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REGIONAL INVESTMENT CLIMATE ASSESSMENT REPORT

TR10 NUTS II REGION İstanbul



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Abbreviations

EDAM	Centre for Economics and Foreign Policy Studies
ES	Enterprise Survey
EIS	Entrepreneurship Information System
FCC	Fully credit-constrained
GVA	Gross Value Added
HHI	Herfindahl-Hirschman Index
IDA	Istanbul Development Agency
ISO	Investment Support Offices
NCC	Not credit-constrained companies
OIZ	Organized Industrial Zones
PCC	Partially credit-constrained
PES	Public employment services
R-ES	Regional Enterprise Survey
RICA	Regional Investment Climate Assessment
R-ICAs	Regional Investment Climate Assessment Reports
SEGE	Socio-Economic Development Index
TIM	Turkey Exporters Assembly
TFP	Total Factor Productivity
TurkStat	Turkish Statistical Institute



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I. Executive Summary

A good investment climate provides opportunities and incentives for companies—from micro-enterprises to multinationals—to invest productively, create jobs, and expand. It thus plays a central role in growth and poverty reduction. Private companies—from farmers and micro-entrepreneurs to local manufacturing companies and multinational enterprises—are at the heart of the development process. Driven by the quest for profits, they invest in new ideas and new facilities that strengthen the foundation of economic growth and prosperity. They provide more than 90% of jobs, creating opportunities for people to apply their talents and improve their socio-economic situations. They provide the goods and services needed to sustain life and improve living standards. They are also the main source of tax revenues, contributing to public funding for health, education, and other services. Companies are thus critical actors in the quest for growth and poverty reduction.

The Regional Investment Climate Assessment Reports (R-ICAs) have been written as part of the Regional Investment Climate Assessment project in Turkey. This project is co-financed by the European Commission and the Ministry of Development, and undertaken by the World Bank Group.

Given the importance of a good investment climate to economic growth, the first step in improving the investment climate is to assess what aspects are good and what aspects of that climate can be improved. For this reason, the World Bank Group has undertaken numerous investment climate assessments across the world. Investment Climate Assessments, as they are called, identify key constraints to growth in an economy and pinpoint areas for reform. The audience for these assessments are governments—whether national or regional whom have been receptive to these assessments. More governments are recognizing that their policies and behaviors play a critical role in shaping the investment climates of their economies, and they are making changes. Investment climate improvements have driven growth and resulted in dramatic reductions in poverty. Many governments are taking on the investment climate reform agenda, but progress remains slow and uneven. Governments still saddle firms and entrepreneurs with unnecessary costs, create substantial uncertainty and risk, and erect unjustified barriers to competition. Governments that saddle the business operations in their jurisdiction in this way, lower growth, reduce investments and stunt job creation. In sum, the Investment Climate Assessment is designed to indicate how the investment climate affects firm performance.

In the case of Turkey, the most recent Investment Climate Assessment, published by the World Bank Group in 2010, revealed wide variation in the quality of the investment climate, or business environment, across regions. The report highlighted how the performance of companies operating in the many regions of Turkey are affected by the varying quality of the investment climate that characterizes each region. Authorities in Turkey arrived at similar conclusions regarding the importance of regional investment climates in the performance of companies, and have made regional development a fundamental policy priority. The Tenth National Development Plan identifies 25 priority transformation programs. One them titled the business and investment climate improvement program includes a component at the regional level titled: Improvement of the Governance of the Business and Investment Environment. This component





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details the specific objective of “the development of a regular monitoring and evaluation mechanism by developing indicators at national and regional levels, with regards to the business and investment environment.” Indeed, formulation of effective strategies at the regional level requires information on the strengths and weaknesses of each region in terms of various aspects of the business environment, including adequate infrastructure, access to finance, access to labor skills, ability to access and adopt technology and administrative barriers at the local level.

To update these findings and to inform these new policy efforts, new data on companies was collected to understand how companies across the regions of Turkey were coping with the regional investment climate in which they operate. So, the new data analyzed in these reports bring a fresh perspective on the investment climate at the regional level. Each R-ICA is the result of analysis from two sources of data. The first source are data gathered through the Enterprise Survey tool of the World Bank Group. While the World Bank Group has conducted Enterprise Survey in Turkey before, this round of the surveys included an unprecedented 6,000 companies in each province in Turkey. The Enterprise Survey produced results that are statistically significant at the NUTS-2 level. The second source of data is the Entrepreneurship Information System compiled by the Ministry of Science, Industry and Technology of Turkey. Bringing together nine different data sets, the EIS provides the company census for the analysis undertaken.

Additional data sources on provincial investments from the Ministry of Economy and the Regional Development Annual Plans prepared by each Development Agency were used for their respective regions.

Bringing together different sources of data, the R-ICA Reports are the first ever effort in assessing the regional investment climate in Turkey using a common methodology. The Enterprise Survey in particular will not only give regions the opportunity to compare themselves with other regions in Turkey and with overall national performance, but will also allow them to compare themselves internationally with other regions in the World. The objective of the reports is twofold. The first is to provide insight into the constraints of each region for decision makers, and to private and public individuals in the field of development. The second is to provide a baseline for both central and regional agencies in assessing the investment climate upon which they can continue to measure and assess the conditions in which the private sector operates. Indeed, this will help improve evidence-based policy making in the years to come.

Indeed, R-ICAs will contribute to already ongoing work of the Government of Turkey and the Ministry of Development, in particular, regarding regional development. The Regional Development National Strategy, prepared by the Ministry of Development, sets the goals, vision, objectives and principles of regional development. The vision of the Strategy is, “A Turkey that is socioeconomically and spatially integrated, and that is developed in a more balanced manner with all its regions with high levels of competitiveness and welfare.” Objectives include reduction in regional development disparities, enhancing the competitiveness of regions, strengthen economic and social integration and to ensure more balanced settlement across the country. To better target programs, the regions have been divided into settlement categories and each settlement





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category has distinct objectives. Horizontal objectives across these settlement categories are:

- Improving the Governance of Regional Development and Strengthening Institutional Capacity
- Developing Cross-border and Inter-regional Cooperation
- Aligning Public Investment and Subsidy Practices with Regional Development Objectives
- Supporting Sustainable Environment and Green Economy
- Improving the Transportation Network and Accessibility

Therefore, as mentioned, the data collected and R-ICA reports primarily aid the already ongoing efforts of the Government in regional development.

This report is organized as follows: Section 2 provides an overview of the regional characteristics, drawing information from the Annual Regional Development Plan as well as the provincial investment data of the Ministry of Economy. Section 3 presents the analysis undertaken using the findings of the Enterprise Survey. Having reported findings from a sample of companies in Section 3, Section 4 includes analysis undertaken using the census data from the Enterprise Information System. This analysis, under the title of productivity and competitiveness, looks into five different areas: market concentration, emerging and high performing sectors, regional productivity, productivity and dynamics, and trade.



1. Overview of Findings

Divided into two subsections, this first section of the Regional Investment Climate Assessment Report provides an overview of the findings of the analysis done under sections 3 and 4.

The subsection named “Challenges and Opportunities in the Business Environment” focuses on a subset of findings that are covered in section 3 with data collected directly from private enterprises via the Enterprise Survey tool of the World Bank Group. In this subsection, strengths and weaknesses peculiar to the sub-region in terms of various aspects of the business environment are emphasized and comparisons between the analytical outputs reported for the sub-region and the country averages are provided. The identification of challenges and opportunities in the business environment will facilitate the formulation of effective strategies to improve the quality of investment climate in the sub-region.

The second subsection named “Productivity and Competitiveness” includes a selection of conclusions drawn in section 4 and derived from data obtained from the Entrepreneurship Information System of the Ministry of Science, Industry and Technology. In this subsection, the distinguished characteristics of the sub-region’s performance in the following areas are reported: market concentration, emerging and high performing sectors, regional productivity, productivity and dynamics, and trade. The systematic analysis of the local economy at the sector and firm level will offer insights on the sub-region’s local market structure and competitive environment, new and emerging economic dynamism, past and current productivity trends and economic efficiency, productivity growth, and trade openness and sources of export growth.

While the particular sections include a more detailed presentation of the findings and extensive discussion, this section aims to provide highlights.

1.1 Challenges and Opportunities in the Business Environment

As mentioned in section I, the R-ES looks at the business environment in which firms operate, identifying the challenges and opportunities they face for sustained private sector growth and job creation, and covers the following topics: physical and communications infrastructure, access to finance, business – government relations, crime and informality, labor market and firms’ perception of the business environment.

When asked for their perceptions on various business environment elements, business owners and top managers in İstanbul cited tax rates (30%), access to finance (25%) and informal competition (16%) as the top three obstacles to their operations.

There are differences in the frequency of citation of top obstacles between manufacturing and services firms. Tax rates are cited to be the most important obstacle most frequently by manufacturing firms while services cite tax rates less frequently. Access to finance is the most frequent obstacle cited by services firm and is cited roughly twice as often by services firms compared to manufacturing firms (16 percent vs 31 percent). Both services and manufacturing firms cite informal competition as the top obstacle they face with similar frequency.



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Finally, tax rates were chosen as their top obstacle by more micro firms (32 percent), small firms (29 percent) and medium firms (25 percent) than any other obstacle. Tax rates are a distant second-place obstacle for large firms who cite tax rates 16 percent of the time while indicating that an inadequately educated workforce is the top obstacle they face 40 percent of the time. Access to finance is frequently cited among the top obstacles facing everyone but the largest firms.

Efficiency in the operation of private businesses requires a reliable supply of water, which seems not to be a significant problem in Turkey where the majority of firms report w episodes of insufficient water supply in a typical month. Firms in Istanbul are in line with the whole country as they experience on average the same infrequent issues with insufficient water supply as in the whole of the country. On average, firms in Istanbul experience the same frequency of power outages as the country average, 1.0 times in a typical month as opposed to 0.9 for Turkey.

Only around 66 percent of firms in Istanbul have access to internet, which is slightly above the country average. Private firms in Istanbul are also similar to average firms in the entire country in terms of the rate of owning websites, with only 30 percent doing so. When it comes to the use of more advanced services provided by the Internet, such as online sales platform, the percentage of enterprises that seize the opportunities presented by internet is considerably lower. Only 6 percent of firms in Turkey and 4 percent of firms in Istanbul use online sales platforms.

90 percent of firms have checking or savings account, much higher than the average for Turkey (62 percent). In terms of having loans from banks however Istanbul performs similar the country average with 25 percent of firms having a loan. The breakdown of use of bank accounts and loans by manufacturing vs. services firms shows that while manufacturing firms in Istanbul slightly outperform services firms in terms of having bank accounts, services firms are more likely to have bank loans. Private firms in Turkey heavily rely on their own sources to finance either working capital or investment. Firms in Istanbul are very similar to an average firm in Turkey. More precisely, on average 90 percent of finances for working capital and 83 percent of finances for investment come from internal sources in Istanbul, as compared to 86 percent and 73 percent in Turkey as a whole, respectively for working capital and investment.

Almost 22 percent of firms in Istanbul are identified to be fully credit constrained, almost 4 percentage points more than the average for Turkey. Istanbul slightly trails the Turkey average for credit unconstrained firms, with 68 percent firms so categorized in Istanbul as opposed to 72 percent in Turkey. Firms in Istanbul appear to have some success in accessing credit, but do not appear to benefit from obvious financing advantages of operating in the largest city in Turkey. Firms in TR10 appear to be more successful in accessing credit. On average 5 percent of firms in Turkey and 6 percent in the region reported creating new physical facility over the last two years.

With respect to relations with Government, managers of firms in Istanbul spend on average around 3 percent of their time for the purposes of fulfilling government regulations which is much lower than the average for Turkey. In Istanbul senior management of micro, small and medium firms spend on average much less time than their counterparts around the country to ensure their compliance with government regulations. In contrast, the managers of large firms spend the same amount of time on



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compliance as large firms in the rest of Turkey. Istanbul outperforms the average for Turkey in making regulations easier to comply with, particularly for smaller firms.

Institutions in Istanbul provide services to enterprises seeking permits at a somewhat slower pace than the average for Turkey. For instance, an import license takes on average 13 days to process in Istanbul, while the process takes around 8 days on average in Turkey. Both expanded bribery incidence and expanded bribery depth indexes show a low and comparable level in Istanbul as related to the country average.

Incidents of theft and vandalism in Istanbul appear to be of the same scale as in the rest of the country as the firms that did experience crime report losses of about 5.5 percent in both Istanbul and Turkey as a whole.

In TR10, 57 percent of firms face informal competition in Istanbul, considerably higher than reported in Turkey as a whole. Of the firms that experience these effects, the overwhelming majority (84 percent) in Istanbul and 65 percent in Turkey identify tax avoidance by their informal competitors as the most damaging practice. Fewer than 10 percent of the firms in Istanbul that experience informal competition are most damaged by hiring of informal labor by informal firms, while 5 percent report fraudulent product certifications as being the most damaging practice.

In Istanbul, large firms, the ones employing one hundred or more workers, are responsible for the largest share of employment (31 percent). Medium and small firms contribute to 21 percent and 30 percent of total employment, respectively, while micro firms employing less than 5 workers generate a 19 percent of employment. In terms of the age, contribution to employment declines by age. Young firms, those that have been in operation for less than 10 years, and firms in operation between 10 and 30 years are contributing 40 percent and 48 percent of total employment, respectively. While firms in operation for more than 30 years generate 13 percent of employment. Manufacturing firms are by far the biggest employers in Istanbul, absorbing 58 percent of employment.

Firms in Istanbul experienced on average 4 percent growth in labor productivity, less than half the country average. Importantly, micro firms, those employing from 0 to 4 workers, have experienced the largest labor productivity growth, 7 percent in Istanbul, but only about half the country average of 13 percent for micro firms. Small firms experienced essentially zero productivity growth while medium and large firms actually experienced negative productivity growth in Istanbul.

28 percent of private enterprises in Istanbul had vacancies in the two years prior to the survey, a slightly higher percentage compared to the average for the whole country (21 percent). About 10 percent of them used PES to fill those vacancies, with a success rate of almost four to one. Firms in Istanbul reflect similar struggles to other firms in Turkey when filling vacancies for either manager or non-managerial positions. Finally, women account for 14 percent of temporary or seasonal workers in both Istanbul and Turkey as well.

1.2 Productivity and Competitiveness

A few large firms with high turnover appear to play a significant role in the local economy. Throughout the whole period of analysis, the median turnover is eight to



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seven times lower than the average level. Yet, firms with high turnover do not dominate the market, as suggested by the low levels of Herfindahl-Hirschman Index (HHI). This is well below 0.15 during the entire period analyzed, 2006-2014.

A historical perspective of aggregate data suggests a sizeable contribution from gazelles to the local economy. Since 2009 gazelles have contributed at most to 10.4% of total turnover (2014) and 11.2% of total employment (2011). To put things in perspective, the relevance of gazelles in sub-region TR10 is far stronger than that of the gazelles in the median region in Turkey.

The analysis of EIS data offers a number of measures with respect to productivity. In terms of value added per worker, the situation in TR10 did not improve over time, hovering between 12,934 and 14,796 TL per worker. Overall average aggregate productivity has risen since 2007. The steady rise of overall productivity suggests that that service sectors are more likely responsible for the lack of productivity improvements. The sources of overall productivity growth suggest that the increase came mainly from more productive firms increasing their market share. Over the period considered, it is more frequently observed that net entrants lower aggregate productivity, suggesting that either less productive firms enter the market or more productive enterprises cease their operations.

Over the years covered by the data available, the region's trade openness with international markets has declined steadily but trade with regional markets has increased in its importance. The technology intensity of the region has shifted from medium-low tech products to low tech products. A larger proportion of the region's exports is medium-low tech and low tech products. Over 70% of exports are medium-low tech and low tech products over the years, with low tech products increasing its share of exports since 2013. The exports of high tech products has remained low at 5% over the years.

Most of the export growth is attributed to the increase of existing products to existing markets but the region has also been successful in diversifying its product mix in existing markets. 93% of the export growth is explained by increase of existing products to existing markets but there has also been a fall and extinction in the exports of existing products that caused a 19% decrease in exports. As a result, existing products explained a net effect of 74% increase in the region's export growth. The region is also successful in product diversification in existing markets, which accounts 17.5% of the export growth. Finally, 8.6% of the export growth is coming from exporting new products to existing markets. The firms in the region have above than average survival rates in the export markets compared to all firms in Turkey. Firms in the region are more likely to remain exporting are those that are exporting resource intensive products and exporting to the EU and MENA region. The exporters of resource intensive products show better survival performance than exporters of low skill, and high skill technology intensive products, but not the medium-skill and technology-intensive products.

Firm size and age is a good predictor of export status: older and larger firms are more likely to have the resources and experience to export internationally and regionally. This relationship between export status and age is evident for international and regional exporters in the region, where older firms are more likely to export, but less evident for firm size. While older firms are more likely to export in TR10, small firms make up a



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larger proportion of the exporters. The share of exporters and sellers to other regions increase with the age of the firms: firms that are older than 6 years old export more, internationally and regionally. As the firms grow older, they may have established close international or interregional links over time.

Finally, goods that are intended for export are cleared through customs in 4.6 days on average in Istanbul which is very similar to the country average of 4.5 days. Imports take little longer to go through a similar process, 8.4 days on average in Istanbul as opposed to 6.8 days in Turkey.



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2. Regional Overview

2.1 General Description and Socio-economic Structure

TR10 sub-region consists of the largest province of Turkey, Istanbul (TR100). Located in Northern Marmara on a surface area of 5.343 km², Istanbul is divided into 39 districts and 40 municipalities including the Metropolitan Municipality. As of 2015, the sub-region had a total population of 14.66 million (approximately 20% of Turkey’s population) divided evenly between males and females (50.2% and 49.8% respectively), with an average household size of 3.5.

Figure 1 Geographical position of TR10 sub-region



Istanbul tops Turkey on measures of socio-economic development. Istanbul ranks 1st of 26 sub-regions in the 2011 Socio-Economic Development Index (SEGE) measured by the Ministry of Development. Gross Value Added (GVA) per capita was TL 23,247 (\$ 13,865) in 2011. The region’s population is educated: Istanbul hosts more than 3 million students from primary school to universities. Out of these 3 million students, 663 thousand study in higher education programs of 53 universities. (IDA, 2015). Additionally, Istanbul attracts high levels of immigration (2.2 million people migrated to Istanbul in 2011) and more than 75% of migrants are aged 15 to 64. Labor force participation rate is 52.7% with 46.4% and 11.9% employment and unemployment rate respectively. Poverty rates are 10.5% and 17% when benchmarked to 50% and 60% of median income respectively.

Figure 2 SEGE 2011 ranking for cities in the sub-region

Province Number	Province	SEGE 2011 Rank	SEGE 2011 Index
TR100	İstanbul	1	4.5154

The region is the largest economy, and biggest exporter of Turkey. Istanbul’s economy is dominated by a wide range of service industries. The key economic sectors in TR10 are



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logistics, real estate, high value services, finance & insurance and tourism & culture. Jewels (20.6%), Iron and Steel (9.5%), Textiles and Accessories (9.1%) capture the biggest share of exports.

In terms of competitiveness, İstanbul ranks the 1st among 81 provinces in the Competitiveness Index compiled by the Centre for Economics and Foreign Policy Studies (EDAM) in 2014. İstanbul ranks the 1st in Market Size, Macroeconomic Environment, Financial Deepness and Physical Infrastructure sub-indexes. İstanbul's worst rank is in Social Capital sub-index (18th).

While this report focuses on the formal economy, trends in the informal sector are worth noting.¹ Over the 2006 to 2013 period, overall informality (measured in terms of labor force) fell from 32.3% to 16.5%. Non-agricultural informality fell from 32.2% to 16.2%. In the agricultural sector, informality has further increased from 50 to 74%, but, given the dominance of industry and service sectors for that region, the increase in the informal activities in the agricultural sector has had an almost negligible effect on overall informality (TurkStat).

2.2 Incentive and Fixed Investment

The schemes and rates of the current investment incentive system, which came into force by the Council of Ministers Decree dated June 15, 2012 and numbered 2012/3305, vary depending on the location, scale, importance and subject of the investment project. According to the system, investors benefit from the measures totally or partially under four main incentive schemes (general, regional, large scale and strategic investments) and nine incentive instruments (VAT exemption, customs duty exemption, tax deduction, social security premium support-employee's share and employer's share, interest support, land allocation and income tax withholding support). While the previous investment incentive regime set the locational incentives on the basis of NUTS-2 regions, the new regime shifted to the province-based system (NUTS-3). Accordingly, 81 provinces were ranked and categorized under six regions according to their socio-economic development levels.

İstanbul is the province of TR10 region, and is part of the 1st region in the new classification, respectively.

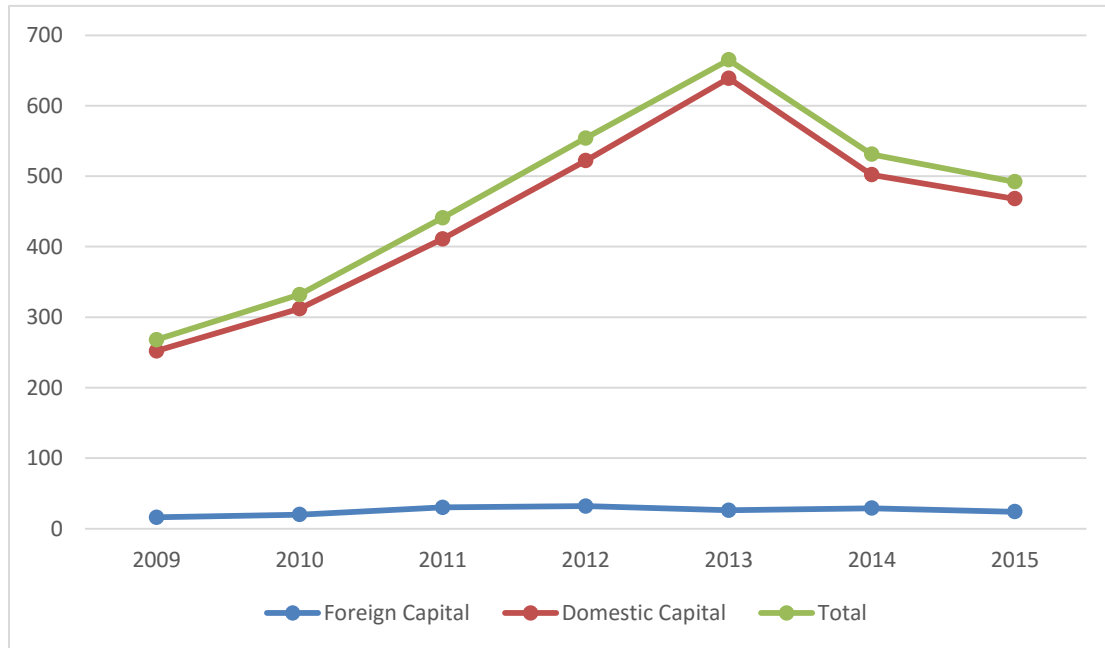
In the period between 2009 and 2015, 3,283 investment incentive certificates were issued for TR10 region. While 3,106 of them were issued for domestic companies and the remaining 177 were issued for foreign capital companies. In spite of global turmoil, in 2010, the number of investment incentive certificates increased by 24% and the amount of projected fixed investment almost quadrupled when compared to the previous year.

¹ The Turkish Statistical Institute (TÜİK) and the Ministry of Labor and Social Security report the size of the informal labor force by both region and sectors over the years, based on household surveys. The Entrepreneur Information System provides additional details about the distribution of labor force and sectors within each region as well as the level of employment per enterprise. Combining these sources of information allows to assess the size of the informal economy.



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Figure 3 Investment incentive certificates in TR10



Source: Ministry of Economy, provisional data

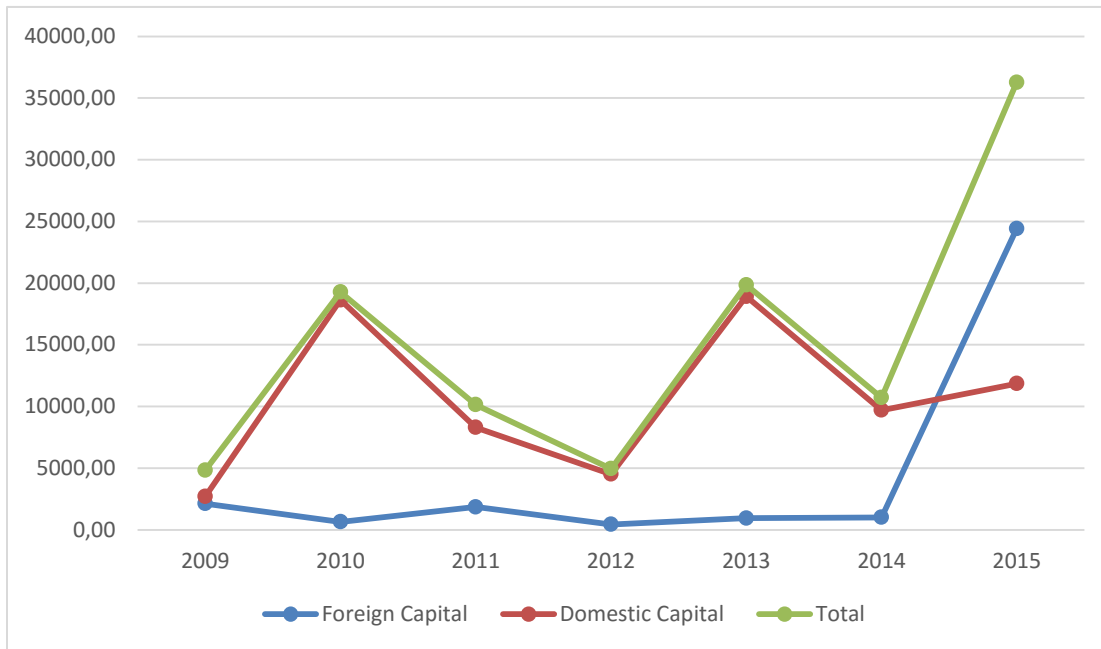
Similar to the other regions' statistics, 95% of the total number of investment incentive certificates were issued for the companies with domestic capital during 2009-2015 period.

Although the number of certificates issued for the investment projects of the companies with foreign capital companies was in line with country average in TR10 region, their projected fixed investments were higher. Their share in total projected amount of fixed investment was around 30% (TL 31.4 billion) and in 2015, the projected fixed investment amount of companies with foreign capital even surpassed that of domestic companies by TL 12.5 billion.



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Figure 4 Projected fixed investment amount in TR10



Source: Ministry of Economy, provisional data

Total amount of projected fixed investment in TR10 region was around TL 106 billion of which TL 74.6 billion by companies with domestic capital and the remaining by companies with foreign capital.

2.3 Regional Development Strategic Priorities

While it is one of the most competitive region in Turkey, Istanbul seeks to enhance its global competitive power. The key economic sectors in TR10 are logistics, real estate, high value services, finance & insurance and tourism & culture. Foreign trade volumes in the logistics sector have been increasing, reaching 208 billion dollars in 2013. In the real estate market Istanbul has been the leading center of attraction: in 2014, 225 thousand houses sold in Istanbul, outscoring the second ranked city, Ankara, at 132 thousand (IDA, 2015). High value services in Istanbul include consultancy, legal and administrative services and advertising. These services offer great potential for the development and competitiveness of the region. The finance and insurance sector has also been among the priority sectors as the city aims to become a regional and global financial center. With this aim, the Istanbul Financial Center Initiative was established to promote Istanbul as a financial center and provide support services for foreign projects. The Istanbul Stock Exchange (Borsa Istanbul) has been the heart of the country's financial market. Tourism and culture has also been among the top priority sectors in the region. From 2002 to 2012, the number of tourists visiting Istanbul grew at a 12 % average annual growth rate.²

² Provincial Directorate of Culture and Tourism, 2013



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Istanbul Development Agency (IDA) prepares the region's Regional Development Plan.³ The first plan was prepared for the 2010 - 2013 period. It aimed at sustainable regional development as well as efficient and effective use of resources (IDA, 2010).

The Regional Development Plan for 2014-2023 proposes guidelines for a sustainable regional development.⁴ It provides a framework for the development and enhancement of i) the economy, ii) society and iii) the environment (IDA, 2014). The development axes and supporting strategic priorities are described in Annex 1.

³ In 2006, the Law No 5449 legislated the establishment, duties and authorities of Development Agencies under the coordination of State Planning Organization in 26 NUTS-2 regions. The main purposes of the RDAs were defined as improving collaboration between the public and private sectors, local administrations, universities and civil society organizations; ensuring the proper and efficient use of resources; accelerating regional development in line with the national development plans by mobilizing local potentials; ensuring sustainability; and mitigating inter/intra-regional disparities. In accordance with the law, Istanbul Development Agency (IDA) was established in 2008, and became active with the recruitment of staff in 2009.

⁴ All regional development plans for the 2014-2023 period were harmonized to define the regional development strategy consistent with Turkey 2023 vision.





3. Challenges and Opportunities in the Business Environment

A key ingredient of any assessment of the private sector is updated representative data collected directly from the main economic agents of this sector: enterprises. For the purpose of this assessment the Regional Enterprise Survey (R-ES) was developed to directly collect data from private enterprises. The R-ES combines financial information from enterprises with their own assessment of the constraints they face as well as their experience navigating the business environment. The data was collected with the purpose of this assessment and therefore it included firms of all sizes, including micro firms, and firms in all sectors of activity excluding agriculture and mining and quarrying. An additional source of information on the private sector of Turkey is administrative data which is more extensive regarding financial data. It lacks, however, information on the business environment and it tends to be older and is only available for firms larger than 10 employees. Given the greater richness on financial information, this administrative data is used in the third section of this report to get more accurate indicators of firm performance.

This second section relies exclusively on the R-ES data collected by the World Bank Group as a key source of information on the regional differences of the business environment in Turkey. Face-to-face interviews were conducted between August 2015 and June 2016 with 6,006 top managers and business owners in the manufacturing and service sectors across all regions in Turkey. The R-ES provides a rich source of information about firms and the environment in which they operate, identifying the constraints they face and the opportunities for promoting sustained private sector growth and job creation. Topics include infrastructure, access to finance, workforce composition, corruption, crime, business-government relationship, and competition⁵. The R-ES follows the Enterprise Survey (ES) global methodology of the World Bank. Data are representative of Turkey's non-agricultural, non-extractive, formal private sector and are fully comparable across NUTS2 regions and with other ES data allowing benchmarking of indicators. Annex 3 shows the characteristics of the firms surveyed in Turkey, along with details of the standard ES methodology.

3.1 Physical and Communications Infrastructure

A well-developed physical and communications infrastructure, including electricity, gas, alternative sources of energy, water, and internet is central to competitiveness and the growth of an economy. Quality infrastructure efficiently connects firms to markets for inputs, products, and technologies. It reduces the cost of production and enhances the competitiveness of firms in domestic and international markets. The R-ES captures the experiences of businesses with the existing infrastructure for energy, water supply, and telecommunications in addition to information on the development of institutions that provide and maintain these public services.

⁵ This section of the report focuses only on a subset of topics that are covered by the R-ES. Additional indicators are presented in Annex 4, which also includes a break down by firms' size along with regional and country averages.



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Efficiency in the operation of private businesses requires a reliable supply of electricity. Inadequate electricity provision can increase costs, disrupt production, and reduce profitability. Figure 5 shows the extent to which firms face failures in electricity provision and their effect on sales. Failures in electricity provision are measured by the number and duration of power outages in a typical month, while the cost of poor electricity provision is measured by the percentage of sales lost by firms experiencing power outages. On average, firms in Istanbul experience the same frequency of power outages as the country average, 1.0 times in a typical month as opposed to 0.9 for Turkey. Moreover, when power outages occur, they tend to be the same duration in Istanbul as the Turkey average (middle panel of Figure 5). Despite similar frequency and duration, firms in Istanbul report slightly higher losses in term of sales due to electricity outages than the average for the entire country.

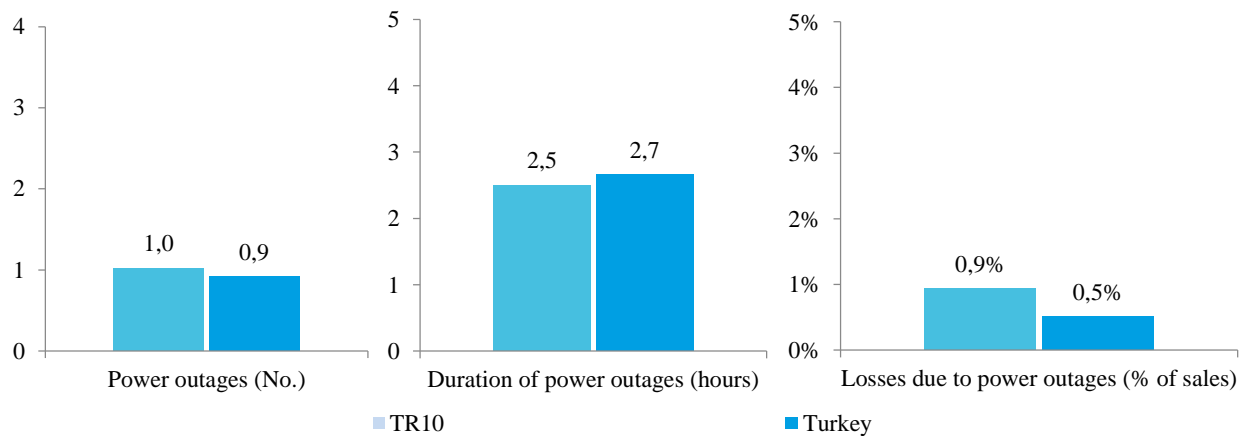


Figure 5: Reliability of electricity provision and related losses

To have a sense of how private firms might compensate for the poor provision of electricity, the R-ES asked business owners and managers whether or not they own or share generators and the extent to which they rely on electricity from generators. Figure 6 reports their responses.



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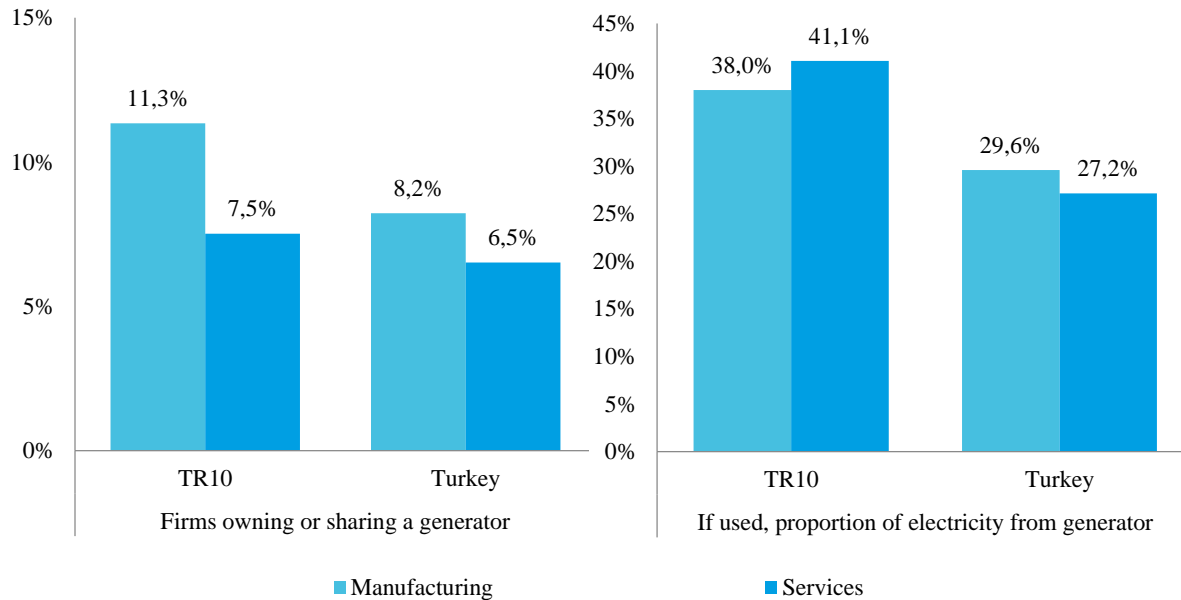
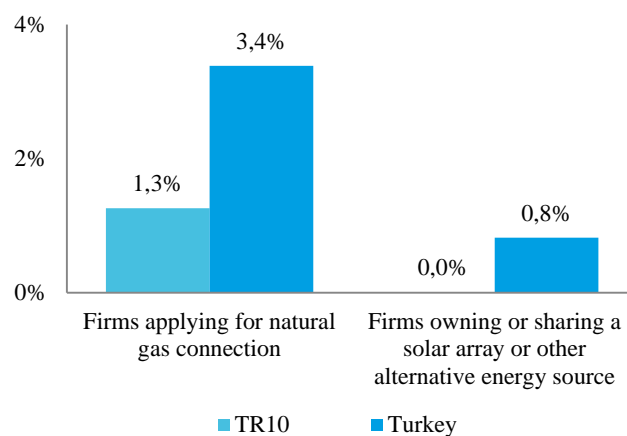


Figure 6: Use of generators as a source of electricity

The use of generators as a source of electricity is not common in Turkey: on average fewer than 1 out of 10 firms in the manufacturing or services sectors own or share a generator. When they own or share a generator, firms derive on average a quarter of their electricity from it. Results for Istanbul varies by sector. Manufacturing firms in Istanbul are slightly more likely to own or share generators than an average manufacturing firm in the entire country (11.3 percent vs. 8.2 percent). They also rely on generators for their electricity somewhat more than an average manufacturing firm in Turkey. In the service sector, a similar percentage of firms own generators in Istanbul and in the whole country but services firms in Istanbul derive a higher proportion of electricity from generators as compared to the average for the whole country.

The energy production and distribution landscape is seeing transformation as sources such as natural gas, solar, and wind power complement, replace and displace other power sources and change the way energy distribution is managed. The R-ES investigates the use of these energy options, by asking firms whether or not they have submitted an application to obtain a natural gas connection over the last two years; and whether or not they own or share a solar array or other alternative sources of energy.

Figure 7: Natural gas and the use of alternative sources of energy



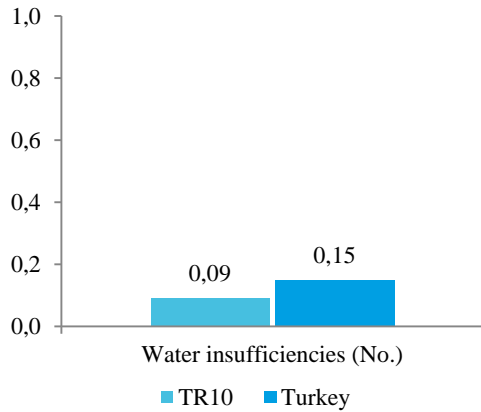
As Figure 7 illustrates, 3 percent of



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firms in Turkey have attempted to obtain a natural gas connection in the past two years, while only 1 percent of firms in Istanbul did. At the same time, firms in Istanbul are not investing in alternative sources of energy with greater enthusiasm than the rest of the country. In particular, very few firms in Istanbul reported owning or sharing a solar array or other alternative source of energy as compared to the already small 1 percent share for Turkey as a whole.

Figure 8: Reliability of water supply



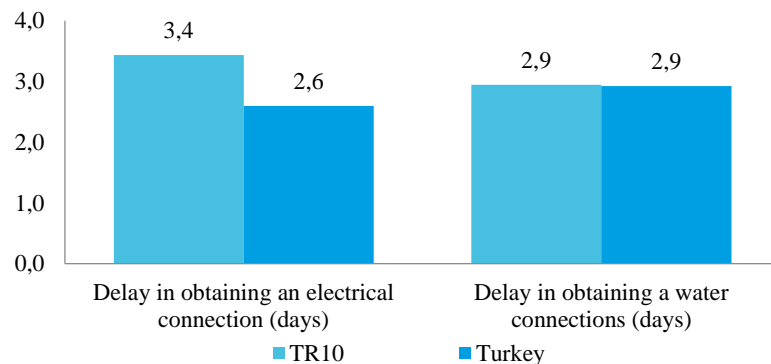
* only for manufacturing firms

For many manufacturing industries, water is also an important input in the production process as interruptions in water provision can have harmful effects on firms' operations. Figure 8 reports the average number of water insufficiencies experienced by manufacturing firms in a typical month in Istanbul and in the whole country. The reliability of water supply seems not to be a significant problem in Turkey where the majority of firms report 0 episodes of insufficient water supply in a typical month. Overall the average number of insufficiencies in Turkey is well under one outage per month. Firms in Istanbul are in line with the whole country as they experience on average the same infrequent issues with

insufficient water supply as in the whole of the country.

The availability of quality institutions capable of providing swift access to infrastructure for private enterprises is key for the development of a prosperous private sector. Delays in obtaining access to vital infrastructure impose additional costs on firms and may act as barriers to entry and investment. Figure 9 displays the speed of infrastructure services provision by quantifying the number of days that it takes to obtain an electricity and water connection.

Figure 9: Days to obtain electrical or water connection



Institutions that govern access to electricity in Istanbul are slightly slower than those in Turkey to grant that access to private firms upon application. Enterprises in Istanbul have to wait on average 3.4 days to connect to electricity grid while an average firm in Turkey waits 2.6 days. Connection to water pipes takes the same time in

Istanbul as in the whole country (2.9 days).

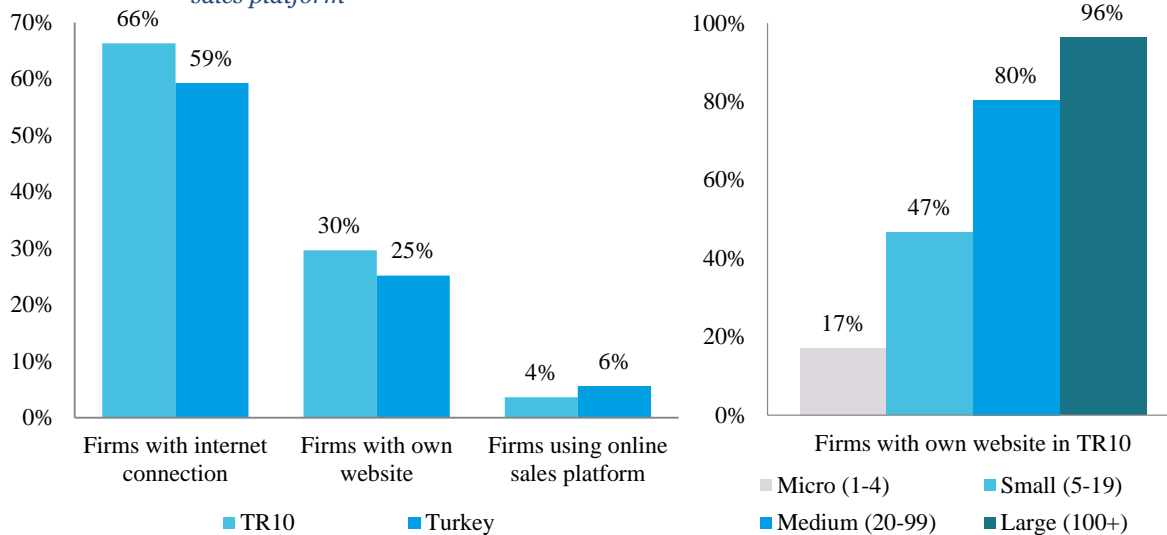
Access to digital technology, in general, and the internet specifically, has opened up vast opportunities for businesses. However, not every firm in Turkey has tapped into its full potential. Figure 10 shows the percentage of firms that have internet connections, that



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own their own websites, and that use on-line sales platforms. Only around 66 percent of firms in Istanbul have access to internet, which is slightly above the country average. Private firms in Istanbul are also similar to average firms in the entire country in terms of the rate of owning websites, with only 30 percent doing so. When it comes to the use of more advanced services provided by the Internet, such as online sales platform, the percentage of enterprises that seize the opportunities presented by internet is considerably lower. Only 6 percent of firms in Turkey and 4 percent of firms in Istanbul use online sales platforms. As the right panel of Figure 10 illustrates, as expected owning a website in Istanbul increases with firms' size.

Figure 10: Access to internet, web presence and use of online sales platform



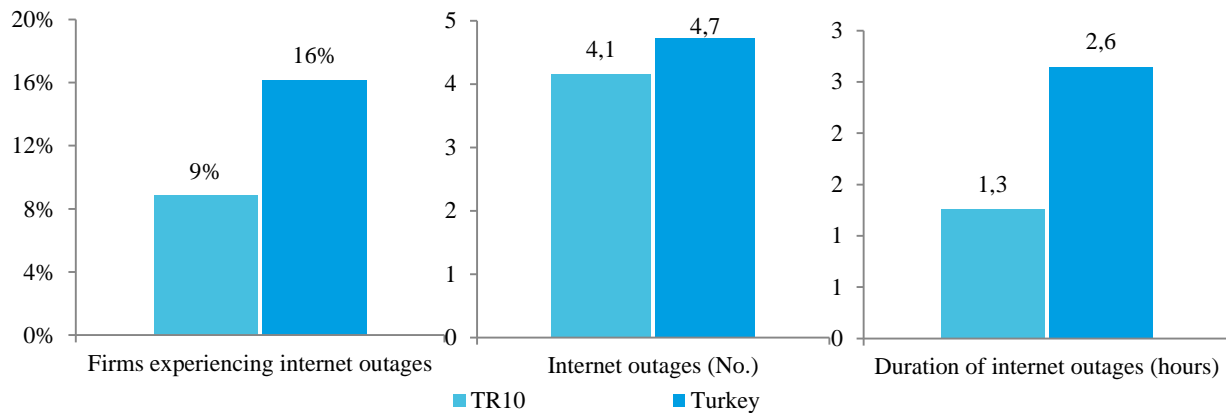
Similar to energy or transport, the internet has become an essential part of a country's infrastructure and a factor of production in almost any activity in a modern economy. The internet enables firms to participate in global trade, thus leading to more inclusion; it makes existing capital more productive, thus raising efficiency; and by stimulating competition, it encourages innovation. Providing reliable internet service is therefore a key element to boosting firms' productivity and growth. Reliability of digital infrastructure is measured by the R-ES as the percentage of firms that experienced internet outages from the internet provider and the frequency as well as duration of those outages.

Figure 11 displays these measures for Istanbul and Turkey. While firms in Istanbul experience internet outages with an average frequency similar to that of Turkey as a whole – 4 times in a typical month (middle panel) – these outages affect fewer firms in Istanbul. Only 9 percent of the businesses in Istanbul experience outages, while 16 percent do so in Turkey. In addition, outages last far half as long in Istanbul averaging at 1.3 hours as compared to the average of 2.6 hours for Turkey.



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Figure 11: Reliability of internet



3.2 Access to Finance

Well-developed financial markets provide payment services, mobilize deposits, and facilitate funding for the purchase of fixed assets (e.g. buildings, land, machinery, and equipment) as well as working capital. They also contribute to firms’ decisions to invest in creating new facilities. Efficient financial markets reduce the reliance on internal funds or informal sources, such as moneylenders as well as family and friends, by connecting firms that are creditworthy to a broad range of lenders and investors.

Figure 12 shows two indicators on the use of financial services by private firms: the percentage of firms with a checking or savings account and the percentage of firms with a bank loan from both private and public banks. The former indicator measures the use of deposit mobilization services which may help firms to manage their liquidity and payments. The second indicator measures the use of credit services. Availability of credit permits funding projects that otherwise would be constrained by each firm’s limited pool of funds. As the left panel of Figure 12 demonstrates in Istanbul 90 percent of firms have checking or savings account, much higher than the average for Turkey (62 percent). In terms of having loans from banks however Istanbul performs similar the country average with 25 percent of firms having a loan. The breakdown of use of bank accounts and loans by manufacturing vs. services firms (the right panel of Figure 12) shows that while manufacturing firms in Istanbul slightly outperform services firms in terms of having bank accounts, services firms are more likely to have bank loans. In particular, 94 percent of manufacturing firms in Istanbul hold checking or savings account, while only 88 percent of services firms do. In contrast, 19 percent of manufacturing vs 29 percent of services firms have bank loans. Similar pattern are observed in Turkey as a whole.



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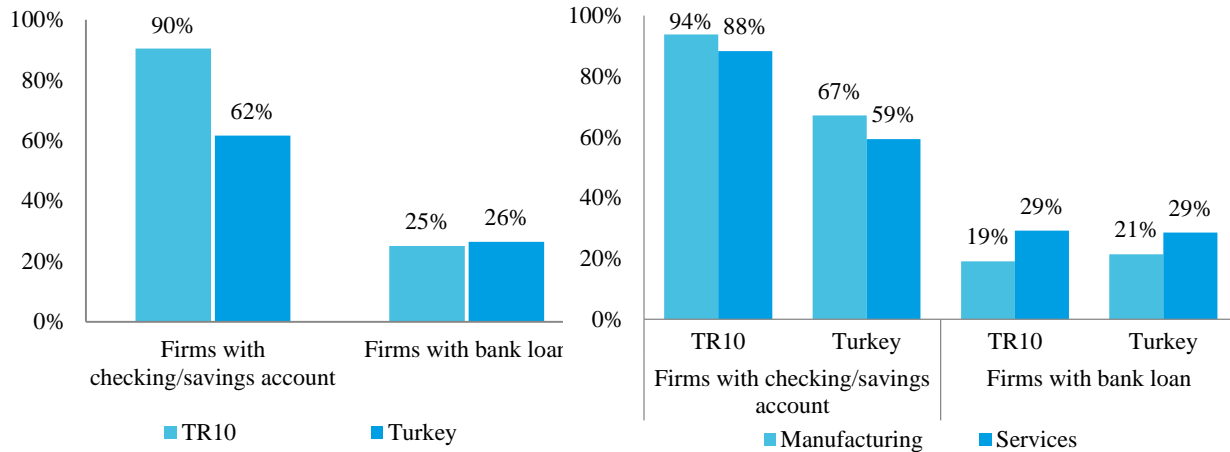
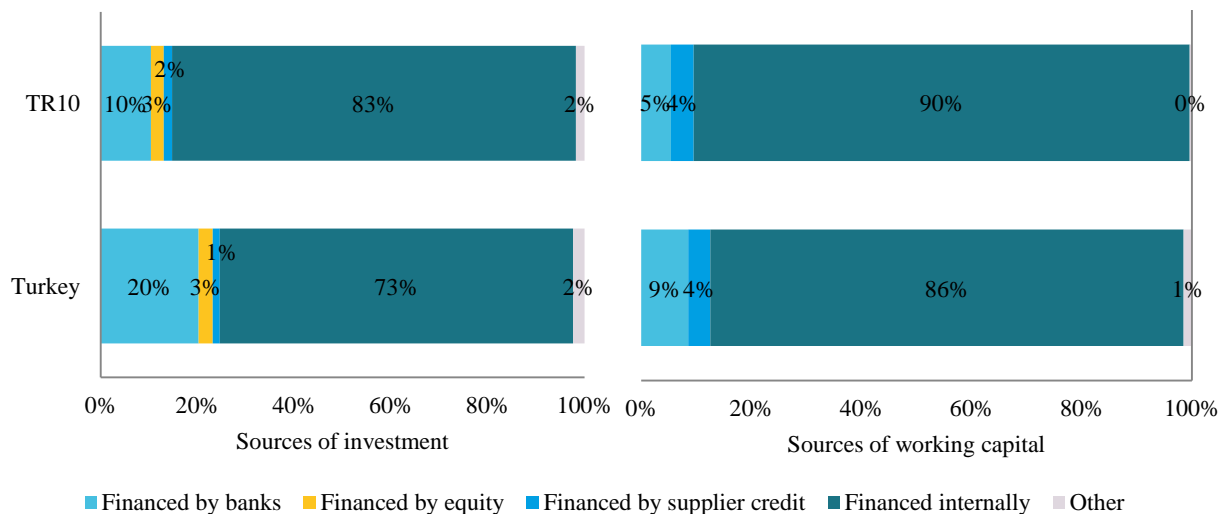


Figure 12: Use of financial services

The R-ES provides indicators on the sources of firm financing and on the characteristics of their financial transactions. Figure 13 compares the various sources used to finance investments (purchases of fixed assets, the left panel) and working capital (the right panel). Investments and working capital can be financed by internal sources, banks, supplier credit, or other sources, including non-bank financial institutions or personal networks. Excessive reliance on internal funds may indicate potentially inefficient financial intermediation.

As Figure 13 illustrates, private firms in Turkey heavily rely on their own sources to finance either working capital or investment. Firms in Istanbul are very similar to an average firm in Turkey. More precisely, on average 90 percent of finances for working capital and 83 percent of finances for investment come from internal sources in Istanbul, as compared to 86 percent and 73 percent in Turkey as a whole, respectively for working capital and investment.

Figure 13: Sources of financing of investment and working capital





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In addition to collecting information on how firms finance their investments and working capital, the R-ES asked top managers and business owners several detailed questions regarding their credit needs, their applications for loans, and the outcomes of these applications. Using this information, a composite indicator can be constructed that measures the degree of credit constraint experienced by firms. In particular, firms can be categorized as follows: fully credit-constrained (FCC), partially credit-constrained (PCC), and not credit-constrained firms (NCC) (see Kuntchev, Ramalho, Rodríguez-Meza, and Yang, 2013 for further details and analysis). Figure 14 reports results for Istanbul and Turkey. The Annex presents the results disaggregated by size.

FCC firms are those that find it challenging to obtain credit. More precisely, they have no source of external financing and typically fall into one of two categories: firms that applied for a loan and were rejected; or firms that did not apply for a loan because terms and conditions were unfavorable. Unfavorable terms and conditions include complex application procedures, unfavorable interest rates, high collateral requirements, insufficient loan amounts and maturities, and a firm's perception that the loan would not be approved.

PCC firms also have challenges in obtaining credit but are successful, to some extent, in raising external financing. Partially constrained firms include firms that have both external finance and have applied for a loan that was either partially approved or rejected; and firms that have external finance but did not apply for a loan from a financial institution due to unfavorable terms and conditions.

NCC firm are those that did not have difficulties accessing credit or do not need credit. Three types of firms fall into this category: firms that have sufficient capital and did not need any form of external finance; firms that applied for a loan and whose application was approved in full; and firms that obtained sufficient capital from other external sources and therefore did not need to apply for a loan.

As Figure 14 illustrates, almost 22 percent of firms in Istanbul are identified to be fully credit constrained, almost 4 percentage points more than the average for Turkey. Istanbul slightly trails the Turkey average for credit unconstrained firms, with 68 percent firms so categorized in Istanbul as opposed to 72 percent in Turkey. Firms in Istanbul appear to have some success in accessing credit, but do not appear to benefit from obvious financing advantages of operating in the largest city in Turkey.



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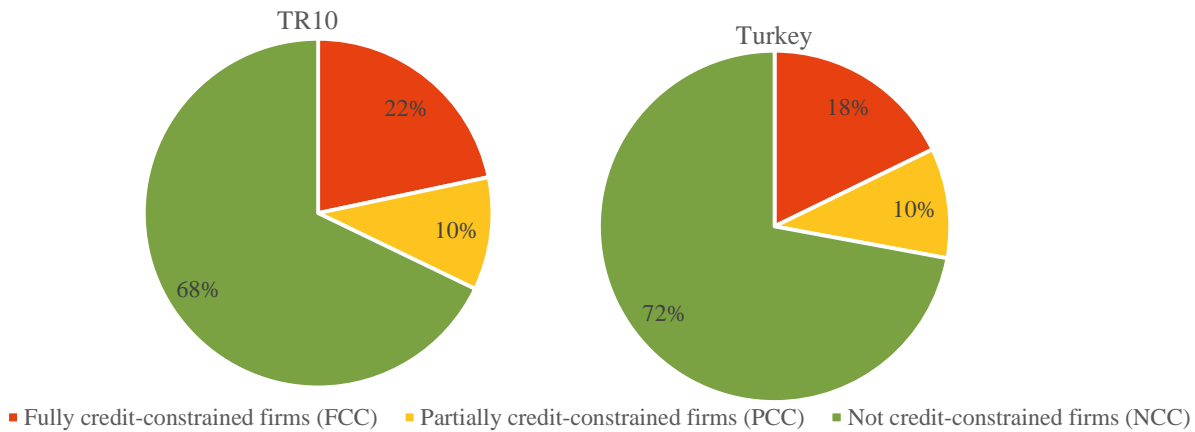
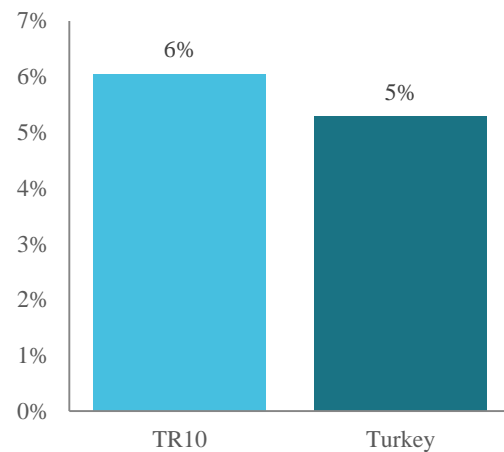


Figure 14: Credit constraints

Apart from helping understand the extent of frictions that firms encounter in the process of finding access to finance, the R-ES investigates the level of firms’ investments in creating new physical facilities. Figure 15 illustrates that on average 5 percent of firms in Turkey reported creating new physical facility over the last two years. Istanbul experienced similar rates of such activities; 6 percent of firms in this region has reported creation of a new facility over this time frame.

Figure 15: Firms creating new physical facility



3.3 Business-Government Relations

Good economic governance in areas such as regulations, business licensing, and taxation is a fundamental pillar of a favorable business environment. Registered firms pay taxes and are supposed to comply with regulations. Permits and licenses are usually required for businesses to operate, to build a new facility, and to import directly, among other activities. Ideally, these regulations and permits safeguard the general public’s interest while remaining transparent and imposing minimal burden on the private sector.

The R-ES provides quantitative measures of regulations such as business licensing and taxation. Figure 16 illustrates the “time tax” imposed by regulations, which is measured as the percentage of time spent by senior management dealing with regulatory compliance. The left panel of Figure 16 shows that managers of firms in Istanbul spend on average around 3 percent of their time for the purposes of fulfilling government regulations which is much lower than the average for Turkey.



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Figure 16: Time spent on dealing with requirements of government regulations

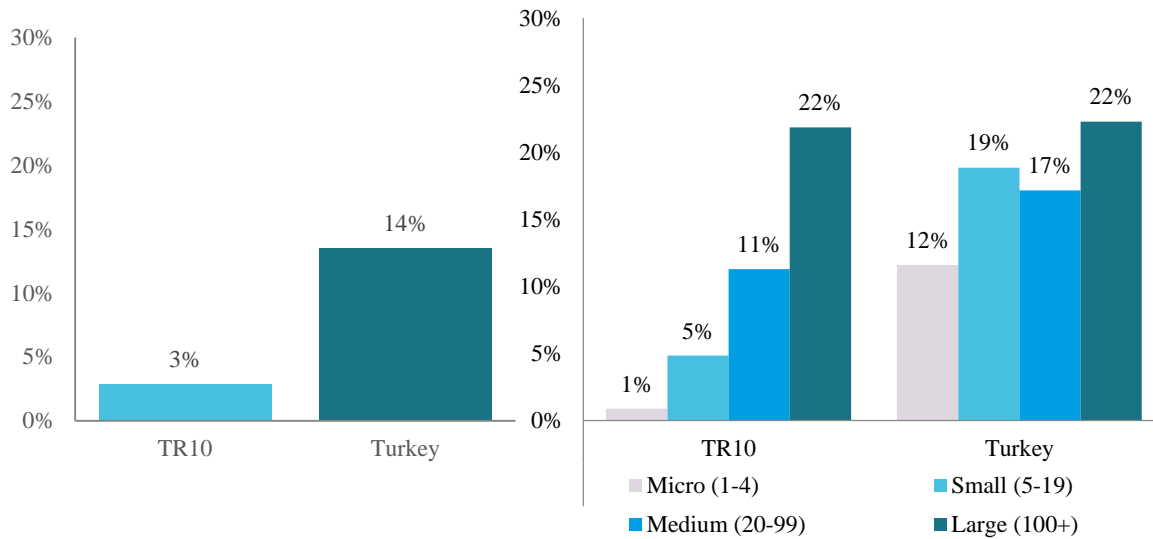


Figure 16 also shows the breakdown of time tax by firm sizes. In Istanbul senior management of micro, small and medium firms spend on average much less time than their counterparts around the country to ensure their compliance with government regulations. In contrast, the managers of large firms spend the same amount of time on compliance as large firms in the rest of Turkey. Istanbul outperforms the average for Turkey in making regulations easier to comply with, particularly for smaller firms. Complying with regulations can be costly for businesses. Excessive or inefficient regulations can discourage private sector activity and foreign direct investment.

Figure 17 focuses on the efficiency of business licensing and permit services. The indicators measure the time required to obtain an import license, a construction permit, and an operating license. Delays in obtaining licenses can be costly to entrepreneurs as they add uncertainty and additional costs to much needed business operations. As Figure 17 shows institutions in Istanbul provide services to enterprises seeking permits at a somewhat slower pace than the average for Turkey.

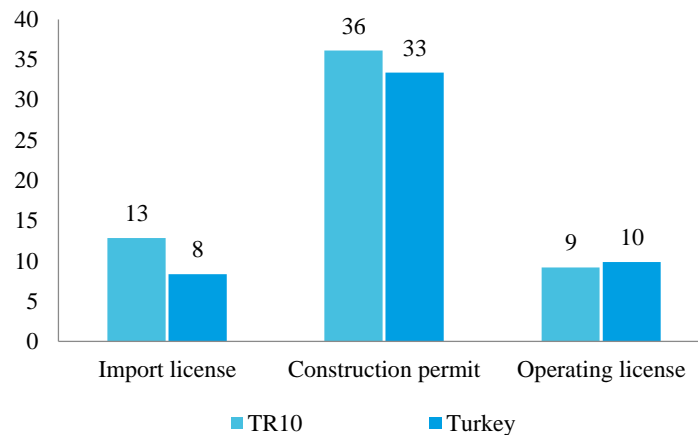


Figure 17: Number of days to obtain permits

For instance, an import license takes on average 13 days to process in Istanbul, while the process takes around 8 days on average in Turkey.

Interactions between businesses and government carry the potential for corruption as government officials are in a position to selectively deny businesses essential services for their operation. Corruption creates an unfavorable business environment by

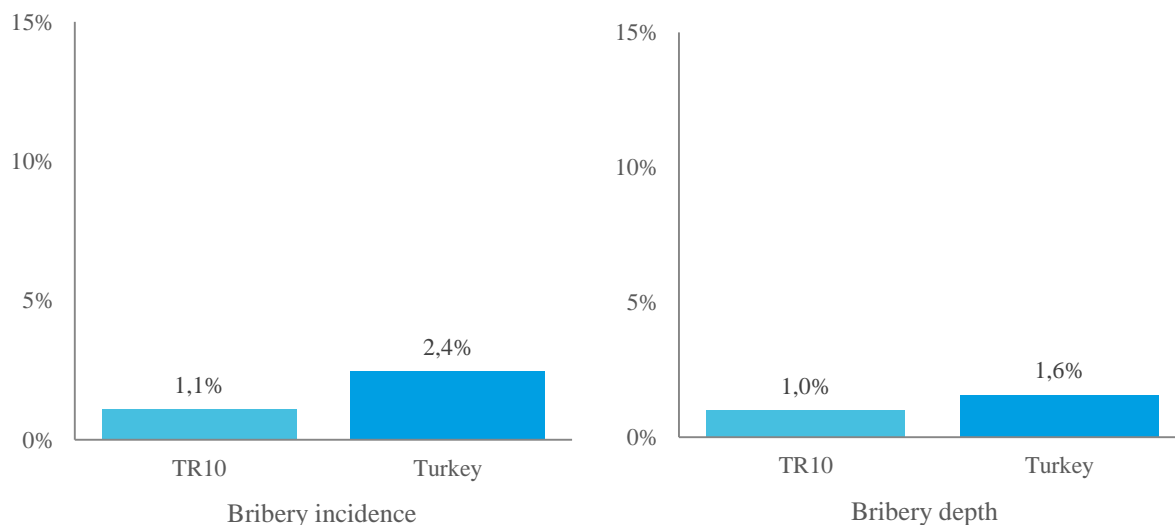


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undermining operational efficiency and raising the costs and risks associated with running a private firm. Inefficient regulations constrain firms’ operations as they present opportunities for soliciting bribes, where firms are required to make informal payments to public officials to get things done. In many economies bribes are common and quite high and they add to the bureaucratic costs in obtaining required permits and licenses.

The standard ES captures several individual transactions where bribes may be solicited and uses them to build two composite indexes of corruption, bribery incidence and bribery depth. The R-ES covers a broader set of transactions and builds expanded versions of the two composite indexes. The expanded bribery incidence, in the left panel of Figure 18, reflects the percentage of firms reporting at least one bribe or informal payment request across twelve different transactions. These include, for instance, processes of obtaining a construction permit or import license, securing a government contract, or while meeting with tax officials.⁶ These types of transactions are common instances where opportunities for bribery occur. The expanded bribery depth (right panel in Figure 18) measures the percentage of transactions where firms reported the request of a gift or informal payment. Consequently, expanded bribery depth gives a sense of how widespread corruption is while expanded bribery incidence of how prevalent it is. Indicators disaggregated by size are presented in the tables of the Annex. Both expanded bribery incidence and expanded bribery depth indexes show a low and comparable level in Istanbul as related to the country average. Bribe requests were reported by an average of 1.1 percent of firms in Istanbul (2.4 percent in the whole country) and for an average of 1.0 percent of transaction (1.6 percent average for Turkey).

Figure 18: Expanded bribery incidence and depth

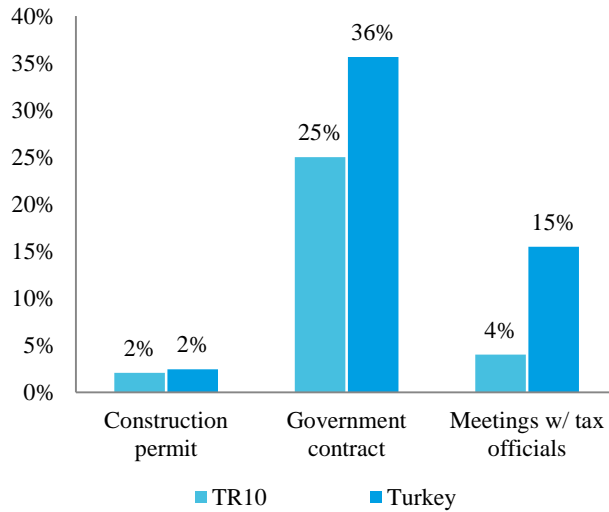


⁶ The following transactions are included in the index: obtaining construction, import, or operating licenses or permits; obtaining work permits for foreign employees; obtaining connections for natural gas, electricity, or water; clearing goods through customs during export or imports; applying to lease land or buildings from the government; during meeting with or inspections by government officials; in the process of securing a government contract.



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Figure 19: Share of firms reporting corruption in specific transactions



Corruption seems to be particularly pervasive in some types of transactions. Figure 19 shows the share of firms that reported an expectation to give gifts or informal payments during specific transactions: in the process of obtaining construction permits, during securing the government contract, and during meetings with tax officials. While bribery is almost never reported in the process of obtaining construction permits, and in meetings with tax officials in Istanbul, the average for Turkey is higher, 2 percent, and 15 percent, respectively. A higher percentage of firms, both in Istanbul and in the whole country, reports bribes in obtaining government

contracts (25 percent and 36 percent, respectively).

3.4 Crime and Informality

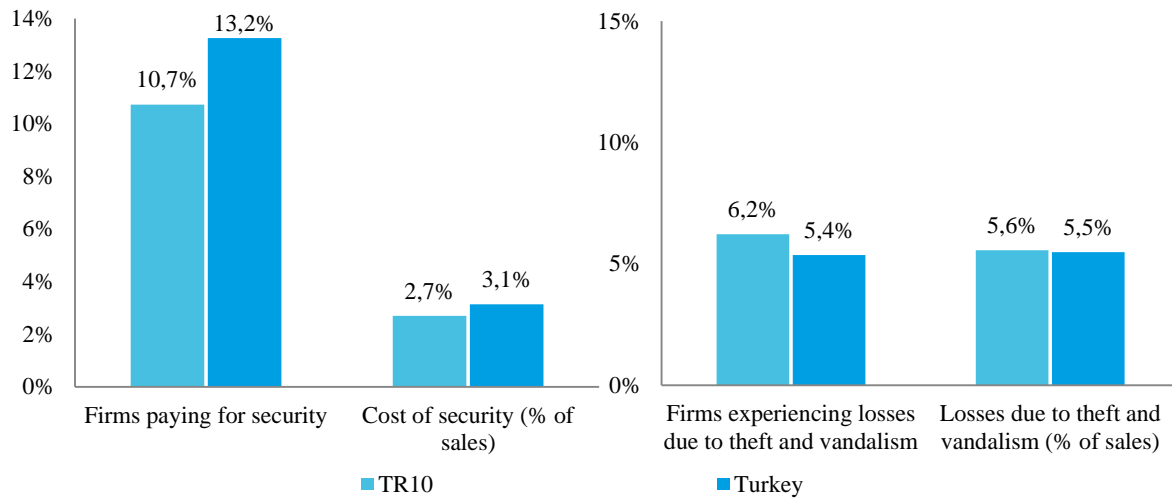
Firms can become the target of theft, robbery, vandalism, or arson. Protecting themselves against crime imposes costs as firms are forced to divert resources from productive uses to cover security costs. Moreover, both foreign and domestic investors perceive crime as an indication of social instability, an element that decreases a locality’s attractiveness for business. All these factors make incidence of crime an important determinant of the business environment. The R-ES examines the presence and cost of crime by asking firms about their costs of security (if any) and losses due to crime (if any), both measured as a percentage of annual sales.

As illustrated on Figure 20, firms in Istanbul are slightly less likely to be paying for security than is the average for Turkey, with 11 percent of businesses incurring this cost in Istanbul as opposed to 13 percent in Turkey. Firms that do pay for security pay on average the same in Istanbul as in Turkey in general, with both around 3 percent of sales. Despite the prevalence of security measures in Istanbul, like the rest of Turkey, many businesses experience losses due to theft and vandalism – 6 percent of firms in Istanbul compared to 5 percent in Turkey. Additionally, these incidents of theft and vandalism in Istanbul appear to be of the same scale as in the rest of the country as the firms that did experience crime report losses of about 5.5 percent in both Istanbul and Turkey as a whole.



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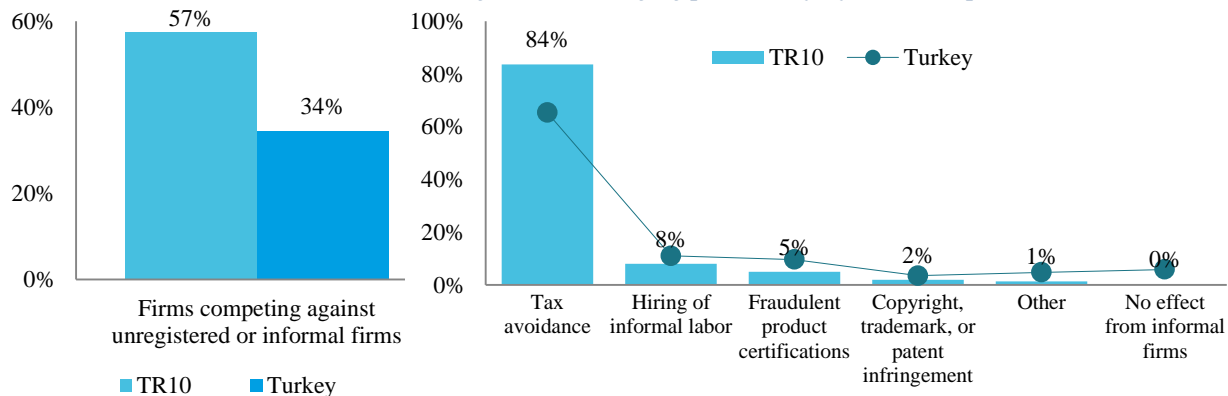
Figure 20: Security costs and firms' losses due to crime



When firms are formally registered, they are required to abide by rules and regulations, which are commonly set by governments. Paying taxes is usually the most tangible consequence of becoming part of the formal private sector. Some firms try to avoid such consequences by not registering their business and thereby remaining in the informal sector. A large informal sector may represent a challenge to competing formal firms as informal firms are able to engage in practices that can give them an unfair advantage over formal firms.

To understand the effects of the informal sector on the business environment the R-ES examines whether or not firms experience competition from unregistered or informal businesses, and if so, what are the practices of informal competitors that owners and managers consider most damaging to the normal operations of their firms. As Figure 21 shows, 57 percent of firms face informal competition in Istanbul, considerably higher than reported in Turkey as a whole. Of the firms that experience these effects, the overwhelming majority (84 percent) in Istanbul and 65 percent in Turkey identify tax avoidance by their informal competitors as the most damaging practice (right panel). Fewer than 10 percent of the firms in Istanbul that experience informal competition are most damaged by hiring of informal labor by informal firms, while 5 percent report fraudulent product certifications as being the most damaging practice.

Figure 21: Damaging practices of informal competitors





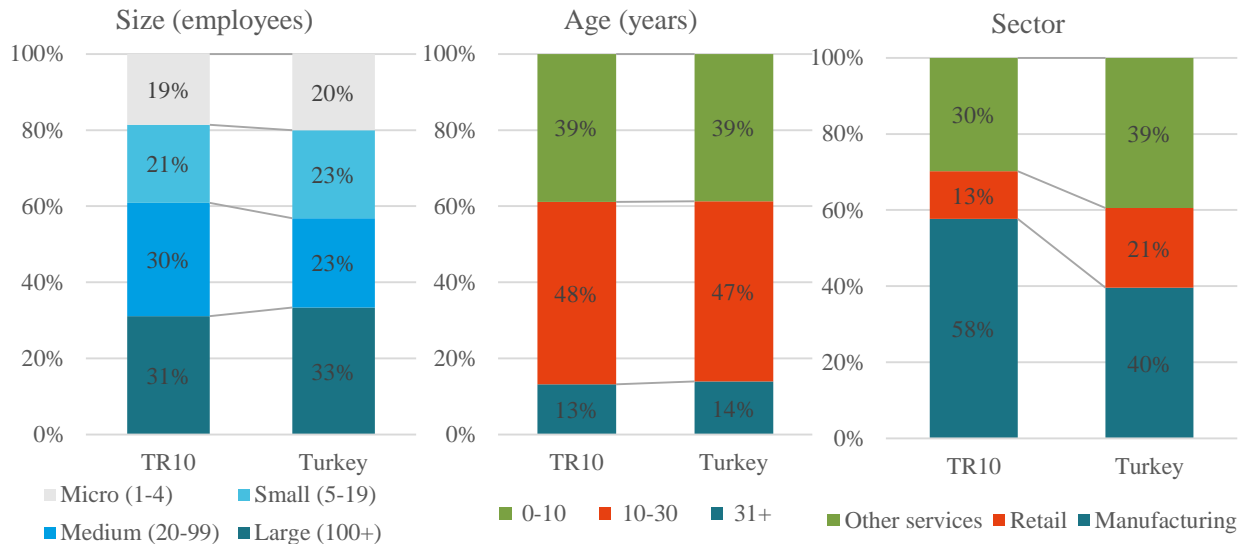
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3.5 Labor Market

The R-ES collects information about firms’ workforce, such as the number of permanent full-time employees, the number of temporary employees, the distribution of employees by gender, and the manager’s experience working in the sector. The R-ES also identifies the gender of the firm’s owner or top manager. In addition, the R-ES allows measurement of the labor productivity and collects information on labor market dynamics including the number of vacancies, the means that firms use to fill them, along with details of their successes in doing so.

Figure 22 illustrates the contribution to employment by firms of different sizes, ages, and sectors. In Istanbul, large firms, the ones employing one hundred or more workers, are responsible for the largest share of employment (31 percent). Medium and small firms contribute to 21 percent and 30 percent of total employment, respectively, while micro firms employing less than 5 workers generate a 19 percent of employment. In terms of the age, contribution to employment declines by age. Young firms, those that have been in operation for less than 10 years, and firms in operation between 10 and 30 years are contributing 40 percent and 48 percent of total employment, respectively. While firms in operation for more than 30 years generate 13 percent of employment. Manufacturing firms are by far the biggest employers in Istanbul, absorbing 58 percent of employment.

Figure 22: Share of employment by size, age, and sector



Labor productivity growth, the annual rate of growth of real sales per worker, is a very important measure of firm performance as it is used as a proxy for how efficiently a firm uses its labor inputs. The R-ES enables tracking the annual growth of labor productivity over the course of the last two years of firms’ operations (Figure 23).⁷ Firms in Istanbul

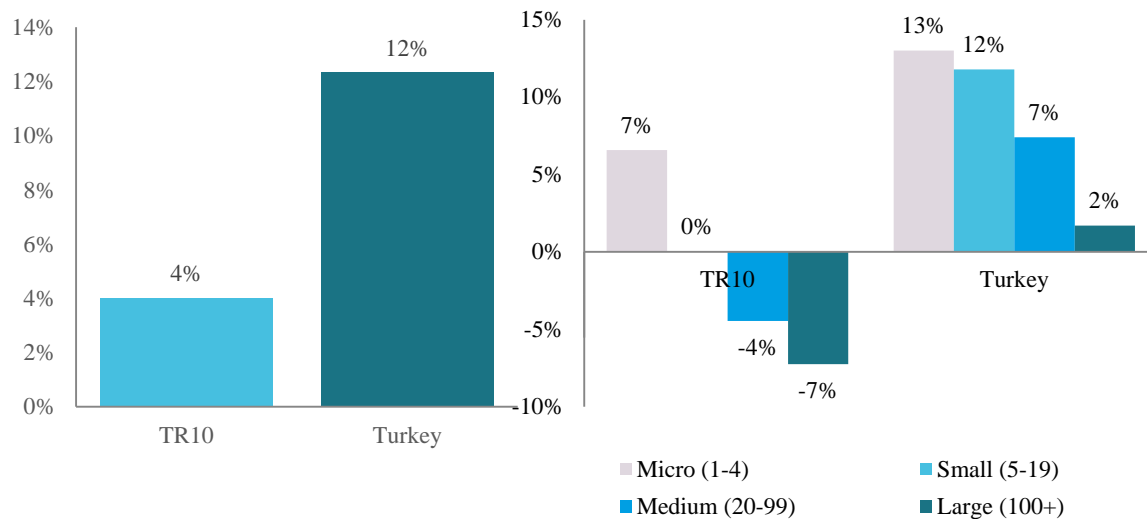
⁷ Note that this measure of productivity differs from the measures presented in next section of this report. While next section investigates total factor productivity (TFP) and value added per worker, R-ES looks into the revenue per worker and its dynamics. Furthermore, as already mentioned, R-ES enables measurement of labor productivity and



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experienced on average 4 percent growth in labor productivity, less than half the country average. Importantly, micro firms, those employing from 0 to 4 workers, have experienced the largest labor productivity growth, 7 percent in Istanbul, but only about half the country average of 13 percent for micro firms. Small firms experienced essentially zero productivity growth while medium and large firms actually experienced negative productivity growth in Istanbul.

Figure 23: Annual labor productivity growth



The composition of the workforce, in terms of permanent vs. temporary and in terms of gender is also an interesting element to consider. Figure 24 reports the prevalence of temporary work, along with the gender composition of both permanent and temporary workers. While the use of temporary or seasonal contracts enables businesses to quickly adjust to a dynamic business environment, it entails challenges in terms of job security for employees, depending on the employment protection laws and regulations. Differences in employment protection between temporary and permanent employees can create a dual labor market, where permanent employees enjoy high levels of job security and better career prospects, while temporary employees are largely marginalized.

As Figure 24 demonstrates, on average, 6 percent of firms in both Turkey and Istanbul hire temporary or seasonal workers. Women account for 14 percent of temporary or seasonal workers in both Istanbul and Turkey as well. Female participation in the private sector workforce is moderate in most of Turkey among permanent workers. On the other hand, Istanbul shows that 50 percent of permanent full-time workers are female compared to 36 percent in Turkey as a whole. Women employees are more common in firms with a female top manager than in firms run by a male top manager but, male managed firms in Istanbul drive the 50 percent figure shown above (Figure 25). In particular, firms managed by a male top manager have on average 48 percent of permanent full-time employees that are female in Istanbul, with the corresponding average for Turkey being 33 percent. In contrast, firms with a female manager have on

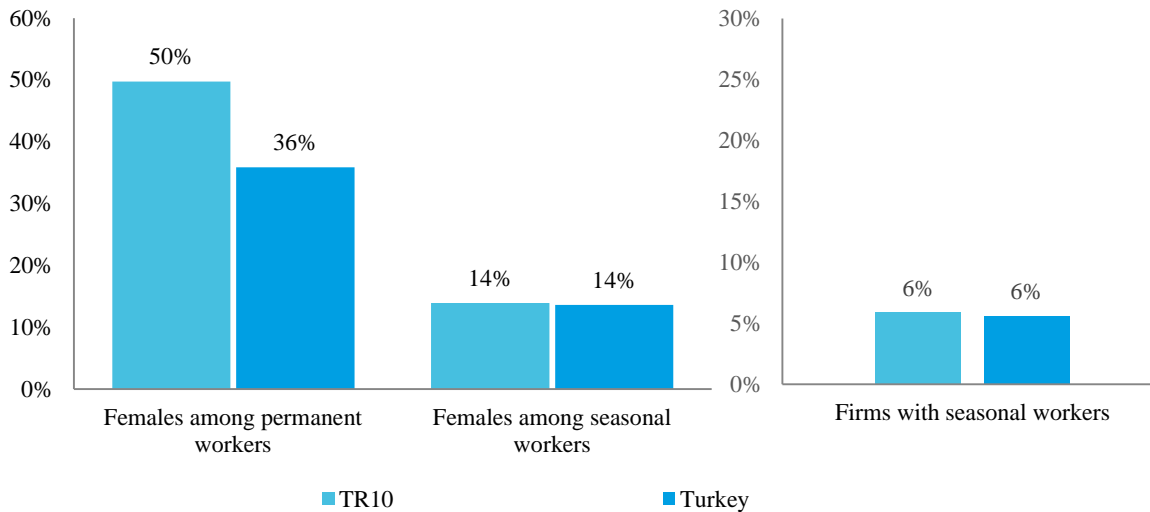
its growth for micro firms, those employing 4 or less workers, which as Figure 22 demonstrates is a substantial source of employment, both in Istanbul and Turkey in general.



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average 64 percent of permanent full-time workers that are female in Istanbul, with Turkey as a whole averaging at 64 percent.

Figure 24: Gender composition of workers, and seasonality of employment

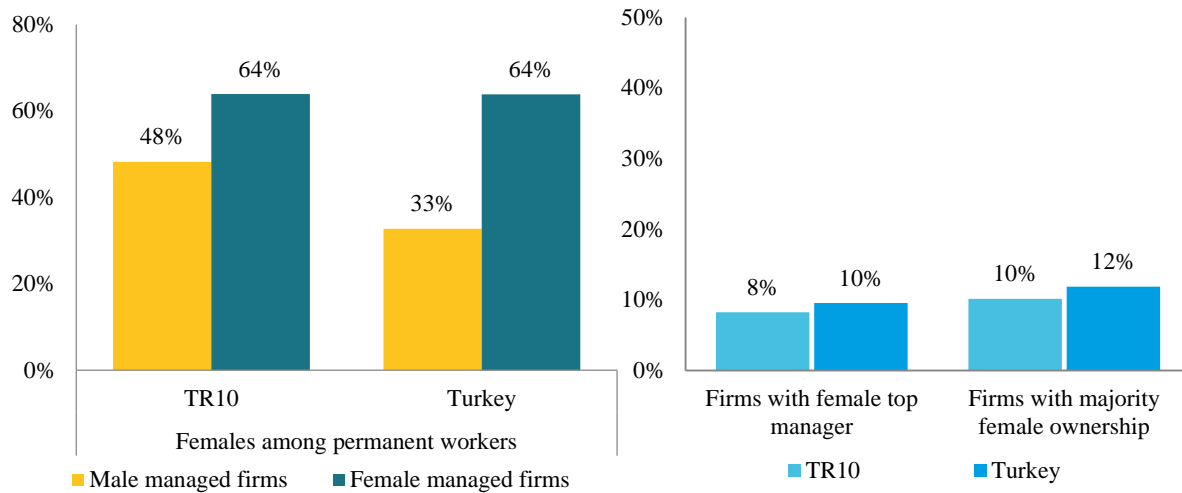


Creating the conditions to unlock women’s skills and expand their opportunities in the private sector is desirable for boosting shared prosperity and for promoting women’s economic empowerment. Besides female participation in the workforce, the R-ES provides two additional measures of female participation in the private sector: the percentage of firms run by a female top manager and the percentage of firms with female ownership. In Istanbul 8 percent of firms are managed by a female top manager as compared to 10 percent in Turkey (Figure 25). Gender inequality is similarly noticeable in the share of firms owned by females. Only 12 percent of firms in Turkey have majority female ownership while the number in Istanbul is even lower at 10 percent. The smallest firms, those with less than 5 employees, have the highest rate of female ownership, but even in this more favorable group only 13 percent of firms have majority female ownership. The services sector is usually considered as more friendly to women in terms of their employment as well as participation in management and ownership, but only marginally so in Istanbul: 8 percent of manufacturing and 11 percent of services firms have majority female ownership.



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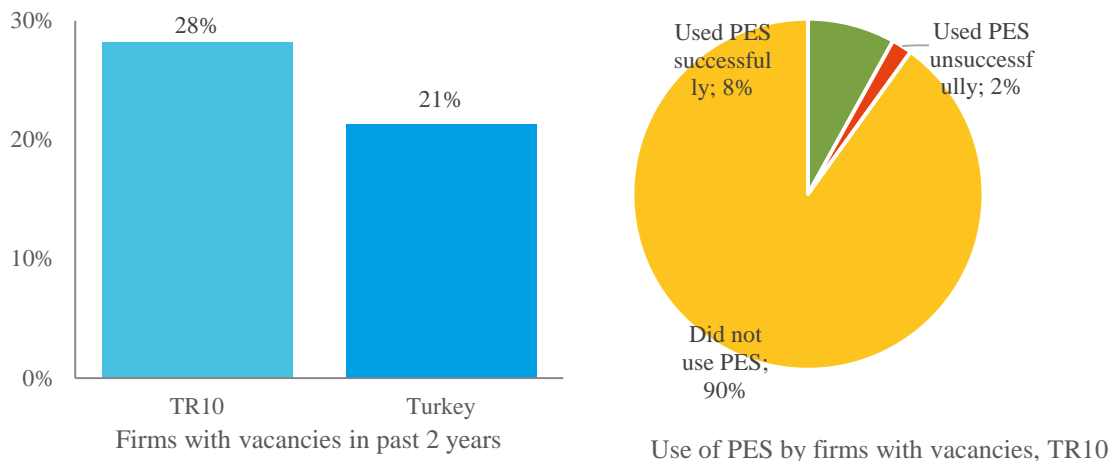
Figure 25: Gender of the manager and workforce and female ownership



An important determinant of the efficiency of the labor market is the availability of vacancies and the ease of filling them. Providing government services for the purposes of facilitating the process of matching between businesses and individuals via public employment agencies has a potential of increasing competitiveness of the entire economy. The R-ES asks firms whether they had vacancies in the last two years, whether they used public employment services (PES) to fill those vacancies, and whether their efforts were successful. Figure 26 presents this information.

As the left panel in Figure 26 illustrates, 28 percent of private enterprises in Istanbul had vacancies in the two years prior to the survey, a slightly higher percentage compared to the average for the whole country (21 percent). About 10 percent of them used PES to fill those vacancies, with a success rate of almost four to one. Overall in Turkey a bigger percentage of firms use the public employment services – around 20 percent, and more successfully (almost one to one).

Figure 26: Job vacancies and the use of PES to fill them





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To investigate the source of labor market frictions, the R-ES inquiries about the problems that firms experienced in the process of hiring two different types of workers: (i) managers or senior-level professionals; and (ii) non-production technicians, associate professionals, and sales workers. As Figure 27 shows, firms in Istanbul reflect similar struggles to other firms in Turkey when filling vacancies for either manager or non-managerial positions⁸. Seventeen percent of the firms in Istanbul that tried to hire a manager or other senior-level professional receive very few or no applications vs. an average of 30 percent of firms in Turkey. Attracting applicants to lower level vacancies seems somewhat more difficult: 42 percent of firms in Istanbul compared to an average of 37 percent of firms in Turkey receive too few or no applicants for these positions.

In Istanbul, requests for higher than affordable wages is the most frequently experienced problem in the process of hiring managers or senior level professionals: 59 percent of Istanbul firms undergoing this process faced applicants that demanded untenable wages. Applicants without the required skills was also cited as a problem when hiring managers and professionals in Istanbul. The request for higher than affordable wages is reported as the most frequent problem when hiring people for non-managerial positions (53 percent of firms in Istanbul and 49 percent on average in Turkey). With a lower percentage of firms being dissatisfied by the applicants' skills (30 percent in Istanbul and 39 percent in Turkey).

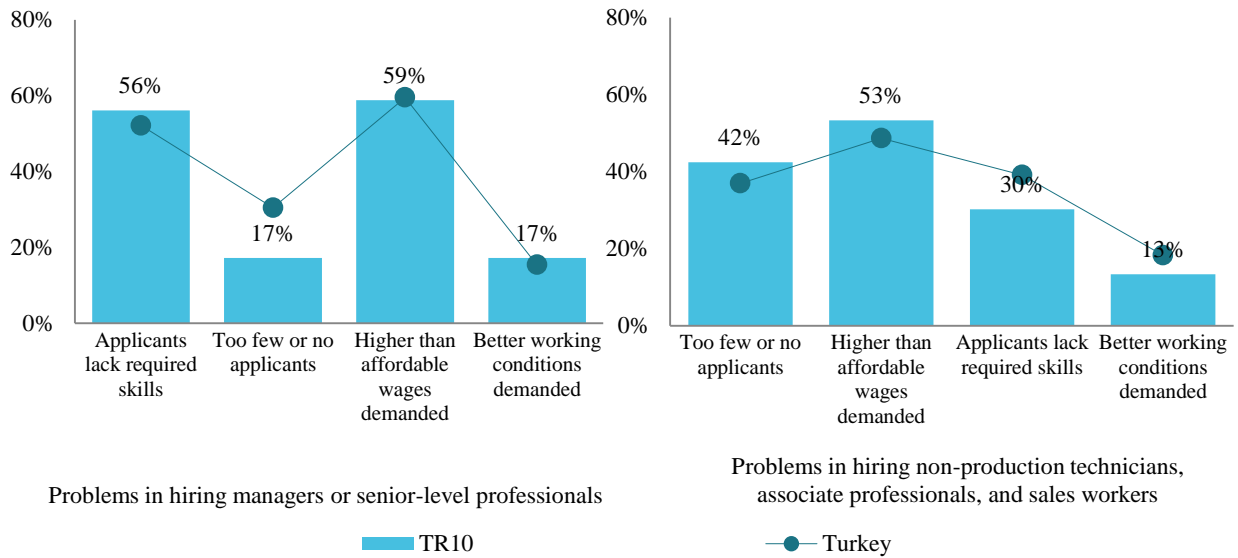
While it is unsurprising that better working conditions and higher pay improve the chances of finding highly qualified and motivated professionals at any level, Figure 27 suggests that firms in Istanbul exhibit a rather stark mismatch between the demands of job applicants and the resources of employers: 76 percent of firms trying to hire a senior-level professional were turned down by desirable applicants for the reasons of low pay or less than desirable working conditions. Similarly for non-senior level position, 66 percent of firms in Istanbul were asked for more wages or better working conditions than they could afford.

⁸ The analysis of the problems that firms experienced in the process of hiring managers or senior-level professionals and non-production technicians, associate professionals, and sales workers is based on a limited number of observations, based on having firms tried to hire workers in those categories. Nonetheless, results are presented as they may provide useful insights about skills mismatch. However, results need to be interpreted with some caution.



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Figure 27: Problems in hiring for managerial and non-managerial positions



3.6 Firms' Perception of the Business Environment

Most indicators in the R-ES are derived from survey questions that ask businesses for their actual experiences in dealing with the business environment. For example, “How many days did it take to get a permit?” or “How many hours did the power outage last?” The R-ES also includes a small number of survey questions asking business owners or top managers for their subjective opinions regarding the importance of various business environment elements.

For deeper understanding of business perceptions, the R-ES asks respondents to choose the specific element of the business environment that is the biggest obstacle to their operations. The business owners or top managers are asked to select the most important item from a list of 15 business environment obstacles. Figure 28 shows the frequency at which the various items are indicated as the top obstacle to the operations of businesses. For illustrative purposes, only the 10 most frequently chosen obstacles are presented.

As Figure 28 demonstrates, the most cited biggest obstacle to operation for firms in Istanbul and for an average firm in Turkey is tax rates: 30 percent of firms in Istanbul and 32 percent in Turkey report tax rates as being the biggest obstacle to their operation. Access to finance is the second most frequently cited biggest obstacles in Istanbul, reported as the most binding obstacle to operation by 25 percent of firms as compared to a lower 19 percent in Turkey. The third most cited obstacle in Istanbul is informal competition (16 percent of firms). Firms in Istanbul report obstacles in roughly the same order and magnitude as firms in Turkey as a whole.



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Figure 28: Top ten business environment constraints

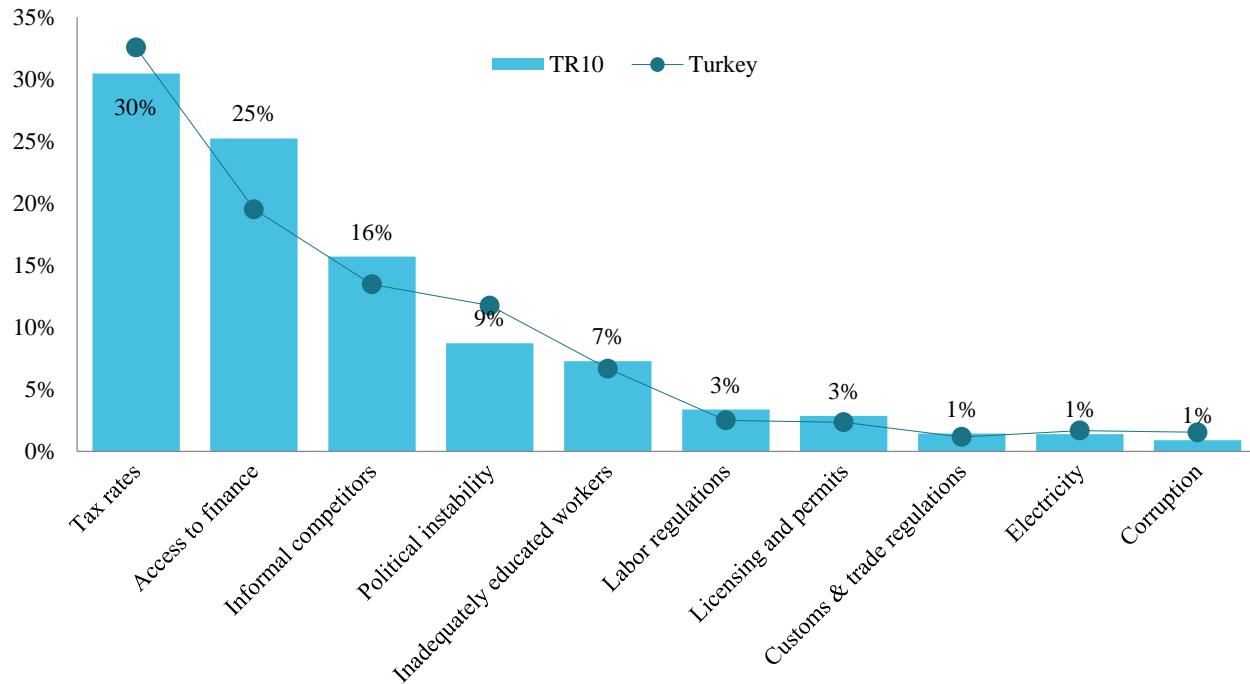
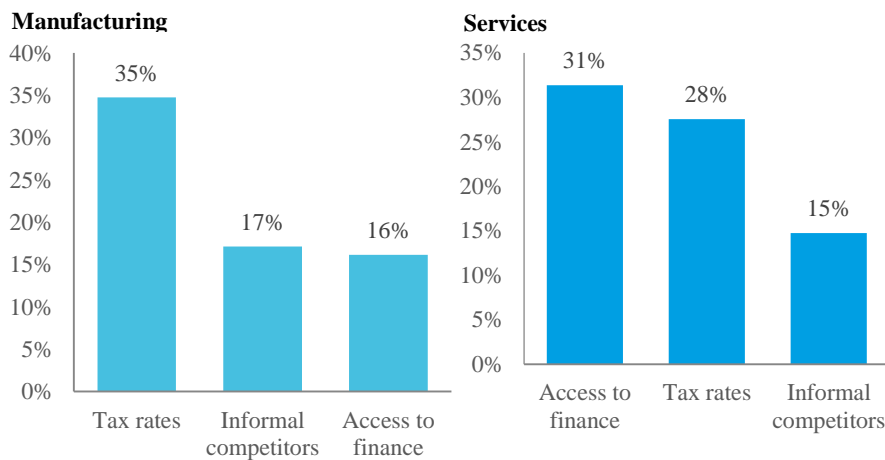


Figure 29 shows the top three obstacles by manufacturing and services firms separately. As firms from different sectors perform different operations, they may experience the business environment differently.

Figure 29: Top three business environment constraints by sector



As Figure 29 shows, tax rates are cited to be the most important obstacle most frequently by manufacturing firms while services cite tax rates less frequently. Access to finance is the most frequent obstacle cited by services firm and is cited roughly twice as often by services firms compared to

manufacturing firms (16 percent vs 31 percent). Both services and manufacturing firms cite informal competition as the top obstacle they face with similar frequency.

Figure 30 displays the top three obstacles by firms of various sizes, namely, micro (with 1-4 employees), small (5-19 employees), medium (20-99 employees), and large (100+ employees). In many economies, the perceptions of managers of large firms are very different from the perceptions of managers of smaller firms. This may be related to the



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capacity to navigate business environment obstacles: larger firms may have more options when facing obstacles but at the same time they may be more visible and more exposed to failures of the business environment.

Figure 30: Top three business environment constraints by size



Tax rates were chosen as their top obstacle by more micro firms (32 percent), small firms (29 percent) and medium firms (25 percent) than any other obstacle. Tax rates are a distant second-place obstacle for large firms who cite tax rates 16 percent of the time while indicating that an inadequately educated workforce is the top obstacle they face 40 percent of the time. Access to finance is frequently cited among the top obstacles facing everyone but the largest firms.

Some obstacles do repeat in the rankings of obstacles across the sizes of firms. In particular, informal competitors are frequently named as problematic by micro and small firms.



4. Productivity and Competitiveness

This and the following sections draw on data from the 2006-2014 Entrepreneurship Information System (EIS). This database is compiled and administered by the Ministry of Science, Industry, and Technology. The EIS enables a systematic analysis of the regional economy at the sector and firm-level. This database also allows a static as well as a dynamic perspective on the main economic drivers. The dataset includes information for most segments of the economy. However, it omits information on the banking sector, as well as on firms that either make purchases for less than 160,000 TL or have annual sales below 220,000 TL.⁹

4.1 Market Concentration

Competition motivates firms to improve what they do. Those that do improve grow and contribute to the economic development of the country and its regions. A good investment climate encourages firms to invest by removing unjustified costs, risks and barriers to competition. Because of the pressure to respond to competition firms innovate and improve their productivity, ensuring that the benefits of productivity improvements are shared with workers and consumers. Firms prefer to face less competition, not more. But barriers to competition that benefit some firms deny opportunities and raise costs for other firms and for consumers. They can also dull the incentives for protected firms to innovate and increase their productivity. High costs and risks can act as barriers to entry. Governments also influence barriers more directly through their regulation of market entry and exit and their response to anticompetitive behavior by firms.

The degree of market concentration offers insights on how much competition exists in the regional economy. *Ceteris paribus*, higher levels of market concentration suggest that firms may be able to exert market power. When a firm is allowed to exert its market power, it can thwart competition and impede development through an inefficient allocation of resources. Because of the importance of competition to the growth and development of a region, several complementary measures of concentration are taken into account to shed light on this issue (Annex 5).

At first glance, a few large firms with high turnover appear to play a significant role in the local economy. Throughout the whole period of analysis, the median turnover is eight to seven times lower than the average level. Yet, firms with high turnover do not dominate the market, as suggested by the low levels of Herfindahl-Hirschman Index (HHI). This is well below 0.15 during the entire period analyzed, 2006-2014. Markets tend to be classified as (i) un-concentrated if the Herfindahl-Hirschman Index (HHI) is below 0.15, (ii) moderately concentrated if HHI is between 0.15 and 0.25 and (iii) highly concentrated if HHI is above 0.25.

In historical perspective, the importance of large firms with high turnover has almost steadily increased since 2006. The global crisis left its mark on the economy, affecting mostly sales rather than employment. The distribution of firms' earnings changed in

⁹ Besides, firms without at least one employee registered to the Social Security Information are also excluded from the analysis, as they lack employment information.

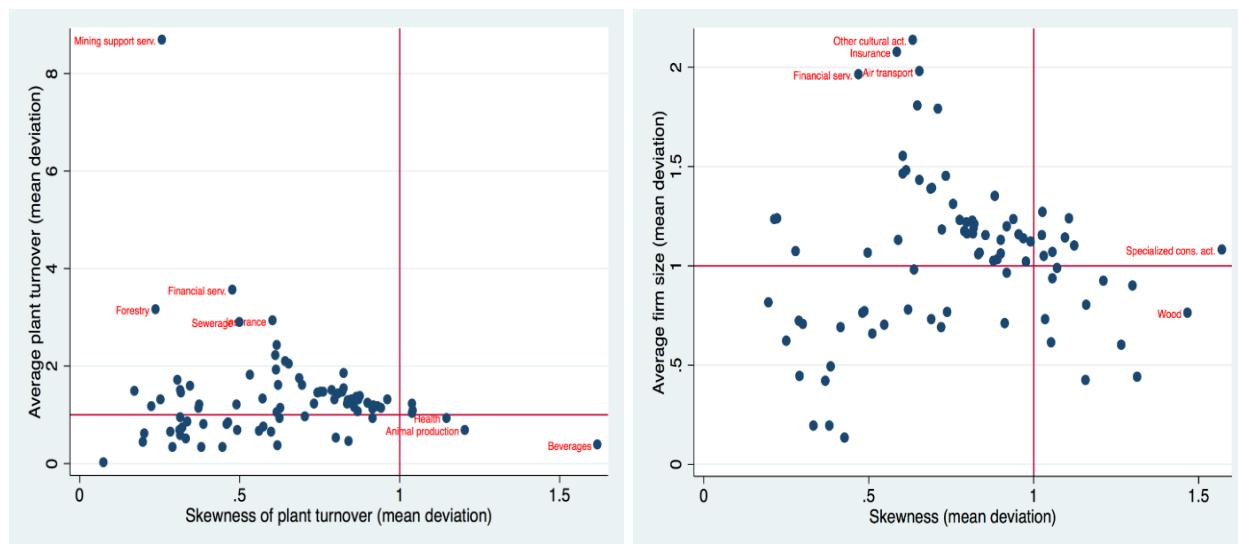


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2009, as firms with higher turnover acquired larger market shares. Conversely, the distribution of employment was mostly not unchanged.

Using sector-level firm-size distribution as an approximation of competition, certain sectors stand out as particularly prominent. For example, very large firms appear to play a substantial role the market for financial and insurance services. The sector shows the highest average turnover (21.5 million TL). It is characterized by limited variability in the composition of its firms, suggesting that several firms tend to be big earners. Management of consulting activities has the second highest average turnover (at a far distant from the top, 9.48 million TL), but smaller firms seem able to secure their niche markets. Manufacturing of wearing apparel has the highest average employment level (more than 20 people per firm). The sector shows substantial variation in its composition, with small firms able to coexist next to large ones. This heterogeneity in the employment composition within each industry is shared by all the top 5 sectors in the region.

Figure 31 Degree of competition in a given sector



Source: Entrepreneur Information System

A graphic representation of the firm-size distribution provides a synthesis of the degree of competition that likely exists at the sector level. This representation also provides a look at the relationship between above average turnover in a given industry and whether there are a few or a number of highly productive firms. Figure 31 plots a measure of dispersion (skewness) against a measure of centrality (average) for each region-industry group.¹⁰ The red lines correspond to the axes. The left panel of Figure 31 displays turnover, while the right panel represents employment. In either case, the dots shows the lack of a common pattern across sectors. With respect to turnover, the differences in firms' distribution are particularly stark in the case of mining support services and

¹⁰ As the sectorial distribution of turnover and employment do not tend to be symmetric, it is preferable to refer to the skewness rather than standard deviation for a proxy of dispersion. For an industry-neutral interpretation of the results, the values are transformed relative to the mean value of the corresponding indicator for each industry across all Turkey regions.



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manufacturing of beverages. Most of the firms operating in the former sector tend to generate high turnover. Conversely, only few strong performer are present in the latter. Regarding employment, the insurance and financial services industries tend to be large employers, while manufacturing of wood is mostly populated by small firms and few selected large ones.

4.2 Emerging and High Performance Sectors

Next, documenting the presence of high performing firms complements findings about the local market structure and competition, and provides indications about new and emerging economic dynamism. Using the OECD definition for gazelles, high performers are defined as young, high-growth firms. Gazelles are firms up to five years old with average annualized growth in turnover greater than 20% per annum, over a three-year period.

Young, high-growth firms can be notable contributors to employment. According to a recent survey of nearly 50,000 firms in 104 countries, SMEs provide as much as two-thirds of all employment, with small firms contributing more to employment in low-income countries than high-income countries. Cross-country research also suggests that small and young SMEs are the net job creators in many countries. Recent research (Haltiwanger 2010; Zarutskie 2013) finds that startups account for a significant portion of job and productivity growth and younger firms disproportionately hire young employees. These findings suggest that policymakers should be promoting start-ups and fast growing young firms (gazelles) to achieve strong employment outcomes

To sustain job growth, productivity growth for SMEs will be important. Research shows that growth and productivity among SMEs varies widely from country to country. While over a life cycle of 40 years, an average firm in the U.S. grows by 7 times its initial size, it grows only 2 times its initial size in India. Such a difference in growth and productivity translates into missed opportunities in increasing the GDP per capita in countries where SMEs face growth constraints. Both business environment (the regulatory environment that governs the cost of doing business) and firm-specific factors (entrepreneurship, skills, access to credit and markets) tend to affect the life-cycle growth profiles of firms in different countries.

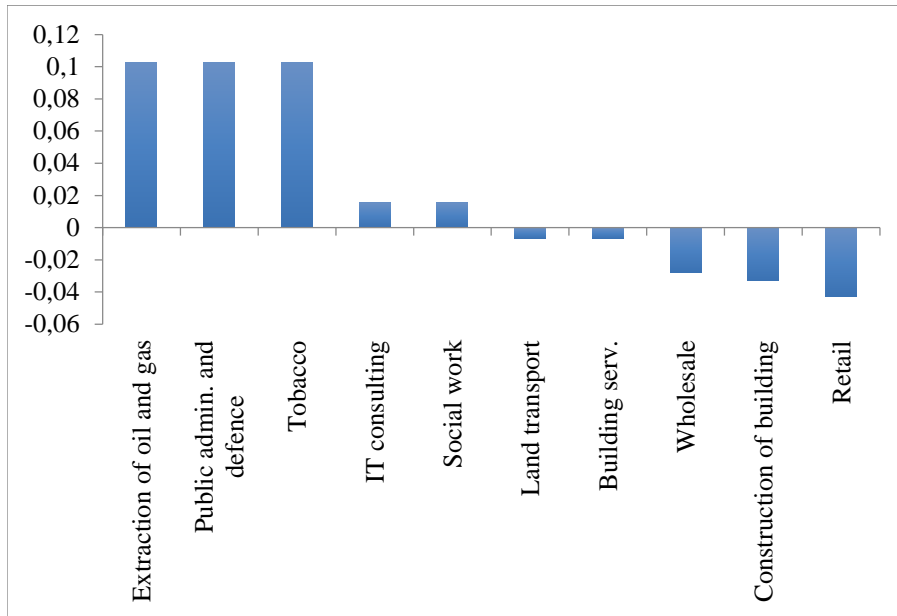
The issue of how young, growing firms contribute to economic development is particularly important for Turkey as it exhibits the highest start-up ratio among 16 OECD countries.¹¹ This is good given that start-ups are net job creators and particularly so in Turkey with respect to comparator countries. Furthermore, should start-ups survive and manage to grow their contribution to overall growth increases. However, start-ups in Turkey exhibit below average survival rates and post entry growth rates which points to a missed opportunity.

¹¹ Austria, Belgium, Brazil, Costa Rica, Denmark, Finland, Hungary, Italy, Luxembourg, The Netherlands, Norway, New Zealand, Portugal, Spain, Sweden and Turkey



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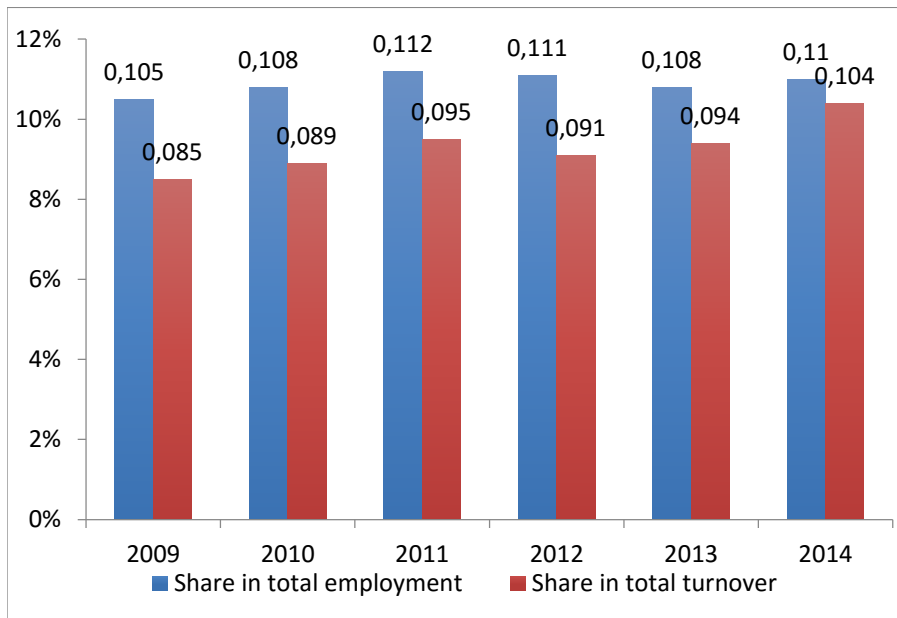
Figure 32 Top 5 most and least likely sectors with gazelles



Source: Entrepreneur Information System

In this sub-region, gazelles are most likely to be present in sectors like extraction of oil and gas, public administration and defense, manufacturing of tobacco products (Figure 32). They are also present, but to a lesser extent, in computer programming and related consultancy as well as in social work activities without accommodation. Conversely, high performers are least likely to be in wholesale and retail trade as well as construction. Industries that provide sizeable contribution to the region's turnover and employment are not likely to encourage the development of champions.

Figure 33 Share of gazelles in region's total turnover and total employment





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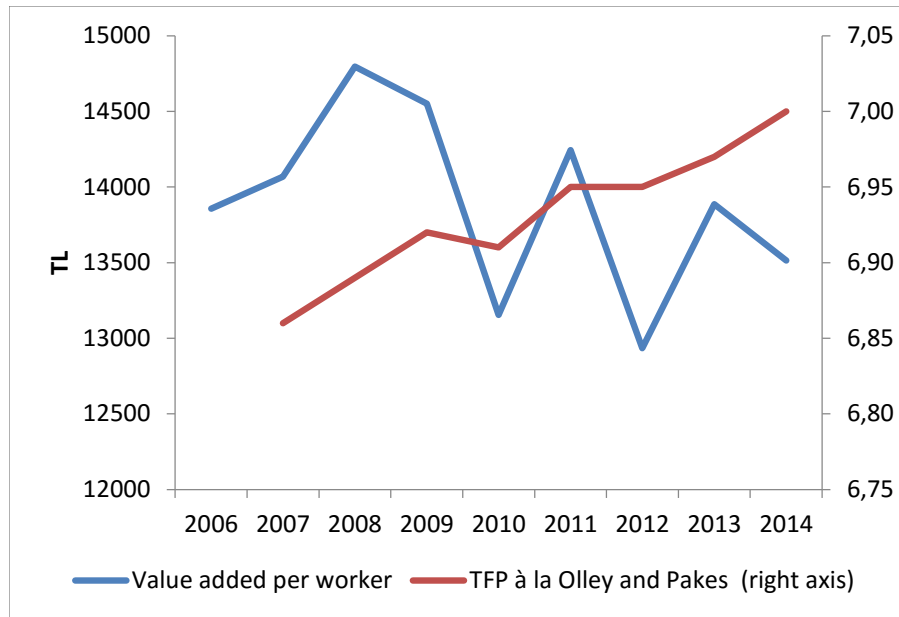
Source: Entrepreneur Information System

A historical perspective of aggregate data suggests a sizeable contribution from gazelles to the local economy. Since 2009 gazelles have contributed at most to 10.4% of total turnover (2014) and 11.2% of total employment (2011). Over the years, their share in total employment has remained constant, while their share in total turnover has mildly increased. To put things in perspective, the relevance of gazelles in sub-region TR10 is far stronger than that of the gazelles in the median region in Turkey.

4.3 Regional Productivity

Productivity is one of the main drivers of long-term economic growth. The ability to improve local standards of living over time depends almost entirely on raising the level of output per worker (Krugman, 1994). A wide array of measures is available to capture the multiple dimensions of productivity. Annex 6 provides a detailed analytical description of the various instruments used. Irrespective of the indicators used, a good understanding of past and current productivity trends provides insights on the efficiency of the local economy and the ability of local firms to compete.

Figure 34 Regional averages of selected productivity measures



Source: Entrepreneur Information System

Value added per worker offers a basic but effective summary of the degree of labor productivity across all sectors in the economy. The situation in TR10 did not improve over time, hovering between 12,934 and 14,796 TL per worker. The evidence on gross output per worker yields similar results. For a more complete picture of regional productivity, total factor productivity (TFP) or aggregate

productivity, takes into account not only labor but also capital inputs. However, it is important to acknowledge that the measure is applicable only to the manufacturing sector. TFP rises steadily over the period of analysis suggesting that service sectors are more likely responsible for the lack of productivity improvements.

4.4 Productivity and Dynamics

A more disaggregated and dynamic analysis of productivity provides additional insights on how firms reallocate resources, improve efficiency, enter and exit the market.

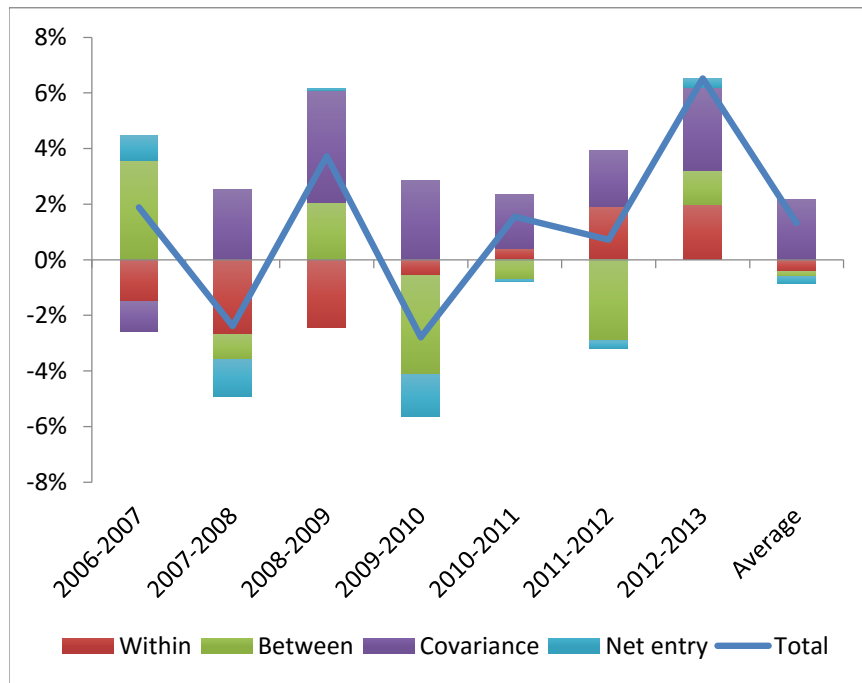


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Understanding how productivity across firms drives the reallocation of output, workers and capital from worse to better performing firms is key to shedding light on the implications for aggregate, regional productivity growth.

Against this backdrop and drawing on the methodology originally suggested by Foster, Haltiwanger and Krizan (2001), firm-level data is decomposed into the following four components of productivity growth: (i) productivity gains that stem from changes within existing firms (the “within” effect) where firms become better at what they do, (ii) gains in aggregate productivity that stem from higher relative growth of firms with higher productivity-levels (the “between” effect), (iii) gains in aggregate productivity that stem from the reallocation of resources across existing firms, when high-productivity-growth firms gain market share (the “covariance” effect) and take it away from lower performing firms whether the market is growing or not, and (iv) firm turnover, when the entry of new, more-productive firms and the obsolete firms exit (the “net entry” effect).¹²

Figure 35 Aggregate productivity (TFP) growth decomposition



Source: Entrepreneur Information System

either less productive firms enter the market or more productive enterprises cease their operations. Annex 8 provides a more complete, technical discussion of how these measures of productivity dynamics were compiled.

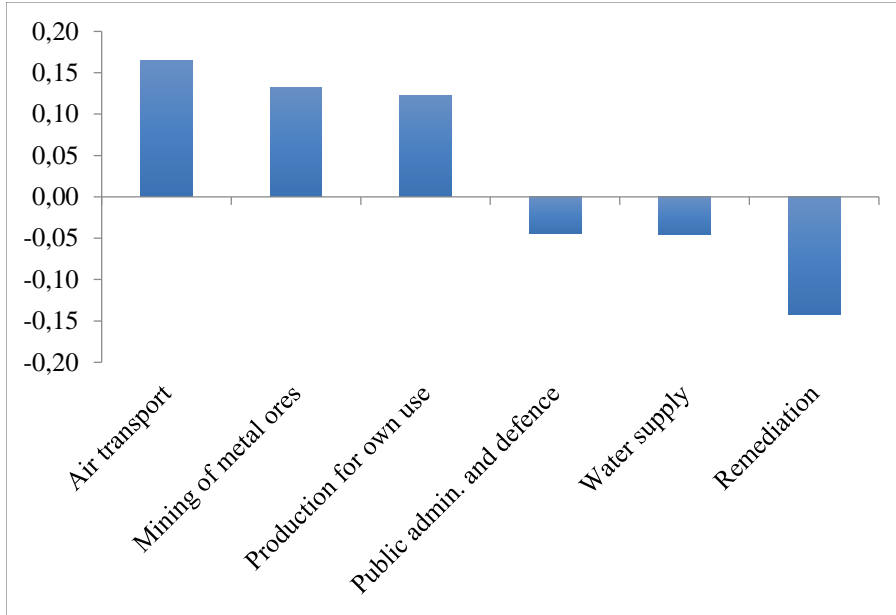
Figure 36 Top and bottom 3 sectors in terms of the allocative efficiency of value added per worker

Results for TR10 show that limited average aggregate productivity improvements over time is mainly explained by a positive “covariate” component. This suggests that firms with above regional average productivity growth have gained more weight in the economy. Over the period considered, it is more frequently observed that net entrants lower aggregate productivity, suggesting that

¹² Interested readers may refer to Annex 7 for additional technical details.



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Source: Entrepreneur Information System

What these dynamics show are the underlying sources of productivity growth. In a healthy economy, firms are continuously looking for ways to reduce costs. In this quest, some succeed and some do not. When a firm succeeds, a healthy economy will allow that firm to grow and draw resources away from those firms that did not succeed in being more productive. The movement of the

factors of production and market share to successful firms and away from less successful ones is often referred to allocative efficiency of an economy or sector. Therefore, allocative efficiency is an important benchmark in the functioning of an economy or sector. Because of this importance, the following analysis compares allocative efficiency across sectors in the region.

Air transport shows the highest allocative efficiency, appearing as the sector with the most efficient allocation of resources. On the other side of the spectrum, resources do not appear efficiently allocated in remediation activities and other waste management services.

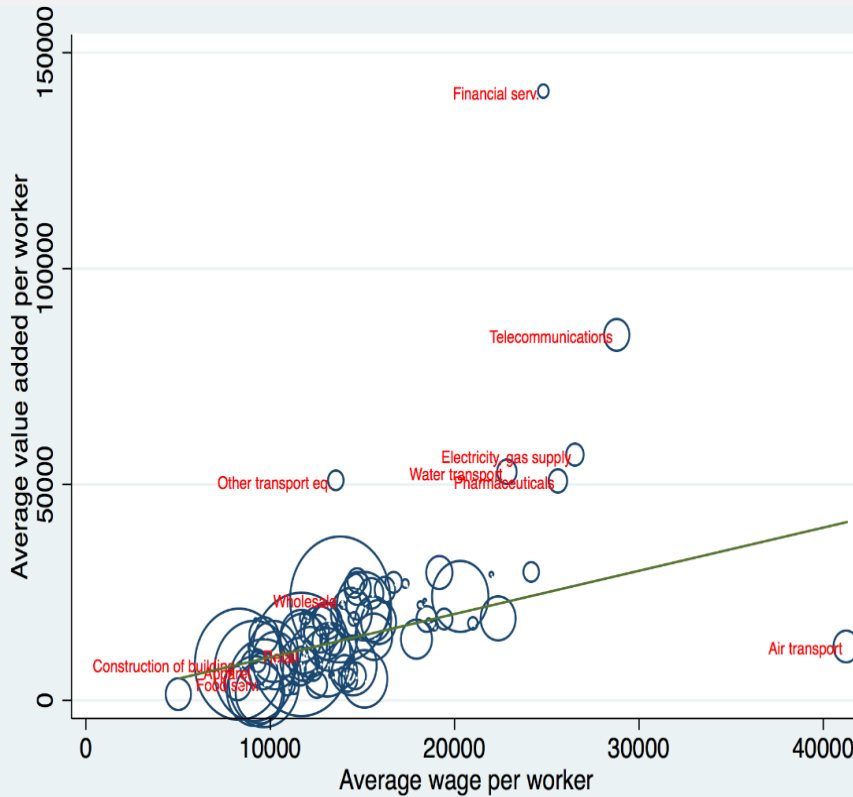


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BOX 1. EMPLOYMENT: FEATURES FROM THE ENTREPRENEUR INFORMATION SYSTEM

Wholesale and retail trade, manufacturing of apparel, construction of buildings, and food services are the top five sectors for employment. Financial and insurance services show the highest value added and gross output per worker, almost twice as high as the regional average. This sector has also the highest unit labor cost, and the second highest average wage per worker. This suggests that supplying financial and insurance products requires qualified productive staff able to command high wages.

Figure 37 Correlation between wage and value added (2014)



Sectors may differ not only in terms of their contribution to employment creation but also with respect to the degree of competitiveness of their respective labor markets. Figure 37 helps to shed light on the latter. It plots a measure of labor productivity (value added per worker) against wage, taking into account the level of employment in each sector. Scatters dots tend to be closer to the 45° (green) line indicating that sectors lean towards being competitive. Notable exceptions are air transport where workers command a salary above their average value added, and financial or telecommunication services where the opposite happens.

Source: Entrepreneur Information System

Note: bubble size proportional to employment, monetary values are in TL.

towards less or more productive sectors. To this end, labor productivity growth is decomposed in two main factors: (i) the contribution to productivity growth from within-sector productivity increase and (ii) the contribution from structural change, i.e. the reallocation of labor from low to high productivity sectors (Annex 9)

Further analysis is needed to assess whether employment is moving

Figure 38 Sources of labor productivity growth



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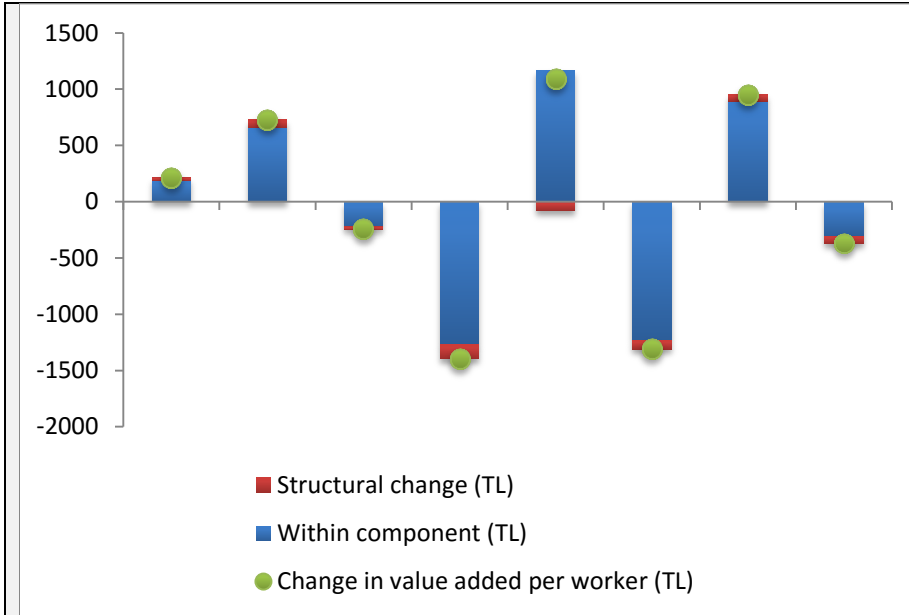


Figure 38 shows different sources of labor productivity change for each year. Value added per worker declined from 2006 to 2014, even though it recovered from the deepest fall in 2009 and 2011. Throughout the period under exam, the structural change component in the region's economy is negligible in size, while the within component has played a more substantial role. This implies that labor productivity growth episodes were driven mostly by labor reallocation from low to

Source: Entrepreneur Information System
high productivity firms within the same sector.



4.5 Trade

An economy that is open to trade allows its business to have access to possibly better and less expensive inputs, new production and management techniques, new and emerging technologies and all kinds of goods and services that support productive activities. While businesses may not like it, competition from outside competitors keeps them in constant search to do things better than before. When successful, this search to do things better makes an economy grow and be more productive. In sum, these are a number of economic advantages for business to have access to outside markets than those in the immediate area and for outside markets to have the opportunity to compete for customer in the region as well. For these reasons, trade (both domestic and international) is the next focus of analysis. The section takes a look at the trade both at the regional and the firm level. At the regional level, first focus is on evolution of exports of the region and the region's trade openness. Then, it looks at exports with respect to sectors as well as with respect to technology content. In order to identify the sources of export growth the section also includes looks at the intensive and extensive margins of export growth. At the firm level, the section takes a look at export destination and exporting density. Furthermore, it establishes a link between the size and age of a firm and its export destinations. The section concludes by looking at the survival rate of exporting status for firms.

4.5.1 Trade Performance of the Region

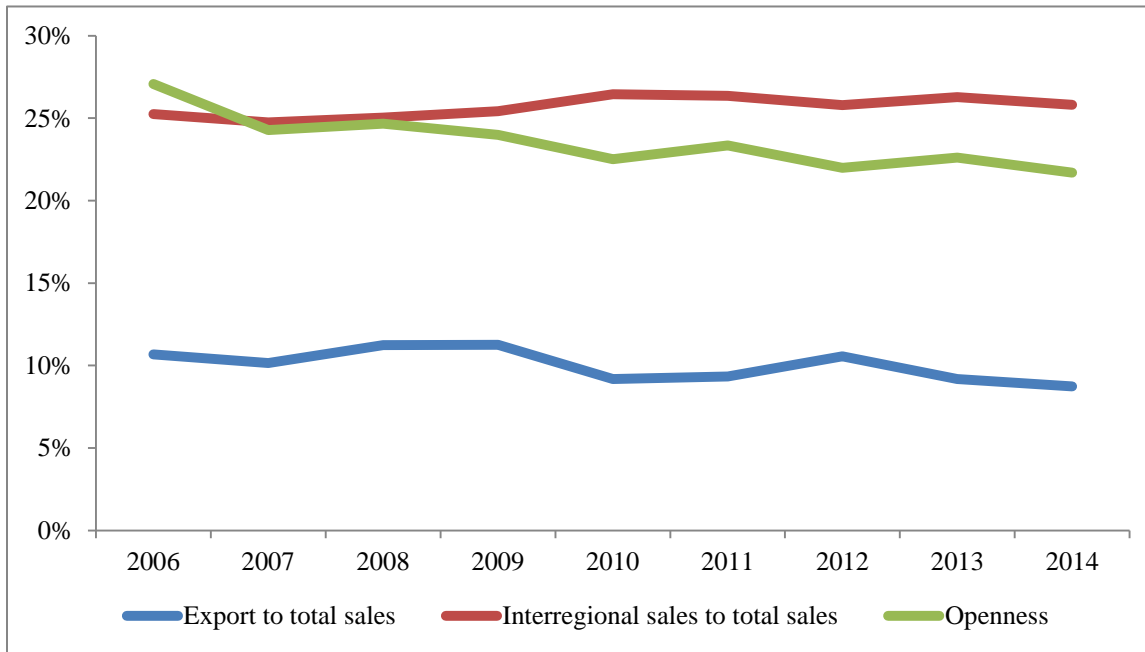
Over the years covered by the data available, the region's trade openness with international markets has declined steadily but trade with regional markets has increased in its importance. Trade openness, measured as the share of total value of international exports and imports to the total sales, has declined from 27% in 2006 to 22% in 2014. The regional markets are more important to the region than international markets. The region exports more to its regional market than to the international market. The total exports, as a share of total sales, is around 10% whereas the sales to other regions remains at 25% of total sales (Figure 39). After the financial crisis, the share of international exports dropped slightly whereas the share of interregional exports increased as international export partners reduced their demand for goods from TR10.

Istanbul has strong logistic and trade links with international and regional markets. The region has two airports (Ataturk and Sabiha Gokcen) that are important for cargo planes and two international seaports (one in European side, one in Asian side). The Bosphorus Strait links Marmara with Black Sea, with approximately 132 ships passing through each day by 2012. There are two bridges linking Europe and Asia (Bosphorus Bridge and Fatih Sultan Mehmet Bridge), heavy load vehicles pass through Fatih Sultan Mehmet Bridge (IDA, 2014a). Yavuz Sultan Selim Bridge has been just opened on August 26, 2016. Regarding Istanbul Grand Airport, the first phase is expected to be completed by 2018. When all phases are finished and the airport is fully functioned, it will serve 150 million passengers per year.



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Figure 39 Share of exports in regional gross value added and region's trade openness



There has been a large change in two of the top exporting sectors

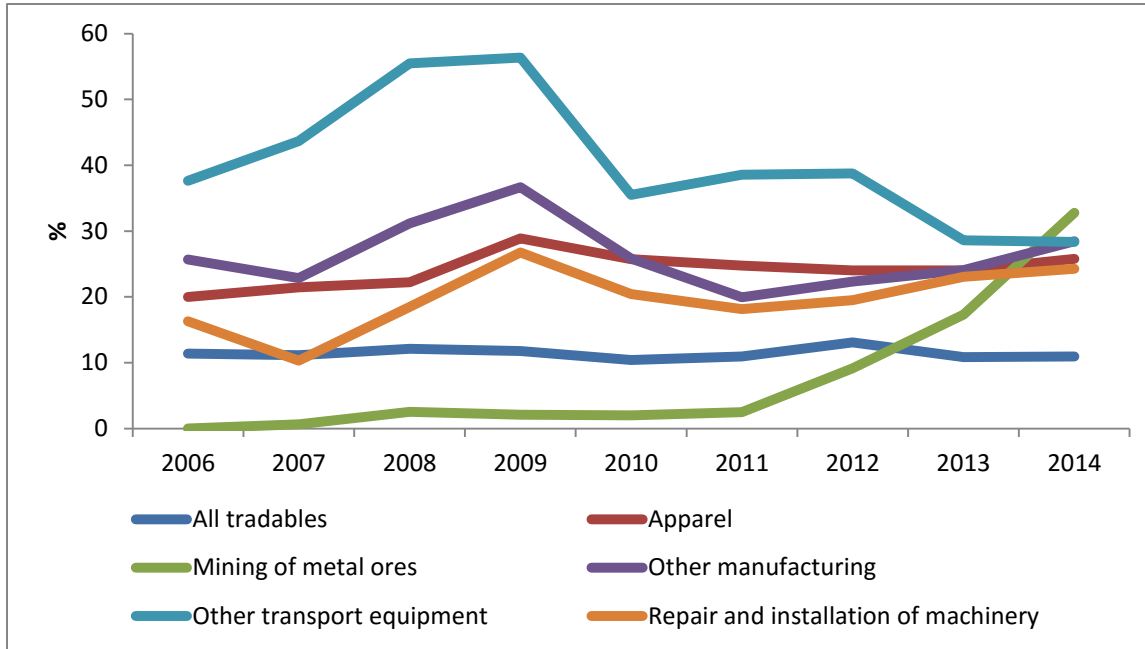
Source: Entrepreneur Information System, TurkStat

tors: the “mining of metal ores” and the “other transport equipment” sectors (Figure 40). There has been a large decline in the contribution of exports to turnover in the “other transport equipment” sector, consisting of ships, boats, railway locomotive, and military vehicles since 2009 where exports has a peak contribution of 56% to turnover in that sector to 28% in 2014. The mining sector overtook the other transport equipment sector and had the largest contribution to turnover in 2014 at 33%. The swap in ranks between these two sectors indicates that the region might be moving down the value chain as international demand shifts from sectors that use metals to sectors that provide the basic metals. The exports to turnover ratios in the other three sectors have remained fairly constant over the last decade.

Figure 40 Contribution of exports to turnover (2006-2014, region and top 5 sectors)



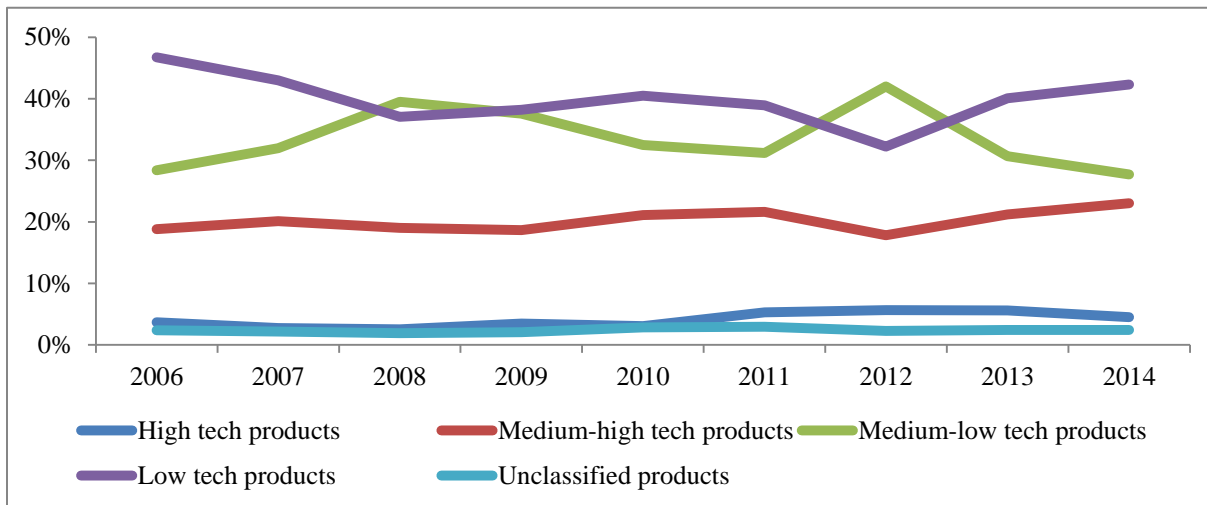
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Source: Entrepreneur Information System, TurkStat

Correspondingly, the technology intensity of the region has shifted from medium-low tech products to low tech products. A larger proportion of the region’s exports is medium-low tech and low tech products. Over 70% of exports are medium-low tech and low tech products over the years, with low tech products increasing its share of exports since 2013 (Figure 41). The exports of high tech products has remained low at 5% over the years.

Figure 41 Technological classification of exports



Source: Entrepreneur Information System, TurkStat

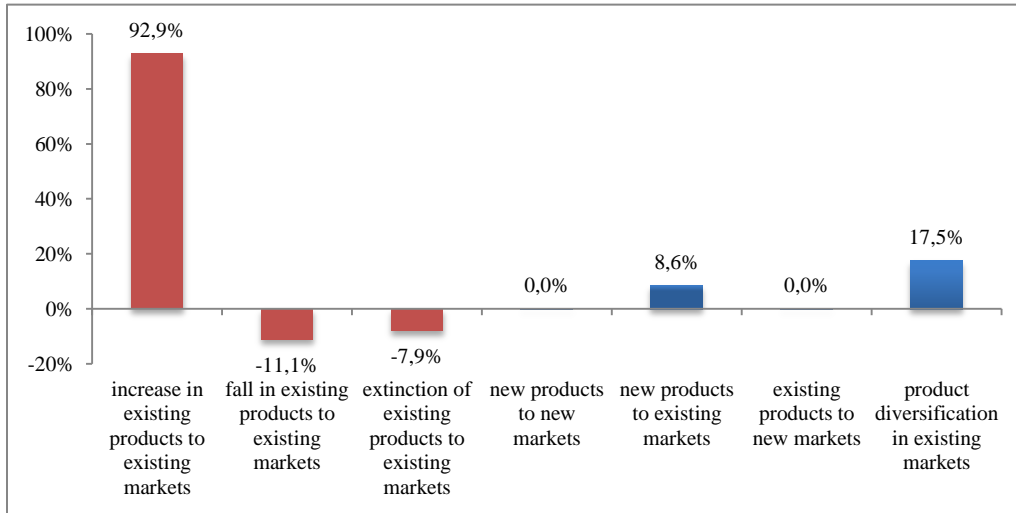
Note: the products are classified by the technology according to an OECD definition



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Export growth can be disaggregated into different components that relate to how much the region is exporting in existing product categories and existing markets (intensive margins) and how much the region is exporting in new product categories and new markets (extensive margins). Export diversification, both in terms of product and geographical location, has been one of the major goals for the government and TIM (Turkey Exporters Assembly), especially after the slowdown in the EU region and the increased geopolitical risks in the Middle East and Northern Africa region.

Figure 42 Decomposition of export growth into extensive and intensive margins



Source: Entrepreneur Information System, authors' calculations

Most of the export growth is attributed to the increase of existing products to existing markets but the region has also been successful in diversifying its product mix in existing markets (Figure 42). 93% of the export growth is explained by increase of existing products to existing markets but there has also been a fall and extinction in the exports of existing products that caused a 19% decrease in exports. As a result, existing products explained a net effect of 74% increase in the region's export growth. The region is also successful in product diversification in existing markets, which accounts 17.5% of the export growth. Finally, 8.6% of the export growth is coming from exporting new products to existing markets.

There is not been changes in the geographical diversification of exports from Istanbul region.¹³ The geographic concentration of the region's export is at similar levels in 2006 as in 2014. The region has the highest share of trade with Turkey's neighbors in Europe and Middle East. In 2014, the top export destination of TR10 was Germany which captured 10.5% of the trade shares and an export value of TL 12.31 billion. Neighboring countries in Europe also received a large share of the region's exports in 2014, with the United Kingdom capturing 6.9% of export share, France with 4.3%, Russia with 3.4%, Italy with 3.6%, and Spain with 3%. The other countries in the top 10 export destinations in 2014 were Iraq, Iran, the UAE and the US. The countries in the top 10 export destinations remained similar from 2006 to 2014: Germany has remained the

¹³ The geographical diversification is calculated using the Hirschman-Herfindahl index.



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top export destination in 2006, 2010 and 2014. Netherlands and Romania were in the top 10 export destinations in 2006 but was replaced by Iran and Iraq in 2014.

Figure 43 Share of TR10 partners in international exports

(Figure 43 to be inserted once the data are obtained)

The pattern of domestic regional trade partners for TR10 remained stable from 2006 to 2014. TR51 region (Ankara) attracts around 15% of the total interregional sales of the TR10 region. This is followed by TR42 region and TR31 region, attracting around 12% and 10% of the total interregional sales of TR10. TR52 region was in the top 10 partners of TR10 in 2006 but were replaced by TR83 region in 2014.

There is not much changes in the product diversification for Istanbul's exports.¹⁴ The product mixes of the international and regional exports are fairly stable over time. The top sector for international exports in terms of its share in total international exports of the TR10 region is the textile and apparel sector that exports "Articles of apparel and clothing accessories, knitted or crocheted" in 2006, 2010 and 2014, with an export share of 13.3% in 2014. The other top two exporting sectors take up 15% of export share in 2014. While the top 10 products changed slightly over the years, the textile and apparel and the iron and steel sectors dominated TR10 region's export portfolio. The top sector for regional exports in terms of its share in total interregional sales was the wholesale industry followed by the management consulting and retail trade sectors in 2006, 2010 and 2014, indicating the importance of TR10 as a service provider to other regions in these sectors.

4.5.2 Export Performance of the Firms

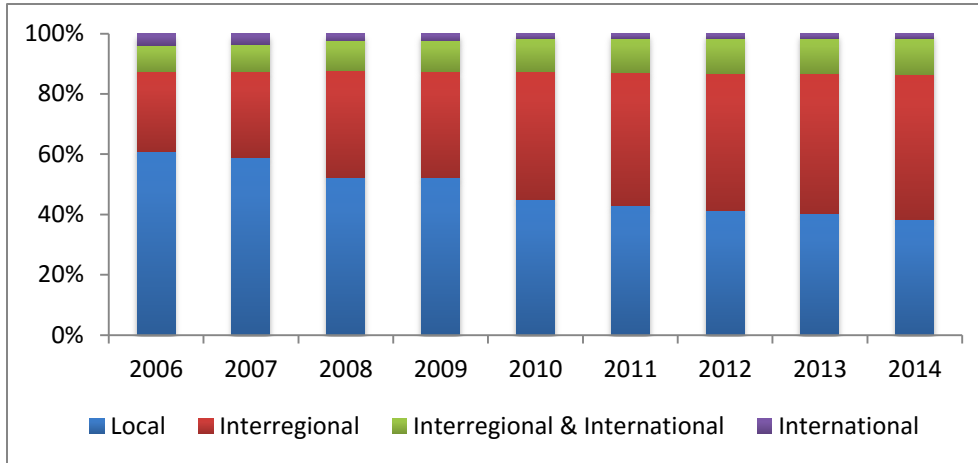
There are substantial costs to trading across regional and national borders. Firms may not know the export market and have to incur costs setting up the trade connections and finding the appropriate customers and suppliers. The trade costs is usually higher for international markets than regional markets, where there is a lack of market information and language barriers. Thus, naturally more firms in the region sell locally and regionally than internationally (Figure 44). More than 60% of the region's firms traded locally or within the region itself in 2006, but this ratio has decreased below 40% by 2014. The largest increase are among the firms that extended their trade relations to interregional destinations. The share of firms trading internationally has reduced slightly from 3.8% to 1.5% over the same period. More than half the firms located in Istanbul deal with either interregional or international trade or both.

Figure 44 Proportion of Exports by Destination

¹⁴ Product diversification is calculated using the Hirschman-Herfindahl Index.

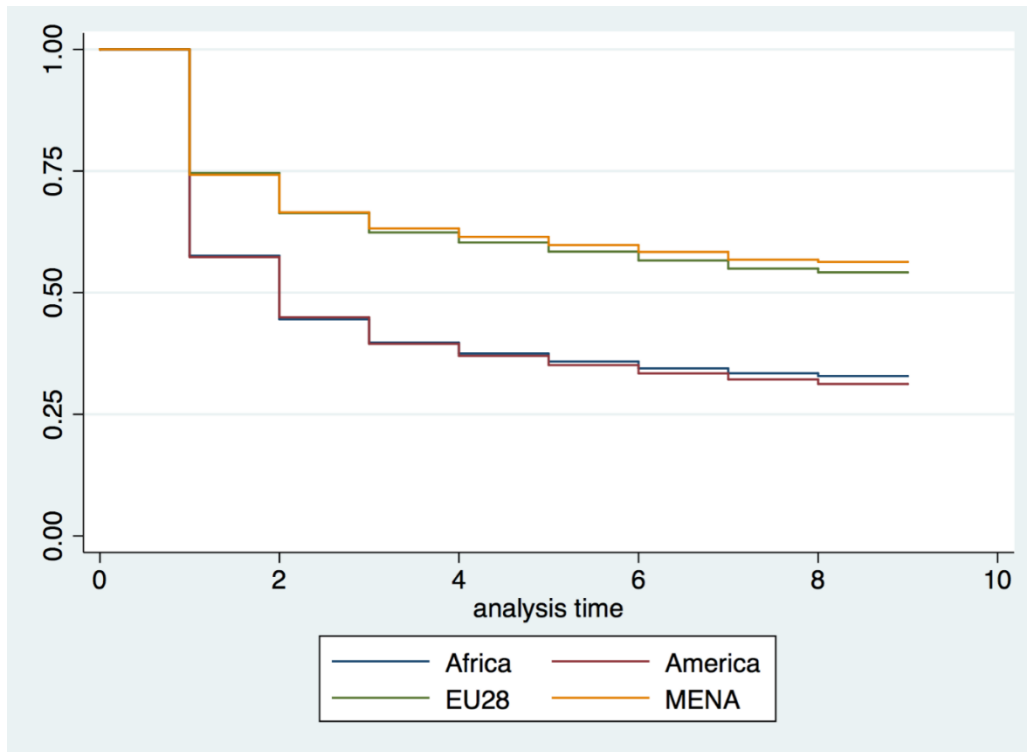


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Source: Entrepreneur Information System, TurkStat

Figure 45 Survival rates for firms' exports by partner region



Source: Entrepreneur Information System.

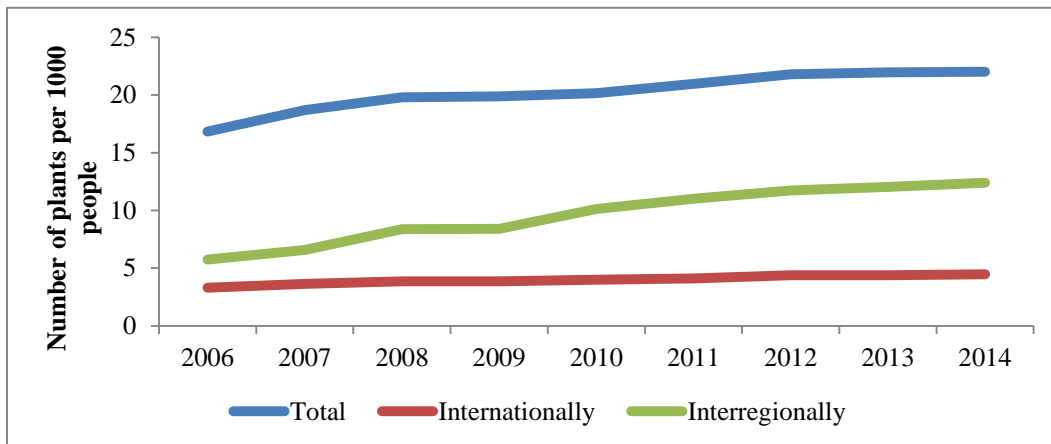
Note: Estimated using the Kaplan-Meier analysis.



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There are large costs and risks associated with exporting so firms are likely to stop exporting over time. The firms in the region have above than average survival rates in the export markets compared to all firms in Turkey: the average length of an export spell for Turkey is 2.65 years, whereas it is 3.50 for this region. Over 32% of the firms that are exporting to international markets are likely to disappear after the first year of exporting and 47% of the exporters is estimated to survive at the end of the analysis period, which is significantly higher than the average survival rate of 33% for all of the regions.¹⁵ Firms in the region are more likely to remain exporting are those that are exporting resource intensive products and exporting to the EU and MENA region. The exporters of resource intensive products show better survival performance than exporters of low skill, and high skill technology intensive products, but not the medium-skill and technology-intensive products.¹⁶ There is a significant difference between the export survival rate in Africa and America and the EU and MENA regions: the length of exporting to Africa and America is significantly lower than to MENA and EU. By the end of the sample period, while about a half of the exporting firms remain exporting to EU28 (54.2%) and MENA (56.3%), less than a third of the exporting firms remain exporting to Africa (32.8%) and America (31.2%) (Figure 45).

Figure 46 Plant Density by Exporting Status



Source: Entrepreneur Information System, TurkStat

¹⁵ The analysis considers the firms that are exporting at the start of the time period and examines how many of them remain exporting at the end of the time period. The percentage of firms that remain exporting is the survival rate.

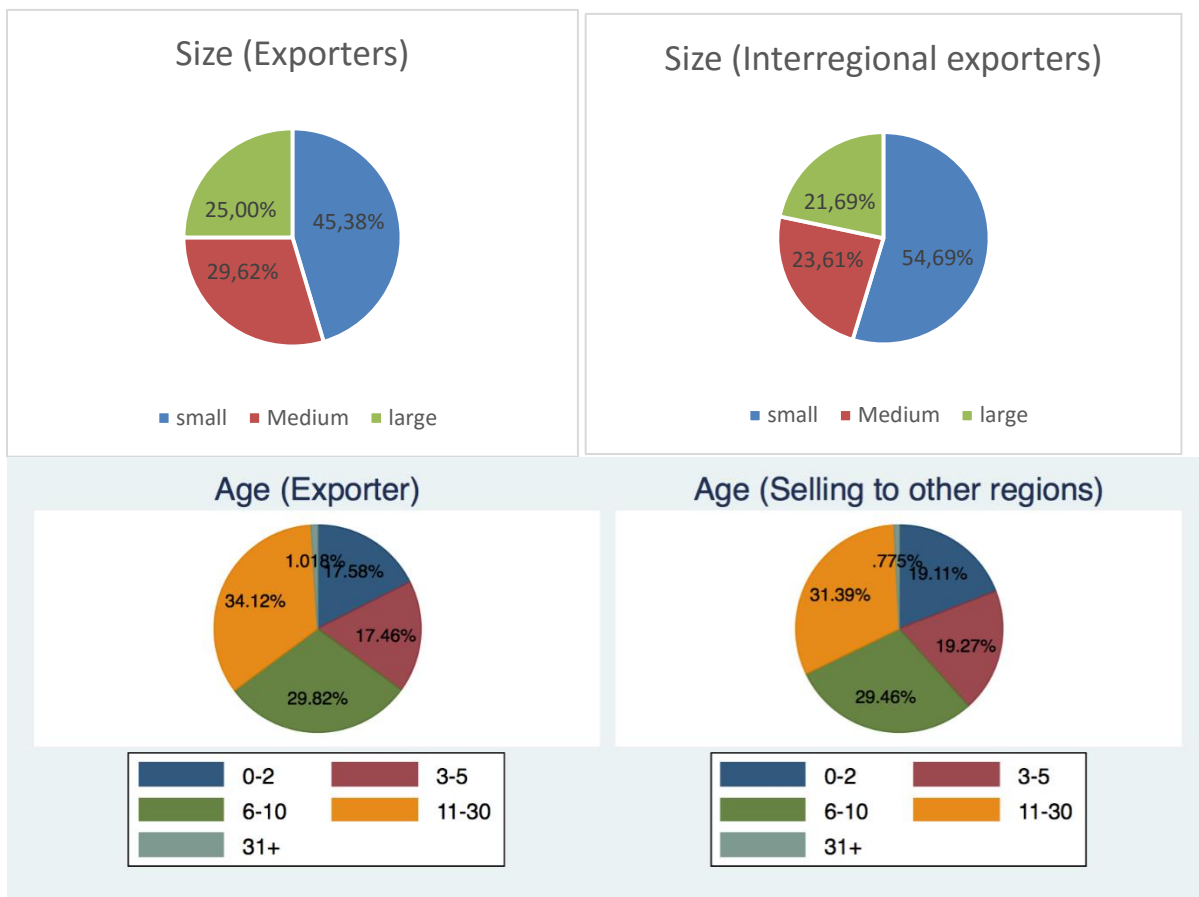
¹⁶ The products are classified into six categories using UNCTAD skill and technology product groups according to Basu, S. R., & Das, M. (2011).



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There is a steady increase in trade activities of firms in the region, with the increase driven mainly by those that export to other regions. Among all the 26 regions, Istanbul has the highest plant density, which is defined as the number of plants per 1000 people. There is a significant increase in plant density from 16.8 to 22 between 2006 and 2014. The tradable sectors constitutes a large proportion (67%) of these plants and more firms in these sector are exporting to other regions than to international markets over time.¹⁷ The share of exporters in total plants is 20% and has not been changing significantly over time. The share of firms that trade regionally, however, has been increasing over time: these firms made up 34% of total firms in 2006 and has increased to 56% in 20. Interregional trade links have intensified for the sample period, suggesting better regional integration. (Figure 46).

Figure 47 : Share of exporters by age and size



Source: Entrepreneur Information System

¹⁷ Tradeable sectors are classified according to the broad NACE classification: A (agriculture, forestry and fishery); B (mining and quarrying); C (manufacturing); D (electricity, gas, steam and air conditioning supply); E (water supply, sewerage, waste management and remediation activities); G (Wholesale and retail trade, and repair of motor vehicles and motorcycles); H (Transporting and storage); I (Accommodation and food service activities); and J (Information and communication).



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Firm size and age is a good predictor of whether a firm will export or not: older and larger firms are more likely to have the resources and experience to export internationally and regionally. This relationship between export status and age is evident for international and regional exporters in the region, where older firms are more likely to export, but less evident for firm size. While older firms are more likely to export in TR10, small firms make up a larger proportion of the exporters (Figure 47). The share of exporters and sellers to other regions increase with the age of the firms: firms that are older than 6 years old export more, internationally and regionally. As the firms grow older, they may have established close international or interregional links over time. Alternatively, the plants that could have established export and interregional trade links may have survived and grown older through time. In contrast, firm size does not matter as much when trading internationally and regionally. A large proportion of exporters are small firms: 45.4% of the exporters are small firms and employ 3-19 people. There are only 25% of the exporters that are large firms employing more than 100 people. A similar pattern is observed for the plants that are selling their products to other regions.

Box 2: Clearing customs for exports and imports

Participation in international trade allows firms to expand, raise standards for efficiency, import materials at lower cost, and acquire updated and better technologies. However, firms are often required to obtain export and import licenses, and trading also requires that firms deal with customs and trade regulations. Efficient customs procedures are key for businesses to directly export and import goods. Delays in clearing customs for exports and imports create additional costs to the firm, can interrupt production, interfere with sales, and may result in damaged supplies or merchandise. For instance, workers that are responsible for goods are often forced to be inactive while they wait for goods to be cleared; or depending on the characteristics of the goods being transported, special arrangements might be needed to ensure that the quality of goods does not deteriorate while waiting.

To investigate the efficiency of customs operations, the R-ES asks managers and owners of private firms in Turkey about their experience in terms of the length of time that is required to clear customs both for import and export. The figure on the right displays their responses. Goods that are intended for export are cleared through customs in 4.6 days on average in Istanbul which is very similar to the country average of 4.5 days. Imports take little longer to go through a similar process, 8.4 days on average in Istanbul as opposed to 6.8 days in Turkey.



Breakdown of the length of time required to clear customs by size suggests that small firms, employing between 5 and 19 workers, clear exports the fastest, waiting for an average of 3 days. The longest average wait times by size are 6.6 days to clear exports for large sized firms



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(100+ employees).



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5. Annexes

Annex 1: Strategic Priorities

Annex 2: Investment Incentives

Annex 3: Regional Investment Incentive Schemes in TR10

Annex 4: Priority Sectors in Regional Investment Incentive Scheme in TR10

Annex 5: Key Indicators of Firm-Size Distribution

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5.1 Annex 1: Strategic Priorities

Development axis	Priorities
Economy	<ol style="list-style-type: none"> 1. Strategic actor in global economy 2. Competitive position in global value chain 3. Industrial Transformation 4. Increasing R&D and innovation 5. Qualified Entrepreneurship 6. Transforming labor force, developing and increasing employment 7. Urban image and efficient promotion
Society	<ol style="list-style-type: none"> 1. High quality and creative education for all ages 2. Social integration 3. Dynamic population 4. Healthy society, quality and accredited health service 5. Secure city 6. Strong institutional capacity, good governance 7. Urban consciousness and attachment to Istanbul
Environment	<ol style="list-style-type: none"> 1. Sustainable urban development, participatory planning 2. Spatial quality, genuine design 3. Integrated and inclusive urban transformation 4. Protected Istanbul memory and cultural heritage 4. Efficient disaster management 5. Sustainable transportation and access 6. Sustainable and efficient logistic infrastructure 7. Quality and sustainable environment 8. Eco-friendly energy management

Source: Istanbul Development Agency, IDA (2014)



5.2 Annex 2: Investment Incentives

The New Incentive System legislated in 2012 is comprised of four categories: General Investment Incentive Scheme, Regional Investment Incentive Scheme, Large Scale Investment Incentive Scheme and Strategic Investment Incentive Scheme.

Provinces are grouped in six regions according to the results of Socio-Economic Development Index research performed by the Ministry of Development. The level of support provided under each incentive scheme varies by province based on the provinces' classification in one of the six incentive regions. The highest levels of support are provided to the priority provinces.

The General Investment Incentive Scheme provides value added tax exemption and custom duty exemption benefits. This scheme is available for all investment projects provided they meet the required amount of minimum fixed investment (one million TL in regions I and II and 500 thousand TL in Regions III, IV, V and VI). Investment Support Offices (ISO) are authorized to issue investment incentive certificates for the investments up to 10 million TL if the minimum requirements are met. For larger investments, the other investment schemes (comprising the benefits of general incentives) apply.

The Regional Investment Incentive Scheme provides additional incentives such as tax reduction, social security employer's premium exemption and land allocation. Terms and rates of support vary by region. Additionally, under this scheme, the sectors that receive incentives and the criteria to be eligible for receiving incentives differ across the provinces based on each province's competitive potential.

The Large Scale Investment Incentive Scheme applies to 12 investment categories for which the tax reduction rates and minimum required fixed investment amounts are set at higher levels. The categories supported under this scheme are Refined Petroleum Products; Chemical Products; Harbors and Harbor Services; Automotive OEM Investments and Automotive Supply industries Investments; Railway and Tram Locomotives and/or Railway and Tram Cars; Transit Pipeline Transportation Services; Electronics; Medical Devices, High Precision and Optical Equipment; Pharmaceuticals; Aircraft and Space Vehicles and/or Related Part; Machinery (Including Electrical Machinery and Equipment); and Mining (Including Metal Production). Terms and rates of support vary by region.

Lastly, the Strategic Investment Incentive Scheme aims at encouraging high-tech and high value added investments with a potential of strengthening Turkey's international competitiveness. Strategic Investments require a minimum fixed investment of 50 million TL and target production of largely imported intermediate and final goods, of which over 50% are currently supplied through imports.

In addition to the 2012 New Incentive System, incentives are provided to firms located in Organized Industrial Zones (OIZ) and Technoparks. The Organized Industrial Zones are exempt from value-added tax for land purchases. Other major incentives include five-year real estate tax exemption beginning from the completion of facility construction and low water, gas and communication costs for companies. Within the technoparks, revenues made from software development and R&D activities are exempt



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from income and corporate tax until December 31, 2023. Additionally, sales of application software are exempt from VAT; salaries of R&D and support staff are exempt from all taxes and 50% of the employer's share of the social security premium is paid by the government for five years.

Note: For further details, see New Investment Incentives Program legislated by Decree 2012/3305.

Source: *Ministry of Economy*



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5.3 Annex 3: Regional Investment Incentive Schemes in TR10

Type of Support	Investment Start Date			
	Before 31.12.2015		After 01.01.2016	
	In OIZ	Outside OIZ	In OIZ	Outside OIZ
Tax Reduction				
Investment Contribution Rate (percent)	20	15	15	10
Tax Reduction Rate (percent)	55	50	40	30
Social Security Premium Support:				
Employer's Share	3 years	2 years	–	–
Interest Support*				
TL Loan	–	–	–	–
Foreign/FX Loan	–	–	–	–
Land Allocation	All investments supported by the regional incentive system			
VAT exemption	All investments with Incentive Certificate			
Customs Duty Exemption	All investments with Incentive Certificate			
Required Minimum Fixed Investment**	1 million TL			

Notes: OIZ refers to the Organized Industrial Zones

*This amount may be higher for some sectors supported regionally. The support rates are higher in these large scale investments and strategic investments. For further details, see New Investment Incentives Program legislated by Decree 2012/3305.

Source: Ministry of Economy



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5.4 Annex 4: Priority Sectors in Regional Investment Incentive

Sectors that receive incentives	Minimum Investment Amount Required
- Industrial Pattern	4 million TL
- Leather Tanning & Processing (Only in Istanbul Leather Specialized OIZ and Tuzla OIZ) - Manufacturing of Office, Accounting and IT Processing Machines - Manufacturing of Radio, TV, Communication Equipment and Devices - Manufacturing of Herbal and Chemical Products Used in Medicine and Pharmaceuticals - Manufacturing of Medical Devices, Sensitive and Optic Devices - Waste Management and Recycling Facilities - Educational Services (from Pre-school up to Grad School) - Hospitals	1 million TL
- Dormitories: 100 students - Nursing Home: 100 persons	100 persons

Source: Istanbul Development Agency, IDA (2015)



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5.5 Annex 5: Key Indicators of Firm-Size Distribution

The Herfindahl-Hirschman Index (HHI) corresponds to the sum of the squared market shares of all the firms in the region-industry-year group ikt or $Herfindahl_{ikt} = \sum_a (MarketShare_{aikt})^2$. The measure ranges between $1/N$ to 1, where N is the total number of firms in the market. Values closer to unity indicate that fewer, larger firms dominate the market.

The mean of employment can be a proxy of the average firm size. In case of lopsided distribution, the median or the 50th percentile of employment may provide a more representative measure, being not sensitive to extreme values.

The skewness is the third moment of the distribution and describes the asymmetry from the Normal (bell-shaped) distribution. In the context of our analysis, this corresponds to measure the heterogeneity in firm size distribution. Industries with a (negative) positive skewness show a longer (left) right tail of the distribution. For example, high skewness values for employment point to the presence of very large firms in the distribution.



5.6 Annex 6: Measuring Productivity

Measuring firm productivity has attracted large interest in the academic and policy debate, for its importance as well as challenges due to data requirements and econometric issues. Multiple alternatives are used, each of them subject to specific shortcomings, to assess the robustness of the results presented.

The simplest indicator considered is labor productivity which is measured as value added per worker or

$$Value\ Added\ per\ Worker_{i,t} = \frac{(Labor\ Costs_{it} + Operating\ Profits_{it}) / Sectoral\ Deflator_t}{Number\ of\ Employees_{it}}$$

for firm *i* at time *t*. The calculation is performed pooling data at the regional level. Sectoral deflators are only available at the 2-digit sectoral classification for the manufacturing industry. For the rest of the industries (e.g. services), the economy-wide deflators are used. Calculations are done at the national level as regional deflators are not available.

Focusing on manufacturing industries and following similar steps a gross measure of labor productivity is computed:

$$Output\ per\ Worker_{i,t} = \frac{(Total\ Sales_{it} + Change\ in\ Stocks_{it}) / Sectoral\ Deflator_t}{Number\ of\ Employees_{it}}$$

Further insights on labor productivity may come from analyzing unit labor cost. This measure links productivity and cost of labor to generate output, and may be used as a proxy of the cost of productivity. For each enterprise, information on the number of employees and the total wages paid are available. By dividing the total wages with the total value added calculated as above, the final measure of productivity is derived, so that:

$$Unit\ Labour\ Cost_{i,t} = \frac{Total\ Wages_{i,t}}{Value\ Added_{i,t}}$$

By construction, these measures do not capture accurately gains in productivity driven by higher return to capital.

A more holistic measures of productivity is Total Factor Productivity (TFP). It is computed based on the following OLS regression:

$$\log y_{it} = \beta_0 + \beta_k \log k_{it} + \beta_l \log l_{it} + \omega_{it} + u_{it}$$

where y_{it} are real output (using sectoral deflator when available) of firm *i* at time *t*, k_{it} is the value of tangible and intangible assets derived from balance sheets, and l_{it} is the number days worked or number of full time employees times salaries and wages



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expenditure. The terms ω_{it} and u_{it} stand respectively for firm productivity and a zero-mean error term that accounts for measurement error of unanticipated productivity shocks that do not influence the choice of inputs. The regression is run separately on data from each region. Firm specific, time-invariant fixed effects are then added to control for time-invariant unobserved productivity at the firm level.

OLS estimation is popular due to low computation requirements. It delivers reliable estimates in the presence of constant return to scale and input inflexibility. These are clearly strong assumptions.¹⁸ As soon as they are relaxed, OLS estimates suffer from a simultaneity or endogeneity problem. OLS coefficients of the production function are biased as firms can choose inputs endogenously. This bias is more severe as firms can adjust inputs quickly in response to productivity shocks. Moreover, if no allowance for entry and exit is made, a selection bias emerges.

The methodology proposed by Olley and Pakes (1996) is useful to address these concerns. It addresses the challenges with (i) endogeneity of some of the inputs, (ii) selection through exit of firms, and (iii) unobserved permanent differences across firms. The authors propose a semi-parametric approach using investment as a proxy variable for unobserved productivity shocks, addressing endogeneity concerns. Selection issues are tackled by incorporating an exit rule into the model. Formally, this translates to estimating:

$$\log y_{it} = \beta_0 + \varphi_k(k_{it}, i_{it}) + \beta_l \log l_{it} + \eta_{it} + e_{it}$$

where $\varphi_k(k_{it}, i_{it})$ is a polynomial function of investment and capital.

Olley and Pakes's method has its own limitations. It requires (i) the existence of a monotonic relationship between a firm-level decision variable (e.g. investment) and the unobserved firm-level state variable "productivity", (ii) exit is also conditioned on the unobserved productivity. The method delivers reliable estimates only in the presence of one of these two issues.

¹⁸ In the presence of measurement error in any variable, using median (quantile) regression may reduce such bias.



5.7 Annex 7: Total Factor Productivity (TFP) decomposition

Haltiwanger (1997) shows that the growth in TFP can be decomposed into five components, corresponding to the addenda in the equation below. Specifically they are (i) the within component, measuring the changes in productivity for continuing plants, (ii) the between–plant portion, reflecting the change in output shares across continuing plants, (iii) the covariance component, and finally the (iv) entry and (v) exit components.

$$\begin{aligned} \Delta \log(TFP_t) = & \sum_{i \in C} \varphi_{i,t-k} \Delta \log(TFP_{it}) + \sum_{i \in C} \Delta \varphi_{i,t} [\log(TFP_{i,t-k}) - \log(TFP_{t-k})] \\ & + \sum_{i \in C} \Delta \varphi_{i,t} \Delta \log(TFP_{i,t}) + \sum_{i \in \Xi} \varphi_{i,t} [\log(TFP_{i,t}) - \log(TFP_t)] \\ & + \sum_{i \in X_{t-k}} \varphi_{i,t-k} [\log(TFP_{i,t-k}) - \log(TFP_{t-k})] \end{aligned}$$

where TFP is defined as the weighted sum of firm–level Solow residuals.

Let g_Y denote the growth rate of aggregate output, g_K the growth rate of aggregate capital, g_L the growth rate of aggregate labor and α the capital share. The Solow residual is then defined as $g_Y - \alpha g_K - (1 - \alpha)g_L$. The Solow residual accurately measures TFP growth if (i) the production function is neoclassical, (ii) there is perfect competition in factor markets, and (iii) the growth rates of the inputs are measured accurately.

Let C denote the collection of plants active in both periods $t - k$ and t , Ξ the set of plants that entered between the two dates and are still active at time t , and X_{t-k} the set of firms that were active at time $t - k$, but exited before time t .



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5.8 Annex 8: Allocative Efficiency

Olley and Pakes (1996) show that the weighted average of productivity can be written as:

$$a = \bar{a} + \sum_{i=1}^n (s_i - \bar{s})(a_i - \bar{a})$$

where a_i and s_i are respectively the productivity level and the labor share of firm i in a given industry. The equation shows that average productivity can be thought of as made up of two parts: (i) the unweighted average level of productivity and (ii) the covariance between market share and productivity. This implies that the weighted average of productivity could be increased either by increasing the unweighted average of productivity (e.g., by increasing the productivity of all firms in an industry) or by increasing the covariance between market share and productivity (i.e., increasing the market share for productive firms and decreasing the market share for unproductive firms). Rearranging these terms, allocative efficiency can be calculated as the ratio of the covariance term to the weighted average, or:

$$\text{Allocative Efficiency} = \frac{\sum_{i=1}^n (s_i - \bar{s})(a_i - \bar{a})}{\bar{a} + \sum_{i=1}^n (s_i - \bar{s})(a_i - \bar{a})}$$

As more competitive firms capture larger market shares, allocative efficiency increases.



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5.9 Annex 9: Sources of Labor Productivity Growth

Following the approach of McMillan and Rodrik (2011), labor productivity growth in an economy is assumed to be achieved in one of two ways: (i) within economic sectors through capital accumulation, technological change, or reduction of misallocation across plants; (ii) through a structural change in which labor can move from low-productivity sectors to high-productivity sectors. The following growth decomposition was applied:

$$\Delta Y_t = \sum_{i=n} \theta_{i,t-k} \Delta y_{i,t} + \sum_{i=n} y_{i,t} \Delta \theta_{i,t}$$

where Y_t and $y_{i,t}$ refer to economy-wide and sectoral labor productivity levels, respectively, while $\theta_{i,t}$ is the share of employment in sector i . The Δ operator denotes the change in productivity or employment shares between $t-k$ and t . The first term in the decomposition is called the “within” component of productivity growth, and is defined as the weighted sum of productivity growth within individual sectors (with weights being the employment share of each sector at time t). The second term reflects “structural change” and captures the productivity effect of labor reallocations across different sectors. A positive (negative) “structural change” component suggests that structural change in the economy has been productivity-enhancing (reducing). In sum, the proposed decomposition aims to disentangle the changes in regional productivity into two components: one related to change in sectoral decomposition and another linked to productivity fluctuations.



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5.10 Annex 10: Enterprise Surveys Methodology

The Enterprise Surveys (ES) provide a rich source of information about firms and the environment in which they operate. Topics include firm characteristics, annual sales, costs of labor and other inputs, performance measures, access to finance, workforce composition, women’s participation in the labor market, and many aspects of the business environment. Survey data are not only useful for corroborating findings based on macroeconomic data but also for exploring heterogeneity at the firm level and examining how firms experience laws and regulations.

Since 2006, the ES have been conducted by the World Bank Group and its partners in 136 economies worldwide following a global methodology, which includes a consistent definition of the survey’s sampling universe, a standard sampling methodology, and the use of a global questionnaire.

The standard universe under study in the ES is the formal non-agricultural, non-extractive private sector, defined as all firms with at least some private ownership (fully government owned firms are excluded). Sector coverage is defined consistently across all economies and includes the entire manufacturing sector and most services sectors as depicted on Table A3-1. The ES interviews are conducted face to face with top managers and business owners.

Table A3-1: Enterprise Surveys universe of study

INCLUDED	EXCLUDED
SECTORS	SECTORS
<ul style="list-style-type: none"> • Manufacturing (all subsectors) • Construction • Motor vehicles sales and repair • Wholesale • Retail • Hotels and restaurants • Storage, transportation, and communications • IT 	<ul style="list-style-type: none"> • Agriculture • Fishing • Mining • Public utilities • Financial intermediation • Public administration • Education, health and social work
ADDITIONAL CRITERIA	ADDITIONAL CRITERIA
<ul style="list-style-type: none"> • Formal (registered) firms • Minimum 1% private ownership 	<ul style="list-style-type: none"> • Informal (non-registered) firms • 100% state-owned firms

The sampling methodology is stratified random sampling. The sample for each economy is stratified by industry, firm size, and geographic location. The level of detail of the stratification by industry generally depends on the size of the economy. Stratification by size usually follows three levels: 5-19 employees (small), 20-99 employees (medium), and 100+ employees (large). The Turkey R-ES also covered micro firms, with 1 to 4 employees. Regional stratification includes the main economic locations in each economy. Through this methodology, estimates for different stratification levels can be calculated separately while, at the same time, inferences can be made for the universe of reference as a whole.¹⁹ Finally, the survey uses a global, standardized questionnaire.

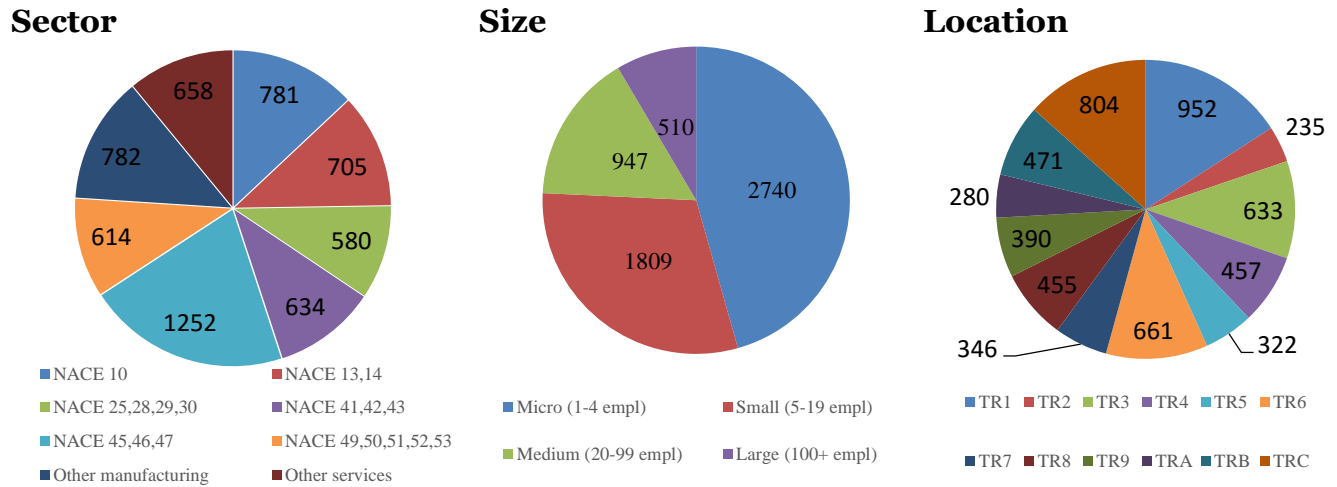
¹⁹ For more details on the sampling strategy, please review the Sampling Note available at www.enterprisesurveys.org.



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Managers and owners of 6,006 firms have been interviewed as part of the Turkey R-ES. Figure A3-1 presents characteristics of firms surveyed. Industry is stratified into 8 groups using the NACE 2.0 classification as described on the leftmost panel of Figure A3-1.²⁰ The rightmost panel displays the current locations of firms interviewed at the NUTS1 level. Note however that the location is stratified with much higher precision, namely at NUTS3 level, which is not displayed for brevity.

Figure A3-1: Characteristics of firms surveyed



²⁰ The NACE codes are as follows: 10 represents manufacture of food products, 13 and 14 represent manufacture of textiles and wearing apparel, codes 25, 28, 29, and 30 represent manufacture of fabricated metal products, machinery and equipment, motor vehicles, 41,42, and 43 represents construction, codes 45, 46, 47 represent wholesale and retail trade, codes 49,50,51,52,53 represent transportation sector including its support activities. Finally, the category “Other manufacturing” includes codes 11,12,15,16,17,18,19,20,21,22,23,24,26,27,31,32,38; and the category “Other services” includes codes 33,42,43,55,56,58,61,62,79,95.



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5.11 Annex 11: Enterprise Surveys Indicators

The following tables contain the values of all indicators used in the regional profile.

	TR10	Micro firms	Small firms	Medium firms	Large firms	Turkey
Firm Characteristics						
Firms' age (years)	10.9	9.6	12.3	16.6	23.4	12.0
Proportion of firm owned domestically (%)	99.8	100.0	99.8	99.0	98.5	99.6
Proportion of firm owned by the largest owner(s) (%)	94.8	98.1	91.2	80.0	72.3	95.7
Firms with internationally-recognized quality certification (%)	6.5	1.2	11.4	29.2	62.6	4.8
Performance						
Real annual sales growth (%)	4.3	6.3	0.1	-0.7	3.7	13.3
Annual employment growth (%)	0.5	-0.5	1.9	3.7	8.9	1.2
Annual labor productivity growth (%)	4.0	6.6	0.0	-4.5	-7.3	12.3
Capacity utilization (%)	63.3	60.3	66.0	65.3	89.7	73.1
Firms buying fixed assets (%)	12.9	8.9	18.5	23.8	59.3	14.3
Trade						
Days to clear direct exports through customs	4.6	n.a.	3.0	5.1	6.6	4.5
Days to clear imports from customs	8.4	n.a.	n.a.	6.9	4.9	6.8
Proportion of domestic sales (% of annual sales)	95.0	98.0	90.9	84.1	71.9	97.6
Proportion of inputs of foreign origin (% of total inputs)	56.3	n.a.	57.7	33.3	24.6	46.9
Firms exporting directly or indirectly (at least 1% of sales, %)	8.9	3.3	15.3	30.3	58.8	5.3
Firms using material inputs of foreign origin (%)	6.2	2.7	8.7	12.3	27.2	5.4
Physical and Communications Infrastructure						
Delay in obtaining an electrical connection (days)	3.4	2.8	4.5	n.a.	n.a.	2.6
Delay in obtaining a water connections (days)	2.9	2.3	2.6	n.a.	n.a.	2.9
Electrical outages in a typical month (No.)	1.0	1.0	0.9	1.2	1.4	0.9
Duration of a typical electrical outage (hours)	2.5	2.7	2.3	2.0	1.3	2.7
Losses due to electrical outages (% of annual sales)	1.3	1.3	1.6	1.0	0.2	1.3
Total time of power outages per month	2.5	2.6	2.2	2.1	1.9	2.7
Water insufficiencies in a typical month (No.)	0.1	0.1	0.0	0.0	0.5	0.1
Firms owning or sharing a generator (%)	9.0	3.4	11.2	36.9	88.3	7.0
Proportion of electricity from a generator (%)	39.4	35.6	25.6	50.9	42.9	28.1
Firms applying for natural gas connection (%)	1.3	1.2	1.3	0.9	5.8	3.4
Firms owning or sharing a solar array or other alternative energy source (%)	0.0	0.0	0.0	0.0	0.6	0.8
Firm with internet connection (%)	66.3	56.1	85.3	97.7	99.2	59.3
Firms that experience internet outages (%)	8.8	8.0	11.1	8.5	4.5	16.1
Internet outages in a typical month (No.)	4.1	3.7	5.1	3.4	n.a.	4.7
Duration of a typical internet outage (hours)	1.3	1.0	1.6	1.4	n.a.	2.6
Firms with own website (%)	29.7	17.1	46.6	80.4	96.3	25.2
Firms using e-mail to communicate with clients/suppliers (%)	48.7	36.0	69.7	92.3	100.0	39.5
Firms using online sales platform (%)	3.7	2.1	6.3	5.7	21.9	5.6
Access to Finance						



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Firms using banks to finance investments (%)	18.5	14.2	24.3	16.5	25.3	31.3
Firms using banks to finance working capital (%)	18.1	13.3	25.9	34.1	45.3	23.1
Firms with a bank Loan/line of credit (%)	25.1	20.2	31.2	42.9	65.5	26.4
Firms with a checking or savings account (%)	90.5	90.4	89.6	91.5	99.4	61.6
Proportion of investments financed by internal funds (%)	83.5	88.8	81.0	75.5	75.1	73.0
Proportion of investments financed by banks (%)	10.4	8.4	12.0	11.6	14.4	20.2
Proportion of investments financed by supplier credit (%)	1.8	0.0	2.7	6.1	0.5	1.5
Proportion of investments financed by equity or stock sales (%)	2.6	2.8	2.6	1.5	3.3	3.0
Proportion of investments financed by other financing sources (%)	1.8	0.0	1.7	5.3	6.7	2.4
Proportion of working capital financed by internal funds (%)	90.1	92.0	87.1	84.4	75.0	86.0
Proportion of working capital financed by banks (%)	5.4	4.0	7.5	10.2	13.1	8.5
Proportion of working capital financed by supplier credit (%)	4.2	3.8	4.8	5.2	6.9	4.0
Proportion of working capital financed by other financing sources (%)	0.4	0.2	0.6	0.1	4.9	1.5
Proportion of working capital financed by external sources (%)	9.9	8.0	12.9	15.6	25.0	14.0
Firms that are partially credit constrained (%)	10.5	11.4	10.8	2.2	6.2	10.1
Firms that are fully credit constrained (%)	21.7	23.9	17.9	15.0	4.4	17.8
Firms that are not credit constrained (%)	67.8	64.7	71.4	82.8	89.4	72.1
Business-Government Relations						
Senior management time spent in dealing with requirements of government regulation (%)	2.8	0.9	4.8	11.3	21.8	13.5
Days to obtain an import license	n.a.	n.a.	n.a.	n.a.	n.a.	8.4
Days to obtain operating license	9.2	8.2	9.8	10.8	9.9	9.9
Days to obtain construction-related permit	36.1	57.8	33.5	27.9	40.0	33.4
Firms expected to give gifts in meetings with tax officials (%)	4.0	n.a.	n.a.	n.a.	n.a.	15.4
Firms expected to give gifts to secure a government contract (%)	25.0	n.a.	n.a.	23.4	24.1	35.6
Firms expected to give gifts to get a construction permit (%)	2.1	0.0	0.0	6.7	2.6	2.4
Expanded bribery depth (% of public transactions where a gift or informal payment was requested)	1.0	0.5	2.6	0.7	1.0	1.6
Expanded bribery incidence (% of firms experiencing at least one bribe payment request)	1.1	0.5	2.6	1.4	2.5	2.4
Crime and Informality						
Firms paying for security (%)	10.7	5.8	13.2	31.8	86.4	13.2
Average costs of security (% of annual sales)	2.7	1.6	2.2	4.8	3.1	3.1
Firms experiencing losses due to theft and vandalism (%)	6.2	5.3	6.8	9.7	22.0	5.4
Average losses due to theft and vandalism (% of annual sales)	5.6	3.2	12.0	4.7	1.7	5.5
Firms formally registered when started operations (%)	97.6	97.3	97.7	99.5	99.7	97.2
Firms competing against unregistered or informal firms (%)	57.5	59.4	59.5	45.4	11.1	34.4
Firms most affected by copyright, trademark, or patent infringement practices (%)	2.0	1.3	4.2	1.2	16.4	3.5
Firms most affected by fraudulent product certifications (%)	5.0	5.4	4.9	0.4	7.9	9.6
Firms most affected by tax avoidance (%)	83.5	86.6	76.2	75.3	75.7	65.3
Firms most affected by hiring of informal labor (%)	7.9	5.6	12.8	17.8	0.0	11.0



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Firms most affected by other practices of informal competitors (%)	1.3	0.7	1.9	5.3	0.0	4.7
Firms not affected by informal competition (%)	0.2	0.3	0.0	0.0	0.0	5.9
Labor Market						
Years of the top manager's experience working in the firm's sector	19.6	19.1	19.8	23.8	19.9	18.6
Number of permanent full time workers	8.3	2.2	7.9	32.3	167.5	7.3
Firms with temporary workers (%)	5.9	2.9	14.8	7.4	10.4	5.6
Number of temporary workers	0.1	0.0	0.1	0.0	0.0	0.1
Firms with majority female ownership (%)	10.2	13.2	2.9	5.3	0.8	11.9
Firms with a female top manager (%)	8.3	9.9	3.9	5.5	7.1	9.6
Females among permanent workers (%)	49.7	61.0	28.3	24.5	24.2	35.9
Females among temporary workers (%)	13.9	25.9	7.5	19.3	17.3	13.6
Firms with at least one vacancy in past 2 years (%)	28.2	15.2	48.8	72.5	94.9	21.3
Firms that used PES successfully (%)	8.1	0.0	4.1	13.2	69.5	10.9
Firms that used PES unsuccessfully (%)	1.9	0.0	1.9	2.7	11.1	9.2
Firms that did not use PES (%)	90.1	100.0	93.9	84.1	19.4	80.0
Firms that tried to hire a senior level professional in past 2 years (%)	5.8	0.0	5.2	8.5	38.0	5.5
Firms with no or few applicants for the vacancy (%)	17.2	n.a.	18.8	24.5	10.5	30.4
Firms whose applicants for the vacancy lacked required skills (%)	56.1	n.a.	n.a.	68.8	61.9	52.2
Firms whose applicants for the vacancy demanded higher wages than possible (%)	58.8	n.a.	37.6	78.9	62.3	59.5
Firms whose applicants for the vacancy demanded better working conditions than possible (%)	17.2	n.a.	0.0	53.6	7.1	15.4
Firms that tried to hire a non-senior level professional in past 2 years (%)	22.4	19.3	17.3	32.3	42.6	17.5
Firms with no or few applicants for the vacancy (%)	42.5	35.8	38.5	57.1	34.1	37.0
Firms whose applicants for the vacancy lacked required skills (%)	30.2	31.0	32.9	27.8	26.7	39.1
Firms whose applicants for the vacancy demanded higher wages than possible (%)	53.3	63.4	39.2	59.0	46.3	48.7
Firms whose applicants for the vacancy demanded better working conditions than possible (%)	13.4	16.2	14.0	6.2	22.5	18.3
Firms' Perception of the Business Environment						
Access to finance	25.2	28.1	21.3	15.2	1.7	19.5
Access to land	0.6	0.3	1.0	2.2	0.0	0.7
Licensing and permits	2.9	2.0	5.3	3.5	2.8	2.3
Corruption	0.9	1.3	0.0	0.0	0.0	1.5
Courts	0.2	0.0	0.0	0.0	14.3	0.3
Crime, theft and disorder	0.8	0.8	0.0	2.6	0.0	1.6
Customs & trade regulations	1.4	1.3	0.9	3.5	4.6	1.2
Electricity	1.4	1.0	3.3	0.0	0.0	1.7
Inadequately educated workers	7.3	3.3	13.9	17.0	40.5	6.7
Labor regulations	3.4	3.0	3.0	7.2	6.2	2.5
Political instability	8.7	10.0	4.2	10.5	7.8	11.7
Informal competitors	15.7	16.0	16.7	13.0	2.9	13.4
Tax administration	0.7	1.0	0.0	0.0	0.0	2.7
Tax rates	30.4	31.7	29.2	25.3	16.5	32.5



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Transport	0.5	0.3	1.2	0.0	2.8	1.6
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