



Report No: 83818-TR

GOOD JOBS IN TURKEY

November 2013

Human Development Sector Unit
Europe and Central Asia Region



WORLD BANK

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CURRENCY EQUIVALENTS (Exchange Rate Effective November, 2013)

CURRENCY = TL

US\$ 1.00 = 2.03 TL

WEIGHTS AND MEASURES: Metric System

ACRONYMS AND ABBREVIATIONS

CPI	Consumer price index
ECD	Early childhood development
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross domestic product
HH	Household
ILO	International Labour Organization
LFS	Labor force survey
LFP	Labor force participation
LP	Labor productivity
NACE	Nomenclature générale des Activités économiques dans les Communautés Européennes
NUTS	Nomenclature of Territorial Units for Statistics
OECD	Organisation for Economic Co-operation and Development
SBS	Structural Business Survey
SILC	Survey on Income and Living Conditions
SME	Small and medium enterprise
TFP	Total factor productivity
TL	Turkish lira
TOKI	Housing Development Administration
TUIK	Turkish Statistical Institute
WAP	Working-age population

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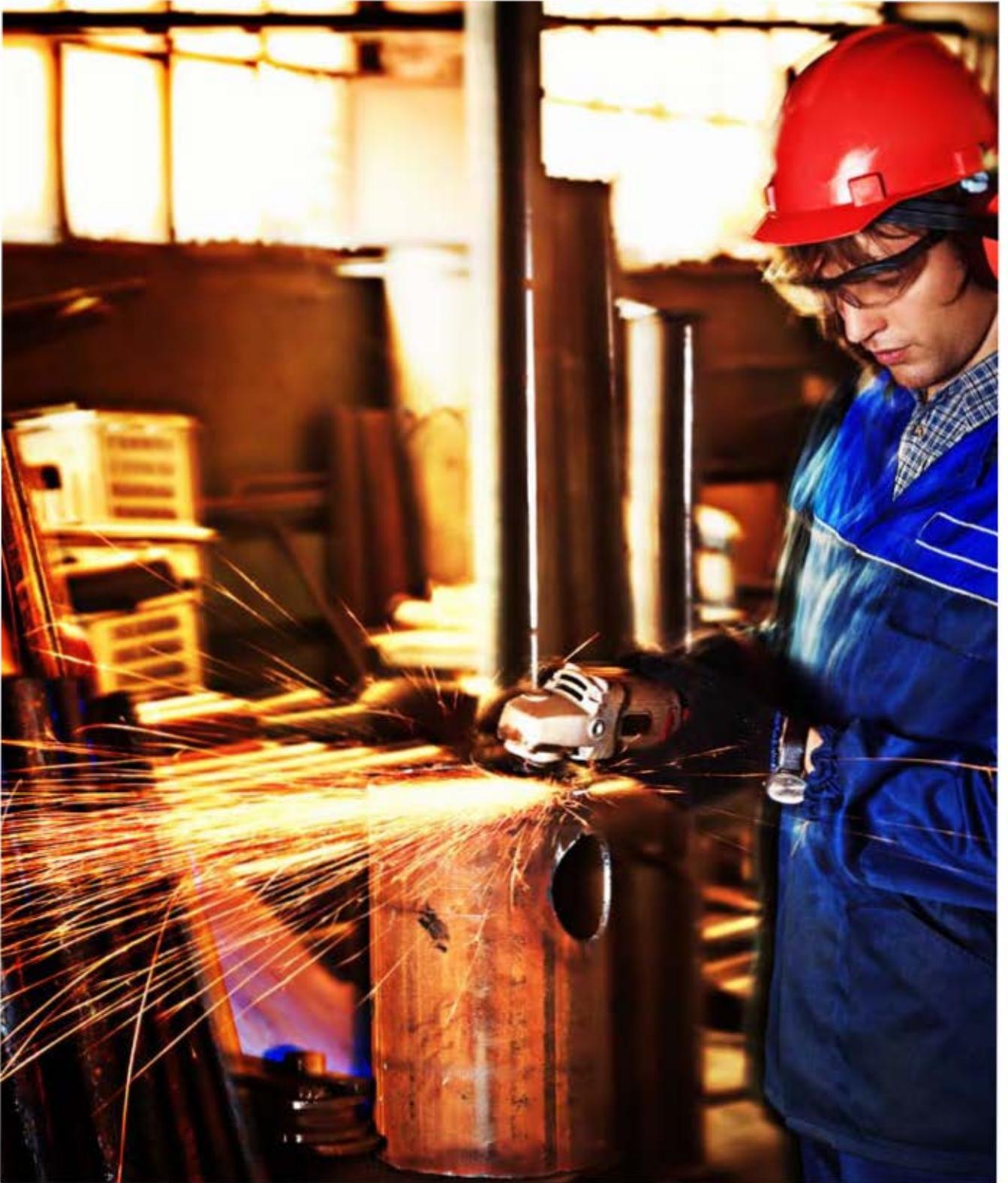
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ACKNOWLEDGEMENTS

This is a joint study by the World Bank (WB) and the Turkish Ministry of Development (MoD). This report was prepared by a team comprising Rebekka Grun v. Jolk (WB), Victoria Levin (WB), Carola Gruen (WB), Ahmet Levent Yener (WB), Altan Aldan (WB), Tolga Cebeci (WB), Gökhan Güder (MoD), Sinem Çapar (MoD), Meltem Aran (Development Analytics), Nazlı Aktakke (Development Analytics), and Bülent Anıl and Ayşenur Acar (BETAM). Cristobal Ridaó-Cano (WB) and Herwig Immervoll (OECD) initiated the dialogue to start this work and conceptualized the components and analytical focus of the report and its chapters. We thank the following advisors for cutting-edge inputs and comments during thematic brainstorming sessions; on chapter 3: Mediha Agar (WB), Mary Hallward-Driemeier (WB), Marc Schiffbauer (WB), William Maloney (WB), Marcela Eslava (Universidad de Los Andes, Bogota), and Bob Rijkers (WB); on chapter 4: Pierella Paci (WB), Sergio Oliveri (WB), Carolina Sanchez (WB), Joao Pedro Azevedo (WB), and Diego Angel-Urdinola (WB). Amy Gautam substantially improved the report through her professional editing. Overall guidance was provided by Martin Raiser (Country Director for Turkey, WB), Roberta Gatti (Sector Manager, Human Development Economics, Europe and Central Asia, WB), and Ana Revenga (Director, Human Development, Europe and Central Asia, WB).



Executive Summary

Jobs have direct benefits, such as an income and livelihood for the job holder. They can also carry indirect benefits, such as increased participation in society and social networks, or a better living standard for an entire household. On a larger scale, jobs that are filled in a productive sector enhance growth for the economy, contributing to a virtuous cycle that produces more and better jobs in the future. This report, drawing on the 2013 World Development Report on Jobs, defines “good jobs for development” as jobs that are rich in these indirect benefits. The more indirect benefits (also called “externalities”) a job has, the better it is for development. Adapting the framework to the context of Turkey, the report focuses on the most relevant aspects that would make jobs good for the development of Turkey: (i) for living standards, formality, and the share of the population that enjoys a good income; (ii) for productivity, the structural transformation between and creative destruction within sectors; and (iii) for social cohesion, and particularly the increased participation of women and youth in the labor market.

This report explores the status and effects of good jobs in Turkey’s current economy. After a brief account of economic events since the recent global economic crisis, it examines

the relationship between growth and employment in Turkey, with a particular regard to the participation of different social groups in the labor market, such as women and youth. It then analyzes where jobs are being created and which activities are the most productive for the Turkish economy, and assesses if jobs have moved to more productive activities in recent years. Finally, the report proceeds to measure the impact of different types of jobs on the welfare of an entire household and on the household’s relative position in the overall income distribution. Every chapter contains an outlook towards relevant policies that can support the impact of Turkey’s good jobs.

Growth, Employment, and Social Cohesion

Prior to the recent financial crisis, the Turkish economy recorded a 7.2 percent annual GDP growth rate over the period 2002-2006. Capital stock and total factor productivity were the main contributors to growth, and GDP per capita reached US\$7,651 in 2006. However, due to the impact of the global crisis, the economy shrank by 4.8 percent in 2009. From 2007-2012, the annual growth rate was 3.3 percent; the main sources of growth in this period were capital stock and increasing employment, while total factor productivity was negative.

Turkey recovered very strongly from the crisis and grew by 9.2 percent in 2010 and 8.8 percent in 2011. However, a relatively weak recovery in the world economy together with high energy prices and stronger domestic demand contributed to an expansion in the current account deficit. Measures to curb the deficit had implications for growth; in 2012, the growth rate was 2.2 percent and GDP per capita was US\$10,527. From 2007-2012, the share of the agriculture sector in GDP decreased to 7.9 percent, the share of industry in GDP recovered to 19.3 percent, and the service sector reached 72.7 percent. In this period, the main growth contributions came from private consumption and fixed capital investment expenditures.

The rapid growth of GDP and employment in the post-crisis period, coupled with upskilling and formalization of employment in the labor market and the increased employment elasticity of growth, present a very favorable picture of the employment situation in Turkey. Between 2007 and 2012, average annual employment growth was 3.3 percent, reflecting the creation of over 4 million new jobs. The unemployment rate was 9.2 percent in 2012, and labor force participation and employment rates increased in the post-crisis period, particularly among women.

Most of the job growth has been of good

quality. The growth of employment took place foremost in the services and formal sectors, and the majority of net employment generation affected both men and women. This group of workers was also mainly university educated.

A more detailed analysis of labor force surveys suggests that the changes in overall employment, as well as female employment and improved formality, can mainly be linked to three factors: (i) absorption in the agricultural sector of a significant portion of the unskilled female labor force into informal employment; (ii) temporary growth in the labor intensive residential construction sector; and (iii) older people remaining in the formal labor market for longer periods. Currently, the improvement in female labor force participation, particularly when disregarding returns to the agricultural sector, is not yet significantly above its pre-crisis trend.

Job Creation and Productivity

Good jobs spur economic growth through their higher productivity. Besides providing an income for their holders, jobs with high productivity are considered to be “good jobs for development” insofar as they imply a positive externality of higher economic growth for the whole society. When jobs become more productive, and when labor in a society is reallocated from lower-productivity activities to higher-

productivity activities, the impact on economic growth is increased, and jobs become a more powerful driver of progress. Movement from lower- to higher-productivity activities can occur between sectors as well as within them. Structural change, defined as movement from low-productivity sectors to higher-productivity sectors (typically from agriculture to other sectors), can be a potent source of economic growth. However, within-sector improvements in productivity through capital accumulation, technological change, and reallocation of labor from low-productivity to high-productivity farms or firms can be just as powerful.

Recent structural change in Turkey, particularly the move away from agriculture, has been growth-enhancing. The most significant change during the 1998-2011 period was the flow of labor from agriculture to other sectors; indeed, the employment share of that sector fell from 41.5 in 1998 to 25.5 percent in 2011, or by 38.6 percent. The labor productivity of agriculture in 2011 is still the lowest of all sectors, at slightly above a third of overall productivity. With this in mind, it is not surprising that labor flows from agriculture to other sectors in Turkey have been growth-enhancing. However, apart from the general movement away from agriculture between 1998 and 2011, movement of labor between non-agricultural sectors in Turkey has

been only slightly in the direction of enhancing growth.

Overall, it appears that there is labor reallocation from less productive to more productive non-agricultural activities. Analysis using firm-level data from Structural Business Surveys (SBS) of firms with 20 or more employees over the 2005-2010 period demonstrates that Turkey is dominated by small services firms, whereas large firms contribute the most to both job creation and productivity. Examination of exit and entry, regression analysis, and decompositions demonstrates that there is, in fact, labor reallocation in Turkey from lower- to higher-productivity non-agricultural activities. This movement of labor is happening to a certain extent both within manufacturing and services sectors, as well as between non-agricultural sectors.

While agriculture as a whole has the lowest labor productivity of all economic sectors in Turkey, it is important to identify good jobs within this sector given its continued importance in terms of output and employment. Even though growth-enhancing structural change can help raise Turkey's overall productivity through movement of labor from agriculture to other sectors, agriculture will remain an important sector for years to come. As of 2012, agriculture contributed more than 9 percent of

GDP and employed close to 25 percent of all workers, and this sector has experienced a resurgence since 2007. Region-specific data begin to establish a linkage between productivity and job creation. The main finding is that regions with higher agricultural GDP per worker appear to have increased their shares of agricultural employment and attracted migration, indicating some agricultural labor reallocation towards more productive regions.

Jobs and Living Standards

The total number of households with at least one member of working age rose by 10 percent between 2006 and 2010; many of these new households were successfully absorbed into the labor market as the share of in-work households increased as well. The increases in in-work households were biggest in the Eastern provinces, where traditionally fewer households are attached to the labor market. The share of in-work households grew more moderately in the Western provinces, resulting in smaller regional gaps.

The population share with less than the minimum level of welfare increased slightly. The share of the population living in low-income households increased slightly from 10.2 percent in 2007 to 11.7 percent in 2010. However, national averages mask large differences across regions and by household type. The share was lower

for in-work households, especially in urban areas and Western provinces. Among households without regular labor market attachment, regional differences were larger and increased over time.

Material deprivation is still widespread among Turkish households, but significant improvements have been achieved since 2006. At the national level, the share of people without access to basic goods declined from 29 percent in 2006 to 21 percent in 2010. Improvements were uniform across the population; material deprivation was lower in 2010 than in 2006 for both household types and in all regions. Progress has been particularly strong among rural households in Eastern provinces, where the share of the materially deprived population declined from 69 percent in 2006 to 45 percent in 2010.

The global financial crisis had only limited impacts on trends in living standards. The main transmission mechanism of the crisis was through the labor market. Higher unemployment rates in 2009, especially in urban areas, contributed to the larger number of households with no regular labor market attachment. To support people out of work, unemployment benefits have increased in 2009, which helped vulnerable households better cope with the crisis.

The drivers of low income and material deprivation in Turkey were similar. Age, education level, and years of experience of the breadwinner mattered. Higher living standards were also associated with different types of employment, but mainly for non-agricultural jobs. The urban population enjoyed higher incomes, but was more affected by material deprivation. Regional differences in prices for consumer goods, differential access to housing allowances, and agricultural household production in rural areas are likely to have contributed to this result.

Labor income was the biggest contributor to total household income and growth in labor income contributed to higher living standards among low-income households. Higher minimum wages and crisis-related policy interventions (for example, reduced hourly wages to keep people in jobs) are likely to have contributed to this trend. Changes in the composition of households also had a positive impact on living standards. In particular, the share of workers contributed consistently to higher incomes. Changes in non-labor income had a large negative impact on living standards, offsetting the income-increasing trends of other factors.

Policy Outlook

The Government of Turkey has embarked or is reflecting on several

policies that support the observed favorable labor market developments, in particular a better integration of youth and women into formal work. The post-crisis policy package included a 5 percentage points reduction in social security contributions for all employees, additional reductions in social security contributions for youth and female employees as well as expanded active labor market measures. The evidence in this report lends cautious support to the formalization policy package lowering the social contributions for youth.

The 10th Development Plan continues to prioritize the activation of women and youth. The objective is to achieve a labor force participation of women of 34.9 percent by 2018. Planned labor market policies move from protecting jobs to protecting workers, which empirically favors easier formal job entry for women and youth. This includes individual account-based severance payments, increased coverage of unemployment benefits, and spreading temporary work contracts. To improve work-life balance, alternative models such as flexicurity, extended parental leave options, and improved access to child care services will be implemented.

To increase female labor force participation, a target of 70 percent gross enrollment of four- to five-year-olds in early childhood education has been set. This is a promising measure,

as according to the evidence presented in this report, the duty to care for young children or elderly family members at home is an important barrier to work for women.

- Building on this objective, an expansion of child-care provision, especially in urban centers, can be helped by a variety of tools. One approach tested internationally includes training unemployed women with some previous skills and experience to set up their own child-care business. In addition, demand-side or supply-side subsidies, as envisaged by the Turkish government, can ensure viability. A job in childcare is also viable formal employment for motivated women of age 50+, as they typically have raised their own children already.
- An expansion of services for the care of the elderly can be contemplated along the same principles. This care can be home-based, allowing the elderly to stay in their family residence. While Turkey still has a generous window of opportunity to prepare for the aging of its population compared to Western Europe, duties for home-based elder care are currently preventing many women from pursuing formal work.
- Last but not least, many women would benefit from continuous

learning and skills upgrading possibilities.

Other measures in the 10th Development Plan aim at a broader activation of the workforce. Social benefits are planned to be linked to the employment agency İŞKUR's activation programs and the overall placement rate of İŞKUR is intended to increase. In particular, activation policies together with lifelong learning programs are expected to increase the employability of the lower-skilled workforce.

Focusing on the objective of increasing productive jobs, several policies can accelerate the movement of labor towards more productive activities. The following have already been adopted or are being considered by the Government of Turkey:

- The initiatives encouraging employment of women and youth through reductions in the employer share of social security taxes can potentially facilitate the integration of existing rural-to-urban migrants into productive activities and accelerate such mobility, and with it agricultural shedding, in the future.
- Implementation of the action plan on combating informality appears to have borne fruit already, as suggested by the significant entry of firms with 20-49 workers in the 2010 SBS firm census.

- Initiatives expanding the scope for flexible contracting that have been under consideration in the National Employment Strategy (NES) can facilitate labor mobility and reallocation without jeopardizing workers' security.
- The reform of severance pay, which is very high by international standards and might be reducing productive labor reallocation, is one of the policies envisioned in the 10th Development Plan.
- In agriculture, the availability of a public support scheme appears to have had a supportive effect on formalization and reallocation of labor to more productive regions.

Productivity and formality of a job go hand-in-hand. The government can possibly lower the cost of formality by ensuring or strengthening the local presence of the services involved in tax and social security benefit administration.

Besides developing an environment that allows firms to grow and create more and better jobs, policy makers could build on the post-crisis achievements and help reduce the share of low-income households.

In 2012, the Government of Turkey adopted a NES that addresses some of the most pressing issues of the Turkish economy. One central pillar of the NES is increasing educational outcomes and improving training opportunities. As shown in this report and in the related literature, there is a strong link between education and the earnings potential of workers. In particular, adult training programs will allow current workers to improve their set of skills, giving them access to higher productivity jobs with better pay.

As a second pillar of the NES, employment opportunities of underprivileged groups such as youth, women, or the long-term unemployed should be promoted; this in turn is likely to reduce the share of low-income households. Given the low earnings potential of some of these groups, a comprehensive activation of cash transfers could help raise the human capital and living standards of the entire household. For households with no regular labor market attachment, social transfers have been shown to play an important role in raising living standards. Improved targeting and social transfers that also take into consideration regional differences may help to further increase the well-being of out-of-work households.



1. Conceptual Framework

1.1 What are “Good Jobs”?

The World Development Report 2013: Jobs presented a new framework for thinking about employment (World Bank 2012). While economists have traditionally focused on how development generates jobs, the World Development Report offered a new perspective, asking instead what jobs can contribute to development. The central argument is that jobs can have a multitude of direct and indirect benefits.

Jobs provide obvious benefits to the people who hold them, but they can also provide benefits to the people who interact with the jobholder, such as non-working household members. And jobs can provide indirect benefits beyond the immediate circles of the worker to the wider society as well. The indirect benefits can be economic, for example welfare and social mobility of the household, or societal, for example through social peace and civic engagement. These are indirect benefits of a job, “spillovers” into broader networks and society. While direct benefits are usually measurable with ease, indirect benefits are not; they are “positive externalities” in economists’ speak.

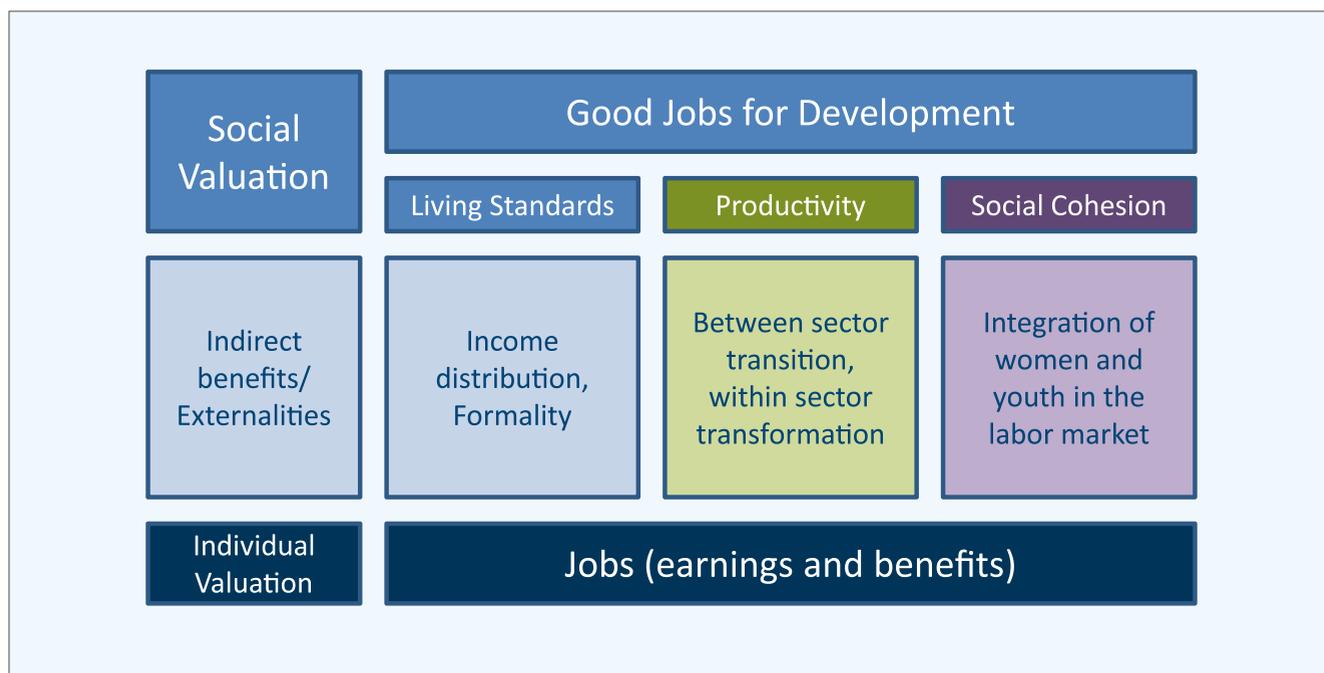
The more indirect benefits, or positive externalities, a job generates, the better it is for development. For example, a breadwinner’s job can lift an entire family out of poverty. A job can move from agriculture towards the expansion of productive off-farm employment, such as manufacturing in cities or tourism in the countryside. A job can move from a less productive sector and help expand a more productive one. A job can provide social insurance to its holder and also to the jobholder’s household. Finally, a job held by a woman can lead to higher spending on children’s health and education, on average, than a job held by a man.

The benefits of jobs can be conceptualized in three broad categories (see Figure 1.1). Jobs can: (i) provide income and livelihoods, and thereby ensure a minimum living standard; (ii) increase productivity; and (iii) foster inclusion in society.

In the context of Turkey, important results in each of the categories include: (i) for living standards, increased formality and a greater share of the population that enjoys a good income; (ii) for productivity, a structural transformation between and within sectors; and (iii) for social cohesion, the enhanced participation of women and youth in the labor market.

FIGURE 1.1

Conceptual framework of the benefits provided by jobs



Source: Adaptation of framework in World Bank 2012.

Most people in the world earn their main income through a job. An income enables consumption; more income and consumption enable one to enjoy a higher standard of living.

Jobs that become more productive generate economic growth; job turnover (with less productive jobs disappearing in favor of more productive ones) also generates economic growth. Job turnover is especially important in developing countries where the dispersion of productivity across different sectors is much higher than in industrialized

countries. In this way, productivity improvements can be registered through movements from agriculture to industry and services (including physical migration and urbanization). They can also be registered within sectors if more productive firms hire more people than less productive firms.

Finally, jobs enhance participation in society. Holding a job confers a certain respect in most societies, such that people feel enabled and entitled when holding an occupational title. The distribution of jobs, especially formal

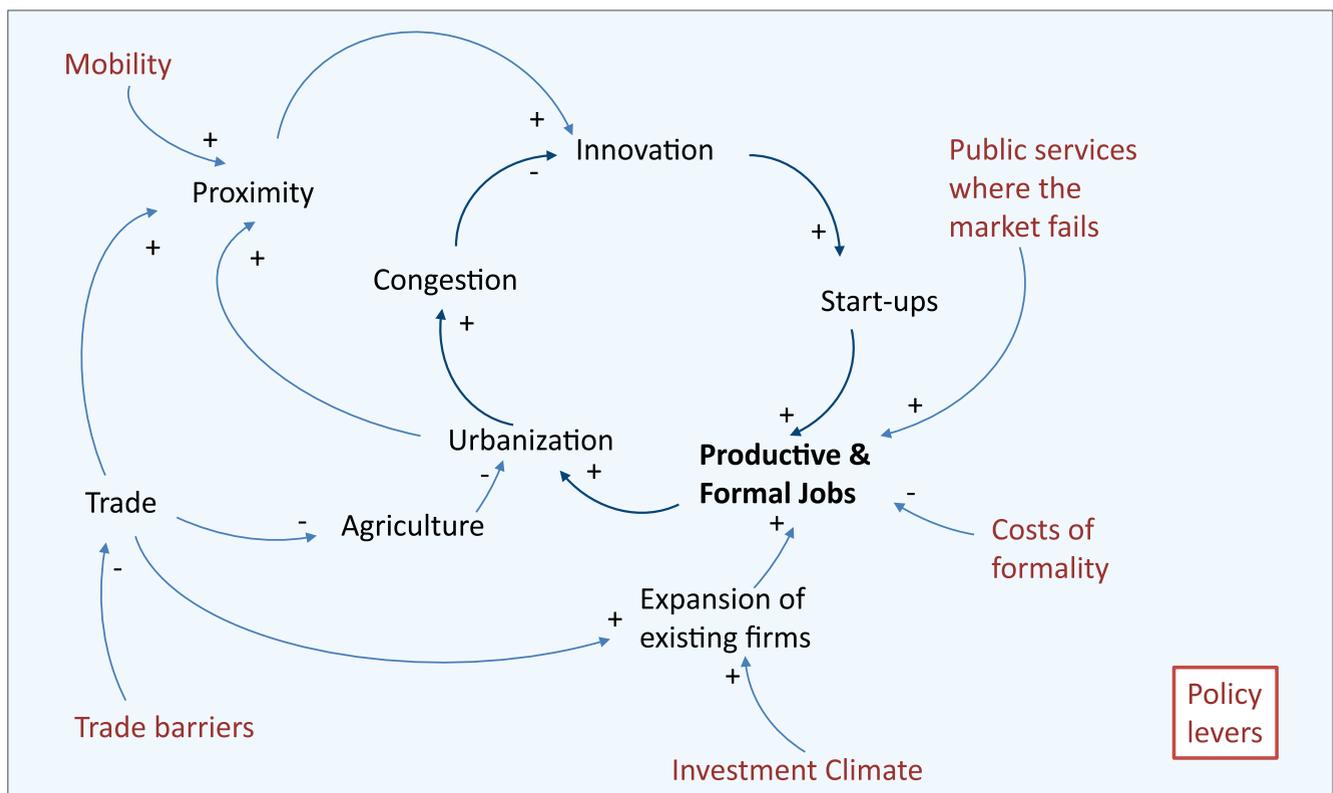
jobs, across regions, social classes, and gender is directly correlated with economic and civil equity across the same dimensions. The integration of women and youth into the labor market helps their participation in wider society. Working women have more influence over the allocation of the household budget, and working youth are more confident and forward-looking.

1.2 Where do Good Jobs Come From?

Good jobs emerge from a systemic interaction of various economic processes. Single causal chains are hard to identify, and a good job can result from several drivers, and can in turn drive other processes. The following cybernetic¹ graph attempts

FIGURE 1.2

Dynamics of good jobs



Source: Authors' elaborations

1- Cybernetics is a transdisciplinary approach for exploring regulatory systems, their structures, constraints, and possibilities. Cybernetics is relevant to the study of systems, including social systems. Cybernetics is applicable when a system being analyzed is involved in a closed signaling loop; that is, where action by the system generates some change in its environment and that change is reflected in that system in some manner (feedback) that triggers a system change, originally referred to as a "circular causal" relationship (Wikipedia).

an overview.

At the center of the dynamics is a circular process (stronger arrows) starting with innovation. This is the so-called “motor” of the system. More innovation leads to the foundation of start-ups, which can create new productive and formal jobs. A presence of productive jobs in a city leads to more “urban pull” and migration towards the city (urbanization). If a city grows too much and becomes congested, it can hamper innovation. A mid-sized city that grows still increases proximity and agglomeration: producers can talk to users, different producers along a value chain can talk to each other. This is helpful for innovation.

To pick out one example, rural-urban migration of those in search of better economic opportunities can create better jobs. Rural-urban migrants typically switch jobs and move out of agriculture into light manufacturing. To the extent that the urban sectors are more productive, the new jobs in the cities are better than the ones left in agriculture. However, it is also possible that this transition is not quite painless if the foregone job in agriculture is replaced by a precarious urban job or no job at all.

Many factors outside the labor market affect job dynamics. For example, trade also increases proximity and exchange

of different producers and clients and can create good jobs. A country with borders open to trade, among neighboring countries that are also open, will embark on a path towards greater specialization and produce more in its sectors of comparative advantage. Jobs will move from sectors with a disadvantage into sectors with a comparative advantage. Firms in the latter sectors will expand. At the same time, firms in the sectors of disadvantage will die. This turnover of firms, not painless, but usually resulting in higher average productivity, is called “creative destruction.”

The expanding sectors will now sell to global clients, and the people working in these sectors will therefore interact with global clients. This interaction will find and bring back new knowledge, for example, better production processes. The new jobs in the growing sectors that have a comparative advantage and are more exposed to trade are better than the jobs given up to move there. In the case of Turkey, this means the expansion of some sectors and formal firms, and, on average, a move away from agriculture.

1.3 Policy Levers

Government can influence these dynamics through a series of policy levers, for which we provide a few examples.

1.3.1 Mobility

The advantages of proximity, an important side effect of urban agglomeration, can best express themselves if people and firms are mobile and can physically move where they can be most productive. Mobility is a concept that encompasses several policy levers. Geographic mobility of people requires a modern transport network; geographic mobility of firms requires a transparent land planning system that balances environmental and economic concerns. The economic proximity of people and firms also requires information and communication highways.

1.3.2 Trade barriers

Trade barriers such as tariffs and product subsidies can restrict trade flows. Removing unnecessary obstacles to trade, such as import tariffs and quotas, will help to integrate the domestic economy with the global economy and thereby to realize productivity gains through specialization in sectors with a comparative advantage. It will also help create jobs that are in touch with the global economy and the global frontier of knowledge.

A related example is subsidies for sectors with a comparative international disadvantage. Subsidies, in the form of price guarantees, for example, are

often applied to maintain domestic production of certain agricultural crops or to maintain sectors that would not be competitive internationally and would disappear with trade. The effect of these subsidies is the same as that of an import tariff, keeping uncompetitive sectors alive, and thereby obstructing the turnover of jobs towards better jobs.

1.3.3 Investment climate

When firms are free to enter a market without excessive entry barriers in the form of licensing costs or difficult planning permissions, for example, and when they are free to grow with equal access to credit and compete based on genuine customer demand rather than nepotism or guaranteed monopolies, then growth and investment will usually be where the jobs are best, i.e., most productive.

It is also important that firms can compete on equal terms for their labor force, without the public sector offering a more comfortable combination of risks and returns (for example, higher wages and no possibility of being dismissed). Hiring and dismissal dispositions in the law can influence the turnover of labor and, if too binding, keep people from moving easily into more productive jobs. Dispositions on the legal wage and non-wage costs can create a hurdle to formality that excludes those people whose productivity could not more

than compensate the minimum wage + non-wage package.

1.3.4 Costs of formality

Lowering the mandatory social contributions or the mandatory minimum wage of some jobs can make it worthwhile to formalize them. Also, making the process easier to register a job or to register for social insurance can trigger the formalization of jobs. For example, merging the administrative windows for different social insurance benefits into a one-stop shop can ease this burden on employees. Finally, outreach to vulnerable and less informed groups, such as informal SMEs or employers in remote regions, can help further convert informal jobs to formal jobs.

For all legal dispositions, proper enforcement is crucial. This is easier if the dispositions are simple, transparent, and do not leave room for discretion. Discretionary application of rules will create an uneven playing field and work against the expansion of good jobs.

1.3.5 Public services where the market fails

Expanding services and creating jobs in areas where the market fails is a legitimate motivation for the allocation of public funds. Examples of services typically underprovided by the market include childcare and eldercare. For

example, asymmetric information regarding the quality of care often leads to an under provision of these services. For example, it is often difficult to distinguish between high-quality and low-quality child care centers and parents may not be willing to pay the higher fees demanded by high-quality providers. High quality centers will exit the market and the average quality provided will fall – despite the fact that parents demand high-quality child care services. Also, childcare services carry a large ‘externality’, i.e. they have positive secondary effects for non-users, for example through the child being well-behaved and a good citizen later on. Providers cannot charge for these positive secondary effects but incur the costs to provide them. The government can support the expansion of child care and elder care services in a market-friendly manner through demand-side vouchers or conditional cash benefits. If public demand-side subsidies build a viable demand from beneficiaries, private providers can supply these services in sufficient quality and quantity, and create jobs for the self-employed, entrepreneurs, or employees in larger practices. The expansion of these services is also a good policy tool for the development of regions, which may be rich in natural beauty but lacking in private sector job opportunities.

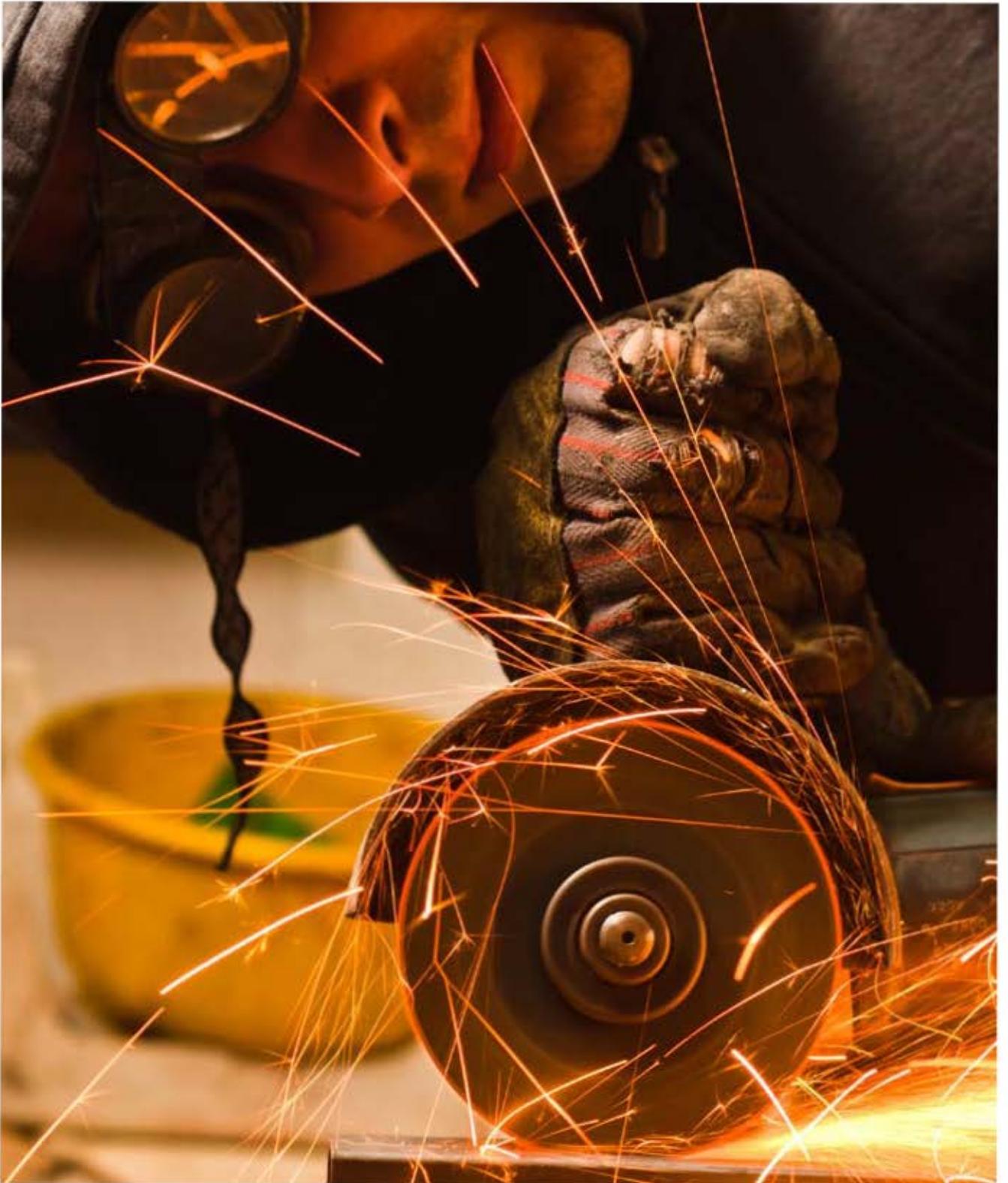
This report explores the dynamics of good jobs and some policy levers

to support them. While we briefly discussed in this chapter five levers relate to the rest of this report, only covers policies that relate to the costs of formality and public services where the market fails, the two levers that directly influence productive and formal jobs. The other policy levers will be discussed in the future reports.

Consistent with this focus, Chapter 2 covers growth, employment, and social cohesion, while Chapter 3 explores employment and productivity, especially with regard to sector transitions. Chapter 4 examines the dynamics of employment and living standards along the income distribution.

Chapter 1 References

World Bank. 2012. *World Development Report 2013: Jobs*. Washington, DC: World Bank.



2. Growth, Employment, and Social Cohesion: Post-Crisis Employment Generation for Men, Women, and Youth in Turkey

Abstract: *The rapid growth of GDP and employment in the post-crisis period, coupled with upskilling and formalization of employment in the labor market and the increased employment elasticity of growth², present a very favorable picture of the employment situation in Turkey. However, a more detailed analysis of labor force surveys suggests that there is not yet reason to assume that these changes in the labor market will have lasting effects. From current evidence, the majority of the changes observed can be linked to: (i) the agricultural sector re-absorbing a significant portion of the unskilled female labor force into informal employment; (ii) temporary growth in the residential construction sector; and (iii) older people remaining in the formal labor market for longer periods, rather than younger people entering formal jobs at the beginning of their lives/careers. The improvement in female labor force participation, particularly when we disregard returns to the agricultural sector, is not yet significantly above its pre-crisis trend.*

2.1 Introduction

In the period after the 2008 crisis, Turkey experienced a measurable increase in both employment and labor force participation. The employment rate increased from 44.9 percent of the working-age population (WAP) in 2005 to 48.6 percent in 2011, and the labor force participation rate increased from 50.4 percent to 53.5 percent over the same period. While a higher share of the overall population wanted to work throughout this time period in Turkey, job creation grew at a faster pace. The employment-to-WAP ratio (i.e., employment rate) went from 67.4 percent to 69.4 percent for men and from 22.8 percent to 28.1 percent for women.

Women, who traditionally have had low levels of labor force participation in Turkey, particularly saw an increase in employment and labor force participation rates. Female labor force participation increased from 25.8 percent in 2005 to 31.3 percent

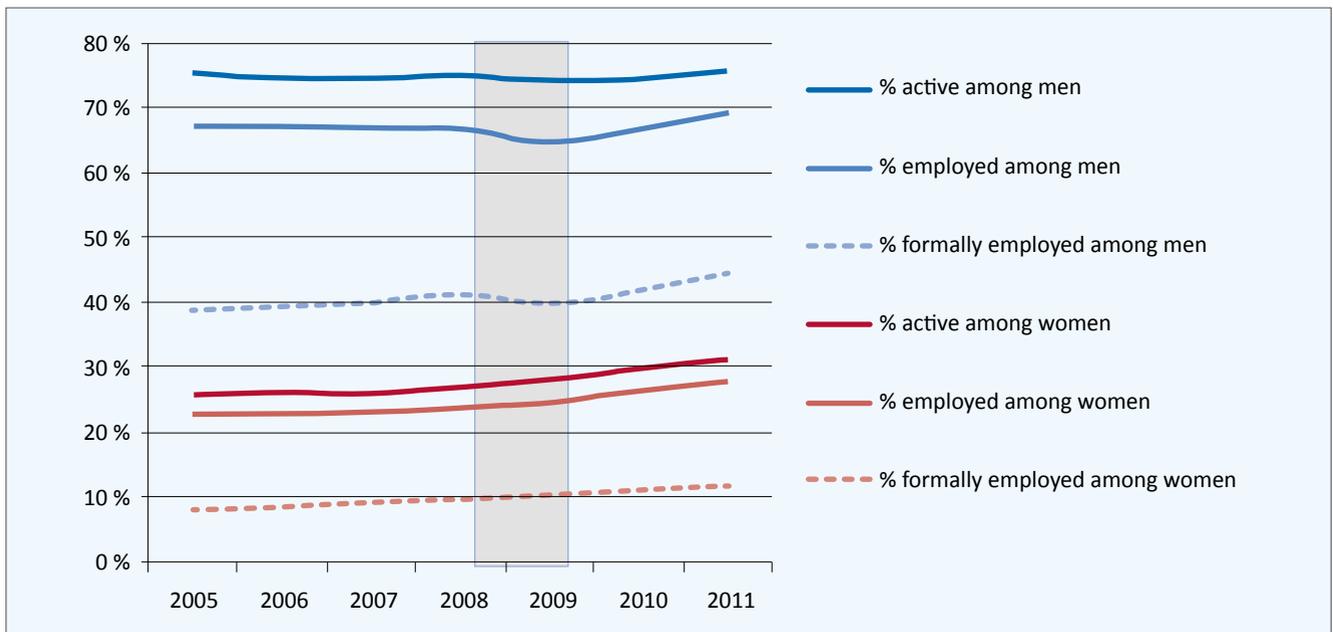
2- Defined as the ratio of growth in employment to the growth in GDP.

in 2011. The labor force participation rates of men, on the other hand, remained stable between 75.5 and 75.9 percent from 2005 to 2011, while their employment level dipped to 64.9 percent in the crisis year 2009 (from

67.4 percent in 2005). It subsequently bounced to 69.4 percent after the crisis. Female labor force participation and employment rates increased even through the crisis, partly as a result of the added worker effect.³

FIGURE 2.1

Labor force participation (activity), employment, and formality rates by gender, 2005-2011 (%)



Source: TUIK LFS and authors' calculations.

³ See Section 2.4 for details on female labor force participation and the added worker effect during the crisis.

The quality of jobs improved too, in terms of formality and skill content. The increases in labor force participation and employment rates for men and women went hand-in-hand with increases in the formalization of Turkey's labor market. Overall, 86.9 percent of net employment generation between 2005 and 2011 was in formal employment (i.e., workers with social security coverage), versus 13.1 percent in informal employment. Over time, there has also been an "upskilling" of employment in both the nonagricultural and agricultural sectors: about 40 percent of all jobs created between 2005 and 2011 (and about half of all jobs in the nonagricultural sector) were taken up by university graduates.

Most of the job creation in the post-crisis period was in the private sector.⁴ The public sector was responsible for 10.4 percent of all new job creation and 13.2 percent of formal job creation between 2009 and 2011. For women, new employment generation in public workplaces was higher: one in five formal jobs created for women were in the public sector in this time period.

Post-crisis growth was job-rich. In the period after the crisis, the employment elasticity of growth increased (from

0.28 in the 2005-2007 growth periods to 0.73 in 2009-2011 to 0.96 in 2010-2012). This means that for the same amount of growth generated, more people were employed.

Hence, in Turkey in the post-crisis years, the labor market became more skilled and formalized while concurrently experiencing a higher employment elasticity of growth. This chapter seeks to understand the drivers of changes in labor force participation, employment, and formalization, as well as the distribution of these changes across different groups of the population, especially women versus men and youth versus mature people. The next three sections answer three main questions. Section 2.2 looks at changes in employment by sector and at the drivers behind the increasing employment elasticity of growth in different sectors. Section 2.3 analyzes net employment growth by types of workers in the post-crisis period to determine who benefited most from employment generation between 2005 and 2011. Finally, Section 2.4 examines female labor force participation in Turkey and tries to measure a possible structural break.⁵

4- The Labor Force Surveys (LFS) have information on being mapped to the private or public sector only after 2009; hence, the changes in employment by public/private sector are analyzed only for 2009 and subsequent years.

5- The data sources used are described in Annex 2.1.

2.2 Drivers of Increased Employment Elasticity of Growth in Post-Crisis Turkey

Turkey's growth in the post-crisis period was job-rich. Real GDP grew by 9.1 percent in 2010 and 8.7 percent in 2011. This rapid economic growth is partly behind the surge in employment. But the more than three-fold increase in the employment-to-growth elasticity between 2005 and 2011 suggests that growth has created relatively more jobs in the post-crisis period.⁶ There are two drivers of the increase in the employment elasticity of growth: (i) a disproportionate increase in employment in labor-intensive sectors (i.e., the composition effect); and (ii) increased employment elasticity within sectors. These are discussed in the next two subsections.

2.2.1 Increase in employment in labor-intensive sectors (the composition effect)

In 2009, 51 percent of workers were employed in services, and this sector generated slightly more than a third of all jobs created between 2009 and 2011. During the same period, agriculture, which made up 23 percent of the labor force in 2009, generated 30 percent of the increase in employment, and the construction sector, which comprised only 6 percent of employment in 2009,

made up 16 percent of the increase in employment. In manufacturing, on the other hand, the growth rate of employment during recovery was similar to the stock of employment in this sector (the stock of employment in manufacturing was 20 percent while flow into the sector was 19.6 percent).

Typically, agriculture and construction are the most labor-intensive sectors in an economy, and significant increases in employment in these sectors also bring about higher employment elasticity of growth for the overall economy. Since we do not have an exact breakdown of labor and capital costs by sector, which would indicate exact levels of sectoral "labor intensity," productivity level per worker in each sector was used as a proxy. Table 2.1 shows the productivity level by sector (GDP/employment). For instance, the productivity level was 1.86 in agriculture and 4.06 in construction, compared to 4.54 in the overall economy in year 2009.⁷ Low GDP per worker in these sectors signals their higher labor intensity. Hence, one reason behind the rise in the employment elasticity of growth was likely the disproportionate increase of employment in the labor-intensive construction and agricultural sectors, compared to pre-crisis levels. Figure 2.2 provides the stock and flow of employment by sector for 2005, 2009, and 2011 (the flow of employment is provided separately for 2005-2011 and 2009-2011).

6- For elasticity figures and methodology see Table 2.2 and footnote 14.

7- Productivity calculated using 1998 base GDP numbers in Turkish lira (TL) and employment figures both from year 2009.

TABLE 2.1

Productivity (sectoral GDP / employment) by sector

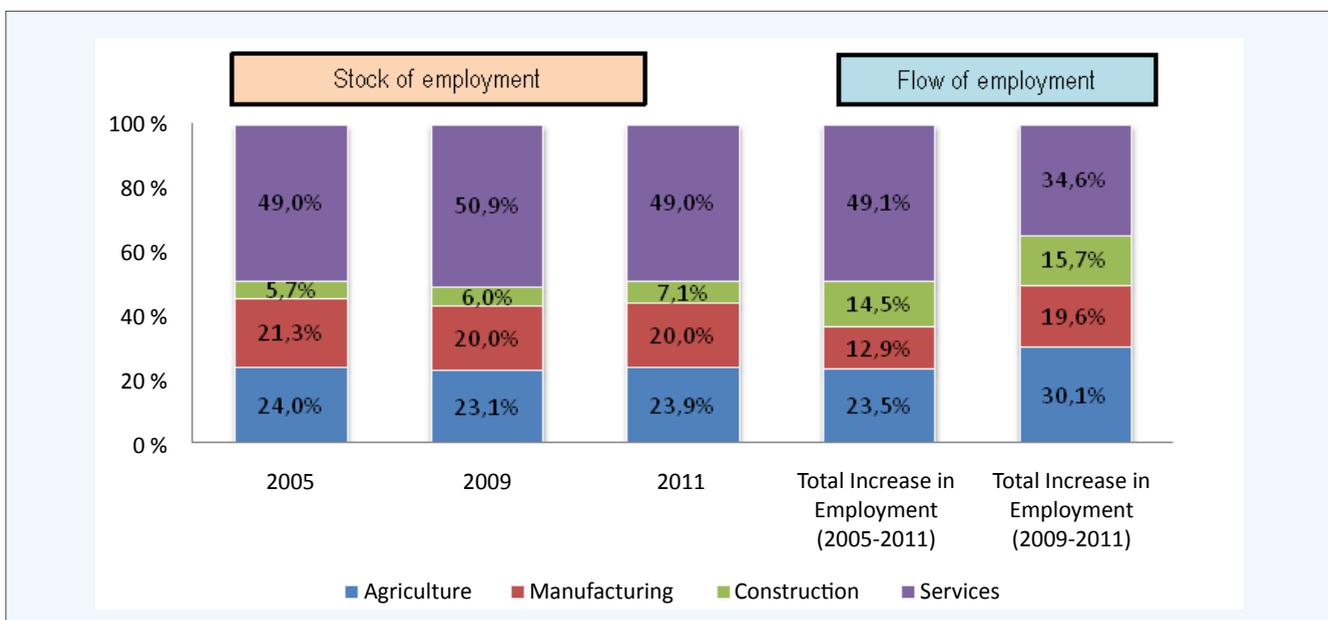
	Agriculture	Manufacturing	Construction	Services	Total
2005	1.86	5.67	4.74	5.11	4.37
2006	1.98	6.01	5.20	5.25	4.62
2007	1.86	6.29	5.34	5.43	4.77
2008	1.88	6.13	4.87	5.47	4.72
2009	1.86	6.09	4.06	5.31	4.54
2010	1.76	6.36	4.19	5.53	4.66
2011	1.72	6.65	3.98	5.69	4.75

Note: The units are expressed in 1998 sectoral GDP (value added) figures in 1,000 TL.

Source: Authors' calculations; GDP numbers from TUIK⁸; employment levels from TUIK LFS.

FIGURE 2.2

Stock and flow of employment by sector (2005, 2009, and 2011)



Source: Authors' calculations from TUIK LFS.

8- GDP in constant prices, taking year 1998 as base year. Source: http://www.tuik.gov.tr/VeriBilgi.do?alt_id=55

Increasing global food prices and rising agricultural earnings were behind the surge in employment in the agricultural sector. The increase in employment in the agriculture sector can be explained by higher earnings in the agricultural labor market (a 21 percent increase in hourly real earnings between 2005 and 2011⁹) experienced in parallel with the surge in global food prices. In the same time period, there was a 94 percent increase in the FAO food price index and a 63 percent increase in the FAO cereals price index.¹⁰ (Chapter 3 untangles the productivity and employment dynamics in the Turkish agriculture sector in more detail.)

A residential construction boom in Turkey increased employment in the construction sector. In the construction sector, growth was mainly fueled by the construction boom in residential construction: while there was only

a modest increase in the number of construction permits issued after the crisis (a rise of 0.4 percent in the total number of permits), there was a considerable increase in the “total area of construction” allowed under these permits (a 25.2 percent increase in the post-crisis period compared to the pre-crisis period¹¹). Of the total area of new permits issued in the post-crisis period, 98 percent were for residential buildings, and 85.5 percent were funded through private means. The government’s share in financing the construction of newly permitted buildings was only 14.5 percent (of total area of construction) in official statistics – however, anecdotal evidence suggests that through the provision of public or subsidized land and through subsidized credit lines for this sector, the state has played a large role in supporting the construction sector in the post-crisis years.¹²

9- Source: TUIK LFS.

10- Source: FAO food price index: <http://www.fao.org/worldfoodsituation/wfs-home/foodpricesindex/en/>

11- Source for all construction permit statistics: Central Bank Database, extracting data from TUIK. [http://evds.tcmb.gov.tr/cgi-bin/famecgi?cgi=\\$ozetweb&DIL=TR&ARAVRIGRUP=bie_inyprh1.db](http://evds.tcmb.gov.tr/cgi-bin/famecgi?cgi=$ozetweb&DIL=TR&ARAVRIGRUP=bie_inyprh1.db)

In the calculation, the post-crisis period is taken as 2010-2012 and the pre-crisis period is taken as 2005-2007.

12- It is unfortunately difficult to document public support for the sector with official statistics. Budget data for TOKI or data on public bank credits to the construction sector would help triangulate the observations presented here.

2.2.2 Increased employment elasticity within sectors

A second reason for increased employment elasticity of growth is the increased employment elasticity within each sector. For instance, in the agricultural sector, employment elasticity increased from an average of -1.7 in the 2005-2007 pre-crisis period to an average of 2.45 in the period 2009-2011 (Table 2.2). Similarly, in

the construction sector, employment elasticity increased from an average of 0.47 in the 2005-2007 period to an average of 1.16 in the 2009-2011 post-crisis period.¹³ Manufacturing also experienced increased employment elasticity of growth in the post-crisis period, although in the services sector there was not a significant change between the pre-and post-crisis periods.¹⁴

TABLE 2.2

Employment elasticity by sector

	Agriculture	Manufacturing	Construction	Services	Total
2005-2006	- 3.52	0.26	0.43	0.62	0.24
2006-2007	0.12	0.18	0.51	0.43	0.32
Pre-crisis average	-1.70	0.22	0.47	0.52	0.28
2007-2008	0.72	9.84	- 0.11	0.70	1.74
2008-2009	1.34	0.91	- 0.04	- 0.62	- 0.11
Crisis average	1.03	5.37	-0.07	0.04	0.82
2009-2010	3.45	0.62	0.80	0.46	0.68
2010-2011	1.44	0.49	1.52	0.63	0.77
Post-crisis average	2.44	0.56	1.16	0.54	0.73

Source: Authors' calculations; GDP numbers from TUIK; employment levels from TUIK LFS.

13- Average elasticities were calculated as simple averages across the years.

14- To calculate employment elasticities by sector, the following formula was used: $\epsilon = (\Delta o c) / (\Delta o c)$ where L represents total employment level and Y is GDP. Therefore growth in employment was divided by growth in GDP. The elasticity then can be interpreted as the percent change of employment for every one percent change in GDP. GDP levels were taken from TUIK's website. GDP levels were not presented in four main sectors, so the subcategories were aggregated into Agriculture, Manufacturing, Construction, and Services. Lastly, employment levels were calculated using TUIK LFS micro data.

For productivity levels, the formula used was: Productivity=Y/L

where again Y is GDP and L is total employment. Productivity can be interpreted as the amount of GDP created per worker.

The reasons for the increased employment elasticity of growth in the agriculture sector are discussed in depth in Section 4 of Chapter 3. The increased employment elasticity in the construction sector could be linked to Turkey's successful export of construction services¹⁵ as well as the residential construction boom.

Part of the reason for increased employment elasticity of growth in manufacturing may be the shift of export markets away from Europe towards the Middle East, entailing a shift in production structure. An increasing amount of labor-intensive products is being produced for more diversified export markets in the post-crisis period. Due to a combination of the reduced demand in European export markets and Turkey's increasing

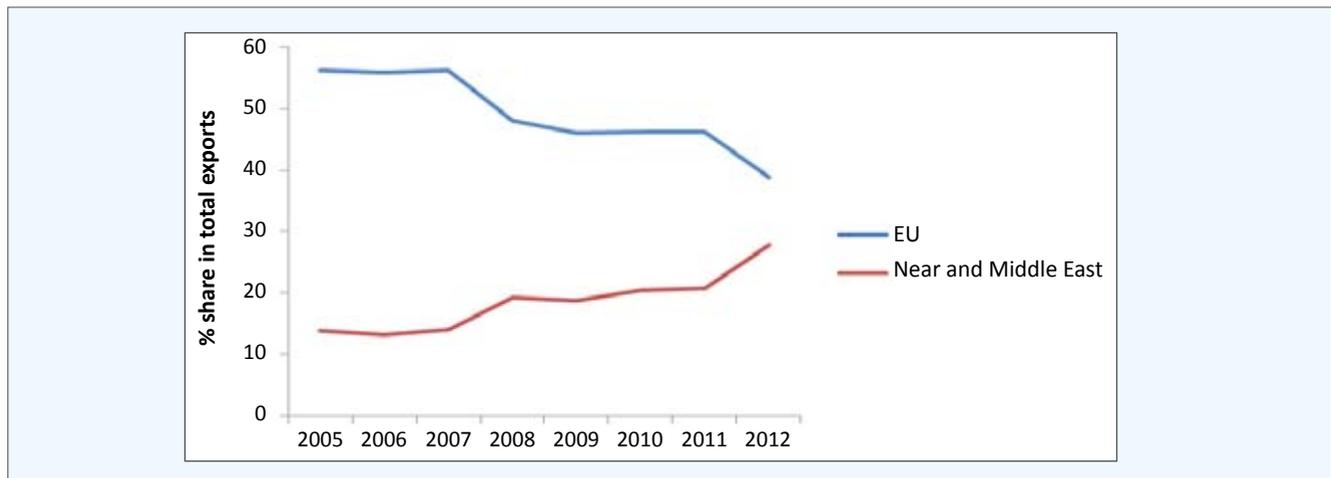
diplomatic and economic relations with the Middle East, there have been changes in the composition of destination countries to which Turkey exports. In pre-crisis years 2005 and 2006, exports to the EU were 56 percent of total exports on average; these dropped to an average of 46 percent in 2010 and 2011. Meanwhile, the share of exports to Middle East countries increased from 14 percent, on average, to 21 percent in the same time period (see Figure 2.3).¹⁶ Cebeci, Lederman and Rojas (2013) find that the average number of employees is higher for exporters to developing countries compared to exporters to EU countries, supporting the point that an increased share of exports to the Near and Middle East may be associated with higher employment.

15- This export has increased in recent years together with a shift to destinations in the Middle East and North Africa, more specifically for the reconstruction of Iraq. Also compare *Financial Times*: "Turkey Emerges As The True Iraq War Victor," March 12, 2013.

16- Source: TUIK export statistics: www.tuik.gov.tr/VeriBilgi.do?alt_id=12

FIGURE 2.3

Share of exports to EU and Near and Middle East countries between 2005-2012



Source: TUIK export statistics

2.3 The Beneficiaries of Employment Generation in the Post-Crisis Period

The employment generated after the crisis was of high quality overall. Increases were mainly in the services sector, in formal employment, and in employment of workers with university degrees. Of the new net employment generated between 2005 and 2011, 76 percent was in nonagricultural sectors and close to half (49 percent) came from an increase in the services sector. Half of all jobs in the nonagricultural sector (48 percent) and 38 percent of all jobs created were taken up by university

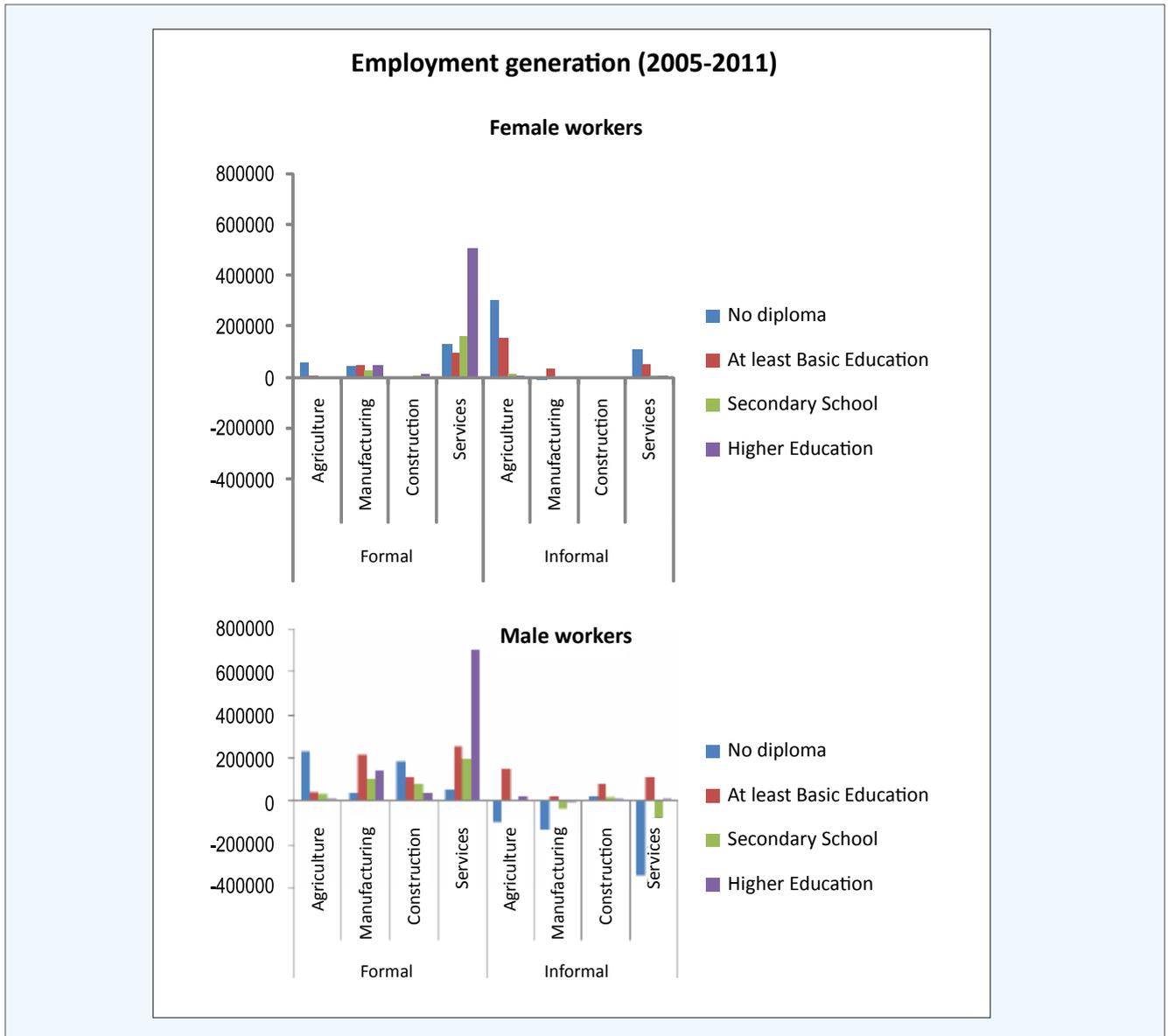
graduates.

While growth in the formal services sector for highly educated workers was the driver in employment growth for both genders, there was a parallel increase in the informal agricultural sector for women, which explains the surge in women's employment between 2005 and 2011. Of the net employment generated for women, 49 percent was in the formal services sector and 26 percent was in the informal agricultural sector. The distribution of net job creation by gender, educational attainment, formal/informal status, and sector of employment is provided in Figure 2.4.¹⁷

17- To calculate the net employment generation, we first calculated the level of employment for 2005 and 2011. Net employment generated was then calculated by subtracting the employment level of 2005 from the employment level of 2011. This was also applied for subcategories of gender and age (i.e., net employment generated for female workers, net employment generated for young workers, etc.). Next we looked at how net employment generated changes for different sectors, cross-tabulating workers by age, gender, and education level. Annex 2.1 summarizes the data sources used in the analysis.

FIGURE 2.4

Net employment growth by sector and educational attainment, and gender



Source: Authors' calculations from TUIK LFS.

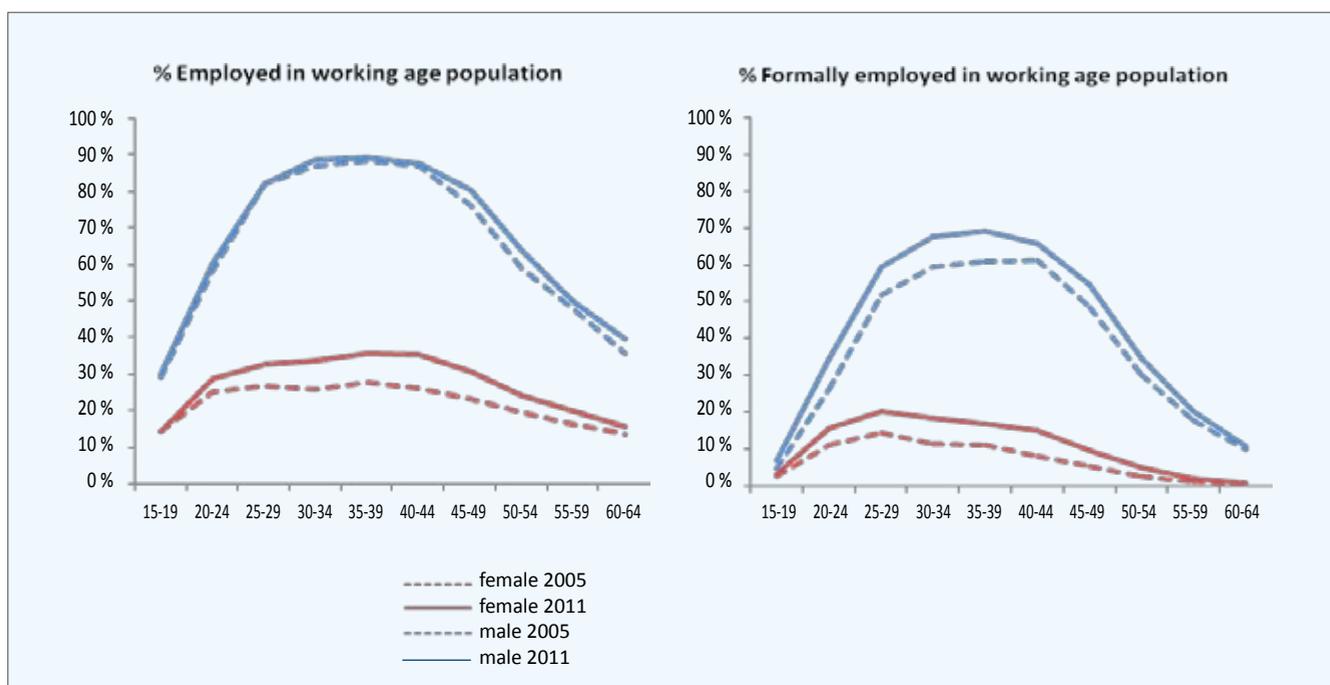
An important contributor to the increase in employment, and in particular formal employment, was that mature people stayed longer in the labor force in this time period. About 26 percent of net employment growth (and 12 percent of formal employment growth) was attributable to older workers (50-64 years old). At the same time, the young (ages 15-29) benefited from 13 percent of total net employment growth (and 29 percent of formal job creation), i.e., from a measurable movement from informal to formal jobs but little new job creation. The overall increase in the growth rate of employment for the older cohort can

be explained by: (i) an increase in the effective retirement age (in the formal sector); and (ii) entry of older women into the informal agricultural labor market (informal sector).

There was a systematic formalization for men of all age levels, while for women there was increased formal employment in younger age groups and increased informal employment for older cohorts (Figure 2.5). This is consistent with the finding that women in the older age groups re-entered the informal agricultural sector in this time period, tending to increase their overall rate of informal employment.

FIGURE 2.5

Share of employed in the WAP by gender, age, and informal/formal status



Source: Authors' calculations from TUIK LFS.

2.4 Trend Changes in the Growth of Employment in the Post-Crisis Period

To assess the changes in the trend of employment growth in the post-crisis period compared to the pre-crisis period, two sets of pseudo-panel regressions of worker categories were estimated (see Annex 2.1 for the methodology and a detailed discussion of the results).¹⁸ The dependent variable in the pseudo-panel regressions is the difference between the post-crisis and pre-crisis trend in average growth of the employment level or rates for each of the cells of worker categories. The growth rates in employment level or rates are computed for each cell in the pseudo panel and the average growth rate of employment for each worker type in the pre-crisis, crisis, and post-crisis periods is calculated.¹⁹ Using this method, the analysis tries to see how the growth trend in the post-crisis period changed compared to the pre-crisis period for different groups of workers, thus comparing post-crisis recovery impact between these groups (e.g., men versus women, young versus middle age).

Two main models were estimated in this analysis. In Model 1, we only controlled for individual characteristics (yielding 24 cells defined by urban/rural location, gender, educational attainment, and age group). Model 2 included only workers in the labor force and used information on four sectors and formal/informal status but omitted location (yielding a total of 96 cells of workers). Model 1 was run with a variety of outcome variables for the individuals in the labor market, such as labor force participation, employment rates, formal/informal employment, or employment rate by sector. In Model 2, on the other hand, there was only one dependent variable (the difference between the post-crisis and pre-crisis trend in average growth of employment level for each cell). While Model 1 is useful for determining the post-crisis impact on a variety of employment outcomes for different work groups, Model 2 gives insights about the sectoral impact of the post-crisis period. The pseudo-panel regressions were weighted by the size of each cell in order to extrapolate the results to Turkey's WAP.²⁰

18- The analysis is adapted from "How Did the Great Recession Affect Different Types of Workers? Evidence from 17 Middle-Income Countries" by Newhouse and Cho(2012) in World Development Vol.41 and "Turkey: Managing labor markets through the economic cycle" Report No. 70130 of World Bank ECSHD.

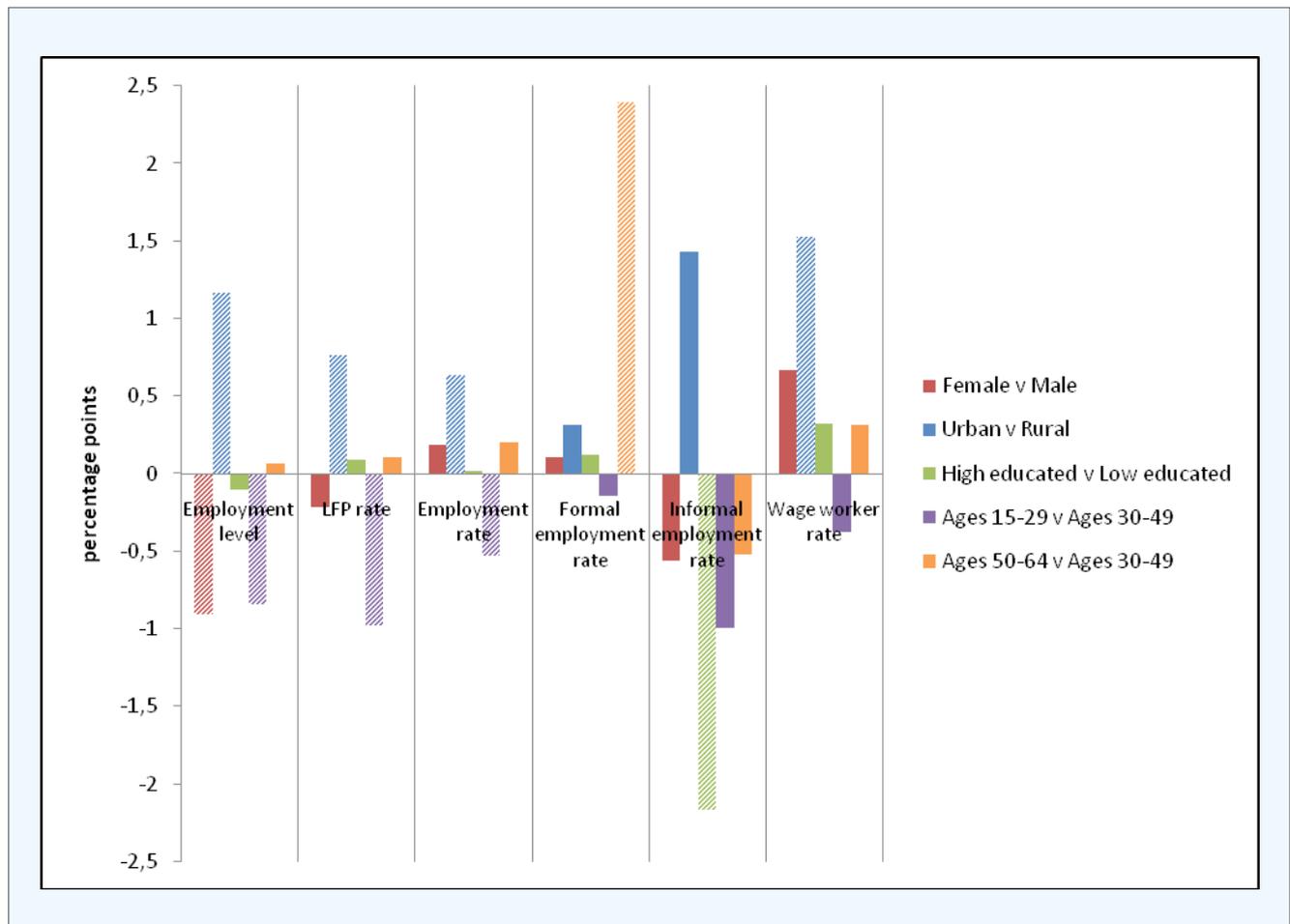
19- The time periods were defined as follows in the quarterly LFS data: Pre-crisis period: Q1 2005 – Q3 2008. Crisis period: Q4 2008 – Q3 2009. Post-crisis period: Q4 2009 – Q4 2011.

20- The pseudo-panel regression was run with 96 observations, and weights were constructed using the size of the worker cell in the baseline quarter (Q1 of 2005) to give more weight to worker types more prevalent in the labor force. Some of the worker categories were too small and for some quarters did not include any workers. Such worker categories were dropped from the regressions. Hence, a total of 85 cells (observations) were used in the pseudo-panel regressions.

Several results came out of this pseudo panel analysis, which used quarterly LFS data from 2005 to 2011:

FIGURE 2.6

Recovery impacts, by individual type²¹



Note: Rates given as a share of WAP. Crossed bars are those statistically different from zero.

Source: Authors' calculations based on LFS (TUIK)

21- The full results of Model 1's pseudo-panel regression are provided in Table A2.2.

First, the trend in labor force participation and employment rate (as a share of the WAP) increased more for workers in urban areas (by 0.8 percentage points and 0.6 percentage points, respectively) in the post-crisis period, relative to the change in trend for workers in rural areas. In particular, the growth rate of employment is higher in the construction sector, and wage work for this group of urban workers increased faster compared to rural workers.

The estimates found no statistically significant difference in the trends in the employment and labor force participation rates of women relative to men (i.e., the impact of recovery is similar for both groups of workers). (See Table A2.2 Column 1). One reason is that the pre-crisis trends in female labor force participation were already positive. However, for employment in the agriculture and construction sectors, the impact of recovery was higher for male workers compared to female workers.

The growth of formal employment exceeded that of informal employment in the post-crisis period. The impact of recovery in the post-crisis period was higher for formal employment. (See Annex 2.2 Table A2.3 Column 1). The post-crisis impact of recovery was higher on the formal employment rate of

the older age cohort workers compared to the middle age cohort workers, while in turn no significant difference was found between the impact of recovery on the formal employment rate of the younger age cohort (15-29 years old) and the middle age cohort workers (See Annex 2.2 Table A2.2 Columns 4 and 5).

The age cohort variables were important determinants, particularly for formal employment: for those in the older age cohort (50-64 years old), the difference between post-crisis and pre-crisis growth in the probability of being formally employed was 2.4 percentage points higher than the change in trend for the middle age cohort (the omitted category in the regressions), suggesting a higher impact of recovery for the older age cohort. However for formal employment, there was no significant difference between the impact of recovery for the younger age cohort (15-29 years old) and the impact of recovery for the middle age cohort.

The analysis found no significant difference in the post-crisis trend of formalization for the youngest cohort (ages 15-29) or for women, relative to, respectively, the middle-aged cohort and men. While in the absolute, the youngest cohort showed measurable movement from informal to formal jobs

(28.9 percent of formal job creation with only 13 percent net job creation), their post-crisis trend in growth of formal employment did not exceed the other cohorts (See Annex 2.2 Table A2.3 Column 6²²). For the older age cohort, on the other hand, there was an increase in the growth rate of formal employment in the post-crisis period (a difference of 5.1 percentage points in the growth of employment) (See Annex 2.2 Table A2.3 Column 7). This is consistent with the finding in Section 2.3 that older people remain in the labor force for longer periods of time if they are formally employed, and this likely contributed to increased formalization in the labor market.

2.5 Was There a Structural Change in Female Labor Force Participation in the Post-Crisis Period?

2.5.1 Main trends

Turkey is undergoing a structural transformation in the labor market for women, albeit slowly. It is instructive to take a broader perspective on female labor force participation as it relates to the percentage of women employed in vulnerable work and to fertility rates (Figure 2.7). The fertility rate in the

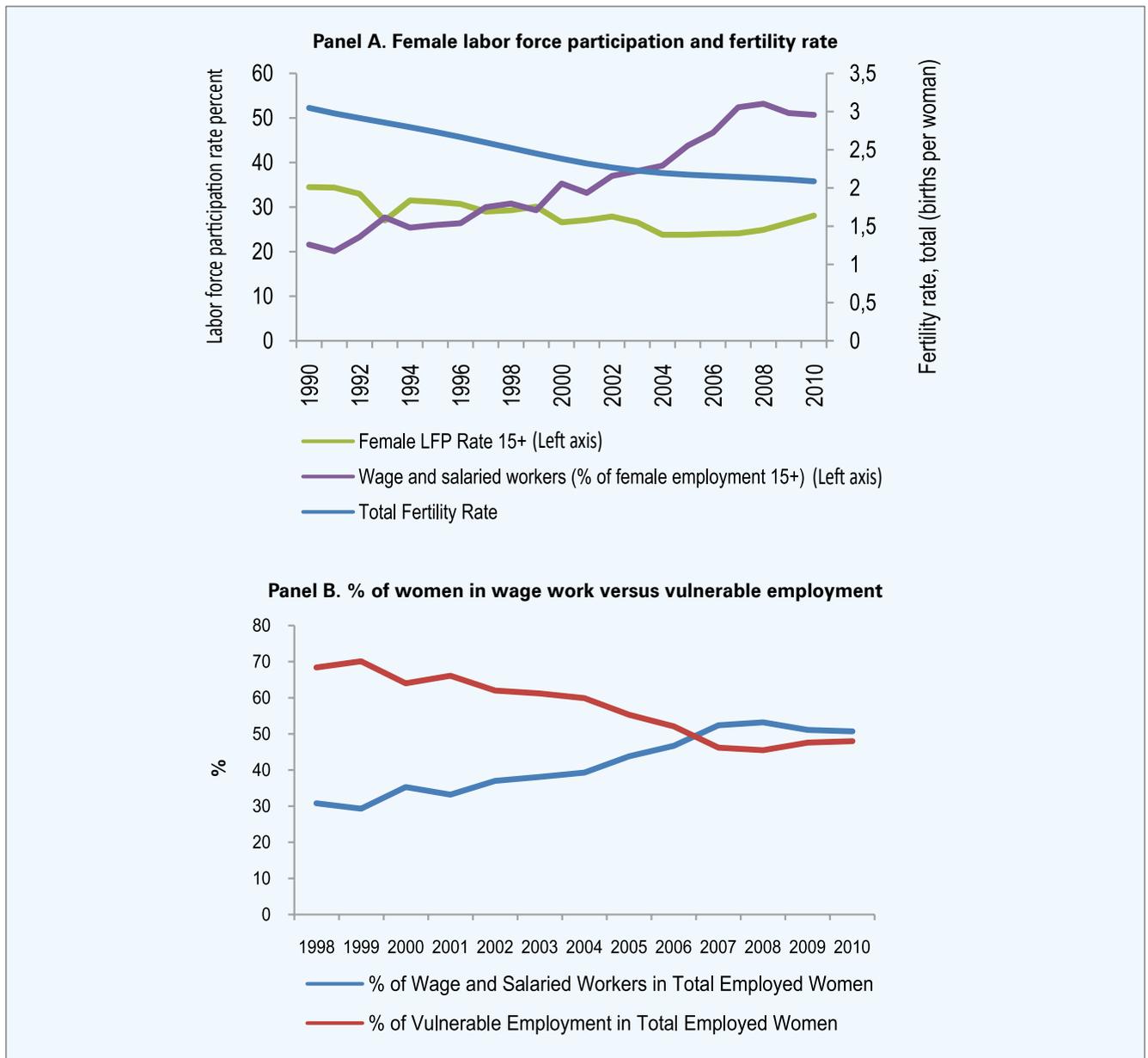
population declined from 3.05 children per woman in 1990 to 2.38 in 2000 and 2.09 in 2010. In the same time period, as a result of urbanization and the move away from agriculture, there were lower levels of female labor force participation until 2007. At that point, the trend reversed, with increased female labor force participation through the crisis and beyond.

From 1990 to 2008, there was a consistent increase in the percentage of women (ages 15+) in wage and salaried work. In fact, through this time period, the percentage of women in wage and salaried work in Turkey increased consistently (up until 2008), while the percentage of women in vulnerable employment (as unpaid family workers or self-employed) declined. This trend was stopped by the crisis and the share of women in vulnerable jobs increased. This was likely due to the increased female labor force participation in agriculture, especially among older women. Latest numbers suggest that the share of women in wage and salaried work continued to increase (51.6 percent in 2011 and 54.3 percent in 2012) and that the share of women in vulnerable employment decreased again (47.2 percent in 2011, 44.4 percent in 2012).

²²- This result holds when we look at employment rates (as a percentage of WAP) in Model 1, and employment levels in Model 2. The WAP changed by only 2 percentage points between 2005 and 2011.

FIGURE 2.7

Long-term trends in labor force participation, fertility, wages, and vulnerable employment for women in Turkey



Source: World Bank Gender Stats.²³

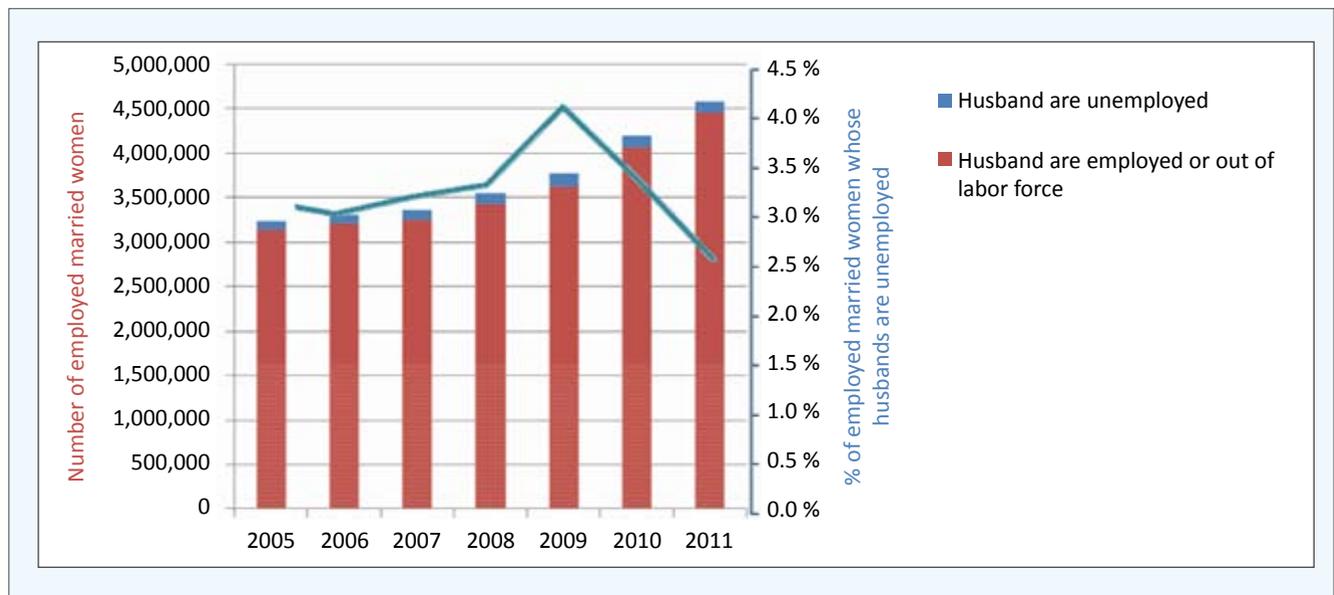
23- See <http://databank.worldbank.org/data/views/variableSelection/selectvariables.aspx?source=gender-statistics>

There is some evidence to suggest that female labor force participation increased during and after the crisis as a result of the added worker effect.²⁴ The overall total number of married women employed increased through the years, including the crisis years. The proportion of employed married women who had unemployed husbands relative to the overall number

of employed married women increased steadily between 2006 and 2009 and declined thereafter. This can be taken as an upper bound on the added worker effect since the number includes women who may have already been working before the crisis, and whose husbands lost jobs while they did not (see Figure 2.8).

FIGURE 2.8

An upper bound estimate of the added worker effect in Turkey



Source: TUIK LFS and authors' calculations.

There was no significant structural change in female labor force participation in the post-crisis years, mainly because the positive trend of the pre-crisis years continued. While more women and university graduates

entered the service sector, a large percentage of women also entered the informal agricultural workforce as unpaid family workers. Total female labor force participation increased to 31.3 percent in 2011. However,

²⁴ The added worker effect is an increase in labor supply of married women when their husbands become unemployed.

without the re-entry of women into the agricultural labor force (between 2005 and 2011), this level would have been 29 percent in 2011 (up from 25.8 percent in 2005).²⁵ Chapters 3 and 4 examine the role of unpaid family workers in agriculture in more depth, from a productivity and welfare perspective, respectively.

2.5.2 Employment by education and age

In the post-crisis period compared to the pre-crisis period, more highly educated women were less likely to be formally employed (compared to women with no formal education) while middle aged women were more likely to be formally employed compared to the young age cohort women. To take a closer look at the determinants of female labor force participation and employment in the post-crisis period in Turkey, a multinomial logit regression model was estimated. Annex 2.3 provides the details of this estimation.

Work prospects for young women did not seem to change over the crisis. Overall, the youngest cohort (ages 15-29) had a negative correlation coefficient when the dependent variable was being formally or informally employed (-0.601 and -0.284, respectively, in the pooled

regressions). The post-crisis dummy variable interacted with the young age cohort also had a negative correlation coefficient for formal employment, at - 0.131 (with p-value<0.01), meaning that being young was associated with a smaller marginal probability of being formally employed on average in the post-crisis period compared to the pre-crisis period (see Annex 2.3 Table A2.4 Column 9).

The middle aged female cohort was more likely to be employed compared to the young, and their likelihood of being formally employed in the post-crisis period also increased in the post-crisis period compared to the young (see Annex 2.3 Table 2.4 Column 9).

For the older age cohort of women, multiple trends are at work. On average in the sample, women in the age group 50-64 were much less likely to be formally employed compared to women in the middle age cohort (the partial correlation coefficient was -2.263, indicating that they were 226.3 percentage points less likely to be formally employed compared to the middle aged group, controlling for other characteristics). This is a function of the early retirement age in Turkey and this high negative coefficient only applied to the formal sector. For informal sector

25- To get the number of new entrants, first the number of employed women was calculated in agriculture in 2005 and 2011 and then the number for 2005 was subtracted from the number for 2011. Then this number was subtracted from the total number of employed women for 2011. The labor force participation rate was recalculated without taking these new entrants into the total employment of women. This rather simplistic methodology assumed that these women would not have been otherwise employed in the economy, which is not necessarily the case.

employment, the partial correlation coefficient on employment for women in the 50-64 age category was -0.449.

2.5.3 Other determinants of female labor force participation

Family composition variables and the number of children and elderly people in the household continued to be strong determinants of female labor force participation. In the pooled sample, on average, it was found that having young children (in the age group 0-4) significantly reduced a woman's labor force participation and employment probability. For the sample of all women, each additional child in the 0-4 age group in the household reduced a woman's probability of employment in the formal sector by 0.466 percentage points (p-value <0.01). The probability is -0.30 (p-value <0.01) for urban high-skilled women, -0.918 (p-value <0.01) for urban low-skilled women, and -0.534 (p-value <0.01) for rural women.

For urban high-skilled women, the interaction term between the post-crisis variable and the number of young children (ages 0-4) had a significant and negative value for formal employment (-0.172 with p-value <0.01) (see Annex 2.3 Table A2.4 Column 10). This

indicates that for this group of women, having young children was associated with an even more negative correlation with formal employment in the post-crisis period than before the crisis. This is not surprising given that Turkey made very little progress between 2005-2013 in making childcare more affordable for working women in urban areas.²⁶ On the other hand, it is interesting that after the crisis, urban high-skilled women became more likely to enter the informal sector with an increased number of young children in the household (0.302 with p-value <0.01) (see Annex 2.3 Table A2.4 Column 6). The informal sector may be increasingly serving as a cushion, providing part-time work or otherwise more flexible work arrangements that the formal sector denies even to the high skilled.

The number of elderly people in the household (ages 65+) acted as a negative correlate of female labor force participation and employment, and this seemed to be increasingly the case for urban high-skilled women in the post-crisis period. For urban high-skilled women, having elderly people in the household was associated with a 7.77 percentage point decline in formal employment on average in the pooled sample (p-value <0.01). In the post-

26- There have been no public subsidies targeting childcare for the age group 0-4 in this time period. The only ECD program scaled up in this time period was for the kindergarten group (60-month-old children), enrolling children in kindergarten one year before starting primary school. No progress has been observed in public programs that target younger children, through public provision or private provision/public financing. As a result, any expansion in supply of childcare has been through private means and childcare remains unaffordable for the poor and middle classes.

crisis period, for urban high-skilled women, the interaction between the number of elderly people and the post-crisis variable was -0.129, indicating that each additional elderly person in the household reduced the likelihood of an urban high-skilled woman being formally employed by 12.9 additional percentage points in the post-crisis period (see Annex 2.3 Table A2.4 Column 10).

2.6 Conclusion and Policy Outlook

This chapter considered growth and employment for different social groups in the post-crisis period in Turkey. The main findings can be summarized as follows.

The changes in the employment elasticity of growth in the post-crisis period can be explained by a disproportionate increase in employment in the agriculture and construction sectors, which tend to be more labor intensive, and an increase in sector-specific employment elasticities.

Most of the job growth has been of good quality. The growth of employment took place foremost in the services and formal sectors, and the majority of net employment generation affected both men and women. This group of workers was also mainly university educated.

However, a large part of the increase

in female labor force participation is due to the re-entry of women into informal agriculture (usually those in the middle age or older cohorts, with no formal training). It was calculated that the female labor force participation rate would have been 29 percent in 2011 rather than 31.3 percent (up from 25.8 percent in 2005) without the development in agriculture. Please refer to Chapter 3, section 3.4 and Chapter 4 for a detailed analysis of the importance of agricultural employment.

While there has been a gradual change in the structure of female labor force participation over the years, the evidence does not support a structural break in the post-crisis period compared to the pre-crisis years, mainly because the development of the pre-crisis years was already positive.

For youth, a significant change could not be found in the employment trend in the post-crisis period either. For older individuals, an increased probability of formal employment was found (likely the result of later retirement). Increased overall formalization in the labor market is partly linked to people staying for longer periods of time in formal employment.

The Turkish government has already embarked on several policies that supported the favorable labor market development, in particular a better integration of youth and women into

formal work. The post-crisis policy package included a reduction in social security contributions for youth and female employees as well as expanded active labor market measures. The evidence cited in this chapter lends cautious support to the formalization policy package lowering the social contributions for youth. The younger cohorts have seen a shift from informal to formal work, if with little overall job growth.

The 10th Development Plan prioritizes the activation of women and youth. The objective is to achieve a labor force participation rate of women at 34.9 percent by 2018. Planned labor market policies move from protecting jobs to protecting workers, which empirically favors easier formal job entry for women and youth. This includes individual account-based severance payments, increased coverage with unemployment benefits, and spreading temporary work contracts.

To increase female labor force participation, a target of 70 percent gross enrollment of four- to five-year-olds in early childhood education has been set to facilitate women's employment but also to improve educational outcomes in the long run. This is a promising measure, as according to the evidence presented in

this chapter, the duty to care for young children or elderly family members at home is important barrier that needs to be overcome by women.²⁷

- **Building on this objective, an expansion of child-care provision, especially in urban centers, can be helped by a variety of tools.** One approach, first tried in New York City (satellite childcare) and later in the United Kingdom (ABC pathway programme) and other countries, addresses two problems at once. In this approach, programs train unemployed women with some previous skills and experience to set up their own child-care business. A comprehensive and selective training course, a start-up credit to upgrade premises and learning materials, and a link with an established kindergarten (to receive mentoring) are key ingredients for success. Finally, demand-side or supply-side subsidies, as envisaged by the Turkish government, can ensure viability. A job in childcare is viable formal employment for motivated women age 50+, as they typically have raised their own children already.
- **An expansion of services for the elderly can be contemplated along the same principles.** While Turkey

27- Further, a profiling of the vulnerable labor force in Turkey shows that the three largest profile groups pertain to inactive women: (i) young urban housewives who never worked; (ii) older urban housewives who never worked; and (iii) young urban mothers in unstable employment. See the companion report World Bank (2013), *Activating the Vulnerable into Good Jobs*.

still has a generous window of opportunity to prepare for the aging of its population compared to Western Europe, duties for home-based eldercare are currently preventing many women from pursuing formal work. Publicly subsidized eldercare is still a relatively underprovided service in Turkey and could be expanded and staffed with previously unemployed or inactive women and men. These services can be home-based and need not require relocation of the elderly. Again, the expansion can be helped through a demand-side finance scheme to allow market forces to work for the best quality of provision.

- Last but not least, many women would benefit from continuous learning and skills upgrading possibilities. Options to certify existing experience and skills or to learn new workplace-relevant skills would help women to enter

productive work or to progress from less to more productive, especially formal, jobs. It is important that any lifelong learning opportunities be compatible with women's existing work and family duties. Finally, it is important to build the awareness of husbands and other family members about the benefits of life long learning for women.

Other measures in the 10th Development Plan aim at a broader activation of the workforce. Social benefits are planned to be linked to İŞKUR's activation programs and the overall placement rate of İŞKUR is intended to increase. In particular, activation policies together with lifelong learning programs are expected to increase employability of the lower skilled workforce. Also building on education, the 10th Development Plan foresees increasing tertiary education, which could further fuel the jobentry observed among the university educated.

Chapter 2 References

Cebeci, T., Y. Lederman and Diego Rojas. 2013. "The Structure of Exports across Destinations and Labor-Market Outcomes: An Empirical Case Study of Turkey." Washington, DC: World Bank.

Cho, Yoonyoung, and David Newhouse. 2012. "How did the great recession affect different types of workers?

Evidence from 17 middle-income countries." *World Development*.

World Bank. 2013. "Turkey - Managing labor markets through the economic cycle." Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/2013/03/17977691/turkey-managing-labor-markets-through-economic-cycle>

Annex 2.1: Data Sources

For calculation of the employment generation numbers used in the pseudo-panel analysis and multinomial logit regressions, we used Turkey's labor force surveys (LFS) from 2005-2011. The LFS is a representative household survey. The main objective of the LFS is to obtain information on the labor structure of the labor force in the country. The survey includes information about economic activity, occupation employment status, working hours, earnings, etc. Since it is a household survey, it is possible to link individuals in the household with each other and see, for example, the effect of husbands' education level on women's labor force participation.

For the 2005 survey, 126,704 households answered the questionnaire. This number is 129,527 for 2006; 128,036 for 2007; 129,266 for 2008; 135,891 for 2009; 143,871 for 2010; and 144,361 for 2011.

For productivity and elasticity calculations, GDP levels were collected

from the TUIK website (http://www.tuik.gov.tr/VeriBilgi.do?alt_id=55). GDP levels are constant prices taking 1998 as the base year and total GDP is a sectoral total calculated by summing the GDP contributions of the agriculture, manufacturing, construction, and services sectors. The GDP of each sector is found by summing the subcategories of each sector.

For food price indices, the annual food price index of FAO was used (see <http://www.fao.org/worldfoodsituation/wfs-home/foodpricesindex/en/>).

Construction permit statistics were taken from the Turkish Central Bank's database, which extracts data from TUIK (see [http://evds.tcmb.gov.tr/cgi-bin/famecgi?cgi=\\$ozetweb&DIL=TR&RAVERIGRUP=bie_inyprh1.db](http://evds.tcmb.gov.tr/cgi-bin/famecgi?cgi=$ozetweb&DIL=TR&RAVERIGRUP=bie_inyprh1.db)).

Lastly, data on fertility rates for Turkey were taken from the World Bank's Gender Stats website (see <http://databank.worldbank.org/data/views/variableSelection/selectvariables.aspx?source=gender-statistics>).

Annex 2.2: Pseudo-Panel Analysis

Pseudo Panel Regression

To assess the changes in the trend of employment growth in the post-crisis period, two sets of pseudo-panel regressions of worker categories were run (see Table A2.1). The dependent variable was the difference between the post-crisis and pre-crisis trend in average growth of e.g., employment level for each of the cells of worker categories. The growth rate in employment level (or labor force participation rate) was computed for

each cell and the average growth rate of employment for each worker type in the pre-crisis, crisis, and post-crisis periods was calculated.²⁸ The growth rates calculated are quarter-on-quarter growth rates (i.e., (Employment level in Q4 2011 – Employment level in Q3 2011)*100/Employment level in Q3 2011).²⁹ Then the difference in growth post-crisis relative to growth pre-crisis was calculated and this difference was regressed on dummy variables characterizing the different groups.³⁰

TABLE A2.1

Types of workers constructed for the pseudo-panel regression analysis

Categories of workers		Model 1	Model 2
Location	Urban, Rural	2 categories	
Gender	Male, Female	2 categories	2 categories
Education level	No high school, At least high school	2 categories	2 categories
Age group	15-29, 30-49, 50-64	3 categories	3 categories
Sector	Agriculture, Manufacturing, Construction, Services		4 categories ³¹
Formality	Formal/Informal		2 categories
TOTAL		24 cells	96 cells

28- Pre-crisis period: Q1 2005 – Q3 2008. Crisis period: Q4 2008 – Q3 2009. Post-crisis period: Q4 2009 – Q4 2011.

29- Year-on-year growth rates would likely yield similar results, because the crisis lasted exactly one year. However, the dataset contains two more quarters in the pre-crisis period than in the post crisis period.

30- In the regression, we also controlled for recovery from the crisis (i.e., the bounce-back effect) by controlling for the rate of growth of the category during the crisis period.

31- In the second model, the cells were not split by urban/rural since very small cell sizes result when interacted with sectors (for instance, there were small cell sizes for urban agriculture and rural construction).

Two models were estimated. In Model 1, we only controlled for individual characteristics (yielding 24 cells defined by urban/rural location, gender, educational attainment, and age group). Model 2 also included information on four sectors and formal/informal status but omitted location (yielding a total of 96 cells). Model 1 was run with a variety of outcome variables for the individuals in the labor market, such as labor force participation, employment rates, formal/informal employment, or employment rate by sector. In Model 2, on the other hand, there was only one dependent variable (the difference between the post-crisis and pre-crisis trend in average growth of employment level for each cell). While Model 1 is useful in determining the post-crisis impact on a variety of employment outcomes for different work groups, Model 2 gives insights about the sectoral impact of the post-crisis period. The pseudo-panel regressions were weighted by the size of each cell in order to extrapolate the results to Turkey's WAP.³²

Model 1 results: changes in employment and labor force participation by worker type

In the first set of pseudo-panel regressions, the trend in labor force participation and employment as a

share of the WAP increased more for workers in urban areas (by 0.8 percentage points and 0.6 percentage points, respectively) in the post-crisis period, relative to the change in trend for workers in rural areas. In particular, the growth rate of employment is higher in the construction sector, and wage work for this group of urban workers increased faster compared to rural workers.

After controlling for other factors, the estimates found no statistically significant difference in the trends in employment or labor force participation rates of women relative to men (i.e., the impact of recovery is similar for both groups of workers). However, for employment in the agriculture and construction sectors, the impact of recovery was higher for male workers compared to female workers.

The age cohort variables were important determinants, particularly for formal employment: for those in the older age cohort (50-64), the difference between post-crisis and pre-crisis growth in the probability of being formally employed was 2.4 percentage points higher than the change in trend for the middle age cohort (the omitted category in the regressions), suggesting a higher impact of recovery for the

³² The pseudo-panel regression was run with 96 observations, and weights were constructed using the size of the worker cell in the baseline quarter (Q1 of 2005) to give more weight to worker types more prevalent in the labor force. Some of the worker categories were too small and for some quarters did not include any workers. Such worker categories were dropped from the regressions. Hence, a total of 85 cells (observations) were used in the pseudo-panel regressions.

older age cohort. However for formal employment, there was no significant difference between the impact of recovery for the younger age cohort (15-29) and the impact of recovery for the middle age cohort. Furthermore, for the younger age cohort compared to the middle age cohort again, the differences between post-crisis and pre-crisis growth trends in the employment and labor force participation rates were significantly lower, suggesting a lower impact of recovery for this group.

The full results of Model 1's pseudo-panel regression are provided in Table A2.2.

Model 2 results: changes in employment level by sector and worker type

The Model 2 pseudo-panel regression results show that the difference in the post-crisis growth relative to pre-crisis growth in employment level was significantly higher only for workers in the formal sector when all groups are included in the regression; the difference in the growth rate of formal employment in the post-crisis period compared to the pre-crisis period was 1.5 percentage points above that of the informal sector.

The regressions were estimated using various subsets of the data, with the following results:

By gender: When the sample was limited by gender, the impact of recovery on women's employment was lower in agriculture and construction compared to services. The impact of recovery for women in the younger age cohort was also lower compared to the middle age cohort women. A statistically significant coefficient was not found on the impact of recovery on formal employment for women, which implies that it was similar to the impact of recovery on informal employment, while for men the impact of recovery was significantly higher on formal employment compared to informal employment. However, with regard to age categories, a statistically significant difference between pre-crisis and post-crisis growth trends for men in different age cohorts could not be found.

By education: When the sample was limited to highly educated workers (high school graduates or higher), it was found that this group experienced a greater impact of recovery on formal sector employment (with the difference between post-crisis and pre-crisis trends 3.1 percentage point above the change in trend for informal sector growth). None of the coefficients were significant for workers with less than high school education, implying a similar impact of recovery for all groups relative to their base groups.

By age cohort: When the sample was limited by age cohorts, it was

found that the impact of recovery was lower for highly educated workers in both younger and older age cohorts compared to low educated workers. A statistically significant difference between the post-crisis and pre-crisis change in the trend of formalization for the youngest cohort (ages 15-29) compared to the trend in informal employment couldn't be found. (The same coefficient for the middle aged cohort was negative, though not significant.) For the older age cohort, on the other hand, a significant positive difference (5.1 percentage points) was found in the impact of recovery on formal employment compared to informal employment. This is consistent with the finding in Section 2.3 that older people remain in the labor force for longer periods of time if they are formally employed, and this likely contributed to increased formalization in the labor market.

No evidence was found in this pseudo-panel analysis of a significant change in the pre-crisis trend in formal employment for women or youth (age group 15-29) *compared to other groups*.

The full results of Model 2's pseudo-panel regression are provided in Table A2.3.

Summary of the results of the pseudo-panel analysis:

- The post-crisis growth in employment relative to the pre-crisis trend was highest in the formal sector.
- Highly educated workers (high school graduates or higher) experienced a stronger impact of recovery on formal sector employment relative to informal employment.
- For women, the impact of recovery was lower in the agriculture and construction sectors compared to services and the recovery impact was also lower for young women compared to middle aged women.
- Formalization gained speed post-crisis for the older age cohort.
- The analysis found no significant difference in the post-crisis trend of formalization for the youngest cohort (ages 15-29) or for women, relative to, respectively, the middle-aged cohort and men. However, in the absolute, the young cohort showed measurable movement from informal to formal jobs (28.9 percent of formal job creation with only 13 percent net job creation).

TABLE A2.2

Model 1 Pseudo-panel results (with 24 worker cells)

	DEPENDENT VARIABLES		Female	Urban	Secondary school or more	Ages 15-29	Ages 50-64	Constant
(1)	Employment level		-0.904**	1.169***	-0.100	-0.843***	0.0648	-0.573
(2)	LFP		-0.218	0.764**	0.0886	-0.981***	0.107	-0.646*
(3)	Employment		0.188	0.638*	0.0204	-0.532***	0.200	-0.621***
(4)	Formal emp		0.109	0.317	0.119	-0.143	2.392***	0.306
(5)	Informal emp		-0.559	1.432	-2.165**	-0.999	-0.519	-1.451***
(6)	Agriculture		-2.887***	-2.216	-3.118	-2.070**	0.0416	1.083
(7)	Manufacturing		1.202	1.566	-1.954***	0.390	-0.793	-0.558
(8)	Construction		-15.23***	9.432**	0.292	-2.183	1.842	-11.06**
(9)	Services		0.850	-0.215	1.114**	-0.902	0.409	-0.134
(10)	Wageworker		0.667	1.531*	0.323	-0.376	0.315	-1.277
(11)	Formal emp		-0.125	-0.620	-0.0129	0.617*	1.662***	0.829**
(12)	Informal emp		0.286	-0.346	-2.080***	-0.151	-0.748**	-0.390
(13)	Agriculture		-1.724**	-2.906	-3.139**	-1.402*	-0.122	1.489*
(14)	Manufacturing		0.409	0.260	-2.024**	1.481	-1.534	0.536
(15)	Construction		-14.19***	4.645**	-0.435	-0.730	1.416	-6.602**
(16)	Services		0.686	-1.085**	1.029**	-0.209	-0.264	0.303
(17)	Wageworkers in emp		0.515	0.135	0.123	0.362	-0.218	-0.239
(18)	Real earnings		0.823	-0.394	-0.179	-0.189	-0.313	-1.225

Note: Outcome (dependent) variables are indicated on the left hand side (from 1-18), and independent variables are listed on the right hand side. The average growth rate of the dependent variable in the crisis period is also included in the regressions. The omitted reference categories are: Male, rural, less than secondary school education, and age group 30-49.

TABLE A2.3

Model 2 Pseudo-panel analysis results for growth trend of employment by worker type (96 cells)

VARIABLES	All		Female		Male		Secondary school or more		Secondary school or less		Young		Old	
	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1	Y1
Female	-0.154 (0.718)						-0.686 (0.611)		-0.531 (1.040)			-0.0199 (1.395)		-2.135 (1.432)
High school education or more	-0.533 (0.737)	-1.520 (1.514)			-0.549 (0.763)							-1.886* (1.092)		-2.557*** (0.798)
Agriculture	-0.429 (0.892)	-4.629*** (0.872)	0.915 (0.809)				-4.645*** (1.394)		0.260 (1.030)			-1.234 (2.490)		1.450 (1.180)
Manufacturing	0.165 (0.837)	0.188 (0.958)	0.388 (0.855)				-0.952* (0.554)		1.235 (1.037)			-0.522 (1.372)		-0.0231 (1.157)
Construction	-1.211 (1.272)	-13.11* (6.668)	-1.194 (1.036)				-3.187 (2.203)		-0.421 (1.652)			-2.180* (1.147)		-0.0750 (2.241)
Ages 15-29	-0.901 (0.605)	-2.075*** (0.626)	-0.483 (0.649)				-0.774 (0.711)		-0.327 (0.865)					
Ages 50-64	0.634 (0.881)	0.00669 (0.894)	0.870 (0.768)				-0.677 (0.711)		1.126 (1.099)					
Formal	1.542** (0.662)	-0.0588 (1.361)	2.095*** (0.602)				3.107*** (0.783)		1.021 (0.675)			0.131 (1.047)		5.088*** (0.828)
Constant	-0.500 (0.713)	2.785** (1.152)	-1.318** (0.610)				-1.902* (1.003)		-0.921 (0.706)			0.449 (1.155)		-1.747 (1.149)
Observations	85	37	48				40		45			30		25
R-squared	0.286	0.448	0.384				0.607		0.319			0.559		0.723

Note: Dependent variable: Y1 = average post-crisis growth of employment for the cell - average pre-crisis growth of employment for the cell. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Average growth of employment in the crisis period is also controlled for in the regression.

Annex 2.3: Multinomial Logit Model

The multinomial logit model used allowed for four discrete outcomes (i.e., dependent variables) in the labor market: (i) being inactive (the omitted reference category); (ii) being unemployed; (iii) being informally employed;³³ and (iv) being formally employed. Outcomes (ii) to (iv) were compared to the baseline reference category of being inactive.³⁴

The sample data used included four cross-sections of annual LFS data: the pre-crisis years of 2005 and 2006 and the post-crisis years of 2010 and 2011. The empirical specification was as follows:

$$\Pr(y_i=j | y_i \in \{j, 1\}) = \beta_0 + \beta_1 \text{postcrisis}_i + \beta_2 x_i + \beta_3 \text{postcrisis}_i x_i + u_i$$

where 1 is the base category (being inactive); and j indicates the three other potential outcomes (being unemployed, being informally employed, or being formally employed). A post-crisis

dummy variable was used to indicate whether an observation was from the 2010 or 2011 datasets. Characteristics of women, denoted by the vector x_i , were: urban location, being married, educational attainment (with no formal education the omitted category), age group (young or old, with middle age being the omitted category), number of children ages 0-4, number of children ages 5-14, number of adults, and number of elderly people in the household. All of these independent variables were then interacted with the post-crisis dummy variable to test whether there was a change in the probability of employment in various categories of employment for women with these characteristics in the post-crisis period.³⁵

The interaction between the education variable and the post-crisis variable shows the change in the probability of employment in the post-crisis period for women of different education groups.

33- The TUIK definition for formal employment was used: "Are you registered with any social security institution related to this job?" This question is asked to those who say they are working. This is also the definition of job informality used by the government in official statistics.

34- The model is equivalent to a series of pair-wise logit models.

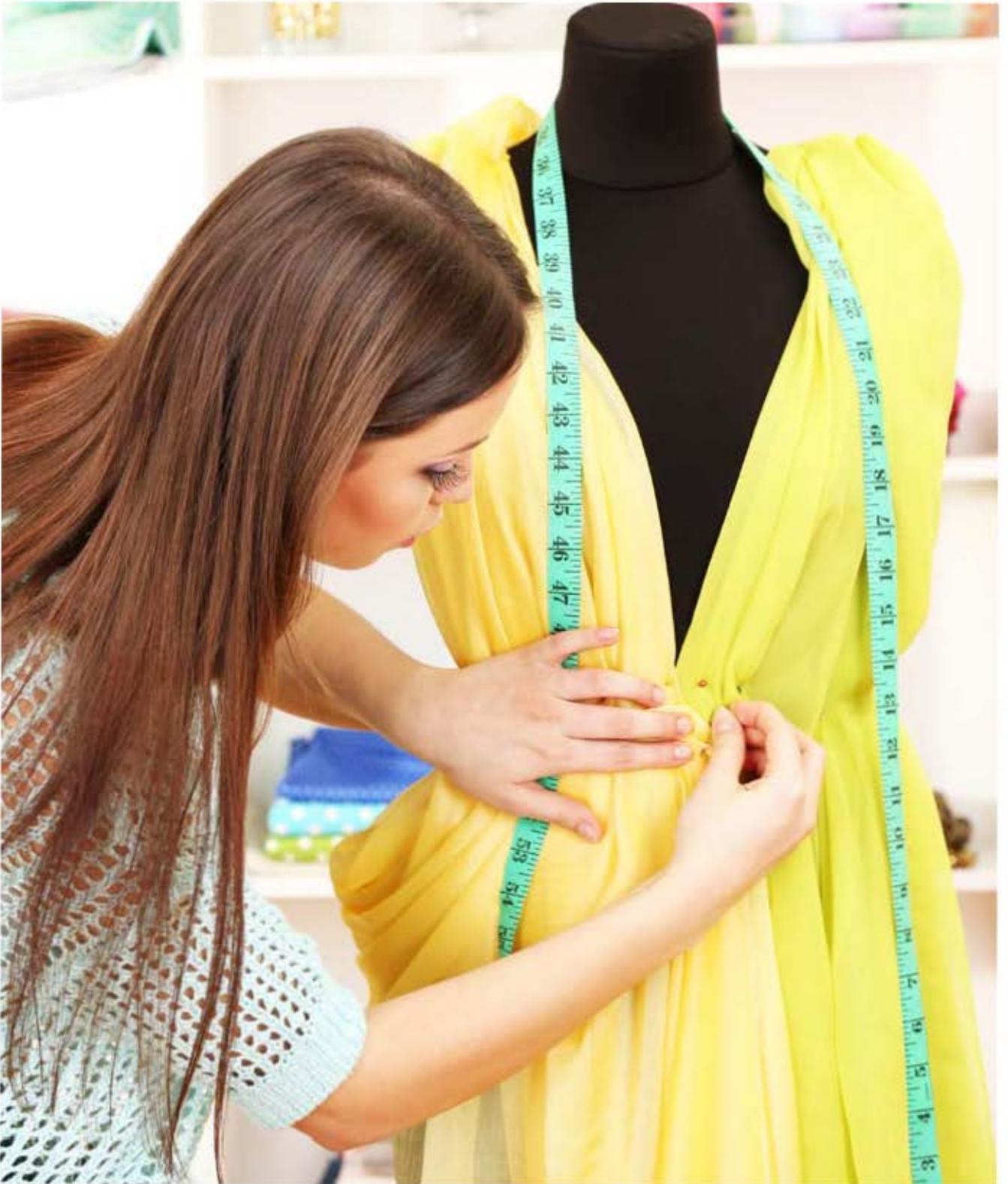
35- The model was first run for different samples of data including urban high-skilled women, urban low-skilled women, and rural women, and also separately for the married women sample where husbands' characteristics were also included in the regressions (husbands' employment status and education level). Finally, pre-crisis (2005-2006) and post-crisis (2010-2011) datasets were pooled to test if there was a difference in the labor force participation of women in the post-crisis period. The post-crisis dummy was interacted with all the other explanatory variables to see the effect of post-crisis period. The results of the cross-sectional multinomial logit regressions are available upon request.

TABLE A2.4

Multinomial logistic regression, reporting marginal fixed effects

VARIABLES	Female (Base = Inactive)											
	i=2			i=3			i=4			Formal		
	All	Urban High Skilled	Urban Low Skilled	Rural	All	Urban High Skilled	Urban Low Skilled	Rural	All	Urban High Skilled	Urban Low Skilled	Rural
Post-crisis	0.337*** (0.0275)	0.330*** (0.0434)	0.389*** (0.0343)	0.207*** (0.0692)	0.150*** (0.0112)	-0.0232 (0.0407)	0.196*** (0.0167)	0.173*** (0.0169)	0.509*** (0.0171)	0.273*** (0.0196)	0.536*** (0.0229)	0.560*** (0.0359)
Post-crisis x Urban	0.129*** (0.0479)				-0.00108 (0.0163)				-0.0607* (0.0314)			
Post-crisis x Married	0.217*** (0.0493)	0.112 (0.0774)	0.199*** (0.0755)	0.429*** (0.130)	0.247*** (0.0227)	0.111 (0.0815)	0.240*** (0.0368)	0.266*** (0.0305)	0.163*** (0.0316)	0.0624 (0.0396)	0.216*** (0.0556)	0.250*** (0.0832)
Post-crisis x Educ 2	0.0224 (0.0586)		-0.314** (0.149)		0.0618** (0.0292)			0.133*** (0.0398)	-0.159*** (0.0429)			-0.445*** (0.103)
Post-crisis x Educ 3	-0.136*** (0.0449)		-0.316*** (0.115)		-0.117*** (0.0305)			-0.00826 (0.0531)	-0.299*** (0.0310)			-0.382*** (0.0802)
Post-crisis x Educ 4	-0.163*** (0.0511)		-0.197 (0.144)		-0.401*** (0.0568)			-0.0885 (0.140)	-0.475*** (0.0342)			-0.723*** (0.0958)
Post-crisis x Age Group (15-29)	-0.184*** (0.0476)	-0.201*** (0.0692)	-0.223*** (0.0735)	0.0935 (0.140)	-0.0162 (0.0236)	0.0665 (0.0781)	-0.0943** (0.0379)	-0.0242 (0.0320)	-0.131*** (0.0309)	0.0129 (0.0360)	-0.209*** (0.0566)	-0.0344 (0.0854)
Post-crisis x Age Group (50-64)	0.228** (0.105)	-0.145 (0.217)	0.374*** (0.134)	0.249 (0.276)	-0.0242 (0.0221)	0.147 (0.121)	-0.0162 (0.0416)	-0.000180 (0.0295)	0.00888 (0.0542)	-0.116 (0.0750)	-0.196** (0.0827)	0.226* (0.116)
Post-crisis x Number of children 0-4 in HH	-0.118** (0.0495)	-0.0655 (0.0773)	-0.155** (0.0781)	-0.223* (0.130)	-	0.302*** (0.0982)	-0.0128 (0.0351)	-	-0.163*** (0.0272)	-0.172*** (0.0346)	-0.102 (0.0647)	-0.0548 (0.0656)
Post-crisis x Number of children 5-14 in HH	-0.0367 (0.0269)	-0.0558 (0.0613)	-0.0675** (0.0332)	0.115* (0.0659)	-0.00610 (0.00880)	0.113* (0.0586)	0.0318** (0.0154)	-0.0193* (0.0115)	-0.0247 (0.0164)	-0.0382 (0.0265)	-0.0363 (0.0255)	0.0190 (0.0358)
Post-crisis x Number of adults in HH	-0.0304** (0.0133)	-0.0414** (0.0209)	-0.0304 (0.0217)	-	-	-0.0252 (0.0252)	-0.00852 (0.00978)	-	-0.00126 (0.00989)	-	0.0386** (0.0155)	-0.0150 (0.0229)
Post-crisis x Number of elderly (ages 65+) in HH	-0.0943** (0.0401)	-0.0910 (0.0604)	-0.0929 (0.0715)	-0.123 (0.0874)	-0.117*** (0.0158)	-0.00707 (0.0755)	-0.0521 (0.0349)	-0.138*** (0.0194)	-0.109*** (0.0289)	-0.129*** (0.0403)	-0.0283 (0.0517)	-0.0811 (0.0615)
Level variables	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Constant	-3.644*** (0.0211)	-2.454*** (0.0345)	-3.763*** (0.0269)	-3.901*** (0.0519)	-1.791*** (0.00822)	-2.337*** (0.0302)	-2.325*** (0.0125)	-0.728*** (0.0122)	-2.665*** (0.0134)	-0.564*** (0.0150)	-3.001*** (0.0181)	-2.827*** (0.0284)
Observations	679,229	129,650	347,401	202,178	679,229	129,650	347,401	202,178	679,229	129,650	347,401	202,178

Note: Pooled sample of Labor Force Survey Cross-sections for four years of data: 2005-2006 (pre-crisis) and 2010-2011 (post-crisis) for women. Robust standard errors in parentheses.



3. Job Creation and Productivity

Abstract: Besides providing an income for their holders, jobs with high productivity are considered to be “good jobs for development” in so far as they imply a positive externality of higher economic growth for the whole society. Movement from lower- to higher-productivity activities can occur between sectors (i.e., through structural change) as well as within them (i.e., through capital accumulation, technological change, skills upgrading and reallocation of labor from low- to high-productivity firms). This chapter identifies the features of good (i.e., highly productive) jobs in Turkey and examines the extent to which labor reallocation across and within sectors has been in the direction of more such good jobs. The analysis demonstrates that structural change in Turkey, particularly the movement from agriculture to non-agriculture sectors between 1998 and 2011, has been growth-enhancing. Moreover, firm-level data reveal that more productive non-agricultural firms in Turkey appear to be creating more jobs than less productive firms. This movement of labor is happening to a certain extent within both the manufacturing and services sectors, and such reallocation of labor bodes well for the creation of good jobs and future economic growth in Turkey. Finally, even though agriculture continues to be the sector with the lowest productivity in Turkey,

there is some initial evidence on the regional level of growth-enhancing labor reallocation within this sector.

3.1 Introduction

Good jobs spur economic growth through their higher productivity. As stated in the World Bank’s World Development Report 2013 on Jobs, “Economies grow as people get better at what they do, as they move from farms to firms, and as more productive jobs are created and less productive ones disappear” (World Bank 2012). Thus, jobs with high productivity, besides providing an income for their holders, are considered to be “good jobs for development” insofar as they imply a positive externality of higher economic growth for the whole society. When jobs become more productive, and when labor in a society is reallocated from lower- to higher-productivity activities, the impact on economic growth is increased, and jobs become a more powerful driver of progress.

Movement from lower- to higher-productivity activities can occur between sectors as well as within them. Structural change, defined as movement from low-productivity sectors to higher-productivity sectors (typically from agriculture to other sectors), can be a potent source of economic growth. This has been

demonstrated by the experience of East Asia and South Asia, where movement “from farms to firms” has brought with it higher economic growth. However, within-sector improvements in productivity through capital accumulation, technological change, and reallocation of labor from low- to high-productivity farms or firms can be just as powerful. Indeed, McMillan and Rodrik’s (2011) study shows that labor productivity growth in high-income countries, Latin America, and Africa in the 1990s and early 2000s can be attributed to within-sector productivity growth.

This chapter identifies the features of good (i.e., highly productive) jobs in Turkey, and examines the extent to which labor reallocation across and within sectors has been in the direction of more such good jobs. Since Turkey still has a significant share of jobs in the agricultural sector, the question of structural change remains central to the country’s development path. Taking this into account, the first part of this chapter analyzes whether structural change in Turkey from 1998 to 2011 has been growth-enhancing or growth-reducing. The second part focuses on the non-agricultural sector of the economy and uses firm-level data to identify the features of firms that have higher rates of job creation and productivity, and examines the extent to which jobs are being created faster in firms with higher productivity,

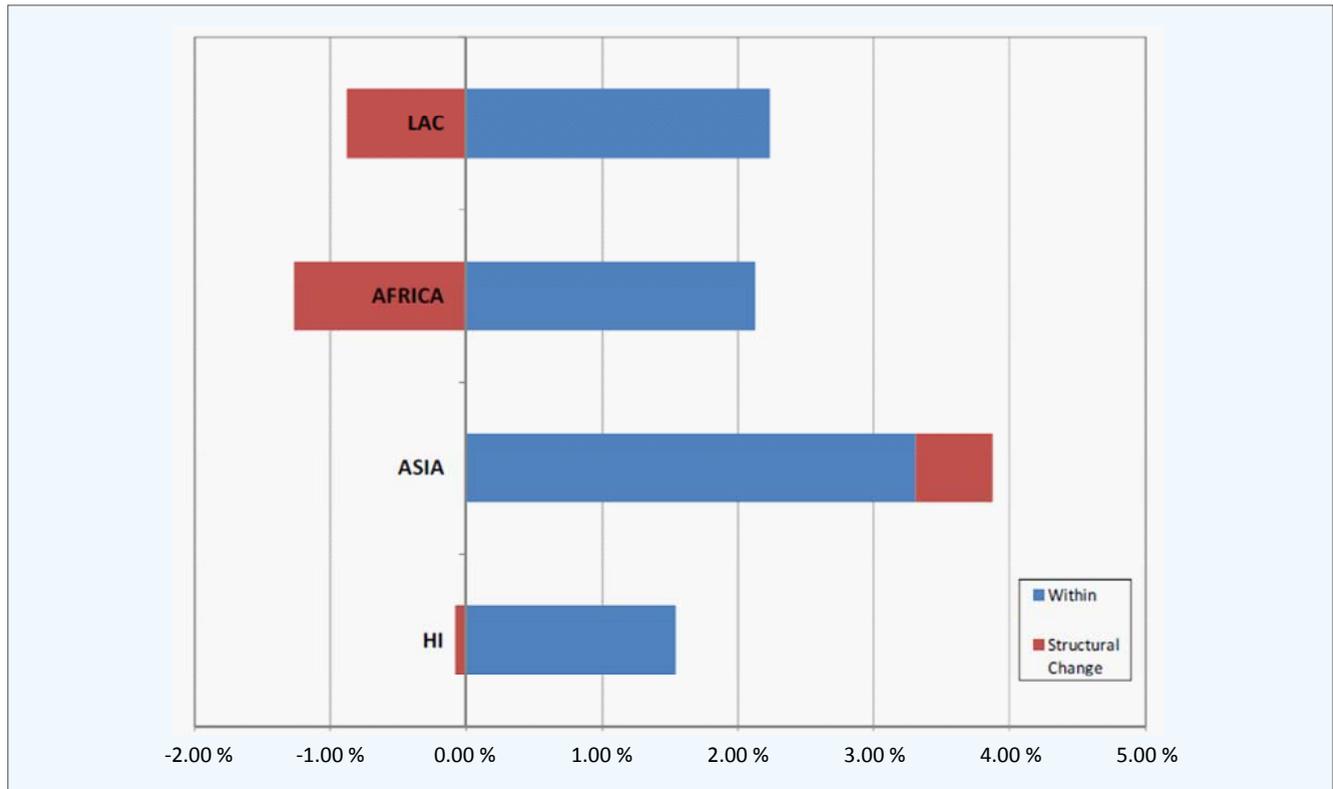
which would imply the reallocation of labor from low-productivity to high-productivity activities. Finally, the chapter looks at the performance of the agricultural sector, which has since 2007 seen an upsurge in employment, to examine the drivers of productivity in agriculture. It will draw on case studies of regions that have experienced changes in agricultural productivity due to global movements in prices and government policies supporting this sector.

3.2 Has Recent Structural Change in Turkey Been Growth-Enhancing?

Structural change can be either growth-enhancing or growth-reducing. In their 2011 paper, “Globalization, Structural Change and Productivity Growth,” McMillan and Rodrik examine the relationship between labor flows and productivity in developing countries. The hypothesis is that to stimulate growth and development through structural change, labor should flow from low-productivity sectors to high-productivity sectors. While they document this relationship in South and East Asia between 1990 and 2005, the structural changes in high-income countries, Africa, and Latin America appear to happen in the opposite direction, which implies that structural change in the latter regions is growth-reducing (Figure 3.1).

FIGURE 3.1

Within- and between-sector productivity growth by country group, 1990-2005



Source: McMillan and Rodrik 2011.

At the country level, growth-enhancing structural change implies growing employment shares in sectors with higher-than-average productivity. McMillan and Rodrik analyze how structural change impacts different countries by measuring changes in employment shares for major sectors

against average sectoral productivity (normalized by average productivity in the economy) in the final year. The resulting bubble graphs, where the size of the bubble represents the starting year's employment share of the sector, are very revealing (see Box 3.1).

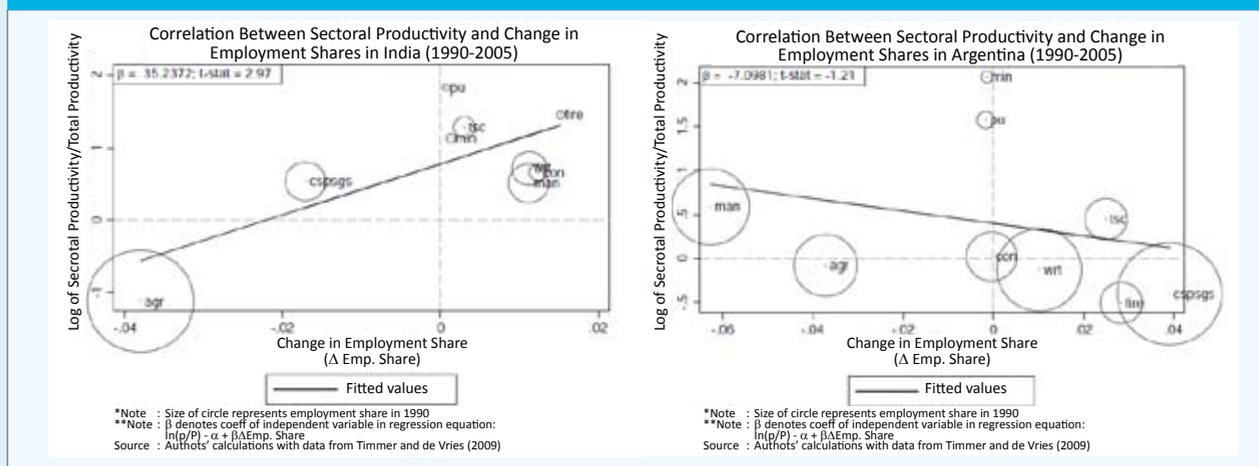
Box 3.1 Accounting for Structural Change in India and Argentina

In India, agriculture was the sector with the lowest productivity, and the country experienced significant reallocation of labor away from agriculture towards other sectors between 1990 and 2005; therefore, as one can observe by the positive slope of the line in the left panel of Figure 3.2, structural change in India has been growth-enhancing. In general, a picture of growth-enhancing structural change would have more sectors with either i) lower-than-average productivity and falling employment shares (i.e., agriculture (agr) in the case of India), and ii) higher-than-average productivity and rising employment shares (i.e., public utilities (pu), transport and communication (tsc), mining (min), finance, insurance, and real estate (fire), wholesale and retail trade (wrt), construction (con), and manufacturing (man) in the case of India), and less sectors with either i) higher-than-average productivity and falling employment shares (i.e., community, social, personal, and government services (cspsgs) in the case of India), and ii) lower-than-average productivity and rising employment shares.

Argentina, in the right panel of Figure 3.2, represents an example where structural change (also away from agriculture towards other sectors) has instead been growth-reducing. This occurred primarily due to even lower productivity of other sectors, such as consumer, government, social, and personal services (cspsgs), and finance, insurance, and real estate (fire) sectors. Indeed, only the agriculture and transport and communication sectors lie in the quadrants of growth-enhancing structural change in Argentina; all other sectors find themselves in the growth-reducing quadrants. Thus, although workers were moving from farms to firms, the average farm appeared to be more productive than the average firm, implying that this movement cannot be expected to bring about higher overall productivity and economic growth.^a

FIGURE 3.2

Examples of growth-enhancing and growth-reducing structural change, India, and Argentina



Source: McMillan and Rodrik 2011.

^a This methodology compares movements between firms with average productivity in each sector; in reality, of course, gains and losses from structural change depend on the marginal productivity of added or lost firms. The methodology also abstracts from changes in population structure (i.e., increases or decreases in working-age population) as well as changes in the labor force participation rates, as it looks only at sectoral shares within the pool of the employed.

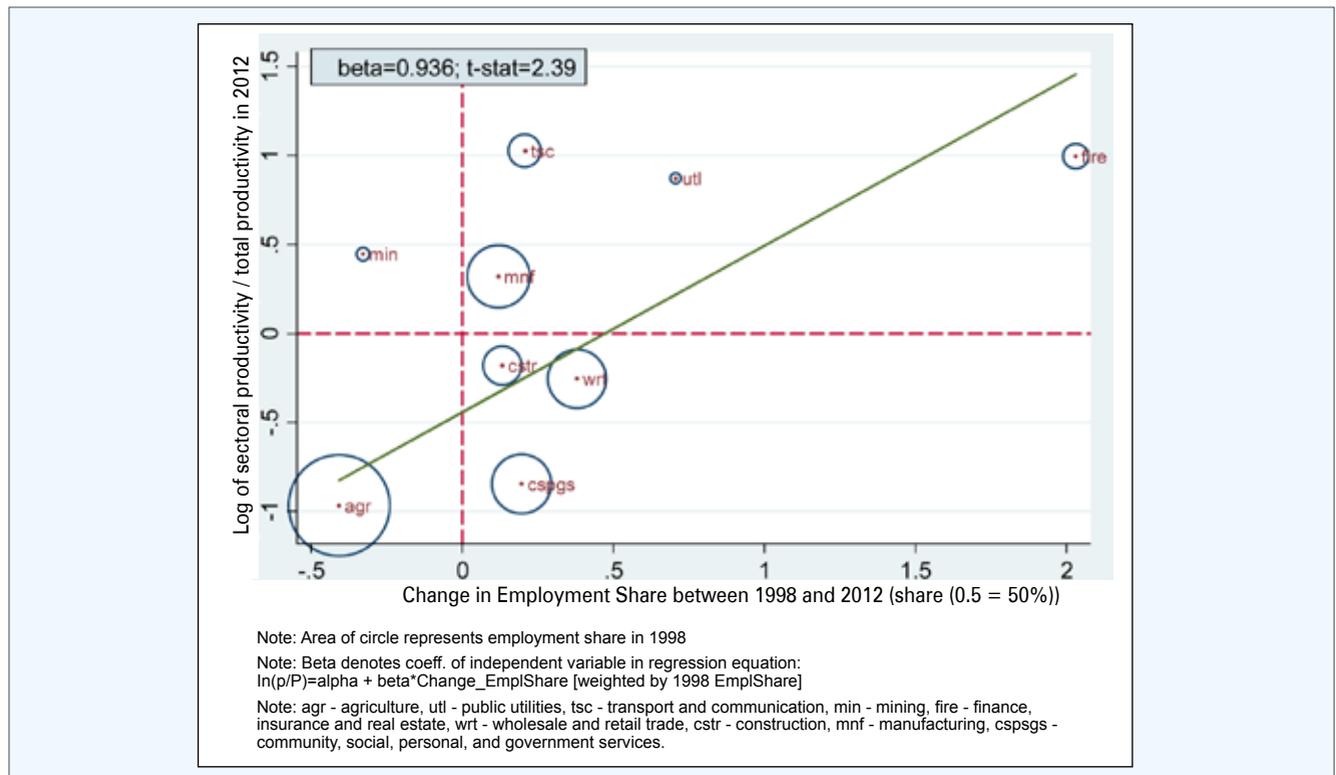
Recent structural change in Turkey, particularly the move away from agriculture, has been growth-enhancing. Figure 3.3 replicates the country-specific analysis in the McMillan and Rodrik paper for the case of Turkey between 1998 (the first available year of TUIK data on sectoral GDP in 1998 prices) and 2012.³⁶ The most significant change during that period was the flow of labor from agriculture to other sectors; indeed, the employment share of that sector fell by more than 40 percent, from 41.5 in 1998 to 24.6 percent in 2012. The end-period (i.e., 2012) relative labor productivity of that sector, defined as sectoral GDP (in 1998 prices) over sectoral employment normalized by total productivity, was the lowest of all sectors at 0.38. With this in mind, it is not surprising that labor flows from agriculture to other sectors in Turkey have been growth-enhancing. With agriculture shedding labor, all other sectors with the exception of mining gained in employment shares between

1998 and 2012, with the financial and business services (labeled as “fire” in the plot) growing the most (by more than 300 percent, or from 2.5 percent of all employed in 1998 to 7.6 percent in 2012). This sector also had the second-highest relative labor productivity, at 2.7 (after the transport, communication, and storage (“tsc”) sector, which was at 2.8). “Fire” is an outlier in terms of growth-enhancing labor flows in Turkey, and is still a relatively small sector, compared to manufacturing (“mnf”), retail and wholesale trade (“wrt”), and community, social, personal, and government services (“cspsgs”). And while flows to manufacturing (and transport and communication (“tsc”)) have been growth-enhancing given these sectors’ higher-than-average productivity, similarly-sized flows to “cspsgs” services (and construction (“cstr”)) have been growth-reducing. Even larger flows to the trade sector have also been growth-reducing, as the relative productivity of this sector stands at 0.77.

³⁶- This analysis updates the one implemented in Rodrik (2010).

FIGURE 3.3

Correlation between sectoral productivity and change in employment shares in Turkey, 1998-2012



Source: Author's calculations based on TUIK data and McMillan and Rodrik's (2011) methodology.

The recent reversal of agricultural shedding in Turkey has not been the result of lower productivity in non-agricultural sectors, but can be attributed to higher agricultural prices. The above analysis hides the recent reversal of the movement from agriculture to other sectors. Agriculture began to attract employment in 2007, such that the share of agricultural employment increased from 23.5 percent in 2007 to 24.6 percent in 2012, with the total number of people employed rising from 4.9 to 6.1

million (compare Chapter 2). Gürsel and Imamoglu (2013) examined the potential reasons for this stark reversal, which preceded and outlived the global crisis of 2008-09. The authors considered several potential drivers, including the increase in world food prices, the decrease in non-agricultural productivity, and structural changes in agricultural production, such as shifts towards more labor-intensive crops (e.g., perennial crops) or production strategies (e.g., greenhouse usage). Using regional data on agricultural

production and economy-wide producer prices, Gürsel and Imamoglu found that the changes in agricultural prices did have a significant positive correlation with changes in regional agricultural employment. On the other hand, changes in non-agricultural incomes (as proxies for changes in labor productivity in non-agriculture), as well as changes in agricultural production had insignificant correlations with changes in agricultural employment.

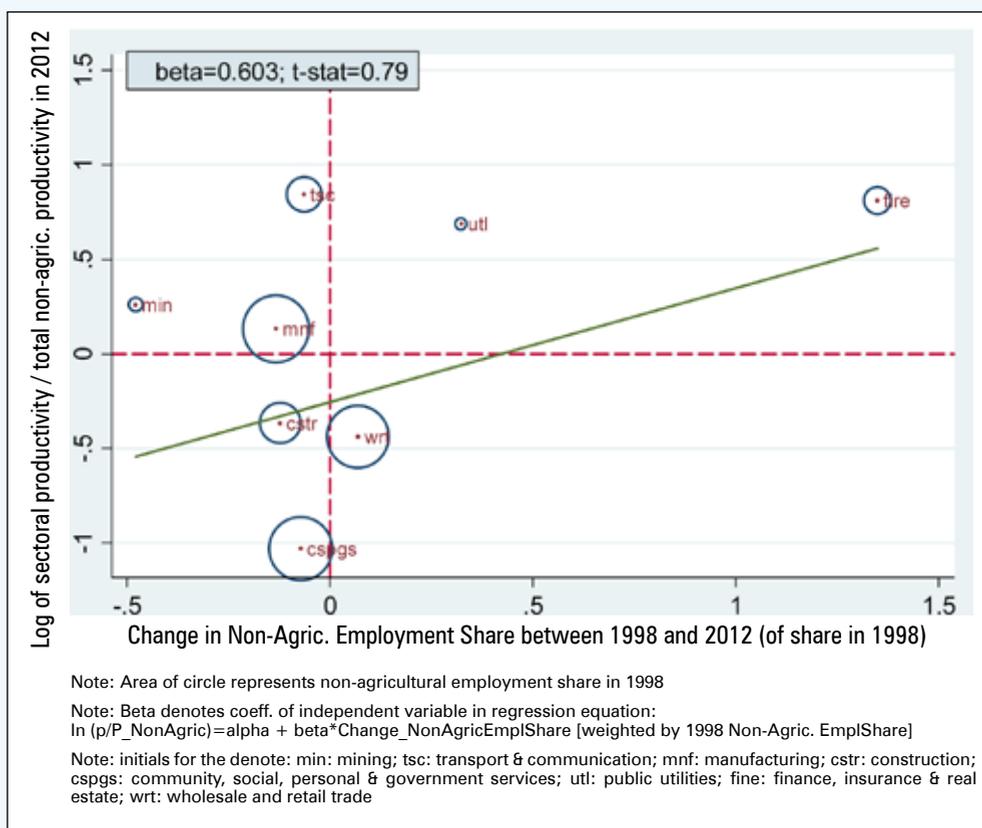
Apart from the general movement away from agriculture between 1998 and 2012, movement of labor between non-agricultural sectors in Turkey has been only slightly in the direction of enhancing growth. Figure 3.4 repeats the Rodrik-McMillan analysis by excluding agriculture and using only non-agricultural employment and productivity as the denominators. The resulting figure demonstrates a positive but statistically insignificant

relationship between non-agricultural labor flows and productivity during the 1998-2012 period.

Only three sectors experienced gains in non-agricultural employment shares over this time: finance and business services, public utilities, and wholesale and retail trade. The movement of non-agricultural labor from construction and “cspsgs” services to finance and business services (“fire”) and public utilities (“utl”) has been growth-enhancing, but both sectors that gained employment are still very small (representing 10 percent and 1.2 percent of 2012 non-agricultural employment, respectively). On the other hand, the movement from relatively high-productivity non-agricultural sectors (transport and communication, mining, and manufacturing) towards low-productivity wholesale and retail trade has been growth-reducing.

FIGURE 3.4

Correlation between non-agricultural sectoral productivity and change in employment shares in Turkey (1998-2012)



Source: Author's calculations based on TUIK data and McMillan and Rodrik's (2011) methodology.

While growth-enhancing structural change is an important aspect of increasing productivity, dynamics within the non-agricultural sector as well as within the agricultural sector also need to be examined. The analysis above focuses only on one method of increasing overall productivity – through moving labor across major

sectors. The next section adopts a different approach by utilizing firm-level data of non-agricultural firms to identify the characteristics of firms with good (i.e., higher productivity) jobs and examining the extent to which jobs are being reallocated from lower-productivity to higher productivity firms.

Box 3.2 Analysis Using the 2005-2010 Structural Business Survey (SBS)

This section utilizes the 2005-2010 Structural Business Survey (SBS) dataset compiled by TUIK. The annual SBS dataset is divided into two parts, based on firm employment size: (i) a census of all non-agricultural firms with at least 20 employees (“20+ firms”), and (ii) a sample of non-agricultural firms with less than 20 employees (“20- firms”), with sampling based on region and NACE 4-digit sector. One drawback caused by this sampling methodology is the annual random selection of sampled firms, which makes it impossible to follow a 20- firm over time. In other words, if a firm with less than 20 employees appears in the dataset one year but not in the following year, it is not possible to determine whether that firm shut down or still exists but was simply not included in the sample. Given this drawback of the sample data, the analysis in this study is mainly based on 20+ firms (unless otherwise specified). SBS provides a rich set of information on each firm, including NACE 4-digit sector code, location, employment by gender, investments by function, expenditure by function (including wage expenditure), ownership (foreign versus domestic by share), sales, value added, and material costs. However, no information is provided on the firm’s capital stock or age (i.e., year of registration). While capital stock can be estimated (which is done below to derive TFP), the absence of age information presents a more significant problem, since appearance of the firm in the 20+ part of SBS cannot be identified as either entry or expansion from a smaller-sized firm. Thus, in the analysis below, “entry” is defined as entry into the 20+ employee firm category. Finally, although SBS began collecting data in its current format in 2003, the first two years (2003 and 2004) still had incomplete coverage of 20+ firms, so the analysis starts from 2005.

3.3 Job Creation and Productivity in the Non-Agricultural Sector in Turkey

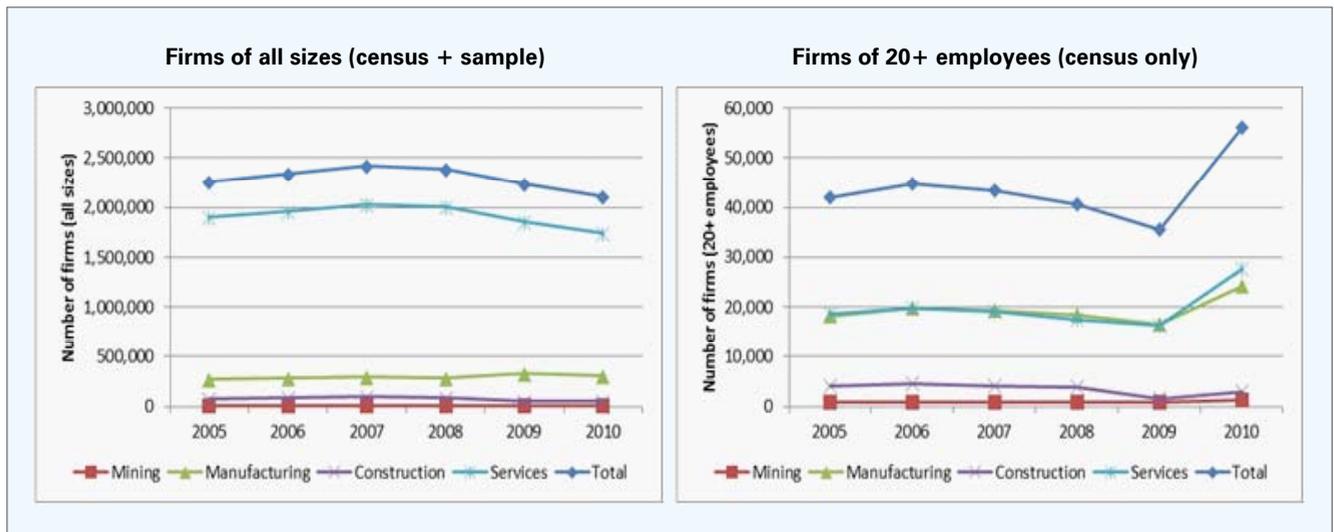
Services is the largest non-agricultural sector in the Turkish economy, but within the group of 20+ employee firms, the services sector has outpaced manufacturing only recently. The number of firms in Turkey has grown from 2005 to 2007 and decreased since

then, with services representing more than 80 percent of all non-agricultural firms in the economy (left panel of Figure 3.5). The dynamics of 20+ employee firms is quite different, with growth falling from 2007 to 2009, and a significant spike in 2010.³⁷ Moreover, within the 20+ group of firms, services and manufacturing made up a similar share of total firms until 2010 (right panel of Figure 3.5).

37- According to TUIK staff, the spike in the number of 20+ employee firms cannot be explained by any changes in the methodology of firm listing. Some possible explanations for this spike include formalization of firms due to the government’s efforts to reduce informality, the comprehensive tax amnesty introduced in November 2010. To disentangle real increases in firms versus expansions of existing firms would require their age, which is currently not available (efforts will be made to contact the Ministry of Finance, which holds information on firms’ year of registration).

FIGURE 3.5

Number of firms by sector, 2005-2010



Source: Author's calculations based on SBS

The Turkish economy is dominated by small firms. Table 3.1 compares Turkey with three developed and three developing countries in terms of the share of small firms (defined as firms with less than 20 employees) in total number of firms and total employment. There does not seem to be a relationship between the share of small firms and countries' income level. On the other

hand, within each country, small firms are more prevalent in services than in manufacturing, both as a share of firms and of total employment, with France being the only exception for the latter. Although this result is valid for Turkey as well, Turkey is an outlier for both sectors.³⁸ In fact, small firms comprise almost 99 percent of all firms in services.

38- The apparent contradiction between these results in terms of contribution of small firms to employment and the ones obtained by Ayyagari et al. (2011) can be explained by reliance on different sources (Ayyagari et al. rely on World Bank Enterprise Surveys), different definitions of employment (Ayyagari et al. only counted full-time permanent employees), and different thresholds for small firms (Ayyagari et al. used 5-19 employees, whereas the results above count all firms with less than 20 employees).

TABLE 3.1

Share of small firms in Turkey and selected countries

	Number of firms			Employment		
	All non-agriculture	Manufacturing	Services	All non-agriculture	Manufacturing	Services
Portugal	88.9	75.3	93.8	31.4	18.9	42.9
France	82.3	77.9	82.0	16.0	19.9	13.6
USA	88.0	72.6	88.7	19.3	6.7	19.9
Mexico	90.0	82.8	92.2	24.5	13.9	28.5
Hungary	85.5	71.1	90.8	16.4	8.8	23.6
Romania	91.5	77.1	95.6	12.8	4.2	31.6
Turkey	98.1	93.4	98.9	52.7	30.4	65.2

Note: Data for Turkey are the average for 2005-2010; for other countries, data are from the 1990s.

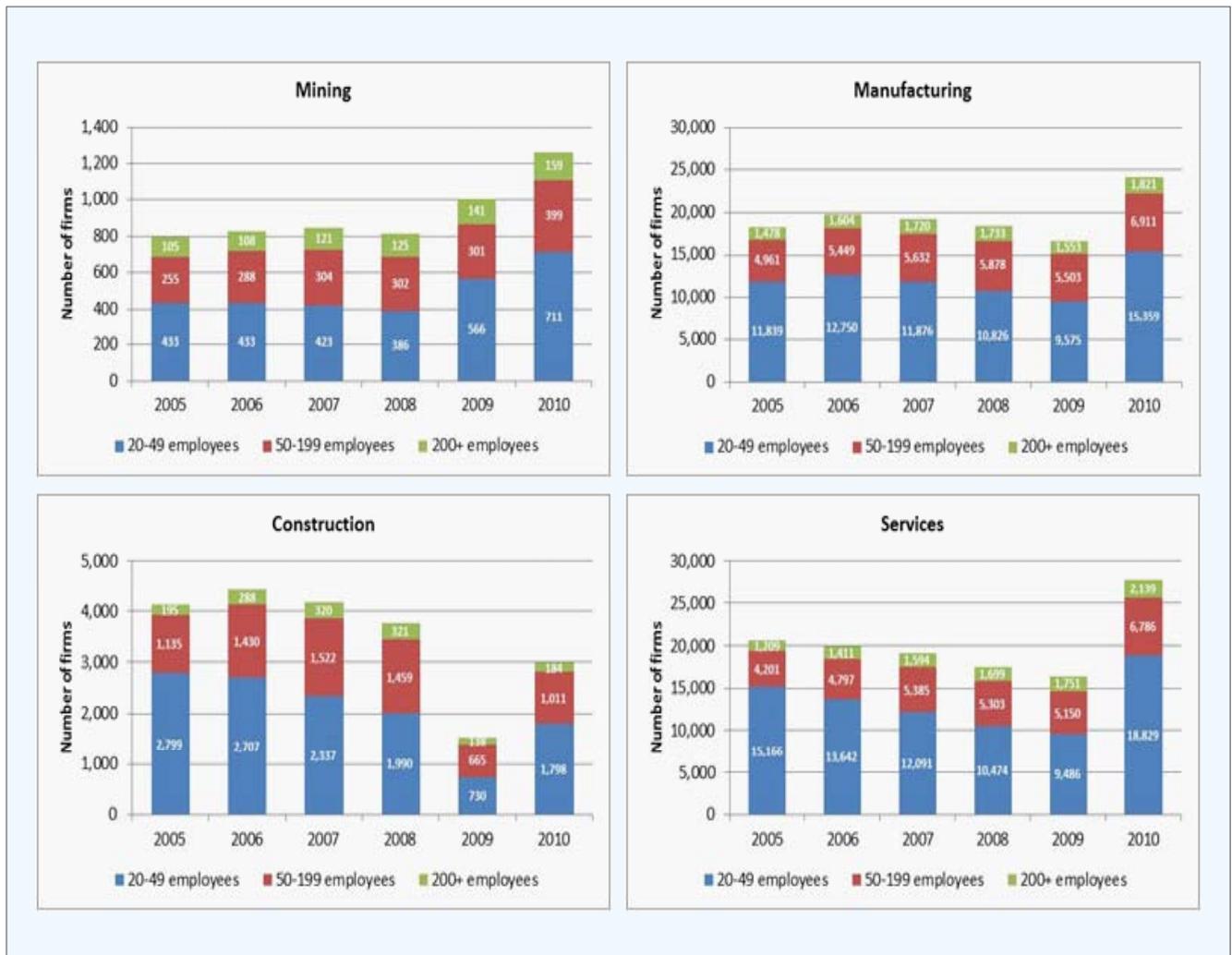
Source: Bartelsman et al. (2004) and authors' calculations.

Focusing on the 20+ employee firm census, smaller firms (20-49 employees) comprise more than half of all firms in each sector, and this category grew the most from 2009 to 2010 (Figure 3.6). In 2010, the lowest share of these firms was

in mining (56 percent) and the highest in services (68 percent). The largest size firms (with 200 or more employees) represented less than 10 percent of firms in all sectors except mining (where they made up 13 percent).

FIGURE 3.6

Number of 20+ employee firms by firm size and sector, 2005-2010



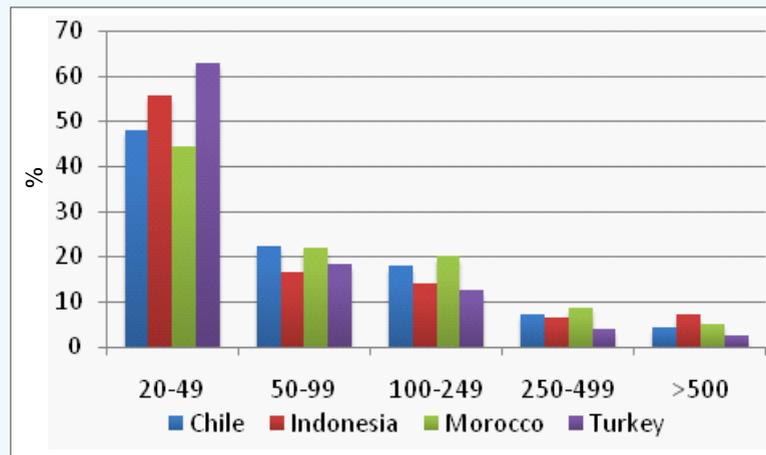
Source: Author's calculations based on SBS

20+ firms are concentrated on the lower side of the size scale in Turkey. 20-49 employee firms have the largest share not only compared to other size categories within Turkey but also compared to the shares of 20-49 employee firms among 20+ employee firms in Chile, Indonesia,

and Morocco. The number of firms in this category comprises 62 percent of the total number of 20+ firms in Turkey. On the other hand, 100-249, 250-499, and 500+ employee firms have the lowest shares in Turkey compared to the countries shown in Figure 3.7.

FIGURE 3.7

Share of different firm size groups among all 20+ firms



Note: Data coverage is 2005-2010 for Turkey and 1990s and 2000s for Chile, Indonesia, and Morocco.

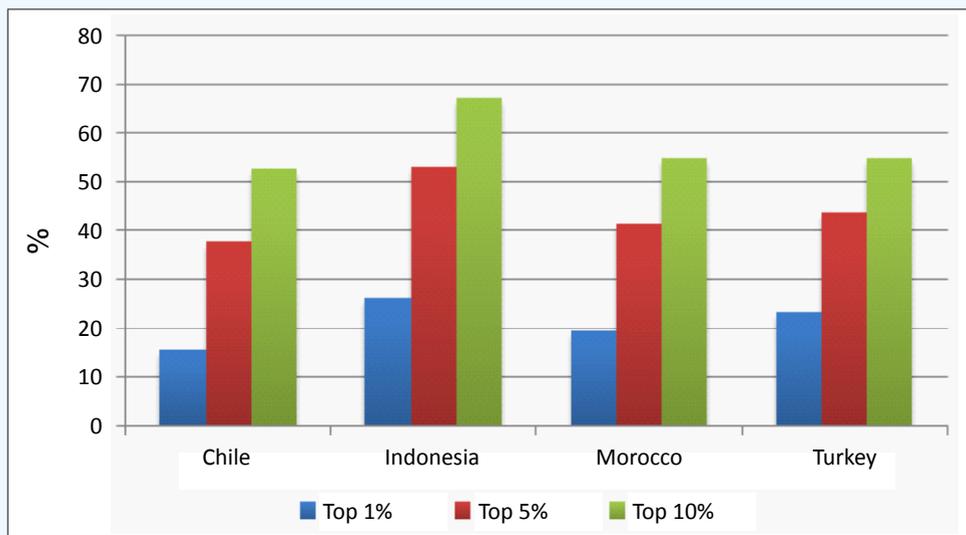
Source: Author's calculations and Hallward-Driemeier et al. (2013), mimeo

Distribution of 20+ employment by firm size in Turkey is comparable to Chile, Indonesia, and Morocco. Over the 2005-2010 period, 55 percent of total employees worked in the largest 10 percent of firms in Turkey. This rate is almost same as that of Chile

and Morocco but lower than that of Indonesia. The share of the top 1 percent largest firms in total employment of Turkey was slightly higher than shares of the top 1 percent largest firms in Chile and Morocco but slightly lower than that in Indonesia.

FIGURE 3.8

Distribution of employment across firm size percentiles



Source: Hallward-Driemeier et al. (2013), mimeo

Within-sector firm size dispersion in Turkey is comparable to other countries. Table 3.2 demonstrates dispersion of firm size by sector (measured by the coefficient of variation normalized by the cross-country sector average).³⁹ Coefficients greater than 1 indicate that firm size dispersion in the corresponding country-sector is higher than the cross-country average variation in that sector. Turkey is between the two extremes of Portugal (lowest) and the U.S. (highest), and is comparable to Mexico, Hungary, Romania, and France. Both in manufacturing and

services, the variation in firm size in Turkey is relatively higher than in most comparison countries. In some sectors, such as food products manufacturing, coke and petroleum products manufacturing, machinery and equipment manufacturing, and telecommunication and transport sectors, Turkey's dispersion of firm size is at least twice the cross-country average; on the other hand, publishing and printing and transport equipment manufacturing other than motor vehicles are much more concentrated in terms of size than in other countries, with coefficients around 0.70.

³⁹- Cross-country sector averages were taken from Bartelsman et al. (2004), which included data from 17 countries (Portugal, France, U.S., Mexico, Romania, Hungary, Slovenia, Korea, Taiwan, Estonia, Brazil, Latvia, Argentina, Italy, Netherlands, Finland, and the U.K.).

TABLE 3.2

Within-sector dispersion of firm size (coefficient of variation)
(normalized by cross-country sector averages)

SECTOR	Turkey	Portugal	France	U.S.	Mexico	Romania	Hungary
Total Economy	1.15*	0.68		2.36	0.94	1.60	1.09
Mining	1.42	0.52	1.26	3.55	0.71		0.56
Manufacturing	1.07	0.48	1.04	2.83	0.78	1.29	0.66
Construction	1.07	1.12	2.28	0.81	1.09	0.67	0.88
Services	1.10	0.79	0.72	1.83	0.95	2.33	1.50

Note: * Excluding agriculture.

Source: Bartelsman et al. (2004) and authors' calculations.

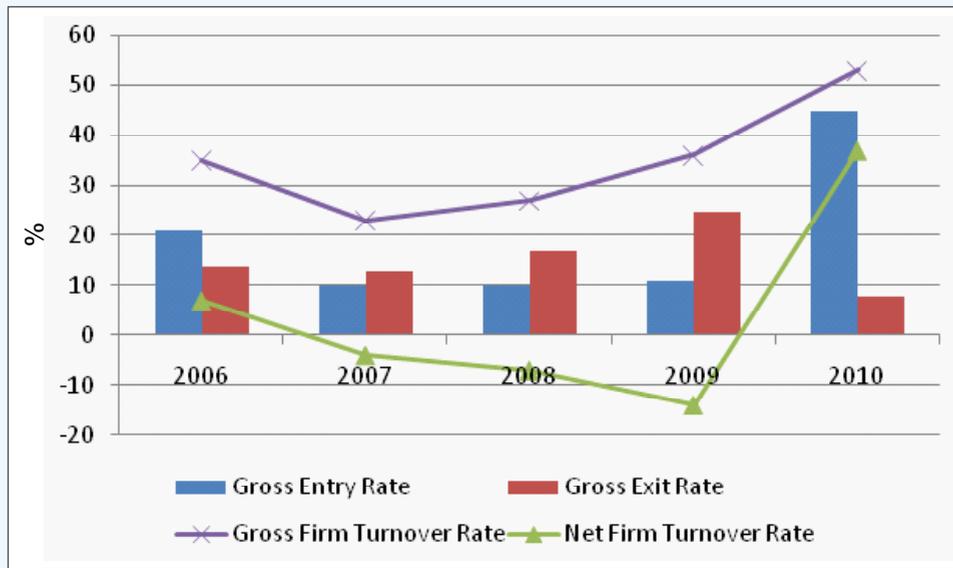
There is very dynamic firm turnover in Turkey. In Figure 3.9, the gross entry rate is defined as the number of entrant firms (i.e., those appearing for the first time in the 20+ employee firm census) divided by the total number of incumbent and entrant firms in a given year; the exit rate is defined as the number of firms exiting the 20+ employee firm census in a given year divided by the number of incumbents in the previous year. According to these modified definitions of "entry" and "exit," gross firm turnover in Turkey was very high (at 20-40 percent) until 2010, when over 40 percent of firms appeared for the first time in the 20+ employee firm census, implying gross firm turnover of over 50 percent. This is far and above

the 3-8 percent gross firm turnover observed in industrial countries or the 10-13 percent in transition economies, as demonstrated in Bartelsman et al. (2004). (Note however that our analysis can only measure turnover at the 20- and 20+ margin.)

It is also notable that gross firm turnover (entry plus exit rates) is much larger than net turnover (entry minus exit rates), and that in some years (i.e., 2006 and 2010), entry outpaced exit as in most transition economies, which could suggest that new firms are not mere substitutes for old exiting firms but are entering new, previously nonexistent markets (Bartelsman et al. 2004).

FIGURE 3.9

Gross firm entry in and exit out of the 20+ employee firm census and net turnover, 2006-2010



Source: Author's calculations based on SBS

Firm turnover in Turkey varies considerably by sector. In general, churning is highest in construction (more than twice the overall rate), and is about 10 percent higher in services than in manufacturing

(see Table 3.3). In terms of detailed sectors, gross firm turnover is lowest in petroleum products and motor vehicles manufacturing, and highest in fabricated metal and other transport equipment manufacturing.

TABLE 3.3

Gross firm turnover rates by sector

(entry in and exit out of 20+ employee firm census, weighted by employment, relative to country average)

Sector	Gross Turnover
Total Economy (non-agriculture)	1.00
Mining	1.09
Manufacturing	0.95
Construction	2.15
Services	1.05

Source: Authors' calculations.

There is evidence that the Turkish economy is characterized predominantly by within-sector creative destruction. One way to assess the main driving force behind firm churning is to look at the correlation between exit and entry rates within sectors (Bartelsman et al. 2004). If there is significant structural change (resources being reallocated between sectors), then shrinking sectors should have high exit rates while growing ones should have high entry rates, leading to a negative correlation. On the other hand, if within-sector creative destruction is driving exit and entry, sectors with high firm entry should also have high firm exit, and thus a positive correlation will be observed. As shown in Table 3.4 for simple annual correlations, Turkey has significant within-sector creative destruction in manufacturing but not in services. As is the case for most other countries, adjusting by firm size makes a difference for Turkey: the correlation for services increases and becomes significant, implying that the

size of entering and exiting service firms differs between detailed sectors. Industrialized countries (such as Portugal and the U.S. but not France) have very high positive weighted correlation rates, demonstrating that the sectoral structure in these countries is settled, and there are very few, if any, fast-growing sectors at the expense of other sectors. However, in transition countries, correlation rates are relatively low (less than 0.2 in the case of Latvia and Romania) and insignificant, implying that some sectors must be expanding in these countries and some others must be contracting. With a correlation of 0.28, Turkey is just above transition countries but much lower than industrialized countries, suggesting that sectoral adjustment might still be ongoing. Looking at correlations of period averages accounts for the possibility that industry changes in entry and exit do not occur in the same year; this strengthens the evidence for within-sector creative destruction as the main force behind firm exit and entry in non-agricultural sectors in Turkey.

TABLE 3.4

Correlation between entry and exit rates across industries

Country	Annual correlations		Correlations of period averages ^b	
	Simple correlation	Weighted correlation ^c	Simple correlation	Weighted correlation ^c
Turkey (all non-agriculture) ^a	-0.03	0.28*	-0.14	0.68*
Turkey (manufacturing) ^a	0.26*	0.27*	0.72*	0.73*
Turkey (services) ^a	0.03	0.20*	0.31*	0.65*
Portugal	-0.12	0.57*	0.35	0.03
France	-0.24*	-0.10	-0.53*	-0.30
U.S.	0.88*	0.82*	0.81*	0.95*
Mexico	0.19*	0.54*	0.09	0.37
Romania	0.08	0.12	0.61*	0.41
Hungary	0.24*	0.57*	0.19	0.78*
Estonia	0.50*	0.29*	0.33	0.46*
Latvia	-0.06	0.15	0.29	0.18

Note: * Significant at 10%;

a- Entry in/ exit out 20+ employee firm census;

b- Turkey: 2005-201, other countries: 1990s.

c- Weighted by firm size

3.3.1 What kinds of non-agricultural firms create the most jobs in Turkey?

Service firms provide the majority of employment in Turkey. In terms of employment, services make up more than 60 percent of total non-agricultural employment, but only half of non-agricultural employment in 20+ employee firms. Manufacturing firms absorb about a third of non-agricultural employees (and about 40 percent of employees who work in 20+ employee firms). Since 2009, there also appears

to be a reallocation of labor from mining and construction towards services and manufacturing.

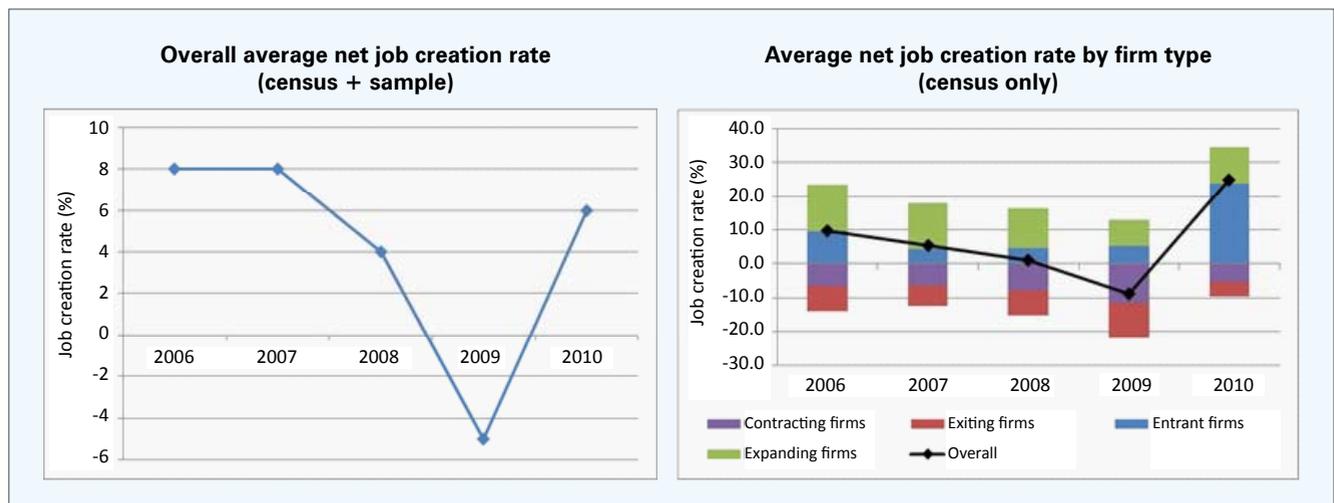
The net job creation rate in Turkey in 2010 was about 6 percent. The definition of net job creation rate is provided in Box 3.3. Using this measure, the left panel of Figure 3.10 plots the overall job creation rate in Turkey and the job creation rate by sector between 2005 and 2010. Starting at 8 percent in 2006 and 2007, the job creation rate declined to 4 percent in 2008, then fell dramatically to negative 5 percent during the 2009

crisis, and rebounded to 6 percent in 2010. The right panel of Figure 3.10 decomposes the net job creation of firms with 20 or more employees into contributions of entering, expanding, exiting, and contracting firms. One can observe that until 2010, expanding firms had a more important role in

job creation than entering firms, whereas in 2010 the above mentioned growth in entry of firms with 20 to 49 employees contributed more to overall job creation than did the expansion of surviving firms. As for job destruction, contracting and exiting firms contribute fairly equally to this process.

FIGURE 3.10

Job creation rate, 2006-2010



Source: Author's calculations based on SBS

Box 3.3 Definitions of Job Creation Rate and Productivity

In this study, we follow the Davis and Haltiwanger (1999) definition of job creation rate, which is the change in employment between period t-1 and t divided by the simple average of employment in t-1 and t; thus,

$$JCR_t = 2 (L_t - L_{t-1}) / (L_t + L_{t-1}),$$

where JCR_t is the net job creation rate (job creation by entering and expanding firms net of job destruction by exiting and contracting firms) at time t, and L_t is employment at time t. This measure has the advantages of being symmetric around zero, lying in the closed interval of [-2, 2], and allowing for estimation of job creation for entering and exiting firms (Davis and Haltiwanger 1999).

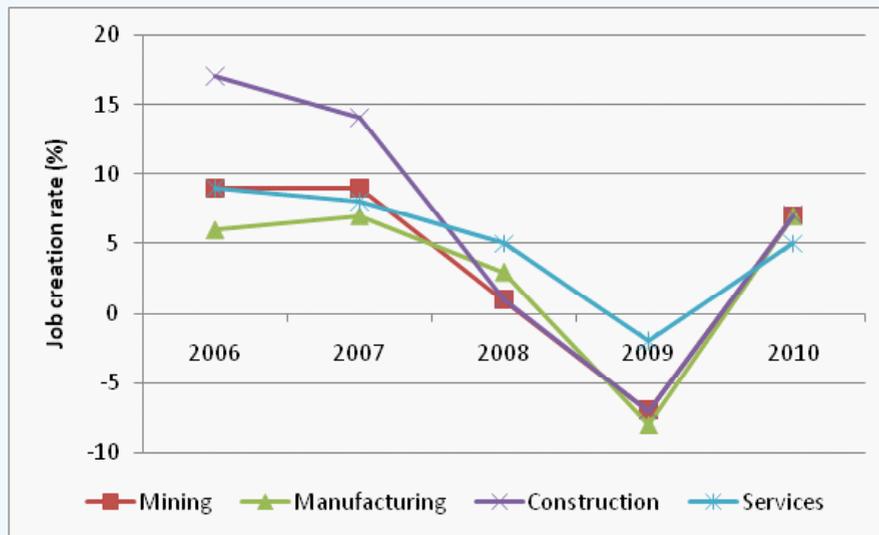
The analysis below uses two measures of productivity: labor productivity and total factor productivity. Labor productivity is calculated as the firm's value-added per hour worked. TFP is estimated by the Levinsohn-Petrin procedure within each NACE 2-digit sector, with a firm's capital stock estimated by using annual investments and the depreciation allowance of firms.

Construction firms had the highest and service firms the lowest net job creation and destruction rates during the 2006-2010 period. Construction firms experienced the highest pre-crisis job creation rates (or about 15 percent in 2006 and 2007), followed by mining and service firms, with manufacturing firms creating jobs at the rate of 6-7 percent. During the 2009 crisis, manufacturing firms experienced the most drastic net job destruction of 8 percent, followed by construction and mining firms at 7 percent; service firms had the least net job destruction during the crisis, at 2 percent. This is fairly consistent with the evidence gathered from analysis of the Labor Force Surveys (World

Bank and Ministry of Development 2013, also compare Chapter 2). Finally, in 2010, firms in all sectors created jobs at the rate of 7 percent, with the exception of services where it was 5 percent. The frequency distribution of the net job creation rate is most dispersed for construction firms, and most concentrated for service firms (as shown in Figure A3.1 in Annex 3.1). This implies that while many construction firms are creating jobs either through firm entry or expansion, many are also destroying jobs through firm exit and contraction. On the other hand, most of the service sector appears to be creating jobs on net in 2010, with lower variance in net job creation between different firms in the sector.

FIGURE 3.11

Job creation rate distribution by sector, 2010



Note: Computation based on 20+ firms only.

Source: Author's calculations based on SBS

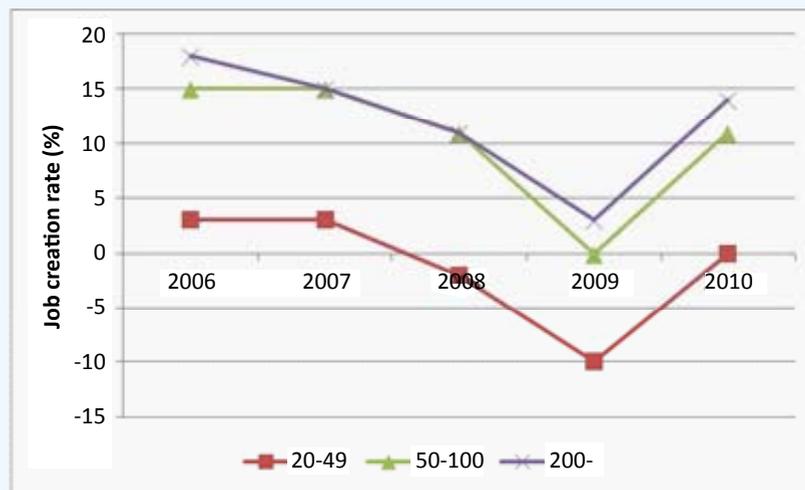
Large firms have the highest rate of net job creation in Turkey.⁴⁰ Firms with 50 or more employees created jobs at the rate of 15 percent or more in 2006 and 2007, while firms with 20-49 employees had a net job creation of only 3 percent (Figure 3.12). During the 2009 crisis, the gap between job creation and job destruction narrowed significantly for firms with 200 or more employees (from 11 percent to 3 percent), and for firms with 50 to

199 employees, net job creation fell to zero. For smaller firms (i.e., firms with 20 to 49 employees), job destruction exceeded job creation in 2008 and the gap increased dramatically in 2009 to negative 10 percent; by 2010, job creation in these firms was similar to job destruction, which can be attributed to many firms still experiencing net job destruction, while some firms started recovering from the crisis (Figure A3.1).

40- This result is consistent with Ayyagari et al. (2011).

FIGURE 3.12

Job creation rate by firm size, 2006-2010

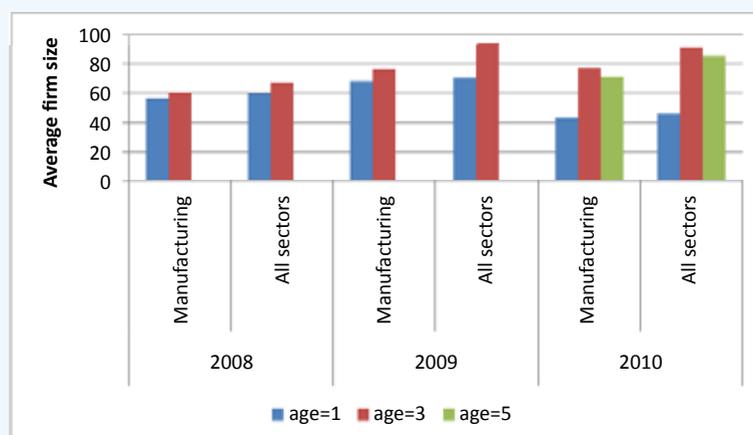


Surviving firms have been only slightly larger than entering firms until 2010, when firm size at entry decreased substantially. Bartelsman, Haltiwanger, and Scarpetta (2004) examine job

creation from the perspective of post-entry survival and growth rates of firms in transition economies by comparing firm size at different ages to firm size at entry. As noted above, the SBS

FIGURE 3.13

Average firm size by age (based on entry into 20+ firm census), for manufacturing and all sectors, 2008-2010



Source: Author's calculations based on SBS

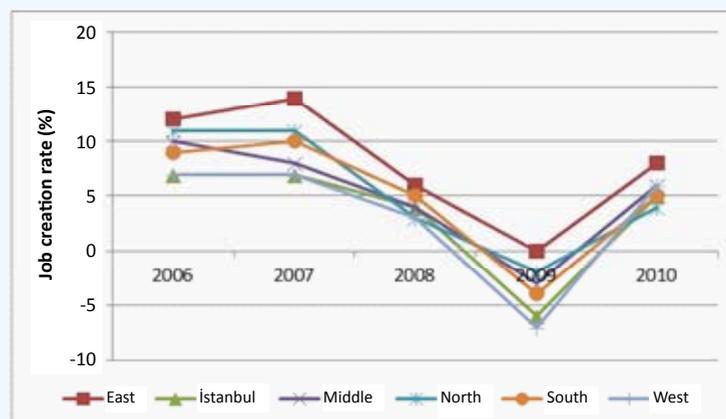
dataset does not contain firms' year of registration, so age can only be defined from entry into the 20+ employee firm census. Still, Figure 3.13 examines how much surviving firms with 20 or more employees grow in size after they appear in the SBS census. By the age of three, the average manufacturing firm in 2008 has 61 employees, which is only four more than the average entering manufacturing firm in that year (the difference for all sectors is eight employees). By 2009, firm size at entry rises, and so does firm size at the age of three years, especially for non-manufacturing firms. Finally, in 2010, firm size at entry falls, since, as seen earlier, many firms with 20-49 employees enter the market, bringing down the average firm size at entry and increasing the gap between the size of entering and surviving firms. Interestingly, firm size at age five is below that at age three. While the

difference is very small, it may be affected by the economic conditions of the respective foundation years. Three-year-old firms were established in 2008, which was a strong growth year until the last quarter.

Net job creation rate has been highest in the East region of Turkey and lowest in the West and Istanbul.⁴¹ The East region of Turkey has experienced the highest rates of net job creation throughout the 2006-2010 period (with 12-14 percent net job creation in 2006-07); it was the only region during the 2009 crisis not to have net job destruction (Figure 3.14). On the other hand, the West region and Istanbul saw the lowest pre-crisis net job creation rates (at 7 percent), and the most net job destruction in 2009 (at negative 7 percent and negative 6 percent, respectively).

FIGURE 3.14

Job creation rate by region, 2006-2010



41- The correspondence of provinces to regions is as follows: East (Agri, Erzurum, Gaziantep, Malatya, Mardin, Sanliurfa, Van), Istanbul (Istanbul), Middle (Ankara, Kayseri, Kirikkale, Konya), North (Kastamonu, Samsun, Trabzon, Zonguldak), South (Adana, Antalya, Hatay), and West (Aydin, Balikesir, Bursa, Izmir, Kocaeli, Manisa, Tekirdag).

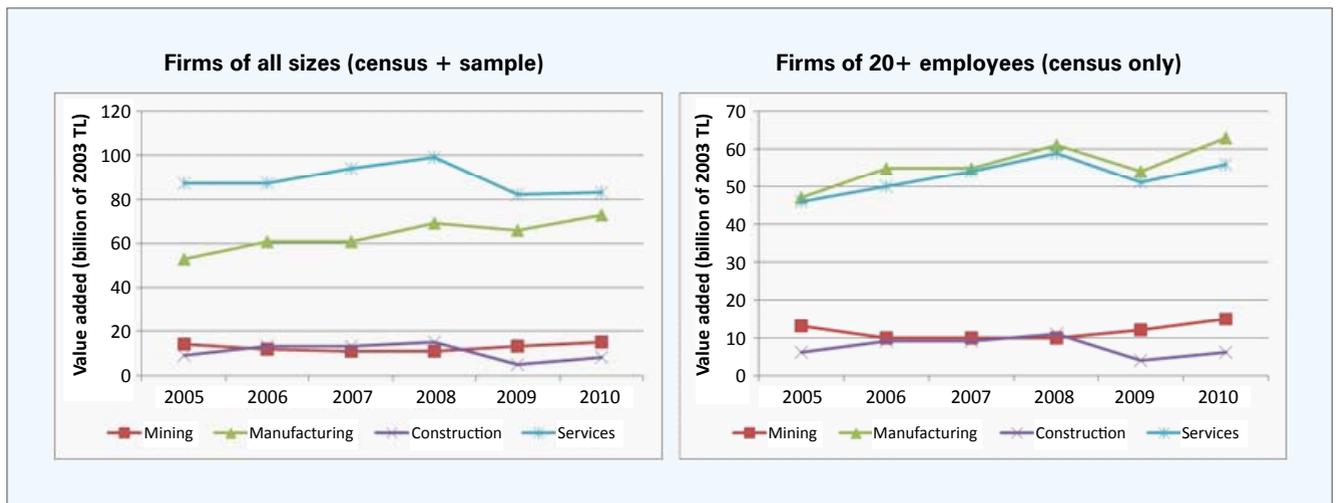
3.3.2 What kinds of firms are most productive in Turkey?

Service firms have the highest value-added in the Turkish economy; however, within the 20+ employee firms, the value-added of manufacturing firms is slightly above that of services. As demonstrated in the left panel of Figure 3.15, services firms contribute the highest value-added to the economy of Turkey, although manufacturing firms have been catching up. Notably, the value-added of services and

construction firms was hit hard by the 2009 global crisis, and in the case of services, it has not recovered in 2010, whereas manufacturing and mining firms' value-added does not seem to be affected by the crisis. For firms with 20 or more employees, the picture looks different, with the value-added of services and manufacturing firms moving very close together, both decreasing during the 2009 crisis and recovering in 2010, with manufacturing rebounding more strongly (right panel of Figure 3.15).

FIGURE 3.15

Value added by sector, 2005-2010

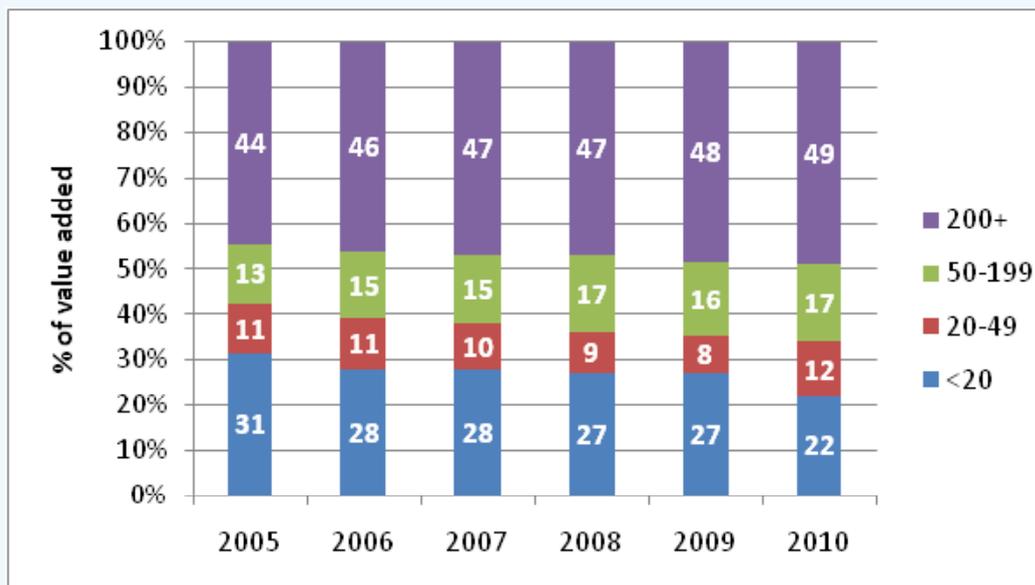


Almost half of all value-added is contributed by firms with 200 or more employees. Despite employing less than 30 percent of all non-agricultural workers, firms with 200 or more employees contribute almost half of all value-added in the Turkish economy (Figure 3.16), providing initial suggestive evidence that their productivity is higher than that of smaller firms. The opposite is true of firms with less than 20 employees,

which absorb almost half of all non-agricultural employment but produce less than a third of all value-added. Notably, while the share of value-added contributed by firms with 50 or more employees has been gradually rising, that of smaller firms has been falling (with the exception of firms with 20-49 employees, which saw a rise in value-added share from 8 percent in 2009 to 12 percent in 2010).

FIGURE 3.16

Value added by firm size, 2005-2010



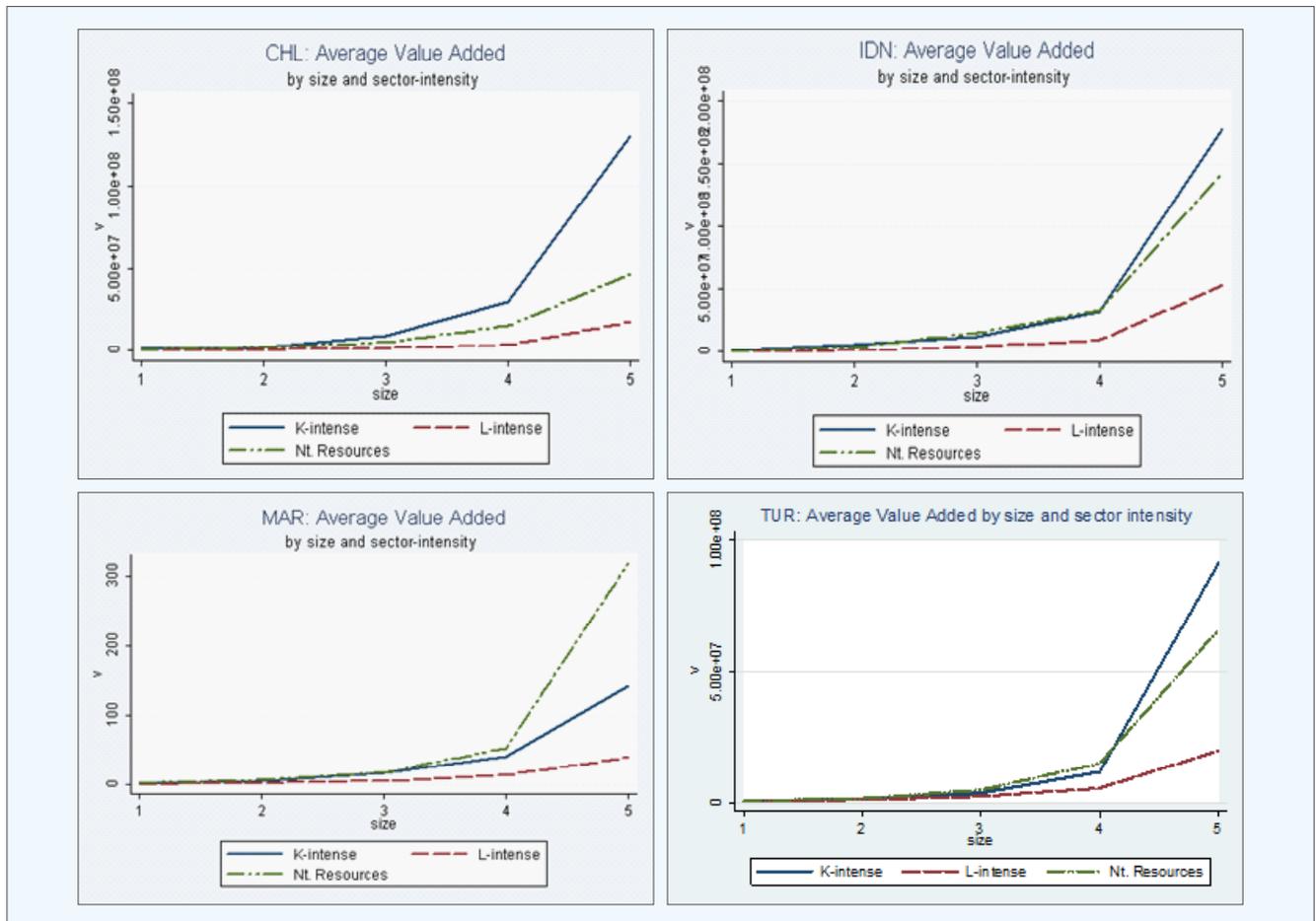
Source: Author's calculations based on SBS

In Turkey, the average value-added of firms in capital-intensive sectors is higher than the value-added of firms in labor-intensive and natural resource-intensive sectors for all firm size categories except 250-499. For this size category, firms in natural

resource-intensive sectors have a higher average value-added. Turkey's pattern is similar to that of Chile and Indonesia for all size groups except 250-499 and similar to that of Morocco for the 250-499 firm size group.

FIGURE 3.17

Average value-added by firm size and sector intensity in Chile, Indonesia, Morocco, and Turkey



Note: Firm size categories represented by each value in the X axes are as follows: 1 : 20-49, 2: 50-99, 3: 100-249, 4: 250-499, 5: 500+. Data coverage is 2005-2010 for Turkey and 1990s and 2000s for Chile, Indonesia, and Morocco.

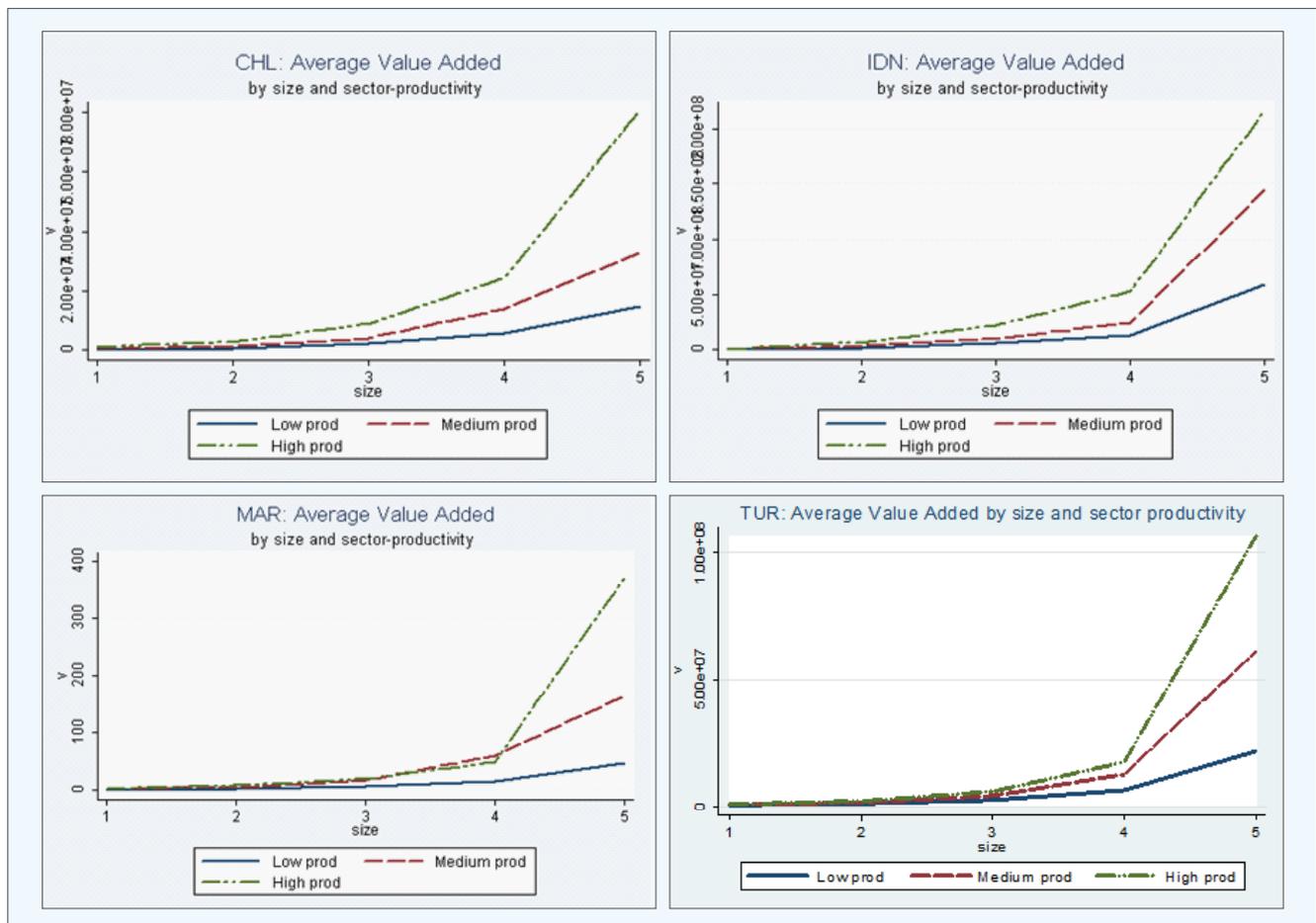
Source: Authors' calculations for Turkey and Hallward-Driemeier et al. (2013), mimeo

Firms in high productivity sectors, by OECD classification, have the highest average value-added for all size groups in Turkey. High productivity sectors are followed by medium productivity and low productivity sectors in average value-added. The average value-added gap widens in absolute terms as firm

size category increases. Although this ranking is not surprising and is similar to those observed for Chile and Indonesia in Figure 3.18, in Turkey, the difference between the value-added of firms in high productivity sectors and medium productivity sectors is smaller than the differences in Chile and Indonesia.

FIGURE 3.18

Average value-added by firm size and sector productivity category in Chile, Indonesia, Morocco, and Turkey



Note: Firm size categories represented by each value in the X axes are as follows: 1 : 20-49, 2: 50-99, 3: 100-249, 4: 250-499, 5: 500+. Data coverage is 2005-2010 for Turkey and 1990s and 2000s for Chile, Indonesia, and Morocco.

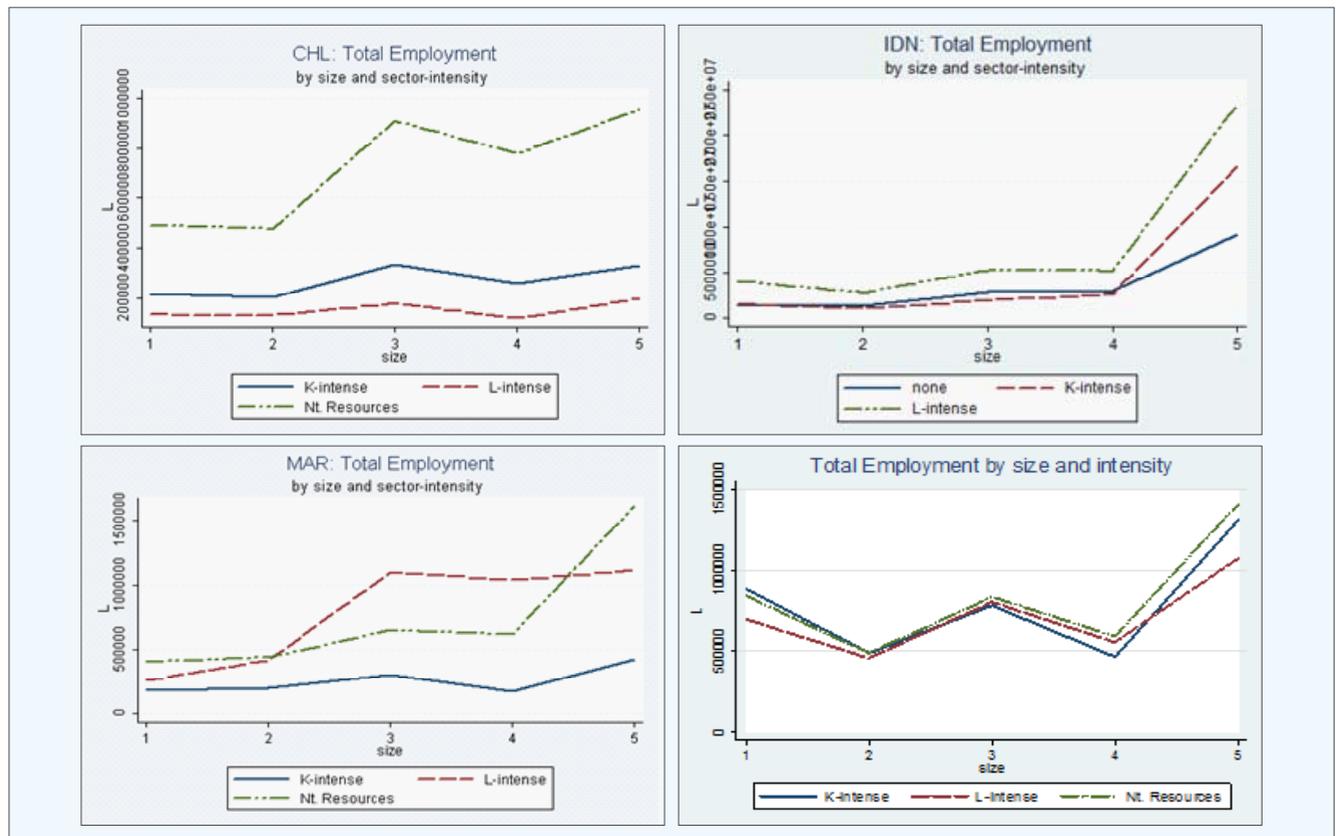
Source: Authors' calculations and Hallward-Driemeier et al. (2013), mimeo

Quite different from the cases of Chile, Indonesia, and Morocco, almost equal numbers of employees work in capital-, labor-, and natural resource-intensive sectors, and in all firm size groups in Turkey. For Chile and Indonesia, more employees work in natural resource-intensive sectors than in capital- and labor-intensive sectors for all size groups. Another interesting observation from Figure 3.19 is that the discrepancy between the number of people employed in each firm size

category is small compared to that of other countries. The total number of workers in 50-99 and 250-499 firms as well as 20-29 and 100-249 firms are very close to each other. In the 500+ employee firms, the largest employer group, there are only 2.3 times as many workers as in the smallest group with 50-99 employee firms. The differential between the total number of employed between largest and smallest size groups is around 5 times for Indonesia and 3 times for Morocco and Chile.

FIGURE 3.19

Total employment by firm size and sector intensity in Chile, Indonesia, Morocco, and Turkey



Note: Firm size categories represented by each value in the X axes are as follows: 1 : 20-49, 2: 50-99, 3: 100-249, 4: 250-499, 5: 500+. Data coverage is 2005-2010 for Turkey and 1990s and 2000s for Chile, Indonesia, and Morocco.

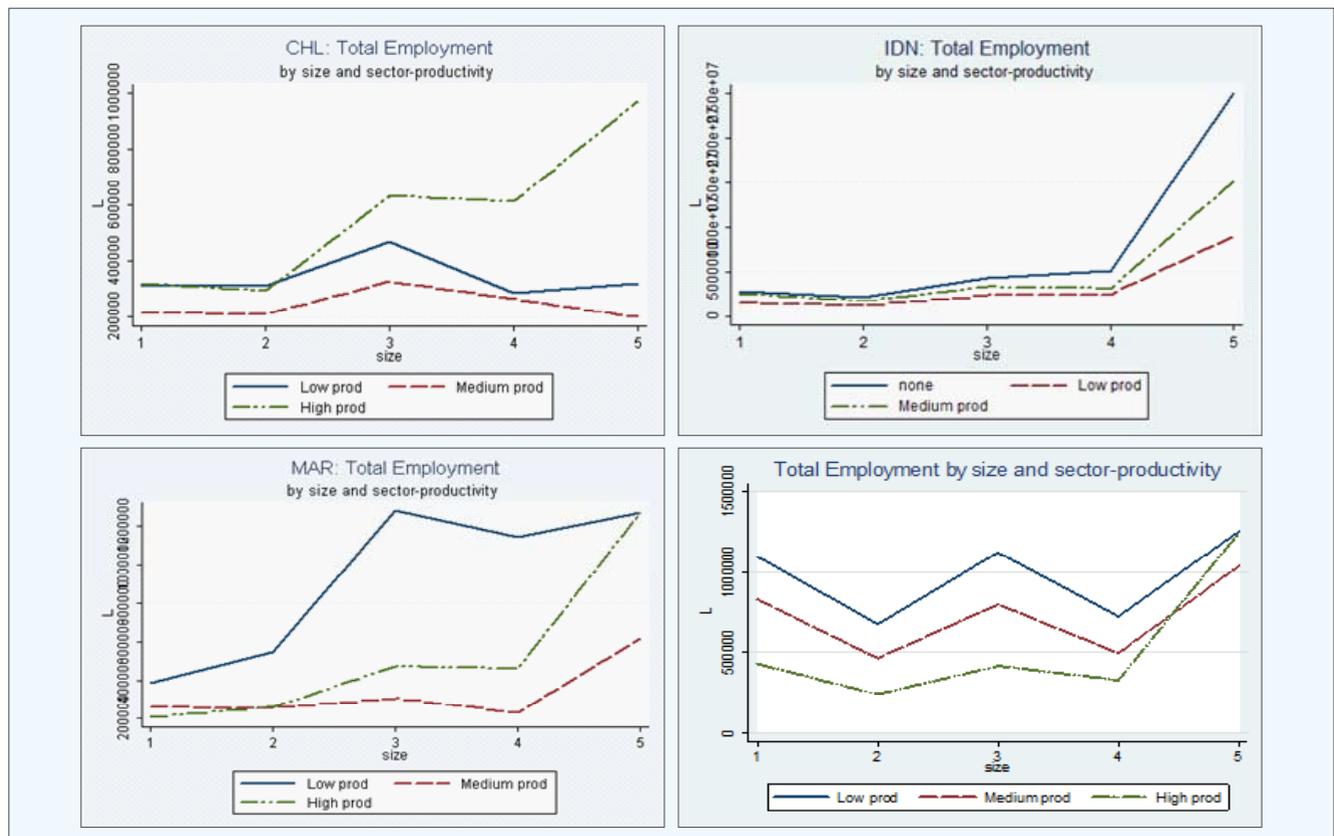
Source: Authors' calculations and Hallward-Driemeier et al. (2013), mimeo

In Turkey, firms in low productivity sectors, by OECD classification, employ more people than medium productivity sectors and high productivity sectors for all size groups except for 500+. In the 500+ category, equal number of employees work in high productivity and low productivity sectors. The pattern in Turkey is somewhat similar to that seen in Morocco. Low productivity sectors in Morocco employ by far the

highest number of employees except for in the 500+ size category. For this category, low and high productivity sectors employ the same number of people. Sector productivity and employment share patterns seem to be the most favorable in Chile, where many more people are employed in high productivity sectors than in other productivity groups for firm size groups larger than 100.

FIGURE 3.20

Total employment by firm size and sector productivity in Chile, Indonesia, Morocco, and Turkey



Note: Firm size categories represented by each value in the X axes are as follows: 1 : 20-49, 2: 50-99, 3: 100-249, 4: 250-499, 5: 500+. Data coverage is 2005-2010 for Turkey and 1990s and 2000s for Chile, Indonesia, and Morocco.

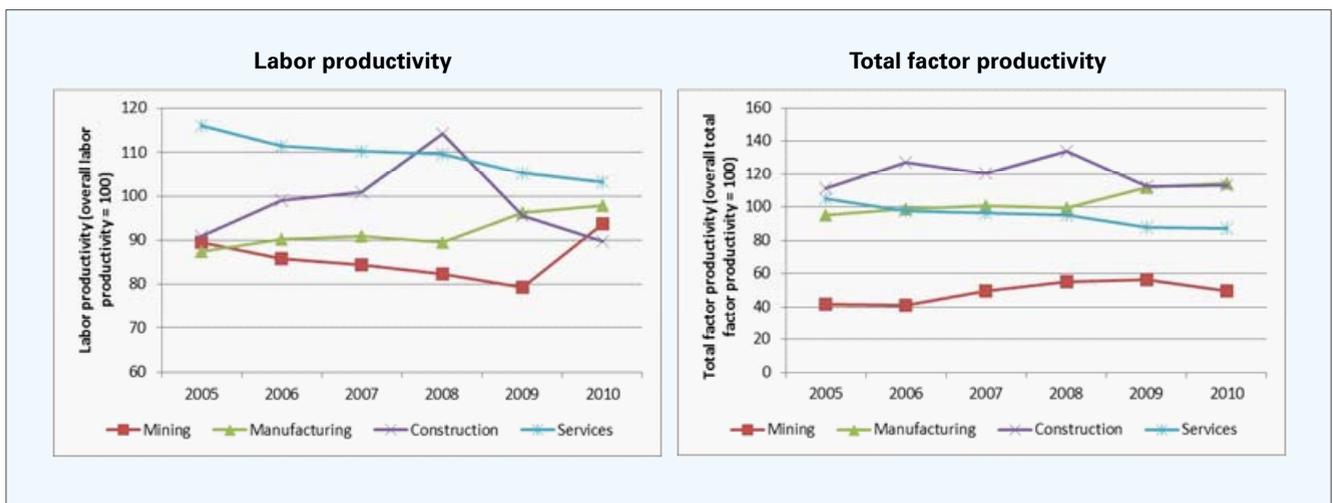
Source: Authors' calculations and Hallward-Driemeier et al. (2013), mimeo

Service firms have the highest labor productivity in Turkey, while construction and manufacturing firms have the highest total factor productivity. Figure 3.21 plots sectoral productivity normalized by the average productivity in Turkey in that year (productivity distributions by sector for 2010 are reported in Figure A3.2). Services firms have higher-than-average labor productivity, although this relative productivity has been declining gradually from 2005 to 2010. Labor productivity in manufacturing firms was fairly stable at about 10 percent below the average until 2009, when it rose significantly. By contrast, labor productivity in mining was rising in the pre-crisis period, peaked at more

than 10 percent above average in 2008, and then began a steady decline, bringing it to 10 percent below average by 2010. Finally, mining had the lowest labor productivity from 2006 to 2009, but in 2010 experienced a significant comeback. The dynamics of sectoral comparisons of TFP appear to be quite different, perhaps due to measurement issues. Only construction firms have had consistently above-average TFP, with manufacturing firms catching up to them in 2009 and 2010. TFP of services firms started at slightly above average in 2005, but declined throughout the period. Mining firms have had the lowest relative TFP, at 40 to 60 percent below average during the period under study.

FIGURE 3.21

Productivity by sector, 2005-2010

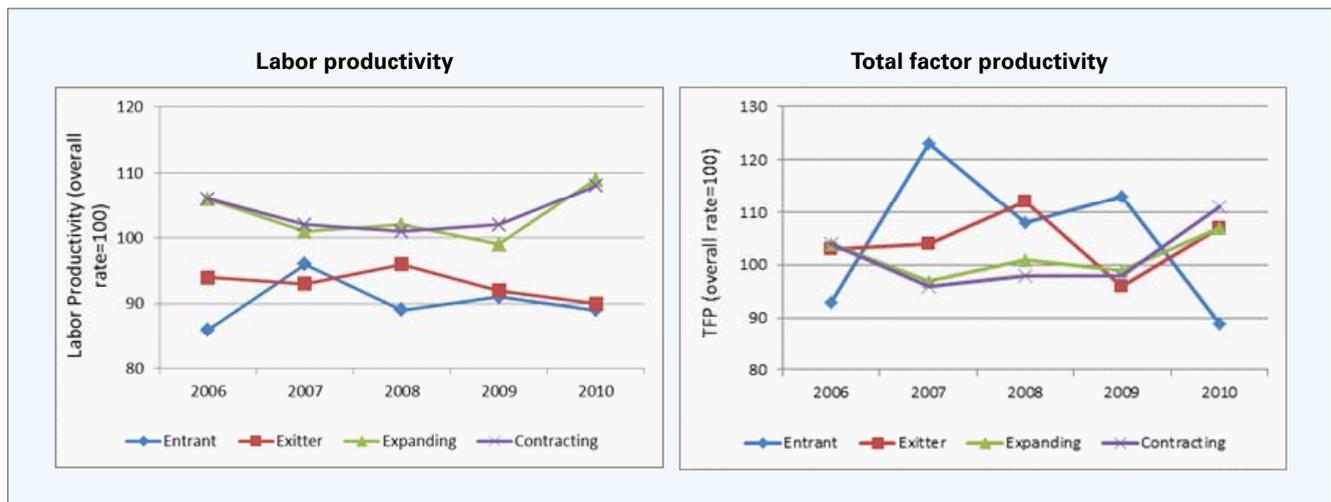


Incumbent firms have the highest labor productivity in Turkey, while firms that lose workers either through contraction or exit tend to have the highest TFP. The labor productivity of incumbent (expanding or contracting) firms was above average for virtually all of the 2006-2010 period. Exiter firms had a labor productivity that was 5 percent or less below the average, while the

labor productivity of entrant firms had the highest volatility. Interestingly, TFP comparisons reveal that at the beginning and the end of the period under study, exiting and contracting firms had the highest relative TFP; expanding firms had the lowest TFP between 2007 and 2009. The relative TFP of entrants was even more volatile than their labor productivity.

FIGURE 3.22

Productivity by firm type, 2005-2010

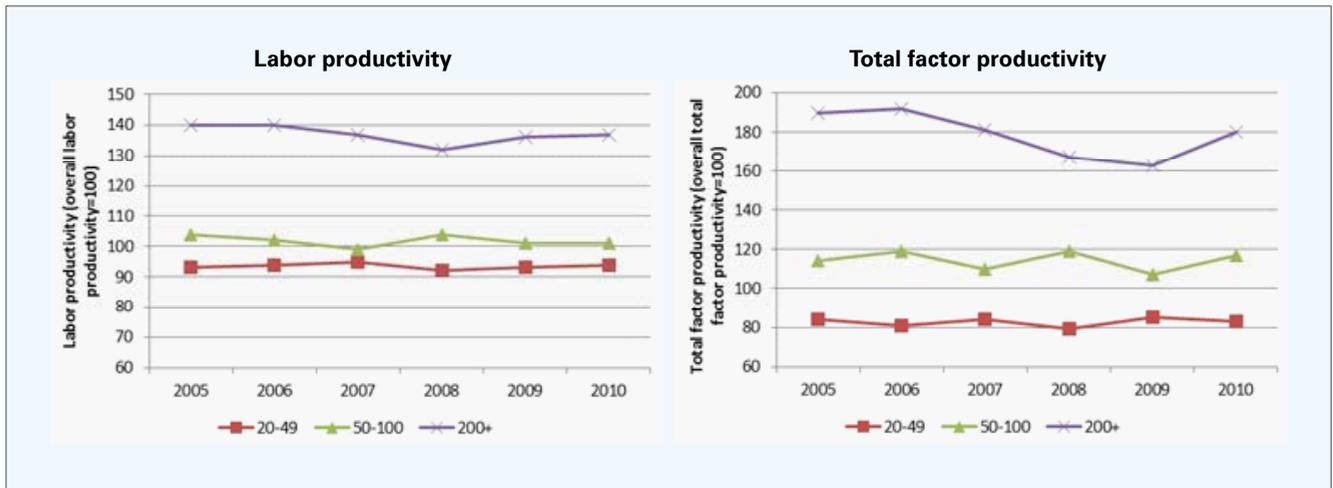


Large firms are much more productive than smaller firms in Turkey. Figure 3.23 presents relative labor and TFP productivity of firms of different sizes. In both cases, the productivity of firms with 200 or more employees is far above that of smaller firms. In terms of labor productivity, large firms are about 40 percent more productive than

the average firm, with some decline in this relative productivity in 2007 and 2008, and recovery in 2009 and 2010. In terms of TFP, the productivity of large firms was 90 percent above average in 2005 and 2006, fell gradually to 60 percent above average by 2009, and then rebounded to 80 percent above average by 2010.

FIGURE 3.23

Productivity by firm size, 2005-2010

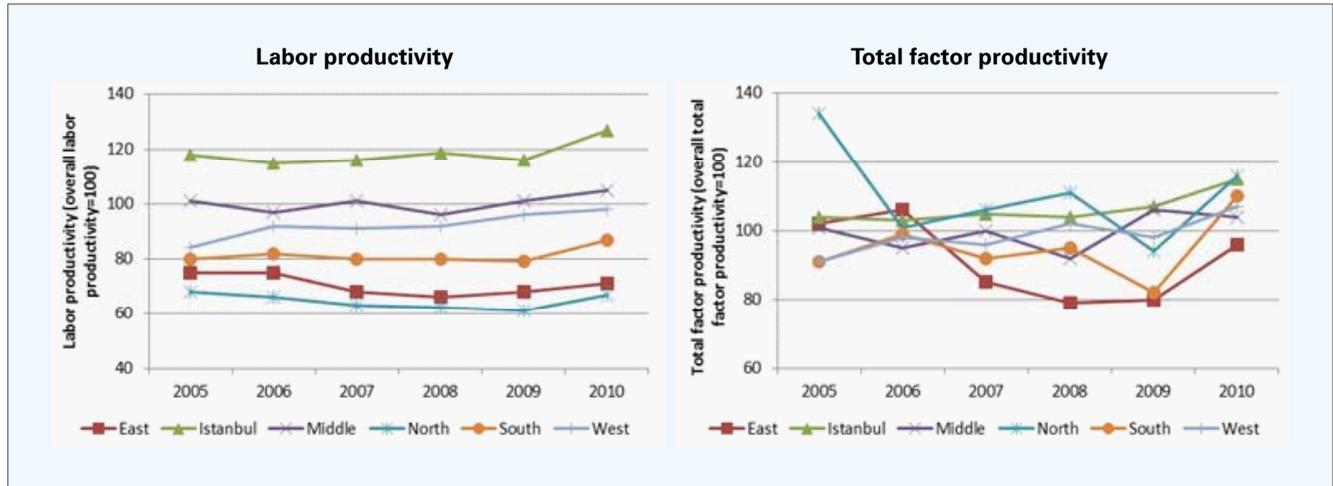


Labor productivity is consistently highest in Istanbul, and lowest in the North region; the regional picture of TFP varies over time. Labor productivity of firms in Istanbul is about 20 percent higher than the average; firms in the Middle region also have higher-than-average labor productivity in 2009 and 2010 (left panel of Figure 3.24). Firms in the North and East of Turkey have

the lowest labor productivity. The dynamics of regional relative TFP are much more complicated, with sharp swings by regions from year to year, although the frequency distribution of TFP in 2010 demonstrates that Istanbul firms have somewhat higher labor productivity, and firms in North and East somewhat lower productivity than firms in other regions (right panel of Figure 3.24).

FIGURE 3.24

Productivity by region, 2005-2010



3.3.3 The linkage between job creation and firm productivity: do more productive non-agricultural firms create the most jobs?

Is there a linkage between the firms that produce the most jobs and those with higher productivity in Turkey? So far, among other findings, firm-level data have shown that large firms have the highest net job creation and also the highest productivity, that services firms have lower net job creation than other sectors and lower-than-average productivity in recent years, and that

Istanbul has the lowest level of job creation but the highest level of labor productivity. To what extent are the two phenomena – job creation and productivity – linked in Turkey? In other words, are more productive firms creating the most jobs, thus facilitating labor reallocation to these better jobs for development? The analysis below attempts to address these questions by looking at the relationship between job creation and firm productivity using cross-sectional regressions, panel regressions, and decompositions. The methodology for the analysis is described in Box 3.4.

Box 3.4 Methodology

Cross-section regressions

There is a short-run tradeoff between productivity and job creation. In the medium to long run, more jobs could be created in activities that are more productive and competitive. Since productivity is measured as value-added per worker (or per hour worked), in the very short run, job creation necessarily depresses a firm's productivity. Thus, one has to look beyond this immediate relationship to a longer time horizon. As the SBS dataset spans the period of 2005 through 2010, the focus of the analysis is the relationship between firm productivity in 2005 (i.e., initial productivity) and its net job creation over the entire period of 2005 and 2010. This implies measuring job creation over six time periods, which can be argued to be a sufficiently long time horizon to abstract away from the short-run tradeoff between productivity and job creation.

The focus on firms that survive for the whole 2005-2010 period demands an adjustment for selection, as more productive firms are more likely to survive and appear in our database. As one can observe from the findings in the top panel of Figure 3.8, surviving firms have higher or lower productivity than entering or exiting firms, respectively. Thus, focusing on these firms in our analysis needs to take into account that more productive firms are more likely to survive and self-select into our sample. Not taking this into account in the regression analysis might result in capturing a spurious relationship between job creation and productivity. To correct for this sample selection problem, our analysis follows Comola and de Mello (2009) by using a multinomial logit, where the first stage predicts whether a firm is a survivor, entrant, exiter, or both an entrant and an exiter during the period under study, and the second stage regresses net job creation on initial productivity as well as a set of other firm characteristics, including exporter status (which is correlated with both productivity and net job creation) and four selection terms calculated from the first stage. The first stage uses initial productivity (either LP or TFP), exporter status, and NUTS2 region dummies (the latter as the excluded variables from the second stage) to predict survival.

Panel regressions

While cross-sectional analysis allows us to look at the overall relationship between productivity and job creation and to assess the extent of productive labor reallocation across sectors, across sub-sectors, and within sub-sectors, we rely on panel regressions to examine how productivity changes within a firm over time affect job creation. To ensure that the results detected on the productivity growth-job creation relation do not depend on the initial productivity level of a firm, we control for the productivity level of a firm in the previous year. The sample in these regressions includes all firms that exist for two consecutive years.

Decompositions (manufacturing sector)

We also decompose manufacturing productivity growth into five components, using the methodology of Foster, Haltiwanger, and Krizan (FHK) (2001) as implemented in Bartelsman et al. (2004) to benchmark the sources of that growth against industrialized and developing countries. FHK decompose productivity growth into five components:

1. The 'within-firm effect' is within-firm productivity growth weighted by initial output shares.
2. The 'between-firm effect' captures the gains in aggregate productivity coming from the expanding market of high productivity firms, or from low-productivity firms' shrinking shares weighted by initial shares.
3. The 'cross effect' reflects gains in productivity from high-productivity growth firms' expanding shares or from low-productivity growth firms' shrinking shares.
4. The 'entry effect' is the sum of the differences between each entering firm's productivity and initial productivity in the industry, weighted by its market share.
5. The 'exit effect' is the sum of the differences between each exiting firm's productivity and initial productivity in the industry, weighted by its market share" (Bartelsman et al. 2004).

Cross-section results

Overall, productive firms appear to be creating the most jobs in Turkey. The results in Table A3.1 suggest that firms with higher initial productivity are creating jobs at a higher rate than firms with lower productivity. This holds both for labor productivity (LP) as well as TFP, although the magnitudes of the coefficients are quite different, perhaps due to different distributions of these two measures: if labor productivity increases by 1 percent, the net job creation rate is expected to increase by 14.3 percentage points; if TFP increases by 1 percent, the net job creation rate is expected to increase by 2.4 percentage points (columns 1 and 4).⁴²

For regressions using labor productivity, the selection term for surviving firms is positive and significant, implying that surviving is positively correlated with job creation. Notably, if one looks at the first-stage results, the coefficients on initial productivity in regressions predicting whether a firm has been an entrant, exiter, or entrant and exiter in the 2005-2010 period are all negative and significant, implying that firms with lower productivity are more likely to exit the market and that surviving firms have the highest initial productivity.

As for TFP, although the selection term for surviving firms is positive, it is insignificant; on the other hand, coefficients for other firms are either negative (implying that entrant firms are less likely to create jobs) or not significant.

Within-subsector reallocation of labor appears to be the most productivity-enhancing in Turkey. Introducing sector fixed effects (broad and NACE 2-digit subsectors) allows us to distinguish between different sources of labor reallocation and productivity. Three sources of labor reallocation are defined:

- I. *Within subsector* reallocation: movement of labor from one firm to another firm in the same NACE 2 digit subsector;
- II. *Across subsector* reallocation: movement of labor from one firm to another firm in a different NACE 2 digit subsector but within same broad sector (manufacturing, services, mining, construction); and
- III. *Across sector* reallocation: movement of labor from one firm to another firm in a different broad sector.

42- The analysis was also conducted with quintiles of LP and TFP productivity measures, revealing that with LP, the relationship between initial productivity and job creation holds throughout the productivity distribution (as coefficients on all quintiles are positive and significantly different from the omitted first productivity quintile, as well as rising in magnitude). However, the analysis with TFP as a measure of productivity demonstrates that only firms in the top productivity quintile create more jobs than the rest of firms.

Introducing sector fixed effects does not change the main finding: more productive firms in Turkey, on average, create more jobs (Table 3.5 and Figure 3.25 summarize the results in Table A3.1.). Even when we control for detailed subsectors, initial labor productivity is significantly correlated with net job creation, implying substantial productivity-enhancing, within-subsector reallocation; in fact, this source of labor reallocation accounts for more than half of the total relationship between productivity and job creation (in the case of TFP, the within-subsector reallocation coefficient is not statistically significant at the 10 percent level, but it accounts for more than 70 percent of the total relationship). When only broad sectors (i.e., manufacturing, construction,

and services) are controlled for, the relationship between productivity and job creation rises for both LP and TFP, implying a positive contribution of across-subsector reallocation (contributing 46 percent for LP and 17 percent for TFP). Finally, the contribution of across-sector reallocation (or structural change) can be calculated as the difference between the coefficient in regressions with broad sector fixed effects and those without. In the case of TFP, across-sector reallocation of labor contributes 13 percent, while it appears that for LP, across-sector movement of labor is actually slightly productivity-reducing. Thus, the results confirm the previous finding that within-sector reallocation of resources is the most important growth-enhancing force in Turkey.

TABLE 3.5

The relationship between productivity and labor reallocation in Turkey and its sources, 2005-2010
Coefficients of a cross-sectoral regression

Source of Labor Allocation \ Productivity definition	I	I+II	I+II+III
LP	0.0807***	0.146***	0.143***
TFP	0.017	0.021*	0.024***

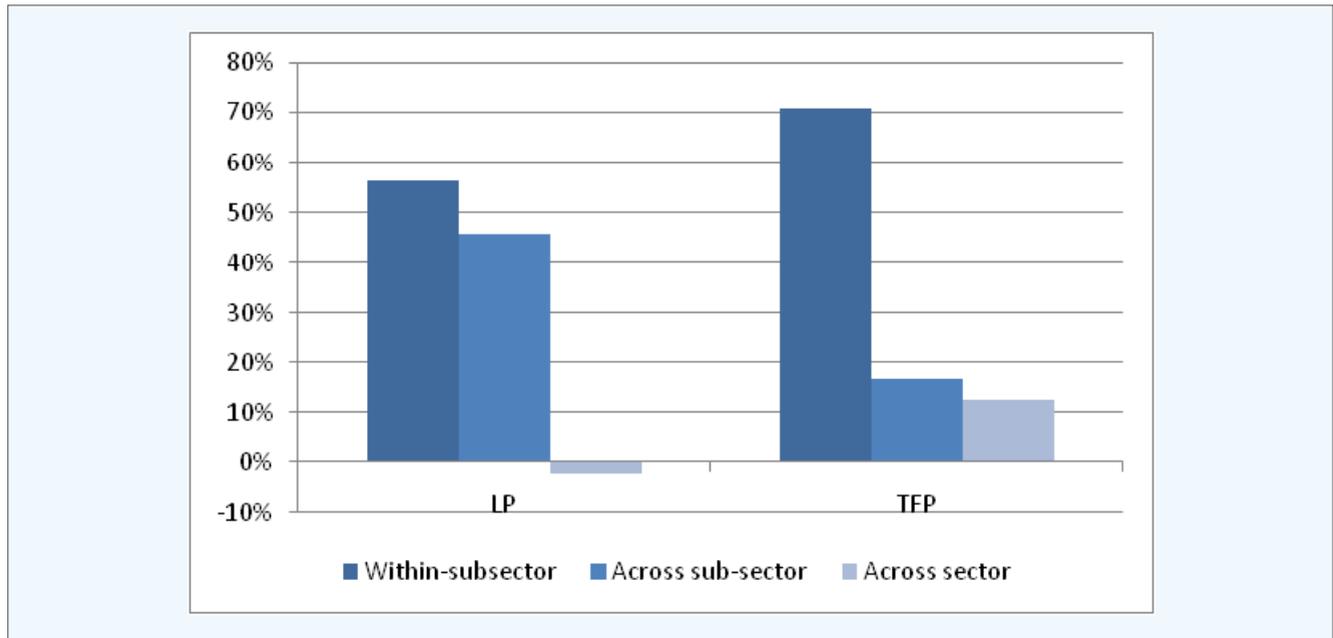
Note: ***significant at the 1% level, **significant at the 5% level, *significant at the 10% level.

Coefficients can be interpreted as follows: a higher initial labor productivity (LP) results in 0.0807 more labor reallocation when measured within sector(I); 0.065 more when measured across subsector (II) (coefficient on I+II, minus coefficient on I) and -0.003 labor reallocation when measured across sectors (III; i.e. coefficient on I+II+III minus coefficient on I+II). The relative contributions of labor movements in the direction of higher productivity are thus $0.0807/0.143 = 56\%$ for within sector movements, 46% for across subsector, and -2% for across sector movements.

Source: Authors' calculations based on SBS

FIGURE 3.25

Sources of productive labor reallocation in Turkey, 2005-2010



Source: Authors' calculations based on SBS

There appears to be labor reallocation towards more productive activities both within the services sector and within the manufacturing sector. This is indicated by the positive significant coefficients in Table 3.6 (detailed results are in Table A3.2). However, the source of this positive reallocation differs (see Figure 3.26). When measuring productivity with LP, productive reallocation in manufacturing emanates from both sources I and II, with within-subsector reallocation slightly dominating. When measuring

productivity with TFP, movement towards high productivity firms in manufacturing originates entirely from source II: there is movement of labor from low-productivity to high-productivity subsectors, but within subsectors, there is a slight movement towards low-productivity firms. The result for services is similar across the two measures of productivity: productive reallocation of labor occurs only within subsectors, with unproductive reallocation across subsectors.

TABLE 3.6

The relationship between productivity and labor reallocation within sectors and its sources, 2005-2010
Coefficients of a cross-sectoral regression

Source of Labor Allocation \ Productivity Definition / Sector	I	I+II
Manufacturing:		
LP	0.075**	0.124***
TFP	-0.008	0.028*
Services		
LP	0.060***	0.051***
TFP	0.037***	0.014**

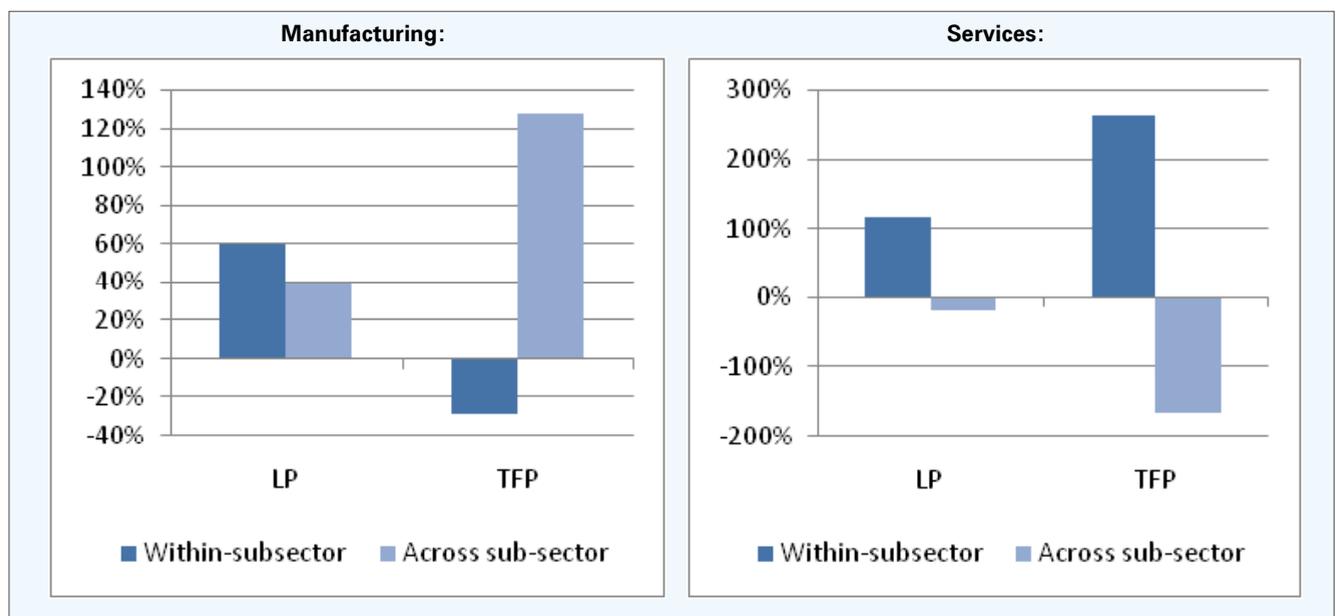
Note: ***significant at the 1% level, **significant at the 5% level, *significant at the 10% level.

Coefficients can be interpreted as follows: within the manufacturing sectors, a higher initial labor productivity (LP) results in 0.075 more labor reallocation when measured within-sector (I); 0.049 more when measured across subsector (II) (coefficient on I+II, minus coefficient on I). The relative contributions of labor movements in the direction of higher productivity are thus $0.075/0.124 = 60\%$ for within sector movements, and 40% for across subsector.

Source: Authors' calculations based on SBS

FIGURE 3.26

Sources of productive labor reallocation in manufacturing and services in Turkey, 2005-2010



Source: Authors' calculations based on SBS

Panel results

As expected, a productivity increase in a firm is associated with a short-run downsizing rather than expansion of employment in that firm. As previously stated, there is a short-run tradeoff between productivity and job creation: any additional employees hired by the firm necessarily depress the firm's productivity in the short run as they try to catch up to the productivity of existing employees, so the immediate relationship between increases in a firm's productivity and its net job creation is negative. Panel regressions confirm that this holds for Turkey as well (see Table 3.7 and Table A3.3). Once

the level of previous year's productivity is controlled, annual growth in the productivity of a firm is associated with a contraction in the labor resources that the firm uses. Although this relationship between productivity and resources is negative for both LP and TFP, it is larger for LP. This result is not surprising since LP by definition is more directly tied to the number of workers in a firm than is TFP. Notably, the coefficients on the previous year's productivity are all positive and significant. Thus, although firms that experience productivity growth shed jobs in the short run, the firms with higher productivity levels are still creating more jobs in the next period than lower-productivity firms.

TABLE 3.7

Short-term relationship between productivity growth and job creation
Coefficients of a panel regression of change in job creation on change in productivity

Change in Productivity Sector	change in LP (percentage points (ppt))	change in TFP (percentage points (ppt))
Overall	-0.055***	-0.003*
Manufacturing	-0.057***	-0.003
Services	-0.054***	-0.005**

Note: ***significant at the 1% level, **significant at the 5% level, *significant at the 10% level.

Coefficients can be interpreted as follows: a short term (annual) 1% growth in labor productivity LP results in a 0.055 ppt reduction in the job creation rate.

Source: Authors' calculations based on SBS

Decompositions for manufacturing sector

Annual productivity decomposition of manufacturing firms supports the previous finding of a negative short-term relationship between job creation and productivity growth. The results of the FHK decomposition presented in Table 3.8 confirm the finding that job creation and productivity growth move in opposite directions for the average

Turkish firm in the short run. The cross effect in annual decompositions is a parallel measure to the coefficient on productivity change in the panel regressions. The cross effect takes a negative sign if expanding firms are losing productivity or contracting firms are experiencing a productivity increase. A very high cross effect of -0.81 indicates a strong, negative short-run relationship between job creation and labor productivity.

TABLE 3.8

Productivity growth decomposition for manufacturing, 2005-2009, average of annual figures (percentage points (ppt))
Contribution of different kinds of productivity growth to overall productivity growth

Effect Type	Within	Between	Cross	Entry	Exit	Total
Contribution	0.77	0.99	-0.81	0.04	0.01	1.00

Note: See Box 3.4 for an explanation of the methodology. Figures can be interpreted as follows: a 1% increase in the productivity of existing firms, weighted by their initial output shares, translates into a 0.77 ppt increase of the overall productivity growth (within effect), a 1% productivity increase achieved through the reallocation of labor from lower to higher productivity firms (between effect) translates into a 0.99 ppt increase in the growth rate of overall productivity.

Source: Authors' calculations based on SBS

Recent productivity growth in the manufacturing sector in Turkey originated both from the productivity growth experienced by existing firms ("within effect") and the reallocation of labor from low- to high-productivity firms ("between effect"). Figure 3.27 compares the results of the FHK decomposition for Turkey's manufacturing sector in 2005-2009 period to a few countries from Bartelsman et al. (2004). Within-firm productivity growth has been by a large margin the main source for overall productivity growth in all countries with the exception of

Turkey and Latvia. For these two countries, movement of labor from low- to high-productivity firms was as important (and in the case of Turkey, more important) a determinant of overall productivity growth as the within-firm effect. Indeed, Turkey is the country with the highest contribution of between-firm effect. This confirms our previous findings of substantial creative destruction happening in Turkey's manufacturing sector.

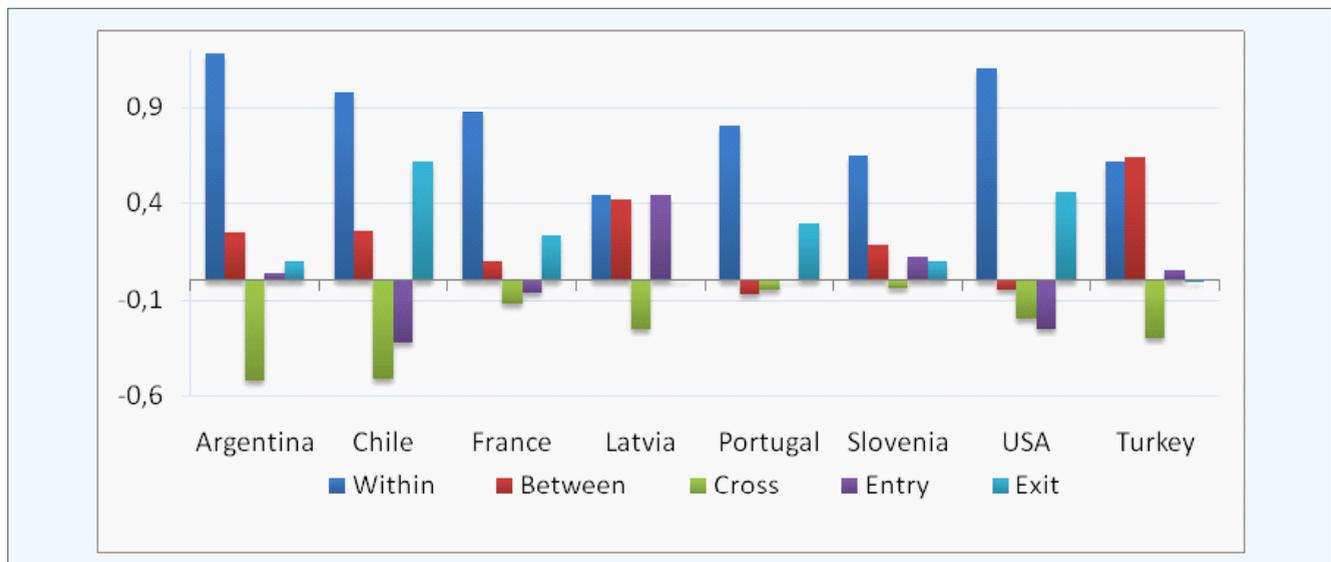
Exit of firms has not contributed to productivity growth in Turkey's manufacturing sector. Among the

countries in Figure 3.27, Turkey is the only one that experienced a negative “exit effect” -- a productivity loss due to the fact that the firms exited the market over the 2005-2009 period had been slightly more productive than the average firm productivity in 2005. Similar to other comparison countries, Turkey’s “cross effect” is negative and of average magnitude, implying that firms experiencing an increase in productivity lost employment shares, i.e. their productivity growth was associated with downsizing rather than expansion.⁴³ The “entry effect” has

made a positive, albeit small (5 percent) contribution to the productivity growth of Turkey’s manufacturing sector, with firms that existed in 2009 but not in 2005 being, on average, slightly more productive than the average firm in 2005. Relative to comparator countries, such “entry effect” is in the middle of the group—above Chile, France, and the U.S., but below Latvia and Slovenia. A positive entry effect might indicate the existence of high entry barriers in Turkey, allowing only firms over a high productivity threshold to enter the market.⁴⁴

FIGURE 3.27

Productivity growth decomposition in Turkey and selected countries, manufacturing sector (percentage points (ppt))



Note: Data period: Turkey: 2005-2009, Argentina: 1995-2001, Chile: 1985-1999, France: 1990-1995, Latvia: 2001-2002, Portugal: 1991-1994, Slovenia: 1997-2001, U.S.: 1992-1997. Computations make use of firms with a minimum number of 9 employees for Argentina, 20 for Turkey, 10 for Chile, and 1 for all others.

Note: See Box 3.4 for an explanation of the methodology.

Source: Bartelsman et al. (2004) and authors’ calculations for Turkey

43- Notably, the magnitude of the cross effect decreased from -0.81 in annual calculations to -0.3 in the 5-year differencing, implying that substantial adjustment has occurred to mitigate this negative effect.

44- The fact that Latvia and Slovenia, both transition countries, had the highest entry effect provides support to the argument that the entry effect is correlated with entry barriers.

Overall, it appears that there is labor reallocation in Turkey from less productive to more productive non-agricultural firms. The analysis above demonstrates that more productive firms in Turkey appear to be creating more jobs than less productive firms. This movement of labor is happening to a certain extent within both the manufacturing and services sectors. The movement of workers from low-productivity activities to high-productivity activities bodes well for the creation of good jobs and for future economic growth in Turkey.

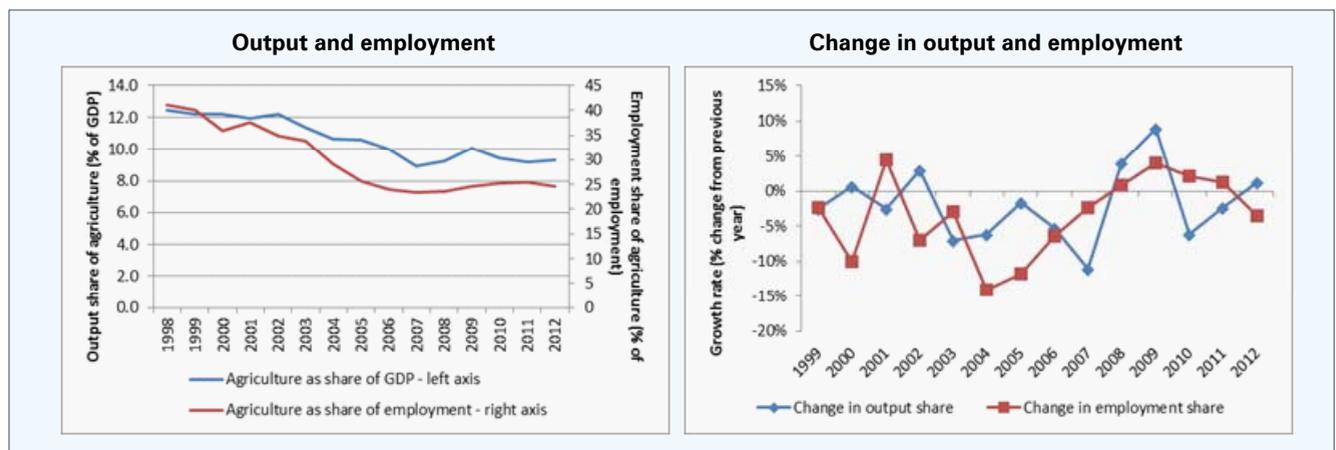
3.4 Are Jobs Being Created in Agriculture Increasingly More Productive?

While agriculture as a whole has the lowest labor productivity of all economic sectors in Turkey, it is important to identify good jobs within this sector given its continued importance in terms of output and employment. Agriculture consistently

has the lowest labor productivity among all sectors, which reduces Turkey's overall labor productivity compared with OECD countries and other emerging markets. Even though growth-enhancing structural change can help raise Turkey's overall productivity through movement of labor from agriculture to other sectors, agriculture will remain an important sector for years to come. As of 2012, agriculture contributed more than 9 percent of GDP and employed close to 25 percent of all workers (Figure 3.28). Thus, in the medium term, it is important to identify the features of good (i.e., higher-productivity) jobs within the agricultural sector, analyze whether there has been movement to such good jobs within this sector, and determine strategies to facilitate such movement in the future. This section analyzes the recent increase in agricultural employment in Turkey, focusing on inter-regional differences in job creation and productivity in this sector.

FIGURE 3.28

Output and employment in agriculture, 1998-2012



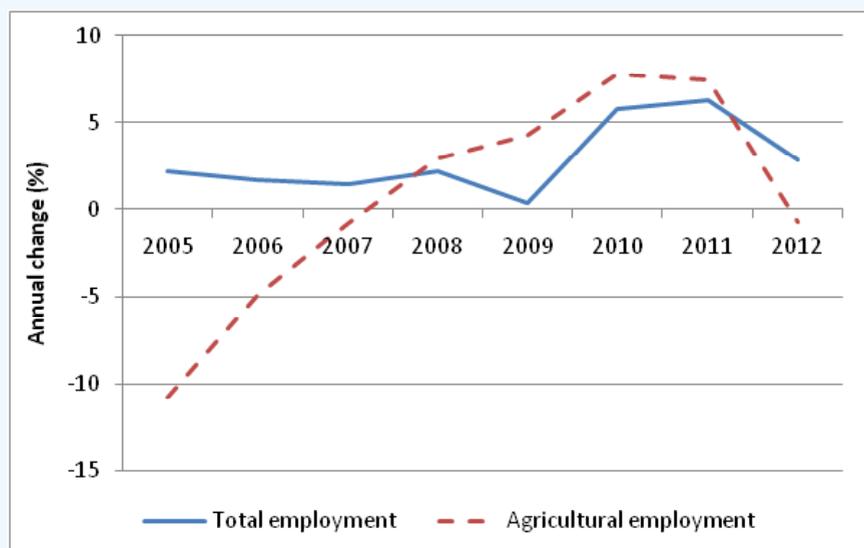
Source: Authors' calculations, based on TUIK.

Turkish agricultural employment, which had been diminishing since the 1980s, reversed course starting during the economic crisis of 2008-09, and continued to increase during the recovery. Between 2004 and 2011, a U-shaped trend was observed in the rate of agricultural employment in total employment, due to the agricultural shedding observed till 2007 (Figure 3.28). In 2004, 29.1 percent of all employed people (5.7 million) were working in the agricultural sector. While the number of employed people in Turkey increased between 2004 and 2012, the number of agricultural workers decreased from 2004 to 2007, and the rate of agricultural employment dipped in 2007 (to 4.8 million people), or to 23.5 percent of all employment. Agricultural employment started to

increase its share in total employment continuously after 2007, and in 2011 it reached 6.1 million (25.5 percent of all employed people). While the total number of employed people increased by 26.4 percent (5.19 million people) between 2004 and 2012, the contribution of the agriculture sector to this rise was not noteworthy due to the decline between 2004 and 2008. Agricultural employment increased by only 6.7 percent (around 384,000 people) between 2004 and 2012. Figure 3.29 shows the annual change in the number of employed people in Turkey as a whole and in the agricultural sector between 2004 and 2012. The decline in the share of employment stopped in 2007 and increased until 2011. In 2012, the share declined around 1 percent, but is still higher than in 2007.

FIGURE 3.29

Annual change in the number of employed people (%)



Source: Authors' calculations, based on TUIK.

There is wide inter-regional variation in the trend of agricultural employment, and major differences were observed between regions producing different crops. Table 3.9 presents the change in the agricultural employment in 12 NUTS 1 regions of Turkey (see Figure 3.30 for the NUTS 1 map).⁴⁵ In 2008,

when agricultural employment in Turkey started rising again, it continued to decline in four NUTS 1 regions. In 2011, agricultural employment fell in five NUTS 1 regions, however only one of these regions (West Marmara) was among the ones that experienced a fall in 2008.

TABLE 3.9

Annual change of agricultural employment (000's of people), 2005-2012

Year	2005	2006	2007	2008	2009	2010	2011	2012	Total Change
TR2-West Marmara	-50	-11	3	-55	28	5	-3	-32	-115
TR3-Aegean	-156	-60	-85	-49	68	158	187	83	146
TR4-East Marmara	-34	-1	32	9	10	8	76	25	125
TR5-West Anatolia	-55	-3	26	40	-4	53	-4	-20	53
TR6-Mediterranean	-10	70	45	36	70	138	43	-76	316
TR7-Central Anatolia	-41	-67	2	-43	35	68	104	29	87
TR8-West Black sea	-15	20	-3	79	18	-117	86	-89	-21
TR9-East Black Sea	-59	-69	-42	37	40	-20	-12	14	-111
TRA-North East Anatolia	-35	-85	-20	69	-13	-6	-27	-31	-148
TRB-Central East Anatolia	12	42	-33	-77	38	68	35	47	132
TRC-South East Anatolia	-115	-81	36	102	-51	70	-49	-4	-92
Total	-558	-245	-39	148	239	425	436	-46	384

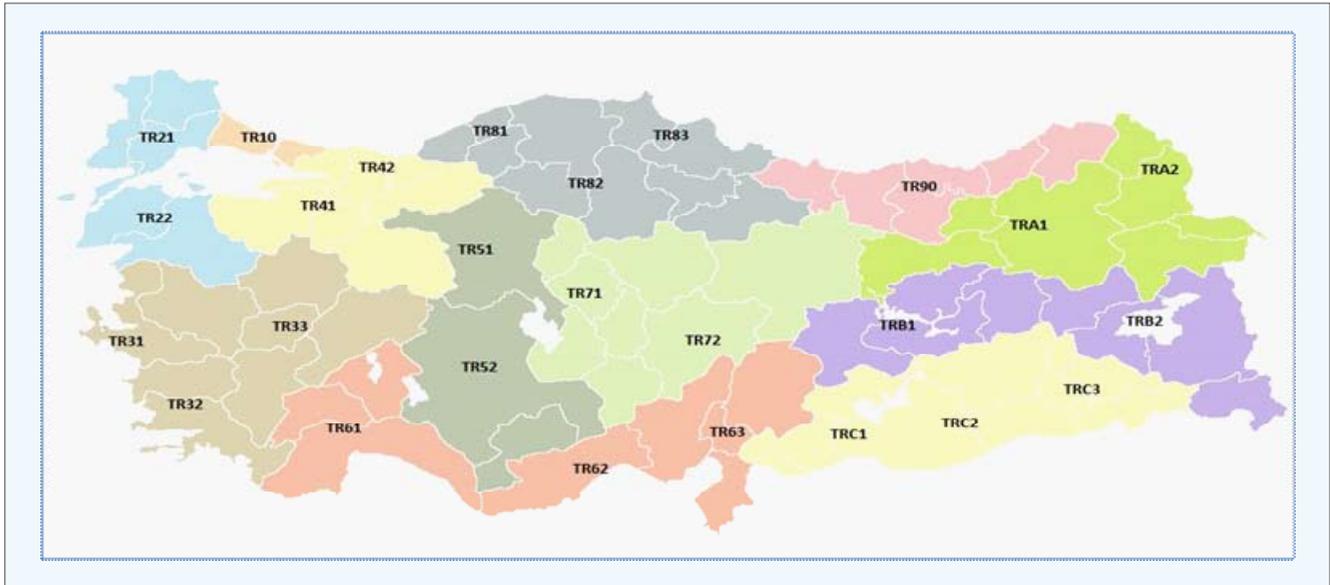
Note: Istanbul is excluded due to minimal engagement in agriculture.

Source: TUIK.

⁴⁵- The NUTS (Nomenclature of territorial units for statistics) classification is a hierarchical system for dividing up the economic territory of the EU for the purpose of the collection, development and harmonization of regional statistics, and socio-economic analyses of the regions. Starting from 2002, Turkey has been using NUTS classification. Turkey has 12 NUTS-1 regions, 26 NUTS-2 sub-regions, and 81 NUTS-3 provinces. See annex for the full list of NUTS regions of Turkey.

FIGURE 3.30

Map of NUTS 1 regions of Turkey



Source: TUIK.

The rise in agricultural employment is generally explained by reverse migration of urban workers, but it is not supported by inter-regional migration trends. In general, the inflow to agricultural employment during the crisis has been explained with the reverse migration of mostly informal workers who lost their jobs in urban

areas and went back to their hometowns - the only place to go. However, analysis of regional net migration rates (Figure 3.31) reveals a continuation of migration away from agriculture-intensive regions of Turkey from 2007 to 2012, negating the hypothesis that reverse migration has driven the increase in agricultural employment.

FIGURE 3.31

Net migration rate and share of agriculture



Source: Authors' calculations based on TUIK.

The continued rise in agricultural employment during the economic recovery attracted the attention of many researchers. Using a multi-sector equilibrium model, Şengül and Üngör (2011) associated the increased employment in agriculture with the declining agricultural labor productivity. Hatunoglu (2011) and the World Bank (2013) argued that the dynamics of agricultural employment increase could be attributed to rising agricultural producer prices and salaries of agricultural employees, especially between 2007 and 2011. None of these studies addressed the above mentioned inter-regional variation in agricultural employment trends.

Focusing on regional variation reveals that the main reason for increased agricultural employment was the rise in agricultural prices in Turkey which paralleled world prices. Gürsel and İmamoğlu (2013) developed a two-sector small-economy model that found that the trends in agricultural employment in 26 NUTS-2 regions were correlated with the dynamics of the prices and production of agricultural products in the regions. The study also examined the influence of non-agricultural income, agricultural area use, and agricultural exports on regional trends in agricultural employment, but could not establish a significant relationship.

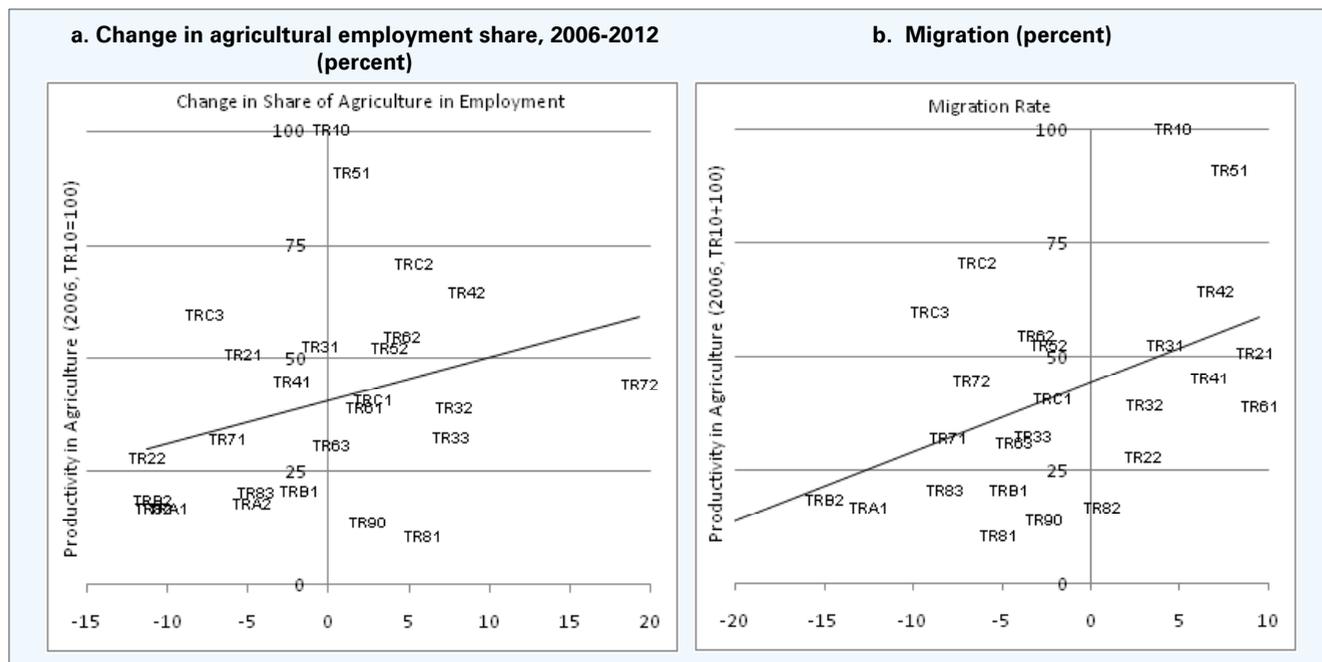
Between 2007 and 2009, Turkey significantly changed the support scheme for its agricultural sector, moving to a product-specific and production-dependent support scheme, and part of the change in production could be related with that change. Starting in 2001, the Turkish agricultural support system was replaced with a direct income support program, with the transfers to producers decoupled from actual production and paid in line with the area of cultivated agricultural land. The aim of that reform was to minimize production distortions caused by the previous subsidy scheme. However, the reform was never fully implemented and state intervention continued through direct purchases of crops, premium payments for the products facing shortages, and high taxation of certain products at the borders. In 2005, the support system was revisited and the amounts of production-related payments were increased gradually until 2009, when the transformation was fully complete. Although the extent of agricultural support affects production and employment, and

therefore, agricultural productivity, unfortunately so far, data on regional producer support estimates (including the market price support) and regional subsidies in NUTS-2 regions have not been made available, thus preventing any further analysis of the relationship between agricultural support schemes, productivity, and job creation.

The rise in agricultural employment between 2006 and 2012 seems to be concentrated in the regions with higher labor productivity. There is a positive correlation between labor productivity in agriculture—calculated as agricultural GDP per worker—in 2006 and the rise in the share of agriculture in total employment between 2006 and 2012. A similar correlation exists between regional migration rates and agricultural labor productivity. Hence, there seems to be a reallocation of labor in agriculture towards more productive regions together with a rise in agriculture intensity in these regions, which might be considered a sign of increasing employment in more productive jobs in agriculture.

FIGURE 3.32

Regional productivity, employment and migration in agriculture, 2006-2012



Source: Authors' calculations based on TUIK.

3.5 Conclusion and Policy Outlook

Overall, labor reallocation in Turkey has been growth-enhancing. The strongest support to overall growth has come from the movement from agriculture to non-agriculture. Indeed, the employment share of agriculture fell from 41.5 percent in 1998 to 24.5 percent in 2012. As agriculture had the lowest labor productivity of all sectors in 2011, movements away from this sector are reflected as improving productivity.

Labor movements within the non-agricultural sectors are overall growth-

enhancing, but can still be accelerated. Regression analysis demonstrates that there is, in fact, labor reallocation in Turkey from lower- to higher-productivity non-agricultural firms. This movement of labor is happening to a certain extent within both the manufacturing and the services sectors as well as between the two sectors and subsectors within them. However, there is also limited evidence of labor movements that diminish growth.

Labor reallocation in agriculture appears to be growth-enhancing, even though the sector as a whole has low labor productivity. Descriptive evidence

supports that labor movement has been towards more productive activities. The main finding is that regions with higher agricultural productivity (such as the Mediterranean and South East Anatolia) appear to have increased their shares of agricultural employment, while those that have features correlated with lower productivity (such as East Anatolia and Black Sea) have experienced declines in the agricultural share of employment. While this suggests some reallocation of labor within agriculture towards more productive activities, more work needs to be done on this subject, incorporating the influence of agricultural support schemes and identifying best practices that can be applied to stimulate the creation of good jobs within agriculture in Turkey.

The Government of Turkey has already adopted or is considering measures that can accelerate the movement of labor towards more productive activities:

- Initiatives encouraging employment of women and youth through reductions in the employer share of social security taxes can potentially facilitate the integration of existing rural-to-urban migrants into productive activities and accelerate such mobility, and with it agricultural shedding, in the future.
- Implementation of the action plan on combating informality appears to have borne fruit already, as suggested by the significant entry of 20-49 employee firms in the 2010 SBS firm census.
- Initiatives expanding the scope for flexible contracting under consideration in the National Employment Strategy can facilitate labor mobility and reallocation without jeopardizing workers' security.
- The reform of severance pay, which is very high by international standards and might be reducing productive labor reallocation, is one of the policies envisioned in the 10th Development Plan.
- In agriculture, the availability of a public support scheme appears to have had a supportive effect on formalization and reallocation of labor to more productive regions.

Productivity and formality of a job go hand-in-hand. The government can possibly lower the cost of formality by ensuring or strengthening the local presence of services involved in tax and social security benefit administration.

The quality of a job, including formality, is important for livelihoods. This topic takes us to the next chapter, which explores jobs and living standards.

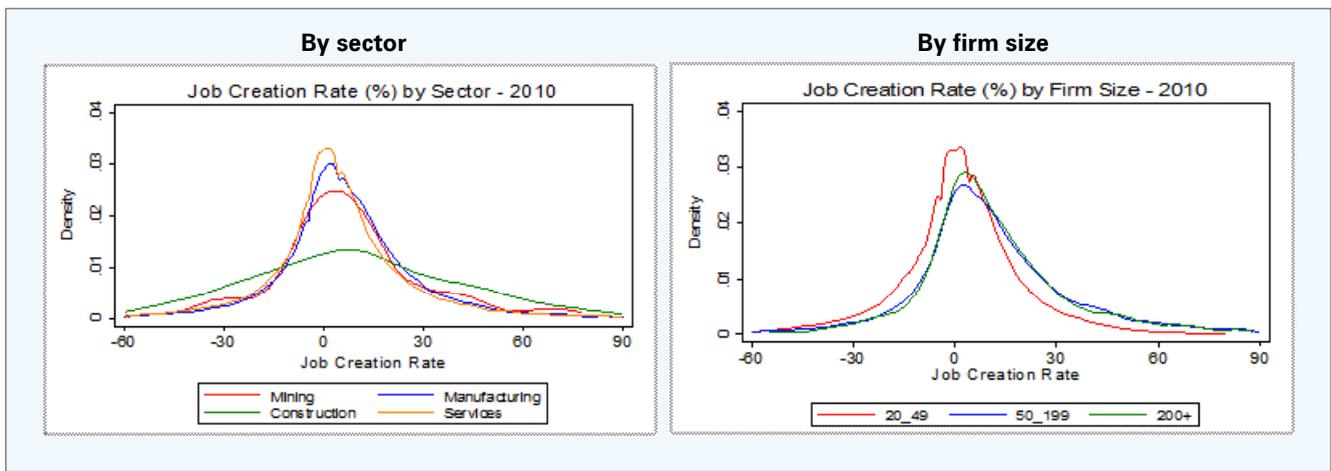
Chapter 3 References

- Aldan, M. Can, and Erol Cakmak, 2011, "Agricultural Employment in Turkey and Regional Differences." Turkonfed Turkpres 2011 Symposium Book, pp. 77-100.
- Ayyagari, Meghana, Asli Demirguc-Kunt, and Vojislav Maksimovic. 2011. "Small vs. Young Firms across the World: Contribution to Employment, Job Creation, and Growth." World Bank Policy Research Working Paper 5631. World Bank, Washington, DC.
- Bartelsman, Eric, John Haltiwanger, and Stefano Scarpetta. 2004. "Microeconomic Evidence of Creative Destruction in Industrial and Developing Countries." IZA Discussion Paper No. 1374.
- Comola, M., and L. de Mello. 2009. "The Determinants of Employment and Earnings in Indonesia: A Multinomial Selection Approach." OECD Economics Department Working Papers, No. 690, OECD Publishing.
- Davis, Steven, and John Haltiwanger. 1999. "Gross Job Flows." In *Handbook of Labor Economics*, ed. O. Ashenfelter and D. Card, Edition 1, Volume 3, Chapter 41, pp. 2711-2805.
- Gürsel, Seyfettin, and Zümrüt Imamoglu. 2013. "Why is Agricultural Employment Increasing in Turkey?" BETAM Working Paper Series #004.
- Hallward-Driemeier, Mary and Reyes Aterido. 2013. "Who Creates Jobs? Differences in Firm Dynamics Across Developing Countries." World Bank mimeo
- Hatunoğlu, E. E. 2011. "Developments in Agricultural Sector Employment." Background paper for World Bank and Ministry of Development 2013. "Turkey: Managing Labor Markets through the Economic Cycle." World Bank, Washington, DC.
- McMillan, Margaret, and Dani Rodrik. 2011. "Globalization, Structural Change and Productivity Growth." NBER Working Paper 17143.
- Rodrik, Dani, 2010. "Structural Transformation and Economic Development." Draft paper delivered as the Merih Celasun Memorial Lecture at TEPAV, Ankara, on December 22, 2010.
- Şengül, Gonul, and Murat Üngör. 2011. "Increasing Share of Agriculture in Employment in the Time of Crises: Puzzle or not?" Central Bank of Turkey Working Paper No:11/05.
- World Bank. 2012. *World Development Report: Jobs* (overview). Washington, DC: The World Bank.
- World Bank and Ministry of Development 2013. "Turkey: Managing Labor Markets through the Economic Cycle." World Bank, Washington, DC.

Annex 3.1: Additional Figures and Tables

FIGURE A3.1

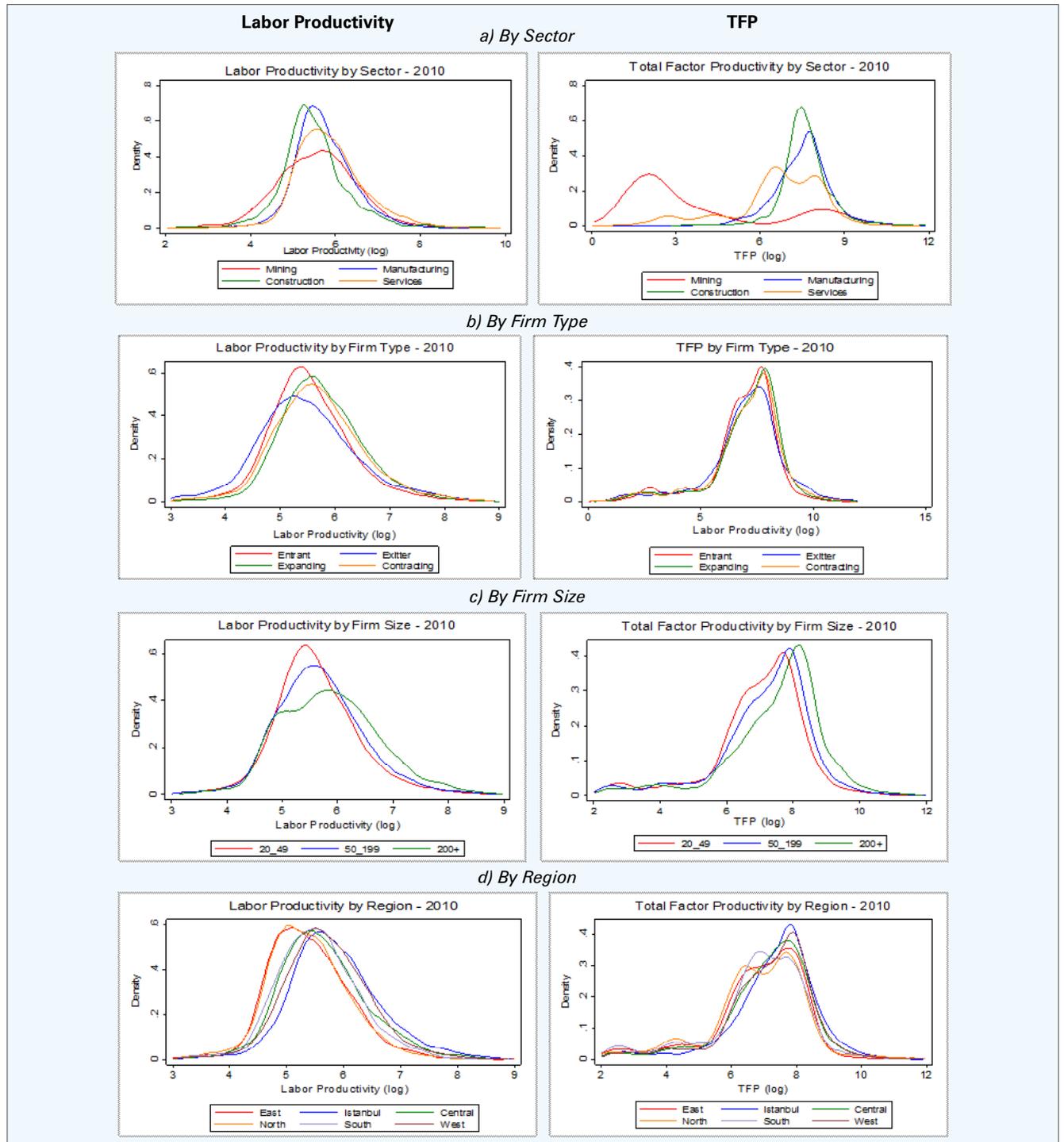
Job creation rate distributions, 2010



Source: Author's calculations based on SBS 2010

FIGURE A3.2

Productivity distributions, 2010



Note: Computation based on 20+ firms only.

Source: Author's calculations based on SBS

TABLE A3.1

Productivity and Net Job Creation in Turkey, 2005-2010

Second Stage variables for surviving firms:	Dependent Variable: Net Job Creation in 2005-2010					
	Productivity = LP			Productivity = TFP		
	I+II+III (1)	I+II (2)	I (3)	I+II+III (4)	I+II (5)	I (6)
Initial productivity (log)	0.143***	0.146***	0.081***	0.024***	0.021*	0.017
<i>Sector indicators (mining omitted)</i>						
Manufacturing		0.035			-0.004	
Construction		-0.337***			-0.088	
Services		0.039			0.064	
<i>Selection Variables</i>						
Surviving firms	1.838***	1.555***	0.641***	0.628	0.58	0.283
Entrant firms	0.244	-0.303	-0.379	-1.370**	-0.892**	-0.530**
Exiter firms	0.432	-0.119	0.464	-1.034	-0.278	0.507
Entrant & Exiter firms	2.573***	2.019***	0.329	0.191	0.152	-0.452
Constant	-1.109***	-1.423***	-0.735**	-1.157***	-0.743**	-0.485
Observations	17,840	17,840	17,840	17,840	17,840	17,840
R-squared	0.018	0.021	0.041	0.013	0.017	0.037
Sector dummies	None	Broad	NACE 2 digit	None	Broad	NACE 2 digit
First-stage coefficients on initial productivity (log) for:	Dependent Variable: Survival Status					
Entrant firms	-0.165***	-0.165***	-0.167***	-0.035***	-0.036***	-0.117***
Exiter firms	-0.255***	-0.257***	-0.277***	-0.045***	-0.073***	-0.138
Entrant & Exiter firms	-0.181***	-0.177***	-0.179***	0.01	-0.024***	-0.112

Note: Multinomial logit regression, with second-stage dependent variable of net job creation rate during the period of 2005 and 2010 for surviving firms; exporter status (=1 if exporter, 0 otherwise) included in the second-stage regression. First-stage predicts the probabilities of being an entrant, exiter, and entrant & exiter firm using initial productivity (either LP or TFP), exporter status and NUTS2 region dummies (as the excluded variables from the second stage). *** p<0.01, ** p<0.05, * p<0.1.

Source: Author's calculations based on SBS

TABLE A3.2

Productivity and Net Job Creation in Manufacturing and Services in Turkey, 2005-2010

Second Stage variables for surviving firms:	Dependent Variable: Net Job Creation in 2005-2010							
	Sector = Manufacturing				Sector = Services			
	Productivity = LP		Productivity = TFP		Productivity = LP		Productivity = TFP	
	I+II (1)	I (2)	I+II (3)	I (4)	I+II (5)	I (6)	I+II (7)	I (8)
Initial productivity (log)	0.124***	0.0750**	0.0279**	-0.00769	0.0511***	0.0604***	0.0140**	0.0374***
<i>Selection Variables</i>								
Surviving firms	1.153***	0.248	0.597	-0.226	1.773***	1.394***	0.661	0.905***
Entrant firms	-0.547	-1.106***	-1.121*	-1.072***	2.392***	1.848***	0.154	0.839*
Exiter firms	0.544	0.122	0.00266	0.449	3.035***	2.529***	0.576	1.217**
Entrant & Exiter firms	1.280***	-0.0895	0.539	-0.502	1.186	0.69	-0.439	0.114
Constant	-1.078**	-0.678	-0.707	0.147	0.609	0.0191	-0.242	-0.294
Observations	9,146	9,146	9,146	9,146	7,935	7,935	7,935	7,935
R-squared	0.025	0.033	0.015	0.025	0.009	0.043	0.007	0.038
Sector dummies (NACE 2-digit)	No	Yes	No	Yes	No	Yes	No	Yes
First-stage coefficients on initial productivity (log) for:	Dependent Variable: Survival Status							
Entrant firms	-0.109***	-0.104***	-0.015	-0.065***	-0.221***	-0.223***	-0.044***	-0.163***
Exiter firms	-0.350***	-0.353***	-0.117***	-0.164***	-0.226***	-0.248***	-0.063***	-0.149***
Entrant & Exiter firms	-0.149***	-0.133***	-0.001	-0.075***	-0.242***	-0.251***	-0.041***	-0.183***

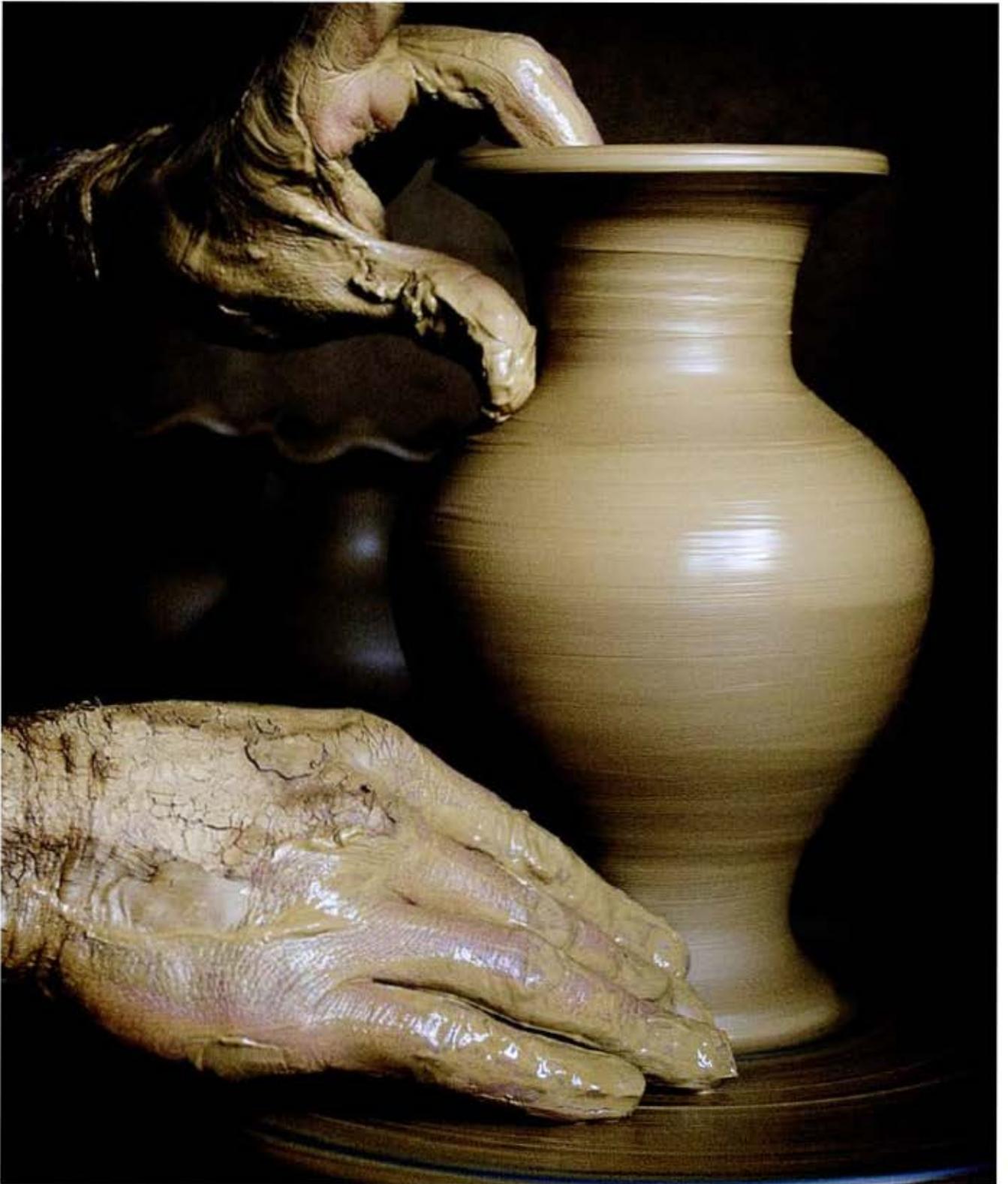
Notes: Multinomial logit regression, with second-stage dependent variable of net job creation rate during the period of 2005 and 2010 for surviving firms; exporter status (=1 if exporter, 0 otherwise) included in the second-stage regression. First-stage predicts the probabilities of being an entrant, exiter, and entrant & exiter firm using initial productivity (either LP or TFP), exporter status and NUTS2 region dummies (as the excluded variables from the second stage). *** p<0.01, ** p<0.05, * p<0.1.

TABLE A3.3

Productivity, Productivity Growth, and Net Job Creation in Turkey, 2005-2010

VARIABLES	Dependent Variable: Annual Job Creation over 2005-2010					
	All Non-Agriculture		Manufacturing		Services	
	LP (1)	TFP (2)	LP (3)	TFP (4)	LP (5)	TFP (6)
Initial productivity (log) in previous year (t-1)	0.016***	0.014***	0.015***	0.011***	0.018***	0.015***
Productivity change (t – t-1)	-0.055***	-0.003*	-0.057***	-0.003	-0.054***	-0.005**
Constant	-0.049***	-0.060***	-0.057**	-0.053**	-0.053**	-0.047**
Observations	119,657	119,657	58,576	58,576	59,357	59,357
R-squared	0.324	0.315	0.356	0.345	0.353	0.346
FE	FIRM	FIRM	FIRM	FIRM	FIRM	FIRM

*** p<0.01, ** p<0.05, * p<0.1.



4. Jobs and Living Standards in Turkey

Abstract: *Turkey's recent growth was largely inclusive, but little attention has been paid to the types of jobs generated and their contribution to higher welfare. To better understand the role of jobs for raising welfare levels, trends in living standards among in-work and out-of-work households are analyzed. Two conceptually different indicators of living standards are considered: the low-income rate and material deprivation. Living standards among in-work households remained largely unchanged; at the same time, the absolute number of in-work households increased significantly, suggesting that the strong economic growth enabled more people to successfully participate in the labor market and enjoy higher welfare levels. Living standards were positively associated with different types of employment, but mainly for non-agricultural jobs. Furthermore, labor income was the biggest contributor to total household income and growth in labor income itself had a positive impact on living standards among low-income households. To promote higher living standards, public policy should improve access to and quality of education and training programs as there is a strong link between the educational level and earnings potential of workers. Similarly,*

the employment opportunities of underprivileged groups (e.g., youth, women, and the long-term unemployed) should be enhanced to promote living standards among low-income households.

4.1 Introduction

As noted in the introduction to this report, Turkey's recent growth has been largely inclusive, as the welfare of the poorest 40 percent of the population grew faster than the average. Better labor market performance certainly contributed to the higher welfare level of the poorest, and women in particular benefitted from these positive trends. Since 2005, female labor force participation and employment rates have steadily increased (recall Chapter 2). Yet, despite these improvements, less than half of the working-age population (WAP) is employed in 2012 and 39 percent of workers are still informal (World Bank 2013).

In the ample literature on employment in Turkey, little attention has been paid so far to the types of jobs generated and their contribution to higher welfare levels. The employment surge was mainly in the service sector and in formal employment, and primarily

benefited college graduates, although informal agricultural employment also increased among women (Chapter 2). The type of job (for example, salaried formal work, casual or seasonal work, or self-employment) can be linked with the income and welfare of the job holder, as well as those of his household.

Chapter 4 focuses on the role of jobs in raising living standards. To fully appreciate the dynamics among in-work and out-of-work households, the analysis first looks at overall trends among households with working-age members. The chapter then documents levels of and trends in living standards in Turkey for the period 2006-2010. Analyzing the determinants of welfare sheds more light onto the role that jobs have played in raising living standards. In a final step, changes in living standards are decomposed to identify the individual contributions of labor income, non-labor income, and altered household composition.

4.1.1 Methodology

The analysis in this chapter was based

on Turkey's Survey on Income and Living Conditions (SILC) for survey years 2006-2010. Most employment-related data, including income, refer to the respective previous calendar year (the reference year). As the focus was on the contribution of jobs to raising living standards, the sample included all households with at least one member of working age (15-64 years old).⁴⁶ If at least one adult member was working full-time⁴⁷ during the entire reference year, the household was categorized as "in-work."⁴⁸ Otherwise, the household was considered "out-of-work."

To provide a comprehensive analysis of the levels of and trends in living standards in Turkey, two conceptually different indicators were applied: (i) the rate of low income; and (ii) an index of material deprivation. The low-income threshold is defined as the income level of the bottom 10 percent of the population in 2006, and is held constant over time. All incomes were deflated using the national consumer price index (CPI) and expressed in 2006 prices. For most parts of the analysis, total disposable household income was

46- A significant number of older workers are still "in-work," especially in rural areas. In 2006, around 8 percent of people aged 65 and above in rural areas had been in full-time employment for at least one month during the reference year.

47- To group together households with comparable employment states, time spent in part-time jobs was not considered. The incidence of part-time employment varied between 4 percent in urban areas and 13 percent in rural areas in 2006.

48- See Annex 4.1 Figure A4.1 for more details. To test the sensitivity of the results, working full-time for at least six months during the reference year was used as an alternative cut-off point. Results are largely the same and available upon request.

adjusted to account for differences in household size and composition using the OECD equivalence scale.

Material deprivation takes a more direct approach to measuring living standards. For the analysis that follows, households that could not satisfy three basic needs were considered materially deprived: notably, to provide food, clothing, and heating. In particular, the household head was asked about: (i) the capacity to afford meals with meat, chicken, or fish (or vegetarian equivalent) every second day; (ii) the capacity to replace worn out clothes by new ones; and (iii) the ability to keep the home adequately warm. This way, the welfare level is measured directly through the consumption of certain goods – instead of indirectly through disposable income. Since monetary and non-monetary indicators of well-being are often only weakly correlated, outcome-based measures, such as the material deprivation index used here, add important information to the discussion of raising living standards.

Results are presented in several ways. First, to keep the discussion clear while acknowledging the heterogeneity of the Turkish economy, regions are grouped into four distinct geographic

cells. NUTS1 regions were aggregated into Western and Eastern clusters.⁴⁹ Within each cluster, rural and urban areas were identified using the SILC data. This approach allowed for a better illustration of the different dynamics between the Eastern and Western parts of Turkey, as well as between rural and urban areas. Second, results are typically presented at the individual level. To allow an easier interpretation, the discussion sometimes refers to the total number of households (instead of total population).

Before presenting the results, the next section briefly discusses recent trends regarding the number of households with working-age members and the labor market attachment of these households, important background information for the analysis that follows.

4.1.2 Dynamics at the household level

The total number of households with at least one member of working age rose by 10.2 percent from 16.1 million in 2006 to 17.8 million in 2010. The annual increase in the number of households with working-age members was particularly high in 2009, at 5.3

⁴⁹ The Western cluster includes Istanbul, West and East Marmara, Aegean, West and Central Anatolia, Mediterranean, and West Black Sea. The Eastern cluster contains East Black Sea, Northeast Anatolia, Middle East Anatolia, and Southeast Anatolia.

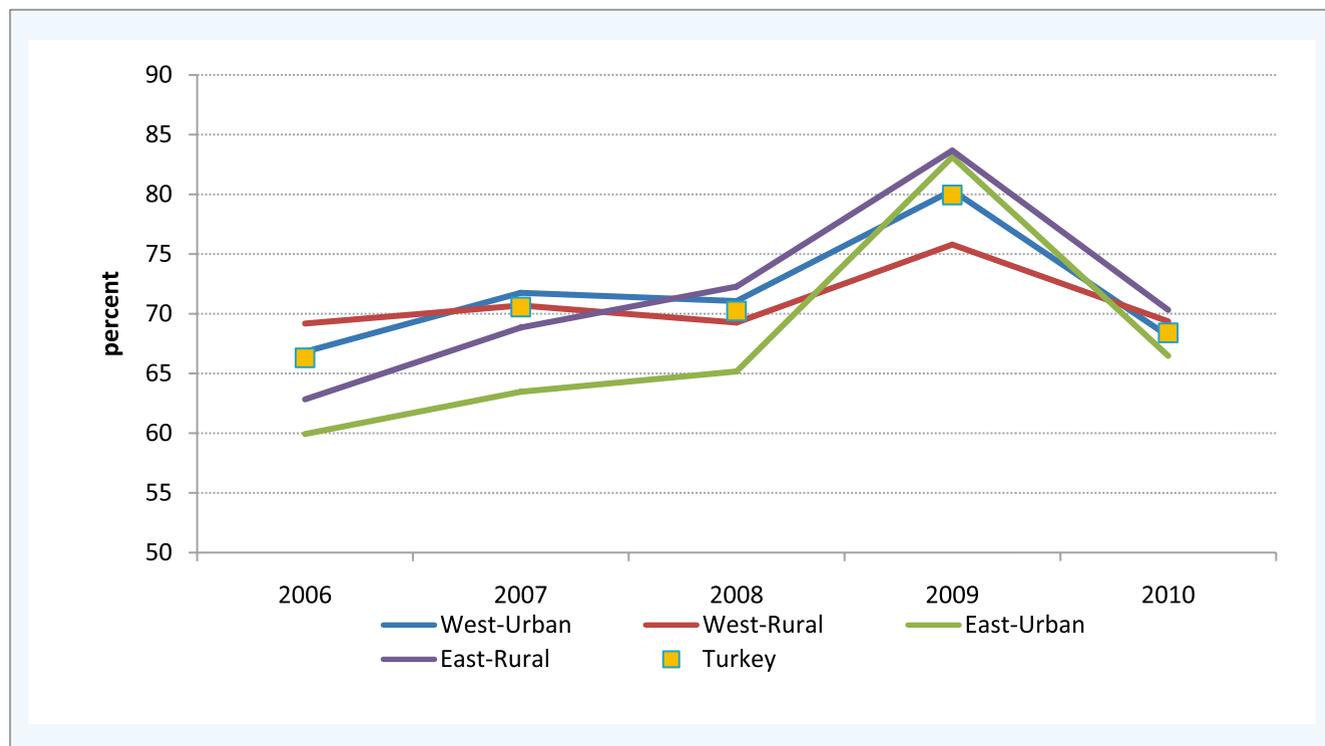
percent. Regional growth rates also peaked in 2009, except in West-Rural, where growth was highest in 2008 (13.6 percent). Over the entire period, the increases were biggest in rural areas (16.5 percent).

The share of in-work households among all households⁵⁰ increased slightly from 66.3 percent to 68.4 percent, but there were large differences across regions.

The increases were biggest in the Eastern provinces, where traditionally fewer households are categorized as “in-work.” Growth in the Western provinces was more moderate, resulting in smaller regional gaps (Figure 4.1). In 2010, the share of in-work households was highest in East-Rural (70.3 percent), followed by West-Rural (69.4 percent), West-Urban (68.1 percent), and East-Urban (66.5 percent).

FIGURE 4.1

Share of in-work households, nationally and by region, 2006-2010



Note: Unit of observation is the household.

Source: SILC.

50- “All households” refers to the total number of households with at least one member of working age (15-64 years old). Please note that the information to discriminate between in-work households and out-of-work households referred to the previous calendar year (reference year).

The share of in-work households peaked in 2009, mainly the result of two factors. In survey year 2009: (i) the total number of households with working-age members increased significantly; and (ii) the share of people reporting that they had worked full-time for 12 months during the previous calendar year increased considerably (Annex 4.1 Figure A4.1). As a result of these two factors, the increase in in-work households was above average in 2009.

The share of households with no regular labor market attachment increased sharply during the crisis. Unemployment rose significantly from 10.9 percent in 2008 to 14.0 percent in 2009, especially in urban areas (IMF 2013; World Bank 2011). The share of people working full-time for 12 months also declined during 2009 (Annex 4.1 Figure A4.1). Both factors left more households with no regular labor market attachment and the share of out-of-work households increased considerably. East-Urban areas were particularly affected; the share of out-of-work households rose from 16.9 percent to 33.5 percent (East-Rural areas: 16.3 percent to 29.7 percent).

4.2 Levels of and Trends in Living Standards

The following section briefly describes

the economic situation of households with at least one member of working age (15-64 years). To shed more light onto the role of jobs in raising welfare levels, trends in living standards among in-work and out-of-work households are reported. In a first step, the share of the population living in low-income households is analyzed; secondly, the rate of material deprivation among the Turkish population is examined. Material deprivation measures the ability of households to satisfy three basis needs related to food, clothing, and heating.⁵¹

4.2.1 The incidence of low income

Despite strong economic growth prior to the crisis, the share of the population living in low-income households increased slightly. The share of the population living in households with low incomes rose slightly from 10.2 percent in 2007 to 11.7 percent in 2010. However, national averages mask large differences across regions and by household type (Figure 4.2). The share was lower for in-work households, especially in urban areas and Western provinces. Between 2007 and 2010, living standards remained relatively constant; the share of the population below the income threshold increased by around 1 percentage point. In-work households in East-Rural experienced more difficulty, and the share of people

51- Trends in material deprivation were analyzed over the period 2006-2010. As there were concerns regarding the income distribution in 2005 (reported in survey year 2006), trends in the low-income rate were analyzed for the years 2006-2009 only (using survey years 2007-2010). See Annex Figure A4.2 for details.

below the threshold increased from 23.6 percent in 2007 to 29.3 percent in 2010. Among households without regular labor market attachment, regional differences were even larger and increased over time, mainly driven by opposite trends between urban and rural areas. In 2010, the share of people in low-income households ranged from 9.5 percent in West-Urban to 62.8 percent in East-Rural.

The gap in living standards between household types became smaller, mainly driven by an increasing share of in-work households with low income. Between 2007 and 2010, the share of out-of-work households below the income threshold decreased somewhat, from 23.1 percent to 22.1 percent. As the share of in-work, low-income households increased from 5.6 percent in 2007 to 7.6 percent in 2010, the gap decreased from 17.4 percent to 14.5 percent in 2010. The gap was smallest in 2009, related to the disproportionate decrease in out-of-work households. The compositional shift also affected the distribution of income; out-of-work households reported higher incomes in 2009, and the share of people in low-income households declined considerably. The opposite trend occurred among in-work households, and the proportion of people below the income threshold increased to 11.3

percent.⁵²

Turkey was hit hard by the crisis; its impact on living standards differed across regions and household types.

The main transmission mechanism of the crisis was the labor market. Higher unemployment rates in 2009, especially in urban areas, contributed to the larger number of households with no regular labor market attachment. Also, out-of-work households' income declined (Annex 4.1 Table A4.1). To support people out of work, unemployment benefits have increased in 2009 (as were minimum pensions) which certainly helped vulnerable households better cope with the crisis. Yet for these households the share living below the income threshold rose significantly, but stayed slightly below the pre-crisis level.

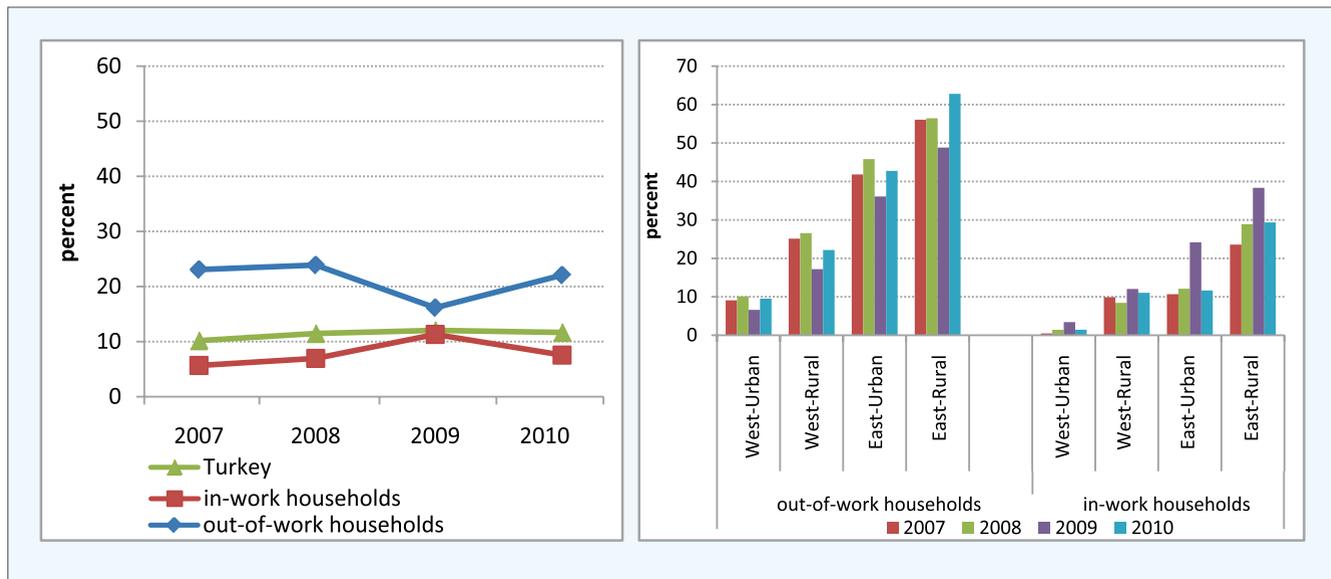
To combat the crisis, a number of policy measures were implemented to keep people in the labor market. For example, legislation on short work was defined better and made more generous and accessible⁵³; and social security contributions were lowered both across the board and for youth and women in particular. In-work households, especially at the lower end of the income distribution, also benefited from annual increases of the real minimum wages.

52- For more details regarding income levels for both types of households, see Annex 4.1 Table A4.1.

53- For example, a statutory change authorized by law 5383, and subsequent publications in Official Gazette No. 2711, including an extension of the maximum time of short time work subsidy payment.

FIGURE 4.2

Population share living in low-income households, 2007-2010



Note: Unit of observation is the individual.

Source: SILC.

4.2.2 Material deprivation

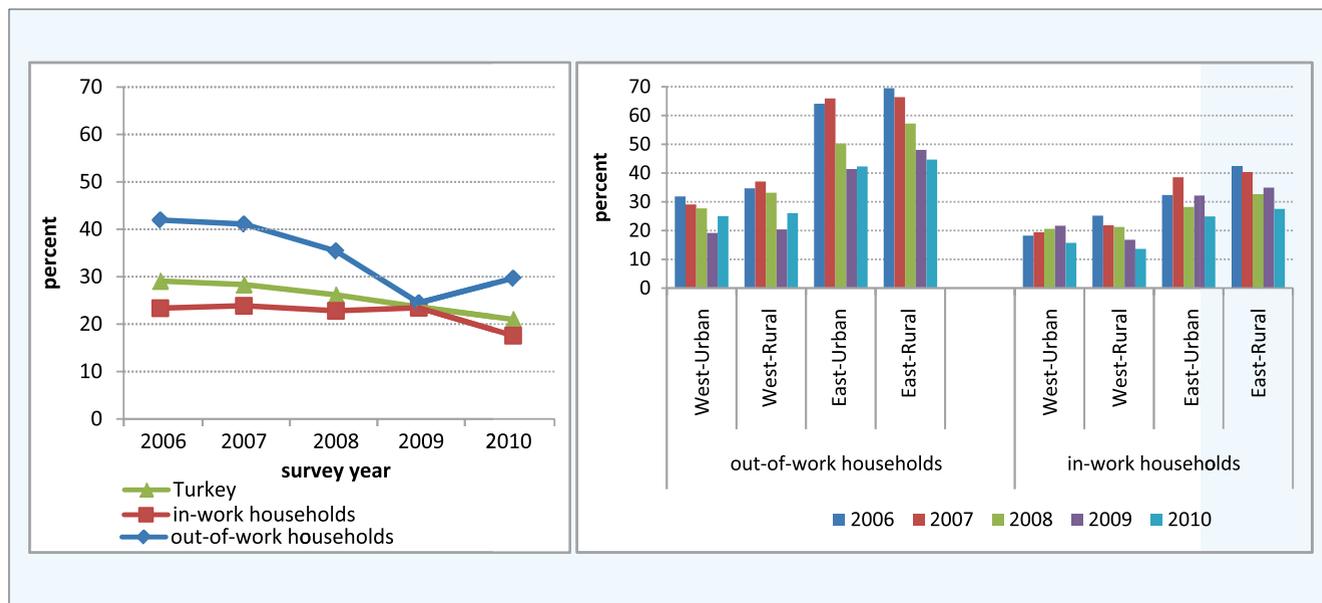
Material deprivation is still widespread among Turkish households, but significant improvements have been achieved since 2006. At the national level, the share of people without access to basic goods declined from 29 percent in 2006 to 21 percent in 2010. Improvements were uniform across the population; material deprivation was lower in 2010 than in 2006 for both household types and in all regions.

Households without regular labor market attachment are still more likely to

be deprived of certain basic goods than in-work households, but the gap has become much smaller. Among in-work households, the material deprivation rate remained relatively constant until 2009; in 2010, it declined considerably, reaching 17.6 percent. In contrast, for out-of-work households, the situation has steadily improved over time; progress has been particularly strong among rural households in Eastern provinces, where the share of the materially deprived population declined from 69 percent in 2006 to 45 percent in 2010 (Figure 4.3).

FIGURE 4.3

Population share affected by material deprivation, 2006-2010



Note: Unit of observation is the individual.

Source: SILC.

The global financial crisis had only limited impacts on trends in material deprivation. Among in-work households, the share of people with unmet basic needs increased somewhat in 2009, whereas for out-of-work households it continued to decline during the crisis. Again, the fact that the number of out-of-work households declined by nearly 1.5 million in 2009 (but went up in the following year) may have been the main driver of this result. In 2010, material deprivation rates declined significantly for in-work households

and stayed below pre-crisis levels in all regions.

4.2.3 Discussion

Despite differences in levels and trends over time, a number of findings hold for both measures of well-being. First, in-work households enjoyed higher living standards than out-of-work households, indicating that jobs contributed to higher levels of welfare. Second, the gap in living standards between in-work and out-of-work households decreased, but

the underlying reasons differed across the welfare measures. In the case of material deprivation, the declining trend among out-of-work households helped narrow the gap, suggesting that recent trends in non-labor income played an important role in raising living standards. Third, living standards among in-work households remained largely unchanged. At the same time, the absolute number of in-work households increased significantly, suggesting that the strong economic growth allowed more people to successfully participate in the labor market.

In Turkey, regions with higher shares of people below the minimum living

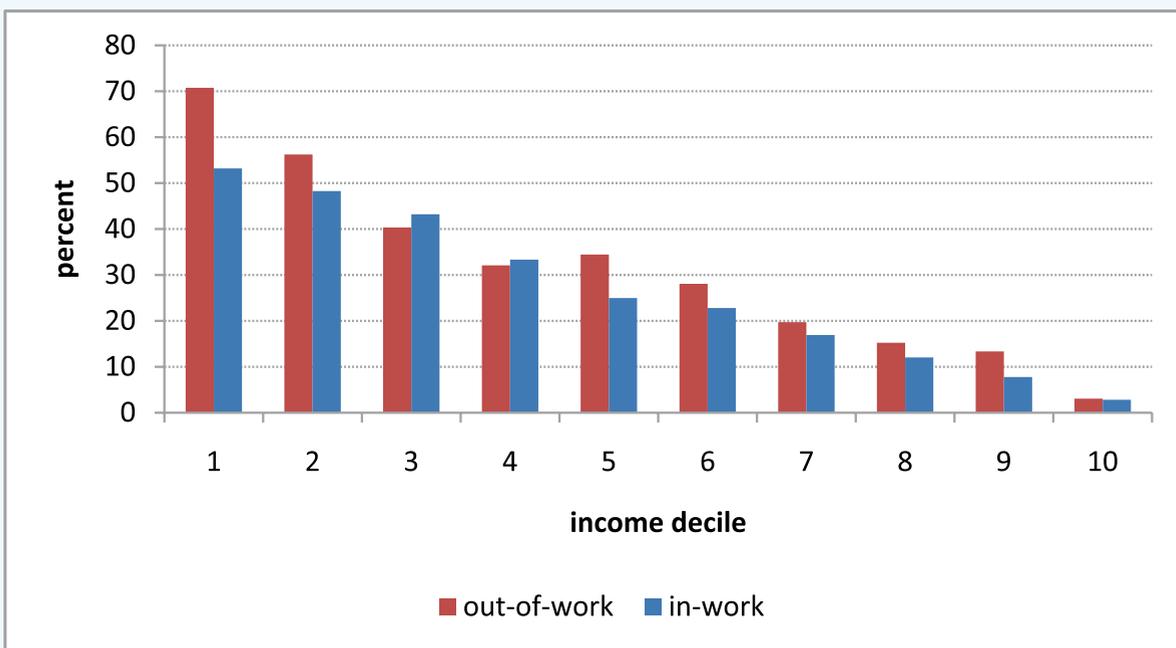
standard often also showed high rates of material deprivation. This apparent correlation at the regional level was not reflected at the household level, however. In fact, the overlap between the two indicators was rather small. In survey year 2007, only 6 percent of all households were both materially deprived and in the bottom income decile.⁵⁴ Materially-deprived households can be found in any income decile (Figure 4.4).⁵⁵ This suggests that the underlying reasons for households to be below the income threshold or to be materially deprived differ; this, in turn, has important implications for policy makers. The following section sheds more light on the drivers of living standards in Turkey.

54- Note that the income data refer to the previous calendar year, and material deprivation is determined using information from the actual survey year. This discrepancy may contribute to a lower correlation between the two indicators. Results are very similar when the analysis is repeated using panel data that allow for the same reference period for both indicators, but do not provide regional information or population weights. The correlation is somewhat stronger for rural households and households with no regular labor market attachment.

55- Similar results were found for many countries. In the EU member states, for example, the population above the poverty line was consistently less affected by material deprivation than the poor, but the respective rates of material deprivation were positive in all countries and varied considerably across countries (Eurostat 2010).

FIGURE 4.4

Material deprivation by income decile, 2007



Note: Unit of observation is the household.

Source: SILC.

4.3 Determinants of Living Standards

To take a more detailed look at the contribution of jobs to higher living standards, we performed a regression analysis on the sample of in-work households. In particular, the personal and employment-related information of the household's breadwinner were used to determine the probability that the breadwinner's household: (i) lived

below the income threshold; and (ii) suffered from material deprivation. Complete results are reported in Annex 4.1 Table A4.2.

The drivers of low income and material deprivation in Turkey were similar: age, education level, and years of experience of the breadwinner mattered. A higher education level for the breadwinner was associated with higher living standards. For example, if the main household

earner had graduated from vocational or technical high school, the chance that the breadwinner's household was not materially deprived increased by 17 percent.⁵⁶ In case of completed tertiary education, it increased by 23 percent. Regarding low-income households, the link between education and living standards was weaker – but still highly significant. If the breadwinner had completed high school, the chance of living above the minimum welfare level increased by 1.4 percent; in case of tertiary education, it increased by 1.8 percent. Similarly, the older the head of household and the more time s/he spent in paid work, the higher the chances that the entire household was better off.

The type of employment of the breadwinner mattered for the household's living standard. Higher living standards were associated with a number of job types, but mainly those in the non-agricultural sectors. For example, formal non-agricultural wage employment increased the household's chances of moving out of the bottom decile by around 6 percent; the effect was of similar magnitude for material deprivation. Similarly, when the breadwinner was an employer outside agriculture, his household was more likely to enjoy a higher living

standard. Informal jobs contributed to higher living standards, but only in the non-agricultural sectors. An informal agricultural job significantly increased the probability of living below the income threshold. Also, self-employed agricultural workers faced lower levels of well-being. This result is consistent with the findings of Chapter 3, which documented that a move of jobs away from agriculture was associated with higher productivity in the new job.

The probability of attaining higher living standards varied considerably by geographical location. Compared to households located in Anatolia, households in all other regions found it easier to move up in the income distribution and were less affected by material deprivation. Also, whether a household was located in an urban or rural area played an important role for living standards. In line with expectations, the urban population was less likely to live below the income threshold. More and better jobs as well as higher pay typically lead to smaller numbers of low-income households in urban areas. For Turkey, the effect was small but significant. Regarding material deprivation, the opposite seemed to be true: urban households faced a higher risk of material deprivation than rural households.⁵⁷ Differences in prices for

⁵⁶- The reference category is no schooling. See also Annex 4.1 Table A4.2.

⁵⁷- This result is robust across years and various specifications of the regression model.

consumer goods, which make it harder for urban households to satisfy basic needs, may partly explain this result. Rural households produce most of the food they consume, increasing their capacity to afford regular protein-rich meals. Also, rural households may benefit more from housing allowances, which in turn may help them keep the house adequately warm.

Households with higher shares of working adults or pensioners enjoyed higher living standards. Adding information regarding the demographic composition of the household increased the explanatory power of the models. A higher share of working adults significantly increased the chance of living above the income threshold; it also considerably lowered the probability of being materially deprived. In addition, benefits from old-age pensions seem to matter for welfare, as a higher share of pensioners in the household contributed to higher living standards.

To conclude, whether or not a household is low-income or materially-deprived depends on similar factors. Holding a formal job is a crucial determinant for raising living standards. To better understand what makes a household materially deprived despite sufficient income, further and more detailed analyses are needed. In

particular, variables that better capture the specific needs of households (e.g., material obligations resulting from household size and structure, marital status, and key life events, as well as health status of household members and housing conditions) and a measure of the permanent income have been shown to be strongly linked with material deprivation (Berthoud and Bryan 2010; Whelan, Layte, and Maître 2004).

4.4 A More Detailed Look at the Trends in Household Income

Despite strong economic growth, living standards among low-income households have not improved. In part, compositional factors may be at play. The number of households with working-age members increased considerably; many of these “new” households were absorbed into local labor markets as the number of in-work households increased as well. New labor market entrants may have accepted entry-level jobs with relatively low pay; as the propensity of low income decreases with more labor market experience of the breadwinner, these households have a good chance of moving out of the bottom decile in the future. According to the findings of Chapter 2, youth have overall less access to formal jobs than older age cohorts. Another reason of stagnant

living standards may be that most of the years reflected in the analysis witnessed a move of some employment back to agriculture. On the other hand, stagnant incomes at the aggregate level may mask the more dynamic but neutralizing trends of the individual components of household income. In the following section, the main sources of total household income are analyzed, with a focus on trends in labor and non-labor income. In a second step, changes in real per capita household income are decomposed to highlight the contribution of several factors, including labor income, to the observed changes in living standards.⁵⁸

4.4.1 Sources of household income

At the national level, the composition of household income changed somewhat over time; labor income and social transfers became more important. Labor income from wage employment was the main contributor to total household income; together with the income from self-employment, the share increased from 58.6 percent in 2007 to 61.5 percent in 2010. Social transfers, which include pensions and unemployment benefits, were the largest component of non-labor income and became more

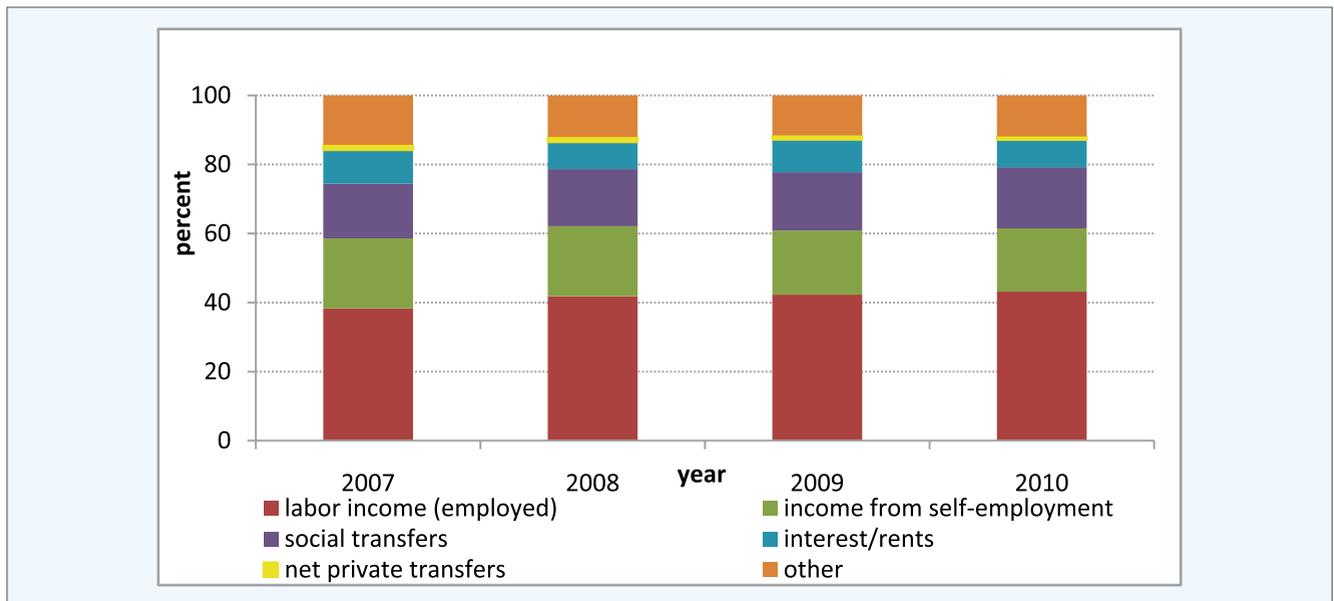
important over time. Their share in total household income increased from 15.9 percent to 17.7 percent (Figure 4.5).

In rural areas, income from self-employment remained the biggest contributor to total household income, but its share declined between 2007 and 2010. Income from self-employment was the main income source for rural households, but other sources, including wage employment and social transfers, became more important over time. For example, among rural households in Eastern provinces, the share of labor income increased from 24.8 percent in 2007 to 31.3 percent in 2009 (Annex 4.1 Figure A4.3). As the decline in self-employment was more pronounced, total labor income became a less important source of household income; the share declined from 65.9 percent in 2007 to 63.2 percent in 2010. Rising unemployment and reduced real hourly wages in 2009 contributed to a declining share of wage income; rural households reverted to self-employment and informal employment as a coping mechanism during the crisis (World Bank 2011 and Chapter 2 of this report). Similar trends were observed for rural households in Western provinces.

⁵⁸ For this part of the analysis, all households are considered. For more details regarding the decomposition method, please see Azevedo, Sanfelice and Nguyen (2012).

FIGURE 4.5

Sources of household income, 2007-2010



Source: SILC.

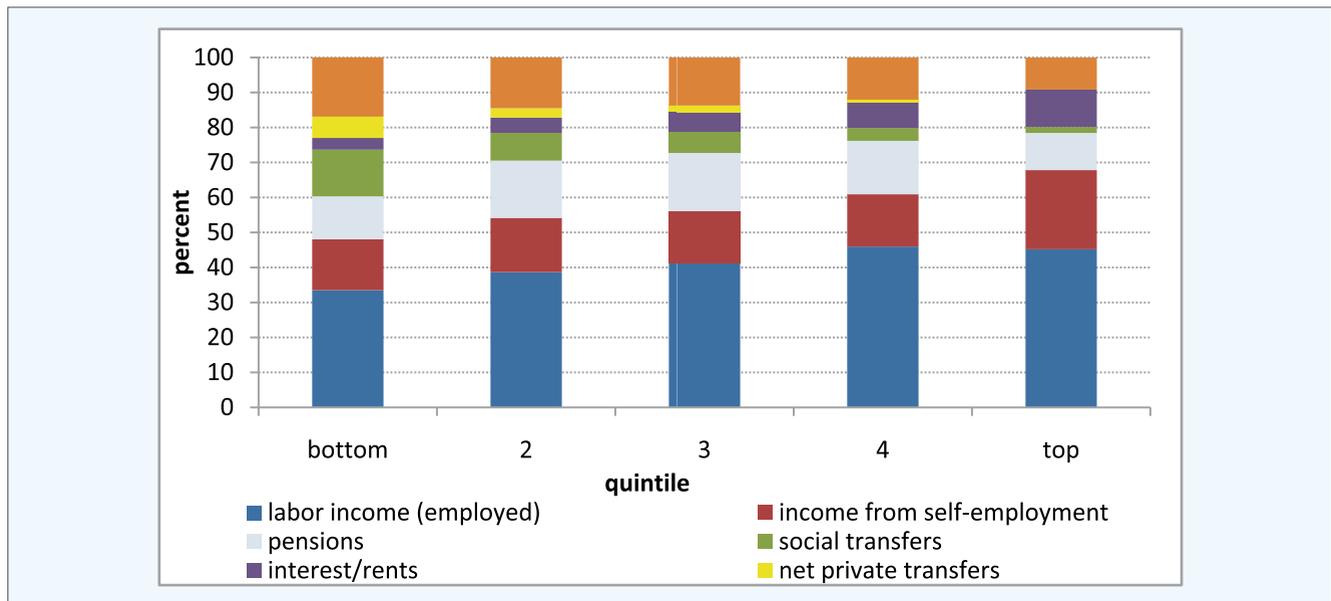
The contribution of labor income to total household income was higher for richer households. In 2010, for households in the bottom quintile of the income distribution, the share of wage employment was 33 percent; it increased across quintiles, reaching 46 percent in quintile 4 (Figure 4.6). The contribution of income obtained from self-employment was around 15 percent

for the first four quintiles, and jumped to almost 23 percent for the top quintile. As a result, more than two-thirds of total household income of households in the top quintile originated from total labor income (wage employment plus self-employment) compared with only 48 percent for households in the bottom quintile.⁵⁹

59- Similar trends were observed in earlier years. In Figure 4.6, pensions have been separated from other social benefits; the share of social transfers declined with household income and contributed 1.7 percent to total household income among households in the top quintile.

FIGURE 4.6

Sources of household income by quintile, 2010



Source: SILC.

4.4.2 Decomposing the changes in living standards

The observed changes in real per capita household income were decomposed into changes in different types of income and changes in household composition. This approach helps to highlight the role of employment in raising living standards. Given the data at hand, the decomposition used cross-sectional data (rather than panel data) and analyzed the changes between 2007 and 2010. Results are presented in Figure 4.7.

Across all income deciles, real per capita household income declined between 2007 and 2010. As illustrated

in Figure 4.7 (right axis), income per capita declined between 2 percent and 3 percent for most deciles. Middle-income households were somewhat less affected by the decline. Households in the top decile of the income distribution realized the largest reduction; real per capita income was around 10 percent lower in 2010 than in 2007.

Changes in the household structure (share of working-age adults and share of workers) contributed to higher living standards. Changes in the composition of households had a positive impact on living standards (Figure 4.7 left axis). In particular, the share of workers contributed consistently to higher

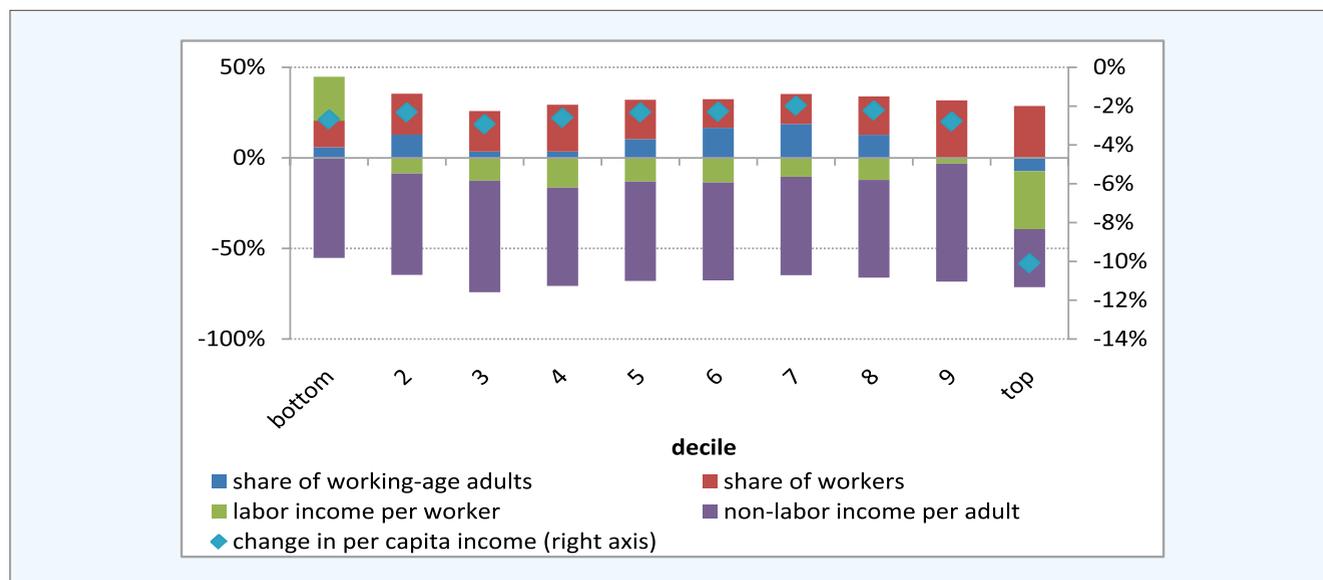
incomes; the effect was of similar size for most deciles and is consistent with the evidence obtained from the analysis regarding the determinants of living standards.

Labor income per working adult had a positive impact on welfare only for the bottom 10 percent of all households. Between 2007 and 2010, labor income per worker increased by 6.3 percent among low-income households. For all other income deciles, the contribution of labor income was negative. Higher minimum wages and crisis-related policy interventions (for example, reduced hourly wages) are likely to have contributed to these trends.

Changes in non-labor income had a large negative impact on living standards, offsetting the income-increasing trends of other factors. As shown in the previous section, pensions and other social transfers (including benefits for unemployment, disability, and sickness as well as housing and family allowances) are the main sources of non-labor income. Both types of transfers had small positive effects on the change in per capita income, especially for low-income households. The large negative impact can be attributed to changes in the unspecified part of non-labor income (labeled “other” in Figure 4.6).

FIGURE 4.7

The contribution of labor income, non-labor income, and household structure to changes in living standards between 2007 and 2010



Note: The columns show the contribution of each component (in percent) to the change in per capita income in each decile. Results are obtained from cross-sectional data.

Source: SILC.

To conclude, growth in labor income has contributed to higher welfare levels of low-income households in Turkey, highlighting the important role that jobs play in raising living standards. Crisis-related distortions in the labor market probably added to the difficulty in identifying longer-term trends on changes in living standards. To gain a better understanding regarding the contribution of specific income sources, longer time series and longitudinal data are required.

4.5 Conclusion and Policy Outlook

For a large majority of people around the world, work is their main source of income. Growth in labor income has been the most important contributor to poverty reduction and higher living standards in many countries (World Bank 2012). In Turkey, strong economic growth allowed more people to successfully participate in the labor market; the share of in-work households increased significantly and in 2010, more than 70 percent of the population lived in households that were well integrated in the labor market. Labor income (wage employment plus earnings from self-employment) was the biggest contributor to total household income; for urban households, its share has increased in recent years. Among low-income households, growth in labor income per worker was positive between 2007 and 2010 and contributed to higher living standards.

Despite these overall positive trends, living standards have not improved by much. A number of reasons are likely to have contributed to this result. First, as the number of in-work households rose from 11.7 million in 2007 to 12.2 million in 2010, the composition within this group of households changed. Some low-income households left the bottom decile for more productive and often formal jobs, but were “replaced” by new households entering the labor market at the lower end of the income distribution. At the aggregate level, the share of low-income households remained relatively stagnant. At the individual level, however, mobility is likely to be higher as: (i) in-work households with older, more experienced heads were more likely to move out of the bottom decile; and (ii) the welfare level of the “new” in-work households was on average higher than among out-of-work households, especially as the overall quality of jobs created after the crisis was unusually high (see Chapter 2).

Second, the economic sector and type of employment are critical for raising living standards. Between 2000 and 2008, the employment share in agriculture declined by 11 percentage points; employment shares in the trade, services, and manufacturing sectors increased considerably, but could not replace all the jobs that were lost in agriculture (ILO 2011). The structural labor reallocation process from agriculture to sectors with higher labor productivity is critical for raising living standards. However, it also

matters what type of jobs are created in the non-agricultural sectors. The share of informal jobs declined somewhat during the period of economic growth, but casual wage employment increased significantly. The share of low-income households where the breadwinner was casually employed was around 15 percent in 2007 and 2008, and jumped to 25 percent in 2009.⁶⁰ Many of these casual workers found employment in the non-agricultural sector, but the low wages associated with this type of employment have not led to higher living standards.

Third, despite its limited impact on the Turkish economy, the global financial crisis may have adversely affected the mobility of low-income households. Unemployment rose sharply, especially in urban areas; informal workers were disproportionately affected both by job losses and wage reductions (ILO 2011). Formal wage earners were more likely to keep their jobs, but as part of the policy interventions during the crisis, real hourly wages were reduced significantly (World Bank 2011) before the minimum wage was increased.

Besides developing an environment that allows firms to grow and create more and better jobs, policy makers could build on the post-crisis achievements and help reduce the share of low-income households. In 2012, the Government of Turkey adopted a National Employment Strategy (NES) that addresses some

of the most pressing issues of the Turkish economy (Özkan 2012). One central pillar of the NES is increasing educational outcomes and improving training opportunities. As shown in this report and in the related literature, there is a strong link between the educational level and earnings potential of workers. Public policy can remove education-related barriers to income mobility by: (i) increasing access to and quality of education for adults and children; (ii) implementing redistributive policies; and (iii) developing social transfer programs (OECD 2010). In particular, adult training programs allow current workers to improve their set of skills, giving them access to higher productivity jobs with better pay.

As a second pillar of the NES, employment opportunities for underprivileged groups such as youth, women, and the long-term unemployed should be promoted; this in turn is likely to reduce the share of low-income households. Given the low earnings potential for some of these groups, a comprehensive activation of cash transfers could help raise the human capital and living standards of the entire household. For households with no regular labor market attachment, social transfers have been shown to play an important role in raising living standards. Improved targeting and social transfers that also take into consideration regional differences may help to further increase the well-being of out-of-work households.

⁶⁰- It dropped to 14 percent in 2010.

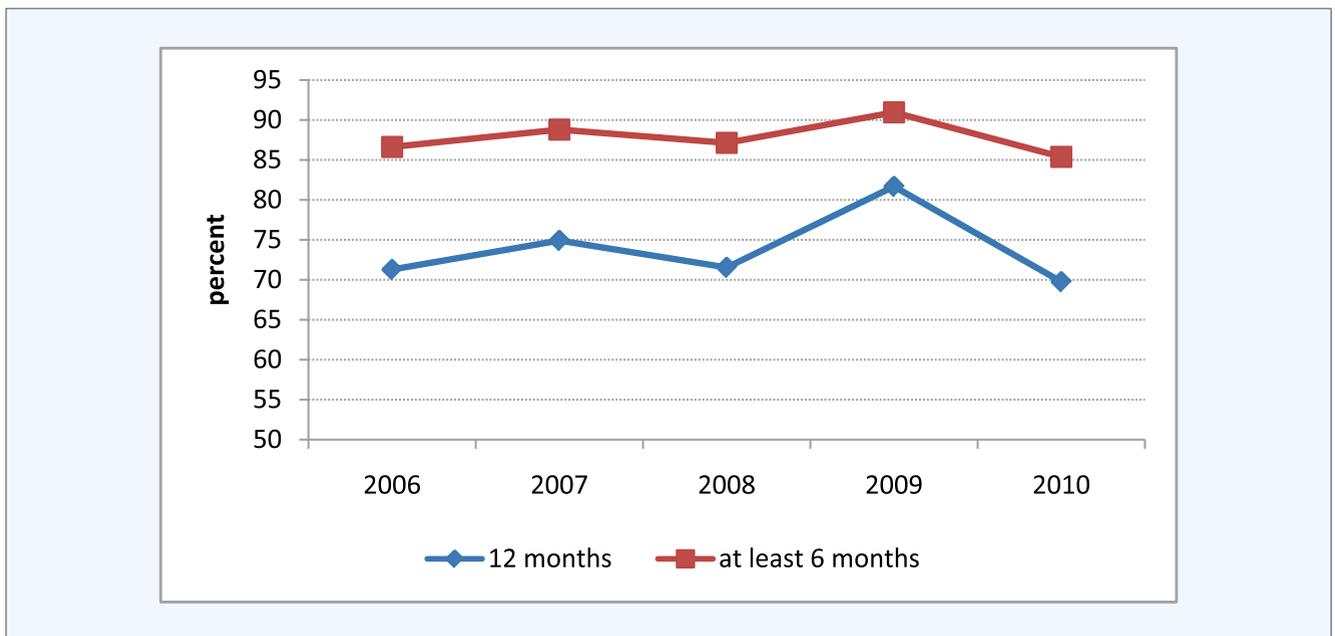
Chapter 4 References

- Azevedo, J. P., V. Sanfelice, and M. Nguyen. 2012. "Shapley decomposition by components of a welfare aggregate." World Bank mimeo. World Bank, Washington, DC.
- Berthoud, R., and M. Bryan. 2010. "Income, deprivation and poverty: a longitudinal analysis." *Journal of Social Policy* Vol. 40, No. 1, pp. 135-156.
- Eurostat. 2010. "Income poverty and material deprivation in European countries." Eurostat – Methodologies and Working Papers.
- ILO. 2011. "Occupational Outlook in Turkey." International Labour Organization: Ankara.
- IMF. 2013. "World Economic Outlook." April. International Monetary Fund, Washington, DC.
- OECD. 2010. "Economic Policy Reform: Going for growth." Organisation for Economic Co-operation and Development, Paris.
- Özkan, M. A. 2012. "The Turkish Labor Market." Speech delivered at the ETF Regional Conference "Social Partnership in VET in the Southern and Eastern Mediterranean Region, Istanbul, October 2012.
- Whelan, C. T., R. Layte, and B. Maître. 2004. "Understanding the mismatch between income poverty and deprivation: a dynamic comparative analysis." *European Sociological Review* Vol. 20, No. 4, pp. 287-302.
- World Bank. 2011. "The jobs crisis: Household and government responses to the great Recession in Eastern Europe and Central Asia." World Bank, Washington, DC.
- World Bank. 2012. *World Development Report 2013: Jobs*. Washington, DC: World Bank.
- World Bank. 2013. "Impact study - Turkey: Evaluating the Impact of İŞKUR's Vocational Training Programs." World Bank, Washington, DC.

Annex 4.1: Background Figures and Tables

FIGURE A4.1

Share of people (15-64) working full-time for:

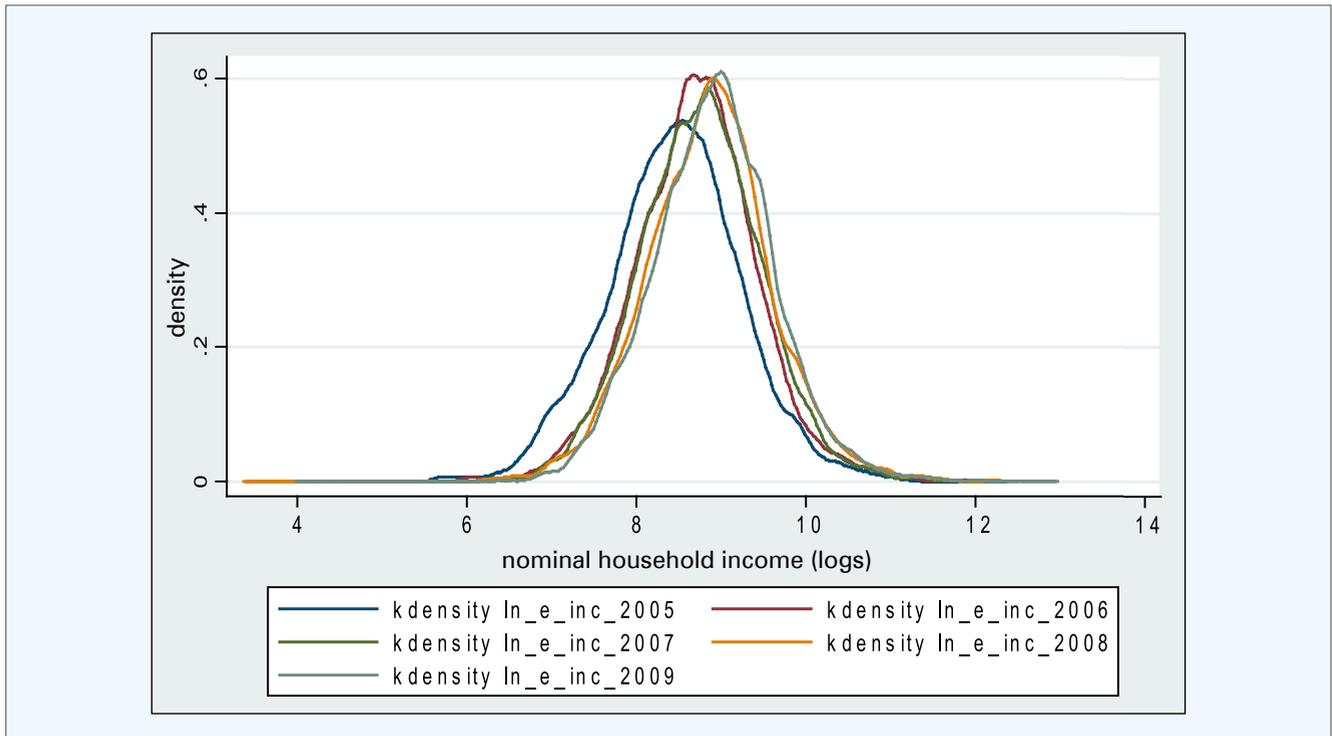


Note: Survey questions reads: Number of months spent in full-time work during the previous calendar year.

Source: SILC.

FIGURE A4.2

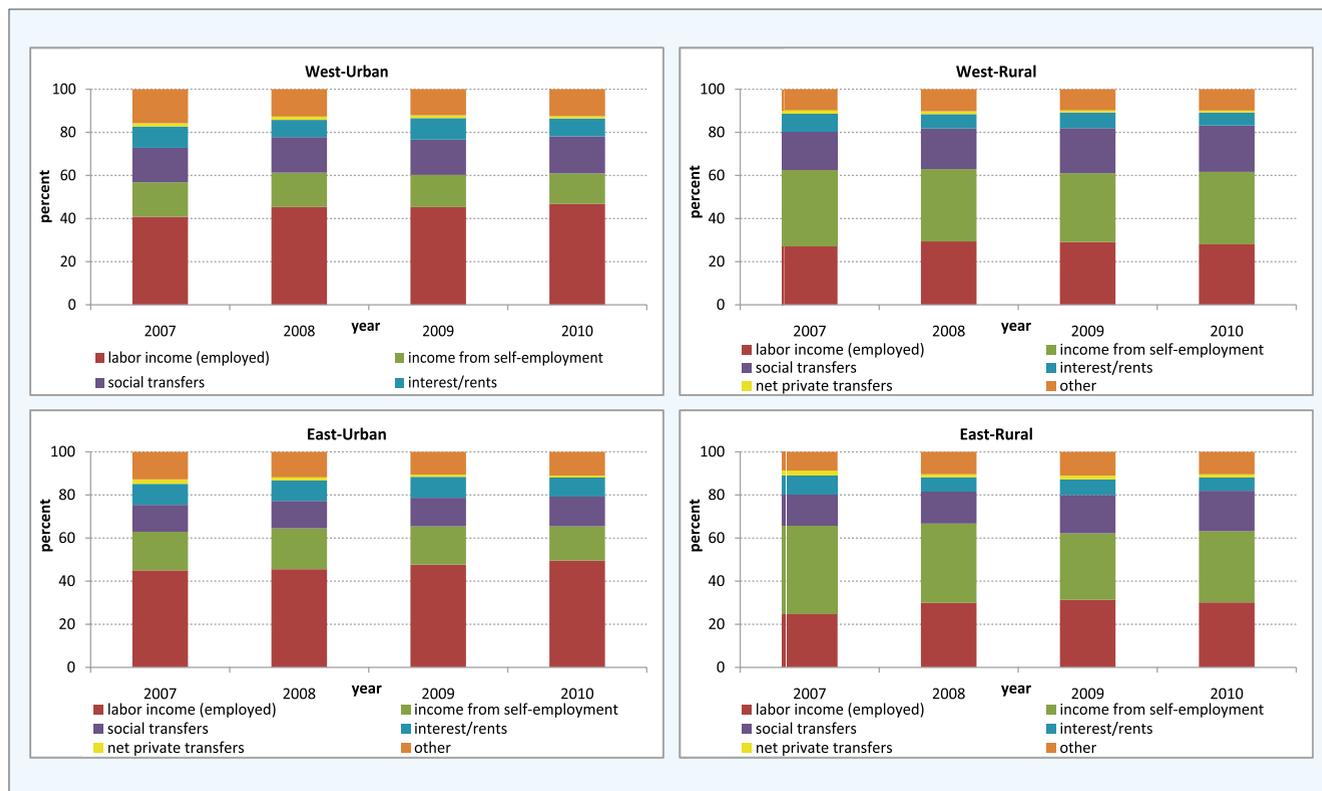
Distribution of adult equivalent household income (nominal, in logs), 2005-2009



Source: SILC.

FIGURE A4.3

Sources of household income, by region, 2007-2010



Source: SILC.

TABLE A4.1

Trends in income, by household type, 2006-2009

Calendar year	p10	p25	p50	p75	Coefficient of Variation	Number of observations
In-work households						
2006	3000	4412	6703	10132	1.018	29,475
2007	2785	4102	6475	10095	0.988	30,374
2008	2344	3640	5954	9321	1.079	36,703
2009	2705	4091	6405	9947	1.019	30,845
Out-of-work households						
2006	1715	2590	4310	7242	1.012	11,702
2007	1643	2541	4194	6747	1.019	12,144
2008	2012	3192	5541	8528	1.013	7,312
2009	1742	2652	4455	6994	0.987	13,004
All households						
2006	2468	3813	6108	9516	1.060	42,458
2007	2334	3587	5867	9287	1.014	43,755
2008	2290	3612	5913	9217	1.064	45,362
2009	2318	3624	5851	9200	1.028	45,389

Notes: Adult equivalent household income, 2006 prices. The minimum level of living standards corresponds to the income of the bottom decile in 2006, 2468 TL.

TABLE A4.2

Determinants of living standards

	Material deprivation	Material deprivation	Low-income rate	Low-income rate
Breadwinner's characteristics				
25-49 years	0.007	-0.008	0.001	-0.003
49-64 years	-0.043	-0.036	-0.005	-0.003
Primary and secondary education	-0.109	-0.105	-0.010	-0.007
High school/Vocational school	-0.174	-0.169	-0.014	-0.010
Tertiary education	-0.234	-0.228	-0.018	-0.012
Spent 3-5 years in paid work	-0.006	-0.004	-0.003	-0.002
Spent 5-15 years in paid work	-0.021	-0.026	-0.006	-0.005
Spent 16+ years in paid work	-0.048	-0.053	-0.003	-0.004
Female	-0.010	0.007	-0.002	0.002
Lives in urban area	0.025	0.021	-0.003	-0.004
Job characteristics				
Formal wage employment	-0.056	-0.074	-0.056	-0.074
... in agriculture	0.017	0.013	-0.004	-0.003
Informal wage employment	0.007	-0.010	-0.007	-0.006
... in agriculture	0.007	0.007	0.009	0.008
Casual employee	0.054	0.033	-0.002	-0.004
... in agriculture	0.062	0.064	0.008	0.007
Employer	-0.116	-0.122	-0.007	-0.005
... in agriculture	0.202	0.211	0.073	0.074
Self-employed	-0.033	-0.047	-0.005	-0.005
... in agriculture	0.078	0.096	0.018	0.028
Household composition				
Share of adults (15-64)	-	-0.115	-	-0.023
Share of working adults	-	-0.065	-	-0.013
Share of pensioners	-	-0.050	-	-0.029
Number of observations	23,258	23,258	19,328	19,328
Explanatory power (Pseudo R squared)	0.105	0.110	0.372	0.406

Notes: Marginal effects of probit regressions are shown. For material deprivation, survey years 2006-2010 have been pooled; for low-income rate, years 2007-2010 were considered. Reference categories: 15-25 years old, no schooling, spent less than 3 years in paid work, male, rural area, unpaid family worker. Regional dummies and year dummies are included. Significant coefficients (5 percent) are in bold