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Structural Reforms to Boost Turkey's Long-Term Growth

Rauf Gönenç,
Oliver Röhn,
Vincent Koen,
Şeref Saygili

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ABSTRACT/RÉSUMÉ

Structural reforms to boost Turkey's long-term growth

Turkey can achieve strong sustainable growth and job creation but further reforms in the labour market, education and product markets are required for such gains to materialise. In recent years, growth has been largely driven by the industrial catch-up of Anatolian regions, although the Marmara area in the West has also been very dynamic. In the process, labour force participation has started to rise anew, but around one third of new low-skilled jobs have been created in the informal sector. Sustaining vigorous growth over the longer run therefore requires pushing ahead with a number of structural reforms. First, Turkey's rigid labour market regulation needs to evolve, so as to encourage job creation in the formal sector. Second, further progress with education reform, from pre-school all the way to the tertiary level and vocational training, is needed to boost growth and bring about employment gains in the formal sector. Third, implementing product market reforms, notably in network industries, would unleash productivity gains in those sectors and be a boost to the rest of the economy. A set of alternative growth scenarios through 2030 illustrates how progress on these various fronts can deliver lasting improvements in living standards.

This Working Paper relates to the 2012 *OECD Economic Survey of Turkey* (www.oecd.org/eco/surveys/turkey).

JEL classification: H11; I25; J2; J3; J41; J65; O11; O15; O17; O18; O4; O52.
Keywords: Turkey; growth; productivity; labour market; employment protection legislation; informality; education; competition.

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Des réformes structurelles pour stimuler la croissance à long terme en Turquie

La Turquie a les moyens d'une croissance rapide et durable riche en emplois, mais des réformes s'imposent en matière de – marché du travail, d'éducation et de marchés de produits –pour que ce potentiel se concrétise. Le rattrapage industriel des régions d'Anatolie a largement tiré la croissance de ces dernières années, même si la région de Marmara, à l'ouest, a elle aussi été très dynamique. Accompagnant ce processus, la participation au marché du travail est repartie à la hausse, mais environ un tiers des nouveaux emplois peu qualifiés ont été créés dans l'économie informelle. Maintenir un rythme de croissance vigoureux sur longue période nécessite donc de faire avancer un certain nombre de réformes structurelles. Tout d'abord, la réglementation du marché du travail, rigide, doit évoluer de façon à encourager la création d'emplois dans l'économie formelle. Ensuite, il faut aller plus loin encore dans les réformes de l'éducation, de l'enseignement préscolaire à l'enseignement supérieur et à la formation professionnelle, pour dynamiser la croissance et favoriser les créations d'emplois dans le secteur formel. Enfin, la mise en œuvre de réformes des marchés de produits, notamment dans les industries de réseau, devrait permettre de libérer des gains de productivité dans ces secteurs et insuffler une dynamique au reste de l'économie. Différents scénarios de croissance à l'horizon 2030 montrent comment les avancées sur ces différents fronts peuvent engendrer une amélioration durable du niveau de vie.

Ce Document de travail se rapporte à *l'Étude économique de l'OCDE de la Turquie*, 2012 (www.oecd.org/eco/surveys/turkey).

Classification JEL : H11 ; I25 ; J2 ; J3 ; J41 ; J65 ; O11 ; O15 ; O17 ; O18 ; O4 ; O52.
Mots clés : Turquie ; croissance ; productivité ; marché du travail ; législation sur la protection de l'emploi ; informalité ; éducation ; concurrence.

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STRUCTURAL REFORMS TO BOOST TURKEY'S LONG-TERM GROWTH

By Rauf Gönenç, Oliver Röhn, Vincent Koen and Şeref Saygili[1]

Turkey's strong growth performance during the 2000s, averaging over 5% in the decade through 2011, rested on two developments: employment growth, which broadened and was particularly vigorous in newly emerging regions in inland Anatolia; and productivity growth, which picked up, mainly in the developed Western regions. Turkey's long-term economic performance will largely depend on future policy choices to sustain these developments:

- *Broader employment growth*: while skilled employment has continued to grow in the entire country, the so-called "Anatolian tiger" regions have created many new jobs for the low-skilled, outside traditional agriculture. However, continued progress in increasing labour utilisation, which has led to an upturn in Turkey's low employment rate, cannot be taken for granted, for two reasons: *i)* newly growing activities are exposed to competition from low-cost countries and are highly sensitive to variations in Turkey's external competitiveness; and *ii)* as Turkey's labour rules are rigid and costly, job creation for the low-skilled often occurs in sub-optimal forms of business organisation, namely informal and semi-formal activities. Going forward, the challenge is therefore to sustain the pace of job creation by preserving Turkey's price competitiveness and further shifting resources to more formal and higher-productivity enterprises. This calls for important structural reforms.

- *Productivity catch-up*: efficiency gains in existing activities in and outside agriculture, and the shift of resources to higher-productivity manufacturing and services have underpinned the economy-wide productivity gains recorded over the past decade. Developed regions in the West, where the higher-productivity medium-to-high tech activities are principally located, have been at the forefront of this process. To sustain productivity growth, further improvements in human capital, a more supportive regulatory environment for doing business and more efficient physical infrastructure are required.

This paper reviews recent developments and policy initiatives in both areas, and lays out scenarios for future growth on the basis of alternative assumptions concerning reforms that will affect employment and productivity performance.

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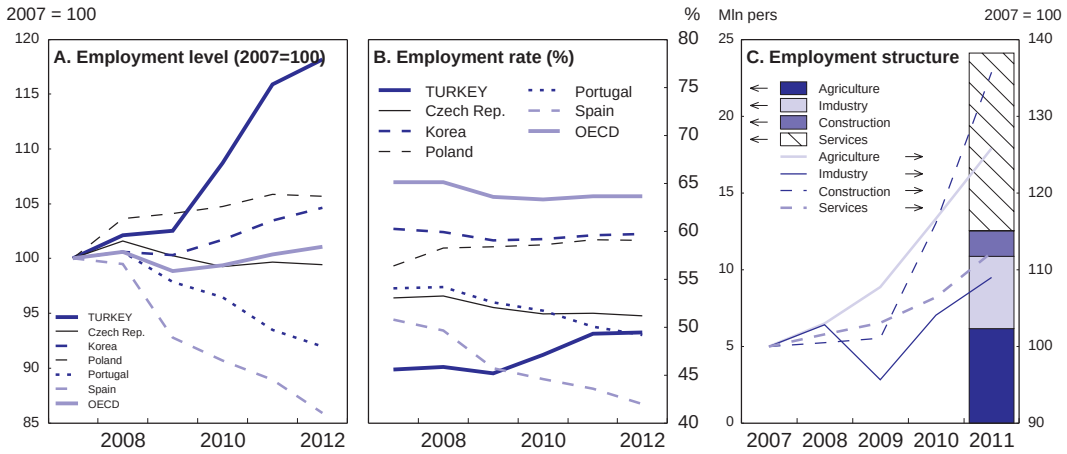
1. OECD Economics Department. This paper is a chapter from the *OECD Economic Survey of Turkey* published in July 2012 under the authority of the Economic and Development Review Committee (EDRC). It has benefitted from background research by Ramazan Karaşahin. The authors thank Andrew Dean and Robert Ford for their valuable comments and Fabrice Murtin, Philip Bagnoli and Francesca Spinelli for their support in conducting the long-term growth scenario estimations. Special thanks go to Béatrice Guérard for technical assistance and to Nadine Dufour and Pascal Halim for technical preparation.

More and better jobs

Broadening employment opportunities

The Turkish economy has created numerous new jobs outside agriculture over the past decade (Figure 1). This was driven partly by the emergence of new, first-generation enterprises in previously non-industrial, low-income regions in inland Anatolia[2] (Figure 2). Medium-sized enterprises with 50-250 employees have been the engine of this development. Between 2002 and 2010 they have increased their employment on average by 5% annually, more than in both smaller and larger firms. Their performance has been particularly strong in Central and South-eastern Anatolia. In these regions medium-sized enterprises' employment and exports increased on average by about 8 and 15% annually, respectively.[3] Among Turkey's 1 000 largest industrial enterprises, about 350 are now located outside the traditional industrial centres.[4]

Figure 1. Strong employment performance



Source: OECD, OECD Economic Outlook and Main Economic Indicators databases.

These enterprises tend to specialise in export-oriented manufacturing. While Western regions are more vertically integrated with EU economies, the new regions trade more with countries in the Middle East and North Africa (MENA). In 2009, 51% of exports from developed regions with a GDP per capita level above 75% of the national average, all located in the Western part of the country, were directed to the EU and 22% to the MENA region. In contrast, only 26% of the exports of the remaining regions were directed to the EU but 49% to MENA. Iraq became Turkey's second-biggest export market after Germany. The new regions specialise in less sophisticated and relatively low-tech activities such as textile, food,

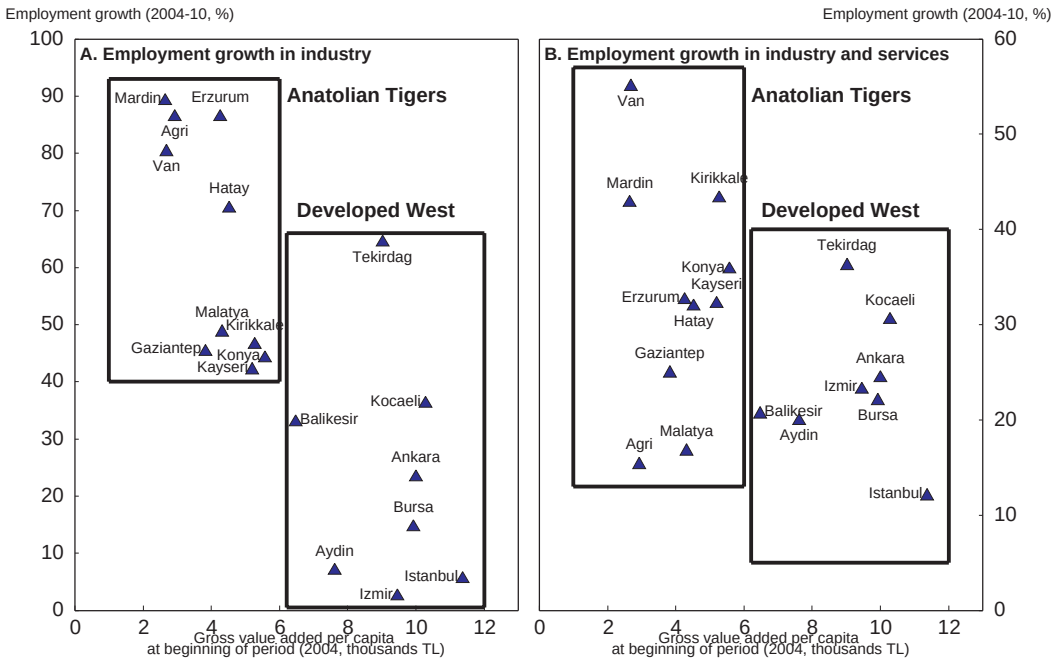
2. See "The Rise of Anatolian Tigers", Box 1.1 in OECD (2008).

3. Based on the enterprise database of the Central Bank of the Republic of Turkey, which includes balance sheets and financial reports from about 2000 enterprises generating nearly half of Turkey's total manufacturing sales and exports. A balanced panel of 1 500 enterprises has been analysed by the Research and Monetary Policy Department (Yalçin, 2012).

4. Enterprises which are part of the Istanbul Chamber of Industry's "top ISO 1000" list. The traditional industrial centres are Istanbul, Izmir, Ankara, Adana, Bursa and Kocaeli. New ones include cities like Gaziantep (with 32 of the top 1000 industrial entreprises), Kayseri (with 26), Konya (with 21) and Kahramanmaras (with 16).

plastic and metal products. However, they account for a growing share in the more rapidly expanding export markets. In the currently weak world trade environment, this diversification has made Turkey's exports and employment more resilient (Box 1).

Figure 2. Strong job creation in emerging regions



Note: Employment growth in selected NUTS 2 regions. NUTS 2 regions are named according to the largest province (NUTS 3) that they include. Istanbul, Ankara and Izmir are both NUTS 2 and NUTS 3 regions.

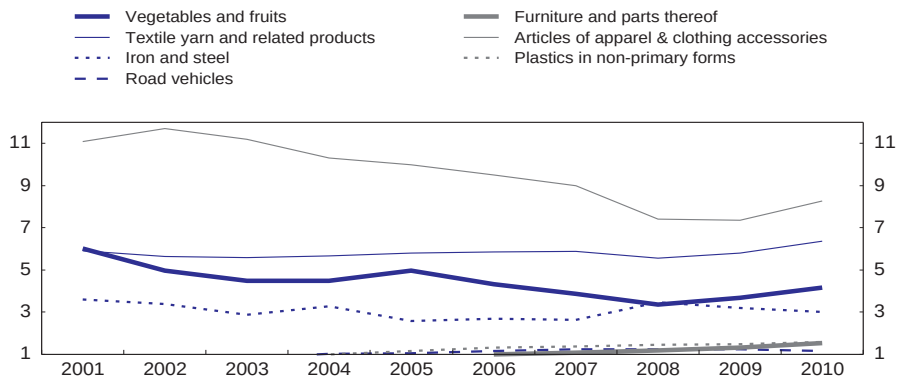
Source: Turkish Statistical Institute.

Anatolian regions benefitted also from the growth of Turkish construction companies abroad, which have gained large market shares in the broader region. Construction service exports have grown towards expanding markets like Russia, Kazakhstan, Turkmenistan, Saudi Arabia and Iraq. As a result, Turkish firms now come only second after China in terms of share in the total number of global construction companies (Engineering News Record, 2011). Construction abroad helps reduce Turkey's trade deficit. In 2011, exports of construction equipment and material made up 20% of total Turkish exports.

Box 1. New growth regions and Turkey's trade specialisation

Revealed comparative advantage (RCA) analyses suggest that compared to other high-growth emerging economies, Turkey's shift in trade specialisation towards medium-to-high tech exports has been rather slow over the past two decades – despite a remarkable growth of these exports from Western regions. Fruit and vegetables and some other primary products from the agricultural sector, as well as textiles, clothing and steel products remain the core areas of RCA. More recently, cars, furniture, metal and plastic products have become additional specialisation areas (Figure 3).

Figure 3. Turkey's revealed comparative advantages, 2001-10



Note: Revealed comparative advantage is measured by the "Balassa" indicator $RCA_{ij} = (X_{ij}/X_{it})/(X_{nj}/X_{nt})$, where X_{ij} = exports by country i (n = total OECD) of good j (t = total goods). As an example, a score of 6 in clothing products means that the share of clothing products in Turkey's exports is six times higher than their share in global exports.

Source: OECD calculations based on data from OECD, International trade by commodity statistics database.

More detailed analyses show that Turkey's export structure has remained more typical of lower-income countries. Using the methodology proposed by Hausman *et al*. (2007), Atiyas and Bakis (2011) calculate an indicator reflecting the statistically-expected level of GDP per capita implied by the export specialisation pattern of each country. On this measure, Turkey's export specialisation, both in 2005 and 2009, was similar to countries with a lower GDP per capita level, and less sophisticated than that of countries with a GDP per capita level comparable to Turkey's. Using Hausman and Hidalgo's (2010) approach, Atiyas and Bakis also estimate an indicator of the average number of competitor countries that each country faces in its various export activities. This index captures to what degree a country has gained distinct competitive advantages, *i.e.* the more its products are differentiated, the less competition it faces. According to this index Turkey has 34 competitors on average across its export portfolio, compared to 24 for Korea and 26 for Israel.

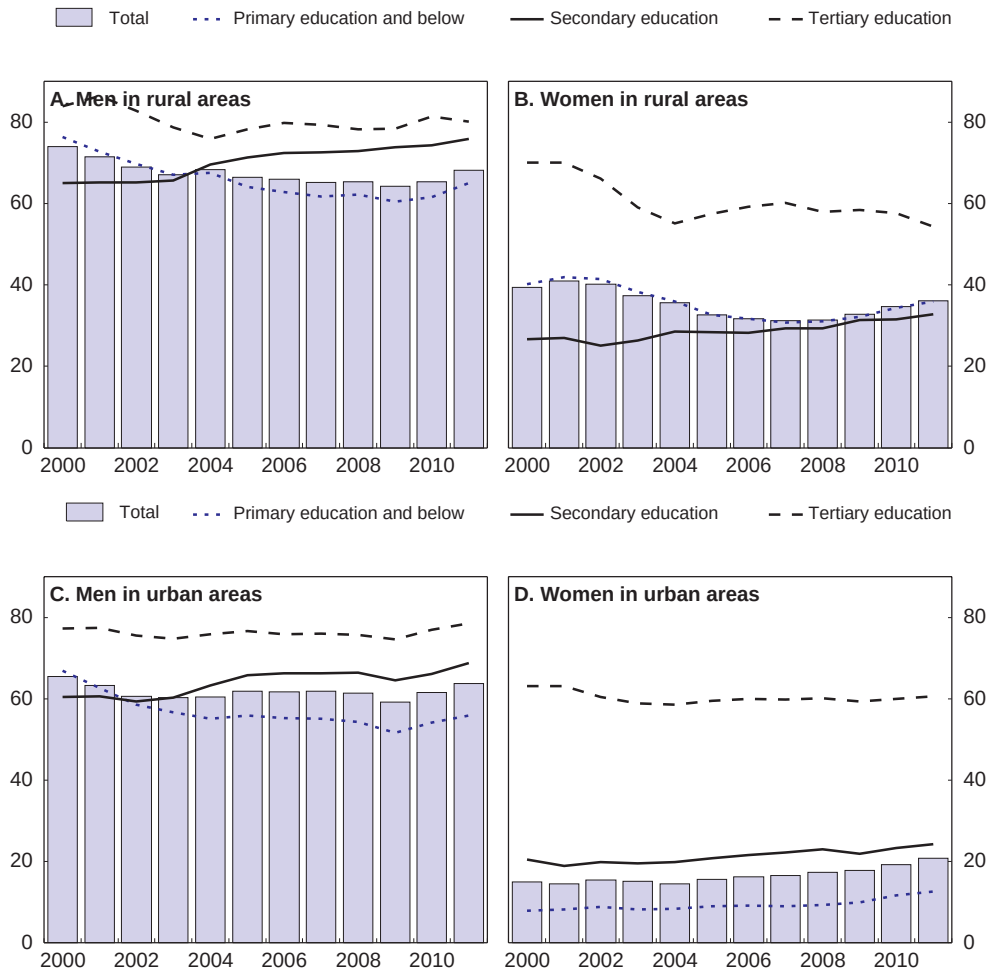
This inertia in trade specialisation is partly due to the fact that Turkey's low-tech exports have grown rapidly thanks to the productive mobilisation of otherwise difficult-to-employ groups. Their members might otherwise have stayed unemployed or inactive in urban areas, or would have remained hidden unemployed in agriculture. This capacity to mobilise low-skilled groups has also slowed the shift in trade specialisation, and contributed to the vulnerability of Turkey's export sector to low-cost competition.

Creating jobs outside agriculture for the low-skilled has been a major contribution of the "Anatolian tigers" to Turkey's growth. In 2011, workers with primary education or less represented 66% of Turkey's working age population and 55% of total employment.[5] The traditionally very low employment rate of these groups had further declined in the earlier part of the 2000s as a result of exits from agriculture. In contrast, starting from 2007, and despite headwinds from the global economy, their employment rate increased due to the new wave of industrialisation, but also in agriculture (Figure 4).

5. Workers with primary education or less are considered to have "low skills" throughout the paper. The length of primary education was however extended from five to eight years in 1997. The "low skilled" working age population therefore includes cohorts with eight years of education, cohorts with five years of education, as well as individuals with less or no formal education. In 2011, 6.6, 18.8 and 9.8 million individuals belonged to these groups, respectively.

Figure 4. Low-skilled and aggregate employment rates have recently improved

Employment rate of working age population according to educational attainment, in %



Source: Turkish Statistical Institute.

As a result, the average "active life expectancy" (*i.e.* years of participation in the labour market) of Turkey's population is rising. After reaching a trough in 2006 – at one of the lowest levels in the OECD at about 24 years – active life expectancy increased to 26.5 years by 2011.[6] This reflects greater participation in all age groups, including those with traditionally very low activity rates. From 2006 to 2011, the participation rate of the 20-24 age cohort rose from 49.5 to 54%, and that of the 50-60 cohort from 38 to 42%.

Even so, participation rates remain particularly low for the very low-skilled,[7] women and elderly (54-65 years) workers, at 26%, 29% and 33%, respectively, in 2011. In rural areas, these groups are often counted as "unpaid family workers" (engaged in family farms at a low productivity level). Many of them

6. These estimates are prone to measurement error, however, as the Household Labour Force Survey may not fully capture informal work of retirees.

7. Very low-skilled workers are those without a school diploma, and may be illiterate. In 2011 they represented 18% of the working age population.

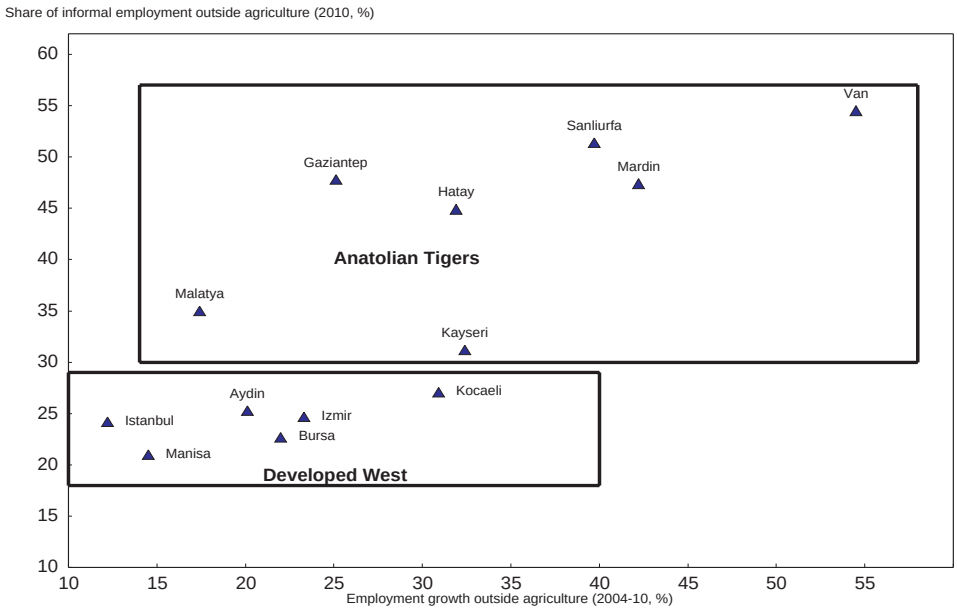
become openly inactive when migrating to urban areas. Limited demand for their labour and low wages has traditionally discouraged them from searching for jobs. Higher labour demand in urban areas would raise their labour force participation.

Shifting employment to the formal sector: indispensable labour market reforms

Low-skilled job creation has largely taken place outside the formal sector, in informal and semi-formal activities.[8] In 2011, 87% of the workers with less than primary education worked informally, as did 55% of those with only primary education. Their employment grew more rapidly in the regions resorting extensively to informal employment (Figure 5 and Map 1). In certain regions, which achieved particularly strong employment growth in the 2000s, such as the broader NUTS2 regions around Kocaeli, Kayseri and Van, the share of informality in non-agricultural employment has in fact increased between 2004 and 2010, despite policy efforts to reduce informality. The link between informality and low-skilled employment results from the rigid and costly labour market rules in the formal sector. The strength of this link was confirmed by Turkey's recent experience: certain limited and temporary employment incentives which significantly reduced the employment costs of certain categories of workers in the formal sector paid off by stimulating formal employment for eligible groups. Similar incentives introduced in 2012 in the least developed regions (Box 2) could have a similar impact in the future.

Figure 5. Job creation in emerging regions has drawn on informality

Share of informal employment and employment growth in selected NUTS 2 regions

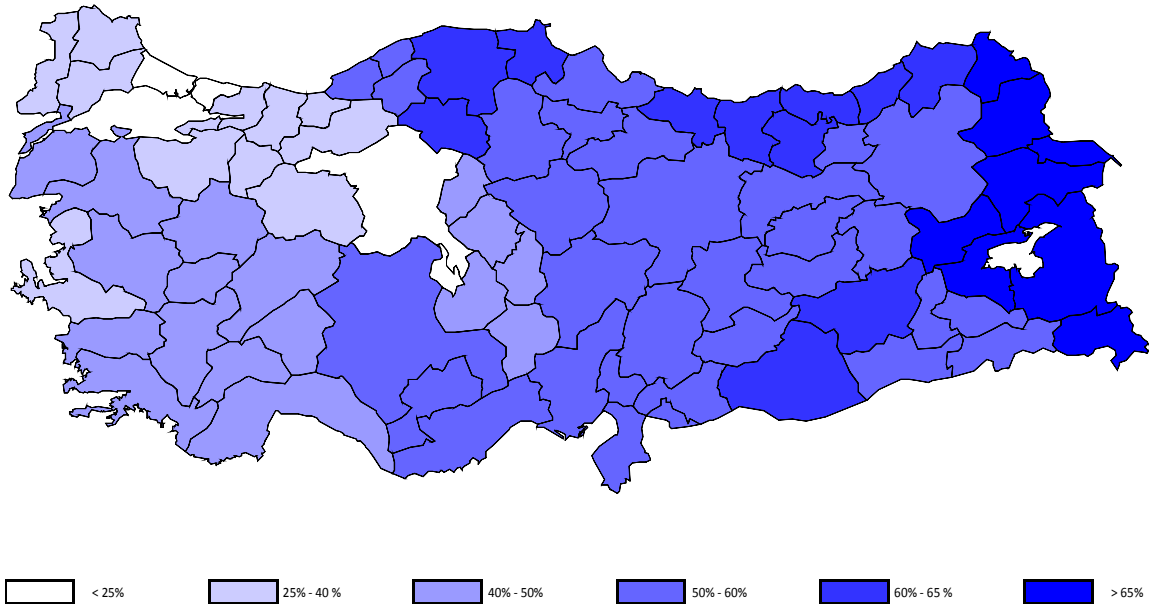


Source: Turkish Statistical Institute.

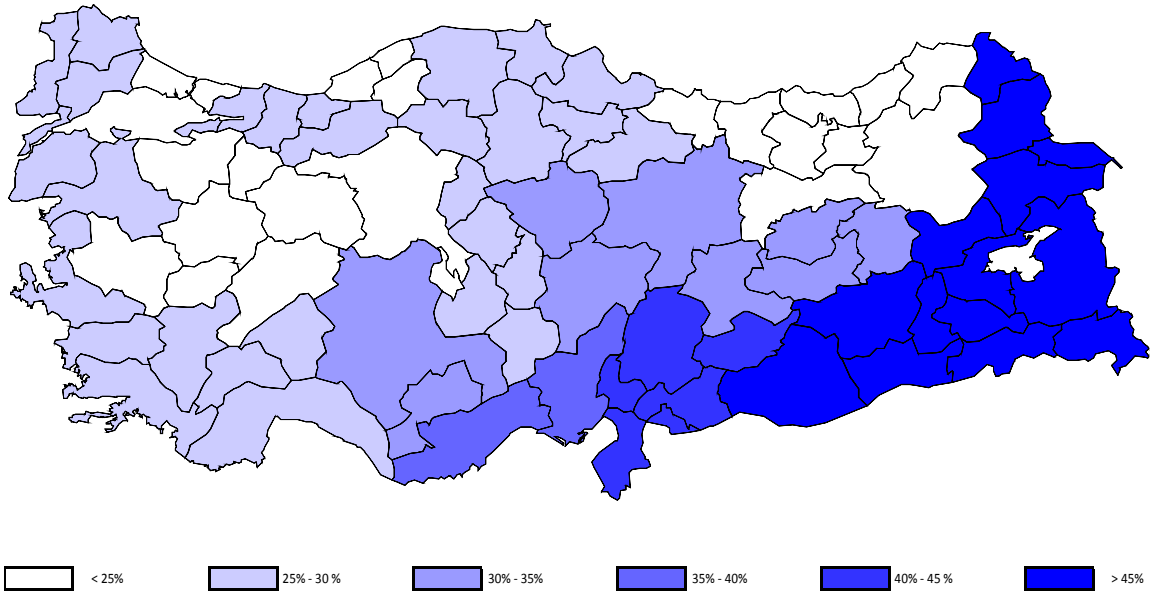
8. Informal employment is found not only in SMEs, but also in large modern enterprises and their sub-contractors. Many use these practices in order not to cross the "30/50/250 employee" thresholds which increase their corporate responsibilities and costs (building social facilities, hiring various categories of support staff, more demanding employment adjustment rules, etc).

Map 1. Informal employment in Turkey's 26 NUTS2 regions
(as a share of total employment in %, 2011)[1]

A- Share of informal employment in total employment



B- Share of informal employment in employment outside agriculture



1. Share of workers not registered with the Social Security Institution, including unregistered self-employed workers.

Source: Turkish Statistical Institute.

Labour costs

Turkey's official minimum wages as a percentage of median wages, at about 67% in 2010, are the highest in the OECD.[9] The average tax wedge on labour, reflecting mainly social security contributions, was also long one of the highest. It declined to about 35% in 2010, after a cut in social security contributions, and the phasing in of a personal income tax allowance in 2008, but remains above the OECD average.

Minimum wages generally grow at least in line with inflation. The employment cost floor set by minimum wages and social security contributions in the formal sector is even higher in enterprises subject to collective bargaining.[10] This floor reduces labour demand for the low-skilled in the formal sector.[11] However, many enterprises avoid these costs by employing workers outside the legal system, especially in the less developed regions. Household Labour Force Survey data suggest that 40 to 50% of workers in Central and Central-Eastern Anatolia may be earning less than the minimum wage. Taking into account the tax wedge of about 35%, this would imply that well above half of wage earners in these regions are employed below official minimum employment costs. Baskaya and Hulagu (2011) and Baskaya *et al.* (2012) confirm that in Turkey informal employment is the main channel of real wage adjustment to economic circumstances. At the same time, in the Western regions where nominal living costs are high, minimum wages appear binding also in the informal sector (in terms of net income earned by workers) while informal employers, even if they pay their workers the net minimum wage, save on the non-wage labour costs.

Rigidity of permanent contracts

Turkey is one of the OECD countries with the most rigid employment protection rules for permanent workers, due to a very expensive severance payment regime. As with the minimum wage, the consequence is the spread of informal employment in the sectors and regions not sufficiently competitive to cope with these constraints, and where excess demand for jobs enable employers to circumvent the law. In addition, distortions arise within the formal sector: as severance benefits are based on seniority and only paid to workers losing their jobs involuntarily, workers with permanent contracts are very reluctant to change jobs. This undermines turnover from lower to higher-productivity activities. In turn, enterprises minimise their severance liabilities through extraordinary means, for example by terminating "permanent" contracts before one year of employment (which is needed for severance entitlement), before rehiring the same workers. As a consequence one third of all "permanent" contracts are less than one-year old.[12] Other firms may ask newly hired employees to sign un-dated resignation letters, to facilitate future employment adjustments (Gursel and Imamoglu, 2012).

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9. The minimum wage as a share of the average wage is, at about 35%, closer to the OECD average. This gap between minimum/median wage and minimum/average wage ratios reflects the high level of remunerations in the productive enterprises of Western regions.

10. In 2012, the net monthly minimum wage is TL 720 (around €310) and the average total employment cost of a minimum wage earner TL 1064 (€460). In enterprises subject to collective bargaining, due to additional salary instalments and other benefits, the average employment cost of a minimum wage earner is about TL 1600 (€670). Some 15% of wage earners are covered by collective agreements.

11. The elasticity of labour demand to wage costs is relatively high. According to a recent estimation, a 1% increase in the total labour cost of a worker may yield a 0.53% fall in his/her probability of remaining employed in the next quarter (Papps, 2010). Various employment incentives introduced as a response to the global crisis, mostly in the form of sizeable reductions in employer social security contributions, have been successful and served as a natural experiment confirming this sensitivity. The strongest impact was observed for female workers (see OECD-ILO, 2011).

12 During 2009-10, 6.25 million job contracts were terminated, 48% of which before one year of seniority.

Finally, financially strained enterprises may be unable to meet their severance liabilities. In many bankruptcy cases workers' entitlements are plainly lost. According to the Ministry of Development only about 10% of job terminations are subject to any severance compensation economy-wide. Gursel and Imamoglu (2012) estimated that no more than half of the resulting liabilities are actually paid. The benefits to workers of this source of rigidity in the formal sector are therefore limited.

Restrictions on temporary work

Fixed-term contracts and agency work are authorised only under very special circumstances. Amongst OECD countries, Turkey has the most restrictive rules for temporary contracts. Moreover, while a number of countries have recently eased access to these contracts, Turkey has not modified its rules. A new law authorising temporary work agencies and temporary contracts was adopted by the Parliament in 2009, but, after strong trade union opposition, the President vetoed the law. As a result, fixed-term contracts play a very marginal role in the Turkish labour market.

Against this backdrop, a "semi-formal" sector has emerged: formal firms register and legally employ a core workforce, but in addition use informal workers to cope with fluctuations in business conditions. Semi-formality appears widespread in volatile manufacturing sectors (such as textiles and clothing) and in service sectors such as transportation, hotels and restaurants. According to the Ministry of Labour, constraints on temporary hiring force many formal firms to use overtime rather than creating new jobs.[13]

A new draft law was submitted for discussion to the social partners in November 2011 to authorise temporary work and temporary work agencies. It proposes to liberalise fixed-term contracts in special cases: when market demand for an enterprise is extraordinarily volatile, and outside the core business area of the enterprise. The number of temporary workers in an enterprise should not exceed 20% of all workers, and the total duration of a temporary engagement should not exceed 12 months (three times four months). Employers need to pay temporary workers the same wages and benefits as for permanent workers. This draft law is an important initiative, but it appears more restrictive than in other OECD countries and these restrictions may impede the shift of the bulk of temporary employment to the legal sector. The initiative could generate some institutional duality in the labour market, as experienced in a number of other OECD countries, but it has large potential benefits in Turkey as, if successful, it can bring more people into the formal economy.

Women's work

Compared to men, a larger proportion of Turkish women prefers to work part-time, or in other flexible forms of employment. The incompatibility between these forms and the existing labour regulations creates additional incentives for informal employment. This negative bias for women became particularly visible in the recent crisis and post-crisis period: 1 million of the 1.6 million net new jobs created for women between end-2008 and end-2011 were in the informal sector. The informality bias in their employment worsens women's income expectations and working conditions, even for those with university education (World Bank, 2009; Aran *et al.*, 2009).

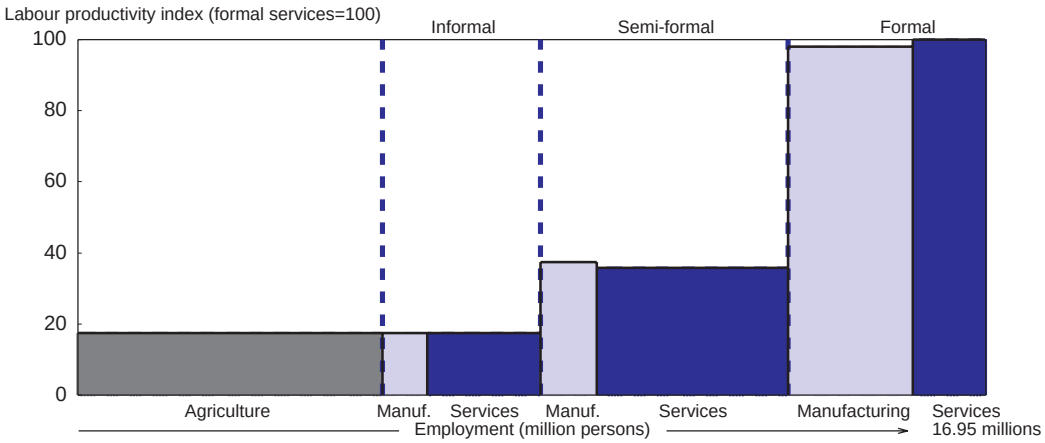
Informal employment keeps workers' productivity and incomes low. Enterprises resorting to it have only limited access to professional management, financial markets, and foreign partners. They face

13. Discussing requirements for additional labour market reforms in late 2010, the Minister of Labour stated that if more flexible employment forms had been available, the Turkish economy would have created more jobs in the post-crisis recovery. He suggested that while the economy creates around 110 000 new jobs for each percentage point growth in GDP, with the availability of more flexible employment forms this figure would rise to about 140-150 000 (E-kolay net, 2010).

important limitations to their technological and commercial development. Many of such structural weaknesses are deeply rooted, independent from the legal status of enterprises, and cannot be remedied by formalisation.[14] Yet, as the existing regulatory environment does not facilitate the shift of employment to larger, more efficient and more professionally managed firms, the "informality trap" becomes penalising for the economy as a whole.

The shift of a higher share of employment to formality would be expected to entail significant productivity gains (Figure 6). There is a link between the prevailing forms of business organisation and the aggregate productivity and competitive performance of an economy. Gains can be achieved by reducing constraints which limit the convergence of enterprises toward more effective scales and forms (Braguisky *et al.*, 2011; Garicano *et al.*, 2012). The benefits associated with the transfer of production factors to the formal sector are therefore potentially large for Turkey.

Figure 6. Labour productivity and degree of formalisation in selected sectors



Note: 2010 Turkstat data was used to calculate the proportion of informal workers across enterprise size classes. Three sectors are distinguished on this basis: *i)* the "informal sector" (where firms employ a majority of informal workers - around 65% on average), *ii)* the "semi-formal sector" (where enterprises employ a sizeable share of informal workers – around 20% on average), and *iii)* the "formal sector" (where only a minority of informal workers are employed – around 5% on average). The labour productivity level of each sector was estimated as a weighted average of labour productivity in constituent size classes. Certain sectors raising particularly severe productivity measurement problems, including the government sector, and a small number of large service sector enterprises were excluded.

Source: OECD estimates based on Turkstat data.

Formalisation would also bring major benefits to Turkish workers by improving social protection against unemployment and income loss, exploitation and unsafe workplaces. For these benefits to materialise, advantages associated with formal employment may need to be strengthened. At present, employees and employers often collude to avoid social contributions in order to increase net earnings for employees and reduce labour costs for employers. For employers, financial incentives are obvious. For employees, limited social insurance coverage (in particular when they already have health coverage through green cards, as dependants of other workers, or, after 2012, via universal health insurance) may provide incentives for non-compliance. For example the fact that only around 17.5% of the formal sector

14. For example, the limited educational background and human capital of owners and managers of informal enterprises cannot be improved by formalisation. Recent research reviewed by Taymaz (2009) suggests that productivity gaps between formal and informal firms can be traced back to differences in scale economies and also professional and technical skills of owners and managers.

workers who lost their job during 2009-10 received any insurance benefits may reduce incentives for compliance.[15]

Reform requirements for encouraging formalisation are now well-known. Far-reaching changes are needed in the labour market (OECD 2008 and 2010, World Bank 2010c). A more flexible labour contract for permanent workers, a less costly severance payment regime, legal availability of temporary and agency work, and lower minimum wages – possibly differentiated across regions to account for differences in living costs, and for young workers– are called for. The government is indeed working on a labour market reform package including many of these elements, in the framework of a new National Employment Strategy being discussed with social partners.

Box 2. Recommended priorities for labour market and formalisation reforms

- A new and more flexible labour contract should be negotiated with social partners, as envisaged in the ongoing discussions on a National Employment Strategy. It should be introduced for all new hires on permanent contracts.
- The severance payment regime should be re-designed in line with international best practices, to make permanent labour contracts more flexible. Temporary and agency employment should be allowed, without sectoral restrictions.
- Official minimum wages should be kept in check. Wage adjustments to productivity gains should be sought more through collective bargaining at enterprise level. Official minimum wages could be differentiated across regions, and for young workers, to account for very large differences in living costs and productivity levels.
- Employment prospects of vulnerable groups such as youth and women, and workers in less advanced regions, can be bolstered with social security contribution cuts (of the same type as the temporary pro-employment measures introduced in the crisis).
- The scope and eligibility conditions for the official unemployment insurance scheme should be broadened. This is key for progress towards “flexicurity” adapted to the Turkish context.

15. Among the 6.25 million workers who voluntarily or involuntarily exited employment in the formal sector during 2009-10, one third were legally eligible for unemployment benefits. Among these, only half had completed their minimum contribution period. As a result, only 17.5% of job losers in the formal sector received any unemployment benefits. Taking into account the workers having lost their jobs in the informal sector, 12% of Turkey’s unemployed were receiving unemployment benefits in 2011.

Boosting productivity growth

Productivity growth is driven both by efficiency gains in existing activities ("within-sector" gains) and by the transfer of resources to higher-productivity activities ("between-sector" gains). Earlier research had found that the shift of resources from agriculture to manufacturing and services had been the main channel of productivity growth in Turkey until the early 2000s (Alam *et al.*, 2008). An update of this analysis for this paper indicates that "within" gains inside manufacturing and service sectors (including via the shift of resources from lower to higher-tech activities) has since been the central channel.[16]

The growth of higher-tech activities appears to have accelerated in the 2000s. Higher-technology activities have expanded particularly rapidly in the Western urban centres and especially in the broader Marmara region around Istanbul (OECD, 2008), which accounts for 45% of Turkey's GDP (in 2008). Istanbul alone generates 28% of Turkey's GDP (in 2008) and employs 23% of the non-agricultural workforce (in 2011).

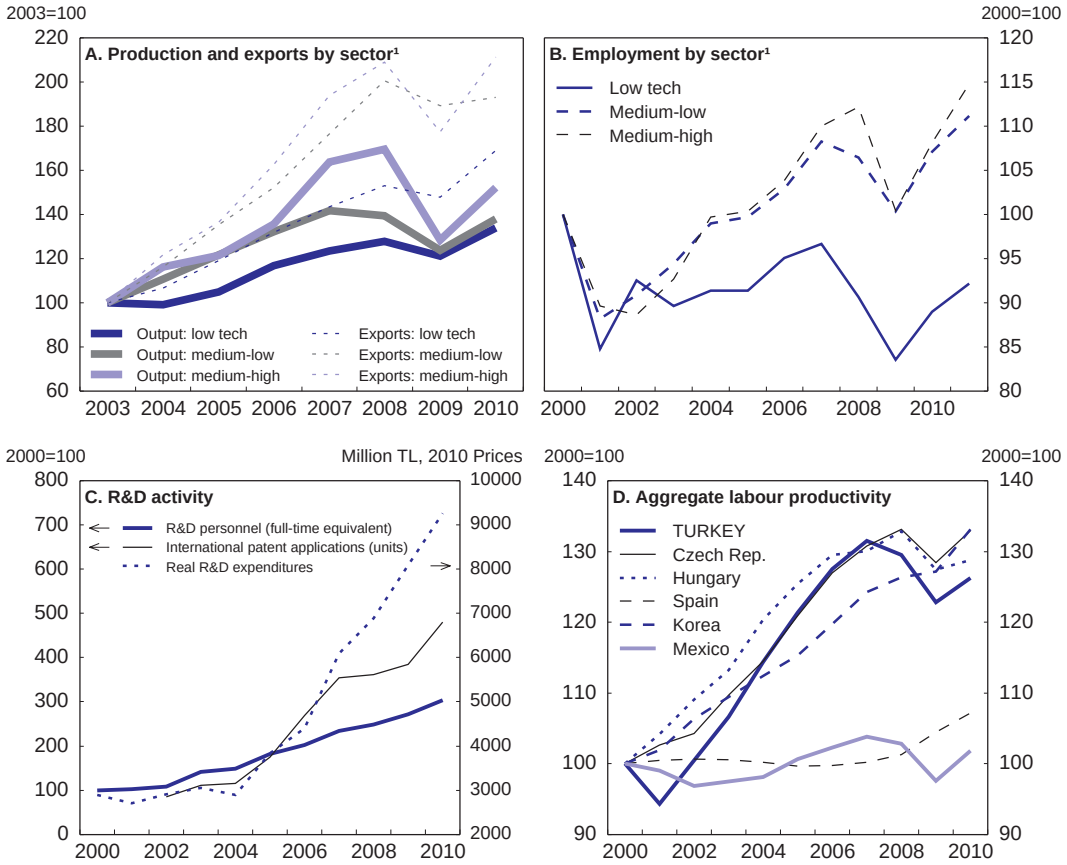
Western regions have a better-skilled labour force: in Istanbul for example, 44% of the labour force has secondary education or more, as against 35% for the rest of the country. A large and prosperous middle-class is thriving in the region, driving consumption demand and diffusing new life- and work-styles. The higher share of university-educated individuals amongst women of working age (12% versus 7.8% in the rest of the country) helps explain the rise in double-income earning households and the higher labour force participation.

The share of medium-to-high-tech sectors in Turkey's total manufacturing exports increased from 30% to more than 60% between 2002 and 2008, and their share in total output rose from 23% to about 30%. Medium-to-high tech firms increasingly invest in R&D activities (Figure 7). Estimates on the basis of Yalçin (2012) suggest that their average labour productivity level is about twice as high as that of low-tech sectors. The expansion of these activities is therefore an important driver of Turkey's aggregate productivity growth (Figure 7).

The emergence of high-productivity services is another driver of productivity-enhancing structural change – even if it is less well captured in official statistics. The rising number of middle-income households and of sophisticated enterprises fosters demand for advanced services. High-quality residential and non-residential real estate development, organised retail trade, a wide range of private education services, and business services in finance, computer software and logistics are among the fastest growing sectors in Western regions. The broader Istanbul area has become not only a major consumer but also a major exporter of these services in the wider Eurasia and MENA region.

16. Employment in agriculture fell from 30% in 2004 to 25% in 2010. As a result, the bulk of productivity gains were achieved within manufacturing (by a yearly average of 2.4% between 2004 and 2010) and services (for example by 2.4% in wholesale and retail trade, 3.5% in transportation, and 8.2% in financial services).

Figure 7. Medium-to-high tech sectors have grown strongly and promoted productivity growth



1. Low tech sectors comprise manufacturing of tobacco products, textiles, wearing apparel, leather products, wood products, paper products, furniture and others; medium-low tech sectors comprise printing and reproduction of recorded media, manufacture of coke and refined petroleum products, rubber and plastic products, other non-metallic mineral products, basic metals and fabricated metal products, except machinery and equipment; medium-high tech sectors comprise manufacturing of chemical products, machinery and equipment, electrical equipment, motor vehicles and other transport equipment.

Source: OECD calculations based on Turkish Statistical Institute data; OECD, OECD Economic Outlook database; Undersecretariat of Treasury.

These structural changes have been accelerated by FDI inflows. A record was attained in 2006, when they totalled $20.2 billion, concentrated mostly in the Istanbul area and mostly in financial services, transport and communications. The Marmara region was already the main magnet of FDI inflows to Turkey before the 2000s, receiving about 80% of the national total between 1980 and 2000. FDI inflows have picked up again after the global crisis (Box 3).

The development of high-productivity activities rests on sufficient availability of human capital and high-quality regulatory and physical infrastructures. Medium-to-high-tech sectors in Turkey compete with more advanced OECD countries which are better-equipped than Turkey in these areas. Further promoting structural change therefore requires additional efforts to strengthen the human capital base, to align key regulations with international best practice and to develop better physical infrastructure.

Box 3. The recent acceleration of FDI inflows in the Istanbul region

According to the Istanbul Chamber of Commerce, FDI in the city jumped by 110% in 2011. The reported number of newly-established FDI firms rose from 3 000 in 2010 to 4 700 in 2011.* Banking, insurance, transportation and advanced manufacturing in electronics and chemicals were the main invested sectors. The principal source countries were Germany, France, the United Kingdom and Iran. Numerous new entries into banking and finance appear in line with the authorities' ambition to develop Istanbul as a financial centre.

Global firms have also expanded their activities in Istanbul with a broader regional perspective. They aim at servicing both the Turkish domestic market and markets in Eurasia and Africa. For example, Microsoft's Middle East and Africa office in Istanbul is the software company's centre for operations in 79 countries. Intel manages its operations in 64 countries from Istanbul and Coca Cola its operations in about 90 countries. The transformation of Istanbul into a multinational enterprise hub has been an important facet of the development of Turkey's service economy.

* Octagonanews website 27.02.2012.

Improving education and human capital

Upgrading education is key for strengthening long-run growth, as highlighted in the special chapter on education in the 2006 *OECD Economic Survey of Turkey*. Turkey still has the human capital characteristic of a developing country. In 2009, 69% of the adult population had less than upper secondary education (80% in the 55-64 age cohort and 60% in the 25-34 age cohort), against an OECD average of 27%. Only 13% of the adult population had tertiary education (10% in the 55-64 age cohort and 18% in the 25-34 age cohort), against an OECD average of 30%. The average expected time in education had reached 13.7 years for boys and 12.9 years for girls in 2009, against OECD averages of 17 and 18. In addition, the proportion of science, engineering and technical students at both tertiary and vocational secondary levels is comparatively low.

Since the late 1990s, stepped-up policy efforts helped extend the length of compulsory education and increase school enrolment rates. Compulsory primary education was extended from five to eight years, and enrolment rates in compulsory education rose from 85% in 1997 to 99% in 2011 – close to the goal of 100% by the early 2010s. Pre-school enrolment also increased, with transition to free pre-school education at age 5 in pilot provinces. Extending pre-school education is essential because it reduces the influence of socio-economic background on educational achievement. Net enrolment rates in secondary education increased from 38% in 1997 to 67% in 2011. These policy efforts facilitated labour market participation for both genders across regions and socio-economic groups.

As a result of resource constraints,[17] but also because of complex pedagogical and school organisation challenges in a socio-economically, culturally and regionally very heterogeneous country, the average quality of education has remained rather unsatisfactory to date. Turkey's performance in OECD-PISA tests of academic proficiency of 15-year-old students has improved over time but remains very low on average.

17. The surge in enrolment rates is a fiscal challenge. There were 3.8 million students in secondary education in 2009 against 2.3 million in 2000, and 1.8 million students in tertiary education up from 1 million. Meanwhile, the number of pupils in pre-school education increased from 212 000 to 804 000. Public education expenditures increased steadily during the same period, but public spending per student did not increase and remains one of the lowest in the OECD, even in PPP (purchasing power parity) terms.

Substantial differences across regions and socio-economic groups persist.[18] At the same time, a small proportion of high-quality education institutions succeed in equipping a small portion of students with very strong skills, meeting international standards. Turkey's challenge is to combine extended schooling with quality convergence.

A particularly weak point to date has been the unsatisfactory quality of vocational education. About 84% of primary education graduates start secondary education, but drop-out rates are high, especially from vocational education. Only about half of the 15-19 age cohort remains in school.[19] It has been argued that this is because upper secondary education as such does not provide skills that are valued in the labour market (Education Reform Initiative, 2009). Even if certain vocational streams are more successful than in the past, notably vocational schools for tourism and health care and the technical high schools established in organised industrial zones, there is ample room for progress. Turkey took new initiatives in this area. In 2009 a new Vocational and Technical Education Strategy was adopted in co-operation with the EU's SVET (Strengthening Vocational Education and Training) programme. In 2010 a strategy and action plan for "Strengthening the Relationship Between Employment and Training" were adopted to upgrade technical and vocational education's capacity to meet labor market needs. Besides, it was noted that the knowledge of English remains too limited and should be strengthened, given the needs of a globalising economy (Koru and Äkesson, 2011).

More decentralisation and competition in the provision of education services could contribute to strengthening the system, as evidenced by the successful growth of private foundation universities. Private schools (authorised and under the supervision of the Ministry of Education) have grown in the 2000s at pre-school, primary and secondary levels. As of today 10% of university students and 3% of students in lower levels are in private institutions, and the government expects the latter to reach 5% in 2015 (Forbes, 2012). While a welcome source of pedagogical innovation and quality competition, it is important that this development does not amplify socio-economic inequalities in education. Scholarships and other measures to mitigate socio-economic segregation in education would help.

Turkey's education policy efforts are now developing in two directions, which may be potentially conflicting in terms of resource allocation and policy priority:

- As emphasised in the Ministry of Education's 2010-14 Strategic Plan (Government of Turkey, 2009), raising and rebalancing quality throughout the education system is the priority for the 2010s, following the focus on quantitative targets in the 2000s. The Ministry plans notably to draw more massively on information technologies to support teaching practices in classrooms.[20] OECD experience suggests that efficiency gains are achievable, notably by improving the

18. In the 2009 PISA tests, 60% of 15-year-old Turkish students could not solve simple mathematical problems. Socio-economic determinants weighed on outcomes: the average reading score of the children of the top income quintile families reached 514, while that of children of lowest quintile families was 421. Some 64% of children from the first group were attending the higher-quality schools, while this was the case of only 7% of children from the lowest quintile (Education Reform Initiative, 2011).

19. Among the 6.3 million individuals in the 15-19 age cohort in 2009, 2 million were neither in school nor in employment. Turkey's NEER (neither in education nor in employment) rate, at 32%, is still the highest in OECD, against an average of 11% for the other countries. This cohort will stay in working age until 2060.

20. The FATIH project (the "Movement of Increasing Opportunities and Technology" in the school system) was designed for this purpose by the Ministry of National Education, supported by the Ministry of Transport, Maritime Affairs and Communications. The aim is "to enable all teachers in primary and secondary schools to instantly access any document on the web that they may need for their class, project the documents on an interactive smart board (in replacement of traditional black boards), and enable students to use tablet PCs in order to provide an integrated interactive education environment".

autonomy and accountability of schools and universities. Despite some steps towards regional decentralisation within the Ministry of Education, the autonomy of education institutions at all levels is still very limited. Public universities remain under tight central control, in contrast to private foundation universities which have successfully piloted pedagogical and curricula innovations.

- At the same time, a new law adopted in April 2012 by Parliament extends the length of compulsory education. By putting the minimum length of education at 12 years, the Law provides Turkey with one of the longest durations of compulsory education in the OECD. This is planned to be divided into three periods of four years. At the end of the first four years, at age 10, access will be given to religious vocational education. For the other vocational streams, branching will start at age 15 (10th grade). The authorities acknowledge that shifting to 12 years of compulsory education will raise a range of practical and fiscal challenges.

The importance of lifelong education

Education policies can enhance Turkey's human capital endowment only gradually, because cohorts above the education age dwarf in number those entering the labour force. Those in need of further training are found in large numbers, even in young age cohorts: in the 25-34 age cohort for example, 39% of men and 58% of women have only primary education or less. Since these individuals will remain in the labour force until 2040-50, upskilling is essential.

A specific but important issue in this regard concerns future labour force exits from agriculture. About 25% of total employment is still in farming, and this population has limited formal skills: 88% of farmers have only primary education, and 15% are illiterate. Given that many of them may leave rural areas and seek employment in cities in the years ahead, upskilling this population to improve employability in urban areas is part of the lifelong education challenge.

New initiatives have been launched in this area. The employment agency Iskur now offers technical courses to the registered unemployed. A new programme called "Specialised Training Centers" (Uzmanlasmis Meslek Edindirme Merkezleri – UMEM) teaches more specialised skills, on the basis of curricula developed in co-operation with employers. These courses, however, are generally attended by the better skilled: workers with primary education or less represented 26% of Iskur and 47% of UMEM course participants in 2010. Furthermore, in line with recommendations in earlier *OECD Economic Surveys*, the government has decided to participate in the OECD's "Skills Strategy", including the Programme of International Assessment of Adult Competencies. This programme will help evaluate, for the first time, the existing skills profile of the working-age population in order to help establish upskilling priorities.

Lifelong learning is crucial for future productivity, employment, and growth performance. The existing human capital stock is not adequate to meet the expanding skill requirements in the labour market: according to a 2009 survey, 16% of FDI firms and 38% of SMEs faced skill bottlenecks in their business development. Upskilling in newly developing regions would, in particular, permit many relatively low-tech industries to access more professional knowledge, improve quality and productivity and thus competitiveness.

Box 4. Recommendations on education policies

Higher-quality education at all levels, including upskilling and lifelong learning, ought to be a top policy priority. This calls for reallocating fiscal resources to this area. Against this background the following priorities stand out:

- Offer effective lifelong education programmes to upgrade the labour market skills for adults whose schooling was inadequate.
- Continue to develop pre-school education, which reduces the influence of the socio-economic background on educational achievement.
- Reduce the large quality gaps among both schools and universities by granting them more autonomy in exchange for more accountability for performance, and by shifting to per student funding with adjustments for socio-economic disadvantages.
- In vocational education, emphasise generic skills. Vocational schools should co-operate with the business sector in developing and teaching their curricula.
- Emphasise the improvement of English education. All secondary and tertiary education graduates should gain a working command of English as a tool to access global knowledge.
- The decision to shift to 12 years of compulsory education should not pre-empt quality improvements in the existing streams of education.

Modernising the regulatory framework for doing business

The growth of modern, high-productivity sectors also calls for a more supportive regulatory framework. Full openness to competition requires free and unconstrained market entry conditions, and opportunities to operate flexible forms of business organisation. Despite the authorities' efforts over the past decade to streamline the regulatory environment for doing business, including through the joint public-private sector Council for the Improvement of the Investment Environment (YOIKK), the regulatory environment continues to have shortcomings. According to the latest available vintage of OECD regulatory indicators, business regulations were still the most restrictive in the OECD in 2008. Progress was made since 2003 but was limited to specific areas, such as streamlining the licensing rules. The degree of administrative control on business activities, the extent of state ownership in industry, and the complexity of regulatory procedures continued to distinguish Turkey from other OECD countries (see Annex 1 in the *Assessment and Recommendations* in OECD (2012d), which summarises Turkey's recent structural and institutional reforms in the areas identified as top priorities in earlier OECD *Economic Surveys* and in *Going for Growth* surveillance).

The update of OECD regulatory indicators in 2013 should help take stock of the extent and success of Turkey's ongoing reform efforts. Partial information on the past five years suggests that Turkey's initiatives, while significant, have fallen short of the bolder reform efforts in several other OECD countries (OECD, 2012a). Turkey appeared in an average position in terms of responsiveness to OECD structural reform recommendations since 2007.[21] It was among the more responsive countries in "labour utilisation enhancing" areas (such as reducing employment costs – owing to temporary measures introduced during the crisis), but among the least responsive in "labour productivity improving" measures (such as product market liberalisation and privatisation reforms). In terms of the broad reform agenda, Turkey progressed

21. A responsiveness score was compiled by estimating whether policy initiatives were taken in the critical areas identified by the OECD in each year or not (OECD, 2012a).

less, according to these indicators, than implied by its relative GDP per capita level and large catch-up potential.

Turkey's comparative position in other international assessments of business environments confirms that the ongoing reform efforts are ambitious, but outcomes have been less conclusive to date than in some other countries (Box 5).

Box 5. Turkey's position in international business environment comparisons

Turkey is 71st among the 183 countries covered in World Bank's 2012 *Doing Business Indicators*. Areas ranking comparatively well include starting new businesses and enforcing contracts. The most significant shortcomings are registered in dealing with construction permits and resolving insolvencies. Urban and real-estate planning appears as an area where the regulatory environment falls particularly short of international best practices. The multiplicity of administrative layers makes the real-estate planning environment particularly opaque and risks creating room for illicit practices.

The World Bank's 2010 *Investment Climate Assessment* report on Turkey showed that a number of important improvements were achieved in the business environment in the second half of the 2000s: *i)* the reduction of the corporate income tax rate from 30% to 20% in 2006; *ii)* the simplification of business start-ups through the reduction of required steps from 13 in 2004 to six in 2009; and *iii)* the emergence of a continuous private-public sector consultation mechanism through the joint Council for the Improvement of Investment Environment (YOIKK). Nonetheless, the report found that "with multiple ministries being in charge of different business areas, responsibilities allocated to institutions are not always linked towards a single regulatory reform strategy. This creates difficulties when it comes to establishing priorities and taking the lead for reform, and often results in overlapping responsibilities within and across levels of government".

Turkey has equally an intermediary position in the World Bank's *International Governance* benchmarking exercise. In the 2000s, Turkey's economic governance improved according to these indicators, with gains in "voice and accountability", "government effectiveness", "rule of law", and "control of corruption". As of 2010 Turkey ranked higher than Mexico, China and India, but was below OECD averages.

Turkey was placed 59th out of 133 countries in the World Economic Forum's 2010-11 *Global Competitiveness Report*, two places above its position in the earlier edition in 2009-10. Relative strengths included the size and growth of the domestic market, the intensity of local competition and infrastructure of reasonable quality (particularly roads and air transport, while ports and energy infrastructure required upgrading). Weaknesses included the functioning of the labour market, the quality of primary, secondary and tertiary education, and the efficiency and transparency of public institutions.

All these indicators are closely correlated, and position Turkey in the upper-middle half of the assessments, with relatively limited gains in the most recent period.

Shortcomings in Turkey's regulatory environment have long been evident in network industries such as energy, telecommunications and transportation. These services play a major role for productivity growth and economy-wide competitiveness (Nicoletti *et al.*, 2010; Arnold *et al.*, 2011). Turkey's shortcomings in these areas may be due to the legacy of state ownership and lack of competition. According to the OECD 2008 product market regulation (PMR) indicators, Turkey had the OECD's most restrictive and competition-unfriendly regulations in railway and road freight transportation, and some of the most restrictive rules in electricity, natural gas and postal services. In contrast, significant reforms were implemented in air transportation, which yielded remarkable benefits (Box 6). Another sector with remaining obstacles to competition is agriculture, as discussed in OECD (2012d).

Box 6. The positive experience of air transportation reforms

The air transport system epitomizes the benefits associated with liberalisation reforms in network sectors (Gönenç and Nicoletti, 2001). Turkey's policymakers pursued an innovative and competitive development of this sector over the past two decades. The business framework has been liberalised with open bilateral air service agreements with other countries (111 of Turkey's 122 bilateral air service agreements are now open to competition between several carriers). New entry by domestic airlines was allowed on several domestic routes. An innovative public-private partnership model was developed to modernise the airports, including for the construction of a major international airport in Istanbul.

Turkish Airlines, the partly privatised national air carrier, was an engine of this change. After the reforms, it expanded strongly its cargo and passenger traffic – the latter by an annual rate of 17% between 2006 and 2011. In 2011, it was servicing 146 international and 41 domestic cities and had become one of the largest airlines in Europe. Other local airlines and air routes have also expanded and average air fares fell. Turkey's domestic air passenger traffic skyrocketed in the last nine years from 9 to 51 million annual passengers, and its international traffic rose from 25 to 52 million.

A new vintage of competition-friendly reforms are now required in the air transportation system, including for more competitive slot allocation in the congested airport hubs, to preserve fully open competition between incumbents and new entrants, and between carriers of various sizes (Competition Policy Authority, 2012).

Box 7. Recommendations on competition and product market reforms

- In network industries with monopolistic elements, especially energy and telecommunications, competitive segments should be fully opened to competition.
- Naturally monopolistic segments should be managed in cost-minimising ways under independent regulatory supervision.
- The comprehensive energy liberalisation plans prepared in the 2000s should be fully implemented.
- Competition conditions across all main sectors of the economy should be scrutinised, especially in the key service industries not exposed to trade competition. The competition authority can play this monitoring role, as with its first report on competition in 2012.

Long-term growth scenarios

To gauge the impact of the policy reforms discussed in this paper on long-term growth, this section presents several growth scenarios based on a new, stylised, cross-country long-term growth model (OECD, 2012c). Starting from a baseline growth projection, which incorporates likely structural policy developments in line with but less far-reaching than the recommendations in this paper affecting labour participation and productivity (see Box 8), the impact of reforms that affect labour force participation and human capital is investigated at the 2030 horizon, which would imply higher growth.

Box 8. Growth model and baseline assumptions

The supply side of the economy consists of a standard Cobb-Douglas production function with constant returns to scale featuring physical capital K_t, human capital per worker h_t, employment L_t, and multi-factor productivity (MFP), A_t, which mainly captures efficiency gains and technological progress:*

$$Y_t = K_t^{\alpha}(A_t h_t L_t)^{1-\alpha} \quad (1)$$

The share of capital α is set equal to one third. Employment is further decomposed into trend over-15-year-old population Pop_t, trend labour force participation rate (for the over 15 year olds) $LFPR_t$, and trend unemployment u_t:

$$L_t = Pop_t \ * LFPR_t * (1 - u_t) \quad (2)$$

To compute trend output growth, the future evolution of each of the components is projected based on a set of baseline assumptions, which incorporate a number of likely policy developments in the areas of education, labour participation and productivity:

- The population projections are from the United Nations Population database. Turkey's population aged 15 and above is projected to grow by 24% between 2012 (55 million) and 2030 (70 million).

- Trend unemployment is assumed to gradually return to pre-crisis levels at a speed that depends on labour market policies and institutions. For Turkey, trend unemployment is projected to stabilise at 9.2% by 2023, as against 9.3% currently.

- Capital intensity (the ratio of productive capital to trend output), is assumed to ultimately stabilise as observed in many developed economies. In Turkey capital intensity has trended upwards in the recent past and this is projected to continue for some time, but, at a diminishing rate. The estimated capital ratio is projected to increase from 1.50 in 2012 to 1.62 in 2030.

- Each country is assumed to converge to its own steady-state level of MFP. This level depends on country-specific factors and product market regulations (PMR) and is assumed to grow at the global rate of technological progress of 1.3% per year observed among advanced economies over 1996-2006. In addition, the speed of convergence from the current MFP level to the steady-state level depends on trade openness. The baseline assumes that countries with strict PMR such as Turkey slowly converge to the level prevailing in the average OECD country in 2011. This implies a higher steady-state MFP level and hence boosts catch-up productivity growth, resulting in MFP growth in Turkey averaging 1.5% per year between 2012 and 2030 in the baseline.

- Labour force participation is projected using a "cohort" approach. This allows combining assumptions about future age-cohort-specific participation behaviour with demographic projections. In the baseline, cohort-specific participation rates are influenced by developments in educational attainment. In particular, improvements in educational attainment are estimated to reduce participation of young cohorts (15-24 years) but to increase them for older cohorts (25-50 years). In addition, recently implemented pension reforms are taken into account via a gradual reduction of the exit rates of older cohorts from the labour force. Under these baseline assumptions, the trend labour force participation rate is projected to increase from the current 49% to 55% by 2030.

- Educational attainment has slowly converged across high- and medium-income countries in the past (Morrison and Murtin, 2012). The baseline therefore assumes that the educational attainment of cohorts aged 25-29 will continue to converge to the world leader (Korea, which itself will continue to expand educational attainment) at the average speed observed across countries over 1960-2005 – equal to 1% per year. It is then assumed that each age-cohort keeps the educational attainment obtained between the ages of 25 and 29 and, combined with demographic projections, the average years of schooling of the population can be computed. For Turkey this implies that the average years of schooling of the adult population will increase from close to 7 in 2012 to about 8.5 in 2030 (see below). The number of years of schooling across the population is then converted into a human capital measure based on estimates of returns to schooling.

The last assumption does not fully reflect the extension of compulsory education to 12 years legislated in April 2012, which will entail an increase in the average duration of schooling by 2030 to about 9½ years (provided that it is implemented for the entire student population already from the school year 2012/13, as stipulated by a May 2012 implementation decree). However, the OECD cross-country model assumes that a year of schooling delivers the same increase in knowledge and skills in all education systems. Since the quality of education in Turkey is still well below the international average, the effects on growth of the increase in average schooling years are likely overestimated in this model. Accordingly, the boost to GDP ascribed in the model's baseline to the assumed improvements in educational attainment may be broadly in line with what can be hoped for from the new Turkish legislation.

The period investigated in the new Long-Term Baseline (LTB) published in the May 2012 *OECD Economic Outlook* (OECD, 2012c) extends to 2050. This longer horizon is mainly chosen to analyse the effects of population ageing on fiscal balances, which is not the focus of this paper. The shorter horizon to 2030 reduces some of the large uncertainties inherent in any long-run growth projection and focuses attention on the likely benefits of reforms within a foreseeable future.

* For details on baseline assumptions, underlying approaches and estimations, as well as data sources see OECD (2012c).

In the baseline, trend GDP is projected to grow on average by 4.4% annually between 2012 and 2030, with some decline over time. The contributions from longer schooling, increased labour market participation and MFP growth to the average annual GDP growth rate amount to 0.5, 0.4 and 1 percentage points, respectively.

The labour force participation rate, while increasing over time in the baseline, will still remain low in Turkey compared to other OECD countries in 2030. Deeper labour market reforms than in the baseline scenario, such as the ones recommended in this paper, could help speed up the convergence to higher participation rates. In a first scenario it is thus assumed that Turkey's ratio of the average years spent in the labour force to life expectancy of currently 34% converges towards the 46% observed in Switzerland, one of the leading countries in terms of aggregate participation, the gap closing by 5% per year. In this scenario aggregate labour force participation would increase to 60% (rather than 55%) by 2030, with significant effects on trend GDP growth. The trend growth rate picks up by 0.6 percentage points on average annually compared to the baseline and the level of trend output would be 10% higher in 2030 (Table 1).

Lifting the average duration of schooling of the adult population to 10 years between 2012 and 2030 (similar to the improvement observed in Korea over the past two decades) would increase average annual trend growth by 0.8 percentage points and the level of potential output by 15% by 2030 relative to the baseline, assuming major quality improvements in the education system, the key strategic priority of Turkey's education policy (Table 1).

Finally, in an "ambitious" structural reform scenario, the effects of the reforms in the labour market and educational reforms are combined. GDP growth would pick up by 1.3 percentage points annually relative to the baseline over 2012-30 and potential output increase by 25% in 2030 (Table 1).

Table 1. Long-term growth scenarios

	Baseline	Labour market scenario	Education scenario	Combined scenario
Average potential GDP growth 2012-30, in per cent	4.4	5.0	5.2	5.7
Difference in level of potential output relative to baseline in 2030, in per cent		10	15	25
Labour force participation rate in 2030, in per cent	55	60	56	61
Average years of schooling of the adult population in 2030	8.5	8.5	10	10
Memorandum items:				
Average MFP growth 2012-30, in per cent	1.5	1.5	1.5	1.5
Average capital stock growth 2012-30, in per cent	4.9	5.2	5.4	5.8
Average population (aged 15 and above) growth 2012-30, in per cent	1.3	1.3	1.3	1.3
Structural level of unemployment in 2030, in per cent	9.2	9.2	9.2	9.2

Source: OECD estimations.

Conclusions

Turkey's structural reform agenda should be sharpened to sustain the two key sources of growth in the future: *i)* broadening employment opportunities, notably for the low-skilled majority of the working age population; and *ii)* sustaining productivity growth, notably by accelerating the shift of resources to higher-productivity activities. This agenda calls for broad-based structural reforms. According to the scenarios presented, such ambitious reforms could boost Turkey's level of output and incomes by as much as 25% relative to a baseline by 2030.

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