

Long term regional dynamics of industrialization, from the late Ottoman Empire to the Republic of Turkey in the twentieth century, 1850-2000¹

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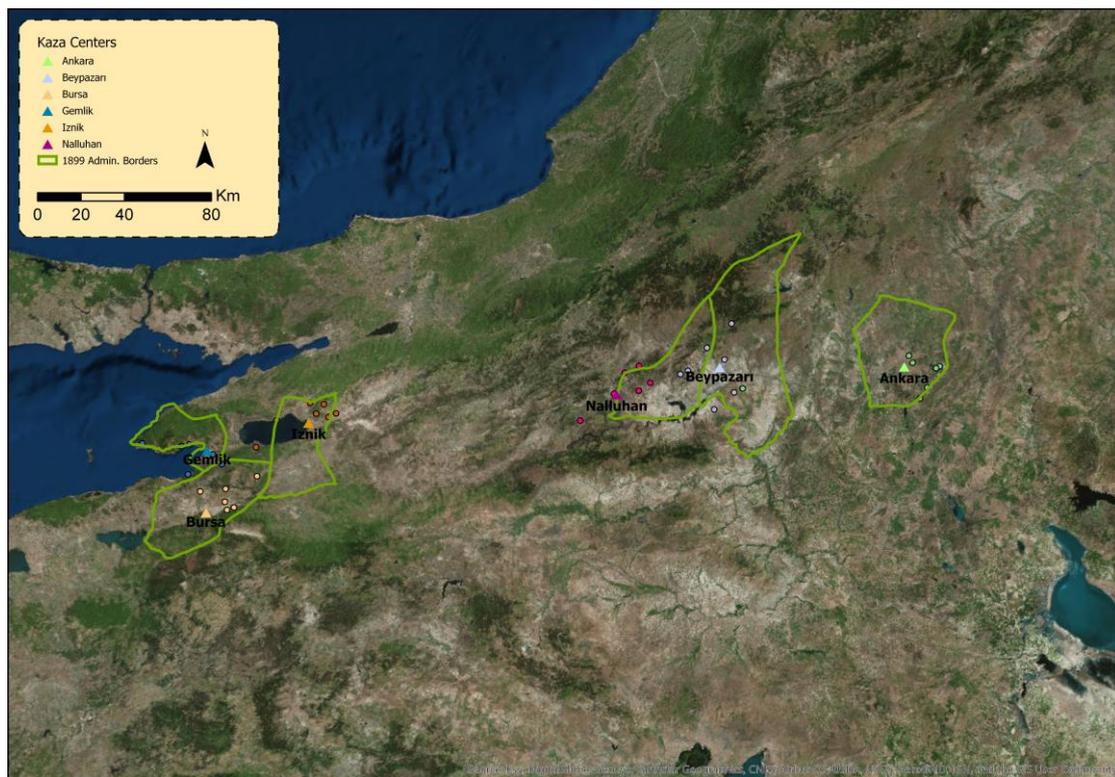
Introduction

This chapter is an attempt to compare and contrast regional dynamics of structural change and urbanisation in two regions of today's Turkey both with each other for a considerably long time period (1850 to 2000), as well with the rest of Turkey for most of the twentieth century (1927-2000) with temporal caveats due to unavailability of panel data on occupations and historical demography for the late Ottoman Empire and Turkey. At present it is only possible to extract occupational data for the Ottoman Empire from an empire-wide tax survey² relating almost exclusively to male household heads conducted in 1845 and from mid-nineteenth century Ottoman population registers. The results of the tax survey, covering approximately one million households, and the population registers, both provide micro level uncategorised data per household, have never previously been tabulated or aggregated. In our ongoing UrbanOccupations_OETR project we have been working on both of these sources and creating relational databases using a database management system. In our project we have been following a regional perspective. We have selected two regions in the first year (October 2016 – 2017) of this 5-year project, centred around cities of Ankara and Bursa in a three-tier case study design. We have extracted, coded, and analysed sectoral distribution of individual occupational descriptors of all available male heads of households in the cities of Ankara and Bursa, then in small-towns surrounding these two cities (Ayaş, Beypazarı and Nalluhan for Ankara, and Iznik and Gemlik for Bursa), and lastly in around ten villages for each town and city (a: villages surrounding in total 5 small-towns in the hinterlands of two cities; b: villages surrounding two cities of Ankara and Bursa). In the map these locations are shown with the administrative boundaries of sub-districts based upon an 1899 map.³

² These registers are called *temettuat* registers. For information on their use in the historiography see Kayoko Hayashi and Mahir Aydın, eds., *The Ottoman State and Societies in Change: A Study of the Nineteenth Century Temettuat Registers*, vol. 5., Islamic Area Studies (Kegan Paul, 2004).

³ R. Huber, *Empire Ottoman : Division Administrative, Dressee D'apres le Salname 1899*, 1:150,000 (F. Loeffler, 1899). The subdistrict of Ayaş and its belonging villages are not shown on the preliminary map above.

Map 1: cities, towns, and villages in two regions



The list of villages belonging to towns and cities can be found in Appendix 1. In this paper we will not use the rural sample set. Since this set needs an elaborate stratified proportional random sampling methodology, which we cannot devise for the time being. We will focus on the urban data sub-set (Ankara, Ayaş, Beypazarı, Nalluhan, Bursa, Iznik, Gemlik) for the mid-nineteenth century which is listed in Appendix 2. The occupational data in that Appendix 2 have been coded into the PSTI system to maintain compatibility both with the twentieth-century census data from Turkey, as well as with other countries' if their data are also PSTI conform.⁴

The first modern population censuses including females in the Ottoman Empire were made in the 1880s and their accuracy reached reasonably reliable levels only in the first decade of the twentieth century. However, these censuses or their detailed tabulated results are not accessible to researchers. We have started to work on mid-nineteenth century population registers for the same urban locations and their belonging villages

⁴ We are cooperating with a group of economic historians led by Leigh Shaw-Taylor and Osamu Saito within the framework of INCHOS (international network for the comparative history of occupational structure, campop.geog.cam.ac.uk/research/projects/internationaloccupations/inchos/) comparing 19 countries' historical structural change using PSTI system. The PSTI(International) scheme has been modified and further developed by Leigh Shaw-Taylor, the director of the Cambridge Group for the History of Population and Social Structure (CAMPOP), Cambridge University. PST has been devised by E.A. Wrigley at CAMPOP, campop.geog.cam.ac.uk/research/projects/occupations/categorisation. PST(I) is a very elaborate system to code occupations into sectors of economic activity. In its most abstract from P stands for primary (agriculture), S for secondary (manufacturing), and T for tertiary (commerce, transport, services and professions). Our study for the INCHOS project focuses on the national scale for Turkey for the period 1927-2000 by making a categorical differentiation between, and using respective occupational census data for, urban and rural locations, without spatially disaggregating them. In this study we would like to expand that perspective both chronologically as well as with a regional focus on two regions, yet still using the PSTI methodology.

from the 1840s yet, for this study we will confine our sources to the mid-nineteenth century Ottoman tax registers and the occupational data derived from them.

To analyse the long-term dynamics of industrialisation and demographic change in twentieth-century Turkey we will use newly created datasets of occupations constructed by using the occupational information taken from the national population censuses. In the Turkish context there is no alternative to national population censuses for this purpose. Series of separate occupational or industrial censuses were not conducted in Turkey. The first and last industrial census is from 1927. Although the population censuses have been available in print form in various publications and currently can be downloaded from the Turkish Statistical Institute webpage, they have been neglected sources for the Turkish economic history. National economic accounts and especially historical GDP estimates have been heavily used in the historical analysis of the performance of the Turkish economy. Interestingly although there are no solid data on employment, available national account estimates are in more frequent use in economic history than data on occupations. Two important and not easily remediable limitations of the available data are: a systematic undercount of occupations of females and the total absence of information on by-employment. These two deficiencies of data prevail for all of the census observations throughout the twentieth century. In this study we will limit our analysis to the examination of occupations registered for males. Since the occupational data coming from the 1845 Ottoman tax registers are also only for male heads of the households, we think excluding female occupations can increase the compatibility of two datasets (occupational data extracted from the Ottoman tax registers and twentieth-century census data).

Similarly, we will also not attempt to overcome problems of non-registered by-employment. A similar reservation is also in place in dealing with changing taxonomies of census making practices in the period. In this study although we are aware of the deficiencies of available data we will not try find solutions to the problems we have diagnosed. This does not mean that we take the census data at face value. Our methodology is the result of a choice to analyse the data in a preliminary and exploratory fashion limited to this exercise for the time being.

In the following we will firstly give a review of the existing literature on structural change and industrialisation of Turkey and the late Ottoman Empire. In doing so we would like to introduce our readers to the sources available and the chosen methodology of the existing literature.

Then we will focus on demographic change and urbanisation in regional perspective. Urbanisation is a key explanatory factor for structural change of the Turkish economy in the period. We argue that Turkey's experience of economic development in the twentieth century did not follow the two-stage structural change suggested by Petty's Law or three-sector hypothesis as put forward by Clark.⁵ The Turkish industrialisation experience in the twentieth century was marked by a very slow rate of urbanisation and limited shifts in employment from agriculture to other sectors until the 1970s; and then over the last three decades of the century, by a rapid and sustained urbanisation which has gradually accompanied by an increase in both the share of occupations in the secondary and tertiary sectors. In this respect we highlight the close connection, and in

⁵ Colin Clark, *The Conditions of Economic Progress* (London: Macmillan, 1940).

fact, the inextricable bond between urbanisation and industrialisation to describe structural change in Turkey in the twentieth century. This paper is an attempt to examine regional dynamics of urbanisation and industrialisation in the long-run for two regions in today's Turkey. Nevertheless, first we would like to review the existing literature on our key topic for the Ottoman Empire and twentieth-century Turkey.

Industrialisation and Structural Change in the Ottoman and Republican History of Turkey

Structural change and/or occupational history is an overlooked subject in both Ottoman and Turkish economic history. There are very few studies dealing with the subject and in fact none devoted entirely to it. In the following we review studies on Ottoman occupational structure and then existing work on structural change in the twentieth century Turkish economy.

The first attempt to analyse nineteenth century economic developments in relation to structural change in the context of Ottoman economic history was by Emine Zeynep Kıray.⁶ There are a few other studies examining structural change in the Ottoman Empire however their perspective is not economic history but the changes in the social structure. These studies are related to social stratification within Ottoman society.⁷ The reason we lack in depth analyses of occupational structure and structural change in the Ottoman Empire is the simple yet very limiting fact that archival sources conveying occupational descriptors on a large scale only recently became available to researchers in the Ottoman state archives. For example, the above mentioned mid-nineteenth century population registers, which constitute one of the most promising archival sources for occupational data were made accessible only in 2011. More importantly these and other similar sources have not been tabulated and are only available in micro level.⁸ With the emergence of national states in the former Ottoman territory at the end of the nineteenth century, especially in the Southeast Europe after the Berlin Congress in 1878, the successor states conducted population and industrial censuses. Nevertheless, this general review of literature is geared toward studies on, or regions of, today's Turkey.⁹

Publications on occupational structure and structural change for the early Turkish Republic covering the period from the 1930s until the 1960s hardly exist. Turkish economic history has neglected the subject almost entirely. The pioneering work of

⁶ Emine Zeynep Kıray, "Foreign Debt and Structural Change in 'The Sick Man of Europe': The Ottoman Empire, 1850-1875" (PhD Thesis, Massachusetts Institute of Technology, 1988). This thesis was not published and it lacks a quantitative analysis of the occupational structure of the mid-nineteenth century Ottoman economy and focuses on the macro financial indicators.

⁷ Yavuz Cezar, "From Financial Crisis to the Structural Change: The Case of the Ottoman Empire in the Nineteenth Century," *Oriente Moderno* 18 (79), no. 1 (1999): 49–54 is a good example for the 18th century. For a similar brief study on the effects of private property ownership and social stratification in the Ottoman Empire see Kemal H. Karpat, "Some Historical and Methodological Considerations Concerning Social Stratification in the Middle East," in *Studies on Turkish Politics and Society: Selected Articles and Essays* (Boston, MA: Brill, 2004), 291–310.

⁸ For an important attempt to aggregate data on shop ownership in Istanbul in the early nineteenth century see Cengiz Kırılı, "A Profile of the Labor Force in Early Nineteenth-Century Istanbul," *International Labor and Working-Class History*, no. 60 (October 1, 2001): 125–40.

⁹ For an authoritative account for the Balkan economies in the long-nineteenth century see Michael R. Palaioret, *The Balkan Economies C. 1800-1914 : Evolution without Development* (Cambridge: Cambridge University Press, 1997).

Haluk Cillov as an economist and statistician in the 1950s¹⁰ was not followed up in the literature and occupational structure was neglected almost completely until the Turkish Statistical Institute made employment statistics available for the researchers covering the period after the 1970s. One important exception to this is a Cambridge University PhD in Economics in 1976 by Tezel and his follow-up publications. In his PhD Tezel provided adjusted and corrected sectoral data on the composition of the Turkish working population in national aggregates for 1927 and 1972 by using industrial and population censuses in broad Primary Secondary and Tertiary categories.¹¹ In his later publications Tezel extended the time period of this analysis using the same categories up to 1992 with the cross sections: 1927, 1935, 1950, 1962, 1972, 1982, 1992.¹² With the exception of Tezel's studies structural change has not been examined in the perspective of economic history. Therefore the literature comes primarily from economics and labour economics instead of economic history.¹³ This literature generally uses the same data source, which is the datasets of the Turkish Statistical Institute. The economists working on this subject have been primarily interested in changes in employment and not in occupational structure by focusing on sectoral data on employment. There are very few and recent examples focusing on occupations and changes in occupational structure and due to the limited data availability economists working on occupations prioritise later or contemporary periods.¹⁴ In fact since the first household labour force surveys in Turkey were conducted in 1988,¹⁵ this year has been a benchmark for studies in changes in employment. In 1995 a very influential book provided the first aggregate and adjusted data on employment for the period from the establishment of the Turkish Republic until 1988.¹⁶ Bulutay's book which is the product of a collaboration between the State Institute of Statistics of Turkey and the International Labour Office, changed the literature in economic history on employment and occupations and it still defines and determines the scope and outcomes of ongoing studies. The employment data estimates provided by this source are modified annual

¹⁰ Especially, Haluk Cillov, *Meslek istatistikleri: metodolojide yeni meseleler* [Occupational statistics: new methodological issues] (İstanbul Üniversitesi İktisat Fakültesi, 1956) is of crucial importance of making use of occupational censuses. Cillov also published various books on statistics and census making in Turkish as well as few articles on Turkish labour force in prominent international journals in the 1950s, Haluk Cillov, "La population totale et la population active de la Turquie d'après les recensements," *Population (French Edition)* 12, no. 1 (January 1, 1957): 93–102.

¹¹ Yahya Sezai Tezel, "Turkish Economic Development, 1923-1950: Policy and Achievements" (PhD Thesis, Cambridge University, 1976) p. 64.

¹² Yahya Sezai Tezel, *Cumhuriyet Döneminin İktisadi Tarihi (Economic History of Republican Era)*, 4th ed., 16 (İstanbul: Tarih Vakfı Yurt Yayınları, 2000), p. 275.

¹³ Contributions from Pamuk is the main exception to this. In a recent publication Pamuk gives a detailed account of the economic experience in the country in the long-term perspective Şevket Pamuk, *Türkiye'nin 200 Yıllık İktisadi Tarihi: Büyüme, Kurumlar ve Bölüşüm (The Economic History of Turkey of 200 Years: Growth, Institutions and Distribution)* (İstanbul: Türkiye İş Bankası Kültür Yayınları, 2014). For a brief but concise overview of the twentieth century economic history of Turkey see his "Economic Change in Twentieth-Century Turkey: Is the Glass More than Half Full?," in *The Cambridge History of Turkey*, ed. Resat Kasaba (Cambridge: Cambridge University Press, 2008), 266–300; also see Sumru Altuğ, Alpay Filiztekin, and Şevket Pamuk, "Sources of Long-Term Economic Growth for Turkey, 1880–2005," *European Review of Economic History* 12, no. 03 (2008): 393–430.

¹⁴ For a recent attempt to analyse a short and again recent period between 2004 and 2010 see Semih Akçomak and Burcu Gürçihan, "The Importance of Occupations in the Turkish Labor Market: Job and Wage Polarization (in Turkish)," *İktisat İşletme ve Finans* 28, no. 333 (2013): 9–42.

¹⁵ İnsan Tunalı and Cem Başlevent, "Female Labor Supply in Turkey," in *The Turkish Economy: The Real Economy, Corporate Governance, and Reform*, ed. Sumru Altuğ and Alpay Filiztekin (New York, NY: Routledge, 2006), 93.

¹⁶ Tuncer Bulutay, *Employment, Unemployment and Wages in Turkey* (Ankara: International Labour Office, 1995).

estimates created by econometric methods from various sources such as population censuses and production indices for the 1923-1949 and the State Planning Organisation's estimates, censuses and annual surveys on manufacturing.¹⁷ The results of these estimates on the employment were presented only first as percentages in national aggregates in three main sectors, agriculture, industry, and services. Secondly, as annual estimates, in real numbers, for 1923-1988, of employment (*demand for labour* as it is called in the mentioned source) again as national aggregates in nine categories of economic activity of the International Standard Categories of Occupations (ISCO) of the time.¹⁸

Bulutay's annual estimates of sectoral composition of employment in to three main sectors and even into sub-sectors along the ISCO categories are results of back projections of econometric modelling without making use of any occupational data. These figures have never been challenged. On the contrary, starting from the late 1990s, Bulutay's estimates have been integrated into the Statistical Indicators updated and published annually by the Turkish Statistical Institute,¹⁹ and following this the estimates for 1923-1988 become embedded and adjusted into the most available data on economics and economic history of Turkey. Leaving aside the problematic method Bulutay's estimates are produced, his data have another categorical flaw. They are only on the national level. Therefore, it is not possible to disaggregate the data either along sex or along rural-urban divisions. As we will discuss below especially for the Turkish economic experience of the twentieth century these two differentiations are crucial to analyse the changes in occupational structure. Historical regional GDP estimates are currently non-existent either, even for the recent performance of the Turkish economy. Therefore, industrialization and economic performance hitherto have not been examined in a regional perspective, to the best of our knowledge.

For our purposes we had to construct our own occupational data series for Ankara and Bursa regions, in addition to alternative national data series of occupational structure for Turkey for 1923-2000. In the following, we will explain in detail the source availability, limitations, possibilities, and our approach.

Sources, Censuses

The data used for this chapter for the twentieth century derive exclusively from the occupational information extracted from the Turkish national population censuses. The nineteenth century dataset has been explained in the introduction. The first national census was in 1927. The second one was in 1935. With only one exception in 1995, national censuses were held between 1935 and 2000 every five years. The 2000 population census was the last general population census conducted in Turkey. After 2000 the Turkish Statistical Institute adapted an address based population registration system and ceased to conduct censuses. The data on employment are now being collected entirely via household labour force surveys. The household labour force

¹⁷ Ibid, p. 213.

¹⁸ Agriculture, forestry, hunting and fishing; mining and quarrying; manufacturing; electricity, gas and water; construction; wholesale and retail trade, restaurants and hotels; transportation communication and storage; finance, insurance, real estate and business services; community, social and personal services, see *ibid*, p. 189-190.

¹⁹ Türkiye İstatistik Kurumu (Turkish Statistical Institute), *İstatistik Göstergeler = Statistical Indicators* (Ankara: T.C. Başbakanlık Devlet İstatistik Enstitüsü, 2013). Data for the years after 1988 are based on household labour force surveys, which are also not very reliable due to their limited sample size.

surveys were conducted in 1988 for the first time. Another good reason to stop in year 2000 is due to one of the severest economic crises in Turkish economic history, that of 2000/01, which occurred during the implementation of an IMF-sponsored stabilization plan.²⁰

Hence there are in total 14 census results available for the time period under examination. The 1940 census can be seen as a failed census. The Turkish Statistical Institute did not publish any occupational data from this census. All the other 13 censuses were published with occupational information in the form of cross tabulations at varying levels of aggregation. If we leave aside the first national census of 1927 all of the available census results provide detailed occupational information suitable to be converted and coded to the second point of PSTI as a national aggregate both for males and females, (however, we think figures for females are not solid enough to work with due to severe undercount of economically active females). Second point of PSTI means going beyond the main sectoral differentiation, first point, P for primary-agriculture sector, S for secondary-manufacturing, and T for tertiary-commerce, transport, services and professions. Thanks to this level of sustained detail, it is possible to trace shifts in occupational structure between sub-sectors both in the secondary and the tertiary sectors on a national²¹ and to a lesser degree on regional level for several census years but not all of them. Within the limitations of this study we opted to stay on the preliminary, first point PSTI and increase to total number of observation years i.e. censuses. Therefore, we will operate with shares of occupation in three main sectors of the economy on national and regional levels for the maximum number of observations.

The most detailed occupational data can be found in the 1935 and 1945 censuses. However, they have also their drawbacks. The major problem is the fact that the taxonomy used in these two censuses is not a universally standard one. The reason for this is the fact that the first attempts to universalise occupational information or economic activity fields consolidate themselves in the late 1930s.²² Only in 1938 was the term *economically active population* coined by the United Nations. The introduction of the term *labour force* was even later, at the Montreal Conference of Labour Statisticians in 1947. Cillov compares the taxonomies of occupations used in 1935, 1945 and 1950 Turkish censuses with international practices. 1950 was also a landmark year regarding the languages used in the censuses. All of the published results of the Turkish censuses are in two languages. Those from before 1950 were in Turkish and in French. Starting from 1950 the census results were published in Turkish and in English.

Cillov is very critical about the occupational categories used in the early Turkish censuses and argues that only after the Turkish Statistical Institute started to implement

²⁰ For more information on the 2000/01 crisis see Sumru Altuğ, Alpay Filiztekin, and Şevket Pamuk, “Sources of Long-Term Economic Growth for Turkey, 1880–2005,” *European Review of Economic History* 12, no. 03 (2008): 393–430, 420.

²¹ Occupations in sub-sectoral second point PSTI in real numbers for the national level can be seen in Appendix 3.

²² Although Jacques Bertillon presented a plan to create an international taxonomy on occupations and diseases at the International Congress of Statistics in Chicago in 1893, it was not before the 1930s that the first taxonomies started to gain broad acceptance. For an evaluation of the historical development of classifying and coding statistical knowledge and for information on Bertillon’s attempts see Alain Desrosières, *The Politics of Large Numbers: A History of Statistical Reasoning* (Cambridge, Mass: Harvard University Press, 1998), 272.

the COTA, (the Inter-American Statistical Institute, Committee on the 1950 Census of the Americas) which is close to the International Standard Classification of Occupations of the International Labour Organization, the results of the Turkish population censuses can be compared meaningfully internationally. Cillov's argument was made in 1956.²³ Thanks to the PSTI system and given the level of detail in the census results we think, it is possible to compare the Turkish occupational structure meaningfully both in time and also in our chosen two regions. Of course, we have to be aware of changes in census practices over this the long period, in which 13 censuses were conducted. In the following the results of the coding will be presented without any adjustment of the data and commented upon where necessary.

Lastly, there is a need to clarify the occupational data we extract from the censuses. For the period prior to 1950, both the 1935 and 1945 censuses provide detailed occupational data. However, these two censuses do not make a distinction between occupation and the economic activity as a category. Starting from the 1950 census we have more differentiated occupational data in the published results of the censuses. After 1955 with the additional questions on occupation and economic activity in the questionnaires, the published census results become more detailed and differentiated regarding the occupational categories. We start to see new categories in addition to *population by usual occupation* such as *population by working status*, *population by kind of working*, *population by occupational status*, *population by last week's occupation*, *economically active population by economic activities*, and *economically active population by industry and by occupation*.²⁴ After 1950 several cross-tabulations were produced along these categories for the occupational information changing in their level of aggregation and geographical scope and detail. Throughout this paper we will prioritise and use the *usual occupation* as our unit of analysis. By choosing this category in our datasets we will include all the enlisted population with occupations whether they were working at the instance of census taking or not. For the regional datasets, when the lack of *usual occupation* as a category creates major gaps in the longitudinal dataset, we occasionally opted for replacing those gaps with the numbers provided in the category of *field of economic activity*. We have clearly stated this data replacement when we applied it.

Preliminary Results

We will present our results on two levels first the national one and then on regional levels. After presenting the data problem on female occupations and before going to the regional perspective we would like to highlight the specificities of the urbanisation experience in Turkey in the twentieth century.

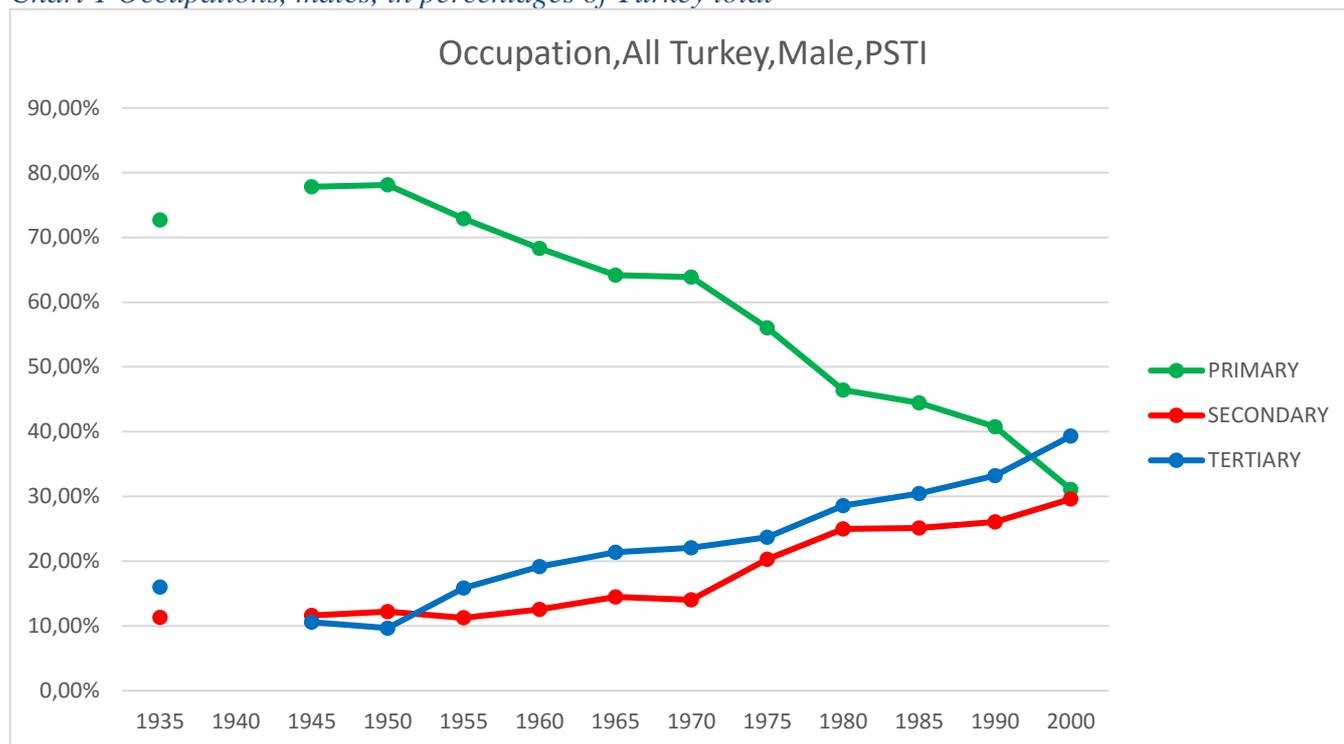
Structural Change in Turkey on National Level, 1927-2000

First, we would like to show and comment on the magnitude of shifts between main sectors for male occupations for Turkey.

²³ See Cillov, *Meslek istatistikleri*, 92–102.

²⁴ These categories in English are not our own translations but they are in the wording the Turkish Statistical Institute used. All of the published results of the Turkish population censuses used in this paper can be downloaded from the webpage of the library of the Turkish Statistical Institute: <http://kutuphane.tuik.gov.tr>

Chart 1 Occupations, males, in percentages of Turkey total



The occupational shifts among main sectors for Turkish males show a very strong agrarian occupational structure. Until the 1990s primary sector had the largest share and it falls below 40 percent only around the 1990s. We argue that the structural change in male occupations in Turkey can be understood in two periods. The first one covers the years between 1927 and 1970, in which the share of male occupations in primary sector remains higher than 60 percent. In this period, we can say that the occupational structure is heavily agricultural and surprisingly we do not see any major shifts from primary to other sectors. The modest increase in the share of occupations in the primary sector from 1945 to 1950 can be attributed to the lowering of the age boundary from 15 to 5 years and older. Especially in the rural settings 10 to 15-year-old males were probably registered with occupations in agriculture although the same age cohort was excluded in the 1945 census data selection. This is the reason we would argue that the whole first period from 1927 to 1970 can be characterised as a long, slow decrease in the primary sector share. Only after 1970 the shift away from the primary sector gains and sustains momentum.

Due to the specific and atypical development or retarded structural change in Turkey we can say that only in the last decade of twentieth century the shares of secondary and tertiary sector occupations surpass the share of primary occupations. How can we comment on this late and non-industrial structural change?

We argue that industrialisation of the occupational structure, in its strict sense of shifts of employment from agriculture to industry, is not the appropriate term for the Turkish economic experience in the twentieth century. If we focus on the dynamics and relative shares of occupations in the secondary sector we can detect three phases. As before mentioned, the 1950 census is less reliable due to a major taxonomy change. Bearing these in mind we can see that between 1935 and 1960 shares of male occupations in

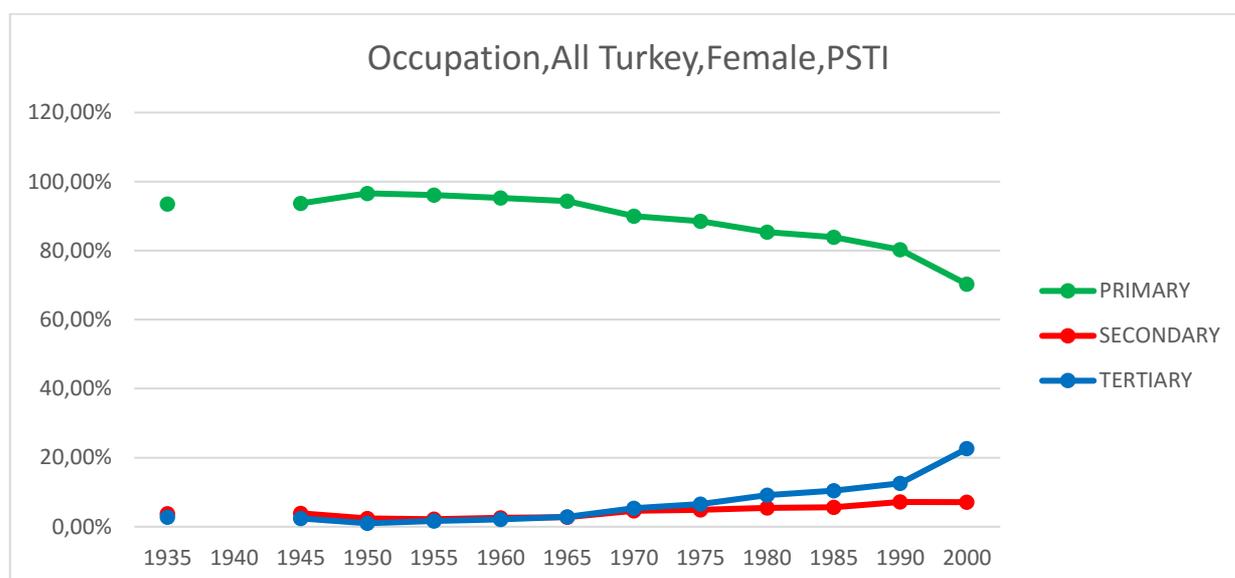
secondary sector are on a plateau ranging around 12 percent. The second plateau is around 16 percent for the years 1960 to 1970. After 1970 we see that share of occupations in secondary sector go beyond 20 percent for the first time and gains a momentum of sustained increase with some bumps in the 1980s to reach a level as high as 30 percent in 2000. We should not assign much explanatory power to these calculated percentages, however, a gradual increase in percentages of male occupations in secondary sector accompanied with relatively bigger fall in occupations in primary sector in Turkey shifts our attention to high share of occupations in tertiary sector. Moreover, the fall in the occupations in primary sector is a larger absolute fall due to the increase in occupations in the tertiary sector.

We argue that these shifts can only be explained by the drastic urbanisation experience of Turkey. At this point we would like to position the findings above with the general findings of the existent literature on the performance of the Turkish economy in the twentieth century. The impact of urbanisation has already received attention. Pamuk summarizes the impact of the Turkish urbanisation experience in the twentieth century on economy as a transformation of a primarily rural and agricultural economy into a mostly urban economy. Pamuk builds his argument upon his analysis of GDP estimates and increasing shares of industry and services and decreasing share of agriculture in them. He also uses data on the share of agriculture in labour force in Turkey.²⁵ Our findings are in accord with this argument and the occupational data extracted from the censuses shows a strong presence and steady increase in the tertiary sector. Pamuk divides the twentieth century Turkish economic experience into three sub-periods to examine structural change, industrialisation and basic macro-economic outcomes, as follows: the single-party era until the end of the WWII; the import-substituting industrialisation era after the WWII; and globalisation era since 1980.²⁶ If we focus on the effects of urbanisation on shifts in the occupational structure of Turkey we propose two periods: until 1970, when the gradual increase of urban share of the population shifts to a different and faster trajectory of growth; and after. The urbanisation in the 1970s both pushes the pace of industrialisation on a higher and sustained level but at the same time also determines its tertiary sector bound growth dynamic. Our conclusions until now are stemming from the analysis of the male occupational structure. Before analysing the impact of urbanisation on occupational structure in further detail we should showcase the severe undercount of female's occupations.

²⁵ Pamuk, "Economic Change in Twentieth-Century Turkey," p. 266 and Graph 10.1, p.269.

²⁶ Ibid, p. 274.

Chart 2 Occupations, females, in percentages of Turkey total



The two graphs above show how distinctively different the occupational structures for males and females were *registered/counted* and how strong the gender divide was. The participation rates for females are extremely low. In fact, they are so low that the figure above in percentages of occupied females and the share of the sectors within cannot be taken as face value. We are convinced that there has been a continuous and massive undercount of female occupations throughout the twentieth century. Although it is plausible to assume that the undercount of female occupations became less marked at the end of the twentieth century, since we would like to discuss the entire period, we will not include the female occupations in our analysis. In the following section the occupational structure of males in Turkey will be disaggregated into urban and rural samples.

Urbanisation: Urban-Rural Division

The available data for occupations with a rural and urban division are more limited. Nevertheless, we do possess such occupational data on the national level for nine census years. The criteria for urban versus rural have changed over the period. In 1935 census data on occupations were analysed and cross-tabulations were created for every province on three levels: province capitals, settlements with less than 10,000 inhabitants, entire province. Therefore, it is possible to code the occupational data into PSTI categories for rural and urban populations using 10,000 as a separator. The next census providing differentiated data in a similar way is 1950. Unfortunately for the 1950 census the population level for the divide is 5,000. For the 1955, 1960, 1965 and 1970 censuses we can use again 10,000 as a separator. For the 1975 and 1980 the occupational data are only available in national aggregates without a possibility to divide it into urban and rural schemes. For the last three census years, 1985, 1990 and 2000 the unit of division is not the population level but the administrative structure. The two-tier division is urban (the total population of province and district centres) and rural (the total population in towns and villages). Although the criterion for urban-rural division have varied we think that the available aggregate data can be used to analyse the impact of urbanisation. Nevertheless, in the following examination the graphs produced from this limited data should be seen as indicators for and not exact mappings of structural change. Especially the last three observations for the period 1985 to 2000

should rather be commented on separately and not seen as a continuation of long term trends of occupational change in Turkey. There are three main reasons for a twofold analysis. First the population limit for the division between urban and rural in data changes starting from 1985. Second urbanisation, which is from our point of view the most important dynamic behind occupational change in Turkey, reaches a new momentum in the 1980s.²⁷ Third IMF-led stabilization and structural adjustment programs were implemented in the early 1980s with crucial effects on the occupational structure.²⁸

Before commenting on the urban occupational structure some information about the pace and the nature of the urbanisation in Turkey in the twentieth century is necessary. Due to the length of the period and the speedy growth of the Turkish population from 13,648,270 in 1927 to 67,803,927 in 2000 it is difficult and not rewarding to set a fixed threshold for urbane status for the entire period and therefore we will follow a dynamic criteria of urbanity imposed by the available census data. Nevertheless, just to underline the extraordinary characteristics of the urbanisation experience in Turkey of the twentieth century if we apply the administrative-locational criterion (populace living in province and district centres compared to populace living in towns and villages) for the entire period we can detect the changing momentum for the urbanisation dynamic for Turkish population more clearly.

Table 1: Urban and Rural Population of Turkey in Real Numbers and in Percentages

Year	TOTAL			Proportion of province and district centers population in total (%)			Proportion of towns and villages population in total (%)			Sex Ratio
	Total	Males	Females	Total	Males	Females	Total	Males	Females	
1927	13648270	6563879	7084391	24,2	26,1	22,5	75,8	73,9	77,5	92,7
1935	16158018	7936770	8221248	23,5	24,8	22,3	76,5	75,2	77,7	96,5
1940	17820950	8898912	8922038	24,4	26,2	22,6	75,6	73,8	77,4	99,7
1945	18790174	9446580	9343594	24,9	26,5	23,4	75,1	73,5	76,6	101,1
1950	20947188	10572557	10374631	25,0	26,6	23,4	75,0	73,4	76,6	101,9
1955	24064763	12233421	11831342	28,8	30,6	26,9	71,2	69,4	73,1	103,4
1960	27754820	14163888	13590932	31,9	33,7	30,1	68,1	66,3	69,9	104,2
1965	31391421	15996964	15394457	34,4	36,2	32,6	65,6	63,8	67,4	103,9
1970	35605176	18006986	17598190	38,5	40,6	36,2	61,5	59,4	63,8	102,3
1975	40347719	20744730	19602989	41,8	43,4	40,1	58,2	56,6	59,9	105,8
1980	44736957	22695362	22041595	43,9	45,3	42,5	56,1	54,7	57,5	103,0
1985	50664458	25671975	24992483	53,0	54,6	51,4	47,0	45,4	48,6	102,7
1990	56473035	28607047	27865988	59,0	60,3	57,7	41,0	39,7	42,3	102,7
2000	67803927	34346735	33457192	64,9	65,3	64,5	35,1	34,7	35,5	102,7

Source: Statistical Indicators, p. 6.

²⁷ For a detailed account of the demographic developments in Turkey in the period see the State Institute of Statistics, *Türkiye Nüfusu, 1923-1994: Demografi Yapısı ve Gelişimi: 21. Yüzyıl Ortasına Kadar Projeksiyonlar (The Population of Turkey 1923-1990: Projections until the mid-twenty-first Century)* (Ankara: T. C. Başbakanlık Devlet İstatistik Enstitüsü, 1995).

²⁸ For evaluations on the effects of these structural adjustment programs see Tosun Arıcanlı and Dani Rodrik, "An Overview of Turkey's Experience with Economic Liberalization and Structural Adjustment," *World Development* 18, no. 10 (1990): 1343–50 and Fikret Şenses, "Turkey's Stabilization and Structural Adjustment Program in Retrospect and Prospect," *The Developing Economies* 29, no. 3 (September 1, 1991): 210–34. Şenses comments on the structural change in the period 1967-87 between sectors of agriculture, industry, manufacturing, and services by using the Turkish State Planning Office and World Bank data (Table 4, p. 225) but does not conduct an analysis on the impact of the structural adjustment program to the structural change in detail.

What we can observe in the table above is a gradual increase in the urbanisation ratio between 1927 and 1970. Yet 1950 can also be seen as an acceleration point for urbanisation. In 1970 urban share of the population reaches almost 40 percent. Following a faster trajectory, the urban population passed the 50 percent mark sometime between 1980 and 1985. Finally, in 2000 share of the population living in province and district centres reached 65 percent. This rapid urbanisation in a period of fast population growth in the last three decades of the twentieth century is extraordinary. The population of Turkey almost doubled between 1965 and 2000 and at the same time urban population share jumped from 34,4 to 64,9 percent. The impact of this drastic demographic change on economic geography and occupational structure has hardly been studied.²⁹ In our analysis of the long term regional structural changes we will, therefore, keep in mind two periods before and after 1970.

Chart 3 Shares of urban versus rural population, Turkey



In absolute numbers³⁰ what we can assess is a gradual increase in the total number of male occupations in primary sector in the entire period, which is not contradictory to the general assumptions in the literature that Turkish economic development did not result in a transfer of labour force from primary to the secondary sector. If we think about the period between 1950 and 1970 this levelling of the total male occupations in the primary sector needs further elaboration. The sharp fall from 1950 to 1955 can be explained by two factors. As exception in the figures of 1950 the population 5 and above is included instead of 15 and above which was the benchmark for other censuses in the period. Secondly also only in this year urban/rural differentiation is made by places having 5,000 and more people instead of 10,000 and more. Both of these factors

²⁹ If we leave aside, Murat Güvenç, "Turkey's Demography and Economic Geography: An Overview," *Südosteuropa Mitteilungen* 44, no. 6 (2004): 30–43.

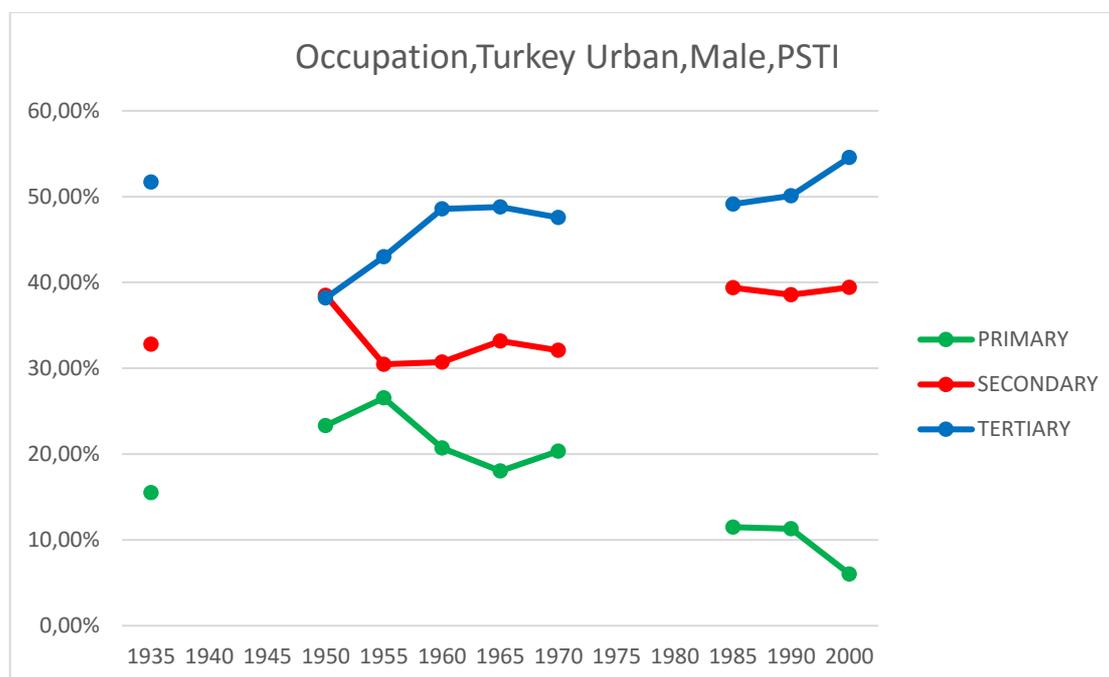
³⁰ See Appendix 3.

push the total number of male occupations in agriculture to higher levels compared to the later observations.

The classifications of the 1970 census with the sizable category of *other* is a problematic one. However, the fact that the figures are very similar to the ones in 1965 shows that before the real acceleration of urbanisation after 1970 urban male occupations remain low. In 1970 the majority of males with occupations had occupations in rural locations in the primary sector (4,740,903) compared to the total male urban occupations in primary, secondary and tertiary sectors (2,651,878). Whereas in 2000 the total urban male occupations in secondary and tertiary sectors (11,661,633) were considerably more than the total rural male occupations in all three sectors (8,139,374). This is the essence of the urban-structural transformation of male occupations in Turkey between 1970 and 2000. Before we contextualise this drastic change of male occupations in the last three decades of the twentieth century, one remark is worth mentioning for an earlier period. Male urban occupations in secondary and tertiary sectors did not only remain low between 1950 and 1970, their composition did not change either. Male urban occupations in the tertiary sector were dominant between 1950 and 1970.

Starting as early as 1935 male urban occupations in the tertiary sector were always greater in number than those in secondary sector. To highlight the relative importance of urban male occupations in tertiary sector we now switch to urban male occupations in percentages on the national level. As in the previous part and even more for the coming charts we should clarify that we are solely using sectoral categories of occupations and their relative shares as indicators of structural change and dynamics of economic activity. This is the reason why we are operating with percentages. Our aim here is not to estimate the magnitude of economic sectors in value or their exact share in employment. We would like to use male occupational data and changing sectoral shares within, as proxies for the fall of the importance of primary sector and timing and raise of importance and magnitude of secondary and tertiary sectors.

Chart 4 Urban male occupations, Turkey



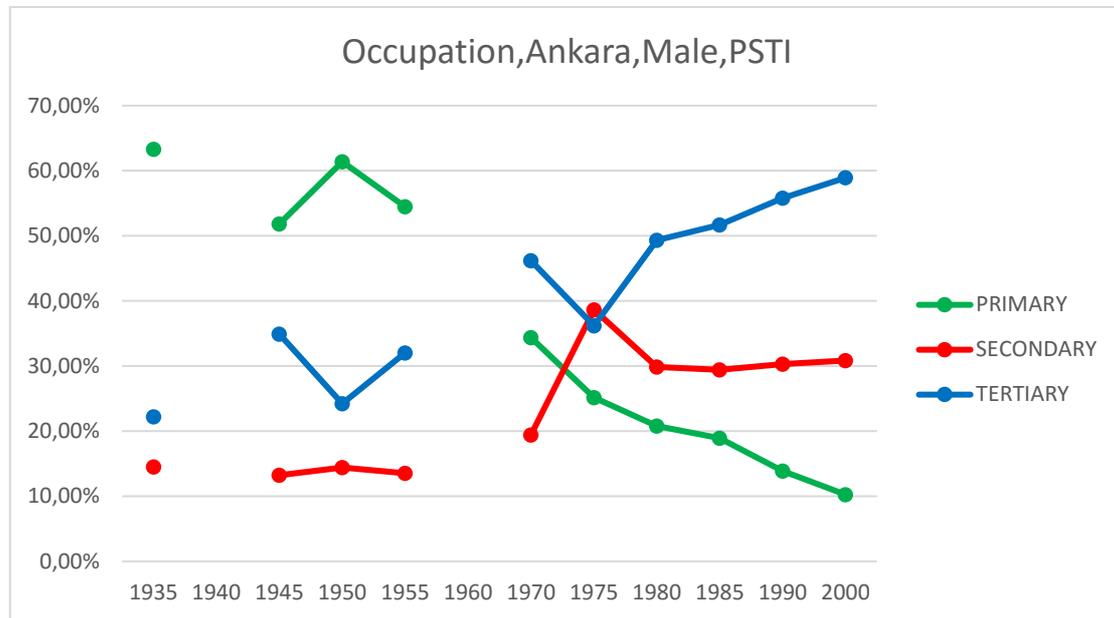
Although in 1935 above 50 percent in tertiary occupations may seem like extremely high, one should not forget that in 1935 only 25 percent of males in Turkey were living in urban locations (having more than 10,000 people as a criterion for most of the period). The low ration of tertiary occupations in 1950 stems from unusual specific categories of this census year, such as lowering the urban separation from minimum 10,000 to 5,000 inhabitants only for this census. Starting from 1955 until 2000 the increases in the shares of urban secondary and tertiary shares in male occupations shows an expected trend to push shares of urban primary occupations lower than 10 percent around 1985. In the following we would like to discern regional male occupational structure for Ankara and Bursa regions on three levels: entire province, urban parts of the province, and the main city of the province.

Ankara and Bursa regions

Before we get into the details of regional occupational structure we should clarify the problem of administrative border changes throughout the period. In our understanding both Ankara and Bursa regions correspond to a geographical area, which goes through changes in in the categories of administrative borders. Hence the total square kilometres of these two provinces change in time. However, our aim here is not to try to fix total surface of the area throughout this long period but focus on two regions centred around two major cities and centres of economic activity. In this regard we argue that although the exact square kilometres do differ, our main categories such as the province, the urban locations and the main city do not change to the degree that they lose their explanatory categories. To our understanding the fact that no other city than the main centres has emerged in these two regions in period, and that these two regions stayed intact instead of being divided into smaller units also supports our argument.

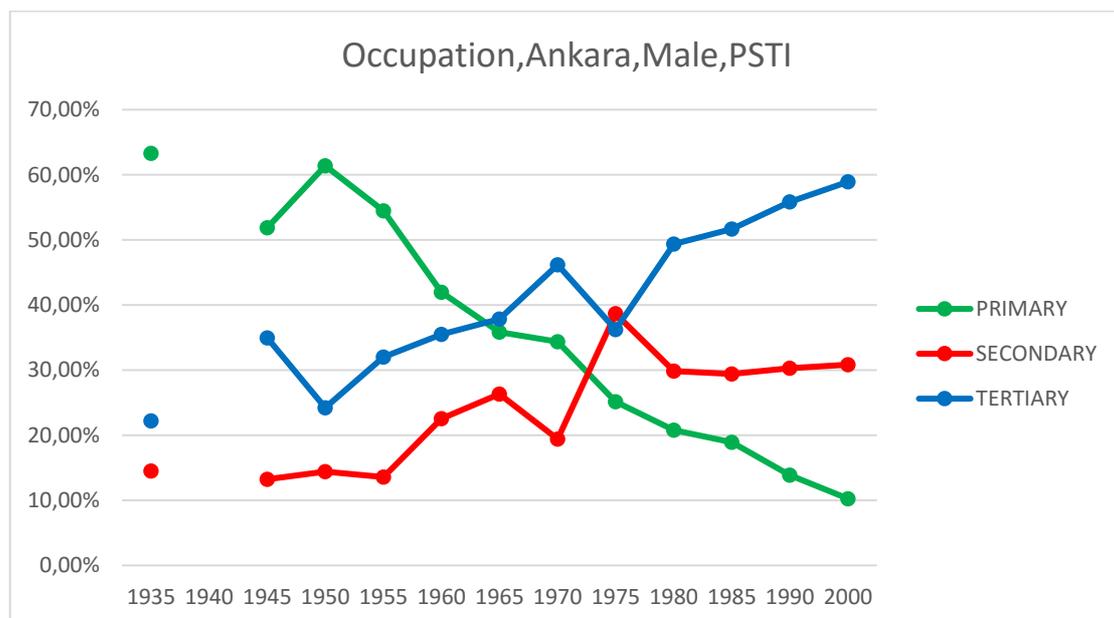
We will first focus on male occupations in Ankara region.

Chart 5 Male occupations, Ankara province



As already mentioned we lack the occupational data on province level for the censuses 1960 and 1965. 1940 census does not provide any data on any category of occupations. If we take the economic activity field data coded into PSTI for 1960 and 1965 we can complement these missing data with proxies as follows:

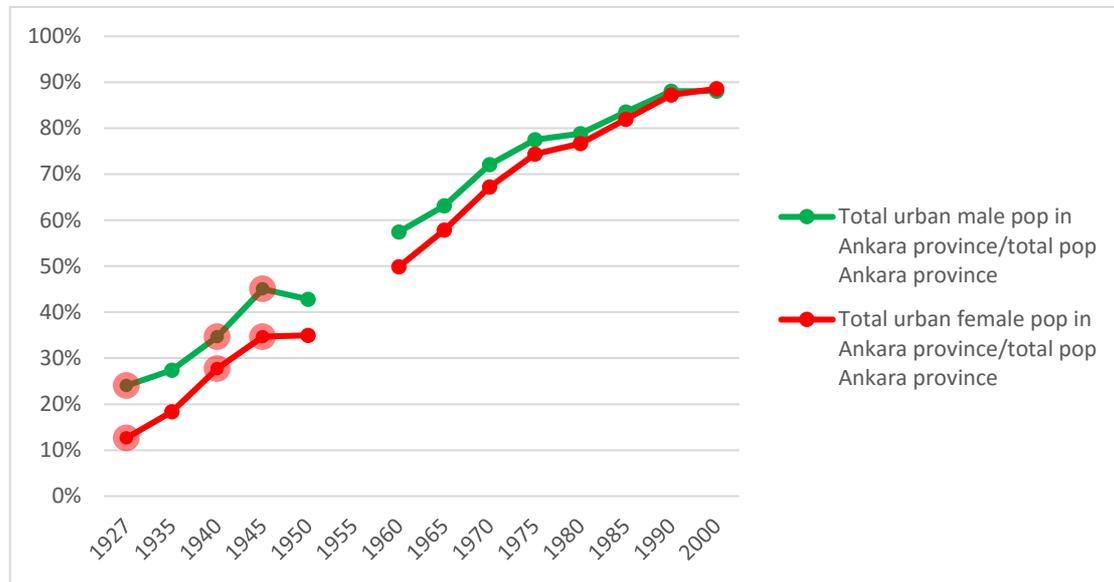
Chart 6 Male occupations and economic activity fields (1960, 1965), Ankara province



We think the inserted economic activity field data for 1960 and 1965 fit into the general trend of having stronger tertiary share throughout the period than the secondary sector and as expected primary sectors shares are in constant decline from 1950s for the entire

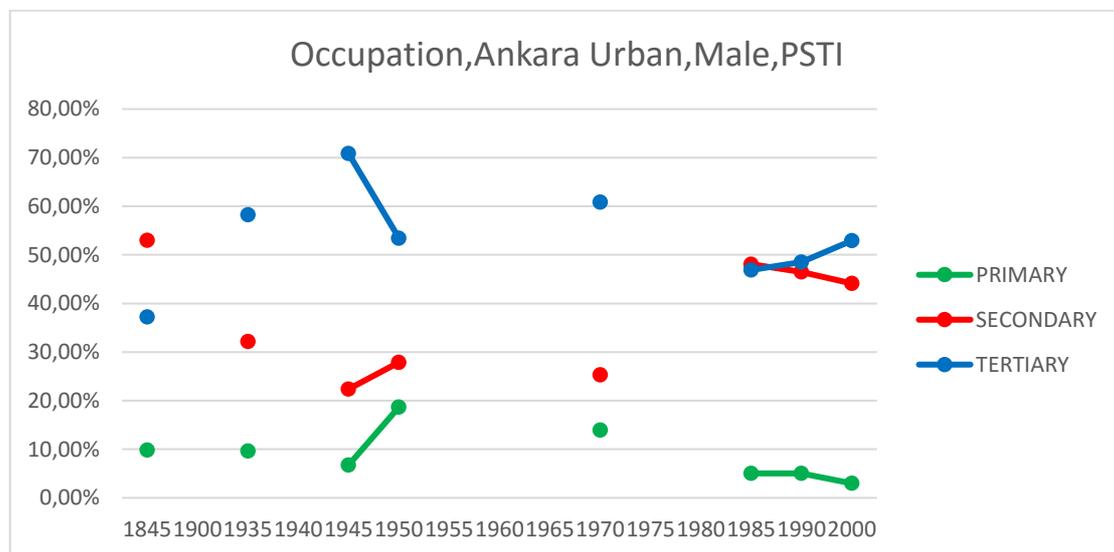
province. As the next step we would like to focus on male occupations in urban parts of Ankara province since it urbanises quite rapidly faster than the national average.

Chart 7 Shares of urban versus rural population, Ankara province



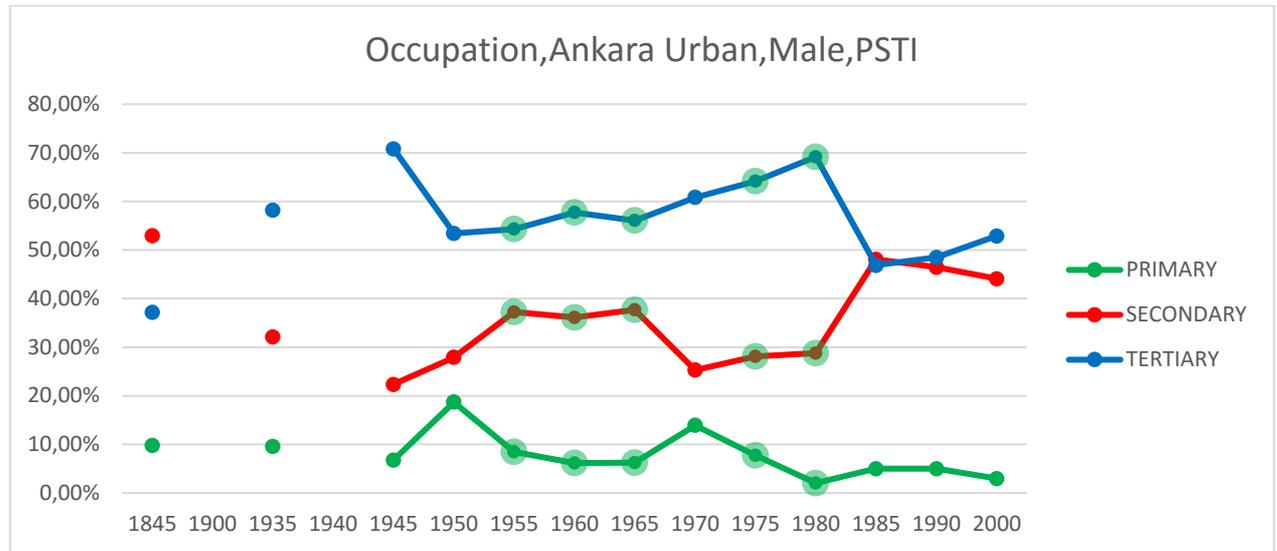
In 1960 urbanisation rate is above 50 percent both for males and females of Ankara province, whereas the national average is around 32 percent. Due to this faster urbanisation we would like to examine the male urban occupations.

Chart 8 Urban male occupations, Ankara province



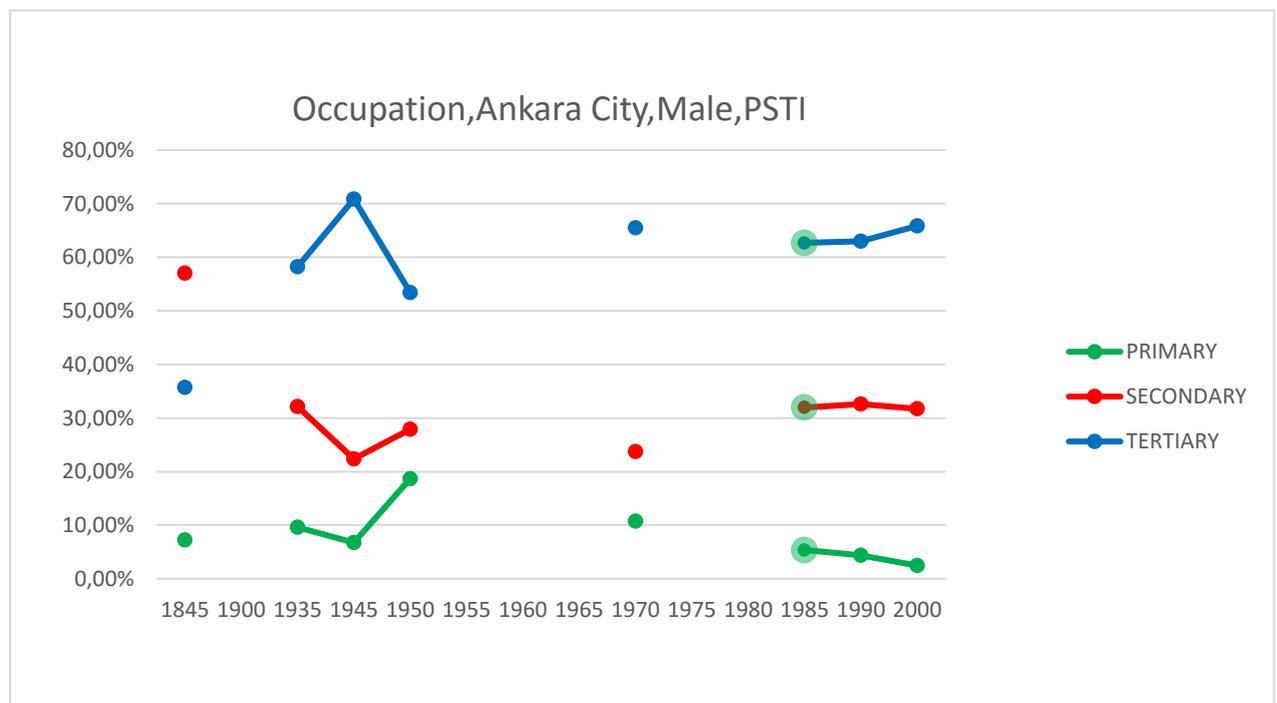
However, the scarcity of data in this category does not allow us to discern a trend. There are too many censuses (1940, 1955, 1960, 1965, 1975, 1980) failing to provide occupational data for urban males. Nevertheless, for the first time we can bring in our 1845 micro level occupational data from city of Ankara and towns of Ayaş, Beypazarı, and Nalluhan as listed in Appendix 2. Yet their inclusion is not solution to discern long term trends due to missing census observations in later periods. Therefore, we again use the economic activity field data as proxies for occupations.

Chart 9 Urban male occupations and economic activity fields, Ankara province



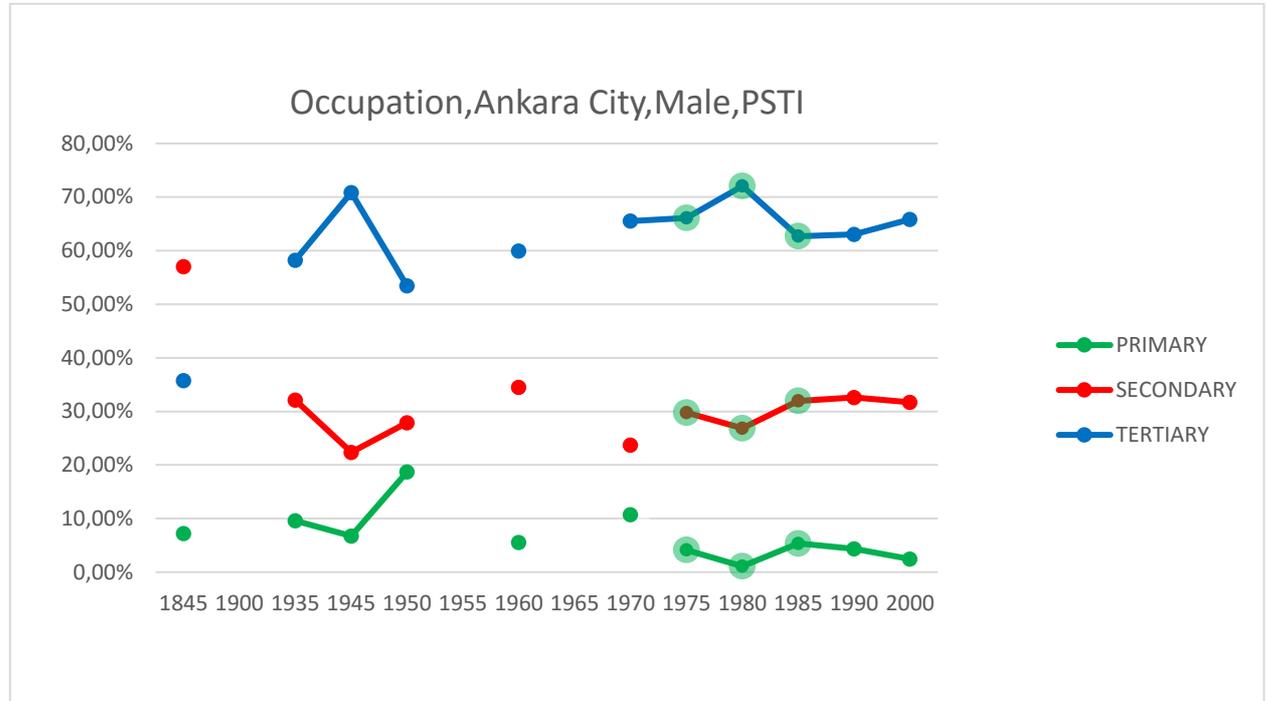
Since the 1845 observations are categorically different than the census data and they belong only to the heads of households in urban locations, it is not surprising that the share of primary is as low as in 1935 due to possible by-employment within the households. Furthermore, due to the lower weight of tertiary sector in mid-nineteenth century urban Ankara province, compared to later periods it is also expected that share of the secondary sector is higher than tertiary. If we leave aside the irregularities in 1970 and 1980 censuses and try to read general trends for male urban occupations the dominance of tertiary and secondary occupations is more outspoken for the entire period.

Chart 10 Urban male occupations in Ankara city



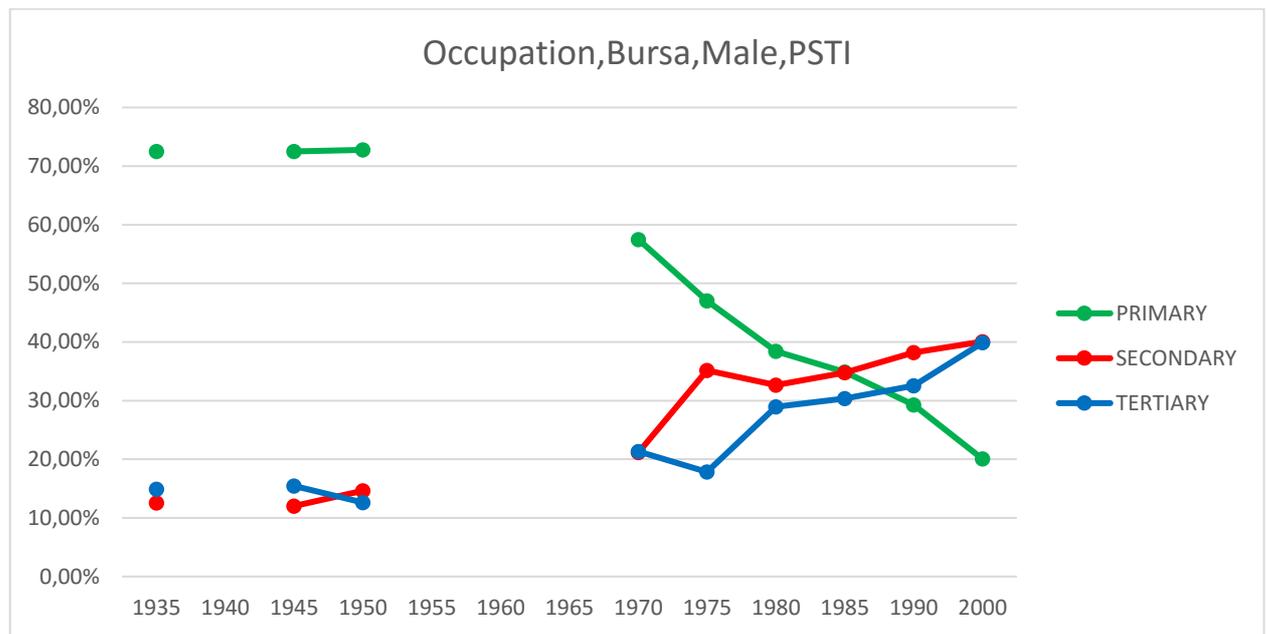
If we solely focus on the city of Ankara, the significance of secondary occupations among heads of households in 1845 are even higher than in the urban sub-set.

Chart 11 Male occupations and economic activity fields in Ankara city



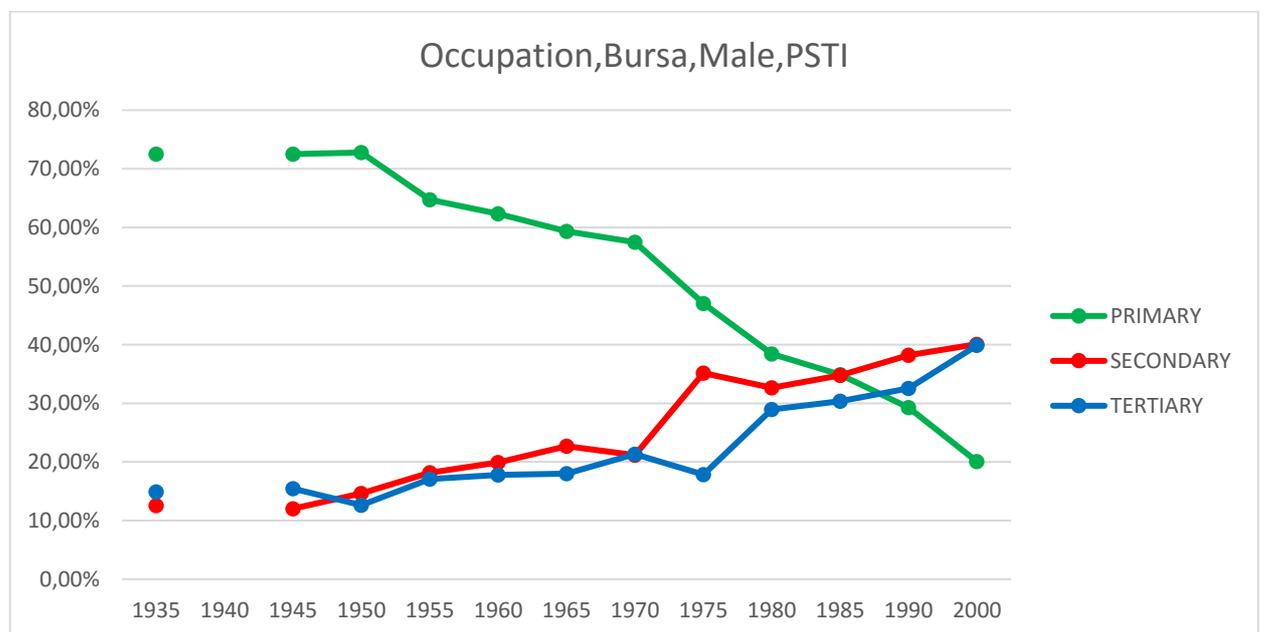
If we again use economic activity field data for missing census years (1960, 1975, 1980), to discern a general trend of male occupational structure in Ankara city in the long run the importance of tertiary sector as the most dominant one come to fore more clearly. Now we would like to compare the regional occupational structure of Ankara with Bursa.

Chart 12 Male occupations, Bursa province



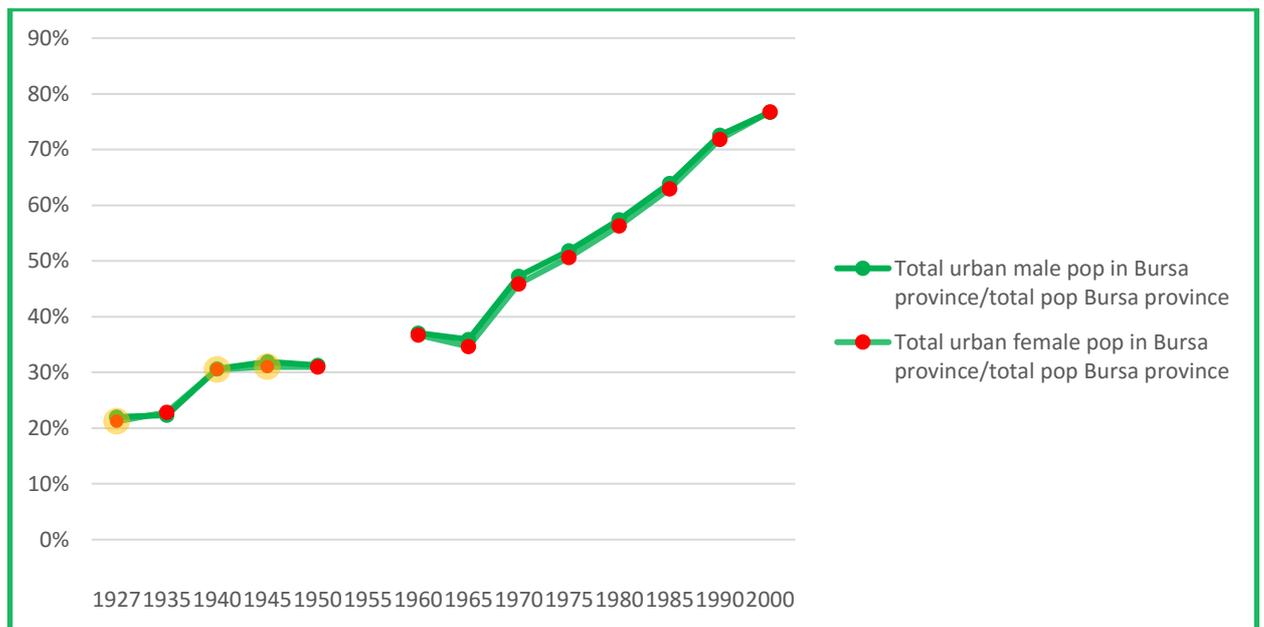
Similar to Ankara, occupational data on province level for Bursa has got consecutive missing census years in mid-twentieth century and including economic activity field data can provide us with a fuller picture.

Chart 13 Male occupations and economic activity fields, Bursa province



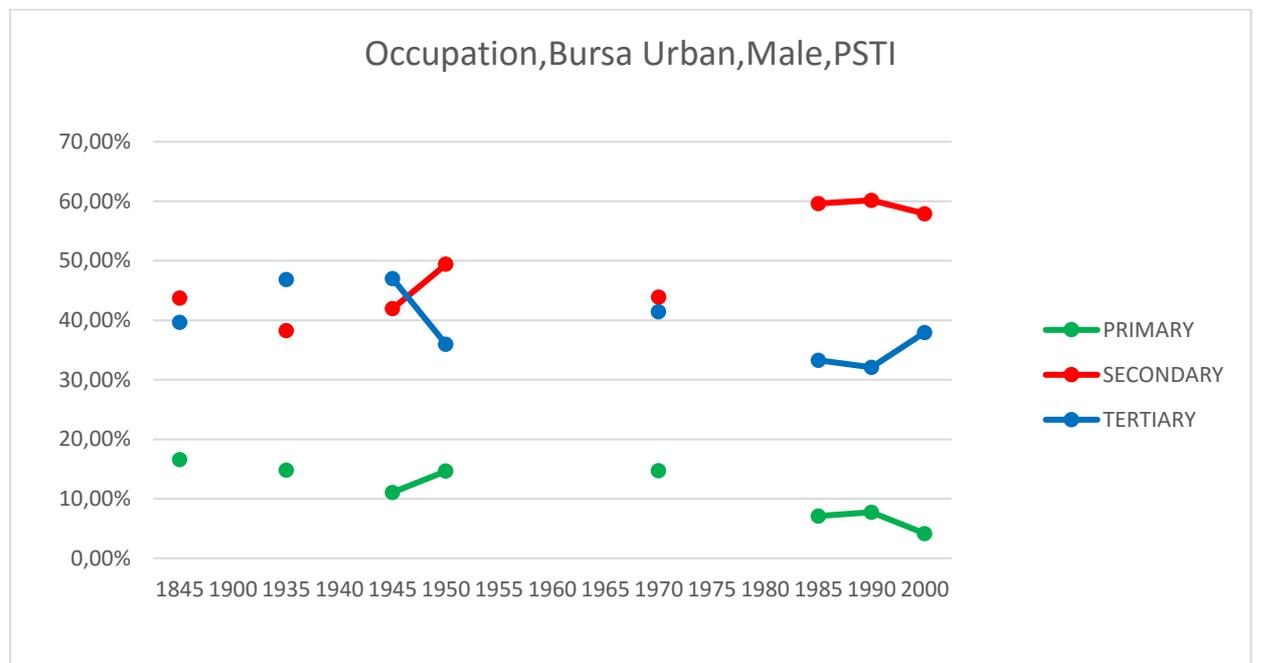
Bursa province comes to fore as a more industrial one compared to Ankara due to overall higher share of male occupations in the secondary sector compared to the tertiary. However, again similar to Ankara province we should try to take into consideration of pace and magnitude of urbanisation for Bursa province.

Chart 14 Shares of urban versus rural population, Bursa



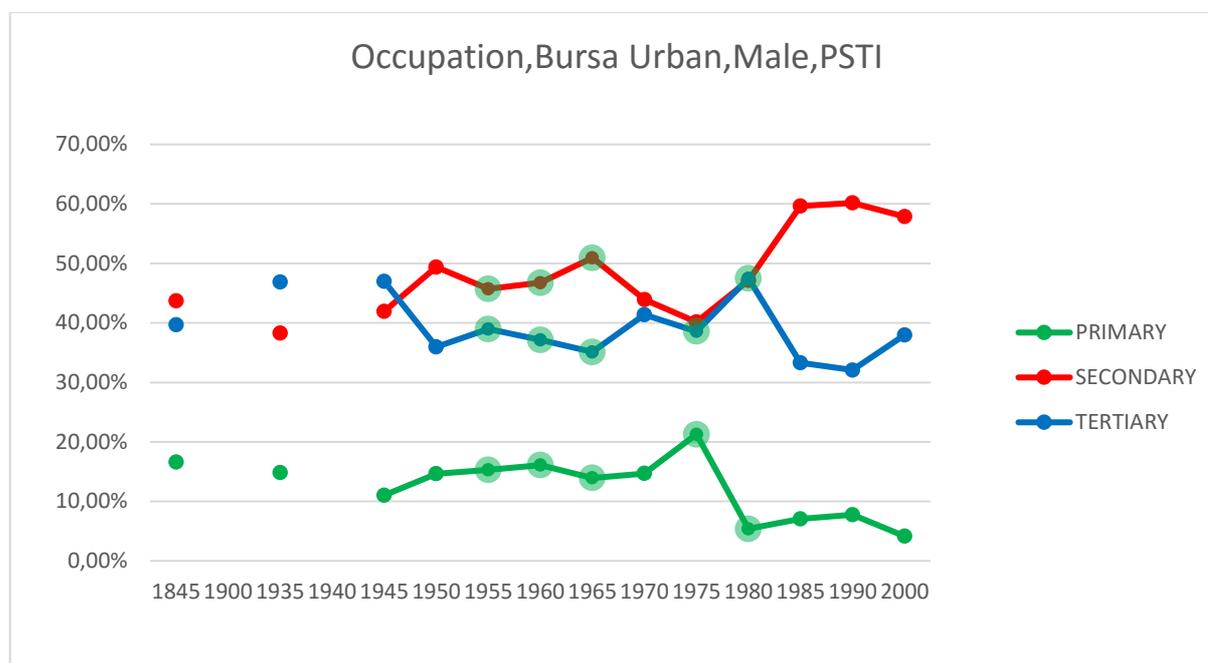
Although being more industrial throughout the twentieth-century, Bursa province has experienced a lower urbanisation rate compared to Ankara, by reaching 50 percent around as late as 1975, whereas Ankara reaches this level earlier in 1960.

Chart 15 Urban male occupations, Bursa province



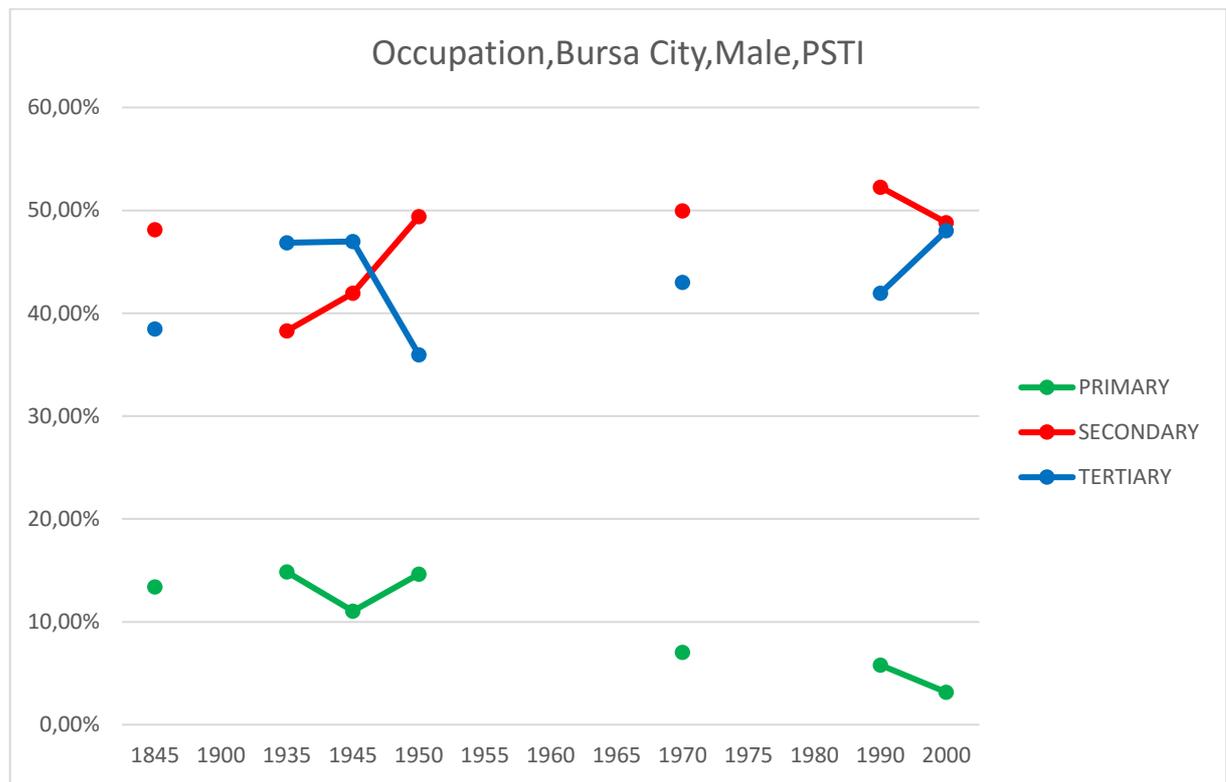
Urban male occupational data for Bursa province suffers from the same incompleteness and only after inclusion of economic activity field data, we can comment on long term trends.

Chart 16 Urban male occupations and economic activity fields Bursa province



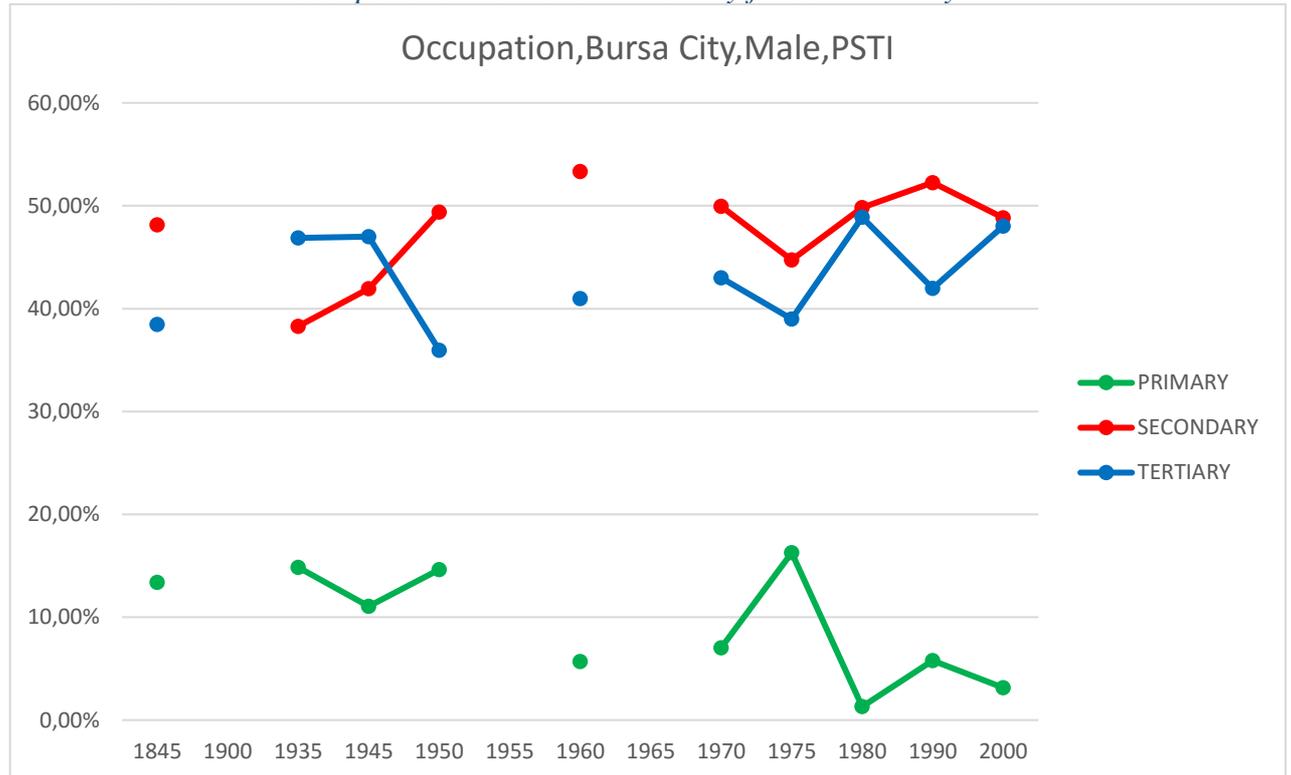
With all insufficiencies, we think we could still compare Ankara and Bursa provinces' urban male occupational structures. Urban parts of Bursa have been more industrial throughout the period. Strikingly for 1845, level of tertiary sector occupations of the heads of households in urban locations of Bursa region (city of Bursa, Iznik, Gemlik) was higher than the ones in Ankara region (city of Ankara, Ayaş, Beypazarı, Nalluhan). Yet this can be resulted by larger commercial activity in places such as Bursa, Gemlik and Iznik where commercial activity in textiles and olive oil production compared to urban location of Ankara regions. If we want to compare city of Bursa to city of Ankara we will have same incomplete picture based upon the male occupational data.

Chart 17 Urban male occupations, Bursa city



After including the economic activity field for additional census years for which we have not occupational data the trends become more legible although still very incomplete.

Chart 18 Urban male occupations and economic activity fields Bursa city



Compared to Ankara city in the beginning of the period, in 1845, Bursa city has a lower share of heads of households' occupations in secondary sector. This is also the case for the tertiary sector shares. Whereas in Ankara city in 1845 less than 10 percent of households' heads had occupations in primary sector, this share is higher than 10 percent for Bursa city in the same year. If we compare the entire period, the overall trend for the city of Bursa indicates for a higher specialization in secondary sector. Bursa remains an industrial city compared to Ankara city and compared to urban Turkey.

Conclusion

This study is the first attempt to discern regional dynamics of structural change and use shifts of employment between sectors and especially away from agriculture as proxies to assess location, timing, and magnitude of economic development or the lack of it in the long run. As further steps we would like to make use of the occupational data from our rural sub-set extracted from the Ottoman tax registers for the villages listed in Appendix 1 for the regions of Ankara and Bursa, include occupational data from the Ottoman population registers from mid-nineteenth century into our analysis, expand our regions; and go for the second point PSTI analysis to unpack the sub-sectoral dynamics of structural change for the entire period.

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Appendix 1: The village sub-set

Village Count	Ankara	Beypazarı	Ayaş	Nalluhane	Bursa	Iznik	Gemlik
1	Deliler (Bala)	Çakıloba	Bayram	Eymür	Yenice-i Kefere	Gürmüzlü	Armutlu
2	Kutludüğün (Bala)	Güneyviran	Şiske	Hobran-1 Sagir	Anarlıdere	Alakya	Kumla-i Sagir
3	Dikmen (Bala)	Sekli	Afşar	Hobran-1 Kebir	Camili Kızık	Beyli	Fındıkcık
4	Bayındır (Bala)	Hırka	Başayaş	Akdere	İsabey	Boyalıca	Murad
5	Mamak (Bala)	Kızılcasöğüt	İlhan	Gölcük	Gölcük	Hisardere	Engürücü k
6	Yakub Abdal (Bala)	Kuyumcu	Tekke	Fasıl	Karasıl	Sölöz	Narlı
7	Mirahor (Bala)	Geleğra	Melal	Sarılar	Ada	Çerkeşli	Kısraklı
8	Solfasol (Bala)	Dere	Oltan	Harami	Ahmed Bey	Karadebin	Dışkaya
9	Özağıl (Bala)	Mikail	Çağa	Kara	Çeltik	Hisarcık	Karaca Ali
10	Pursal (Bala)	Oymaağaç	Dastarlı	Sürüm	Dere Kızık	Sarıkısırak	Katırlı
11			Oğuzçayırı	Etce	Eğdir		Kurşunlu
12			Ilıca		Tepecik		Arnavud
13					Balat-1 Yunus		
14					Alışar		

Appendix 2, Urban Sub-Set in PSTI Sectors

P1(Ankara_city)	5105
PRIMARY	271
SECONDARY	2141
Sectorally unspecific occupations	608
TERTIARY dealers	195

TERTIARY sellers	374
TERTIARY services and professions	625
Transport and Communications	147
Without occupation or unstated	744
P1S1(Ayaş_town)	740
PRIMARY	125
SECONDARY	172
Sectorally unspecific occupations	59
TERTIARY dealers	38
TERTIARY sellers	34
TERTIARY services and professions	141
Transport and Communications	39
Without occupation or unstated	132
P1S2(Beypazarı town)	198
PRIMARY	9
SECONDARY	99
Sectorally unspecific occupations	31
TERTIARY dealers	1
TERTIARY sellers	20
TERTIARY services and professions	32
Without occupation or unstated	6
P1S3(Nalluhan_town)	306
PRIMARY	57
SECONDARY	79
Sectorally unspecific occupations	41
TERTIARY dealers	2
TERTIARY sellers	45
TERTIARY services and professions	50
Transport and Communications	7
Without occupation or unstated	25
P2(Bursa_city)	5678
PRIMARY	669
SECONDARY	2405
Sectorally unspecific occupations	138
TERTIARY dealers	221
TERTIARY sellers	456
TERTIARY services and professions	1060

Transport and Communications	185
Without occupation or unstated	544
P2S1(Iznik_town)	259
PRIMARY	43
SECONDARY	1
Sectorally unspecific occupations	168
TERTIARY dealers	4
TERTIARY services and professions	12
Without occupation or unstated	31
P2S2(Gemlik_town)	458
PRIMARY	7
SECONDARY	27
Sectorally unspecific occupations	301
TERTIARY dealers	13
TERTIARY sellers	3
TERTIARY services and professions	35
Transport and Communications	5
Without occupation or unstated	67
Grand Total	12744

Appendix 3, Sub-Sectoral Occupations, Males, Turkey in Real Numbers

	1927	1935	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	2000
Primary	2.678.737	2.843.752	3.260.828	5.454.870	4.741.958	4.988.716	5.134.259	5.282.424	6.139.057	5.632.915	6.069.184	6.451.952	5.989.695
Secondary	266.913	503.444	556.269	633.245	858.506	1.191.885	1.384.743	1.257.651	2.354.659	3.443.371	3.741.761	4.536.673	6.542.758
Mining (2, 0)		17.947	33.621	29.637	46.030	52.858	63.906	66.970	81.187	95.714	104.759	83.406	71.671
Food and Drink Processing (2, 1; 2, 2; 2, 3)		68.957	57.516	68.701	73.432	93.229	116.250	145.345	165.174	244.272	285.195	289.670	375.846
Footwear and Clothing (2,10; 2,11)		74.490	97.163	126.771	126.878	153.015	177.240	216.061	257.530	299.507	365.127	455.627	705.406
Textiles (2,20)		28.062	53.961	60.527	80.923	79.475	90.977	96.337	106.408	153.149	179.963	209.221	277.397
Chemicals (2,55)		838	2.078	451	731	8.648	11.536	6.629	8.501	9.559	11.285	11.915	9.208
Metal Working (2,61; 2,62; 2,63; 2,66; 2,67; 2,68; 2,70; 2,71; 2,72)		53.451	68.590	125.571	152.278	179.599	248.154	333.722	466.033	678.942	797.738	881.963	1.368.607
Machine Making (2,65)		14.101	46.992	21.903	26.513	49.930	54.634	91.927	138.243	266.829	318.253	374.003	501.852
Construction (2,80)		78.964	59.819	47.859	217.992	369.530	306.097		464.561	665.084	684.799	1.013.751	1.351.930
Rest of the Secondary Sector		166.634	136.529	151.825	133.729	205.601	315.949	300.660	667.022	1.030.315	994.642	1.217.117	1.880.841
Tertiary	543.657	716.418	1.055.153	982.521	1.157.235	1.377.083	1.688.733	1.723.297	2.459.427	3.229.329	4.719.410	5.875.194	7.952.751
Retail and Wholesale (3; 4)	243.271	203.512	260.057	218.010	283.155	355.989	408.711	468.041	545.546	660.773	819.168	1.066.757	1.231.340
Domestic Service (5,25)		17.157	12.380	4.640	3.149	3.336	2.145	17.587	17.586	17.256	21.610	25.654	102.811
Transport (6)		116.888	132.405	109.284	207.846	273.310	309.977	13.024	531.888	667.151	807.945	1.006.867	1.259.214
Labourers				194.514	139.490								
Rest of the Tertiary	300.386	378.861	650.311	456.073	523.595	744.448	967.900	1.224.645	1.364.407	1.884.149	3.070.687	3.775.916	5.359.386
Non-Working	531.380	381.516	584.262	1.873.436	525.284	665.833	962.280	3.448.711	2.870.327	3.096.205	3.273.240	3.684.906	5.555.768
Total (PSTI)	3.489.307	4.063.614	4.872.250	7.070.636	6.757.699	7.557.684	8.207.735	8.263.372	10.953.143	12.305.615	14.530.355	16.863.819	20.485.204
Population (-minors, aged below)	4.020.687 (13)	4.445.130 (15)	5.456.512 (15)	8.944.072 (5)	7.282.983 (15)	8.223.517 (15)	9.170.015 (15)	11.712.083 (12)	13.823.470 (12)	15.401.820 (12)	17.803.595 (12)	20.548.725 (12)	26.040.972 (12)

