculations*

Figure 3. Technology Classification of Turkey's to exports, 1964-2014,%



Source: *UN COMTRADE, LALL (2000) TEPAV Calculations*

Figure 4. Export sophistication index (EXPY) for the top 20 largest economies, 2010 (Normalized values, Switzerland= 100, Niger=0)

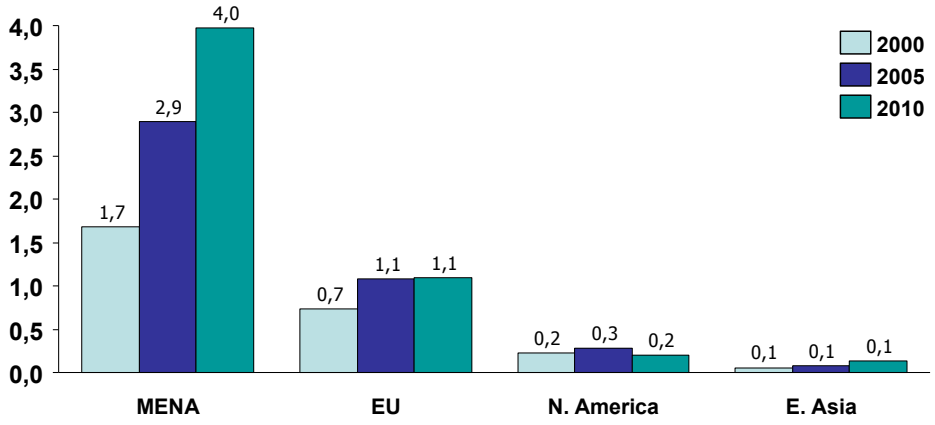


Source: *BACI Database, WDI, and TEPAV Calculations*

Moreover, Turkey's presence in major world markets, including East Asia and North America, is low. Turkey's trade integration is largely limited to its neighbouring region. Improvements in the sophistication of its exports will also help Turkey gain access to key high-growth markets such as

East Asia and Latin America, and improve its presence in the EU market, which has been stable since 2005[21].

Figure 5. Share of Turkey's exports in the imports of main regions, 2000-2005-2010, (%)



Source: *UN COMTRADE, TEPAV Calculations*

Turkey's main challenges for the upcoming period will be to improve its share of high-technology exports, diversify into emerging high growth sectors, and access high growth markets. The next section outlines the major challenges in increasing investment in productive industries.

[21] *UN COMTRADE, TEPAV Calculations*

OBSTACLES TO INVESTMENT AND THE WAY FORWARD

An increase in the quality and sophistication of production and exports is key for Turkey's economic development. Turkey has high inflation and a sizable current-account deficit. Large capital inflows that helped finance growth are increasingly short-term, making the economy vulnerable to external shocks. Heavy reliance on energy imports, the crisis in the Eurozone (Turkey's main trading partner), and political instability in Turkey's regions are also external risk factors. Moreover, the pace of urbanization—that played an important role in productivity gains as the country shifted from agriculture to industry and services sectors—is bound to slow down. At the same time, the import of investment goods has fallen in recent years, while the added value of domestic exports has been stagnant. The low domestic savings rate and low capital accumulation increase the risk of Turkey becoming stuck in the middle-income trap. Premature de-industrialization (industry loses importance and then a rapid shift to services) may also hamper the development of sophistication and high-technology in manufacturing industries.

The present backdrop makes it all the more urgent for Turkey to attract and facilitate both domestic and foreign investment in order to enhance its medium- and high-tech exports and leap to a high-value-added economy.

In order to make the "sophistication" jump, first and foremost, Turkey needs to improve its human capital pool and physical infrastructure, and strengthen its investment climate (i.e. labour market, tax system, judiciary/rule of law, intellectual property regime). Moreover, investment strategy measures need to be mainstreamed across a broad range of sectors and horizontal policy areas, and the selection of key sectors can provide an opportunity for Turkey to make the "sophistication" leap.

Human capital and education. A highly skilled labour force is critical for improving Turkey's global competitiveness in producing high-value-added products and services, as well as for unleashing innovation. However, Turkey has a low-skill workforce and the Turkish higher education system faces major challenges in both quantitative and qualitative terms (albeit significant expansion in enrolments in the past decade[22]). In order to attract investments in high-value-added industries, Turkey must enhance its educational and skills profile.

Only 12% of the adult population has a tertiary education and only 13% are employed in Science and Technology related occupations[23]. The industrial sector has also expressed concerns about how poorly graduates are prepared for jobs despite the fact that the average rate of return for having a college education remains high. Furthermore, English proficiency in Turkey is very low compared to European countries and some emerging markets such as India (albeit higher than China and Brazil)[24].

[22] The number of students enrolled in higher education institutions in 2012-2013 reached approximately 984 thousand—a phenomenal rise from 398 thousand in 1997 1998 (*ÖSYM Higher Education Statistics)*. This growth is an outcome of both increased demand for higher education and a rise in secondary-level completion rates .The rise in primary completion rates—as a result of the 1997 Compulsory Education Law that increased mandatory formal schooling from five to eight years—has led the way for expansion of enrolments in all education levels. However, despite growing enrolments, the net enrolment ratio in Turkey did not extend to more than 38.5% of the total population of those eligible for higher education (aged between 18 and 22) in 2012-2013 (*ÖSYM Higher Education Statistics)*.

[23] *OECD Science and Technology Indicators.*

[24] Education First, English Proficiency Index (EF EPI). Available at : http://www.ef.com/epi.

Research and Development outcomes. The number of patent applications has increased both domestically and internationally[25]. However, Turkey needs to address problems of R&D efficiency and patent production effectiveness. A report prepared by the World Bank shows that in 2007 Turkey spent substantially more on R&D resources for each USPTO (the US Patent and Trademark Office) patent (thousands of PPP$) compared to both developed and some developing countries.[26]. The implementation of the government's new strategies (discussed above) to shift focus to transforming research outputs into value-added commercial goods and services will be decisive in improving R&D outcomes.

Structural reforms and institutional infrastructure. Turkey must accelerate structural reforms and strengthen its institutions. In the World Bank's Doing Business Index in 2013, Turkey's rank dropped from 68th to 71st of all countries, and it ranked 43rd of 144 countries in the 2012-2013 Global Competitiveness Index (GCI). Looking at GCI sub-indices, the most problematic areas are the labour market, tax system, judiciary/rule of law, and education.

Table 2. Turkey's ranking in GCI sub-indices

	2006	2012
1. Labor market	114	124
2. Tax system	95	117
3. Judiciary, rule of law	56	83
4. Education	58	74
5. Infrastructure	61	51
6. Macro framework	101	55

Labour market reform. Turkey must accelerate structural reforms to tackle labour market rigidity and high labour costs. Turkey has one of the highest levels of employment protection in the OECD[27]. The minimum wage is higher compared to some European countries (such as Hungary and the Czech Republic[28]), and much higher than emerging Asian countries. Moreover, nearly half of the population does not enter the labour force. This is due to the exceptionally low level of female labour force participation in Turkey, which stood at 29,5% in 2012—the lowest rate in the OECD.

Taxation. The taxation system has become more investor-friendly in recent years with the reduction of the basic corporate tax rate. However, further planned tax reforms have not been implemented, including reduction of the employment tax—which is one of the highest in the OECD. Turkey also must reduce its large informal economy and broaden its tax base. Furthermore, the Turkish tax system relies heavily on indirect taxes, which creates distortions in production. The indirect consumption tax—taxes on goods and services—in total tax revenues increased from 36% in 1985 to 42% in 2000, and 48.4% in 2010[29].

[25] Patents filed with the Turkish Patent Agency (PCT) increased from 1874 in 2002, to 3461 in 2005, and 11599 in 2012. Internationally, the number of patent being filed to the PCT increased more than fourfold since 2004, and the number of international patent applications being filed (to the USPTO, the European Patent Office and the Japan Patent Office) also increased.

[26] Goldberg, I., Goddard, J.G., Kuriakose, S., and Racine, J.L. (2011). *Igniting Innovation: Rethinking the Role of Government in Emerging Europe and Central Asia.* World Bank. Based on World Bank calculations and UNESCO and USPTO data for 2007.

[27] *OECD Labour Statistics*

[28] Eurostat, Monthly Minimum Wages—Bi-annual Data. Available at:

http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=earn_mw_cur&lang=en tps00155

[29] OECD (2012). "Revenue Statistics 1965-2011", Paris: OECD Publishing.

Intellectual property rights (IPR). A strong IPR regime based on international standards will help facilitate FDI and high-technology transfers and boost innovation and competitiveness. In recent years, Turkey made progress in improving its IPR regime and enforcement of these regulations. However, after heated debates, the outcome of the new patent and IPR legislation is still pending. Turkey needs to speed up the legislative process to achieve international standards.

Judiciary and rule of law. Turkey's low rank in the judiciary and rule of law category of the GCI point to the lack of predictability and transparency of the bureaucratic and legal system that deter both domestic and foreign investment. Moreover, the proper functioning of the court system is critical to ensure the implementation of key regulations including on taxation and IPR.

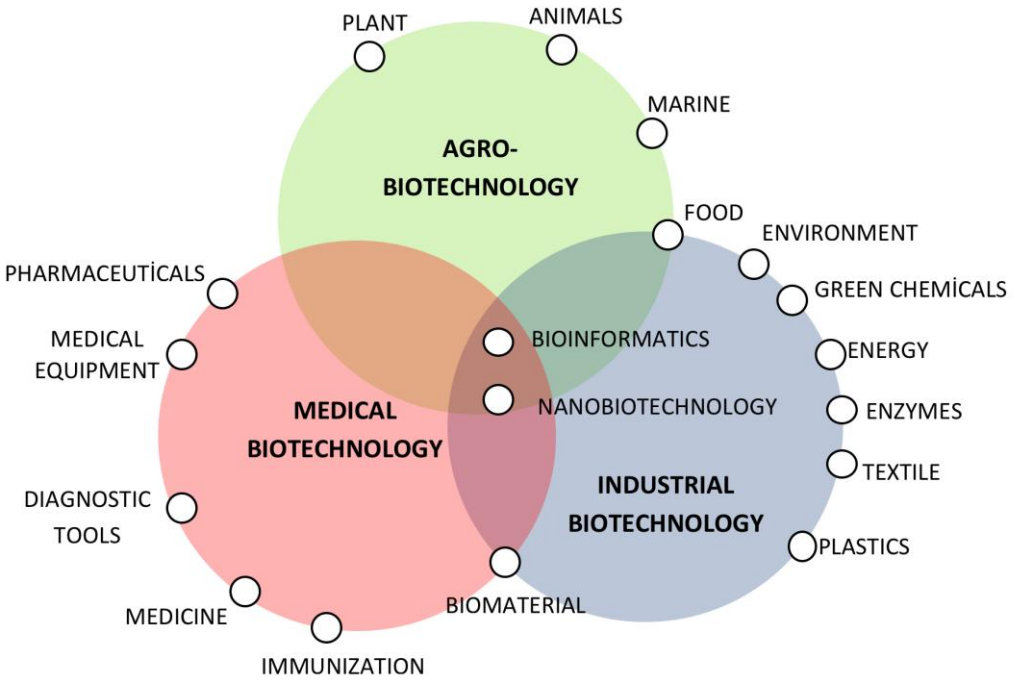
Financial markets. Deeper and broader financial markets help facilitate more investment. In spite of some progress over the last decade, Turkey's financial system is still shallow compared to other countries, limiting the private sector's access to financial resources. Moreover, limited access to long-term finance is a critical obstacle to private sector growth, especially for investment in high-tech industries.

Lack of a common vision and coordination between government departments. Coordination between various government bodies involved in the design and implementation of industrial policy is key. There has been increased interaction between different ministries and government agencies as well as between government agencies and the private sector in policy design processes. In spite of this progress, the various government bodies involved in the design and implementation of industrial policy still lack a common vision. No matter how well individual policies are designed, the lack of coordination between different agencies endangers the effectiveness of industrial policy.

Large Impact Industries and technology platforms. Technology-intense crosscutting sectors provide an opportunity for Turkey to make the "sophistication" leap. Hence investment strategy must focus on technology-intense platforms such as biotechnology, nanotechnology, and ICT to accelerate Turkey's industrial transformation process. Figure 6 outlines the biotechnology sector's wide-ranging impact and spillovers to other sectors and industries that use similar methods such as recombinant DNA technology[30].

[30] "Transferring Biotechnology to Turkey" figure prepared by Selin Arslanhan Memiş, Director of the Economic Policy Research Foundation of Turkey (TEPAV), Centre for Biotechnology Policy.

Figure 6. Transferring Biotechnology to Turkey



Source: Figure prepared by Selin Arslanhan Memiş, Director of the Economic Policy Research Foundation of Turkey (TEPAV), Centre for Biotechnology Policy.

In order to increase trade and investment, Turkey must urgently tackle present challenges. The effective implementation of new government policies are equally as important as the development of new strategies for Turkey to make the "sophistication" leap and accelerate its industrial transformation process.

CONCLUSION

Turkey must adopt a new investment-promotion strategy in particular—and a new growth model in general—as the large capital inflows that helped finance growth are expected to slow down in the post-quantitative-easing period, and it becomes increasingly difficult for Turkey to carry its large current account deficit.

In the short term, it is critical that Turkey improves its domestic savings rate. In order to achieve this, the adoption of a new fiscal policy framework and stronger public savings need to be prioritized (rather than investment promotion).

Furthermore, Turkey needs a more active industrial policy framework to enhance the sophistication level of its exports and leap to a high-value-added economy. Technology-intense crosscutting sectors provide an opportunity for Turkey to make the "sophistication" leap. Emerging technology platforms—such as biotechnology, nanotechnology and ICT, which have wide-ranging impact and spillovers to other industries—can help accelerate Turkey's industrial transformation process. More specifically, the pharmaceutical industry and new partnership models between the government and industry provide an opportunity to expand biotechnology in Turkey. Moreover, in order to spread the benefits of the sector to other industries, the government must encourage and facilitate global companies to move a portion of their R&D and production activities to Turkey.

Lastly, Turkey must adopt a new governance framework to achieve its industrial policy objectives. The government must work more closely together with all different sectors and industries that may benefit from new technology platforms. Improving coordination between government agencies and industry, and strengthening the capacity of impact analysis, will also help improve the efficiency and effectiveness of individual policies.