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Ex-Ante Labor Market Effects of Compulsory Military Service

Huzyefe Torun*

Abstract

Previous research on military conscription exclusively focuses on the effect of military service on *subsequent* labor market outcomes. I examine the effect of peacetime conscription on early labor market outcomes of potential conscripts *before* they are called up for service. In a simple theoretical framework with costly job search and no job security, I show that an expected interruption in civilian life reduces the incentive of teenagers to search for a job. Using micro-data from Turkey, Argentina, Peru and Spain, I present evidence that the anticipation of compulsory conscription reduces the labor force participation of teenage men by 6.7 percent compared to men in their twenties, and employment by 11 percent, while raising unemployment in this group by 9 percent. Interestingly, I find mirroring effects on teenage women who are not subject to conscription. Women experience a 7.5 percent decrease in the labor force participation and a 10-13 percent decrease in employment after the abolition of conscription, suggesting a high degree of substitutability between men and women.

JEL Codes: J21, J24, H56.

Key Words: Military Service, Labor Force Participation, Youth Unemployment, Difference-in-Differences.

*The views expressed here are of my own and do not necessarily reflect those of the Central Bank of the Republic of Turkey. All errors are my own.

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1. Introduction

Throughout the twentieth century, the armed forces in many countries recruited personnel through conscription. Given the compulsory military service (CMS) laws, a significant portion of sixty year-old males around the world served in the military when they were young. However, since the end of the Cold War many countries have moved from conscription to all-volunteer armies, especially in North America and Europe. France, considered the first country to introduce modern conscription, abolished it in 1997, and most recently Germany abolished conscription in 2011. Yet some European countries and many Asian and African countries including Austria, Brazil, Greece, Denmark, Egypt, Israel, Russia, South Korea, and Turkey still use conscription to supply their armed forces with qualified personnel. Among the latter group, the duration of compulsory service and the possibility of eliminating it have frequently been debated. Turkey is now reducing the duration of compulsory service from 15 months to 12 months. The decision to switch from a conscription army to a professional one is partly strategic and partly economic.

In this paper, I examine the effect of peacetime conscription on the early labor market outcomes of potential conscripts *before* they are called up for service. Using micro-data from four countries, I present evidence that the existence of compulsory conscription reduces the labor force participation and employment of male teenagers who are waiting to be called into service. Similarly, I observe an increase in male teenage employment and a decrease in female teenage employment after the abolition of conscription. The economic effects in advance of conscription have not been studied previously, to my knowledge.

I use both cross-country and within-country strategies to investigate the effect of peacetime conscription on the early labor market outcomes of potential conscripts *before* they are called up for service. In a simple theoretical model with costly job search and no job security, I show that an expected interruption in civilian life reduces the incentive of teenagers to search for a job. Moreover, when firms bear the cost of on-the-job training, an expected interruption may reduce the employers' likelihood of offering a job to expected future conscripts.

I use labor force survey micro-data from Turkey (which has CMS), Argentina and Peru (which do not have CMS), and Spain, which eliminated it in 2001. My results show that CMS decreases the labor force participation and employment of male teenagers at ages at which they are waiting to be called into service. I also show that the existence of CMS in Spain reduced the chance of finding a job, and that its elimination increased employment of teenage men while decreasing employment of teenage women.

I start my analysis by pointing out the low labor force participation of males in their late teens in Turkey, focusing on young men who finished their schooling at an early age and comparing them to men in their twenties with the same level of education. The differences between the two groups may reflect unobserved characteristics that keep teenage men out of the labor force. To test this possibility, I incorporate data from the "control" countries, Peru and Argentina, and show that, although labor force participation trends are very similar in all three countries among men in their twenties with the same level of education, labor force participation is significantly lower in Turkey among teenage men. Finally, using the Encuesta de Población Activa (EPA) before and after Spain abolished CMS in 2001, I present within-country evidence that the abolition of CMS increased the labor force participation and employment of teenage men and decreased it for teenage women. Using a difference-in-differences methodology, I find that the

abolition of CMS increased the labor force participation of teenage men by 5.9 percentage points (6.7 percent) compared to men in their twenties and increased their employment by 6.7 percentage points (11 percent). Therefore it decreased the likelihood of unemployment by around 3.1 percentage points (9 percent). Finally, I find mirroring results for teenage women, suggesting substitutability in the labor market. Teenage women experience a 7.5 percent decrease in the labor force participation after the abolition of conscription.

The first contribution of this study is to highlight the anticipation effects of CMS, as the previous literature focuses on the effect of military service on subsequent labor market outcomes only. By showing the ex-ante effects of CMS, I point out one cause of low labor force participation among youth in the countries with CMS, which is a common concern around the world.

Second, I show one channel through which conscription may affect future labor market outcomes of individuals. It is well documented that early labor market experiences have significant effects on later labor market outcomes (Smith, 1985). This channel that occurs before conscription may partially explain why the previous literature finds either negative or no effect of conscription on later wages, even though some hypothesize that the effect should be positive. Third, Galiani et al (2011) exploit the Argentine draft lottery and show that military conscription raises the likelihood of later criminal activity, particularly property crimes. This study highlights another channel through which this may occur, involving the lack of teenage labor market experience. Similarly, Jacob and Lefgren (2003) show that idleness among high school students causes them to engage in more property crimes. Finally, I exploit a credible natural experiment to demonstrate the substitutability in the labor market across types of workers.

In the next section, I review the literature on the effects of military service. Section 3 provides a brief institutional background of CMS in the four countries. Section 4 presents a theoretical framework that motivates the effect of CMS on teenage labor market outcomes. Section 5 describes the data sets and the key variables, and explains my sample selection from each country. Section 6 covers the empirical strategy and presents the results. Section 7 concludes.

2. Literature Review

The economics literature informs the debate about compulsory military service in a number of ways. One branch of the literature analyzes the budgetary and opportunity cost of a conscription army versus a professional army given the goal of supplying the armed forces with qualified personnel (Warner and Asch 2001). Another branch investigates how the existence of CMS affects aggregate labor market characteristics relative to other countries with no CMS. Given the high number of countries switching from conscription to professional armies in the last two decades, it is surprising that there is little evidence on aggregate labor market effects (Feldman, 2009).

Finally, a recent branch of the literature examines the effect of military service on individual outcomes such as labor market performance, educational attainment, cigarette and alcohol consumption, and criminal activity. These papers use within-country variation in veteran status across citizens and generally attempt to find exogenous variation in veteran status. Angrist (1990) and Angrist and Krueger (1994) investigate the effect of serving in the U.S. military during wartime on future labor market outcomes in an instrumental variables framework, whereas Imbens and van der Klaauw (1995) and others examine the effect of peacetime conscription in Europe. Bound and Turner (2002) and Barr (2013) investigate whether military

service increased veterans' educational attainment through G.I. benefits in the U.S., and Goldberg et al (1991), Eisemberg and Rowe (2009), and Galiani et al (2011) estimate the effect on later substance use and criminal behavior.¹ This paper belongs to the second and third branches of the literature by using both cross-country and within-country empirical strategies and by focusing on individual outcomes.

I focus attention here on papers that analyze labor market outcomes as a result of conscription. As mentioned above, the frequent switches from a conscription army to a professional army provides variation in conscription status across countries. Yet most cross-country studies in the literature examine the relationship between military expenditure and economic growth using cross-section or panel data on the expenditure and economic growth of countries (Stroup and Heckelman, 2001; Deger and Sen, 1995; Shieh et al, 2002). Keller et al (2009) focus on conscription and examine the relationship between conscription and economic growth in OECD countries. Feldman (2009) uses data on 73 economies to investigate the effect of labor regulation on unemployment around the world. He finds that, no or short military conscription is correlated with lower unemployment among the total labor force. Yet none of these studies investigates the causal link between conscription and labor market outcomes in depth. In this study, I use cross-country comparisons to present evidence on the effect of conscription on aggregate labor market characteristics.

Identifying the effect of conscription on individual outcomes is a difficult task because there is non-random selection to the military service. Even countries with universal conscription allow certain exemptions based on characteristics such as health and occupation. Thus comparing the

¹ The literature on draft avoidance behavior of individuals can be considered as investigating the ex-ante effects of conscription on educational attainment (Card and Lemieux, 2002; Maurin and Xenogiani, 2007).

individual outcomes of interest between veterans and non-veterans is misleading unless the researcher also controls carefully for the characteristics that determine the veteran status. However, data on such characteristics are rarely available to the researchers. For example, if the army recruits its members after medical and psychological examinations, an ordinary least squares (OLS) estimate of the effect of military service on labor market outcomes would be upward biased. If men with relatively fewer civilian opportunities are more likely to enlist in the military or men from wealthy families are less likely to enlist, an empirical approach that does not control for civilian earnings potential or family background would underestimate the benefit or overestimate the cost of military service (Angrist, 1990; Angrist and Krueger, 1994). Some papers that focus on individual outcomes therefore use instrumental variables to explain military service, while others, like this paper, obtain intent-to-treat estimates on the cohorts who are eligible for military conscription.

Angrist (1990) and Angrist and Krueger (1994) investigate the effect of wartime military service during Vietnam War and World War II on future labor market outcomes, and use date of birth as an instrumental variable for the probability of being drafted. These studies found that white Vietnam-era veterans earn 15 percent lower annual wages than non-veterans 10 years after the war, and World War II veterans earn no more, possibly less, than non-veterans. Imbens and van der Klaauw (1995) use variation in the aggregate military enrollment rates across cohorts in a grouped-data IV framework to identify the causal effect of peacetime military service in the Netherlands on future earnings. They find that, 10 years after service, those who served in the military earn 5 percent lower annual wages than those who did not. Grenet et al (2011) exploit the discontinuous change in the probability of conscription into the British army during the post-war period in a regression discontinuity design (RDD) and find no effect on earnings of

peacetime compulsory military service. Similarly, Bauer et al (2012) use RDD based on a discontinuity in the probability of being drafted across cohorts in Germany and find no significant effect of conscription on future wage or employment of the former conscripts. Paloyo (2010) revisits conscription in Germany in a difference-in-differences framework and verifies that CMS has no effect on the labor market performance of conscripts.

The papers mentioned above focus on the effect of military service on future labor market outcomes. Also, it is worth noting that they identify the Local Average Treatment Effect, with treatment being the actual conscription. My approach differs because I investigate the ex-ante outcomes of CMS before the actual call to service. My findings should be interpreted as Intent-to-Treat estimates, or the effect of the existence of conscription in a country. In this sense my work is similar to the study from the retirement literature by Friedberg (2003) who points out that impending retirement reduces the incentive of older workers to invest in new computer skills. This is because approaching retirement reduces the time to recoup the investment in new skills. It is also important to note that wartime conscription may have different effects than peacetime conscription. Although both types of military service cause a loss of job market experience among those who serve, the war-time military service has a higher physical and psychological cost.

3. The Institutional Background

In the first part of the empirical analysis I compare Turkey, which still has CMS, to Peru and Argentina, middle-income countries which abolished CMS in 1999 and 1995, respectively.² To do this, I use labor force micro data for the years 2004-2011 for each of these countries. Then, I

² It should be noted that, in both countries, the government retains the right for conscription in case of emergency. Yet in practice both armies currently consist of volunteers.

use Spanish micro-data before and after the abolition of conscription in 2001 to estimate the effect on ex-ante labor market outcomes of individuals. In this section, I first describe the “treatment”, focusing on the institutional details of CMS in Turkey. Then, I switch to the details of control group countries, Peru and Argentina. Finally, I present the institutional details of military service in Spain before and after the abolition of CMS.

Conscription in Turkey was introduced in 1916. Since then, all able-bodied men have to enlist in the military when they turn 20.³ All men from a particular cohort are called for medical and psychological examinations around their 19th birthdays. Those who are fit for service are called up when they turn 20. A second group of men who have temporary health problems are deferred from service. A third group of men who have severe health problems or extreme BMI values are permanently exempted from military service. Unlike some other countries, there is no exemption based on one’s occupation.⁴ Thus, the number of permanent exemptions is negligible. Those who are required to serve are not necessarily called up immediately. Individuals who are enrolled in higher education can defer their military service until they reach 29. High school graduates or two-year college graduates can defer their service until the age of 22 or 23. These age differences in service requirements are a major reason that I focus most of my analysis on people who have completed their education at a younger age.

The duration of CMS in Turkey has changed several times throughout the century reaching its maximum during World War II. A legal change in 2003 shortened the duration of CMS from 18 months to 15 months. The most recent change was made in October 2013, and it shortened the

³ Women are exempt from compulsory military service in Turkey, but they are allowed to join the army as professional military officers.

⁴ For example, police and fire men are not exempt from the military service. Yet there are other forms of exemptions. For example, a man whose brother lost his life during military service or was seriously injured is exempt from compulsory military service. The laws do not allow conscientious objection.

duration of service from 15 months to 12 months effective January 2014. As will be explained in the next section, the data from Turkey, Argentina and Peru cover the years 2004-2011. The duration of CMS in Turkey was 15 months for most men during these years. Yet military service duration varies depending on one's higher education status. Those who have four-year college degree either serve for 12 months as an officer candidate among military officers, or for 6 months as a sergeant among enlisted soldiers. The final allocation of college graduates between 12-month service and 6-month service depends on both individual preferences and the necessities of the army. Men who studied in certain fields, such as medicine or engineering, are more likely to be assigned 12-month officer jobs. Unlike the other conscripts, college graduates who serve for 12 months are paid.⁵ All conscripts receive basic training for around two months and after that they are allocated to their divisions for active duty. Although the exact number of conscripts has varied over time, the Turkish armed forces comprise around 200,000 officers and professional soldiers and around 400,000 conscripts.

Peru modified its military service act in 1999 and made military service voluntary for any physically and mentally-able Peruvian aged 18-30. After the switch to a professional army, the government increased the benefits of joining the armed forces by providing technical job training and education benefits. Currently the Peruvian armed forces comprise around 120,000 active-duty personnel in total. Compulsory military service in Argentina was created in 1901 and was suspended after the murder of an 18 year-old conscript by two soldiers in 1994. Before the suspension, 18-year old Argentineans were randomly selected and recruited for 14 months. In the all-volunteer army, soldiers are paid for their service and they can stay in the armed forces up to

⁵ In practice all conscripts receive extremely small, symbolic salaries.

ten years. The number of active personnel in the Argentinean armed forces is around 70,000. Neither of these countries had CMS between 2004 and 2011.

The length of compulsory military service in Spain was nine months, shorter than the fifteen months in Turkey, before its abolition in December 2001. The total armed forces comprised around 250,000 personnel in 1999, and conscripts constituted more than half of it. By 2002, the size of the armed forces was below 200,000. Before the abolition of conscription in Spain, men were called up for physical and psychological examination before the age of 19. Those who were fit for service were called up in the year that they turn 19. Individuals who had temporary health problems could defer the service. Those who were not physically or mentally fit for military service were permanently exempt, as in Turkey.

Also as in Turkey, those who were not exempt from military service did not necessarily begin to serve immediately. There were a number of reasons for deferring military service. One common reason for deferment was education. Individuals who were enrolled in school could defer the military service for as many as seven years. Conscientious objection was also popular in Spain. According to Spanish law conscientious objectors were allowed to do alternative public service in institutions such as hospitals for the same duration and pay. The ratio of conscientious objectors for military service in 2001 to those who actually enrolled in the armed forces for serving in 2001 was more than a quarter, but one's status as conscientious objector should not alter the ex-ante effects of conscription on labor markets.

The intent of the Spanish government to abolish compulsory service was known as early as 1999. Initially the laws said that CMS would be abolished by the end of 2002. In early 2001, another law changed the end of conscription to December 2001. Similar to the draft avoidance behavior

of individuals in Card and Lemieux (2002) and Maurin and Xenogiani (2007), this information might have led more individuals to stay in school and defer military service. For those who deferred service in 2000 and 2001, the deferment practically meant an exemption from military service.

The institutional details of compulsory military service in Spain affect my analysis in two important ways. First, since individuals who are enrolled in school at the conscription age can easily defer military service, I exclude college graduates and those who were enrolled in school when surveyed. I concentrate on those who finish schooling at a relatively early age, at or before sixteen. This way, the individuals in my sample are more likely to be affected by CMS laws and its abolition. Second, the fact that individuals expected the abolition of the conscription would make them more likely to ignore the possibility of conscription and join the labor force. Thus, the estimated effect of the existence of CMS in Spain should be a lower bound.

4. Theoretical Framework

In this section, I present a simple three-period model with costly job search and no job security to illustrate labor force participation decisions of individuals in their late teens. I show that an expected interruption in civilian life in period 2 reduces the incentive of teenagers to search for a job in period 1.⁶ Comparative statics analysis provides some testable predictions that I investigate empirically. When we look at the employer side, similar results would also arise in three-period model of hiring with on-the-job-training. An expected interruption reduces the incentive of employers to hire workers in the first period. Although the theoretical framework

⁶ The same effect may arise if continuous labor market experience is more valuable, in terms of building human capital, than interrupted labor market experience.

presented here aims to show the effect of compulsory military service, it applies to any expected interruption in the civilian life.

4.1. Labor Force Participation Decision

I focus on a three period model in which individuals may be exogenously called up for military service in the second period. Three periods represent the early labor market experience of young men in a country with compulsory conscription. The first period can be thought of as the late teenage years, the years before the conscription age. The second period can be thought of as the conscription age, at which young men may be called up for the service. The third period corresponds to the years after the conscription age.

In the model, individuals begin life without a job. Each period, individuals receive non-wage benefit, c , regardless of their employment status. This benefit represents home production, family support or the very small compensation given in the army. Individuals discount future periods by a discount factor, β , where $0 < \beta < 1$. They can be called up for military service in the second period with exogenous probability η . In the first period, they decide whether to search for a job. Job search is a costly effort that happens at the beginning of a period. I assume that anyone who pays the search cost, z , finds a job. Individuals who find a job start working in the same period and receive a wage, w , for that period. Once an individual finds a job, there is no separation unless he is conscripted into the army in the second period, in which case he loses his job. If an individual who worked in the first period is called up for service in the second period, he needs to search for a job in the third period if he wants to work. Everyone knows whether or not he will be called up for military service at the beginning of the second period. Therefore, an individual who worked in the first period does not start working in the second period if he is

called up. Similarly, an individual who did not work in the first period does not pay a search cost in the second period if he knows that he will join the armed forces.

Individuals optimize between searching and not searching at the onset of each period in which they do not have jobs and are not in the armed forces. Each individual balances the cost of search with the wage benefit of employment considering the probability of losing his job due to compulsory conscription. The benefits differ across periods. The search cost, z , differs across individuals but stays the same for each individual across periods. Although the cost of search, z , has a distribution $f(z)$ across individuals, I will use a generic z in the following model, and refer to the distribution at the end.

I approach the optimization problem in a recursive way. There is no decision making for individuals who worked in the second period. They continue working in the third period. However, an individual who did not work in the second period, either because he lost his job due to compulsory conscription or he did not search for a job in the first two periods, compares the search cost and the wage of the last period. In the third period, the value function for an individual who did not work in the second period is

$$V_3 = \max\{\text{not search}, \text{search}\} = \max\{c, c - z + w_3\}.$$

Individuals who worked in the first period continue working in the second and third period if they are not called up for military service. In addition, there is no decision making for conscripts in the second period. However, civilian individuals who did not work in the first period choose whether or not to search in the second period. If they search in the second period, they will not need to search again in the third period. In the second period, the relevant value function for a civilian individual who did not work before is

$$V_2 = \max\{\text{not search}, \text{search}\} = \max\{c + \beta V_3, c - z + w_2 + \beta(c + w_3)\}.$$

In the first period, individuals decide whether or not to search taking into account the probability of conscription in the second period. The value function for an individual in the first period is

$$V_1 = \{\text{not search}, \text{search}\}$$

$$V_1 = \max\{c + \beta[\eta(c + \beta V_3) + (1 - \eta)V_2], \\ c - z + w_1 + \beta[\eta(c + \beta V_3) + (1 - \eta)(c + w_2 + \beta(c + w_3))]\}.$$

Since the value of the choice in the third period affects the choices in the previous periods as well, one should know whether a jobless individual searches in the third period. There are two possible cases regarding the choice in the third period based on the value of search cost relative to the wage in the third period.

Case 1: No search in the third period:

Assuming that $z > w_3$, an individual does not search in the last period if he does not have a job at that point. Thus, V_3 boils down to $\bar{V}_3 = c$. Individuals do not find it worth paying the search cost for the third period wage only. A civilian individual who is not called up for service and who did not work in the first period knows that if he does not search in the second period he will only get $\bar{V}_3 = c$ in the third period. So his problem in the second period becomes

$$V_2 = \max\{c + \beta c, c - z + w_2 + \beta(c + w_3)\}.$$

Assuming that $z < w_2 + \beta w_3$, a jobless civilian individual chooses to search in the second period.⁷ Then V_2 boils down to $\bar{V}_2 = c - z + w_2 + \beta(c + w_3)$. So when individuals start the first

⁷ We can also consider the case with $w_2 + \beta w_3 < z$. Then, civilian individuals who did not work in the first period do not search in the second period. This makes jobless civilian individuals indifferent between conscription and

period, they know that if they choose not to search and they are not called up for military service, then the discounted value at the beginning of the second period will be $\bar{V}_2 = c - z + w_2 + \beta(c + w_3)$. Then, individuals at the beginning of the first period face the problem

$$V_1 = \max\{c + \beta[\eta(c + \beta c) + (1 - \eta)(c - z + w_2 + \beta(c + w_3))], \\ c - z + w_1 + \beta[\eta(c + \beta c) + (1 - \eta)(c + w_2 + \beta(c + w_3))]\}.$$

This choice reduces to comparing $-\beta(1 - \eta)z$ with $-z + w_1$. An individual in the first period chooses not to search if $-\beta(1 - \eta)z > -z + w_1$ i.e. $z > \frac{w_1}{(1 - \beta + \beta\eta)}$, and chooses to search if $z < \frac{w_1}{(1 - \beta + \beta\eta)}$.

The threshold value of the search cost is $\hat{z} = \frac{w_1}{(1 - \beta + \beta\eta)}$, and I will discuss comparative statics later. If individual search cost z_i is smaller than \hat{z} , then an individual pays the search cost in the first period and starts working. If z_i is bigger than \hat{z} , then the individual does not find it worth paying the search cost and stays out of the labor force in the first period. We should also check the previous two assumptions. The assumptions $w_3 < z$ and $z < w_2 + \beta w_3$ do not restrict the z values too much. There is a range of z values that satisfies $w_3 < z < w_2 + \beta w_3$, and lead some individuals to search and others not to search in the first period.

Case 2: Search in the third period:

If we assume that $z < w_3$, then individuals with such z values search in the third period if they do not have jobs at that point. Then, V_3 boils down to $\bar{V}_3 = c - z + w_3$. The optimization

civilian life in the second period. In either case, they will receive the non-wage benefit, c , in the second and third periods. Then, there is a threshold value for z above which individuals do not search in the first period either.

problem of a civilian individual in the second period who is not called up for service and who did not work in the first period becomes

$$V_2 = \max\{c + \beta(c - z + w_3), c - z + w_2 + \beta(c + w_3)\}.$$

He chooses to search in the second period as long as $w_2 - z > -\beta z$ i.e. $z < \frac{w_2}{1-\beta}$. Assuming that he searches, V_2 becomes $\bar{V}_2 = c - z + w_2 + \beta(c + w_3)$.⁸ Thus, individuals at the beginning of the first period face the following choice

$$V_1 = \max\left\{c + \beta\left[\eta(c + \beta(c - z + w_3)) + (1 - \eta)(c - z + w_2 + \beta(c + w_3))\right], c - z + w_1 + \beta\left[\eta(c + \beta(c - z + w_3)) + (1 - \eta)(c + w_2 + \beta(c + w_3))\right]\right\}.$$

An individual at the beginning of the first period chooses not to search if $z > \frac{w_1}{(1-\beta+\beta\eta)}$, and chooses to search if $z < \frac{w_1}{(1-\beta+\beta\eta)}$. Here, we should check the previous two assumptions. There is a range of z values that satisfies $z < w_3$ and $z < \frac{w_2}{1-\beta}$, and lead some individuals to search and others not to search in the first period.

Tables 1 and 2 show search behavior of individuals with different values of z_i , given two possible wage sequences. For the first case, the threshold values for the three periods are $\hat{z} = \frac{w_1}{(1-\beta+\beta\eta)}$, $w_2 + \beta w_3$ and w_3 , respectively. For the second case, they are $\hat{z} = \frac{w_1}{(1-\beta+\beta\eta)}$, $\frac{w_2}{1-\beta}$, and w_3 , respectively. In almost any wage structure, we expect that $\frac{w_2}{1-\beta} > w_2 + \beta w_3 > w_3$. Yet, the threshold value of the search cost in the first period, $\hat{z} = \frac{w_1}{(1-\beta+\beta\eta)}$, can be smaller or larger than

⁸ There is potentially another case. If $w_3 > z > \frac{w_2}{1-\beta}$ then a jobless civilian individual who is not conscripted does not search in the second period although he is willing to search in the third period. Because β is typically close to 1, this case is unlikely to realize unless the third period wage is far bigger than the second period wage.

w_3 . Table 1 illustrates the search behavior of individuals where $\hat{z} = \frac{w_1}{(1-\beta+\beta\eta)} > w_3$, and Table 2 does the same where $\hat{z} = \frac{w_1}{(1-\beta+\beta\eta)} < w_3$.⁹ Note that first period search is monotonic in the search cost. Table 1 shows that, for intermediate values of the search cost, someone may search in the first period, but will not search in the third period if they are drafted in the second period. Similarly, Table 2 shows that, for intermediate values of the search cost, some people will not search in the first period and then search in the third period if they are drafted in the second. In both tables, as the threshold value of the search cost decreases, fewer individuals search in the first period.

In either of the cases above, the threshold value for searching in the first period can be defined for the ratio of search cost to first-period wage. This threshold value is $\frac{\hat{z}}{w_1} = \frac{1}{1-\beta+\beta\eta}$. If the search cost-first period wage ratio exceeds this value, then an individual does not search in the first period.

4.2. Comparative Statics

Next, I use the model to develop predictions for the effect of conscription regulations on the search effort of young men.

i. The model shows that anything that affects the threshold value for the search cost, \hat{z} , affects the labor force participation of young men. Given w_1, w_2, w_3 , and discount factor β , and an underlying distribution of z , $f(z)$, the first partial derivative of $\hat{z} = \frac{w_1}{(1-\beta+\beta\eta)}$ with respect to η is negative. Therefore, as the probability of conscription in a country increases, the mass of individuals with a z value less than \hat{z} gets smaller, and less people join the labor force in the first

⁹ One can consider more different wage structures using the same reasoning.

period. Equivalently, if a country abolishes conscription, \hat{z} increases, and labor force participation among young men increases as well. A similar reasoning applies to cross-country analysis.

ii. Everything else constant an increase in the first period wage increases the threshold value for first period search, \hat{z} . The cumulative distribution $F(\hat{z})$ increases and we observe more people with search cost values under the threshold. This implies that if the wage rate for teenage men increases, more men join the labor force before they reach the age of conscription.

iii. An increase in the discount factor, β , increases the threshold value for the search cost \hat{z} . Thus, more people pay the search cost and start working in the first period. As explained above, with some probability of conscription, the second and third periods are the same across all individuals regardless of their employment status in the first period. The three periods become independent from each other, and the discount factor does not affect the first period decision. With some probability of not being conscripted, individuals balance cost of search in the first period with the cost of search tomorrow, in the second period. An increase in the discount factor makes individuals more likely to pay the search cost early.

As mentioned in Section 2, the ex-ante labor market effect of conscription has received little attention. The theoretical framework above shows its potential effects on individuals before they are called up for service. Next, I illustrate how compulsory conscription also affects the hiring decision of employers.

4.3. The Hiring Decision

Similar results would also arise in a three-period model of hiring with on-the-job training. This model looks at the other side of the coin. Employers choose whether or not to hire a job applicant considering the expected interruptions in the applicant's labor market experience.

Suppose that, rather than a fixed search cost, there is a one-time training cost for all new hires at the expense of employer. If a worker leaves the firm due to conscription, then he needs to be trained again in his third period. This is in line with many studies that refer to the depreciation effects of compulsory conscription. This also fits to the case where training is firm-specific. If a worker who worked for a firm in the first period is called up for military service, he quits the job and joins the armed forces in the second period. Once he is back to civilian life in the third period, he is no different than other job applicants to employers.¹⁰

In this theoretical framework, in the absence of conscription, an employer would prefer hiring someone in the first period of his life because he is able to gain from the productivity of the worker for three consecutive periods and only pays the training cost once. The advantage of younger applicants compared to older ones decreases as the conscription probability in a country increases. Similarly, if a country abolishes conscription completely, the employment likelihood of men younger than the age of conscription rises.

5. Data

I focus my entire analysis on men (and occasionally women) who finished their schooling at an early age, before conscription age, so that schooling and labor force participation decisions are not confounded, especially because schooling may lead to deferred conscription. Throughout my analysis, I compare men in their late teens and men in their twenties with the same low level of

¹⁰ This is consistent with the labor force participation model in section 4.1. There is no job security.

education. Because men with different ages may differ for other reasons, I compare statistics for men in their late teens and in their late twenties across countries and within Spain before and after the abolition of CMS. If there is a common age-labor force participation profile for men in their twenties across these countries, but not for men in their late teens when they face CMS, it suggests that CMS causes the different outcomes. To undertake this analysis, I incorporate data from one country that retains CMS, Turkey, two countries that no longer have CMS, Peru and Argentina, and one country that recently abolished CMS, Spain in 2001. Below, I describe the data from the four countries.

Common Definitions

My theoretical model suggests that in a country with CMS such as Turkey, the existence of compulsory conscription would affect the ex-ante labor market outcomes of individuals who are about to choose between joining the labor force and waiting for conscription. Therefore, I concentrate my empirical examination on young men who finished schooling at relatively early ages. College students can defer military service in all three countries and they are already above 20 when they graduate from college, so they can choose to do military service right after graduation. Inefficiency due to anticipation of service is therefore not a serious concern for college graduates. Consequently, in all three samples described below, I exclude those who are enrolled in school or who have any college education. Unlike urban areas, individuals in rural areas, especially with family farms, always have some work to do on the farm. The surveys are designed in a way that anyone who finished schooling is considered employed if he works for the family business. Therefore, labor force participation or employment figures in the rural areas are less informative about labor market decisions and opportunities for young men. Thus, I drop the rural population in the three samples.

I generate three schooling categories in each country. Those who have primary/elementary school degree or less are in the first group. They have six years of schooling or less. Those who have a middle school degree in Turkey or are secondary school drop outs in Peru and Argentina are the second group. Finally, those who have a high school degree in Turkey or a secondary school degree in Peru or Argentina are the third group. In the next section, cross-county analysis is carried out separately for these three samples: those who have elementary school degree or less, middle school degree or less, and high school degree or less.

Household Labor Force Survey of Turkey

I use the 2004-2011 releases of the Household Labor Force Survey, Hanehalkı İşgücü Anketi (HİA), conducted by the Turkish Statistical Institute. Each survey covers about 150,000 households and 500,000 individuals annually. This micro-data set is a cross-section. Like other labor force surveys around the world, the survey excludes the institutional population such as prisoners and conscripts in the armed forces. Therefore, I have fewer observations of men than women at the age of 20. Respondents report demographic and detailed labor market characteristics. The original public version of the dataset provided individual age in ranges. This makes it difficult to see how labor force participation changes within narrow age categories, which is needed for this study. I obtained additional files on the exact age of respondents from the Institute and merged them with the original data.¹¹ Among many labor market characteristics, I focus on whether or not the individual is in the labor force and is actively searching for a job or employed.

¹¹ I would like to thank the staff in the Labor Force Statistics Department of Turkish Statistical Institute for providing me the access to these supplementary data.

I restrict my sample to individuals aged 17-30 in any of the survey years from 2004 to 2011. During these years, military service in Turkey was compulsory, as described in Section 3, 15 months of service were required for non-college graduates. It is worth restating that college graduates can defer military service until they finish the college, confounding the opportunity to look at behavior during ages at which they are anticipating conscription.

About 4 percent of the sample between 17 and 30 is missing year of birth information, so I drop them. I also drop those who live in rural areas with population less than 20,000. Finally, I drop those who were enrolled in school or who have any college degree, leaving 48% of the original sample aged 17-30. So I analyze a sample of 419,023 individuals aged 17-30 from survey years 2004-2011. Table A1 in the Appendix provides sample statistics for the main variables, separately for women and men of the baseline sample used in this paper.

National Household Survey of Peru

I use the 2004-2011 releases of the National Household Survey, Encuesta Nacional de Hogares (ENAHO) micro-data to investigate labor force participation across ages in Peru. The survey is conducted by the National Statistics Institute of Peru continuously every week. The data set is a cross-section with a panel subsample that begins in 2008. Each year the institute surveys more than 20,000 households and collects information on employment, income, education and household demographics among other things. The survey is organized in 29 modules. For this study, I merge the information from modules on household characteristics, education and employment status. Since there is a panel structure as well, I drop all duplicates from the data.

The age variable is defined as the completed age. For comparability across countries, I restrict my sample to individuals aged 17-30 in any of the survey years from 2004 to 2011. Peru did not

have compulsory military service in any of these survey years. The country had already switched to a professional army in 1999. Residential areas are categorized based on the number of households. I drop observations from rural areas with fewer than 4,000 households, similar to dropping areas with fewer than 20,000 residents in Turkish data. In addition I drop those who were enrolled in school or who have any college degree. This leaves 54,132 observations over eight years. Table A2 in the Appendix presents sample statistics for the main variables of interest, separately for women and men.

Household Continuous Survey of Argentina

The data used to investigate Argentina come from the Household Continuous Survey of Argentina, Encuesta Permanente De Hogares (EPH). This is a panel household survey conducted by the National Institute of Statistics and Census Institute in 31 urban centers populated by at least 100,000 residents. The survey contains information on employment, demographic, economic and social characteristics of the non-institutional population. The EPH represents more than 60% of the country's population. The survey is a rotating panel that is conducted over the whole year and is published four times a year. Each selected household is interviewed in four waves of the survey. They are surveyed in two consecutive quarters, then not surveyed for two quarters, and then appear in the sample again for two consecutive quarters. I drop all duplicates from the data and concentrate my analysis on its cross-sectional aspect.

Because the survey is already representative of urban areas, I do not restrict the sample based on the area of residence. Similar to the previous data, I restrict my sample to individuals aged 17-30 in any of the survey years from 2004 to 2011. Note that Argentina did not have compulsory military service during this period. It had abolished conscription in 1995. Similar to the previous

two samples, I also drop those who were enrolled in school or who have any college degree from the sample. This makes the sample size 100,362 over eight survey years. Table A3 in the Appendix presents the sample statistics, separately for women and men.

Economically Active Population Survey of Spain

Spain abolished CMS at the end of 2001. Young men who finished schooling at early ages expected compulsory conscription at the age of 19 before 2001, and they did not worry about such an interruption after 2001. This natural experiment provides an opportunity to investigate the effect of compulsory conscription on early labor market outcomes. As such, I conduct a similar analysis as with the cross-country data using the Economically Active Population Survey, Encuesta de Población Activa (EPA), from Spain, conducted by the National Statistics Institute. This is a rotating quarterly survey administered to approximately 60,000 households each quarter. The rotation implies that each household remains in the sample for six consecutive quarters. The survey is continuously carried out each week during a quarter. The reference period for most questions in the survey is the week before the interview. The survey contains a variety of questions about demographic, social and economic characteristics of non-institutional individuals.¹²

For my empirical analysis, I am not interested in the panel structure of the survey. Instead, I generate a repeated cross-section sample from survey years 1999-2004 using the first wave of each year.¹³ The dataset provides age in ranges. I restrict my sample to the age groups 16-19, 20-

¹² The survey excludes the population in institutional dwellings such as hospitals, hotels, barracks and prisons. According to National Statistics Institute documentation, this group constitutes 0.6 percent of the total population in 2001 Census.

¹³ Technically, I should be able to track individuals across years and drop those who appear more than once. Yet I have noticed problems when I use household and person identifiers to track individuals. Therefore, I picked the first

24, and 25-29. The fact that age is given in categories does not prevent analysis as the first age group is exactly the treatment group, and the rest is my control group.¹⁴ The age group 16-19 expected conscription before 2001, and they did not worry about it after 2001. In order to restrict my empirical analysis to those who finished schooling at early ages, I dropped those who continued schooling after the age of 16, or who were enrolled when surveyed. Since conscription primarily affects citizens, I also dropped non-citizens from the sample. This leaves me with 62,717 observations from the survey years 1999-2004. Table A4 in the Appendix provides sample statistics for main variables of interest.

Tables A1-A3 provide a comparison of the final samples from the three countries. The average ages among women and men across the three samples are quite similar, given my sample selection criteria. In my final samples of non-college graduate individuals, the high school completion rate among men is 41% in Turkey, 66% in Peru, and 38% in Argentina. Similarly, 32% of men in Turkey, 11% of men in Peru, and 29% of men in Argentina have an elementary school degree or less. The overall labor force participation is quite similar at 84% in Turkey, 86% in Peru, and 89% in Argentina among men aged 17-30. The employment rate is lower in the sample from Turkey compared to the samples from Peru and Argentina.

6. Empirical Analysis and Results

In this section I describe my empirical framework and present evidence that compulsory military service reduces young men's labor force participation even before they are called up for service.

I start by pointing out the low labor force participation of teenage men in Turkey who finished

wave of each year to minimize the repetition of the same observations. Even when I use the data from all waves of the survey, the estimated effects are very similar.

¹⁴ Although the conscription age is 19, I cannot reject that a fraction of the second group (20-24) might be affected by the abolition of CMS. This should not be a big fraction as my sample consists of men who left schooling before the age of 16.

schooling at an early age compared to similar men in their twenties with the same level of education. One explanation for the sharp increase in labor force participation around age 20 may be unobserved age-specific characteristics that are not related to compulsory conscription. To test this possibility, I incorporate micro-data from two other middle-income countries, Peru and Argentina. Graphically, I show that although the labor force participation trends are quite similar in the three countries among men in their twenties, labor force participation is significantly lower in Turkey among teenage men. Then, I present regression results that show significant differences in the age profile of labor force participation in Turkey, compared to both Peru and Argentina. I also show that a difference-in-differences strategy that uses women as control group would provide misleading results on the ex-ante labor market effects of CMS. This is because the assumption of common trends between men and women is clearly violated.

Finally, I present within-country evidence from Spain which abolished the CMS in 2001. I use difference-in-differences (DD) estimation, with men in their twenties as a control group, and show that the abolition of CMS increased the labor force participation and employment of men in their late teens in Spain. I also find that the increase in labor force participation of teenage men after the abolition indirectly affected labor force participation and employment of teenage women in the reverse. Evidence on the substitutability of workers in response to compulsory conscription has also been neglected in the literature.

6.1. The Labor Force Participation among Teenage Men in Turkey

Figure 1a separately illustrates the labor force participation rates of young men and women with a high school degree or less using the Household Labor Force Survey micro-data from Turkey covering 2004-2011. The sample contains individuals from urban areas who are not enrolled in

school and who do not have a college degree. Although labor force participation ratio trends upward for men, it jumps after the age of twenty. It is around 60% before the age of 20 for men with 11 or fewer years of schooling, and it rises to 88% by the age of 22. For women, it is as low as 25% before and after age 20 and smooth throughout these ages. I narrow down my sample to those with a middle school degree or less education in Figure 1b, and to those with only an elementary school degree in Figure 1c. In all three figures, labor force participation of men jumps as they move from their teens to twenties in Turkey. When we investigate the employment likelihood in the sample, we observe similar patterns in Figures 2a, 2b, and 2c. The employment rate is around 55% before the age of 20 for men with 11 or fewer years of schooling, and it rises to 70% by the age of 22.

Other reasons besides CMS are unlikely to explain the observed jump. Labor laws in Turkey do not prevent teenage men from working at the age of 17-20. Certain heavy industries are not allowed to employ individuals below age 18, but this is only a small share of the total employers, and this restriction would not directly affect individuals' decision regarding labor force participation. While labor demand for very young individuals may be low, it does not explain why there would be a sudden jump for men but not for women at any particular age. Compulsory military service is a major policy that affects men aged 20-21. As the theoretical framework suggests, the compulsory conscription may be discouraging young men from searching for job before and around the conscription age.

In addition, Figures 1a-2c illustrate that the labor force participation and employment trends are quite different between men and women. Overall, men have rising labor force participation across ages, whereas it is relatively stable for women across ages. This shows that assuming common trends between men and women and using women as a control group is misleading in

the analysis of military conscription. As will be explained later, instead of using women as a control group, I use men from other ages as a control group in my difference-in-differences analysis of military conscription in Spain.

6.2. Cross-Country Evidence on the Effect of CMS: Turkey, Peru and Argentina

Graphical Evidence

One explanation for the sharp increase in labor force participation around age 20 may be unobserved age-specific characteristics that are not related to compulsory conscription. If we observe similar patterns of labor force participation among men in countries without compulsory military service then it would be difficult to attribute low labor force participation in Turkey to compulsory military service. In other words, the theory suggests that, everything else constant, we should observe low labor force participation among teenage men in countries with CMS than in countries without CMS. In order to examine this, I incorporate micro-data from Peru and Argentina. Although no two countries are the same, these three countries are middle income countries. Yet, the latter two abolished CMS in 1999 and 1995 respectively. As explained in the Section 5, the sample from each country covers the survey years 2004-2011, excludes the rural population, those who have any college degree, and those who were enrolled in school at the time of the survey. I compare elementary school graduates in Turkey to primary school graduates in Peru and Argentina, middle school graduates to secondary school dropouts in Peru and Argentina, and high school graduates in Turkey to secondary school graduates in Peru and Argentina.

Figure 3a illustrates the labor force participation ratio of men with a high school degree at most across ages using ENAHO micro-data from Peru and HIA micro-data from Turkey. Square data

points represent the mean labor force participation rate in Turkey, and diamond data point represent that in Peru. Men from Turkey and Peru with no college degree have extremely similar labor force participation rates in their twenties. After ages 20-21, the data points are nearly identical. Yet before ages 20-21, labor force participation is considerably lower in Turkey. When I examine the trends among men with a middle school degree at most in Figure 3b, or among men with an elementary school degree in Figure 3c, I find the same patterns. In both figures, labor force participation is noticeably lower in Turkey among teenage men. The gap is more evident at ages 19 and 20, just below the conscription ages. For example, Figure 3b shows that, among men with a middle school degree or less at the age of 19, the labor force participation rate is 80% in Turkey versus 86% in Peru, while it is almost identical at the age of 22. The same pattern applies to employment status of men in the two countries. Figures 4a, 4b, and 4c show that men younger than 20 have a lower likelihood of employment in Turkey than in Peru, by around 20 percentage points. The employment rate increases substantially in Turkey over ages 21 to 23 and comes much closer at those ages to the rate in Peru, although it remains a few points lower until age 28 or so.

These figures reject the idea that very low labor force participation among teenage men in Turkey is due to unobserved characteristics common across countries. Although the labor force participation and employment trends are extremely similar in both countries among men in their twenties, they are significantly lower in Turkey among teenage men. This supports the theoretical prediction that compulsory conscription has ex-ante labor market effects on individuals before they are actually called for service.

Next, I use micro data from Argentina in a similar fashion to Peru. Note that in the comparison between Turkey and Peru, I can restrict both samples to urban areas. I restricted the Turkish

sample to urban areas with more than 20,000 inhabitants, and the Peruvian sample to areas with more than 4,000 households, which is very close to 20,000 inhabitants on average. The EPH micro-data from Argentina covers only urban areas with more than 100,000 inhabitants, so the Argentinean sample may differ from the Turkish sample more than the Peruvian one. Still, graphical evidence from the comparison of samples from Turkey and Argentina support my hypothesis.

Figures 5a, 5b, and 5c illustrate the labor force participation rate of men across ages using EPH micro-data from Argentina and HIA micro-data from Turkey. Again, the labor force participation trends are nearly identical in both countries for men older than 20-21. Yet Figure 5a shows that labor force participation among men younger than 20 is lower in Turkey by about 10 percentage points, compared to Argentina. The same pattern applies to employment status of men in two countries. Men older than 20-21 have very similar patterns of employment in both countries; men in the Turkish sample consistently have lower employment likelihood than men in the Argentinean sample by 2-3 points. Yet Figure 6a shows that men at the age of 19 have 9 percentage points lower likelihood of employment in Turkey than in Argentina.

It is worth noting that in Figures 5b and 6b, in the sample with a middle school degree or less education, 17 and 18 year-old men in Turkey have higher labor force participation rate and higher likelihood of employment than 17 and 18 year-old men in Argentina. For the ages 19-20, however, this is reversed, and men in Turkey have lower labor force participation and lower likelihood of employment. This supports the idea that the effect of expected conscription is concentrated around the conscription ages.

Regression Analysis

The previous sub-section presented highly convincing graphical evidence that the labor force participation profile of young men in Turkey, which has compulsory military service, is significantly different from those in Peru and Argentina. Teenage men in Turkey have lower labor force participation and employment likelihood than their counterparts in Peru and Argentina. Now I will carry out a simple regression analysis to show the above-mentioned difference analytically.

Similar to the graphical analysis, I use data of individuals aged 17-30 from survey years 2004-2011 for each country separately. Then I exclude those who are from rural areas, those who are enrolled in school, and those who have any college degree. Next, I generate three samples from each country: high school degree at most, middle school degree at most, elementary/primary school degree at most. In total I have nine subsamples. Then, in each sample I estimate the following regression equation

$$Y_{ijt} = \beta_0 + \beta_1 Age_j + \beta_2 AgeSquare_j + \beta_3 Younger_20_{jt} + \sum_{t=2005}^{2011} \beta_t Year_t + \epsilon_{ijt}$$

where Y_{ijt} is the labor force participation status or employment status of individual i , at age j , in survey year t , and $Younger_20_{jt}$ is a binary indicator that takes the value 0 for individuals older than 20 and 1 for those who are 20 or younger. The survey year effects control for time specific characteristics such as labor market conditions that are constant across ages. The regression equation controls for quadratic age trends in labor force participation or employment likelihood. Considering the potential group structure of the error terms, in all specifications I allow standard

errors to be correlated within the same survey year.¹⁵ My strategy identifies whether and how much the younger individuals differ from the overall labor force participation or employment trend.

Table 3 reports the estimated effects of being below the conscription age in nine subsamples from three countries. 20 year-old individuals who left schooling at earlier ages in Turkey and show up in the survey and therefore have not been conscripted are likely to be waiting for the conscription.¹⁶ Therefore they are part of the treated group. Yet there is a small possibility that they are exempt from military service due to other unobserved characteristics that make their labor supply different. To eliminate this concern, I try dropping men at ages 20-21 from the samples at the expense of losing some of the treatment group. In each panel, the first three columns present the estimated effects from the regression for men aged 17-30, and the second three columns exclude men aged 20-21. In all subsamples from Turkey, being younger than 20 is correlated with a significant decrease in labor force participation after controlling for quadratic age trends. However, for the other two countries without CMS, being younger than 20 is not correlated with a decrease in labor force participation. For example, the first column shows that among the sample of individuals without any college degree, being younger than 20 in Turkey is correlated with a 19 percentage point decrease in the labor force participation likelihood compared to those in their twenties. However, the estimated effect is either positive or statistically insignificant in Peru and Argentina. In columns 4-6 that exclude men aged 20-21, the estimates for Turkey are still negative and statistically significant whereas the estimates for Peru and Argentina are either positive or statistically insignificant.

¹⁵ Clustering at the age-group level provides smaller standard errors. I picked the approach with larger standard errors.

¹⁶ Recall that all three surveys cover the non-institutional population. Yet, someone who turned 20 and shows up in the survey may be waiting to be conscripted as the actual conscription happens in one of four periods during the year that an individual turns 20.

The regressions verify the findings of the graphical analysis. Turkey has significantly lower labor force participation than the other two countries among teenage men compared to men in their twenties. In a cross-country analysis, one cannot expect the estimates from two countries to be the same. Yet, in the current case, the magnitude of the estimated effect of being younger than 20 in Turkey is many times bigger than the estimated effect in Peru and Argentina. The estimated effect in Turkey is large and statistically significant, whereas it is concentrated around zero in Peru and Argentina. Table 4 repeats the same exercise for the effect on employment likelihood. Again, I find a significant negative effect for the indicator for being younger than 20 in Turkey, and insignificant effects in the samples from Peru and Argentina.¹⁷

In addition, I combine the samples from pairs of countries together and estimate the following regression equation separately for each pair

$$Y_{ijtc} = \alpha_0 + \alpha_1 Age_j + \alpha_2 AgeSquare_j + \alpha_3 CountrywithCMS_c + \alpha_4 Teenage_j + \alpha_5 Teenage_j * CountrywithCMS_c + \sum_{t=2005}^{2011} \alpha_t Year_t + \vec{X}'_{tc} \vec{\vartheta} + \varepsilon_{ijtc}.$$

where Y_{ijtc} is the labor market outcome of individual i , in age group j , in survey year t , in country c . $CountrywithCMS_c$ is an indicator that takes the value one if the individual is from the Turkish sample, zero otherwise. \vec{X}'_{tc} is a vector of country-year specific controls such as GDP per capita, overall labor force participation, male labor force participation, overall unemployment and male unemployment rate. We are interested in the interaction of the indicator for being a teenager with the indicator for being in a country with CMS, Turkey. Panel 1 of Table 5 illustrates that labor force participation among men younger than 20 is lower in Turkey by about

¹⁷ Note that the magnitude of the estimated effect for Peru is significantly larger than the magnitude for Turkey in the sixth column of Table 4 only, for the sample with an elementary school degree at most.

13 percentage points, compared to Peru. The magnitude is smaller among men with a middle school degree or less, and slightly larger among men with an elementary school degree or less. Panel 2 illustrates that labor force participation among men younger than 20 is lower in Turkey compared to Argentina in the sample with a high school degree or less (by 12 percentage points), and the sample with elementary school or less (by 6.3 percentage points). Yet, teenage men in Turkey with middle school degree or less have slightly higher labor force participation (by 3 percentage points) compared to Argentina. When I drop men aged 20-21 from the sample in the last three columns, because some of them may not be awaiting conscription and may be different on unobserved grounds, I still find that labor force participation among teenage men in Turkey is significantly lower than among those in Peru and Argentina. Table 6 repeats the exercise for the effect on employment.¹⁸ Panel 1 of Table 6 shows that the employment likelihood among teenage men in Turkey is significantly lower than among those in Peru. Panel 2 provides rather insignificant estimates for the effect on the employment likelihood.¹⁹

Although the cross-country evidence presented above is clear and intuitive, one can still have questions regarding the identification of the effect of CMS. Since no two countries are exactly the same, individuals may be concerned about two countries having different labor market structures or social characteristics for teenage men. Also, the definitions of labor force participation, employment, and schooling levels slightly differ across countries. To deal with these concerns, I generated similar employment and schooling categories across countries as explained in Section 5. Also, having very similar trends across ages after the conscription age in

¹⁸ One may be concerned that the recent recession affects teenagers differently across countries. Table A7 and A8 in the Appendix restrict the sample period to years before the great recession, 2004-2007. The findings are similar.

¹⁹ In particular, the estimates in the second and fifth columns of Panel 2 in Table 6 are counterintuitive. Those two columns correspond to the sample of Figures 6b that I mentioned at the beginning of Section 6.2.

all three countries and controlling for country-year specific characteristics ameliorates the aforementioned concerns.

6.3. The Ex-Ante Labor Market Effects of the Abolition of Conscription in Spain

In this section, I investigate the impact of abolishing CMS in Spain using the Encuesta de Poblacion Active (EPA) 1999-2004 in a difference-in-differences framework. The previous figures showed that assuming common labor force participation trends between men and women is misleading. Paloyo (2010) investigates the effect of conscription in Germany on future earnings in a DD framework using women as a control group. Yet he assumes common trends between men and women across cohorts rather than ages, which lessens the concerns that arose when I compared men and women in Turkey. Consequently, I use men in their twenties as a control group and show that the abolition of CMS in 2001 actually increased the labor force participation and employment of teenage men in Spain. Moreover, the employment rate of teenage men conditional on being in the labor force also improved. Lastly, I find that abolishing CMS adversely affected labor market opportunities of teenage women.

As mentioned in Section 3, there were a number of groups that could defer or get an exemption from service. Exemptions and deferments were particularly common in the years directly preceding the abolition of CMS. Since deferments and exemptions are closely related to education, I restrict my sample to individuals who finished schooling at the age of sixteen, a relatively young age. Thus, they would not be deferring compulsory military service due to enrollment in college. Although alternative public service is the same as military conscription in terms of the duration of interruption, individuals who left schooling at an early age are less likely

to be conscientious objectors, and in any case conscientious objectors face the same labor market interruption.

Figures 7a, 7b, and 7c illustrate labor force participation among Spanish men across years separately for three age groups: 16-19, 20-24, and 25-29. In all three figures, the labor force participation rate among teenage men jumps as they move from the pre-2001 period to post-2001 period, while it is stable among men in their twenties. It is around 88% before 2001 for teenage men with 10 or fewer years of schooling, and it rises to 94% after the abolition of CMS in 2001. For men aged 20-24 it barely moves from 96% to 97% and for men aged 25-29 it stays at 96%. When we examine the employment likelihood in the sample, we observe similar patterns in Figures 8a, 8b, and 8c. The average employment rate is 59% among teenage men with 10 or fewer years of schooling before 2001, and it rises to 68% after the abolition of CMS. The change among men in their twenties is as small as 2 percentage points. Figures 9a, 9b, and 9c illustrate that employment rate conditional on labor force participation among teenage men also increases after 2001, whereas it is mostly stable for men in their twenties before and after 2001. Table A5 in the Appendix presents the average values for these characteristics before and after the abolition of CMS separately for age groups and education levels. Next, I will estimate the impact of the abolition of CMS in a DD framework.

Because I investigate the effect of the existence of CMS on ex-ante labor market outcomes, the estimated effects should be interpreted as Intent-to-Treat estimates. Note that the Intent-to-Treat

estimates will be smaller than Average Treatment Effect estimates unless everyone in the country actually expects to serve in the military when they turn 19.²⁰

The estimation strategy compares the labor market outcomes of teenage men at the same age before and after the abolition of CMS in December 2001. In order to control for any unobserved change in the overall labor market characteristics over this period, I use men in their twenties as the control group. So, my identification strategy identifies the effect of the abolition of conscription by comparing relative differences in labor market outcomes across age groups before and after abolition affected the younger age group. This identification strategy relies on the common trends assumption in the absence of any policy change; I assume that the trends among teenage men and trends among men in their twenties would be similar if there were no change in CMS laws. Note that this does not necessitate that the levels of labor market outcomes be similar across age groups, but rather that the level within each age group changes in a similar fashion across years.

I estimate the following regression equations

$$Y_{ijt} = \delta_0 + \delta_1 Abolition_t + \sum_{j=1}^2 \theta_j AgeGroup_j + \sum_{j=1}^2 \psi_j AgeGroup_j * Abolition_t + \delta_2 Year_t + \sum_{k=2}^{k=18} \omega_k Area_k + \vec{X}_t' \vec{\vartheta} + \epsilon_{ijt}$$

²⁰ Note that unlike the previous literature, the treatment in my paper is not serving in the armed forces. The treatment is the expectation of military service, regardless of whether an individual actually serves or not. So the ITT Effect equals the ATT when everyone expects the conscription.

$$Y_{ijt} = \gamma_0 + \gamma_1 Abolition_t + \gamma_2 Teenage_j + \gamma_3 Teenage_j * Abolition_t + \gamma_4 Year_t + \sum_{k=2}^{k=18} \omega_k Area_k + \vec{X}'_t \vec{\vartheta} + \varepsilon_{ijt}.$$

The dependent variable Y_{ijt} is the labor market outcome of individual i , in age group j , in survey year t , and $Abolition_t$ is a binary indicator that takes the value 0 for observations from survey years 1999, 2000, 2001 and 1 for observations from 2002, 2003, 2004. δ_2 captures the linear year trend, and ω_k captures the fixed effects for eighteen autonomous communities in Spain. \vec{X}'_t is a vector of year specific controls such as GDP per capita, labor force participation, and unemployment rate. There are three age groups in the first regression model: 16-19, 20-24, 25-29, and two age groups in the second model: teenager (16-19) and non-teenager (20-29); recall that single ages are not revealed in the Spanish data. The theoretical model predicts that those who are under the conscription age (16-19) will be particularly affected by its abolition. The estimated value of ψ_1 in the first model captures the effect of the abolition of conscription on teenage men compared to men aged 25-29, and γ_3 in the second model captures the effect of the abolition of conscription on teenage men compared to men in their twenties.

The following tables present the estimated effects of the abolition of compulsory military service in Spain on ex-ante outcomes such as labor force participation, employment status and employment likelihood conditional on being in the labor force. In Tables 7-9, the first panel shows the coefficient estimates from the first regression equation and treats the age group 25-29 as the default category. The second panel shows the coefficient estimates from the second regression equation and treats non-teenagers as the default category. Similar to the previous regressions, I generate three sub-samples according to education levels. The three columns in

each table investigate the inclusive samples with 10 years of schooling or less, 8 years of schooling or less, and 6 years of schooling or less, respectively.

Panel 1 in Table 7 shows that among men with ten years of schooling or less, those aged 16-19 are 5.9 percentage points (6.7%) more likely to be in the labor force after the abolition of conscription compared to men aged 25-29. The estimated effect is similar among men with 8 years of schooling or less, and greater among men with 6 years of schooling or less, at 19.7 percentage points (30%). These estimated coefficients are statistically and economically significant. Panel 2 results, which combine both older groups together into a single control group, are very similar, verifying that the results are not driven by strange behavior of one of them.

Table 8 shows the estimated effect of the abolition of CMS on employment status of young men. As expected, the estimates are positive and statistically and economically significant across the six specifications. Panel 1 shows that men aged 16-19 are 6.9 percentage points (11%) more likely to be employed after the abolition of conscription compared to men aged 25-29. Again, the estimated effect in the second sample is similar, and the effect in the sample with 6 years of schooling or less is much greater, at 17 percentage points (40%). Panel 2 results are very similar to those in Panel 1.

A deeper look at the results shows that the gain in employment of teenage men after the abolition of CMS is greater in magnitude than the gain in labor force participation. Labor force participation can be considered a unilateral decision by individuals themselves, whereas employment depends on hiring decisions of employers. The results suggest that the abolition of conscription also affected the hiring behavior of employers. As I explained in the theoretical

model in Section 4.3, employers may be more likely to hire teenage men when they do not worry about an expected interruption. The only exception to this observation is the sample with 6 years of schooling or less. The effect on the employment for this group is slightly smaller than the effect on labor force participation.

Table 9 confirms these observations by focusing on employment conditional on labor force participation. Although the estimates are statistically insignificant, they are consistently positive across the six sample specifications. Panel 1 in Table 9 suggests that a teenage man who is actively searching for a job is 3 percentage points (4.5%) more likely to be hired by an employer after the abolition of CMS compared to men aged 25-29.

6.4. The Effect of Abolition of Conscription on Teenage Women

The theoretical model implies that men who expect an interruption in their labor market experience reduce their search effort, and employers who expect their teenage employees to be conscripted reduce their hiring of teenage workers. The previous sub-section provided novel empirical evidence on the ex-ante labor market effects of CMS in Spain. Next, I will point out another interesting consequence. Since teenage women may be close substitute for teenage men in the labor market, teenage women may benefit from CMS because it reduces the labor supply of teenage men. Theoretically, we can even expect effects on women of other ages, but the substitutability between 16-19 year-old men and 16-19 year-old women should be higher than the substitutability between 16-19 men and 25-29 women. Below, I estimate the previous two

regression equations for the sample of women in a similar fashion to men and present the estimates in Tables 10-12.²¹

Panel 1 in Table 10 shows that, among the sample with ten years of schooling or less, women aged 16-19 are 6.5 percentage points (7.5%) less likely to be in the labor force after the abolition of conscription compared to women aged 25-29. The estimated effect is similar and statistically significant among women with 8 years of schooling as well. It is negative but loses statistical significance among women with 6 years of schooling or less. There are also smaller negative effects for women aged 20-24, who may also be substitutes in the labor market for men aged 16-19. The estimated coefficient for the effect on teenage women's labor force participation is consistently negative in all of the specifications. Panel 2 results are very similar to those in Panel 1. Notably, these results are similar in magnitude, while opposite in sign, for teenage men.

I present the estimated effect of the abolition of CMS on employment of young women in Table 11. As expected, the estimates are consistently negative across six specifications and statistically significant in four of them. Panel 2 results are very similar to those in Panel 1. Table 12 presents the estimated effect on the employment rate of teenage women conditional on being in the labor force. The estimates are statistically insignificant, yet consistently negative.

7. Conclusion

In this paper, I investigate an effect of compulsory military service that has not received attention in the literature. I examine the effect of peace-time conscription on early labor market outcomes of potential conscripts *before* they are called up for service. Many papers in the literature estimate the post-service labor market effects of compulsory conscription, with some finding

²¹ Tables 7-9 and tables 10-12 have the same regression equations except that the second group investigates the sample of women.

negative effects and some finding no effect on later wages. In a simple theoretical model with costly job search and no job security, I show that an expected interruption in civilian life reduces the incentive of teenagers to search for a job. Moreover, when the firms bear the cost of on-the-job training, such an expected interruption may reduce employers' likelihood of offering a job to expected future conscripts.

Using labor force micro-data from four countries including Turkey, Peru, Argentina and Spain, I make the following contributions to the compulsory military service literature. First, I highlight the anticipation effects of CMS. By showing the ex-ante effects of CMS, I point out one cause of low labor force participation among youth in countries with CMS, a common concern around the world. Second, I show one channel through which conscription may affect future labor market outcomes of individuals. Adverse effects of CMS on the teenage labor market experience may partially explain why the previous literature finds either negative or no effect of conscription, rather than positive effects that some have hypothesized. Third, idleness and poor labor market experience among teenage men caused by expected conscription may explain why the previous studies find a correlation between conscription and later criminal activity. Finally, I point out that CMS affects not only teenage men, but also indirectly affects teenage women. The effect of conscription on labor market outcomes of teenage women has not apparently been investigated in the literature. This also contributes to the literature on substitutability in the labor market showing that teenage men and women are highly substitutable.

Using micro-data from Turkey, Peru and Argentina, I show that, although labor force participation and employment trends are very similar in all three countries among men in their twenties, they are significantly lower in Turkey (which has CMS) among teenage men compared to Peru and Argentina (which do not). Also, using the Active Population Survey from Spain,

before and after Spain abolished conscription in 2001, I present within country difference-in-differences evidence that the abolition of CMS increased the labor force participation and employment likelihood of teenage men while decreasing the labor force market opportunities of teenage women.

Thus, unlike the future labor market outcomes of CMS, ex-ante labor market effects are consistently negative and statistically significant across specifications and sample selections. While the decision to switch from a conscription army to a professional one is partly strategic and partly economic, I point out an effect on labor market opportunities of youth.

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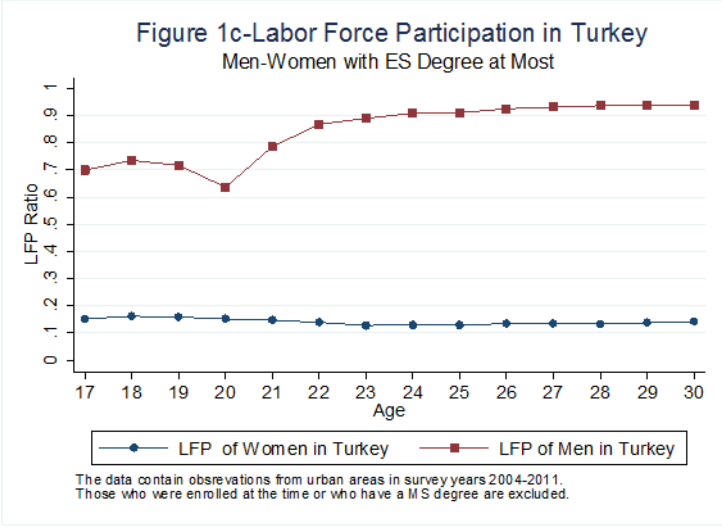
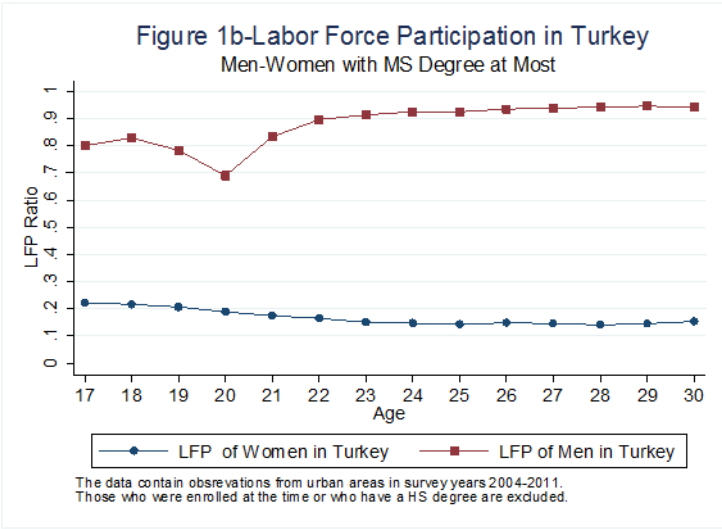
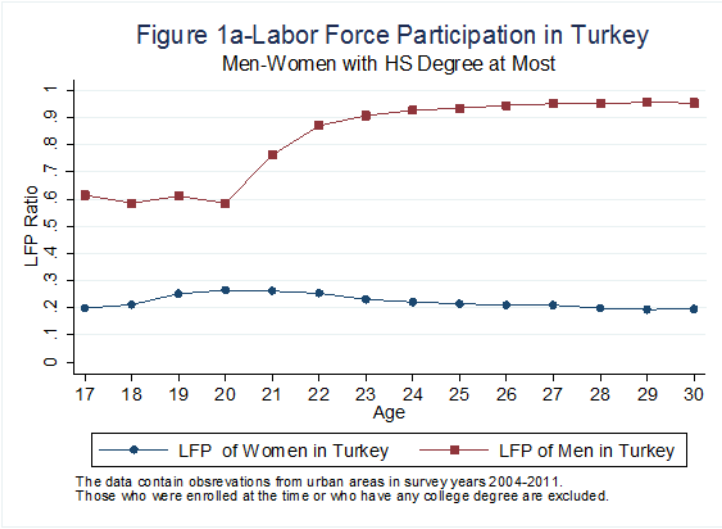
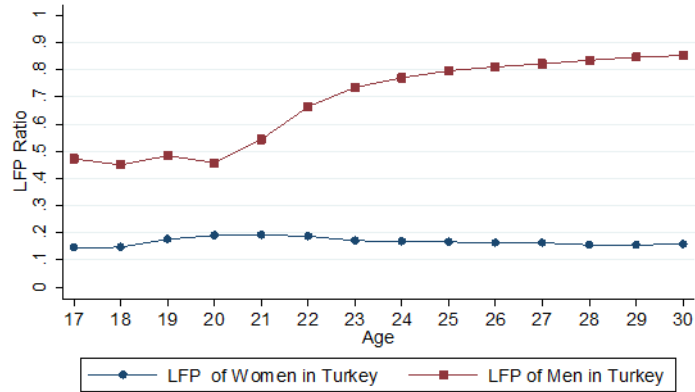
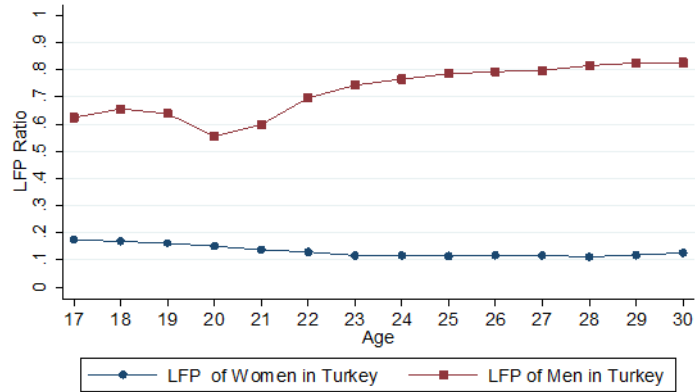


Figure 2a-Employment Status in Turkey
Men-Women with HS Degree at Most



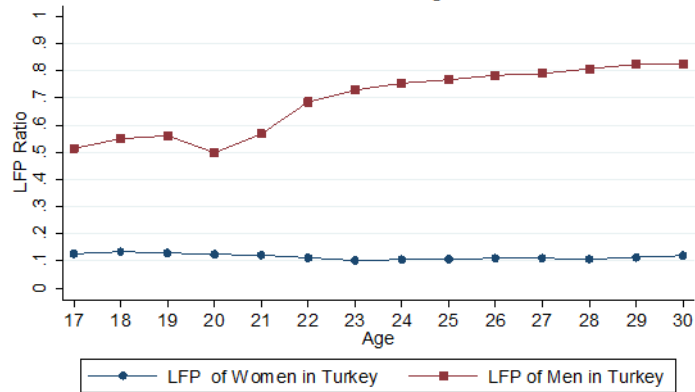
The data contain observations from urban areas in survey years 2004-2011. Those who were enrolled at the time or who have any college degree are excluded.

Figure 2b-Employment Status in Turkey
Men-Women with MS Degree at Most



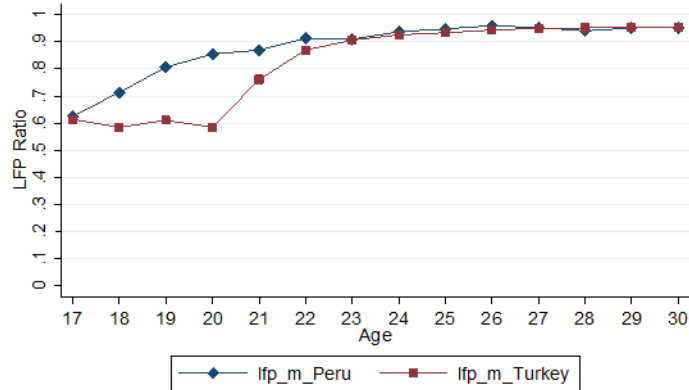
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Figure 2c-Employment Status in Turkey
Men-Women with ES Degree at Most



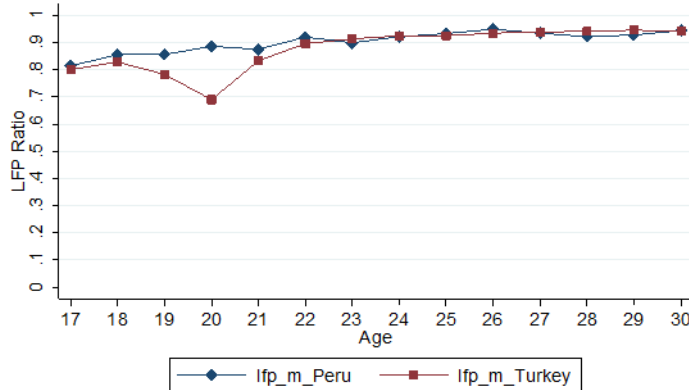
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Figure 3a-Labor Force Participation in Turkey and Peru
Men with HS Degree at Most



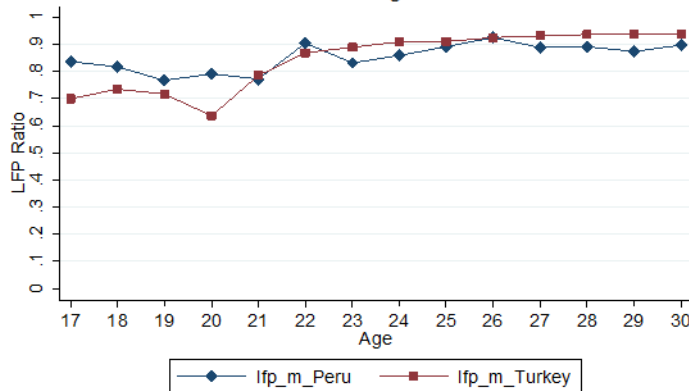
The data cover survey years 2004-2011 in both countries.
Those who were enrolled at the time or who have any college degree are excluded.

Figure 3b-Labor Force Participation in Turkey and Peru
Men with MS Degree at Most



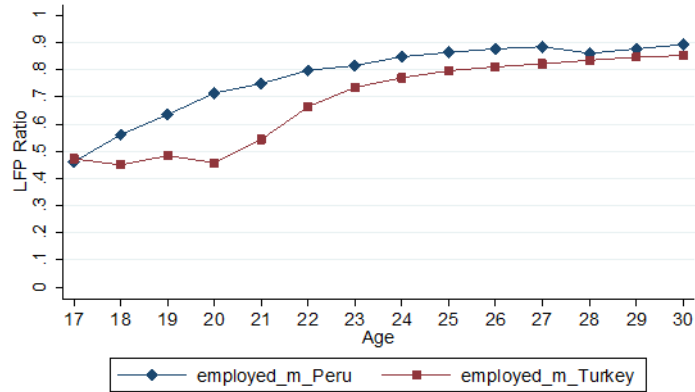
The data cover survey years 2004-2011 in both countries.
Those who were enrolled at the time or who have HS are excluded.

Figure 3c-Labor Force Participation in Turkey and Peru
Men with ES Degree at Most



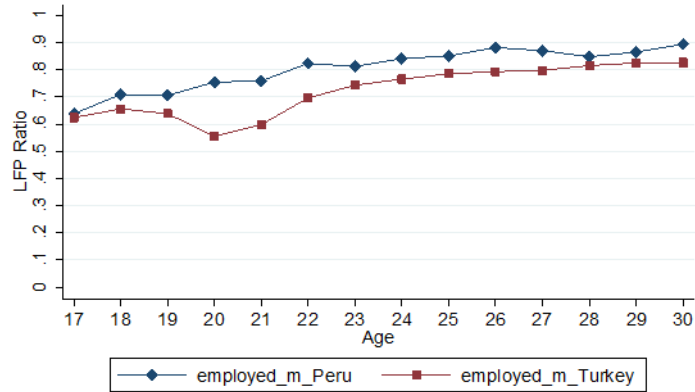
The data cover survey years 2004-2011 in both countries.
Those who were enrolled at the time or who have MS degree are excluded.

Figure 4a-Employment Status in Turkey and Peru
Men with HS Degree at Most



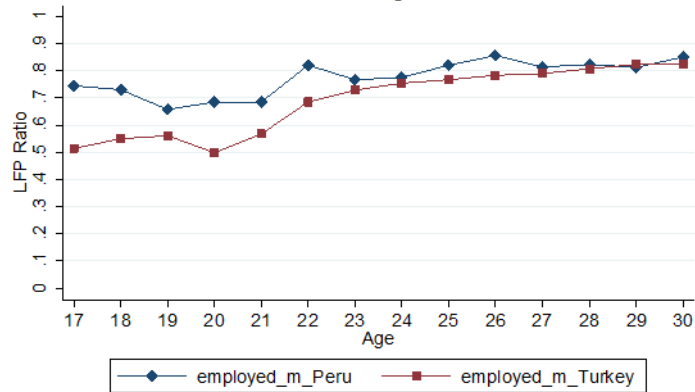
The data cover survey years 2004-2011 in both countries.
Those who were enrolled at the time or who have any college degree are excluded.

Figure 4b-Employment Status in Turkey and Peru
Men with MS Degree at Most



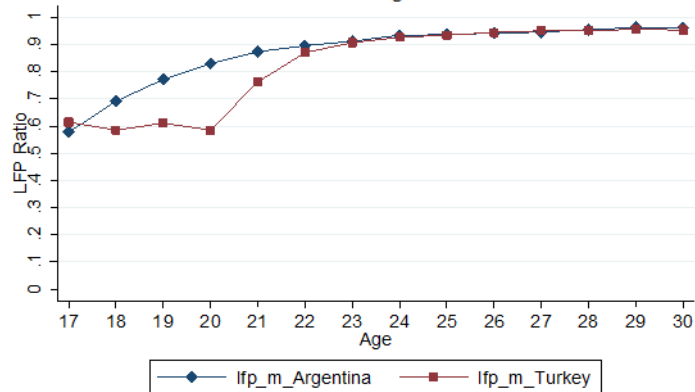
The data cover survey years 2004-2011 in both countries.
Those who were enrolled at the time or who have HS are excluded.

Figure 4c-Employment Status in Turkey and Peru
Men with ES Degree at Most



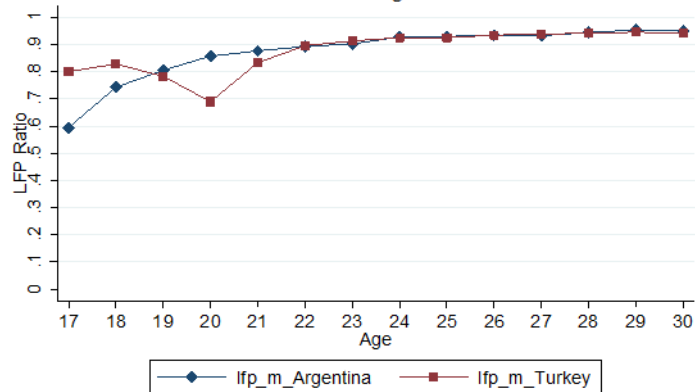
The data cover survey years 2004-2011 in both countries.
Those who were enrolled at the time or who have MS degree are excluded.

Figure 5a-Labor Force Participation in Turkey and Argentina
Men with HS Degree at Most



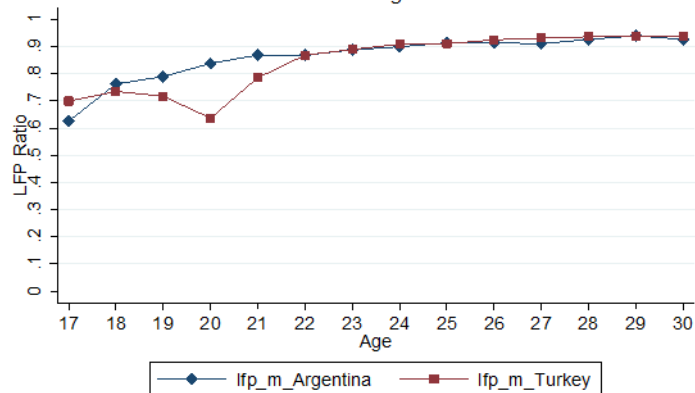
The data cover survey years 2004-2011 in both countries.
Those who were enrolled at the time or who have any college degree are excluded.

Figure 5b-Labor Force Participation in Turkey and Argentina
Men with MS Degree at Most



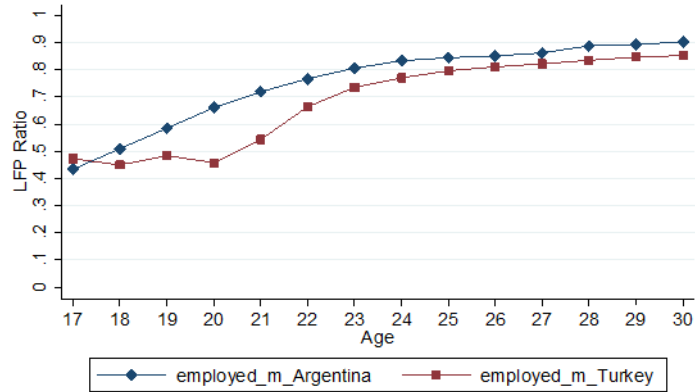
The data cover survey years 2004-2011 in both countries.
Those who were enrolled at the time or who have HS are excluded.

Figure 5c-Labor Force Participation in Turkey and Argentina
Men with ES Degree at Most



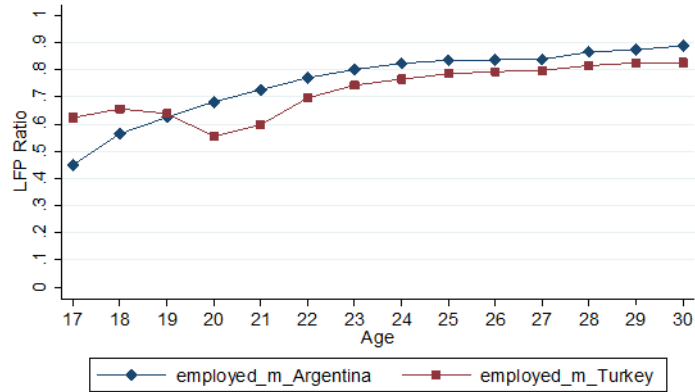
The data cover survey years 2004-2011 in both countries.
Those who were enrolled at the time or who have MS degree are excluded.

Figure 6a-Employment Status in Turkey and Argentina
Men with HS Degree at Most



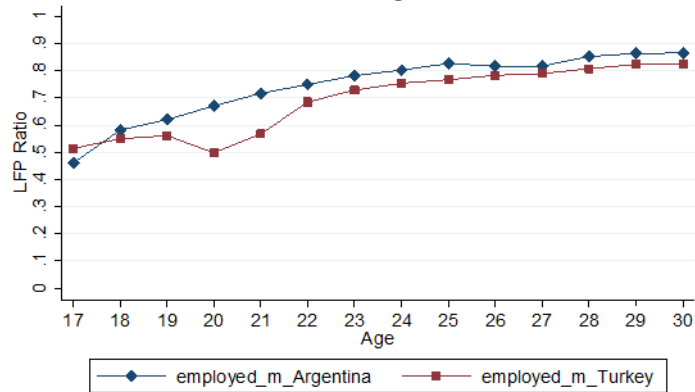
The data cover survey years 2004-2011 in both countries.
Those who were enrolled at the time or who have any college degree are excluded.

Figure 6b-Employment Status in Turkey and Argentina
Men with MS Degree at Most

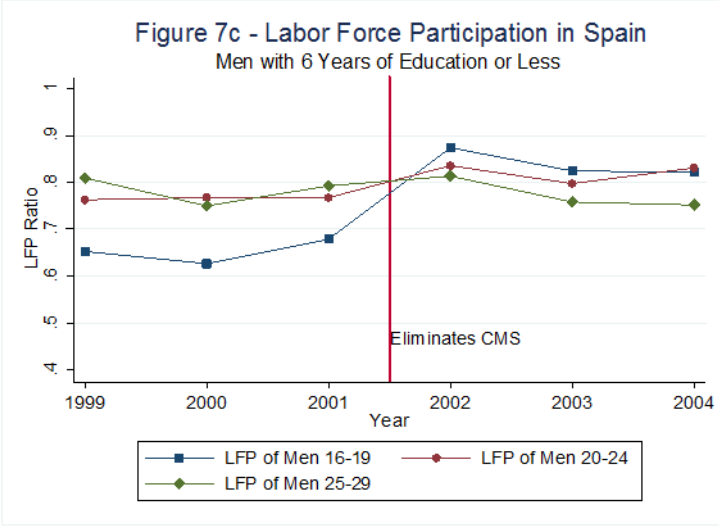
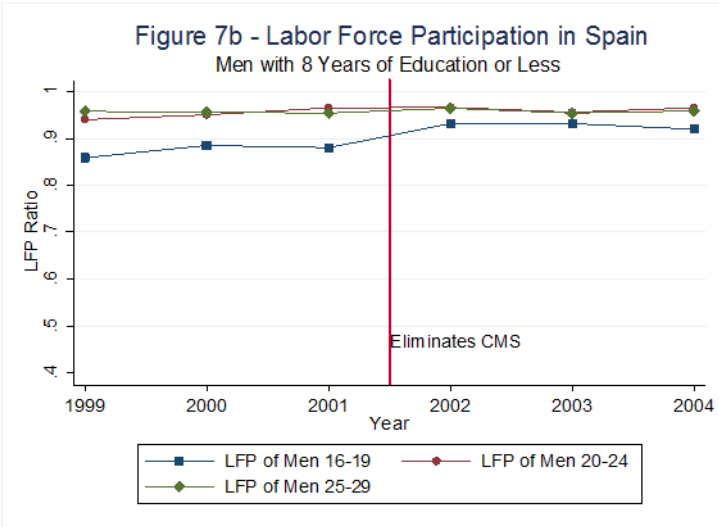
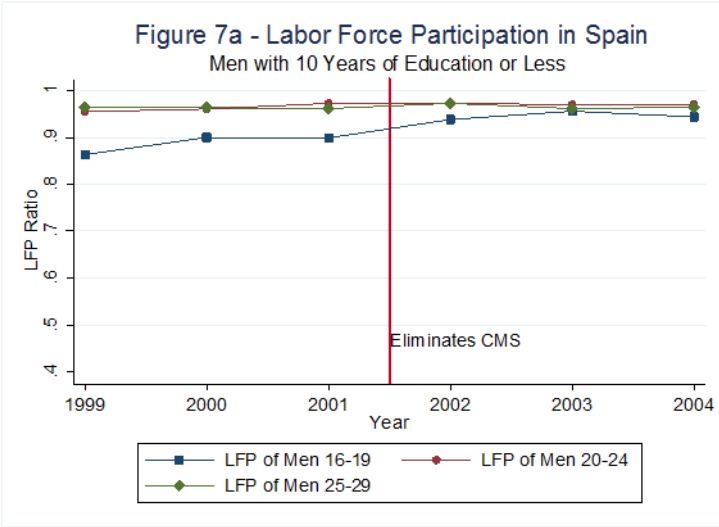


The data cover survey years 2004-2011 in both countries.
Those who were enrolled at the time or who have HS are excluded.

Figure 6c-Employment Status in Turkey and Argentina
Men with ES Degree at Most



The data cover survey years 2004-2011 in both countries.
Those who were enrolled at the time or who have MS degree are excluded.



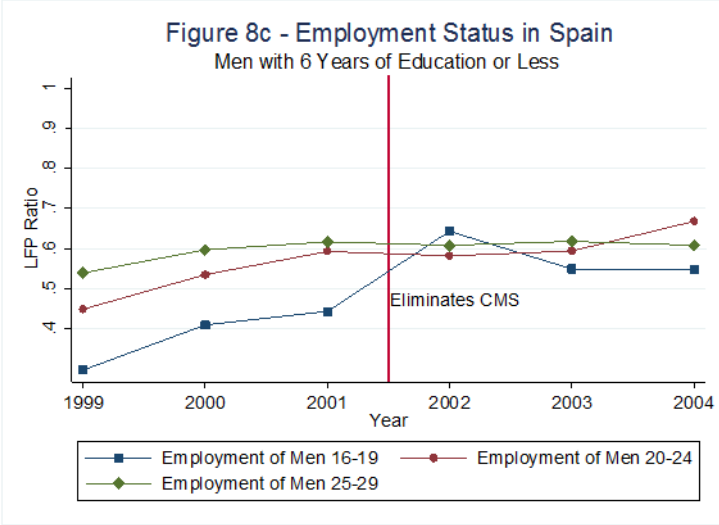
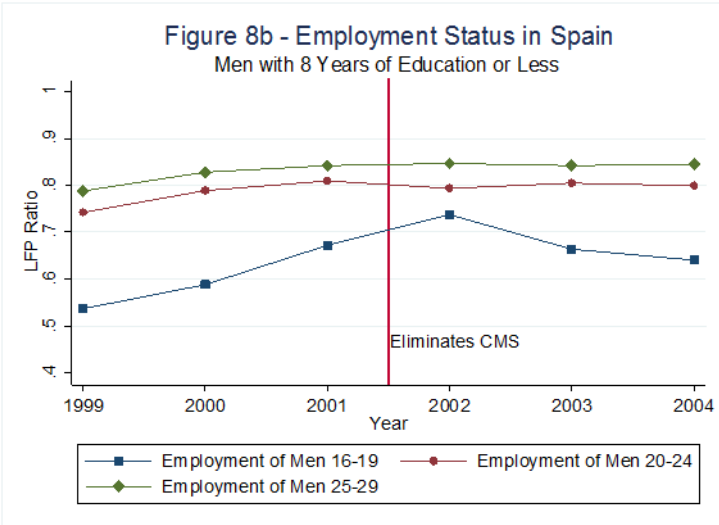
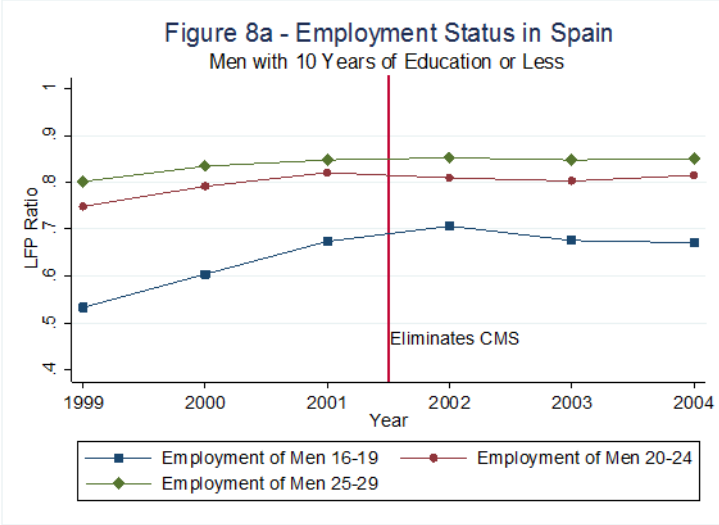


Figure 9a - Employment Ratio within the Labor Force in Spain
Men with 10 Years of Education or Less

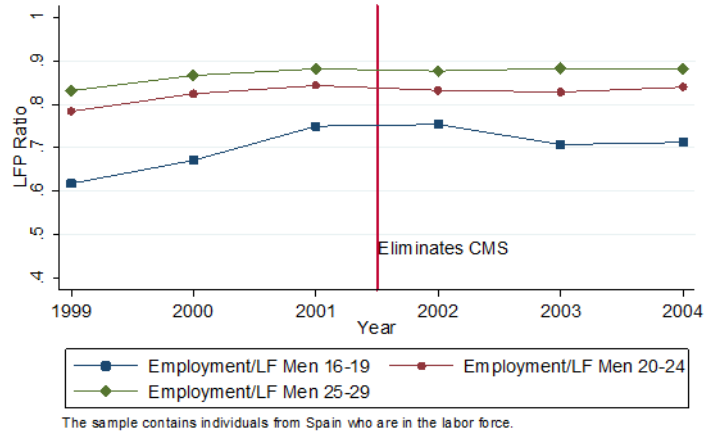


Figure 9b - Employment Ratio within the Labor Force in Spain
Men with 8 Years of Education or Less

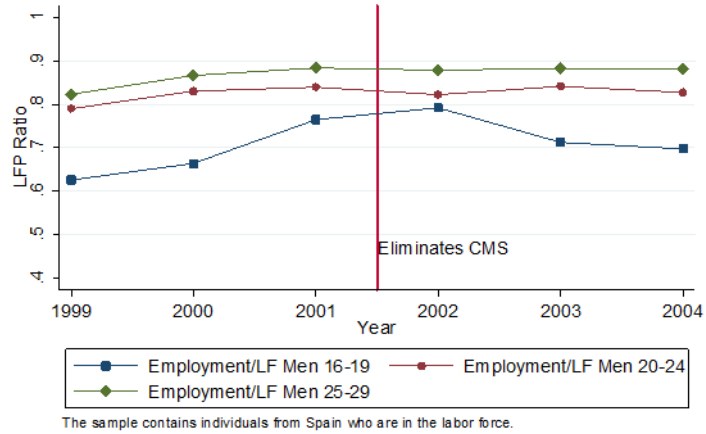


Figure 9c - Employment Ratio within the Labor Force in Spain
Men with 6 Years of Education or Less

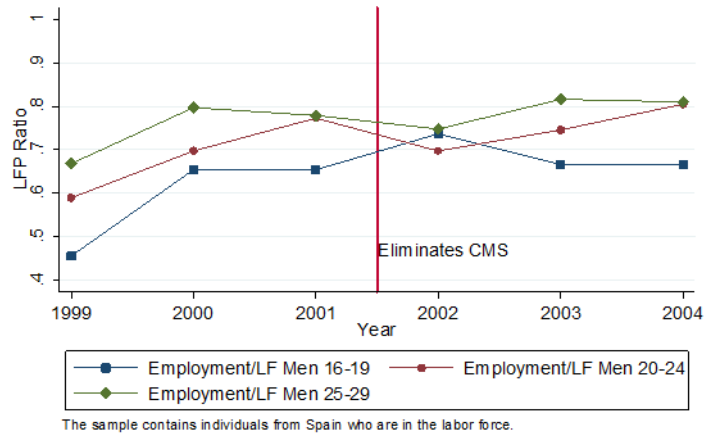


Table 1 - The Distribution of Search Cost, z , and the Search Behavior of Civilian Individuals in Each Period (Given Wage Structure I)

A jobless civilian individual in period 1	Search	Search	Search	Search	Not Search	Not Search	Not Search	
A jobless civilian individual in period 2	Search	Search	Search	Search	Search	Not Search	Not Search	
A jobless civilian individual in period 3	Search	Search	Search	Not search	Not Search	Not Search	Not Search	

Note: Each row shows the labor force situation of a civilian individual with a search cost, z , value shown at the distribution line. Civilian individuals in the second period of their life are those who are not called up for service. The threshold value for search decision in the first period is $w_1/(1-\beta+\beta\eta)$. Wages are exogenously given, and individuals make their search decisions according to their z values.

Table 2 - The Distribution of Search Cost, z , and the Search Behavior of Civilian Individuals in Each Period (Given Wage Structure II)

A jobless civilian individual in period 1	Search	Search	Search	Not Search	Not Search	Not Search	Not Search	Not Search
A jobless civilian individual in period 2	Search	Search	Search	Search	Search	Not Search	Not Search	Not Search
A jobless civilian individual in period 3	Search	Search	Search	Search	Not Search	Not Search	Not Search	Not Search

Note: Each row shows the labor force situation of a civilian individual with a search cost, z , value shown at the distribution line. Civilian individuals in the second period of their life are those who are not called up for service. The threshold value for search decision in the first period is $w_1/(1-\beta+\beta\eta)$. Wages are exogenously given, and individuals make their search decisions according to their z values.

Table 3 - The Effect of Being Younger than Twenty on Labor Force Participation of Men

	Men Aged 17-30			Men Aged 17-19 & 22-30		
	HS at Most	MS at Most	ES at Most	HS at Most	MS at Most	ES at Most
<i>The Sample from Turkey</i>						
Younger than 20	-0.195*** (0.012)	-0.116*** (0.010)	-0.105*** (0.014)	-0.235*** (0.023)	-0.086*** (0.008)	-0.080*** (0.018)
Number of Obs.	189,150	110,117	61,470	173,149	102,400	58,327
<i>The Sample from Peru</i>						
Younger than 20	0.045** (0.015)	0.014 (0.030)	-0.036 (0.044)	0.052** (0.020)	-0.013 (0.042)	-0.132 (0.094)
Number of Obs.	18,204	6,140	2,016	15,395	5,284	1,765
<i>The Sample from Argentina</i>						
Younger than 20	0.002 (0.013)	0.040** (0.016)	0.026 (0.022)	-0.002 (0.015)	0.065** (0.025)	0.056* (0.024)
Number of Obs.	47,558	29,256	13,903	40,601	24,917	12,149

Note: Each cell shows the estimated coefficient for the indicator of being 20 years old or younger. The dependent variable is a dummy variable that takes one if individual is in the labor force. The educational categories correspond to 11 years or less, 8-9 years or less, and 5-6 years or less, respectively. Each of the nine sub-samples excludes women, rural population, those who were enrolled in school when surveyed. All estimations control for survey year fixed effects and quadratic age trends. The first three columns contain men aged 17-30, and the last three columns drop men at the age of 20 or 21 from the samples. Robust standard errors are shown in parentheses, clustered at the survey year level.

Table 4 - The Effect of Being Younger than Twenty on Employment Likelihood of Men

	Men Aged 17-30			Men Aged 17-19 & 22-30		
	HS at Most	MS at Most	ES at Most	HS at Most	MS at Most	ES at Most
<i>The Sample from Turkey</i>						
Younger than 20	-0.085*** (0.011)	-0.009 (0.010)	-0.031* (0.015)	-0.119*** (0.021)	0.004 (0.011)	-0.030 (0.028)
Number of Obs.	189,150	110,117	61,470	173,149	102,400	58,327
<i>The Sample from Peru</i>						
Younger than 20	0.019 (0.016)	0.004 (0.031)	-0.066 (0.056)	0.006 (0.023)	-0.035 (0.052)	-0.179* (0.086)
Number of Obs.	18,204	6,140	2,016	15,395	5,284	1,765
<i>The Sample from Argentina</i>						
Younger than 20	-0.024 (0.014)	-0.005 (0.019)	-0.004 (0.022)	-0.067** (0.020)	-0.018 (0.024)	-0.002 (0.025)
Number of Obs.	47,558	29,256	13,903	40,601	24,917	12,149

Note: Each cell shows the estimated coefficient for the indicator of being 20 years old or younger. The dependent variable is a dummy variable that takes one if individual is employed. The educational categories correspond to 11 years or less, 8-9 years or less and 5-6 years or less respectively. Each of the nine sub-samples excludes women, rural population, those who were enrolled in school when surveyed. All estimations control for survey year fixed effects and quadratic age trends. The first three columns contain men aged 17-30, and the last three columns drop men at the age of 20 or 21 from the samples. Robust standard errors are shown in parentheses, clustered at the survey year level.

Table 5 - The Effect of CMS on Labor Force Participation of Teenage Men - Pooled Sample

	Men Aged 17-30			Men Aged 17-19 & 22-30		
	HS at Most	MS at Most	ES at Most	HS at Most	MS at Most	ES at Most
<i>Panel 1 - Turkey vs. Peru (Peru is the default country)</i>						
Younger than 20*Turkey	-0.130*** (0.008)	-0.063*** (0.009)	-0.144*** (0.019)	-0.106*** (0.011)	-0.037** (0.011)	-0.131*** (0.024)
Younger than 20	-0.050** (0.016)	-0.048*** (0.009)	0.034 (0.022)	-0.110*** (0.029)	-0.047*** (0.011)	0.042 (0.028)
Turkey	-0.008 (0.015)	0.048** (0.019)	0.061 (0.104)	0.025 (0.025)	0.121*** (0.021)	0.157 (0.109)
Number of Obs.	207,354	116,257	63,486	188,544	107,684	60,092
<i>Panel 2 - Turkey vs. Argentina (Argentina is the default country)</i>						
Younger than 20*Turkey	-0.119*** (0.017)	0.030*** (0.009)	-0.063*** (0.015)	-0.090*** (0.024)	0.079*** (0.014)	-0.025 (0.014)
Younger than 20	-0.058** (0.020)	-0.094*** (0.008)	-0.022 (0.017)	-0.119** (0.034)	-0.117*** (0.012)	-0.029 (0.018)
Turkey	-0.004 (0.042)	0.018 (0.047)	-0.177** (0.061)	-0.124 (0.069)	-0.069 (0.056)	-0.252*** (0.071)
Number of Obs.	236,708	139,373	75,373	213,750	127,317	70,476

Note: Each column presents results from a separate Linear Probability Model regression. The dependent variable is an indicator for being in the labor force. The regression model compares the teenage labor force participation in Turkey vs. Peru in Panel 1, and in Turkey vs. Argentina in Panel 2. The ages are grouped into two categories; men younger than 20, and men older than 21. Men older than 21 is the default category. The variable of interest is the Younger than 20*Turkey. The sample in the separate columns contain individuals with HS degree or less, MS degree or less, and ES degree or less, respectively. Each sample excludes women, rural population, and those who were enrolled in school when surveyed. All estimations control for survey year fixed effects and quadratic age trends. All estimations control for GDP per capita, overall labor force participation, male labor force participation, overall unemployment, and male unemployment rate of the countries. The first three columns contain men aged 17-30, and the last three columns drop men at the age of 20 or 21 from the samples. Robust standard errors are shown in parentheses, clustered at the survey year level.

Table 6 - The Effect of CMS on Employment Likelihood of Teenage Men – Pooled Sample

	Men Aged 17-30			Men Aged 17-19 & 22-30		
	HS at Most	MS at Most	ES at Most	HS at Most	MS at Most	ES at Most
<i>Panel 1 - Turkey vs. Peru (Peru is the default country)</i>						
Younger than 20*Turkey	-0.044*** (0.009)	0.007 (0.018)	-0.136*** (0.031)	-0.022* (0.009)	0.027 (0.017)	-0.136*** (0.033)
Younger than 20	-0.033** (0.010)	-0.014 (0.011)	0.094** (0.030)	-0.086*** (0.020)	-0.023* (0.011)	0.093** (0.038)
Turkey	0.066* (0.030)	0.146** (0.059)	0.118* (0.055)	0.105** (0.032)	0.227*** (0.056)	0.193* (0.086)
Number of Obs.	207,354	116,257	63,486	188,544	107,684	60,092
<i>Panel 2 - Turkey vs. Argentina (Argentina is the default country)</i>						
Younger than 20*Turkey	-0.022 (0.013)	0.103*** (0.007)	-0.004 (0.025)	0.004 (0.015)	0.139*** (0.007)	0.026 (0.027)
Younger than 20	-0.055*** (0.015)	-0.082*** (0.009)	-0.020 (0.019)	-0.113*** (0.025)	-0.111*** (0.011)	-0.043 (0.025)
Turkey	0.277** (0.086)	0.190** (0.080)	0.101 (0.102)	0.134 (0.135)	0.032 (0.101)	-0.036 (0.105)
Number of Obs.	236,708	139,373	75,373	213,750	127,317	70,476

Note: Each column presents results from a separate Linear Probability Model regression. The dependent variable is an indicator for being employed. The regression model compares the teenage labor force participation in Turkey vs. Peru in Panel 1, and in Turkey vs. Argentina in Panel 2. The ages are grouped into two categories; men younger than 20, and men older than 21. Men older than 21 is the default category. The variable of interest is the Younger than 20*Turkey. The sample in the separate columns contain individuals with HS degree or less, MS degree or less, and ES degree or less, respectively. Each sample excludes women, rural population, and those who were enrolled in school when surveyed. All estimations control for survey year fixed effects and quadratic age trends. All estimations control for GDP per capita, overall labor force participation, male labor force participation, overall unemployment, and male unemployment rate of the countries. The first three columns contain men aged 17-30, and the last three columns drop men at the age of 20 or 21 from the samples. Robust standard errors are shown in parentheses, clustered at the survey year level.

Table 7 - The Effect of Abolition of CMS on Labor Force Participation of Teenage Men in Spain

	10 Years of Schooling or Less	8 Years of Schooling or Less	6 Years of Schooling or Less
<i>Panel 1</i>			
Age group 16-19*Abolition	0.059** (0.015)	0.052*** (0.009)	0.197*** (0.017)
Age group 20-24*Abolition	0.007 (0.006)	0.010 (0.007)	0.067** (0.025)
Age group 16-19	-0.079*** (0.012)	-0.084*** (0.008)	-0.126*** (0.017)
Age group 20-24	-0.001 (0.006)	-0.006 (0.007)	-0.019 (0.016)
Abolition	-0.001 (0.005)	0.022*** (0.004)	0.275*** (0.008)
Number of Observations	37,862	22,818	2,787
<i>Panel 2</i>			
Teenager*Abolition	0.055*** (0.012)	0.048*** (0.008)	0.167*** (0.019)
Teenager	-0.078*** (0.010)	-0.081*** (0.006)	-0.117*** (0.014)
Abolition	0.002 (0.002)	0.026*** (0.001)	0.291*** (0.010)
Number of Observations	37,862	22,818	2,787

Note: Each column presents results from a separate Linear Probability Model regression. The dependent variable is an indicator for being in the labor force. Panel 1 groups the ages into three categories, 16-19, 20-24, 25-29. Age group 25-29 is the default category. The variable of interest is the Age group 16-19*Abolition. Panel 2 groups the ages into two categories; teenagers and non-teenagers. Non-teenagers are the default category. The variable of interest is the Teenager*Abolition. The sample in the separate columns contain individuals with 10 years of schooling or less, 8 years of schooling or less, and 6 years of schooling or less, respectively. All estimations control for 18 survey area fixed effects and the survey year fixed effects. All estimations also control for GDP per capita, male labor force participation, and male unemployment rate of the countries. Robust standard errors are shown in the parentheses, clustered at the survey year level.

Table 8 - The Effect of Abolition of CMS on Employment Likelihood of Teenage Men in Spain

	10 Years of Schooling or Less	8 Years of Schooling or Less	6 Years of Schooling or Less
<i>Panel 1</i>			
Age group 16-19*Abolition	0.067* (0.026)	0.074* (0.032)	0.169*** (0.041)
Age group 20-24*Abolition	0.001 (0.008)	-0.004 (0.007)	0.068 (0.034)
Age group 16-19	-0.226*** (0.025)	-0.221*** (0.021)	-0.196*** (0.024)
Age group 20-24	-0.041*** (0.007)	-0.038*** (0.004)	-0.061** (0.020)
Abolition	-0.014 (0.007)	-0.036*** (0.005)	0.011 (0.012)
Number of Observations	37,862	22,818	2,787
<i>Panel 2</i>			
Teenager*Abolition	0.066** (0.023)	0.075* (0.032)	0.140** (0.043)
Teenager	-0.207*** (0.021)	-0.204*** (0.019)	-0.169*** (0.015)
Abolition	-0.011** (0.004)	-0.037*** (0.004)	0.038** (0.012)
Number of Observations	37,862	22,818	2,787

Note: Each column presents results from a separate Linear Probability Model regression. The dependent variable is an indicator for being employed. Panel 1 groups the ages into three categories, 16-19, 20-24, 25-29. Age group 25-29 is the default category. The variable of interest is the Age group 16-19*Abolition. Panel 2 groups the ages into two categories; teenagers and non-teenagers. Non-teenagers are the default category. The variable of interest is the Teenager*Abolition. The sample in the separate columns contain individuals with 10 years of schooling or less, 8 years of schooling or less, and 6 years of schooling or less, respectively. All estimations control for 18 survey area fixed effects and the survey year fixed effects. All estimations also control for GDP per capita, male labor force participation, and male unemployment rate of the countries. Robust standard errors are shown in the parentheses, clustered at the survey year level.

Table 9 - The Effect of Abolition of CMS on Employment of Teenage Men In Spain
Conditional on LF Participation

	10 Years of Schooling or Less	8 Years of Schooling or Less	6 Years of Schooling or Less
<i>Panel 1</i>			
Age group 16-19*Abolition	0.031 (0.026)	0.044 (0.035)	0.057 (0.046)
Age group 20-24*Abolition	-0.005 (0.004)	-0.013* (0.005)	0.025 (0.029)
Age group 16-19	-0.181*** (0.021)	-0.172*** (0.021)	-0.158*** (0.020)
Age group 20-24	-0.041*** (0.003)	-0.034*** (0.002)	-0.066** (0.023)
Abolition	-0.019** (0.006)	-0.060*** (0.004)	-0.268*** (0.016)
Number of Observations	36,162	21,598	2,162
<i>Panel 2</i>			
Teenager*Abolition	0.033 (0.024)	0.049 (0.036)	0.047 (0.043)
Teenager	-0.161*** (0.019)	-0.156*** (0.022)	-0.130*** (0.016)
Abolition	-0.019*** (0.004)	-0.064*** (0.005)	-0.245*** (0.017)
Number of Observations	36,162	21,598	2,162

Note: Each column presents results from a separate Linear Probability Model regression. The dependent variable is an indicator for being employed. Panel 1 groups the ages into three categories, 16-19, 20-24, 25-29. Age group 25-29 is the default category. The variable of interest is the Age group 16-19*Abolition. Panel 2 groups the ages into two categories; teenagers and non-teenagers. Non-teenagers are the default category. The variable of interest is the Teenager*Abolition. The sample in the separate columns contain individuals with 10 years of schooling or less, 8 years of schooling or less, and 6 years of schooling or less, respectively. All samples exclude those who are not in the labor force. All estimations control for 18 survey area fixed effects and the survey year. All estimations also control for GDP per capita, male labor force participation, and male unemployment rate of the countries. Robust standard errors are shown in the parentheses, clustered at the survey year level.

Table 10-The Effect of Abolition of CMS on Labor Force Participation of Teenage Women in Spain

	10 Years of Schooling or Less	8 Years of Schooling or Less	6 Years of Schooling or Less
<i>Panel 1</i>			
Age group 16-19*Abolition	-0.065*** (0.016)	-0.080** (0.024)	-0.047 (0.036)
Age group 20-24*Abolition	-0.032*** (0.005)	-0.035*** (0.008)	-0.033 (0.048)
Age group 16-19	0.112*** (0.014)	0.127*** (0.003)	0.120** (0.034)
Age group 20-24	0.131*** (0.004)	0.140*** (0.007)	0.111*** (0.023)
Abolition	-0.003 (0.004)	0.016** (0.006)	-0.258*** (0.027)
Number of Observations	24,855	15,226	1,920
<i>Panel 2</i>			
Teenager*Abolition	-0.051** (0.015)	-0.065** (0.023)	-0.032 (0.028)
Teenager	0.056*** (0.013)	0.069*** (0.002)	0.075** (0.026)
Abolition	-0.012*** (0.003)	0.012*** (0.003)	-0.265*** (0.013)
Number of Observations	24,855	15,226	1,920

Note: Each column presents results from a separate Linear Probability Model regression for the sample of women. The dependent variable is an indicator for being in the labor force. Panel 1 groups the ages into three categories, 16-19, 20-24, 25-29. Age group 25-29 is the default category. The variable of interest is the Age group 16-19*Abolition. Panel 2 groups the ages into two categories; teenagers and non-teenagers. Non-teenagers are the default category. The variable of interest is the Teenager*Abolition. The sample in the separate columns contain individuals with 10 years of schooling or less, 8 years of schooling or less, and 6 years of schooling or less, respectively. All estimations control for 18 survey area fixed effects and the survey year fixed effects. All estimations also control for GDP per capita, female labor force participation, and female unemployment rate of the countries. Robust standard errors are shown in the parentheses, clustered at the survey year level.

Table 11 - The Effect of Abolition of CMS on Employment Likelihood of Teenage Women in Spain

	10 Years of Schooling or Less	8 Years of Schooling or Less	6 Years of Schooling or Less
<i>Panel 1</i>			
Age group 16-19*Abolition	-0.061** (0.018)	-0.068* (0.028)	-0.082 (0.063)
Age group 20-24*Abolition	-0.028** (0.007)	-0.033* (0.017)	-0.074 (0.059)
Age group 16-19	-0.034* (0.014)	0.006 (0.022)	0.030 (0.062)
Age group 20-24	0.089*** (0.005)	0.108*** (0.012)	0.084* (0.042)
Abolition	0.027*** (0.005)	0.028** (0.009)	-0.072* (0.029)
Number of Observations	24,855	15,226	1,920
<i>Panel 2</i>			
Teenager*Abolition	-0.049** (0.015)	-0.054* (0.023)	-0.052 (0.052)
Teenager	-0.073*** (0.012)	-0.039* (0.017)	-0.004 (0.047)
Abolition	0.017*** (0.003)	0.022*** (0.003)	-0.100*** (0.013)
Number of Observations	24,855	15,226	1,920

Note: Each column presents results from a separate Linear Probability Model regression for the sample of women. The dependent variable is an indicator for being employed in Table 10. Panel 1 groups the ages into three categories, 16-19, 20-24, 25-29. Age group 25-29 is the default category. The variable of interest is the Age group 16-19*Abolition. Panel 2 groups the ages into two categories; teenagers and non-teenagers. Non-teenagers are the default category. The variable of interest is the Teenager*Abolition. The sample in the separate columns contain individuals with 10 years of schooling or less, 8 years of schooling or less, and 6 years of schooling or less, respectively. All estimations control for 18 survey area fixed effects and the survey year fixed effects. All estimations also control for GDP per capita, female labor force participation, and female unemployment rate of the countries. Robust standard errors are shown in the parentheses, clustered at the survey year level.

**Table 12 - The Effect of Abolition of CMS on Likelihood of Teenage Women in Spain
Conditional on LF Participation**

	10 Years of Schooling or Less	8 Years of Schooling or Less	6 Years of Schooling or Less
<i>Panel 1</i>			
Age group 16-19*Abolition	-0.028 (0.020)	-0.026 (0.034)	-0.097 (0.102)
Age group 20-24*Abolition	-0.013 (0.009)	-0.019 (0.016)	-0.092 (0.077)
Age group 16-19	-0.128*** (0.014)	-0.091** (0.026)	-0.068 (0.099)
Age group 20-24	0.004 (0.006)	0.021 (0.012)	0.044 (0.064)
Abolition	0.032*** (0.006)	0.020* (0.009)	0.138* (0.059)
Number of Observations	20,264	12,043	1,088
<i>Panel 2</i>			
Teenager*Abolition	-0.021 (0.016)	-0.018 (0.031)	-0.057 (0.078)
Teenager	-0.130*** (0.011)	-0.101*** (0.020)	-0.088 (0.071)
Abolition	0.025*** (0.002)	0.012** (0.004)	0.101** (0.032)
Number of Observations	20,264	12,043	1,088

Note: Each column presents results from a separate Linear Probability Model regression for the sample of women. The dependent variable is an indicator for being employed. Panel 1 groups the ages into three categories, 16-19, 20-24, 25-29. Age group 25-29 is the default category. The variable of interest is the Age group 16-19*Abolition. Panel 2 groups the ages into two categories; teenagers and non-teenagers. Non-teenagers are the default category. The variable of interest is the Teenager*Abolition. The sample in the separate columns contain individuals with 10 years of schooling or less, 8 years of schooling or less, and 6 years of schooling or less, respectively. The sample in Table 11 excludes those who are not in the labor force. All estimations control for 18 survey area fixed effects and the survey year fixed effects. All estimations also control for GDP per capita, female labor force participation, and female unemployment rate of the countries. Robust standard errors are shown in the parentheses, clustered at the survey year level.

Appendix Figures and Tables

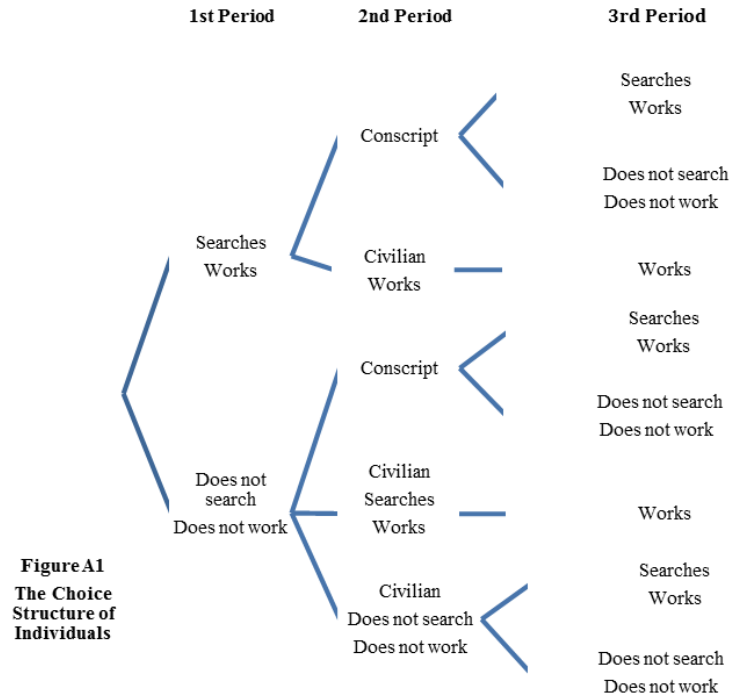


Table A1 - Descriptive Statistics for the Sample of Individuals between 17 and 30 (Turkey)

	Women		Men	
	Mean	S.D.	Mean	S.D.
Age	23.966	3.980	24.122	4.024
% Less than Middle School	0.517	0.500	0.325	0.468
% Middle School Only	0.174	0.379	0.257	0.437
% High School Only	0.309	0.462	0.418	0.493
% in Labor Force	0.221	0.415	0.848	0.359
% Employed	0.167	0.373	0.707	0.455
Number of Observations	229873		189150	

Note: The sample contains individuals aged 17-30 from all survey years 2004-2011. The sample excludes the rural population, those who were enrolled in school when surveyed, and those who have college degree. Degree attainments are defined in an exclusive way.

Table A2 - Descriptive Statistics for the Sample of Individuals between 17 and 30 (Peru)

	Women		Men	
	Mean	S.D.	Mean	S.D.
Age	23.114	4.121	22.914	4.073
% Primary School or Less	0.162	0.368	0.111	0.314
% Secondary School Drop Out	0.214	0.410	0.227	0.419
% Secondary School	0.624	0.484	0.663	0.473
% in Labor Force	0.645	0.478	0.868	0.339
% Employed	0.498	0.500	0.754	0.430
Number of Observations	18447		18204	

Note: The sample contains individuals aged 17-30 from all survey years 2004-2011. The sample excludes the rural population, those who were enrolled in school when surveyed, and those who have college degree. Degree attainments are defined in an exclusive way.

Table A3 - Descriptive Statistics for the Sample of Individuals between 17 and 30 (Argentina)

	Women		Men	
	Mean	S.D.	Mean	S.D.
Age	24.030	3.796	24.089	3.789
% Primary School or Less	0.260	0.439	0.292	0.455
% Secondary School Drop Out	0.305	0.460	0.323	0.468
% Secondary School	0.435	0.496	0.385	0.487
% in Labor Force	0.538	0.499	0.892	0.311
% Employed	0.431	0.495	0.780	0.414
Number of Observations	41611		47588	

Note: The sample contains individuals aged 17-30 from all survey years 2004-2011. The sample excludes the rural population, those who were enrolled in school when surveyed, and those who have college degree. Degree attainments are defined in an exclusive way.

Table A4 - Descriptive Statistics for the Sample of Individuals between 16 and 29 (Spain)

	Women		Men	
	Mean	S.D.	Mean	S.D.
6 Years of Schooling or Less	0.077	0.267	0.074	0.261
8 Years of Schooling	0.535	0.499	0.529	0.499
10 Years of Schooling	0.387	0.487	0.397	0.489
% in Labor Force	0.815	0.388	0.955	0.207
% in Labor Force	0.541	0.498	0.784	0.411
Number of Observations	24855		37862	

Note: The sample contains individuals from age groups 16-19, 20-24, 25-29 from all survey years 1999-2004. The sample excludes those who were enrolled in school when surveyed, and those who have more than 10 years of schooling. Degree attainments are defined in an exclusive way.

Table A5 - Descriptive Statistics for the Spanish Sample by Age and Schooling Level - Men

	1999-2000-2001			2002-2003-2004		
	10 Years or Less	8 Years or Less	6 Years or Less	10 Years or Less	8 Years or Less	6 Years or Less
<i>Ages 16-19</i>						
% in Labor Force	0.884	0.872	0.653	0.945	0.928	0.840
% in Employed	0.594	0.587	0.372	0.686	0.686	0.580
% in Employed within the LF	0.672	0.673	0.570	0.726	0.739	0.691
% Married	0.006	0.008	0.018	0.008	0.010	0.008
<i>Ages 20-24</i>						
% in Labor Force	0.962	0.950	0.766	0.971	0.962	0.819
% in Employed	0.783	0.776	0.514	0.809	0.799	0.617
% in Employed within the LF	0.814	0.817	0.672	0.833	0.830	0.754
% Married	0.055	0.063	0.110	0.054	0.060	0.098
<i>Ages 25-29</i>						
% in Labor Force	0.963	0.956	0.786	0.966	0.959	0.774
% in Employed	0.826	0.817	0.580	0.850	0.844	0.612
% in Employed within the LF	0.857	0.855	0.738	0.880	0.881	0.790
% Married	0.278	0.298	0.273	0.259	0.275	0.291

Note: The sample contains men from age groups 16-19, 20-24, 25-29 from all survey years 1999-2004. The sample excludes those who were enrolled in school when surveyed, and those who have more than 10 years of schooling.

Table A6 - Descriptive Statistics for the Spanish Sample by Age and Schooling Level - Women

	1999-2000-2001			2002-2003-2004		
	10 Years or Less	8 Years or Less	6 Years or Less	10Years or Less	8 Years or Less	6 Years or Less
<i>Ages 16-19</i>						
% in Labor Force	0.857	0.851	0.635	0.822	0.787	0.589
% in Employed	0.453	0.465	0.296	0.455	0.449	0.272
% in Employed within the LF	0.529	0.547	0.465	0.554	0.571	0.461
% Married	0.045	0.054	0.094	0.040	0.057	0.073
<i>Ages 20-24</i>						
% in Labor Force	0.877	0.865	0.616	0.875	0.851	0.631
% in Employed	0.586	0.580	0.358	0.616	0.600	0.317
% in Employed within the LF	0.669	0.670	0.581	0.704	0.705	0.548
% Married	0.189	0.206	0.279	0.178	0.193	0.269
<i>Ages 25-29</i>						
% in Labor Force	0.747	0.725	0.503	0.779	0.749	0.536
% in Employed	0.499	0.475	0.269	0.559	0.534	0.317
% in Employed within the LF	0.668	0.654	0.534	0.718	0.713	0.591
% Married	0.565	0.586	0.503	0.505	0.529	0.414

Note: The sample contains women from age groups 16-19, 20-24, 25-29 from all survey years 1999-2004. The sample excludes those who were enrolled in school when surveyed, and those who have more than 10 years of schooling.

Table A7 - The Effect of CMS on Labor Force Participation of Teenage Men (Pre-Recession Period)

	Men Aged 17-30			Men Aged 17-19 & 22-30		
	HS at Most	MS at Most	ES at Most	HS at Most	MS at Most	ES at Most
<i>Panel 1 - Turkey vs. Peru (Peru is the default country)</i>						
Younger than 20*Turkey	-0.141*** (0.006)	-0.055** (0.010)	-0.115*** (0.007)	-0.125*** (0.008)	-0.028 (0.012)	-0.097*** (0.006)
Younger than 20	-0.017 (0.009)	-0.039** (0.008)	0.006 (0.013)	-0.048* (0.016)	-0.046*** (0.005)	0.013 (0.012)
Turkey	0.075*** (0.009)	0.089*** (0.005)	-0.071*** (0.003)	0.116*** (0.009)	0.263*** (0.006)	0.178*** (0.006)
Number of Observations	104,059	56,492	34,441	94,450	52,161	32,086
<i>Panel 2 - Turkey vs. Argentina (Argentina is the default country)</i>						
Younger than 20*Turkey	-0.157*** (0.016)	0.019 (0.012)	-0.038** (0.011)	-0.142*** (0.019)	0.057** (0.016)	-0.001 (0.013)
Younger than 20	-0.010 (0.011)	-0.081*** (0.005)	-0.051* (0.019)	-0.039 (0.017)	-0.096*** (0.014)	-0.050** (0.015)
Turkey	-0.052 (0.024)	-0.025 (0.018)	0.000 (0.015)	-0.051 (0.022)	-0.028 (0.017)	0.003 (0.019)
Number of Observations	118,338	68,431	40,943	106,686	62,387	37,817

Note: Each column presents results from a separate Linear Probability Model regression. The dependent variable is an indicator for being in the labor force. The regression model compares the teenage labor force participation in Turkey vs. Peru in Panel 1, and in Turkey vs. Argentina in Panel 2. The ages are grouped into two categories; men younger than 20, and men older than 21. Men older than 21 is the default category. The variable of interest is the Younger than 20*Turkey. The sample in the separate columns contain individuals with HS degree or less, MS degree or less, and ES degree or less, respectively. I drop survey years after the global recession, 2008,2009, 2010, 2011. Each sample excludes women, rural population, and those who were enrolled in school when surveyed. All estimations control for survey year fixed effects and quadratic age trends. All estimations also control for GDP per capita, male labor force participation, and male unemployment rate of the countries. The first three columns contain men aged 17-30, and the last three columns drop men at the age of 20 or 21 from the samples. Robust standard errors are shown in parentheses, clustered at the survey year level.

Table A8 - The Effect of CMS on Employment Likelihood of Teenage Men(Pre-Recession Period)

	Men Aged 17-30			Men Aged 17-19 & 22-30		
	HS at Most	MS at Most	ES at Most	HS at Most	MS at Most	ES at Most
<i>Panel 1 - Turkey vs. Peru (Peru is the default country)</i>						
Younger than 20*Turkey	-0.039** (0.009)	0.039 (0.021)	-0.081* (0.027)	-0.020 (0.014)	0.059* (0.020)	-0.079* (0.032)
Younger than 20	-0.019 (0.010)	-0.023 (0.019)	0.046 (0.027)	-0.044* (0.014)	-0.027 (0.017)	0.045 (0.045)
Turkey	0.273*** (0.011)	0.485*** (0.020)	0.148*** (0.011)	0.363*** (0.013)	0.644*** (0.013)	0.316*** (0.008)
Number of Observations	104,059	56,492	34,441	94,450	52,161	32,086
<i>Panel 2 - Turkey vs. Argentina (Argentina is the default country)</i>						
Younger than 20*Turkey	-0.045* (0.015)	0.106*** (0.011)	0.033 (0.030)	-0.025* (0.010)	0.136*** (0.007)	0.073* (0.027)
Younger than 20	-0.024 (0.013)	-0.074*** (0.012)	-0.045 (0.030)	-0.058** (0.015)	-0.091*** (0.011)	-0.079** (0.019)
Turkey	-0.024 (0.012)	0.013 (0.019)	0.096*** (0.010)	-0.035** (0.011)	0.006 (0.017)	0.090*** (0.013)
Number of Observations	118,338	68,431	40,943	106,686	62,387	37,817

Note: Each column presents results from a separate Linear Probability Model regression. The dependent variable is an indicator for being employed. The regression model compares the teenage labor force participation in Turkey vs. Peru in Panel 1, and in Turkey vs. Argentina in Panel 2. The ages are grouped into two categories; men younger than 20, and men older than 21. Men older than 21 is the default category. The variable of interest is the Younger than 20*Turkey. The sample in the separate columns contain individuals with HS degree or less, MS degree or less, and ES degree or less, respectively. I drop survey years after the global recession, 2008,2009, 2010, 2011. Each sample excludes women, rural population, and those who were enrolled in school when surveyed. All estimations control for survey year fixed effects and quadratic age trends. All estimations control for GDP per capita, male labor force participation, and male unemployment rate of the countries. The first three columns contain men aged 17-30, and the last three columns drop men at the age of 20 or 21 from the samples. Robust standard errors are shown in parentheses, clustered at the survey year level.

**Table A9 - Compulsory Military Service
in European Union Member Countries**

Country	CMS exists	Abolished in
Austria	Yes	
Belgium	No	1994
Bulgaria	No	2008
Croatia	No	2008
Cyprus	Yes	
Czech Republic	No	2005
Denmark	Yes	
Estonia	Yes	
Finland	Yes	
France	No	1997
Germany	No	2011
Greece	Yes	
Hungary	No	2004
Ireland	No	
Italy	No	2005
Latvia	No	2007
Lithuania	No	2008
Luxembourg	No	
Malta	No	
Netherlands	No	1997
Poland	No	2009
Portugal	No	2004
Romania	No	2007
Slovakia	No	2006
Slovenia	No	
Spain	No	2001
Sweden	No	2010
United Kingdom	No	1960

**Table A10 - Compulsory Military Service
in NATO Member Countries**

Country	CMS exists
Albania	No
Belgium	No
Bulgaria	No
Canada	No
Croatia	No
Czech Republic	No
Denmark	Yes
Estonia	Yes
France	No
Germany	No
Greece	Yes
Hungary	No
Iceland	No
Italy	No
Latvia	No
Lithuania	No
Luxembourg	No
Netherlands	No
Norway	Yes
Poland	No
Portugal	No
Romania	No
Slovakia	No
Slovenia	No
Spain	No
Turkey	Yes
United Kingdom	No
United States	No