07.01.2022

Turkish Economy Research Report
Unemployment

1. Introduction

This report serves as a term project for the Turkish Economy class, held by the Department of Economics at Istanbul Technical University. The subject of the report is unemployment in the Turkish economy. Unemployment continues to be one of the most important problems encountered in both developed and developing countries. In Turkey with the economic crises experienced in recent years, the dimensions of unemployment have gradually expanded.

Our topic is unemployment and in particular we wanted to focus on the details of the unemployment, to discover and explain its patterns in the Turkish Economy. We put special emphasis on job search duration, for example job search duration of different groups in Turkey's economy such as job search duration of the youth, job search duration of the people who hold at least a high school degree, and so on. We considered this as being relevant because the chronic unemployed proportion of the population can manifest severe issues for any country, and may affect several dynamics within that country; indeed, increasing youth unemployment may lead to depression for huge masses and may have bad consequences for the economy. Another area in Turkish unemployment that we focused on is the searched job type e.g. full time or part; this is especially important for understanding the behavioral changes of females, which we will discuss in the report. Lastly, we discussed reasons for job search, leaving the job, losing the job and being unemployed. Line graphs for each reason monitors how certain reasons and internal dynamics changed in Turkey.

The analysis section of this paper investigates these sub-areas under unemployment, and tries to explain them with the knowledge attained in our Turkish Economy class and, in general, with tools obtained from other classes, too.. The format of the paper highly depends on statistics, visualization of the graphs and interpretation of those visualizations. This report can be considered as a preparatory note for a new minister who comes to office and wants to know recent and historical developments in the areas of unemployment that we mentioned. That's why we focus on the trends, the explanations, and the changed configurations in the Turkish Labor Market. For instance, we report how more women started to search part-time jobs and passed the number of males who search part-time jobs, instead of mentioning the exact number of unemployed women that searched for a part-time job.

The remaining parts of the report are structured as follows: the next section explains the data retrieval process, then there is an analysis section which includes graphs and comments, and lastly, with the concluding section we wrap up our findings and the report.

2. Data

All of the statistics presented in this report comes from Turkish Statistical Institute (TurkStat). There are some notices that should be made about two revises that TurkStat made. Firstly, there are two databases that the data retrieved. The statistics about labor market outcomes before 2014 are in a database and after 2014 are in another database. The reason for this separation between databases lies behind TurkStat changing its methods in The Household Labor Force Survey to comply with European Union's laws. This change causes some huge jumps in some of our graphs, and the data after 2014 does not include the details of rural/urban. Apart from this revision in the labor market statistics, the other revision was carried out in 2008 due to the population projection that TurkStat made. This second revision makes the statistics before 2004 ineligible. As a result, our data is aggregated from the 20 different datasets that were downloaded from these two databases, cleaned and merged into a one tidy dataset; the code for this process and the graphs can be found in the link[1].

3. Analysis

The analysis part consists of presenting and commenting on the graphs that we produced, using the data we explained in the previous section. The analysis has different sections; first of all, we will present general unemployment numbers, gender-specific and aggregated. Then we will explain the job search duration of different age groups, the job type searched, reasons for unemployment and reasons for leaving/losing the job. Unfortunately, our data does not include the same specifications for every statistics as, for example, some of our graphs have rural/urban differences, while some others are not available after 2014. The reason that we included those graphs with incomplete details is that we found them compelling enough to understand some causations and occurrences in Turkey's economy.

Before moving on to our commentaires, there are two important decisions made in the data and the visualization processes. Firstly, all of the percentages in the y-axis are the ratio of the number of people pertaining to a specified group to the total number of people in labor force–e.g. ratio of number of unemployed people with the reason for being unemployed as "Was in education" –to the total labor force of Turkey in that specific

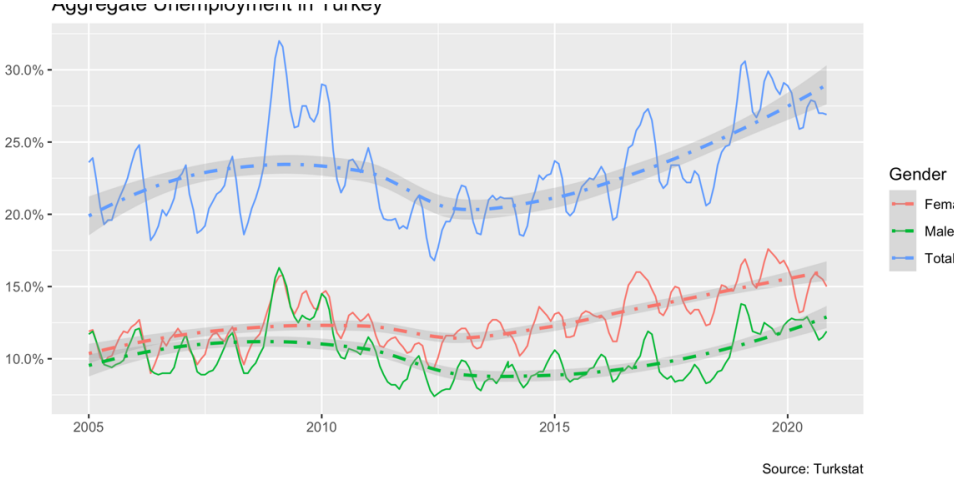
[1] https://github.com/sarpcebeci/TR_Econ_Unemp

month. This decision helps us to compare any percentages in different groups. Secondly, in the visualizations we used the ggplot2 packages' geom_smooth[2] function's "loess" method which is the local polynomial regression or known as moving regression[3]. The choice of this model originated from our decision to display the trend in our data, and thus, the points of breaks in the observations.

A substitute to this approach would be plotting a seasonally adjusted line; however, as our data is monthly, a seasonal adjustment would generate a line very similar to our original one in the observed data. Thus, to elaborate on the available information we found our method to be better than the alternatively proposed one.

[2] https://ggplot2.tidyverse.org/reference/geom_smooth.html
[3] https://en.wikipedia.org/wiki/Local_regression

1. Total Unemployment Percentages



This plot shows the aggregated unemployment percentages with respect to gender. We provided it to reveal Turkey's situation as a whole. We can infer that Turkey's unemployment rate moves between 20% in times that the economy performs well, and 30% in times that the economy runs into a crisis.

This plot is not seasonally adjusted and shows that Turkey's unemployment percentages are higher in winter and the vice versa in summer. This effect comes from the employment created with tourism and the seasonal workers for agriculture. If we pay attention to the difference between females and males, until 2010 the movements of the lines for each gender are the same; but after that we observe that unemployment percentages are higher for females. There may be a few explanations for this.

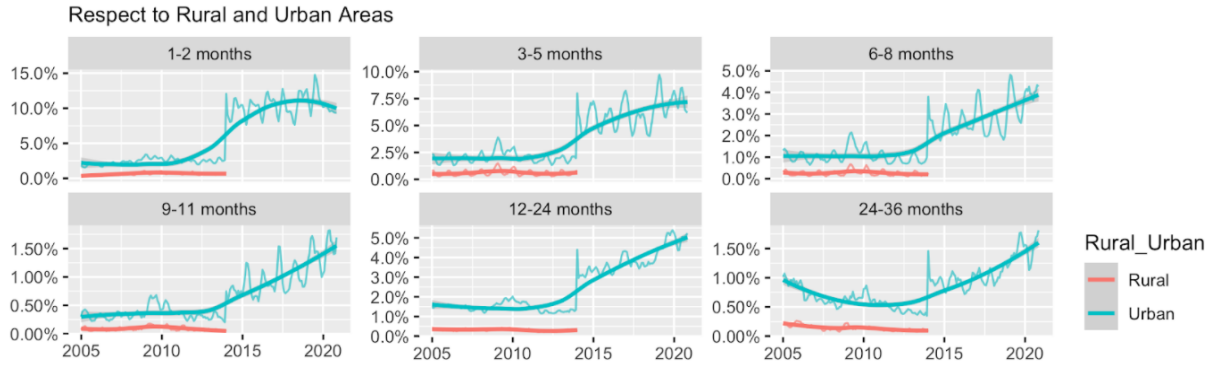
Firstly, with the 2008 crisis, the firm's structure might be changed and it somehow substitutes female workers with other factors of production. For example, we observe that self-employed people started to search for work after the 2008 crisis, so the crisis might decrease the small-scaled family work which is one of the areas that females work. Also, those bankrupted males now are in the labor market that compete with females.

Secondly, assuming Turkey's economy got worse, especially starting from 2013, females' labor force participation increased to help the household's budget and that excessive supply caused this increase. The period that starts with 2013 shows this deterioration, unemployment's trend increased monotonically.

The final explanation might be the immigrants, because females tend to work at seasonal jobs, and in the agriculture sector; newcomer immigrants may be competing with females, maybe informally, and decrease the job opportunities that especially unskilled females had.

2. Job Search Duration

i. General Look



In this section we can effortlessly see that after 2014 there is an increasing trend of people remaining unemployed in most of the ranges of time duration for job search, something which does not have to do with the calculation change as the trend seems to be ever-increasing.

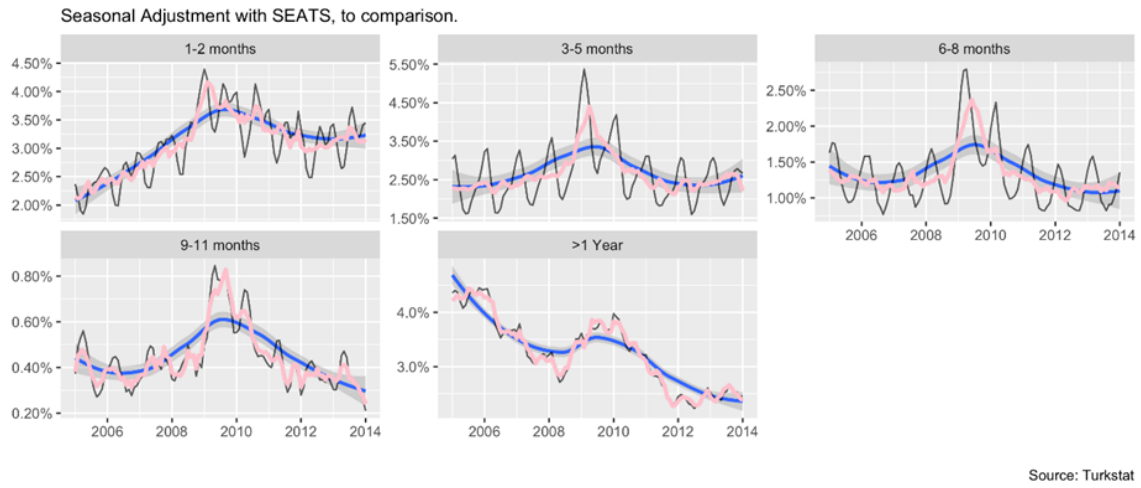
However, for the first sub-graph representing a search duration of 1-2 months, it looks like the percentage of unemployed in the labor force having to look for a job for this amount of time is quite stable across the timeframe on which we have available data for both urban and rural workers. And, despite the greater percentage surge of the unemployed in urban areas having searched for a job for the shortest time duration, when considering the calculation change in 2014, we can understand the reasons behind such an extraordinary change and confirm that indeed, through the past 6 years the very short-term job search duration is consistently experienced across time in the same pattern, by approximately the same share of unemployed in the overall labor force.

Also, quite sensibly this subplot supports the fact that job search for shorter periods manifests more amplified seasonal behaviors, as most temporary jobs are in fact seasonal and during some short periods of time cause unemployment to rise and then fall, and follow this continuous pattern of ups and downs. It is important to mention that another impact the calculation change has had on this plot is visibly emphasizing this seasonal variation, mostly because of an expanded magnitude.

An additional remark to make is that, up to 2014 (since after that time there is no possibility of comparison), labor force in rural areas is affected in the same pattern as the one in urban areas, apart from, again, the larger magnitude understandably representing the latter as workers are more attracted to, and thus, concentrated in such areas. Also, around the COVID-19 outbreak period, the very short-term job search duration has decreased, since most probably the unemployed have been struggling for a longer period during this time in

order to find a job. And, indeed, the subplots representing time durations which are neither too long nor too short, display a noticeably positive slope.

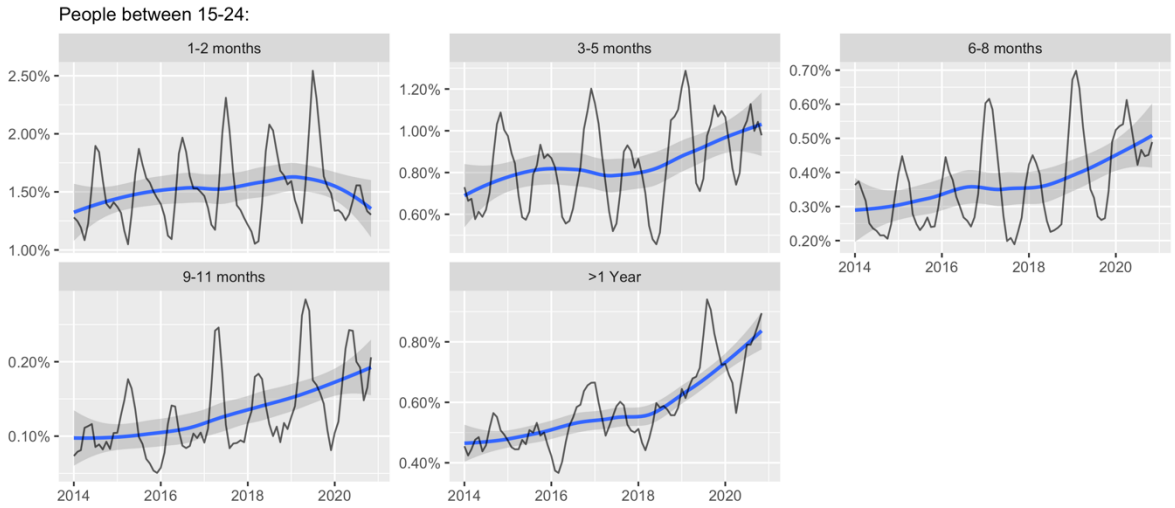
Duration of Job Search, Supportive Graph (2005-2014)



Having said all of the above, we thought that providing this supportive graph, with the aggregated workers form urban and rural areas, would provide an interesting observation as to how this aggregation, especially in the long run, suggests another version for the unfolding of future events. What is an interesting point to be raised with the introduction of this supportive graph set is that, from 2005 people in the labor force have started to suffer at a decreasing rate from long-term unemployment, something observable in the last plot, displaying the frequency of job search lasting for one year or more. But, let us not forget the limited timeframe of the data for which we have access, and also the fact that here, we have a different group specification, with both rural and urban workers represented by the same line.

Another difference from the main plot and other plots in this paper is that it is seasonally adjusted, so that the contrast with the unadjusted original plot of the data can be grasped, too. Actually, no dramatic change takes place with this adjustment, apart from the fact that the new line approximates more to the trend of the data.

ii. Young's Job Search Duration

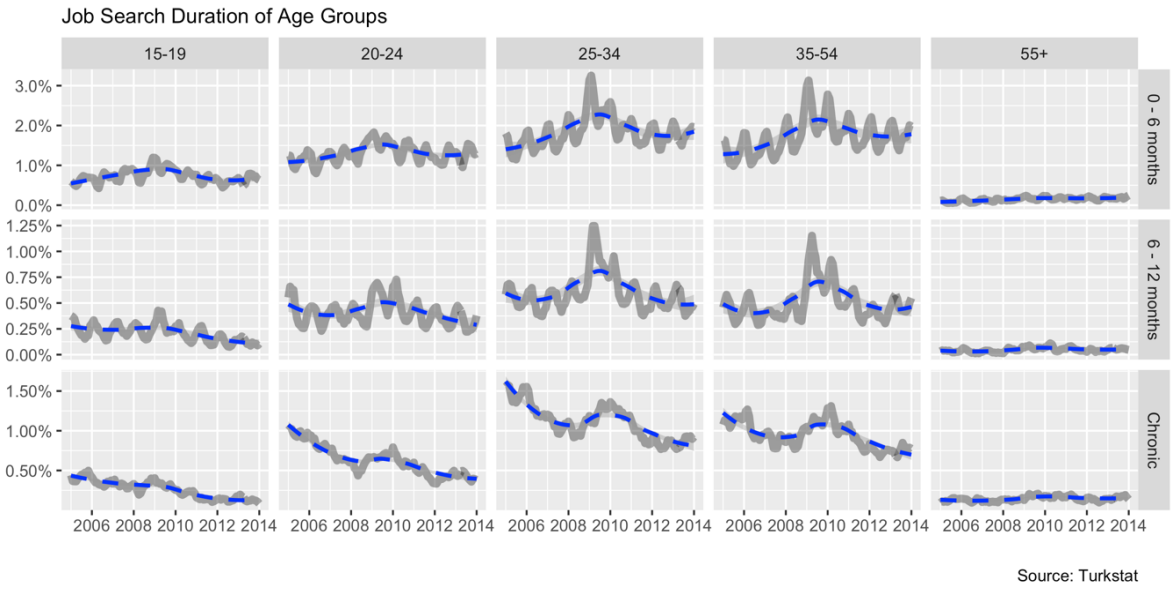


This graph shows the youth's job search duration; the power of this graph comes from its eloquence for chronic youth unemployment. First of all, we see that half of the young population finds a job in less than two months, and this trend has not changed in the last few years. However, the picture is not the same when we look at the job searchers that searched for more than two months, we see a steady increase in the trend that can unfold the increasing number of chronic unemployed youth. This is worrying for Turkey, because this young population will not be able to join the workforce, start a family and probably rely on parents so his or her future is not certain, something which creates mental problems for the same group.

That being said it should be noted that the number of people that we consider as chronic are less, that's why their overall number even decreases in "the job search duration of different age groups" graph.

Lastly, it can be observed that most of the unemployed in the labor force aged from 15 to 24 need a very short time to find a job placement, 1-2 months. Both this fact and short-term job finding may reflect the preference of part time jobs among the youth.

iii. Job Search Duration of Different Age Groups



Being in the age group of 25-34 implies that finding a job is harder relative to what people belonging in other age groups have to go through. That is because it is the age group that you need to work since the education is over and the help of the families decreases.

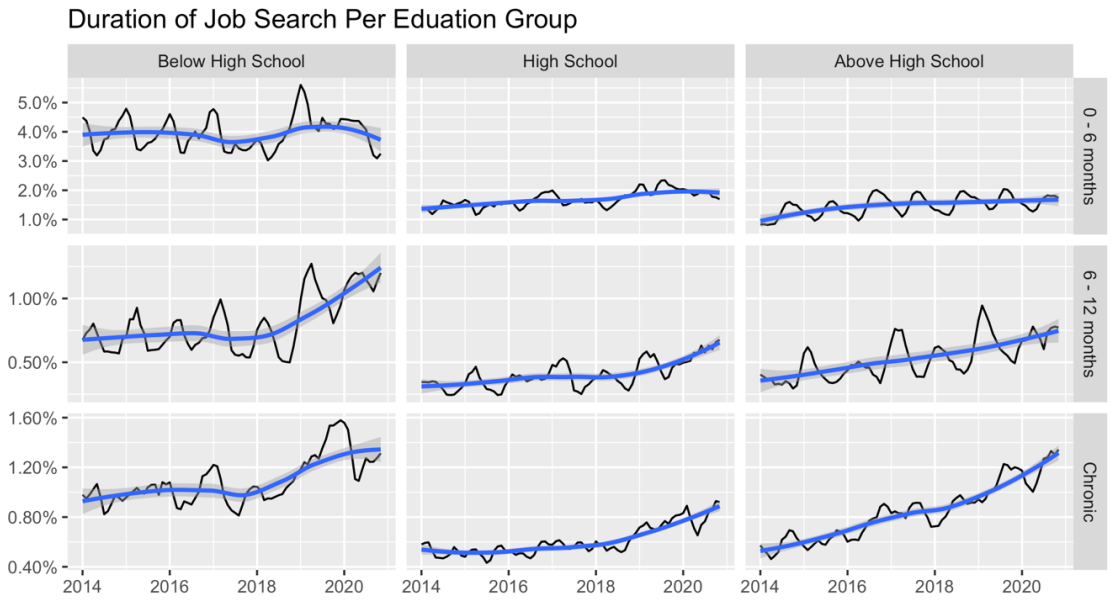
Also, for the 35-54 age group the story is similar although it is very slightly better than for the former case. For people in both these age groups, it is more typical to take up to 6 months and then find a job or either suffer from chronic unemployment, with less significant in between values.

Whereas, people that are in the age group that usually includes most graduates, tend to suffer less from chronic unemployment. Always referring to our available data, they would most likely require half a year to find a job, but still constant failure to find a job is not insignificant for these young adults too. Perhaps, this age group has a slightly better experience at finding jobs because employers do not wish to hire overqualified workers, a characteristic most of the times representative of the 25-34 age group. And the explanation for the 35-54 group can be that workers already have a certain set of skills and knowledge upon which they exercise their expertise. Possibly at this stage of life they become less flexible (mostly mentally-wise) and can adapt only to certain job environments, thus becoming more selective and reducing their job opportunities to some extent.

As for the youngest age group, 15-19, it is considerably easier for them to find a job, which should be a part-time one at least up to 18 years of age. Part-time jobs are easier to find and replace, when we compare them with full-time ones. However, there still exists the risk of being affected by chronic unemployment, even though it converges toward having a minuscule impact through time.

If we consider ages above 18 (meaning just 18 and 19 in this age group), they could be pupils who have given up on higher education and thus are under-qualified for many jobs, that is why there is also long-term unemployment in this category as well.
In the last age group, 55 or older, we can deduce that job search is not a major current concern for these people, because either they have a stable job, or they have given up searching for a job and thus decreasing their share in the labor force, or they might have retired early as well.

iii. Job Search Duration of Different Education Groups



The question of "does the education system in Turkey provide enough qualified people to the industry and graduate highly skilled white-collar people?" is commonly asked in the media, and in academia. As people utter this and similar questions; they rely on their observations that we, as well, observe in this graph.

If we look at the highest row of our graph, we see that the number of job searchers for every education group stays the same, except for the seasonality. This shows that there were not high additions to the labor supply in the previous 6 years, so the job searchers stayed the same, and there are enough job creation for this group to employ them, we can even call them the skilled labor force.

On the other hand, it seems that the not-so-skilled ones that passed the first 6 months without being employed, could not find a job; and there is not enough job creation for them. Thus, unemployed people caused increases over time.

In brief, the main story here is that the ones that went to good universities keep getting employed in the first 6 months, the others that went to new opened and not so qualified universities graduates joins to the labor force but stays longer period of times; moreover, these numbers are keep getting increasing through time and this issue can be observed at the row of the chronic job searchers. Lastly, for the less educated group, chronic unemployed people increase, perhaps due to the effect of the unskilled immigrants and increasing informality of jobs that require low skilled labor.

3. Searched Job Type

i. Searched Job Type of Different Education Groups

Moving forward to this section, we see first that the highest percentage of people seeking full time employment is individuals who have attained an educational level below high school. This may or may not be a striking finding, as one initially would only naturally comprehend that high school dropouts are perhaps a consequence of a high opportunity of attending school, stemming from various reasons. Thus, labor force participants that have not obtained a high school diploma or even further degree certifications endorsing their capabilities, might have had their odds favoring the acquisition of practical skills for a certain professional job, instead.

Yet, there might also be some disagreement, supporting the reality that insufficiently qualified workers would be prone to getting mostly part-time job offers. However, Turkey has a large economy, and this is also reflected in the labor market, which is conformingly large, too. Thus, there are a myriad of job placements, among which many are full-time and do not really require any qualifications, such as tasks carried in construction sites. Only a small percentage of workers in this category of educational background choose to rely on part-time jobs.

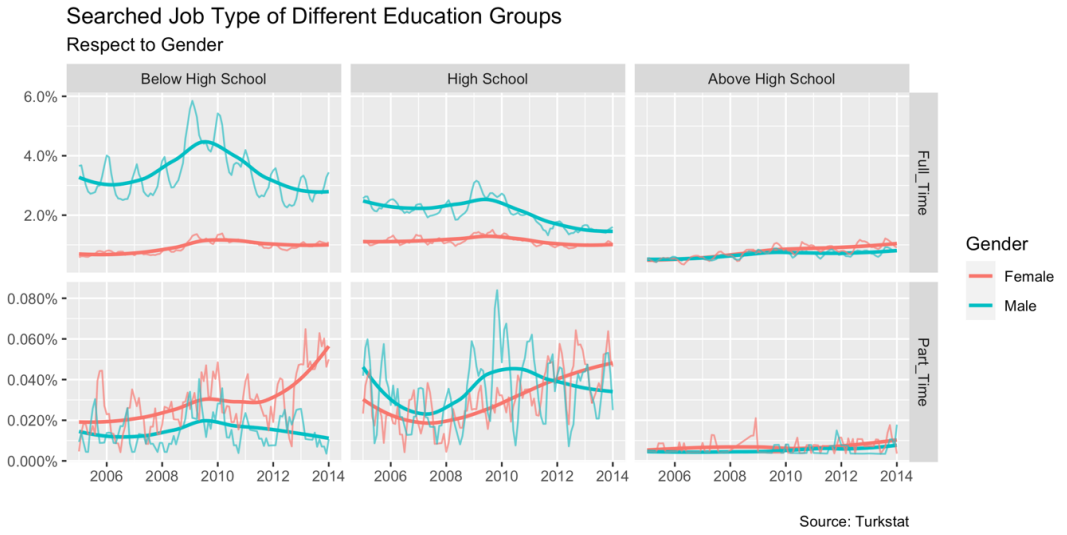
Focusing on the category with a high school level of educational attainment we see that in their case, too, a full-time job is more preferred than a part time one. The reasons can be extremely vast, but one explanation may be that, since they have some considerably higher degree of knowledge when compared to the prior category, their chances at getting a full-time job should also be higher, and since it means they can have more financial stability, usually workers would prefer such jobs. And, in fact, just because a higher percentage of workers without any type of diploma are going for full-time jobs, does not necessarily mean that this

category has a stronger preference for such a job type, in contrast to others. Because we are taking a percentage coming from a ratio with the denominator being the labor force, it might just mean that the labor force in Turkey has perhaps more workers pertaining to such educational level and that is the reason for facing greater percentage numbers there. This does not hinder us from making intra-category interpretations though, concluding that among all three cohorts, full-time jobs are predominantly preferred.

It is relevant to emphasize however, that after the financial crisis this preference as per high school graduates is slowly wearing off, whilst the numbers for those who prefer temporary jobs start stabilizing at this period, suggesting that either these workers leave the labor force by ceasing to search for a job, or maybe they decide to pursue further degrees of education, as workers searching for both part-time and full-time jobs are decreasing, too.

In the case of having a college diploma, we see that overall in the different job types searched the percentages are lower in number than in the other categories, telling us that obviously this cohort takes up a smaller share of the labor force, as it is more difficult to pursue higher education and thus, less occurring. Again, in here as well, stability considerations are important, and I believe that is why the largest proportion of workers having obtained a college degree prefer full-time jobs. But also, a job to the level of skills a college graduate is endowed with would most certainly be offered as full-time. Still, it is quite significant to point out that the remaining part are majorly flexible, as there is a higher percentage of them willing to accept either one and not exclusively just one, instead of perhaps settling by leaving the labor force if they do not find a job according to their preference. In fact, this flexibility in job choice is prevalent across all categories, and the percentage numbers are higher than those for part-time jobs. Thus, in essence the majority of workers in the labor force are clearly having a preference on full-time jobs over part-time ones, another part is indifferent, whereas the smallest group is preferring temporary jobs.

ii. Searched Job Type of Different Education Groups: Gender-Specific

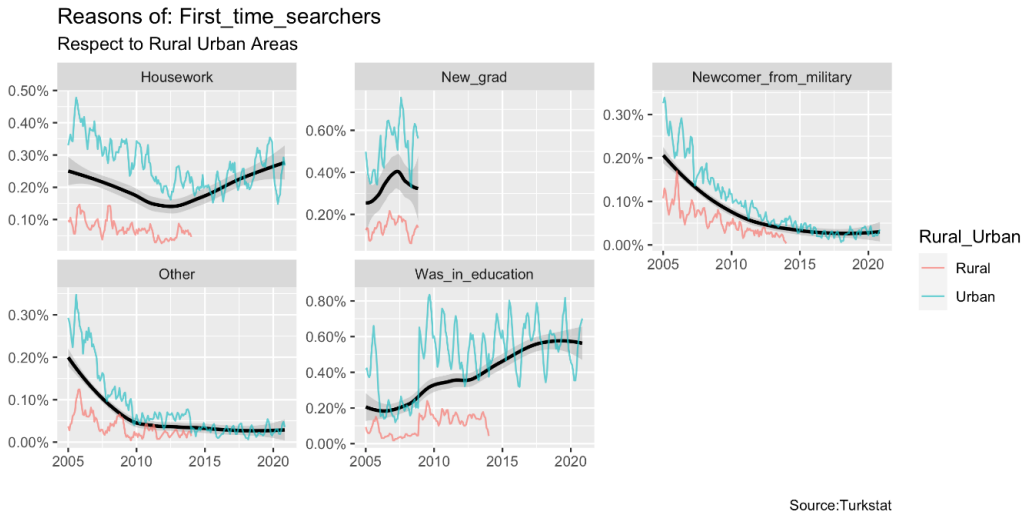


When we observe workers who have no diploma of any sort, it is the male ones who will take up the largest number of places for full-time jobs. There are some for women too, but it is significantly less common for them to allocate their labor in this type of job. Still, among women, most of them have the opportunity to go for full-time jobs, however among the workers that look for part-time jobs, women are more in number. This may suggest that those women, indeed, have to allocate their time to different tasks, like house chores or child rearing, and thus are more likely to search for not-too-engaging jobs.

Regarding the high school graduates, male workers are still larger in number, when looking at the percentages of workers looking out for a full-time job. But in this case, a share of them is also seeking a part-time job, more than male workers in the previous cohort, who have attained a level of education below the high school one, do. When having a high school diploma, it seems as if more male workers are searching for part-time jobs, again compared to the prior group. However, the trend is close to the percentage of females. The difference is that there is a visible larger variation for males regarding their preference for conducting a temporary job. At some points there are very dramatic drops which suggest a smaller proportion of them which prefer this type of job. One reason as to why it is like this is that men might want to get employed in some seasonal jobs which become available only during the periods where the plot line for part-time jobs searched by them experiences such peaks.

As supported by the previous graph set, when having an education above high school, usually workers prioritize full time employment. An interesting component for these two graphs depicting the percentage of people that have graduated from further studies and are searching either for a full time or a part time job, is that women and men follow the same stationary course of change and they are approximately the same in number when it comes to searching for both job types.

iii. First Time Job Searchers



We see that among the observable data we have at hand, the main reason for only recently putting effort in joining the labor market is due to schooling. Around 2006 up to 2009 there is a considerable drop in the percentage of people being first time job searchers because of this reason, however, after that period it regains its significance, and its trend is quite stable, which is the case for both rural and urban areas. The seasonal variation is not negligible in magnitude, and the peaks represent the periods when academic programs are concluded (such as graduation, taking place usually in June). At this time the percentage of the labor force seeking employment for the first time due to being, up to that moment, in the process of attaining a certain set of knowledge and skills, increases. Not being quite sure about the explanation behind the sudden drop in 2006, I can still say that what it implies is, either that less people were graduating from a certain degree program or training, or more of them decided not to join the labor market directly.

This perplexity can be seemingly resolved if we look at the "newly graduated" graph. This is a reason which is actually included in the "was in education" but is a smaller, more concentrated part of it. And though we do not have all the data extending to recent times, we have access to enough data to put at use for what we need. As it can be seen, it is not really the case that less students achieved graduation, but we can support the idea that more of these graduates opted out of the labor force and decided to enter at a delayed period.

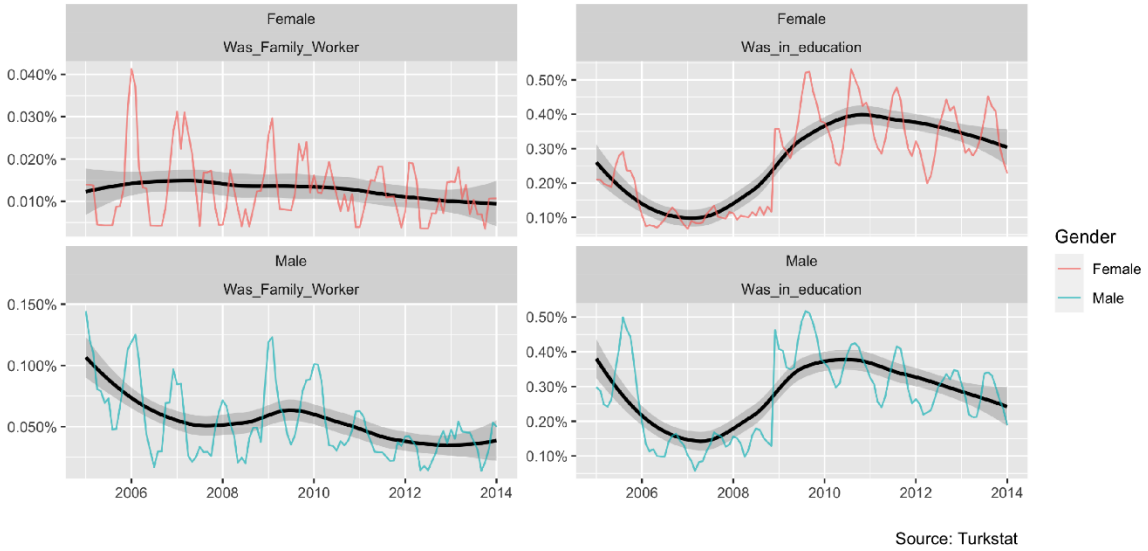
Housework is another quite relevant barrier that has prevented individuals from becoming part of the labor force and starting to search for a job. Up to 2011, its trend has been decreasing for urban areas, and after that it has regained some weight in explaining our variable in this section, however, for rural areas the trend has been stable at around 0.075%.

Newcomers from the military have had quite their share in 2005 for being first time job searchers, but then there is a rapid decrease and it quickly loses its influence in adding new

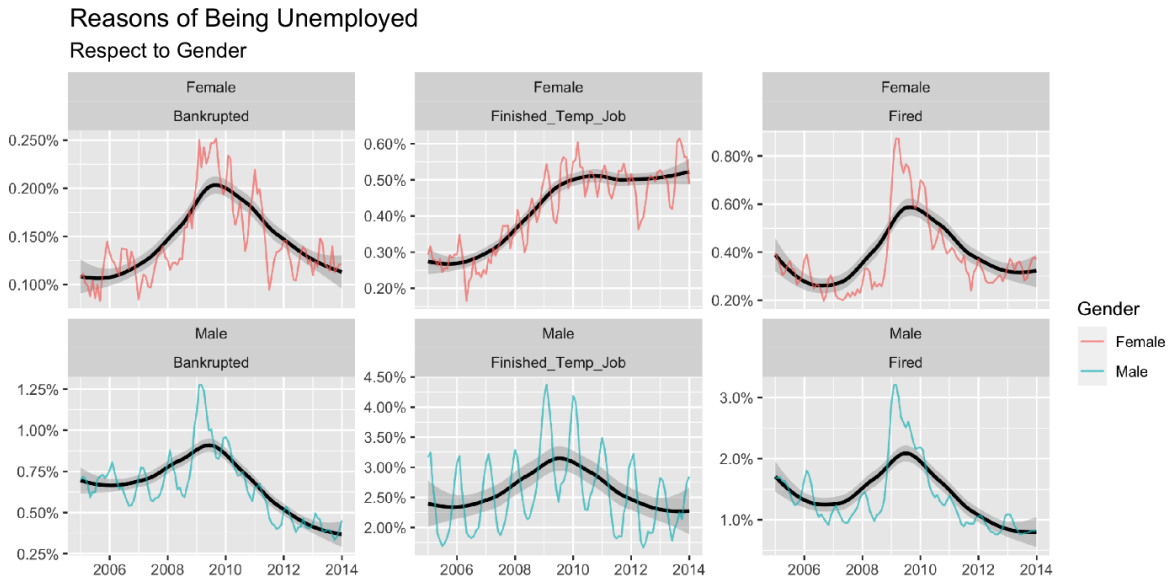
workers to the labor force. We can also deduce that the more recent the data, the more important become our specified categories for the available data we have, as in 2005 there were other reasons explaining our variable which could not be captured and included in here. But with time these alternative explanations start to shrink.

4. Reasons for being Unemployed

i. General Look



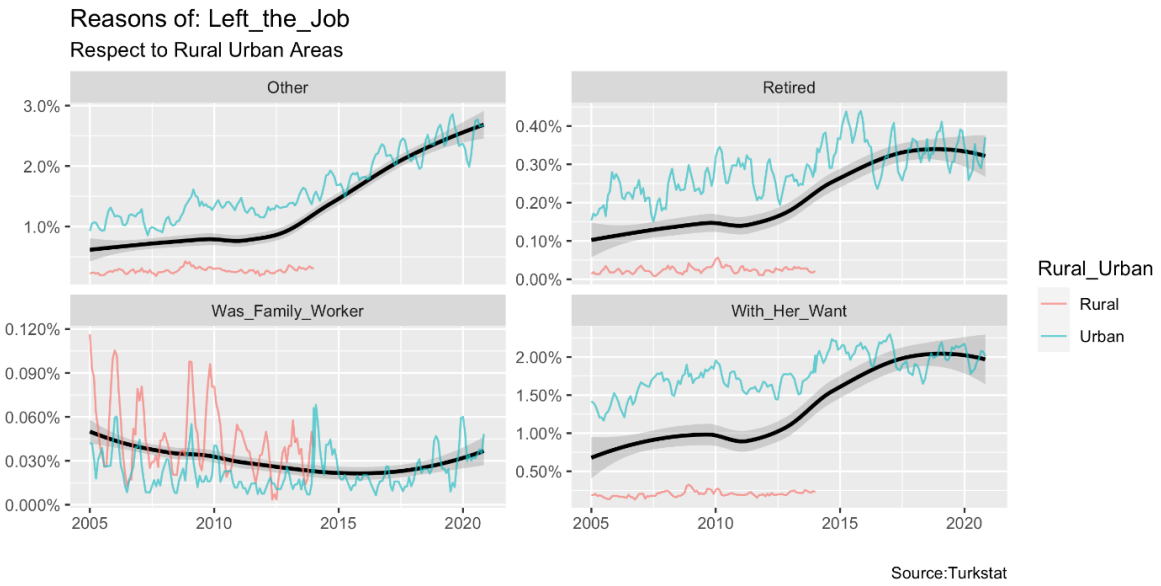
These graphs highlight reasons for unemployment. In this part of the paper we focus on how years of schooling and engaging family affected leaving jobs respectively. Interestingly, the magnitude and volatility of the percentage of unemployed women and unemployed men are almost equal to each other from the point of view of coming to a certain stage of education. And the pattern of these two graphs is also quite similar. It must be known that in all stages of education (primary, secondary, tertiary) women have faced more problems than men. In all levels of education women are involved as much as men but they are less involved in the labor force. This case is not only the case for Turkey, it is also the case in all around the world. They face more problems than men that cause to involve labor force less than men.



Women are easily fired from their job. We can see that in the last ten years women have lost their job more than men. And also, most women are working part time. That is the reason they found themselves in such a position. It seems like in the time of crisis firstly women are fired and also in the time of bankruptcies women lost their job more than men. Some women have seasonal jobs. They seem like they do not work in other seasons but they do housework and they participate in their seasonal job again when it's time. These jobs are like working on a farm.

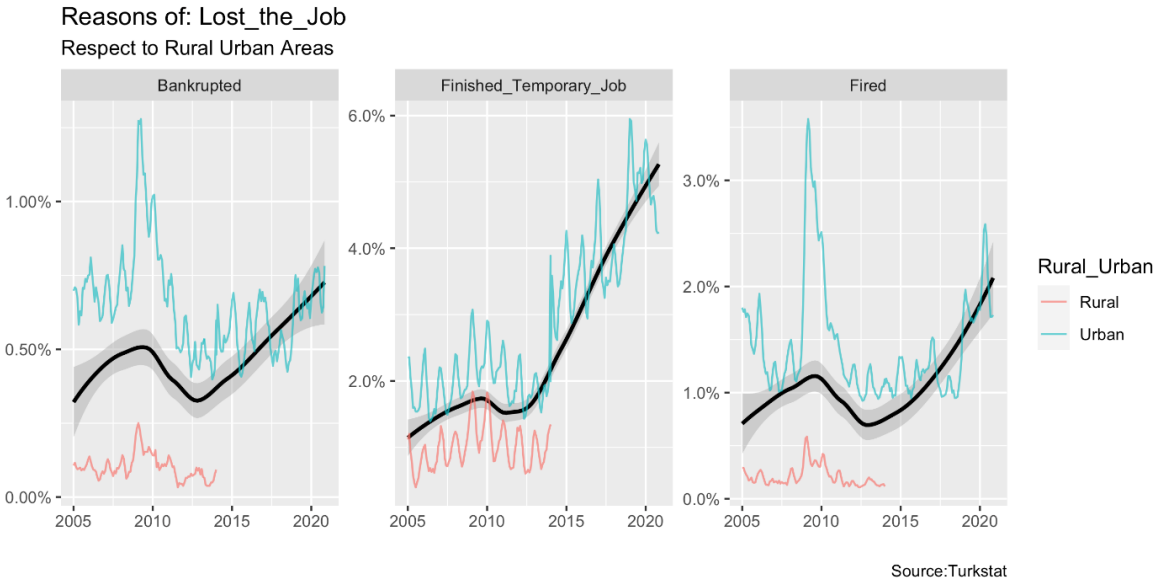
When it is not crisis time we can see that women did not lose their job more than men. The pattern of the slope looks similar. When we look at these graphs, we cannot see a proper comparison between men and women. We can see that the number of men who lost their jobs is higher than the number of women who lost their jobs. That cannot show the truth about gender discrimination because there are more males in labor force and when same percentage of female and male workers lost their job that will seem like more male worker lost his job. When financial stability times male workers have kept their jobs more likely female workers. But it is easier to keep their jobs for male workers. When we check 3 graphs we can see that there are more male who lost their job but as we mentioned it is because male have a majority percentage in the labor force.

a. Reasons of Left/Lost a Job

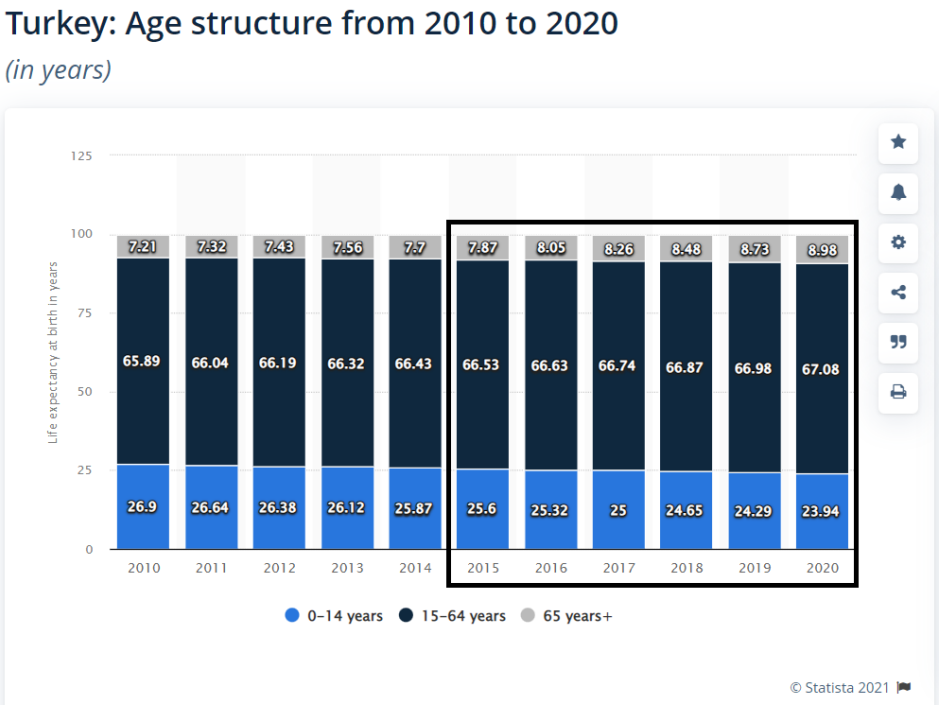


2008-2009 crisis: Bankruptcy was the major cause of job loss among the labor force participants. However, the recovery is quick for those companies that laid off workers. Also, some people may not start their small business but become employed in the post-crisis years for bankrupted. But it is to say that around mid-2012 variations expand and uncertainties on business failure increase, together with the stakes of being left unemployed due to this reason. Such a pattern has been observed in the past 9 years, with a moderately increasing trend. It is good to see that just two years later, unemployment decreased, however 2018 unemployment shown drastic increases. From 2005 up to 2010 some 1% to 2% of the labor force became

unemployed because of concluding their jobs, which most probably were part-time jobs, or either because they got fired from such temporary jobs. For the first case it is not necessarily frictional unemployment as some of these individuals might not search for another job placement because they might still be in college (and or they may return to the university or stayed longer than they were planning) but temporarily joined the labor force to conduct an internship or for other reasons. After 2010 until 2013 it seems as if the percentage of people becoming unemployed due to this reason remains stagnating, and then suddenly after that year there is a rapid increase in the percentage of people joining the unemployment group because of switching part-time jobs or just opting out of the labor force intentionally.
Being fired was also a major reason for becoming unemployed in the most recent major financial crisis, as we can see a sudden spike in 2008 from 1% of the labor force to around 3.6% being fired-an exceptional situation with a quite quick recovery, as it can be the case for most shocks. And, we can actually see companies stop this pattern of frenetic firing decisions as soon as 2009 began. This might imply that the reason for firing workers was not that the companies were already going through many financial struggles, but perhaps they predicted future difficulties from observing what was happening in the countries most hit by this crisis. For the companies that did not go bankrupt and were able to hold on quite well, which seems to be the case, workers' risk to get fired substantially decreased.



There are some reasons why people deliberately leave their jobs, instead of being fired from it, and contribute to the overall number of unemployed in the country. During the 15 years the trend for the proportion of people in the labor force leaving their jobs because of retirement has been almost stationary, however there is an existing small slope which shows a gradual increase of the people in this category through time. Though the change is slow and can be considered insignificant, it might be a sign that the population has started to age a bit. What has also experienced a slow-paced growth, is the proportion of people leaving their jobs out of their own will, for certain personal reasons.



Turkey's Age Structure
(supportive graph)

But another reason for leaving their jobs might be that these individuals were employed in a family undertaking from where they concluded their work. We see that this is not that significant as a reason for explaining why people leave their jobs, with the percentage of people in the labor force under this category being just within the interval [0.01%, 0.07%].
Until around 2013, the above-mentioned reasons were more likely to account for people's motivations in leaving their job, but after that, we can see an incremental increase in the proportion of people that have some other drivers that guide their behavior into leaving their job. Up to now we have only referred to the labor force belonging to urban areas, but when observing also the other part of the picture, it is noticeable that workers in rural areas are more included in family jobs than their urban peers, and that is why we also see a great variation for this category as family work is less predictable and does not follow a clear pattern of labor demand. Perhaps something might affect the family business in a way that it is in need of additional workforce which can be provided by a family member for that specific time and then is no longer needed.

4. Conclusions

As a conclusion, in this report we tried to understand the Turkish Economy's unemployment statistics. We chose visualization as a means of doing this. Using the data from Turkish Statistical Institute, we focused on the trends and changes in our commentaires to the graphs. We can conclude that the biggest narrative that can help us to comprehend the changes in the Turkish Economy is the 2008 crisis. It not only causes big jumps in the laid off but also indirectly affects other dynamics, too. For instance, the crisis makes people stay at school longer, thus jumping the ratio, 2-3 years after the crisis, of job workers that search for a job as a new graduate. Another trend break is observed in the year 2013, somehow, starting from around that year we see the trend starts to increase, and the rate of the increase rises with 2018 is another fact. We believe this shows some of the changes in the economy of Turkey, as these years are critical and important years. As a reflection of the economic crisis caused by Covid-19, in these days when layoffs have increased and unemployment rates have risen, both the Turkish Employment Agency on behalf of the state and the private employment offices have duties to eliminate the negative consequences of unemployment. In addition to the analysis made, considering that the individuals who are unemployed today will be the workers of the future and that the high rate of young unemployment in Turkey is considered, the necessity of maintaining the mental well-being of these people in the best way is understood more clearly in terms of productivity in employment and national development. A worrying issue is observed in the job search of the young population, it seems that the wound starts to deepen and youth becomes chronic unemployed as time passes. One of the reasons for youth unemployment is that the qualifications provided by the education system do not fully match the qualifications sought in the labor market. The education system should provide young people with the necessary skills with market value. Of course, it is worth mentioning that these numbers do not include the informal sector, and the ones departing from the labor force. Furthermore, this makes us think that the number of unemployed people could be higher.

There are significant differences in terms of both labor force participation rates and employment rates in terms of genders in the Turkish labor market. In this context, one of the main problem areas of the Turkish labor market is that women's labor force participation and employment rates are significantly lower than that of men. This is because of the patriarchal system. Women stay at home and take care of the elderly and take care of children, i.e. unpaid labor. Regarding women in Turkey, the labor force participation increases; this might be interpreted as the households depend more on additional income to be break-even. However, the main reason may be the increase in the level of education and the decrease in gender discrimination against female employees.

Lastly, an interesting interaction in the labor market might be immigrants. From our graphs, it does not seem that they affected people who have education above high school

degree. But, on the other hand it adversely affects the unskilled labor, as the number of less educated people increases through the years, and starts to get chronic. Due to the fact that migrant labor is seen as cheap labor in Turkey, it is seen that it takes place in informal employment. Moreover, these numbers again can be higher; because some of those less educated people, with not a small possibility, went to the informal sector of the economy.