

Chapter 5

Structural Transformation and Income Distribution in Turkey*

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5.1. Introduction

The last 17 years have been an exceptional period in the history of Turkey for three reasons. First, a newly founded political party came into power after a snap election in November 2002 and has remained there as a single-party government for more than 17 years. This election also marked both a drastic change in the existing political establishment and a rise of a new one with the leadership of the AK Parti (Justice and Development Party). This political transformation has later become a reason for many to appeal for public confidence in the Turkish economy. Second, changes in the political front were accompanied by an expansionist financial policy in the world economy, and the Turkish economy was eventually exposed to a massive amount of capital inflows, which were used to expand the volume of domestic credit allowing for a consumption boom.

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Third, this new political era witnessed a relatively successful economic performance, especially in the period between 2003 and 2007, by enhancing positive public perception about this new political establishment led by the AK Parti.

AK Parti had come into power in the aftermath of the worst economic crisis of the Turkish economic history. In response, distinguished economic performance in the early years in power paved the way for rising public support for the AK Parti, and this helped them consolidate the right-wing public support from the Turkish political spectrum around themselves. AK Parti has gradually become the only representative of the right-wing political discourse in the 2000s by eliminating the rivalry of other right-wing parties.¹

The new political climate has widely been perceived as a sign of confidence in the Turkish economy by domestic and international investors. Infrastructural investment and a consumption boom, along with overvaluation of domestic currency and massive credit expansions, all served as the instruments for increasing the well-being of households, particularly of middle- and low-income families, and kept the public support high and the trust of voters on various AK Parti governments alive.

The political transformation has also been accompanied by a structural transformation in the economy. This structural transformation, beginning right after completing capital accounts' liberalization as a distinctive institutional change in the 1990s, has not been pertaining only to Turkey. A similar transformation has been observed in other developing countries, indicating that what happened in the economies of developing countries is indeed a systematic event widely occurring in response to changes in today's world economy.

This transformation process is, in fact, a continuous process, and it would not be an exaggeration to suggest that the major transformation of the Turkish economy started *far before* 2003. The origin of the transformation observed in Turkey can be traced back to those years when the Turkish economy began to become a part of the world economy in the 1980s.² With the help of various structural reforms undertaken during

¹ See Chapter 1 by Pamuk and Chapter 2 by Acemoğlu and Üçer.

² See Chapter 1 by Pamuk.

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the 1990s, the Turkish economy was transformed from a relatively state-oriented, interventionist economic structure, into a more market-oriented one. The new institutional framework was enhanced with the economic reforms in 2001, and the economic growth policies implemented by various AK Parti governments and the financial stance prevailing in the world economy in the 2000s took place within this framework.

The structure of the Turkish economy has begun to change after 2003, *partly* due to deteriorations in relative prices between tradable and non-tradable goods and *partly* because of a change in sectoral preferences of the government in favor of non-tradable economic activities such as *construction, trade, and banking*. They have eventually become the main motive of the economic growth models during the AK Parti period. This sectoral choice can be considered an obligation of a new political establishment, which is eager to expand its public approval by providing high, as well as inclusive, economic growth to the wide layers of Turkish society. This was indeed an exceptional task, and its accomplishment was used to rely both on the availability of financial resources, and its distribution to particular economic and social groups through the most appropriate channels (such as the market) to remain in power as long as possible. De-industrialization, which can be described by an increase in the share of non-tradable economic activities in employment and total value added manufacturing, has come out *unintentionally* as an economic *outcome* of this task of the economic growth model, and it has become its distinguishing feature of this period.

The concern about de-industrialization is not new, and there have been various attempts to explain this, particularly in the process of development. The first attempt goes back to Kaldor's explanation of structural development during the development process. In his seminal contributions, Kaldor's underlying argument is the faster the rate of growth of manufacturing in the economy, the faster will be its growth of GDP (Kaldor, 1966 and 1967). Therefore, industrialization is the engine of economic growth and faster growth. It has been seen that today's advanced countries have experienced industrialization as well as de-industrialization process as in the theoretical expectation postulated by Kaldor. However, many economies of developing countries today have been de-industrialized without completing industrialization properly. This

de-industrialization has been called “premature” mainly because it has started before industrialization was completed (in other words, marginal factor productivity began to fall) (Dasgupta and Singh, 2006; Rodrik, 2016).

The economic literature has put forward various causes of de-industrialization (Rowthorn and Ramaswamy, 1997), but some are worth noting in the case of Turkey. A new institutional structure (or globalization) allowing for free trade and capital flows, economic populism that is desperately required by the new political establishment to make itself be accepted largely by the Turkish society, favorable financial conditions available in international financial markets, and change in the relative prices in favor of non-tradable economic activities, can be accounted for the shift in scarce economic resources toward non-tradable sectors in Turkey.

Turkey is one of the countries in Organisation for Economic Cooperation and Development (OECD) having the worst income distribution (OECD, 2016). The purpose of this chapter is to first establish a new channel of interaction between de-industrialization and different income entities available in the economy, and then to examine the effects of de-industrialization on income distribution by using this channel of interaction. For this purpose, we reveal the presence of de-industrialization, and then examine both likely motives behind de-industrialization and its interaction with the new economic discourse politically set by AK Parti after 2003.

The chapter consists of seven sections, and its organization is as follows. The first section is to examine the political motives of the existing political establishment encouraging structural transformation moving away from the manufacturing industry. The second section exhibits some empirical observation on the state of the financial situation in the 2000s, abetting structural transformation. High economic growth rates, regarded as an indication of economic (as well as political) success in the 2000s, aim to accelerate structural transformation with the expectation of mobilizing low-income households upward, and the government was able to accomplish this aim by prioritizing some sectors in resource allocation. The third section draws attention to the high economic growth rate episodes in the last 17 years from a comparative perspective. De-industrialization

in the 2000s with several well-known indicators of structural transformation is analyzed in the fourth section.

Unlike the well-known definition in the literature, de-industrialization in this chapter is defined as the share of the “non-tradable” sector in GDP and employment. In this chapter, we imagine an economy divided into three sub-sectors, namely tradable (mainly representing manufacturing), non-tradable (services and other sectors operating only domestically and having the low capability of generating income in foreign currencies), and finally agricultural (which has been the traditional sector in Turkey). The effects of international trade as a cause of de-industrialization, together with domestic demand and changes in productivity, are empirically examined in the fifth section. The relationship between structural transformation and income distribution is studied in the sixth section. Finally, the last section is devoted to some concluding remarks.

5.2. Economic Populism and Structural Transformation

This section examines the political motives behind the structural transformation, and the populist economic discourse as the ground for economic practices undertaken by various AK Parti governments is put forward as the cause of de-industrialization. The reason why we emphasize the link between economic populism and de-industrialization is that the importance of non-tradable expenditure as the most distinctive instrument of populist economic discourse has largely been missed from attention in the literature. However, the recent rise in political debate on populism in both advanced and developing countries has required establishing a likely link between populism and de-industrialization. In practice, economic populism has gained its importance in today’s political debates as long as the populist political practices improved the well-being of people in need. People, extremely exhausted by the results of neoliberalism in economics, have unfortunately been left without any option other than following up on the populist discourse of today.

Economic populism has recently been the mainstream discourse in economic policy debates in Turkey and the world. This can be seen as a

reaction of policymakers in the developing and even in the advanced countries to neoliberal economic policies and their economic consequences. Populism has different dimensions, and economic policies are one of the concerns of the populist discourse (Eatwell and Goodwin, 2018; Muller, 2016). Remaining within the boundary of national economies, economic populism can be considered as the implementation of economic policies that put emphasis overwhelmingly on economic growth and income distribution without considering the risk of inflation and internal and external financial constraints (Dornbusch and Edwards, 1990). Economic growth, particularly high growth, becomes the “ambition of policymakers” at any expense.

Populism in an economic sense goes back to economic policy practices of Latin American countries and even of Turkey in the 1960s and the 1970s. This version of economic populism targeted mostly the well-being of poor and low-income households. Industrialization and import substitution, practiced in a rather different institutional framework from today, was widely regarded as the engine of economic growth irrespective of its inclusiveness. The transformation of national economies from agriculture to manufacturing had mobilized the population from rural to urban areas and had constituted the cause of inequality and poverty. Populism rose in response to these defects of industrialization at the early stage of development and targeted mainly generating benefits for the poor without taking into account the constraints of any economic practice. The populist discourse in the 1960s and the 1970s was in favor of a solution to the inequality and poverty issues by going further into industrialization and creating employment in manufacturing. The new populist practice today was however practiced in an open environment with a relatively developed institutional structure under the pressure of international competition, and inevitably was ended up with de-industrialization. Therefore, economic populist practices in two different institutional frameworks have generated two different results in the structural transformation of the Turkish economy.

Despite the aims of economic populism, the results were not as expected and economic populism usually ended up with high inflation — in some cases hyperinflation, high debt stock as in the Latin American countries, and low economic growth in the 1970s, and left these countries

to deal with various economic imbalances. Most importantly, these results constituted an excuse for worldwide acceptance of the adaptation of the neoliberal economic policies to cope with these imbalances.

After over 30 years of experience, neoliberal policies globalized the world economy at an unprecedented level and helped many developing countries to deal with economic imbalances in the short run and catch sustainable growth rates for a while. Nevertheless, the achievement of the economic growth sphere has not been sustainable and sufficiently inclusive, and inequalities in developing countries like Turkey and countries in Latin America remained as important as before.³ Most importantly, improvements in income distribution and poverty have become extremely dependent on high economic growth; the higher the economic growth, the better the income distribution (Bayar and Günçavdi, 2020). Economic populism today emphasizes the policies that encourage economic activities generating high economic growth without being under the pressure of international competition. This partly is the reason why new populism paves the way for non-tradable economic activities. The rise of non-tradable economic activities in value added manufacturing and employment together with an increase in non-tradable income entities become an instrument of populist economic practices.

5.3. Financial Environment and a Fall in the Cost of Economic Growth

Turkey in the 2000s was exposed to large capital inflows, and it experienced almost all symptoms of a Dutch Disease problem, such as overvaluation of the domestic currency, a consumption boom, and deterioration of relative prices between tradable and non-tradable goods due to an unavoidable increase in non-tradable prices. This is, though, not a typical Dutch Disease phenomenon as it happens in a natural resource-abundant developing country as being exposed to large foreign exchange earnings in the event of a commodity boom (Cohen and Neary, 1982). Even though countries like Turkey are not resource rich, they attracted a large amount

³See Chapter 2 by Acemoğlu and Üçer; Acemoğlu and Robinson, 2012.

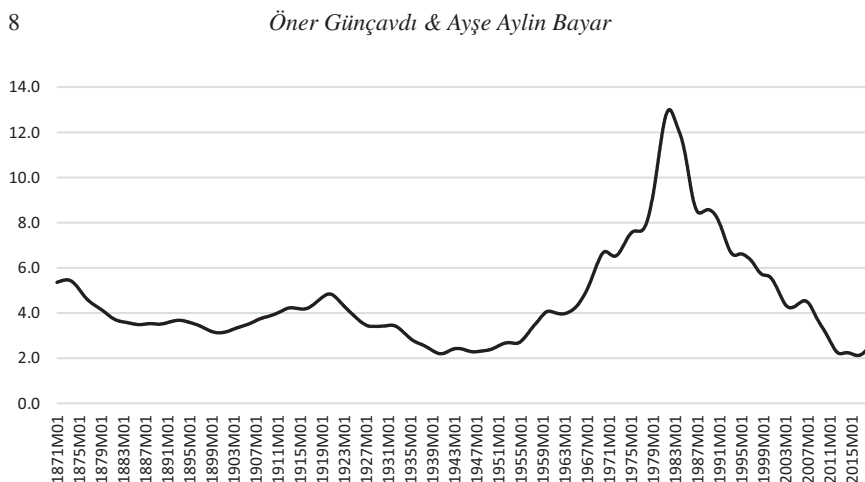


Figure 5.1. The US monthly 10-year treasury bond rates — Trend values

Source: The raw data were obtained from the *Federal Reserve Economic Data* (FRED), source <https://fred.stlouisfed.org/series/T10Y2Y#0>.

of capital after 2002 due to changes in the institutional structure allowing for capital inflows and the availability of easy borrowing opportunities at low costs in the world financial market (see Palma, 2014).

Exceptionally low-interest rates in the world financial market was another determinant of the dynamics of this situation. Figure 5.1 illustrates a secular decline in the trend value of the 10 years T-bill of the US Treasury. The trend values of monthly interest rates of the US treasury bills were calculated by the Hodrick–Prescott Filtering method. It is evident from Figure 5.1 that today’s trend value of the US 10-year Treasury bond seems to have reached the level that is observed after WW II.

Turkey benefited from the financial bonanza with the institutional framework allowing her easily to access international finance. Figure 5.2 shows the extent of the capital flows between 2003 and 2019 as a difference in capital account deficits from the amounts in the finance account. The monthly data were taken from the Central Bank data distribution system and the data that correspond to the value each month are 12-month moving cumulative amounts. Positive values in Figure 5.2 indicate the excess amount of finance over current account deficits, whereas negative ones imply the lack of finance. It is clear from Figure 5.2 that despite the presence of a short period during the sub-prime crisis and many months

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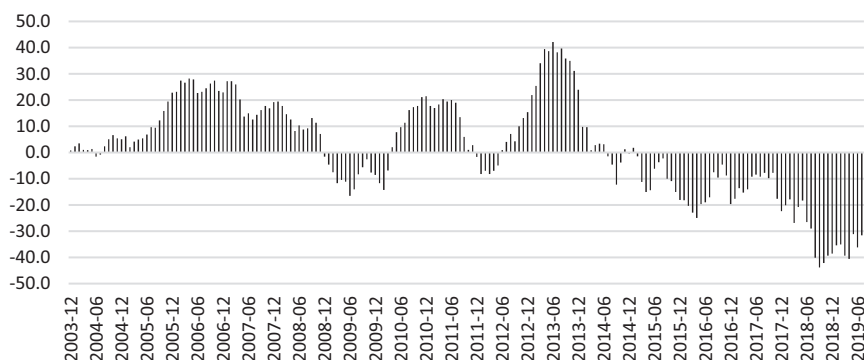


Figure 5.2. Difference between current account deficits and finance account (billion \$)

Source: TCMB (Central Bank of Turkey). <https://evds2.tcmb.gov.tr/index.php?evds/serieMarket>.

in the 2011–2012 period, Turkey achieves to attract more capital than the amount that the economy requires to finance capital account deficits. However, this turned in the opposite direction after 2013, and Turkey began to lack a sufficient amount of capital inflows to finance capital account deficits.

Financial liberalization and intense efforts for globalization after the 1980s gradually increased the availability of finance and led to a decrease in the cost of borrowing. An expansionist monetary policy after the sub-prime mortgage crisis also contributed to a rise in international liquidity and provided an appropriate financial environment for economic growth for developing countries.

For many developing countries like Turkey, this low-interest rate era has also been the high economic growth period. It was easier than before to find a resource to finance expenditure requiring generating high economic growth. However, the presence of severe international competition on foreign trade has been the main obstacle for some countries in this highly globalized world, and it became difficult to have high economic growth rates through tradable economic activities. Instead, non-tradable economic activities have become the new engine of economic growth due to the absence of international competition on non-tradable activities. This has been one of the reasons for some countries de-industrializing in this low-interest rate era.

5.4. The Episodes of High Economic Growth After 2002

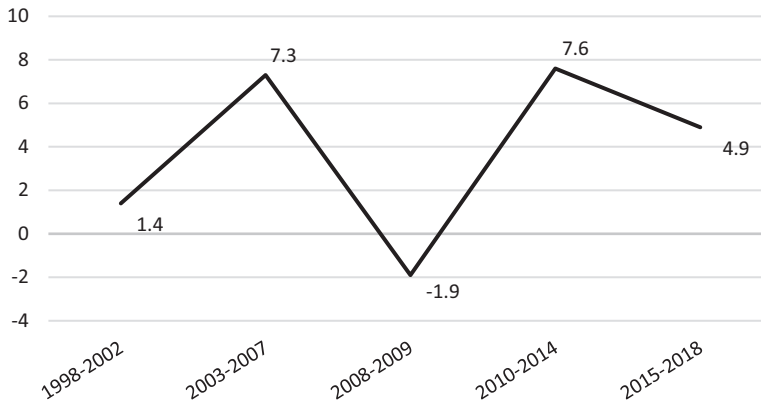
Since attaining high economic growth is seen as an indication of macro-economic success, the government put extra efforts into pursuing exceptionally high rates. Moreover, high economic growth is also regarded as an instrument of populist economic practices, and a relatively new political establishment, requiring extensive public approval, and seeks a way of generating economic benefits for those who support this establishment. This can be done only through high economic growth, particularly without disturbing the already existing benefits in society. However, today's public policymakers are restricted to accomplish this high economic growth target. Highly liberalized trade regimes and increased pressure of international competition, unfortunately, leave little room for maneuvering for policymakers. They seem, to some extent, to have lost their control on the one side of the entire economy (namely tradable one) due to globalization, and become dependent on the non-tradable economic activities to generate economic growth that is in their control.

Economic populism emerges as the government loses its appetite for structural reforms and desperately needs economic growth to sustain high public approval, while at the same time it remains dependent increasingly on non-tradable economic activities without taking care of any cost of this dependency. However, this type of economic growth inevitably appears in the short term, and it is difficult to sustain in the long term unless the availability of finance continues.

This is particularly crucial for a country like Turkey, which has historically been suffering from the shortage of domestic savings. Turkish economic growth rates historically show high variations dependent on the availability of resources that are required to finance economic growth. This is also true for the economic growth episodes after 2002. In this regard, the economic growth performance of the Turkish economy shows mixed narrative after 2002. The early years of the 2000s emerged as a reform period, as the first AK Parti government was acting as a reformist government by accomplishing various political and economic reforms.

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**Figure 5.3.** Average growth rates (%)

Source: TurkStat. <http://www.tuik.gov.tr/UstMenu.do?metod=istgosterge>.

Sound macroeconomic management was astonishingly successful and inflation, interest rates, and foreign exchange rates were low enough as a sign of this good macroeconomic management. As a result, economic growth was exceptionally high, most importantly this growth was inclusive and paved the way for an improvement in income distribution (Bayar and Günçavdi, 2020).

The average growth rate of the Turkish economy after 2001 can be seen in Figure 5.3. There are five different economic growth eras in Figure 5.3. The 1998–2002 period is the pre-AK Parti period describing the condition that brought the AK Parti into power. The striking feature of this period is the institutional framework, which had been started to bring about change after 1990. Among others, capital account liberalization and easy access to international capital can be considered as two of these institutional changes. Rapid institutional changes, particularly after the 1990s, and the inability of the Turkish policymakers to adapt themselves to the requirements of this new institutional framework can be attributed for this low growth performance in this period.

The entire period between 2003 and 2018 can broadly be divided into four distinct periods in terms of the sources of economic growth (see Figure 5.3). Among them, two of them (namely the 2003–2007 and the

2010–2014 periods) draw attention with their high economic growth rates. This distinction, according to ruling the political party, is important, for those who define the AK Parti era as distinct and different from the earlier periods of Turkey. They even define the period after 2003 as “New” Turkey, based on the so-called “exceptional” economic growth performance. They distinguish this performance as a proof of good governance of a strong-single party government. This is indeed a period, in which the Turkish economy experienced significant productivity gains due to accelerated capital accumulation and improved efficiency in the use of economic resources.⁴

The second period is another high economic growth period corresponding to two crucial elections during the AK Parti ruling. In the local election in 2009, AK Parti had performed rather badly and its public support had declined to 38% due to over a 4% contraction in the economy. The government ended its reform program, and indulged in seeking a possible easy, less costly (at least in the short run) and quick way of generating economic growth. Realizing the importance of high economic growth for drawing high public support in forthcoming elections in 2010 and 2011, the government of the time increased public expenditure and encouraged expansion in the volume of domestic credit. Changes in relative prices, rather in favor of non-tradable goods (including domestic trade and construction) helped the economy generate non-tradable demand-driven economic growth in this period. Construction, trade, banking, and other services came forward as leading economic activities driving economic growth in this period. Large capital inflows were available for the use of the government of the time, allowing for a consumption boom in the economy. Capital account deficits in the tradable goods side of the economy appeared as a result of this consumption boom, whereas increases in non-tradable prices caused rigidities in the overall prices level to not fall to the level targeted by the Central Bank. Therefore, high economic growth rates in this period were obtained at the expense of high current account deficits and sustained a high price level in non-tradable goods.

Respectively, AK Parti government’s coming into power after the 2003–2007 period changed its priorities in the macroeconomy, and

⁴See Chapter 2 by Acemoğlu and Üçer; Chapter 3 by Atiyas and Bakış.

became inclined to “mega” infrastructural projects — such as the *Third Bosphorus Bridge*, the *Third Istanbul Airport*, and *The Bridge* connecting the two sides of Marmara Sea at Yalova and the Bridge over the Dardanelles Strait — in order to appeal for the public’s electoral support.⁵ It is important to note that all these “mega” projects are non-tradable, and they can be considered as an indication of the sectoral sources of economic growth on which the Turkish government has recently relied.

The demand components of economic growth provide important information on the common features of high economic growth episodes in the AK Parti period. Figure 5.4 was drawn to see the relative importance of each demand component in economic growth. Leaving two exceptional years 2001 and 2002 aside, the first episodes between 2003 and 2007 seem to have witnessed relatively high growth rates of investment and imports. This observation is also true for the second growth episode. Hence, these common features of high economic growth episodes imply that fixed capital accumulation and

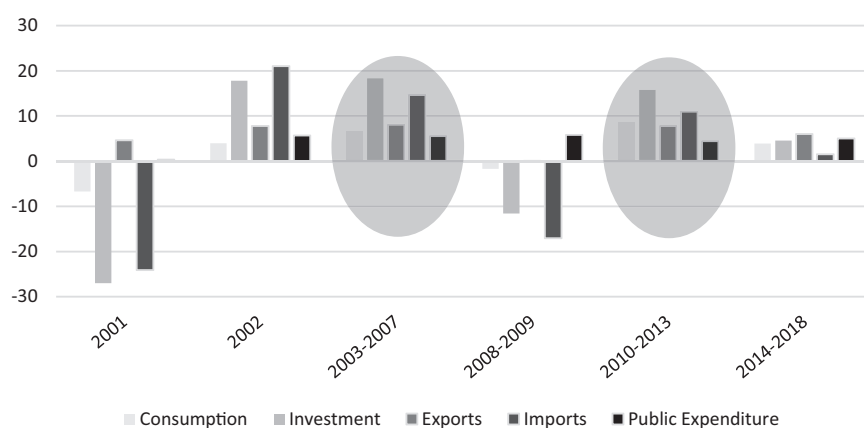


Figure 5.4. Growth rates of expenditure components

Source: TCMB. <https://evds2.tcmb.gov.tr/index.php?evds/serieMarket>.

⁵The government was proposing to build a water-crossing channel from the Black Sea to the Marmara Sea as an alternative passage to Bosphorus. Although the project attracted huge public attention, it has been postponed now due to its huge financial cost and change in the financial stance of the Turkish economy in the international markets.

importations have been an essential condition for the high economic growth in Turkey.⁶

5.5. Structural Transformation

The route of development is theoretically expected to take place as a shift from agriculture to manufacturing. This expectation is mainly based on Kaldor's empirical observations from several advanced countries, and, according to him, the manufacturing sector is the engine of economic growth at the early stage of this route (Kaldor, 1966). However, the recent trend that we observe from developing countries challenges Kaldor's view. Among others, this Kaldorian view becomes important for a country like Turkey for two reasons. First, agricultural economic activities have been dominating the entire economy, and the agriculture sector has consequently been facing various difficulties to absorb the excess population growth due to a fall in employment. Eventually, declines in mean income in agriculture and, in some cases, a concentration of land ownership by a limited number of "elite" people deteriorate income distribution and even make it difficult for people to stay in the agricultural sector.

Second, the manufacturing sector can be regarded as the sector compensating for the falling employment in agriculture and becomes an alternative sector employing relatively more labor force (particularly unskilled ones) than the agriculture sector. The high productivity in manufacturing hypothetically speeds up overall economic growth and helps a developing country to catch up with the advanced countries relatively fast. Therefore, industrialization, which is taken as a shift of labor force from the traditional sector to manufacturing, has been seen as the condition for development, and developing countries have invested a lot to establish a production capacity in manufacturing.

⁶Günçavdı and Ülengin (2018), using a CES form for aggregate investment, empirically examined the reason behind high investment demand in these growth periods. According to their empirical finding, the rate of substitution between tradable and non-tradable components of investment was very low, and this means that its non-tradable component was required for its promised capital gains accruing as a consequence of high economic growth and domestic demand for non-tradable goods.

However, a recent trend among developing countries has become different from this in a way that labor force in traditional sectors like agriculture shift more to services (or non-tradable) instead of manufacturing as expected by Kaldor. Several interesting observations appear from the recent experiences of transforming developing countries, and this raises our concern about the nature of today's development pattern of least developed countries. Among others, some are noted as follows:

- A secular fall in the shares of manufacturing value added and employment in total. More importantly, these declines occurred at a relatively lower level of per capita income that has been for today's advanced countries in the past.
- The expected sectoral shift from agriculture takes place in some developing countries to service sectors, not to manufacturing.
- Sectoral shifts in some developing countries associated with deteriorations in income inequality. Especially in the case of shifting from an industry with having better income distribution toward a sector with high within-group inequality, the structural transformation might have changed to deteriorate overall income distribution.

It is an empirical question to examine to what extent this postulated outcome of structural transformation appears in a particular case. As countries develop, the importance of manufacturing reduces, and the workforce eventually moves from manufacturing to services. This route of development is called "de-industrialization" and it has been the route that today's advanced countries followed in the past. Basing on detailed cross-country empirical observations, Castillo and Neto (2016) postulate that today's advanced countries started this transformation when they reached \$15,000–20,000 per capita income. This structural shift from manufacturing to services has been considered as a sign of development for many years.

However, today's developing countries appear to have entered this route of development a little bit earlier than the advanced countries did in the past (Rowthorn, 1997; Castillo and Neto, 2016). Empirical observation pointed out that developing countries started to move out of manufacturing to services before the per capita income level reach \$15,000–20,000 without

1 completing the industrialization in manufacturing. Moreover, the workforce
2 in agriculture today usually skip over the manufacturing sector but instead
3 move directly to services. In some developing countries, this transformation
4 has taken place when the per capita income was somewhere between
5 \$3,000 and \$4,000. Since manufacturing is not sufficiently matured, this
6 structural transformation is called premature de-industrialization (see
7 Dasgupta and Singh, 2006; Rodrik, 2016).

8 Table 5.1 reports the differences between overall economic growth
9 and growth rates of manufacturing value added for different areas of the
10 world. The primary reason for this international comparison is to examine
1 the impacts of different industrialization practices. For example, East
2 Asian countries in Table 5.1 include newly industrialized countries, and
3 some are success stories of the past in industrialization, such as South
4 Korea, Thailand, and China. Latin American countries in the same table
5 are also well known for their unsuccessful industrialization practices and
6 economic crises that they have occasionally confronted in search of ambi-
7 tiously high economic growth rates. Sub-Saharan countries, such as
8 Nigeria, South Africa, and Kenya, are underdeveloped but all are in an
9 attempt of industrialization today.

20 The period of Table 5.1 is sufficiently long to assess the consequences
1 of such structural transformation, which takes time to occur. The first
2 period, spanning from 1970 to 1980, is the period of import substitution
3 under the controlled foreign trade regime. This is also the period when
4 industrialization and capital accumulation in manufacturing speeded up.
5 The second period in Table 5.1 witnessed various liberalization efforts in
6 foreign trade regimes and financial markets. The import-substitution-
7 industrialization strategy abounded, and re-organization of the existing
8 capital stock according to the competitive power of the country in interna-
9 tional markets, instead of creating new capital stock, was gained priority
30 in this period. In the 1990s, capital controlled on external accounts was
1 removed in many developing countries and access to international finance
2 through external borrowing become easier than before. A fall in the cost
3 of borrowing and increases in the availability of external finance in the
4 world market enables many developing countries (which were named as
5 emerging market economies afterward) to grow their economies at higher
6 rates than before. However, all these favorable conditions inevitable

Table 5.1. De-industrialization in some selected developing countries

	Differences between the entire economic growth rate and manufacturing growth rate (%)			
	1970–1980	1980–1993	1993–2003	2004–2017
ASIA				
China	5.3	1.5	1.9	—
India	1.2	1.1	0.8	0.8
Indonesia	6.8	6.0	1.7	–0.9
South Korea	7.6	3.2	1.7	1.6
Malaysia	3.8	4.1	1.4	–0.6
Pakistan	0.5	1.3	0.9	1.1
Philippine	0.1	–0.6	–0.3	–0.1
Sri Lanka	–2.2	2.7	1.1	–0.2
Thailand	3.4	2.6	2.1	–0.4
LATIN AMERICA				
Argentina	–1.2	–0.4	–1.2	–0.6
Bolivia	1.5	—	–0.1	–0.1
Brazil	0.9	–1.9	–0.3	–1.9
Chile	–2.6	–0.7	–1.6	–1.9
Colombia	0.4	–0.2	–4.3	–1.7
Equator	1.0	–2.1	–0.6	–1.0
Mexico	0.7	0.5	0.1	–0.5
Peru	—	—	–0.6	–1.4
Venezuela	2.2	–0.8	–1.1	–2.5*
SUB-SAHARA AFRICA				
Nigeria		–3.5	–6.5	–1.4
South Africa	1.8	–0.5	–0.4	–1.0
Kenya	3.7	0.9	–1.1	–1.6
TURKEY	1.3	1.5	0.8	–1.2

*The data for Venezuela is available only for 11 years between 2004 and 2014 in World Bank's World Development Indicators. Unlike other countries, the differences in growth rates are calculated for the 2004–2014 period, not the 2004–2017 period.

Source: The data for Asia and Latin American countries between 1970 and 2003 are borrowed from Dasgupta and Singh (2006); the remaining data for 2004–2017 are compiled from *World Bank World Development Indicators* by the author. The data for Sub-Sahara Africa was also obtained from *World Bank World Development Indicators*. The data for Turkey, on the other hand, is from *Economic and Social Indicators* 2017.

AQ: Please confirm
that you mean
"World"

1 hindered industrialization in some of these countries. And, the last period
2 is the financialization of the world economy. Low-interest rates and an
3 abundant amount of international borrowing capacity become an engine
4 for economic growth in many developing countries.

5 Table 5.1 illustrates the differences between the rate of output growth
6 in manufacturing and the entire economic growth rate. A negative net
7 growth rate in the table indicates that manufacturing grows slower than
8 the overall economy, and *vice versa*. In the first column of Table 5.1 net
9 economic growth rates come up with positive signs, implying that the
10 manufacturing sector was the engine of economic growth with higher
1 growth rates than other sectors in the economy. This expected result was
2 due to import substitution strategy and capital accumulation in manufac-
3 turing at any expense in the 1970–1980 period. However, in the second
4 period between 1980 and 1990, developing countries began to differ in
5 terms of net economic growth rates. The majority of South Asian coun-
6 tries exhibit positive net economic growth rates whereas almost all Latin
7 American countries appear to have had negative growth rates. This is
8 indeed a clear indication that South Asian countries continued industrial-
9 zation in the 1980–1990 period, as the countries in Latin America, except
20 Mexico, left it. Turkey in this period seems to continue to industrialize
1 with the positive average net economic growth rate. In the last period,
2 however, de-industrialization has become an event that was seen even in
3 some South Asian countries along with Latin American countries. Turkey
4 in this period also had a negative average net growth rate, indicating a
5 strong sign of de-industrialization.

6 Further evidence on the presence of de-industrialization in Turkey can
7 be examined in detail by employing different measures calculated for
8 recent years. One is the calculation of the net economic growth rates as
9 seen in Table 5.1.

30 As we have already pointed out, international trade is one of the rea-
1 sons of de-industrialization. Turkey experienced noticeably large foreign
2 trade deficits after 2002, and these trade deficits could be at least some
3 extent of de-industrialization. In Figure 5.5, the share of manufacturing in
4 GDP fell by 2.3% between 2003 and 2017, while manufacturing trade
5 balance, during the same period, deteriorated by 41.2%. This means that
6 domestic expenditure shifts from domestically manufactured goods to

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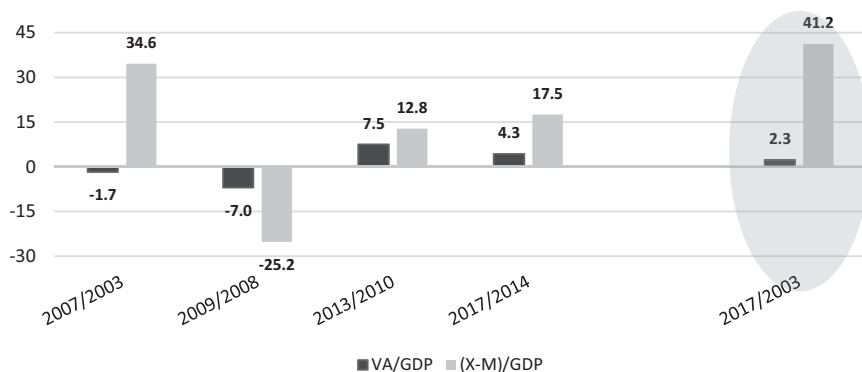


Figure 5.5. Changes in the shares of manufacturing value added and trade balance in GDP (%)

Source: TCMB and TurkStat.

foreign ones in this period. There would be various factors causing this shift, but a number of them seem to be significant to explain the decline in the importance of domestic manufacturing. One of them is a significant fall in the price of foreign manufactured goods, which would have caused primarily by the overvaluation of Turkish Lira (TL) and increased productivity in the world-manufacturing sector due to new technological innovations. Since the domestic manufacturing sector might have come behind to adopt these technological innovations, Turkey might have lost a certain competitive power in manufacturing.

Following a similar discussion in the literature, several macroeconomic indicators can be used to show the extent of the nature of structural transformation in Turkey. Among others, a mismatch between consumption and domestic production stands out in the Turkish case. This can be seen as another reason for a fall in the share of domestic manufacturing in GDP, which would be due to changes in consumer preferences, causing a mismatch between consumer preferences and domestic production structure. As the per capita income increases, consumer preferences expectedly changes, and the already existing composition of domestic production becomes inferior for households. If changes in the composition of domestic production are slow or do not exist at all, the imports become essential to meet the need for new preferences of households. Lastly, as the

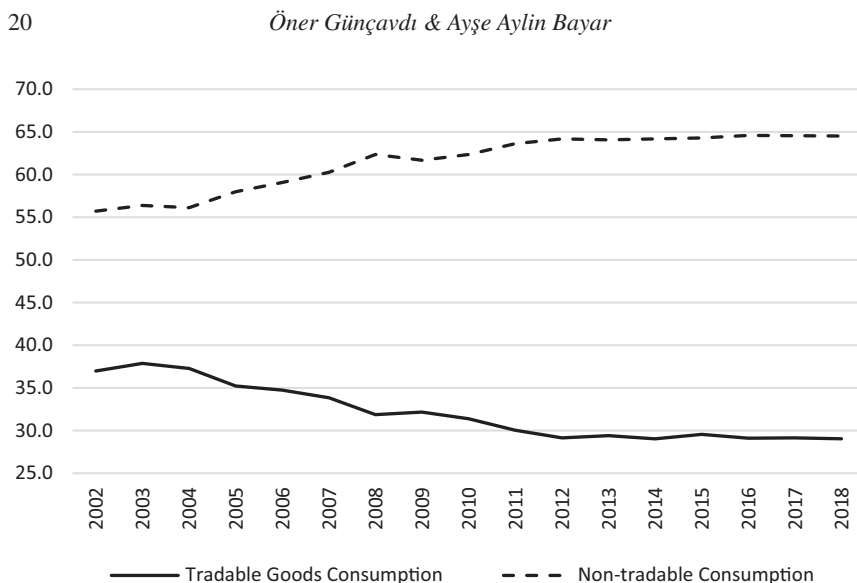


Figure 5.6. Distribution of consumption by commodity groups

Source: TurkStat.

distribution of income worsens, the structure of demand shifts away from manufacturing toward services (see Figure 5.6). This also leads to a decline in the share of manufacturing in GDP. Households consequently demand more non-tradable from inside and more tradable from outside.

a. The Sectoral Shares of Employment

Figure 5.7 shows the diagram for the shares of sectoral employment for the manufacturing and services sectors (including construction). The data are readily available from *TurkStat* for the 1985–2018 period. The employment share of manufacturing is distinguished by cross marks, whereas the service sector share is given by circle marks. Besides, different trend functions passing through each scattered mark are fitted to the data as seen in the figure. There are several observations worth mentioning in this respect. First, the share of manufacturing employment seems to have increased until 2008, and it began to decline afterward by rendering a *concave* functional shape for the trend function. The employment capacity of the manufacturing sector shows a decline, which started after 2009. Second, the service sector employment is an important source of

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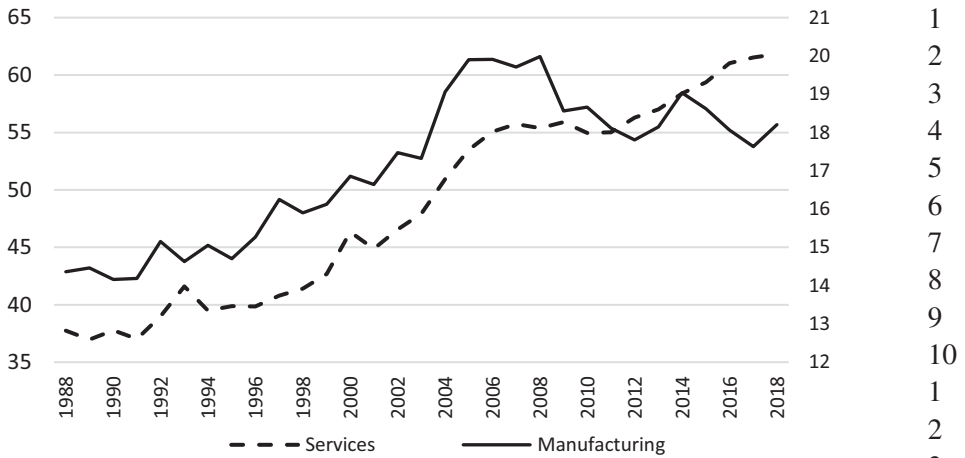


Figure 5.7. Sectoral shares of employment (%)

employment, and it seems to have reached over 60% of total employment after 2016. The best-fitted trend function becomes an increasing trend line as seen in Figure 5.7. Lastly, it will not be an exaggeration if it is considered that employment in the Turkish economy is, to a great extent, *service-led employment*.

In Figure 5.8, the numbers of employment in three distinctive sectors, namely manufacturing, services, and agriculture, are depicted. It is even more evident from the earlier figure that services (including construction) seem to have become the dominant sector creating employment after 2001. In particular, relatively two sharp increases appear in the service sector employment, the first in 2004, the second in 2009. Employment in manufacturing steadily increased without any distinctive trend. The agricultural employment, on the other hand, shows a sharp decline in 2004 and seems to have remained stable afterward.

According to Figure 5.8, employment levels in the extended-service (including services and construction) and manufacturing services show a rising trend from 1988 to 2018 (see TurkStat, 2018). Among them, manufacturing employment shows a secular trend at a relatively slow pace. The extended-service sector, on the other hand, seems to have increased relatively faster than manufacturing, but it departed away from its trend with a small jump in 2010. Basing on this observation, the extended-service

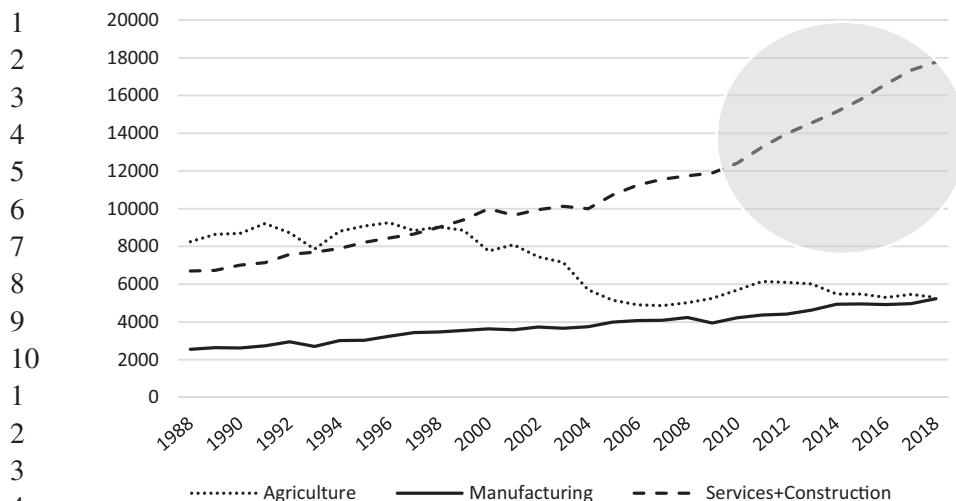


Figure 5.8. Sectoral employment (thousand)

sector has become the most important sector creating employment, particularly after 2010.⁷ It is also obvious from Figure 5.8 that the agricultural sector is the only one losing employment. It appears that the employment capacity of the agricultural sector especially declined between 1999 and 2007, and then seems to have reached stability.

Unlike these conventional measures of de-industrialization, additional indicators can also be proposed here by generating them from microeconomic data sources available in Turkey. The longest data available for this purpose is *Households Budget Surveys*, covering the period between 2002 and 2017. Two indicators, namely sectoral mean income and the population shares of each income entity, are calculated and the results are discussed in what follows.

b. Differences in Sectoral Mean Income

In this study, the total income of households is decomposed into three components according to the sectors through which income is generated;

⁷G. Uysal and F. Kavuncu (2019). "Disables' Care and Labour Statistics". *BETAM Research Note* 19/244.

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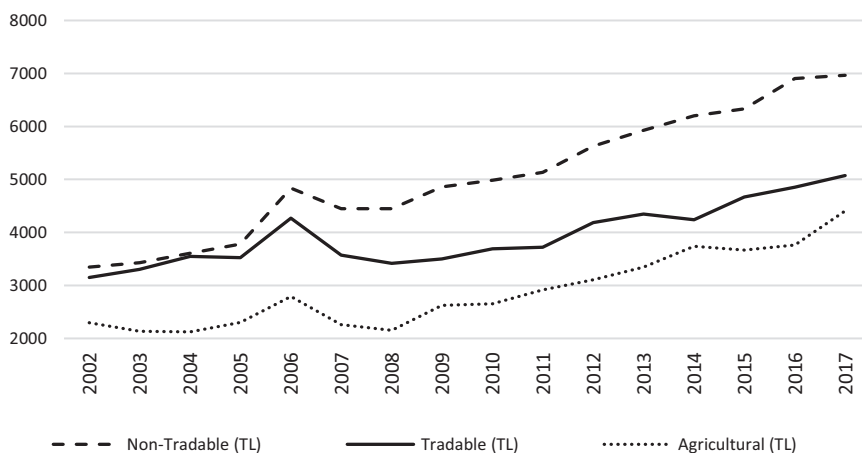


Figure 5.9. Mean income of each income type (TL)

they are namely non-tradable, tradable, and agricultural income. The mean income level of each component can be seen in Figure 5.7. Since these figures are calculated from *Households Budget Surveys*, they are only available for the period between 2002 and 2017. In Figure 5.9, the mean non-tradable income is higher than the mean income of other income sources. Mean non-tradable income seems to have steadily increased after 2002, but this increase particularly became distinctive after 2008.

The ratios of the mean levels of non-tradable income to other income components can be seen in Figure 5.9. In 2004, tradable and non-tradable mean income levels appear to be almost equal. Then, this ratio of non-tradeable mean income became almost 1.4 times higher than the tradable mean income in 2007 and remained more or less at this level afterward. This finding implies that the mean income in non-tradable economic activities increased relatively more than tradeable mean income, particularly in the 2004–2008 period.

c. Change in Population Shares

“Population” in our exercise here refers to the number of income entities, and it is decomposed by income groups. Any “change” in this context

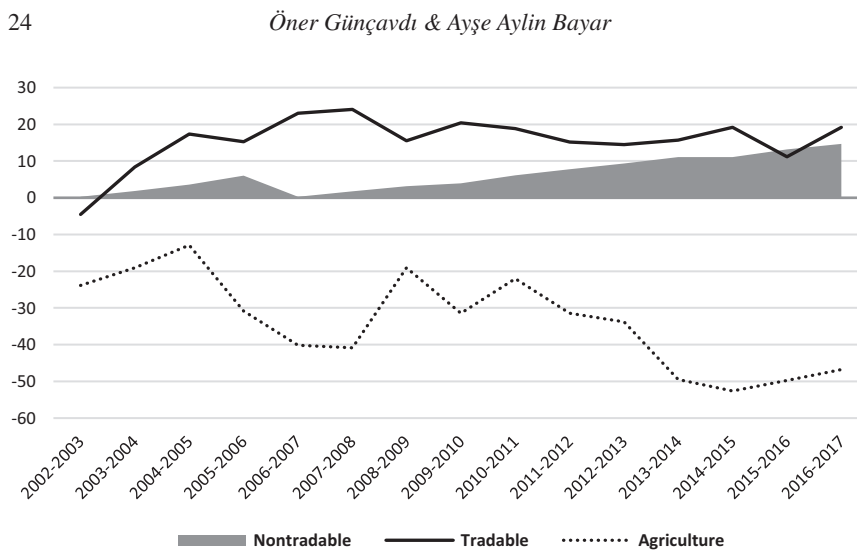


Figure 5.10. Change in population share — cumulative

implies a change in the number of relevant income entities. For example, any increase (or decrease) in the population share of non-tradable income is considered an increase (or decrease) in the number of income entities in the form of non-tradable activities. Figure 5.10 shows this change in each income component. Three distinctive results emerge from Figure 5.10. First, the population share of agricultural income declines after 2009. Second, tradable income items seem to surge around zero indicating no major change in the population share of tradable income. Third, non-tradable income entities, together with their population share, apparently increased after 2009.

d. Changes in Relative Prices

It is most likely that most developing countries are price takers in manufacturing goods and their relative prices are fully determined globally. Technological development in advanced countries experiences rapid productivity growth, which leads to a substantial amount of decline in relative prices of manufacturing through the standard supply–demand condition in the world market. This expectedly puts the pressure of low manufacturing prices on developing countries with slow technological progress in

technology. These countries without strong comparative advantage in manufacturing inevitably become net importers of manufacturing goods, and begin to rely more on non-tradable sectors (such as construction, services, trade, and finance) rather than tradable economic activities (namely manufacturing) to revive economic growth. Those that are not able to avoid international competition, have to become increasingly dependent on economic activities which are controlled by domestic supply-demand conditions without being exposed to international competition originating from advanced countries. This is one reason for squeezing the manufacturing sector in employment and production. Non-tradable sector unavoidably becomes the most trusted economic activity to policymakers in developing countries to create employment and economic growth.

Figure 5.11 shows that the Turkish experience also complies with the theoretical expectation. Figure 5.11(a) illustrates a decline in the relative price of manufacturing until 2008.⁸ Turkey was exposed to foreign competition mainly due to the Customs Union agreement with the EU after 1995, and manufacturing goods in any kind and competitive prices became highly accessible for Turkish customers. Overvaluation of the domestic currency, caused by large capital inflows, was a great help for

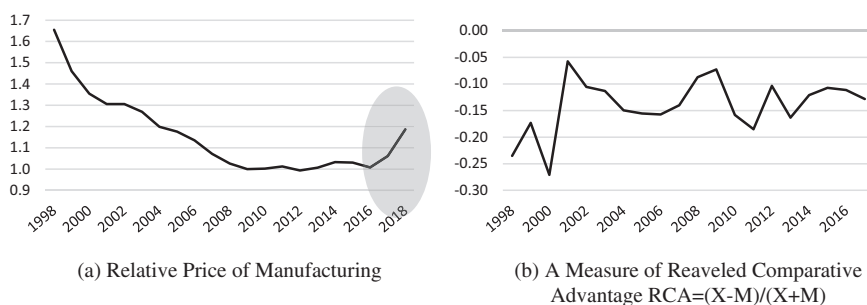


Figure 5.11. Relative prices of manufacturing and its international competition power

⁸The relative prices are derived as a ratio of the price of manufacturing to the price of service and construction. Both price series must be taken as tentative price indices, and both are obtained by dividing current values of sectoral data to those chain-linked volume values. This is not a conventional way of deriving these price indices, but a recent change in measuring national account data left no other option, other than this.

Turkey to import easily. Figure 5.11(b) also illustrates the loss of the competitive power of Turkish manufacturing. Revealed comparative advantage (RCA) was calculated as a ratio of net exports ($X - M$) to the volume of foreign trade ($X + M$). RCA values appear to be negative for all years between 1998 and 2017, indicating losses of competitive power in manufacturing.

This explanation is based on the differential technological progress in manufacturing among advanced and developing countries. This is also the reason for the rising economic populism in developing countries. The countries that have difficulties to overcome undesired effects of globalization and backwardness in technological progress seek alternative ways for generating employment, economic growth, and better income distribution. They find the recent structural shift from manufacturing to non-tradable economic activities a relief, without worrying about the binding constraint of international competition. Yet, a requirement of adopting domestic economy, most importantly political establishment, to new conditions puts a squeeze on politicians everywhere to rely on non-tradable economic activities to please the public searching for a better job and higher income. Today's populism in practice is different from the earlier one in the 1960s–1970s. The manufacturing sector and structural transformation from agriculture to manufacturing used to be the sources of employment and economic growth. The government used to intervene in income distribution through direct income policies. Industrialization in this period took place, *to a great extent*, under import substitution in the absence of globalization.

e. The Pattern of Transformation

The movement of labor forces has been from agriculture to services, not to manufacturing as expected. However, the shift from agriculture to manufacturing has been very limited and it seems to have stopped after 2005. This is mainly because both sectors, agriculture and manufacturing, have lost employment against services. A similar pattern of transformation in the workforce has also been observed for services, with the only exception that this shift continued to a limited extent after 2005.

The second feature of this transformation is that the shift from agriculture to services has been accompanied by declines in the relative productivities of the service and manufacturing sectors compared with agriculture until 2005. Importantly, the fall in productivity in the service sector was larger than in manufacturing. This suggests that the sectoral transformation from agriculture to manufacturing and services until 2005 was not economic growth enhancing.

Another feature of transformation is that manufacturing has been losing employment against services as seen in Figure 5.12. The fall in employment has been accompanied by a rise in the relative productivity of manufacturing compared with services. In comparison with the rising relative average labor productivity of manufacturing, the sectoral shift of labor forces to the service sector from manufacturing has little chance to exhibit a positive impact on overall economic growth.

As we have already pointed out, international trade is one of the reasons of de-industrialization. Turkey experienced noticeably large foreign trade deficits after 2002, and these trade deficits could be at least to some extent due to de-industrialization. In Figure 5.7, the share of manufacturing in GDP fell by 2.3% between 2003 and 2017, while manufacturing trade balance, during the same period, deteriorated by 41.2%. This means that domestic expenditure shifted from domestically manufactured goods to foreign ones in this period. There would be various factors causing this shift, but a few of them seem to be significant to explain the decline in the importance of domestic manufacturing. One of them is a significant fall in the price of foreign manufactured goods, which would have been caused primarily by the overvaluation of the Turkish Lira and increased productivity in the world-manufacturing sector due to new technological innovations. Since the domestic manufacturing sector might have fallen behind to adopt these technological innovations, Turkey might have lost a certain competitive advantage in manufacturing. Another reason for a fall in the share of domestic manufacturing in GDP would be changes in consumer preferences, and a mismatch problem occurring between consumer preferences and domestic production structure. As the per capita income increases, consumer preferences expectedly change, and the already existing composition of domestic production becomes inferior for households.

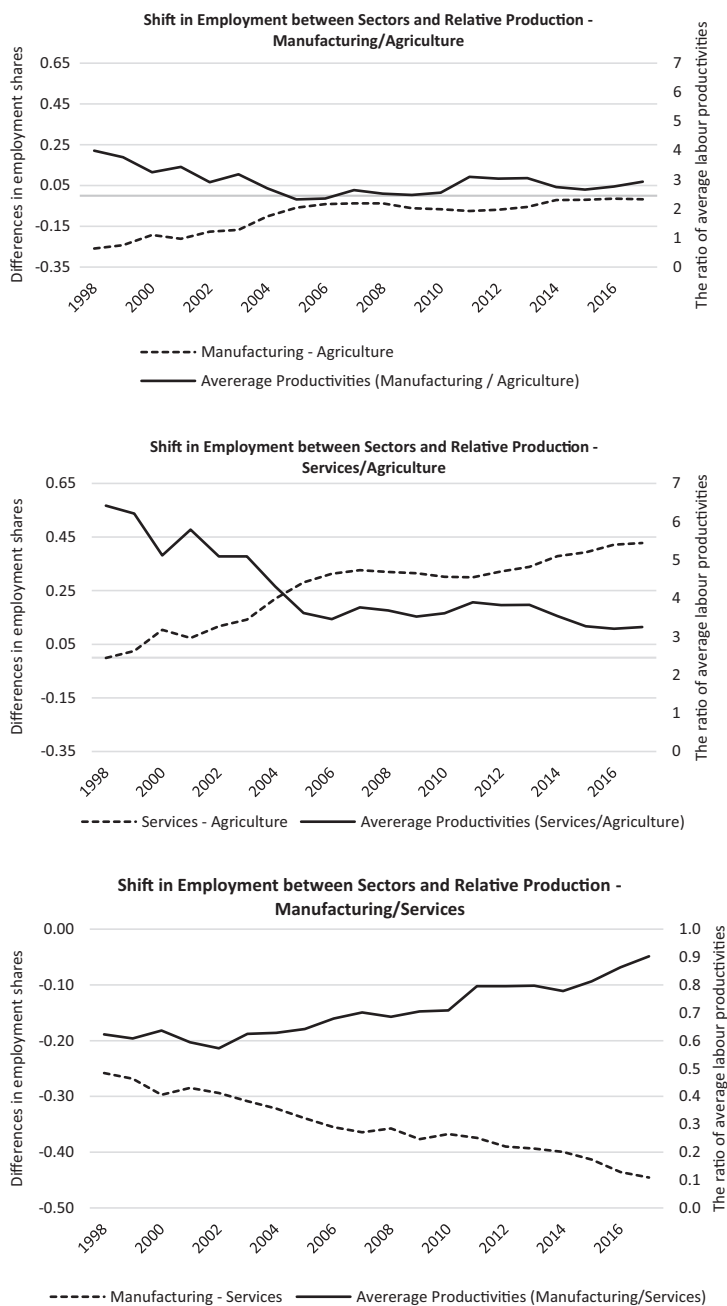


Figure 5.12. Sectoral comparison between productivity and employment shares

If changes in the composition of domestic production are slow or do not exist at all, the imports become essential to meet the need for new preferences of households. Lastly, as the distribution of income worsens, the structure of demand shifts away from manufacturing toward services (see Figure 5.6). This also leads to a decline in the share of manufacturing in GDP. Households consequently demand more non-tradable from inside and more tradable from outside.

f. International Trade as a Cause of De-industrialization

International trade is one of the several reasons for the de-industrialization process in Turkey. The trade–employment relationship has widely been studied in the literature, but mostly for developed market economies (Acemoğlu *et al.*, 2016; Greenaway *et al.*, 1999; Krugman and Lawrence, 1993). However, the same issue has begun to draw attention for developing market economies, especially after the (premature) de-industrialization process has also become observable for these countries. The de-industrialization, as a result of being exposed excessively to import penetration, can give rise to deteriorations in income distribution through its revealed undesirable effects on employment.

The same development has been seen in the economy of Turkey for some time, and de-industrialization has lately become visible as an apparent drop in the shares of value added manufacturing and employment. Besides, the search for high economic growth as a result of populist economic practices and an increased reliance on non-tradable economic activities for growth ended up with high dependence on importation.

As much as the appropriate environmental factors prevailed, Turkey has been able to have *current account deficits*. In Figure 5.13, a sudden rise in current account deficits can be observed in the 2000s. However, the extent of these deficits had not been seen in the history of the Turkish economy. Moreover, as long as the economy grows above its potential level, which is historically 4.5–5% per annum, current account deficits also rise to unsustainable levels mainly because of the high dependency of the Turkish production and consumption on imports. Various AK Parti governments in the 2000s have had to rely largely on non-tradable economic activities and had easy economic growth and gains in jobs by

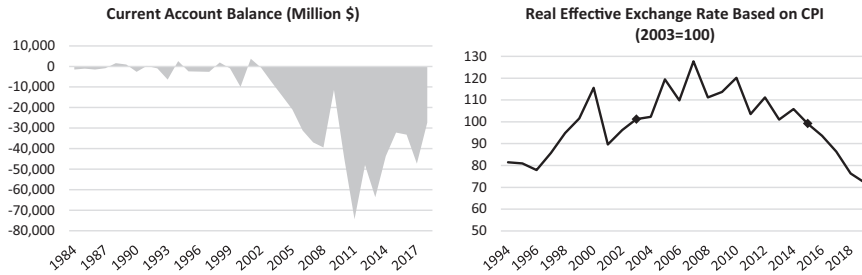


Figure 5.13. Current account balances and real effective exchange rates

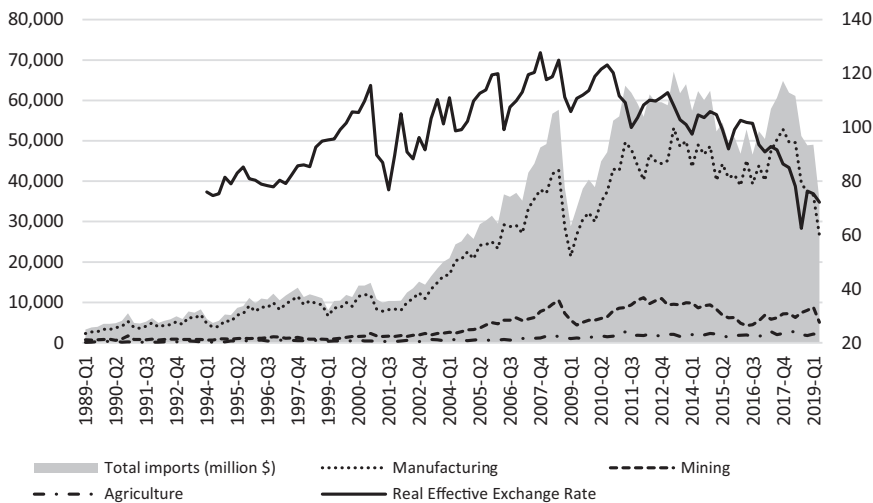


Figure 5.14. Sectoral composition of imports and real effective exchange rate

avoiding international competition to which tradable economic activities have intensively been exposed.

The sectoral breakdown of imports in Figure 5.14 also shows a drastic jump in manufacturing imports after 2002. This implies that the great extent of current account deficits was also made up of manufacturing imports. In particular, manufacturing imports, along with total imports, illustrate a firm rise up to the 2008–2009 period in which the sub-prime mortgage crisis prevails in the world economy. It is also striking from

Figure 5.14 that this jump in import took place while Turkish Lira was appreciating. After a limited amount of a decline in the 2008–2009 period, imports revived with high economic growth and continued to remain as high as before. The imports of mining and agriculture, on the other hand, stayed relatively low.

This empirical finding implies that foreign trade in manufacturing would be one of the causes of declining share in manufacturing value added and employment. We now propose a simple method of measuring the employment effect of rising imports in the 2000s by basing on the calculation of net import penetration (NIP). The net effects of the simultaneous growth of exports and imports need to be estimated to assess the impacts of trade on de-industrialization and losses in employment. NIP offers a simple method that takes account of this net foreign trade effect simultaneously. The method we propose, as noted, is simple and well known in the literature (see Luttrell, 1978). NIP for each year t is calculated as the ratio of net imports ($M - X$) to apparent consumption ($C = Q + M - X$, where C and Q are apparent consumption and domestic production, respectively).

The data and calculated NIP for the 1998–2017 period are reported in the table in Appendix A. It is interesting that all calculated values of NIP are positive and increase over time, indicating that the manufacturing sector has lost competitive power in international trade due to the overvaluation of the domestic currency. This finding is indeed compatible with the findings of earlier research emphasizing the high import dependence of the Turkish economy on imports (Günçavdi and Orbay, 2005; Günçavdi and Kayam, 2017; Günçavdi and Ülengin, 2018). Figure 5.15, drawn by using calculated NIP values in Table 5.2, illustrates an increase in NIP while the share of the use of domestic production in total consumption declines due to losses of comparative advantage of domestic production.

Of course, high NIP could be responsible for a certain extent of losses in employment in manufacturing, and these losses can be calculated by taking into account changes in NIP values between t and $t + 1$. We first estimate a hypothetical level of employment, which is compatible with the actual change in NIP from t to $t + 1$. This estimated employment is noted by L_{t+1}^* , and it is calculated by $L_{t+1}^* = \alpha L_{t+1}$, where $\alpha = (1 - \text{NIP}_t)/(1 - \text{NIP}_{t+1})$. Thus,

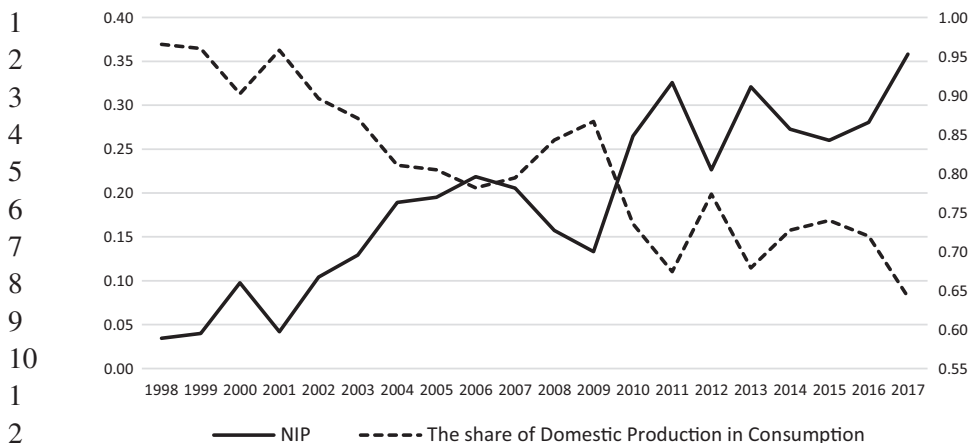


Figure 5.15. Net import penetration and the share of domestic production in consumption

L_{t+1}^* is calculated as a fraction of actual employment and it is interpreted as the estimated employment level if actual employment from t to $t + 1$ was changed by the amount of change in NIP. It is evident from this that $\alpha = 1$ if there is no change in NIP (i.e., $NIP_t = NIP_{t+1}$). If $NIP_{t+1} > NIP_t$, then $\alpha > 1$, so that the calculated level of employment will be greater than the actual level of employment; $L_{t+1}^* > L_{t+1}$. Finally, the difference between the estimated and actual levels of employment will be a measure of the change in employment at time $t + 1$ (ΔL_m) due only to import penetration between period t and $t + 1$; $\Delta L_m = L_{t+1}^* - L_{t+1}$. The positive values of ΔL_m are interpreted as losses in employment, whereas the negative ones show gains in employment. These estimated values of losses (or gains) are reported in Table A1 in the appendix, and both their levels and cumulative values are illustrated in Figure 5.16. Cumulative values in Figure 5.16 show total losses in employment until the selected end year from the initial year 1998. According to the figure, import penetration has been responsible for job losses, and these losses appear to have speeded up after 2009.

In sum, Turkey was able to increase economic growth and domestic consumption after 2002, which paved the way for high current account deficits, but, at the same time, suffered from job losses due to increase in import penetration. This empirical finding shows that international trade

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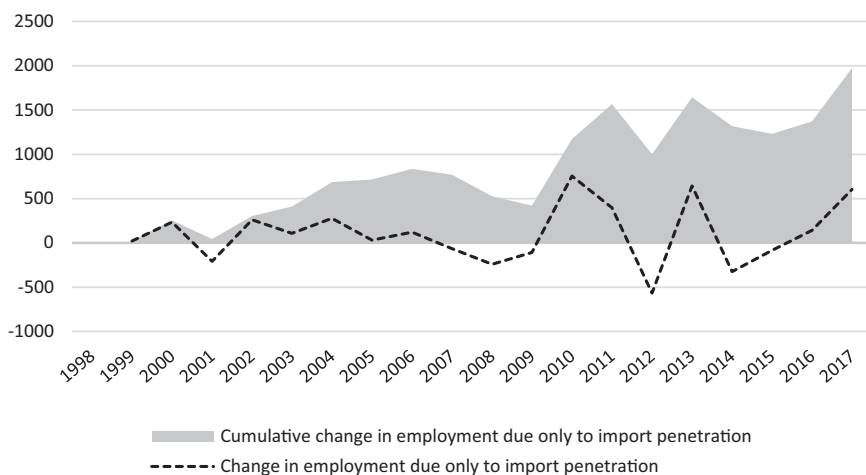


Figure 5.16. Estimated job losses due to import penetration

and excessive increase in manufacturing imports accounted for a certain extent of de-industrialization, and this effect seems to have increased apparently in the period after 2009.

g. Relative Impact of Demand, Productivity, and Import on Manufacturing Employment

It would be useful to carry out an additional empirical examination to see the relative effects of demand, labor productivity, and imports by employing a simple accounting approach. Our method is simple and based on the decomposition of the definition of the apparent consumption variable as follows:

$$C_t = Q_t + M_t - X_t \quad (1)$$

where C_t : consumption; Q_t : domestic production; M_t : imports; X_t : exports. Recalling the definition of net import penetration (NIP_t) as the ratio of net foreign trade balance ($M_t - X_t$) to domestic consumption (C_t), (2) can be written as follows:

$$\text{NIP}_t = (M_t - X_t)/C_t \quad (2)$$

Then, upon dividing both sides of (1) by C_t , the following can be derived:

$$1 = (Q_t + M_t - X_t)/C_t \quad (1a)$$

Using the definition of NIP_t in (2), (1a) can also be written as follows:

$$(1 - NIP_t) = Q_t/C_t \quad (1b)$$

Since NIP_t is defined as the net import penetration, then $(1 - NIP_t)$ can be named as the ratio of domestic production to consumption. To make a connection with changes in manufacturing employment, average labor productivity can simply be defined as

$$A_t = Q_t/L_t \quad (3)$$

or

$$Q_t = A_t L_t \quad (3a)$$

Upon substituting Q_t from (3a) into (1b),

$$(1 - NIP_t) = A_t L_t / C_t \quad (1c)$$

Assume that S_t is the ratio of domestic production to consumption and it is substituted for $(1 - NIP_t)$. Respectively, (1c) can be written for L_t as

$$L_t = S_t (C_t / A_t) \quad (4)$$

Equation (4) describes the labor employed in domestic production in terms of consumption, domestic production, and average productivity. Respectively, proportional changes in labor can also be derived in the growth form by logarithmically differentiating Equation (4):

$$\dot{L} = \dot{C} + \dot{S} - \dot{A} \quad (5)$$

where “.” over the variables above represents the growth rates of the relevant variable; i.e., $\dot{X} = \frac{dX/dt}{X}$. Identity (5) is an accounting identity and defines that growth rates of manufacturing employments are related *positively* to both the growth rate of total consumption (\dot{C}) and the growth rate of the share of domestic production in consumption (\dot{S}) and *negatively* to

Table 5.2. The sources of changes in employment

Growth Rates					
	Actual Change in Employment	Consumption	Domestic Production	Average Productivity	Estimated Change in Employment
1999	2.7	-5.0	-0.6	-8.0	2.4
2000	2.3	13.9	-6.0	4.6	3.3
2001	-1.5	-14.2	6.2	-7.5	-0.5
2002	4.2	11.2	-6.5	-0.1	4.9
2003	-1.8	13.0	-2.8	11.8	-1.6
2004	2.1	21.6	-6.9	10.9	3.8
2005	6.7	10.4	-0.7	2.7	7.0
2006	1.8	13.1	-2.9	7.9	2.3
2007	0.5	5.0	1.7	6.2	0.5
2008	3.6	-5.3	6.1	-3.0	3.8
2009	-6.8	-11.4	2.8	-2.3	-6.3
2010	6.8	29.2	-15.2	2.7	11.4
2011	3.6	30.9	-8.3	15.9	6.7
2012	1.2	-10.9	14.7	1.0	2.8
2013	4.8	24.5	-12.2	4.3	8.0
2014	6.6	-0.9	7.1	-0.4	6.6
2015	0.4	4.1	1.8	5.5	0.4
2016	-0.8	6.8	-2.8	4.7	-0.7
2017	1.1	22.3	-10.8	7.9	3.6

Source: Author's calculation based on data from TÜİK.

changing rate of average productivity (\dot{A}).⁹ The statistical data are available to calculate each component in (5) from *TurkStat* for the 1998–2017 period.

The empirical results are reported in Table 5.2 and they must be taken as tentative just to examine the relative importance of three factors defined

⁹There are two important defects in this decomposition method. First, the accounting identity (1) is defined rather arbitrarily, and a different identity expectedly yields different results. Second, this definition ignores the effects of cross-terms and other variables that are not included here (Martin and Evens, 1981).

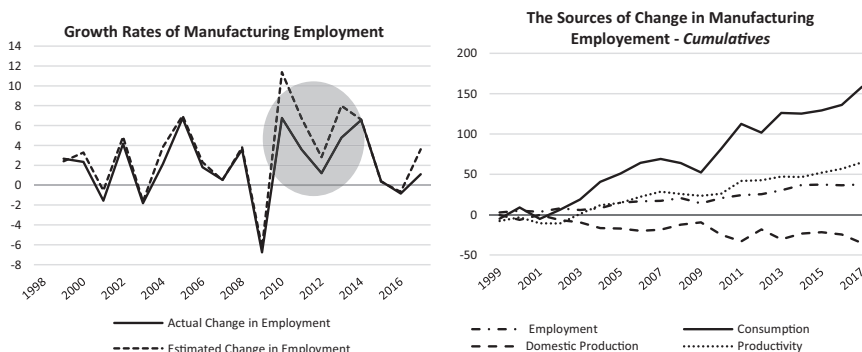


Figure 5.17. The impacts of import penetration on employment

in Equation (5). Figure 5.17 presents a simple comparison between actual and estimated growth rates of manufacturing employment, and the performance of the calculated growth rates looks fine. Respectively, the estimated figures show great similarity with the actual ones until 2011 and then drift away from the actual figure until 2013. After getting closer to each other again in the period between 2014 and 2016, the estimated employment growth rate differs significantly from actual value in 2017. Despite these differences, estimated results can be considered as sufficiently successful.

The results are also very informative regarding the factors that determine the change in employment in manufacturing. Two findings become obvious in this empirical analysis. First, general consumption (or demand) positively contributes to employment. Second, the reduction in domestic production (due to higher import penetration) expectedly causes losses in employment in the manufacturing sector. Third, the positive trend of the average productivity of labor implies a decline in the average productivity of labor.

These results indicate that domestic demand is necessary for generating economic growth and gaining employment in manufacturing, but it is not sufficient. A certain extent of import substitution would have been needed as a sufficiency condition to revive industrialization and create extra employment. Unless external borrowing to finance non-tradable-derived domestic demand and economic growth is sufficiently available,

industrialization and the tradable sector's production will be the only option for the new economic growth model.

5.6. Structural Transformation and Income Inequality

In his seminal paper, Kuznets has been the first one drawing our attention to the relationship between structural transformation and income inequality (Kuznets, 1955). Based on his empirical observations on a limited amount of countries, he argued that as low-income economies industrialize, inequality would initially increase. This is because as labor force moves from relatively low-productive industries, such as agriculture, to relatively high-productive ones, such as manufacturing, a difference would occur between the wage levels of workers already employed and endowed with appropriate skills in manufacturing and the wage level of fresh labor force previously working in agriculture with no skill for manufacturing. This postulate has later become a well-known **Kuznets hypothesis**.

This hypothesis has, however, been challenged by the experiences of today's developing countries. Kuznets's hypothesis is an empirical observation and not a deterministic relationship. The relationship between structural transformation and income inequalities is to some extent determined by the specific characteristics of the path of transformation that the country follows. In this regard, Kuznets distinguished three essential characteristics of the sectoral transformation that determine the effect on income inequality of the transformation. They are namely (i) the mean income level of the sectors that the transformation involves; (ii) within-group inequality of the sectors between which the population moves; (iii) the population share in each sector (which constitutes a population shift effect). If the labor force moves more from both low-mean income and high within-group inequality sector to high-income and low within-group inequality sector, then income inequality improves and the Kuznets hypothesis does not hold.

If we turn our attention to the Turkish experience, it can be seen that the shift of labor force takes place from agriculture to service sectors rather than manufacturing. The distributional effects of this shift are

determined by the mean income levels and within-group inequality of each sector (Baymul and Sen, 2019). In this regard, what we have observed was the agriculture sector being a low-mean income (see Figure 5.9) and high within-group inequality sector (see Figure 5.20), and the service and non-tradable sectors, in general, possess the highest mean income level. Although within-group inequality in non-tradable also is high, this particular transformation from agriculture to services might have an improving effect on the overall inequality, but this can rather be concluded by examining further empirical results. However, we expect that the shift of labor from tradable to non-tradable would have deteriorating effects on entire income distribution in the economy. In this regard, Figure 5.21 in the following section clearly shows that the ratio of the mean income of both sectors remained stable after 2008. It implies that there has been no apparent deterioration in the relative mean income level of both income groups after 2008. Given the fact that within-group inequality of tradable is lower than other sectors, a shift from manufacturing, or tradable in general, would deteriorate income distribution, or at least hold it stable.

To see whether the structural transformation in Turkey has taken place by the Kuznets hypothesis, the Gini coefficients of the entire Turkish economy are depicted with the shares of three sectors, namely agriculture, manufacturing, and services, in Figure 5.18. The Gini coefficient is shown on the vertical axis, whereas the share of each sector is depicted on the horizontal axis. In the first panel in Figure 5.5(a), it seems that income inequality increases as the share of agriculture rises over time, and *vice versa*. The figure in panel (b) shows a decline in income inequality with

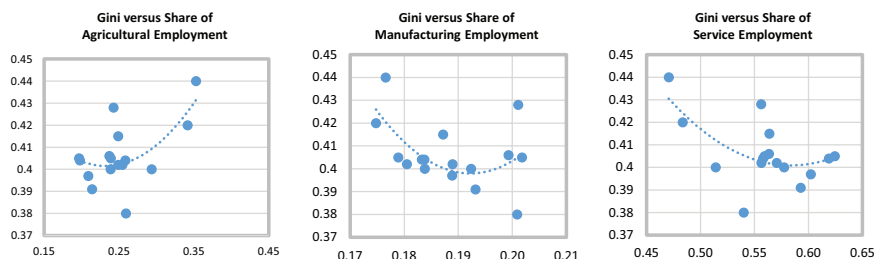


Figure 5.18. Income distribution and sectoral shares

an increase in the share of manufacturing. They are all expected results as the Kuznets hypothesis postulates. The panel (c) in Figure 5.18 implies falls in inequality as the share of services increases.

a. *Income Distribution*

Income inequality has been one of the crucial economic issues in the Turkish economy, and this allows the Turkish policymakers to easily adopt populist approaches to combating inequality. Different estimates of income inequality are available for the period before 2002 and can be compiled from the website of the Presidential Office of Strategy and Budget of Turkey.¹⁰ Estimated Gini¹¹ coefficients for the 1963–1994 are based on various empirical research previously made by the State Planning Organization and State Institute of Statistics, which had previously been responsible for economic planning and monitoring economic and social development in Turkey. A comprehensive and continued survey-based research on this issue was first started by *TurkStat* in 2002 and onward.

Undulated economic growth rates in the 1970s were surprisingly accompanied by improvements in income distribution (Figure 5.19). These improvements seem to have continued after 1980.¹² There is another interesting observation on the economic growth–income distribution relationship. It becomes evident from Figure 5.16 that as the economy

¹⁰This is a newly established governmental body working under the new Presidential Office. The same data had previously been compiled and announced as Economic and Social Indicators to the public by the Minister of Economics, but they had also been available in the publications of various governmental bodies. For the data, see <http://www.sbb.gov.tr/ekonomik-ve-sosyal-gostergeler/>.

¹¹For the definition of the Gini coefficient and its importance in measuring income inequality, see Chapter 2 by Acemoğlu and Üçer.

¹²The data for income distribution for the period before and after 2002 are compiled from different sources. Income distribution figures for the period earlier than 2002 usually come from different studies of State Planning Office, as forecasted parameters, without relying on any organized household survey. As seen in Figure 5.6, there is also discontinuity in income distribution data before 2002 for this reason. Therefore, precaution is needed when income distribution data for the period before 2002 is used for any comparison with those calculated for the period after 2002.

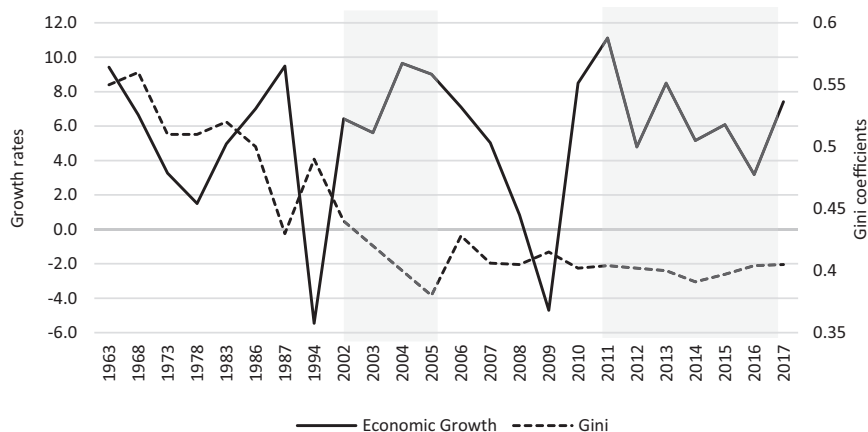


Figure 5.19. Relationship between economic growth and income distribution

encounters any economic crisis and a sharp slowdown in economic growth, income distribution immediately deteriorates. For example, in the 1994 economic crisis, once economic growth declined to -5% , the Gini coefficient, as a well-known income distribution measure, seems to have reached 0.49 in 1994 from 0.43 in 1987. Similarly, this negative relationship was also seen in the sub-prime mortgage crisis in 2008–2009, where economic growth slowed down at the rate exceeding 4% by deteriorating income distribution.

Regarding the performance in income distribution under various AK Parti governments, the entire period between 2002 and 2017 does not show a unique pattern. An evident improvement in the early 2000s (namely in the 2002–2005 period) seems to have disappeared afterward. Although a limited amount of decline in income inequality continued between 2006 and 2013, income distribution began to deteriorate after 2014. This mixed result is worth explaining.

Changes in the intuitional framework and macroeconomic priorities can account for this mixed result. In the early years of the 2000s, reforms measures and good macroeconomic governance (featured by low-interest rate and inflation and stable foreign exchange rate) took place and eradicated income gaps in the economy.¹³ In an empirical work based on the

¹³ See Chapter 2 by Acemoğlu and Üçer.

Household Budget Survey of *TurkStat*, Bayar and Günçavdi (2020) postulate that good macroeconomic governance is the crucial factor for the improvement in income equality in the early years of the 2000s. In particular, despite their small shares in total income, financial earnings have been the most important determinant of income inequality, and a drastic decline in interest rates during the reform period, together with lowering inflation, helped income inequality decrease (Bayar and Günçavdi, 2020). Additionally, labor and entrepreneurial income were other influential income items that were also affected by sound macroeconomic management in the reform period. Despite the presence of small ups and downs, improvements continued until 2014 and then began steadily to increase once again.

In another paper, Bayar and Günçavdi (2018) decompose the total income of households concerning their sources and define three different income groups whose income is earned from three distinctive economic activities. They are namely (i) Non-tradable income, which is earned only from non-tradable economic activities, such as services, construction, and trade; (ii) Tradable income, which is earned from tradable economic activities such as manufacturing; finally (iii) Agricultural income, which is earned from agricultural activities.¹⁴ Accordingly, some households in the survey would have only one or a combination of these income items as total household income. We divide these incomes by their sources and cumulate them as three separate income items regardless of households themselves. Therefore, instead of using a household as a unit of observation, we use only these income entities and examine how they interact with changing macroeconomic conditions. When one looks at Figure 5.20, the share of non-tradable income is seen to be far higher than other income entities in selected years.

In Figure 5.21, inequality levels, measured by Gini coefficients, of three income groups are shown. Within-group inequality seems to be lower in tradable income than others. Non-tradable income has the highest

¹⁴ Agricultural goods are also tradable goods, but the agricultural sector has great importance in the Turkish economy and constitutes a large share in the entire economy, we consider agricultural income separately from tradable goods. Besides, macroeconomic policies targeting particularly at agricultural activities are sector-specific policies and differ in nature from those for tradable.

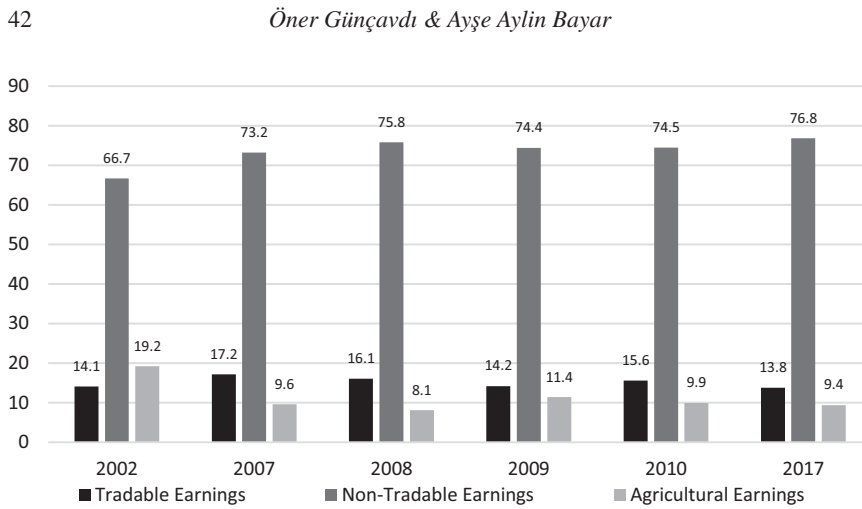


Figure 5.20. Shares of each source of income in total (%)

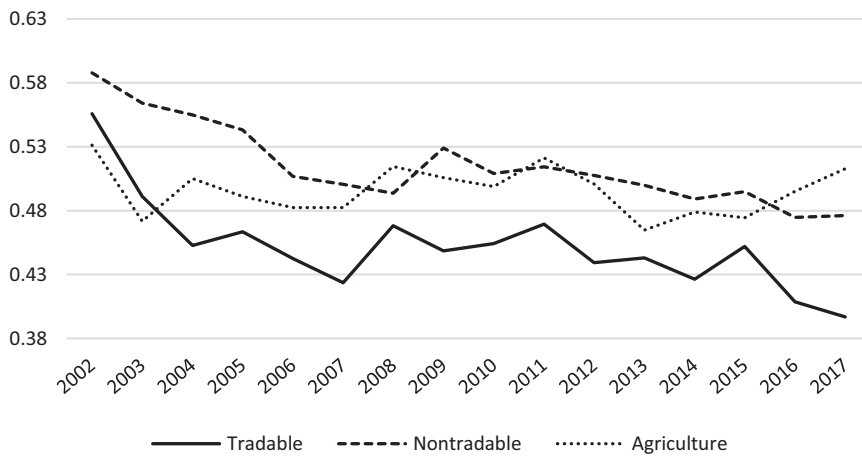


Figure 5.21. Within-group inequalities — Gini Coefficients

within-group inequality due to having more variability in size and their nature among income items than those of other income types. The same is true for agricultural income, which is earned according to the size of land owned by households. These differences in inequality offer two candidates that possess a detrimental impact on the entire inequality. Any

measure aiming at improving income distribution must then target these two distinctive income types by improving their within-group inequalities. In particular, a non-tradable income group has great potential in an improvement in the entire distribution of income in the economy.

This type of decomposition is particularly important in examining structural transformation. Each income group is not a perfect substitute for others, and they would be affected *differently* by changes in macroeconomic policies, relative prices, and incentives. Most importantly, the markets, which constitute the sources of income entities, would show different responses to shocks due to their structural differences. For example, tradable income and tradable goods markets are highly globalized and are exposed to severe international competition and external shocks. Accordingly, macroeconomic policies regarding the tradable goods market and tradable income are assumed to be determined in coordination with the need for international markets. On the other hand, non-tradable goods market and non-tradable income are easily taken under control by policymakers without worrying about the restrictiveness of international competition. The policies regarding non-tradable income might become independent from external shocks.

Non-tradable sectors are relatively closed to international competition, and to a great extent, present freedom for policymakers and politicians to implement independent economic policies according to the needs of society and the economy. In particular, after globalization took away the control of policymakers over a certain part of the economy, non-tradable activities and non-tradable sectors have gained importance to intervene directly in the economy to generate economic growth, and even to exercise populist policies. In the case of having difficulties in creating economic growth, non-tradable activities and income become easy for policymakers to encourage. This feature of non-tradable activities also allows policymakers to establish a novel "rent-transfer-via-markets" mechanisms to "selected" or "privileged" groups of people in the economy.

As we discussed earlier, Figure 5.7 illustrates the mean income of each income type between 2002 and 2017 based on our calculation from the household survey data. The great extent of income entities in the Household Expenditure Surveys is non-tradable income. And, the real

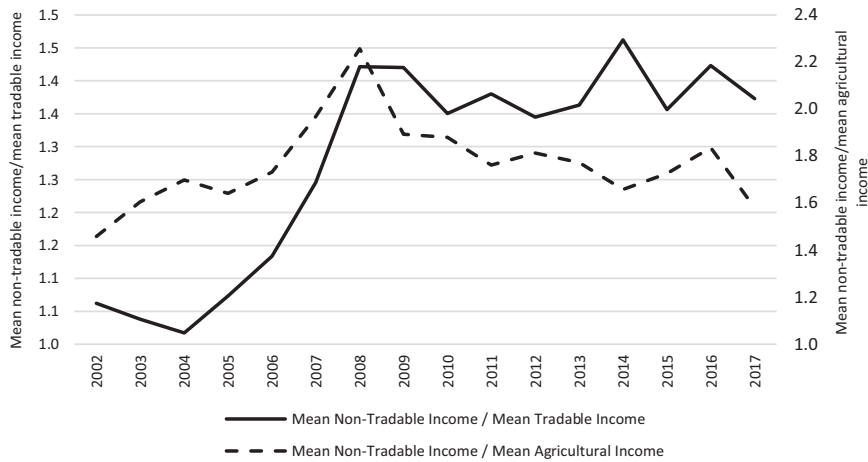


Figure 5.22. Mean non-tradable incomes to tradable and agricultural incomes

mean level of this income seems to be the highest among others. It is clear that the difference of mean non-tradable income, particularly from tradable one, drifted away after 2008. Although real mean tradable income also shows a secular increase after 2008, its pace seems to have been slower and its level has been lower than mean non-tradable income. These empirical findings, altogether, imply that non-tradable income is the most crucial income entity that would most likely affect unprivileged households' income.

Figure 5.22, on the other hand, shows the ratios of mean non-tradable income to mean tradable and agricultural income. It is also clear from the figure that the ratio of the real mean non-tradable income to tradable one increased sharply between 2002 and 2008. However, this relative income ratio somewhat remained constant after 2008. The same trend can be observed for the ratio of non-tradable mean income to mean agricultural income, except its decline after 2008. It is obvious from Figure 5.22 that non-tradable income shows a secular increase in the early reform period.

Based upon the presumption that different measures of macroeconomic policies might affect the different components of income differently, the total household income can be decomposed into its components according to its sources, and the relationship between these income

components and macroeconomic measures can be established. In a recent paper, Bayar and Günçavdi (2018) decompose total household income into their components by their functions. They use the Household Budget Survey, which allows for six different functional forms of income. They are namely labor earnings, which are the most dominant income type and nearly consist of 55–60% of total income, of which agricultural entrepreneurial earnings are 7–8%, entrepreneurial earnings are something around 20%, financial earnings are less than 1%, retirement earnings are 10–11%, and finally transfer earnings are only 4–5% of total household income. The last two income sources in Turkey are received by households, not in return of any productive contribution to creating value added, they could be treated as transfer payments to households to maintain social justice. Then, they calculate the relative contribution of each income type into overall income inequality by employing Shorrocks and Jenkins decomposition methods.¹⁵ The empirical results obtained from Jenkins's decomposition method is borrowed from Bayar and Günçavdi (2018) and are illustrated in Figure 5.23.

As seen in Figure 5.23, each income source contributes to overall income inequality differently. Entrepreneurial and financial earnings stand

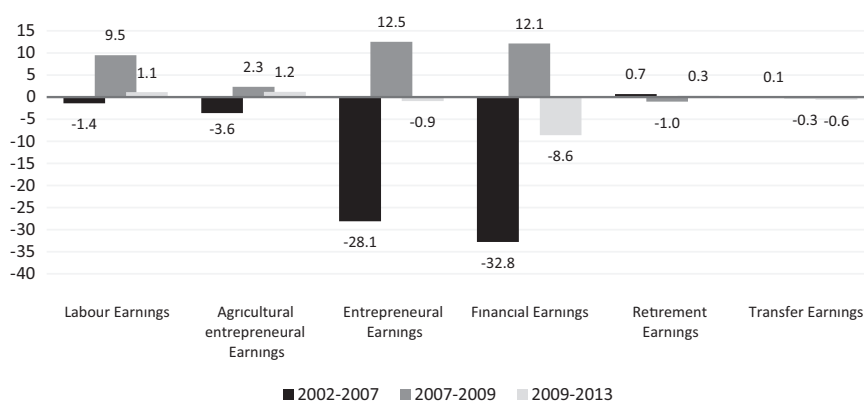


Figure 5.23. Contribution of different income sources in overall income inequality

¹⁵ For a detailed explanation of both decomposition methods and adaptation of them to the Turkish household data, see Bayar and Günçavdi (2018).

out as the most influential income in the 2002–2007 reform period. This implies that entrepreneurial and financial earnings accounted for the improvement in income inequality in the early 2000s. In addition, both income sources were influenced by low inflation, interest rate, stable exchange rate, and high economic growth, which were all products of good macroeconomic governance. Another interesting finding is that social nets practices, as an integral part of the recent World Bank–IMF backed reform program, were widely adopted by the central government and local municipalities in the early reform period, with new public institutions introduced for this purpose.

There is, of course, a widely expected presumption that these transfer payments would contribute to the improvement in inequality, which could have deteriorated after the economic crisis. However, in the Turkish case in the 2002–2007 period, the contributions of transfer earning were negligible. Retirement earnings, on the other hand, appear to have deteriorating effects on income inequality. This paradoxical result is rather related to the fact of widespread informal employment without any social security protection. This group of people is deprived of any retirement payment when they get retired. Retirement income becomes a privilege for some people who had worked formally under the umbrella of the social security system and can be a source of inequality in society. Any increase in retirement income in this structural framework inevitably widens the gap between the incomes of these two groups.¹⁶

The sub-prime mortgage crisis and its contagion effect in Turkey took place in the 2007–2009 period, and all income sources were inevitably affected by this crisis. In Figure 5.20, four main income sources seem to have had deteriorating effects on income inequality, namely labor earnings, agricultural entrepreneurial earning, entrepreneurial earning, and financial earning. Interestingly, in this period of high economic growth (2010–2013), the economic crisis period appears to have had no significant effects, except on financial earnings, or income inequality. Bayar and

¹⁶Gürsel *et al.* (2000) also note a similar result regarding the impact of overall transfer payments (rather than retirement payment) on income distribution. In the comparison of household income between 1987 and 1994, they find that transfer payment exhibits a deteriorating effect on income distribution.

Günçavdi (2018) postulate that the improving effect on income inequality of financial earnings is not surprising. A consumption boom, derived by credit expansion, and low-interest-rate earnings took place to revive economic growth after the crisis, and most likely, households, particularly low-income ones, were discouraged to hold savings in the financial system. High-income households, on the other hand, remained in the banking system due to their relatively high *propensity-to-save*, and interest rate earners became a more homogeneous group after the fall in interest rate than before. Additionally, the weight of interest rate earnings in total income drastically declined after the reform, and their impacts on entire income distribution inevitably decreased.

Sectoral decomposition of household income would also be informative to draw an inference about the effects of de-industrialization, defined as a rise in the share of non-tradable economic activities, on income distribution. Following the same methodology of decomposing income by their functions in production, non-tradable, and agricultural income, this time is used as a unit of account (instead of equivalent disposable income of individuals¹⁷). Then, the impacts of tradable, non-tradable, and agricultural income on inequality are calculated by using the Shorrocks decomposition method, and the results are depicted in Figure 5.24. According to the results, the contributions of non-tradable income into income inequality have been the highest in all selected years. This implies that any economic growth strategy relying on expansion in non-tradable economic activities, rather than tradables, and income would likely account for having a detrimental effect on income inequality.

In this regard, the contributions of three income sources, namely agricultural, non-tradable, and tradable income, are estimated by using the Jenkins decomposition method, and the results are reported in Figure 5.25. This decomposition aims to understand whether different sources of

¹⁷ In the literature, studies mainly employ Equivalent disposable income of individuals for examination. The fact is that in a particular household, there may be some individuals who do not have any income may benefit from the incomes of the other individuals in these households. Therefore, this reality has to be taken into account when estimating the income inequality measures. In this respect, an equivalent scale is used as a tool to assess individual equivalent disposable income measure.

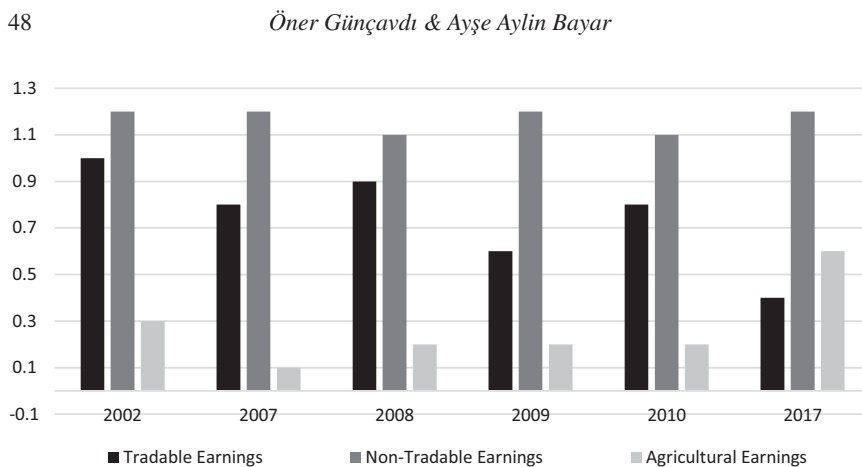


Figure 5.24. Relative contribution of income sources to inequality — shorrocks decomposition

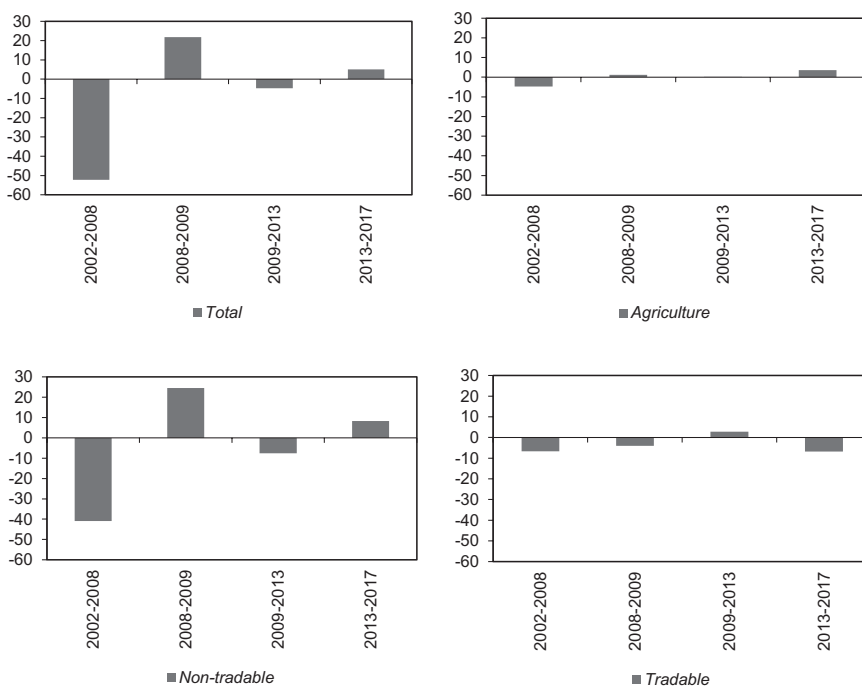


Figure 5.25. Contribution of non-tradable, tradable, and agricultural incomes in overall income inequality

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income matter in combating inequality. Unlike the Shorrocks decomposition method, Jenkins (1995) suggests another method allowing for a dynamic comparison over time regarding the contributions of different income sources into overall inequality. It is clear from Figure 5.25(a) that the great extent of improvement in inequality taken place in the AK Parti period occurred in the first period between 2002 and 2008. It also appears that the sub-prime mortgage crisis caused a deterioration in income distribution in the 2008–2009 period. However, the limited amount of improvement took place in the high economic growth period between 2009 and 2013. The moderate levels of economic growth in the last period seem to have accompanied a deterioration in income distribution again. Interestingly, this finding indicates that maintaining high economic growth rates, as happened in the 2010–2013 period, is not the only requirement to have a significant improvement in inequality. The type of economic activity on which economic growth relies is also a crucial factor to determine income distribution.

The impacts of agricultural income seem to have remained very small but have been in the directions of changes in overall inequality in all periods. Among three distinctive income sources in our examination, non-tradable income stands out by exhibiting a distinctively high contribution to changes in overall inequality. In particular, the contribution of non-tradable incomes to a change in inequality was highest in the 2002–2008 period, and non-tradable income can be accounted for overall improvement in this period. Besides, non-tradable income seems also to have been responsible for the great extent of the deterioration in inequality in the period corresponding to the sub-prime crisis. This is also the period when non-tradable income increased relatively more than other income groups. The ratio of the mean non-tradable income to the mean income from tradable activities appears steadily to have increased until 2008, and it remained stable for the rest of the period (see Figure 5.20).

Tradable income, as a product of manufacturing, is a crucial income source, taking up almost 20% of GDP after non-tradable activities. Except for the 2009–2013 high-economic-growth period, tradable income in Figure 5.25 seems to have generated negative impacts on changes in inequality, and became the second income group improving income distribution. Figure 5.25 also shows that tradable income in the first period

enhanced the improving impact of non-tradable income on inequality. However, this harmony between both income groups ruptured in the third period, in which non-tradable activities increased relatively more than tradable ones and paved the way for exceptionally high non-tradable-driven economic growth. While non-tradable incomes continued to improve income distribution, tradable incomes' contribution moved, albeit in a small way, in the direction of deterioration in 2009–2013. The same disharmony between the two income groups continues in the last period when non-tradable income caused an increase in inequality whereas tradable ones decreased it. This is partly because financial resources began to run out, and became difficult to find as easily as at the beginning of the 2000s. This is also due to the high reliance of non-tradable-driven economic growth on finance. Turkey in the third period has been experiencing economic growth at moderate rates. This finding implies that the *more the economic growth relies on non-tradable economic activities, the better the overall income distribution will be*.

The high economic growth in 2009–2013 continued to be a non-tradable-driven one, and the increasing reliance on non-tradable activities in this period caused even more de-industrialization than before. In addition to economic growth rates, it is also clear from Figure 5.25 that an increase in non-tradable economic activities and income this time resulted in a deterioration in income distribution (see their positive contributions in the fourth period in Figure 5.25). This rather puzzling result postulates that increases in non-tradable economic activities are *necessary*, but are not *sufficient* to have an improving effect on income distribution. Unlike our expectation, the reason for why non-tradable-driven economic growth in the fourth period caused a deterioration in income distribution must be sought in the developments in the relative prices. Unlike in other periods, the long-term stability in the foreign exchange rate halted in the fourth period, and the nominal exchange rate became volatile.¹⁸ The substantial

¹⁸ As an example, the \$/TL foreign exchange rate increased by almost 23% from 2009 to 2013. However, the same exchange rate increased by 92% between 2013 and 2007. In the early years of AKP ruling in power between 2003 and 2008, the same exchange rate seems evident to have declined by almost 14% (TCMB, <https://evds2.tcmb.gov.tr/index.php?evds/serieMarket>).

increase in expenditure on non-tradable economic activities began to cause an increase in the foreign exchange rate. This is, in fact, a new development in the Turkish economy that we had not experienced before. Therefore, this brings us to the conclusion that *non-tradable-driven economic growth is likely to result in an improvement in income distribution as long as the relative prices of non-tradable to tradable activities are stable.*

5.7. Conclusion

Turkey has gone through political and economic transformations in the 2000s, but the origin of this transformation goes back to the 1980s when economic liberalization and integration to the world economy started. Her distinguished macroeconomic performance after the economic crisis in 2001 particularly drew attention in the beginning. However, Turkey was not alone in having this macroeconomic success, as other emerging market economies had experienced high economic growth in the same period.

This high performance with growth was accompanied by a distinctive transformation in their economic structure and brought about a fall in the importance of tradable economic activities in creating value added manufacturing and employment. These economies, including Turkey, eventually became dependent on non-tradable economic activities to generate high economic growth and additional employment. This process was then called de-industrialization. Although de-industrialization in the normal course of development, as noted by Kaldor (1966), is expected to take place after the marginal factor productivity of manufacturing begins to fall, it occurred early in many developing countries including Turkey.

In this chapter, the experience of Turkey with de-industrialization is examined, and several factors are put forward to explain this early occurrence of de-industrialization, as follows:

- economic populism as an extension of the political power struggle in Turkey, and an increase in non-tradable economic activities as an effective instrument of populist economic practices;
- the high availability of financial resources in the international markets and their low cost during the 2000s, allowing financial resource

deficient developing countries to finance expenditure on non-tradable economic activities easily;

- the institutional structure of emerging market economies, which become more and more similar to those in advanced countries; on the international trade side, this similarity made developing market economies be more exposed to international competition; on the financial side, a globally similar financial structure paved the way for easy access to international finance;
- the mismatch of domestic consumption preferences with domestic production, the importation of tradable goods, mainly manufacturing goods, as a result, are all examined as causes of de-industrialization in Turkey.

This chapter also puts a particular emphasis on the observation from the Turkish economy that economic populism is exercised by an extension of non-tradable expenditure and economic activities such as construction, services, trade, banking and insurances, and public services. While economic populism requires high job creation as a result of high economic growth, non-tradable activities come forward to accomplish these tasks. Since any tradable-driven economic growth, the policy is under the constraint of international competition, policymakers, especially those who feel the pressure of severe political struggles, become dependent on non-tradable economic activities without feeling any pressure coming from international competition. However, this change in preferences between economic activities distorts the quality of economic growth, which increasingly becomes non-tradable-driven, creating less employment and value added than expected. However, this type of growth model has little ability to create foreign currency income, and requires finance, particularly from international capital markets. Moreover, this makes the economy vulnerable to external shocks. Any change in the prevailing favorable conditions in international capital markets easily creates instability and uncertainty about the prospects of economic growth.

The empirical investigation shows that a structural shift toward non-tradable activities from both tradable and agricultural has taken place in the case of Turkey. Based on micro Household Budget Survey data, we observe that the mean income level of non-tradable activities appears to

have increased substantially. More importantly, the number of non-tradable income entities in total income has also increased along with an expansion in non-tradable economic activities. This feature of the Turkish transformation is expected to generate a positive impact on income distribution. It is indeed true for the first years of the AK Parti government in the period between 2003 and 2008. We observed that income distribution in this period drastically improved until 2008, but then remain almost stable afterward. Our research also indicates that rises in non-tradable income in the early years of the 2000s must account for the improvement in income distribution. Besides, financial earnings stand out as the income source that generates the highest improving effect on income distribution in the 2002–2007 period. Importantly, our findings postulate that non-tradable-driven economic growth is likely to result in an improvement in income distribution as long as the relative prices of non-tradable to tradable activities are stable.

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Appendix A

Table A1. The impacts of NIP on employment

	Domestic Output Q	Exports X	Imports M	Domestic Consumption $C = Q + M - X$	Net import penetration $NIP = (M - X)/C$	$\alpha =$ $(1 - NIP_t)/(1 - NIP_{t+1})$	Actual employment L	Estimated employment if no increase in import penetration $L^* = \alpha L$	Change in employment due only to import penetration $\Delta L_m =$ $(L^* - L)$	Cumulative change in employment due only to import penetration $\Sigma(L^* - L)$
1998	107 988 631	6.274.512	10.130.374	111.844.493	0.03	—	3463	—	—	—
1999	102 002 782	10.115.334	14.357.507	106.244.955	0.04	1.01	3555	3575	20	20
2000	109 201 105	15.930.255	27.768.846	121.039.695	0.10	1.06	3638	3871	233	254
2001	99 491 693	35.624.083	39.985.146	103.852.755	0.04	0.94	3582	3373	-209	45
2002	103 484 915	51.048.050	63.079.511	115.516.377	0.10	1.07	3731	3990	259	304
2003	113 629 475	66.081.574	82.963.498	130.511.399	0.13	1.03	3664	3770	106	410
2004	128 676 609	85.195.572	115.237.975	158.719.011	0.19	1.07	3742	4019	277	686
2005	141 064 789	92.753.202	126.975.817	175.287.404	0.20	1.01	3994	4024	30	716
2006	154 926 320	115.717.473	159.031.341	198.240.188	0.22	1.03	4066	4187	121	837
2007	165 378 668	131.317.815	174.080.748	208.141.600	0.21	0.98	4088	4021	-67	770
2008	166 204 969	161.539.002	192.535.574	197.201.541	0.16	0.94	4235	3992	-243	527
2009	151 436 401	148.169.489	171.446.739	174.713.651	0.13	0.97	3949	3840	-109	418
2010	165 969 976	158.697.259	218.462.335	225.735.051	0.26	1.18	4216	4970	754	1172
2011	199 202 715	211.900.033	308.175.727	295.478.409	0.33	1.09	4367	4763	396	1568

Structural Transformation and Income Distribution in Turkey

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2012	203 704 562	257.866.643	317.532.864	263.370.784	0.23	0.87	4420	3853	-567	1001
2013	222 669 208	269.787.785	374.998.394	327.879.817	0.32	1.14	4632	5275	643	1644
2014	236 241 645	322.121.426	410.757.462	324.877.681	0.27	0.93	4936	4610	-326	1318
2015	250 183 050	365.709.840	453.643.595	338.116.805	0.26	0.98	4956	4871	-85	1232
2016	259 788 258	404.353.635	505.607.742	361.042.364	0.28	1.03	4915	5054	139	1372
2017	283 498 084	537.708.285	695.937.381	441.727.180	0.36	1.12	4969	5571	602	1974

Source: Author's calculation based on data from TÜİK.

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