

Driven Out of Employment? The Impact of the Abolition of the Draft on Driving Schools and Aspiring Drivers

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Abstract:

Before 1997 the compulsory military service was a way for many young French men to obtain their driver's license for free. After the abolition of compulsory conscription in 1997, this sex-based discrimination disappeared. We show that the suppression of such an opportunity was followed by a fall in young men's possession of a car driver's license, particularly for men living in urban areas. Because the causal relation between holding a driver's license and employment is hard to demonstrate, we use this policy change as an instrument for the former. Indeed estimates demonstrate a negative impact of the abolition of the draft on employment for young men and a likely causal impact of holding a driver's license on employment probability. However, we must remain cautious since we cannot fully show that the effect is due to the lack of a driver's license in itself rather than the lack of other abilities the national service could provide (e.g. professional courses). Then, we show that the abolition of the draft also had a more direct and uncontroversial effect on the (heavily regulated) driving schools industry: the shock on driver's license demand that the reform induced resulted in increased rents. These rents translated in an increase in the number of driving schools, a stability in total employment, a decrease in average employment, no increase of total sales or value-added, no obvious decrease in profits per school, but an increase in wages paid to the teachers in those cities that had many young men. Hence, those who benefited from increased demand have been the teachers, in limited supply, not the incumbent schools or the consumers. We believe that such an outcome is potentially inefficient and is due to the heavy entry regulations distorting the economy of this industry.

I. Introduction

A driver's license is clearly an important liberating asset, more particularly in dispersed countries, such as the United States. It is even more so in France, a country with wide geographical dispersion, because the cost of a driver's license (learning and test costs) is one of the largest in the world. The difficulty of obtaining this license (because of its cost, but not only) has been a matter of much public debate, raising the problem of inequality of access for the poorest and the youngest part of the population. In this paper, we analyze the possible causal effect of possessing a driver's license on employment among different social and geographic groups. These effects should be positive since a driver's license enables the holder to drive to work, particularly in locations where public transportation is scarce, or to use a vehicle for business purposes. If hardly any paper in the existing literature can be found on the subject, it may be because the problem is not seen as essential in many countries but it may also come from data sources that do not have information on possession of a driver's license. In addition, solving the causality issue is potentially hard because possessing a driver's license is clearly endogenous in relation to employment: one person who has a talent for exams should also easily pass the driver's license tests as another diploma, and has therefore better chances to get a job, not because of the license but because of the talent. Moreover there is a potential reverse causality issue when examining the impact of having a driver's license on employment: having a job makes it easier to pay for your driver's license because of your earnings. As a consequence, it is essential to find good exogenous instruments useable for car driver's license.

Before 1997, young French male adults had to do a ten months military service at the age of 18 or they could defer it if they stayed on in university education. Among them, some

had the opportunity to obtain their military driver's license (*Brevet de conduite militaire*), which could be converted into a usual civilian driver's license. It was a way for a fraction of young French men to pass the driver's license for free, whereas women were not offered such an opportunity. After the abolition of the national service, this sex-based, albeit rarely noted, discrimination disappeared.

The idea here is to use the abolition of compulsory conscription in France as an opportunity to examine several issues, and in particular the impact of having a driver's license on employment. Therefore, the abolition of the draft can be used to derive an instrument for driver's license possession. Indeed the 1997 abolition was followed by a fall in the possession of a driver's license for men relative to women. This fall can then be used to measure the impact of a license on employment.

The first contribution of this paper is to show that the decline in the number of conscripts caused a decrease in the possession of a driver's license for young men after the reform. The fall is identified by comparing the relative driver's license rate between men and women, before and after the reform, within different age groups (difference in difference methodology, in fact a triple difference). In addition, because of the timing, the analysis has a flavor of regression discontinuity. Furthermore it is also possible to identify those who were most affected, as measured by their socio-economic background or their geographic environment (rural or urban). In particular, we show that individuals living in an urban environment were more affected than those living in rural environment.

The second contribution of our paper is to analyze if having a driver's license helps in getting a job. After having shown that the reform provides a valid instrument for holding a driver's license, we use it in our employment IV regressions. Our results indeed show that young men affected by the abolition of the draft found it harder to get a job after this date, 1997. Whether this phenomenon is fully attributable to the lack of a driver's license in itself

or to other services the national service could provide (training, behavioral help, etc.), our results cannot tell, as all the maintained assumption in our IV analysis is that the effects of the draft only go through the endogenous variable, i.e. holding a driver's license.

The third and last contribution of our paper is to analyze the impact of the reform on the driving schools industry. As the fraction of women and men differs widely at the local level, in particular in smaller rural towns, the 1997 abolition of conscription can be considered as a natural experiment: specifically as a shock on demand for the driver's license randomly distributed all over the country. All of a sudden, thousands of young men who could acquire the driver's license independently of driving schools now turned to them massively and the precise increase in demand depended on local demography. Because demand for driving schools increased, the supply should have responded. But when an industry experiences such a shock on demand, the effects can be extremely diverse, especially when considering a regulated industry. Indeed, a short-term price increase should be the result but the final outcome depends on various elasticities. One outcome could also be that the "biggest" and most profitable schools attract more customers and offer better conditions; leading to mergers at a local level. In fact, in an industry regulating both schools and diplomas, teachers' supply and firms' entry are going to play a crucial role in the final outcomes, and the precise mechanisms should affect the driver's license price as well as the incentives for driving schools to merge or to be created. In all cases, employment and sales should increase in the cities facing a positive demand shock. However, in contrast with these simple ideas, we observe a dispersion phenomenon, i.e. the creation of new driving schools at a local level with a decrease in the average employment, no increase in total local employment or in total sales and profits. This surprising outcome in this context (where prices remain steadily high) can be understood by the observed increases in wages: teachers capture the rents.

II. Data and background

2.1 The data

Three sets of data are used in our analysis. The primary source of data comes from a nationwide car park survey conducted on a yearly basis by a French private institute, the SOFRES (for *Société Française d'Etudes par Sondages*). The annual sample includes about 7,000 households (10,000 questionnaires sent and a return rate of around 70 percent from every part of France). The sampling plan comes from a collaboration with the French national statistics office, INSEE (*Institut de la Statistique et des Etudes Economiques*) to be representative of the French population. We use this source from 1995 to 2002, providing information on the date of birth, sex, possession of a driver's license for each individual. It also provides information on households: incomes and details on the level of urbanization around the place of residence. Such data are useful in order to study the impact of the reform of the draft on a national scale. Unfortunately there is no information about individual employment, so that it will be of no help for the second part of our paper.

Therefore, we use a second source, the global transport survey for the Paris and *Ile de France* region (called EGT for *Enquête Globale Transport*), conducted in 1983, 1991 and 2001 by the Paris region transport authority (*Direction régionale de l'équipement d'Ile de France*). Each year includes about 23,000 individuals and 10,000 households. It provides information on household incomes and the date of birth, sex, education level, activity status (student, employed, unemployed, retired ...), possession of the driver's license and the department of residence of each individual (see Table A.1).

The third and last source of data is the French national file on firms, called SUSE (for *Système Unifié de Statistiques d'Entreprises*, i.e. Unified system on firms statistics) built by INSEE on an annual basis. The specificity of the SUSE file is to “unify” two sources of data: fiscal data coming from the French fiscal administration (*Direction générale des impôts*) on one hand, and survey data conducted by the INSEE through the EAE survey (for *Enquête annuelle des entreprises*) on the other hand. It yields precise information on firms’ activity and firms’ structure over time, such as employment structure, accounting data like operating profit, value-added, wages paid, sales, etc. known from P&Ls (profit and loss accounts) and balance sheets, but also different interesting indicators like industry concentration indices. Finally, the SUSE file includes information on location down to the “city” level (French *commune*), which will enable us to match firms data with population data. The SUSE file gathers all three firms fiscal regimes information: the BIC regime (for *Bénéfices Industriels et Commerciaux*, i.e. Industrial and commercial incomes) for manufacturing, trade or craft activities that aim at making profits; the BNC regime (for *Bénéfices non commerciaux*, i.e. Non commercial incomes) for individual professionals like physicians, lawyers etc. and other regulated activities such as clerks or auctioneers; finally, the BA regime (for *Bénéfices agricoles*, i.e. Farming incomes) for farming activities. The BNC regime comprises three categories depending on turnover: BRN (for *Bénéfice réel normal*, i.e. Standard real incomes) gathers some 800 different variables on firms and is compulsory for firms with turnover exceeding 763 k€ (230 k€ for services); RSI (for *Régime simplifié d'imposition*, i.e. Simplified tax regime) gathers only some 200 different variables and is destined to firms with a turnover ranging between 76,3 k€ and 763 k€ (27 k€ and 230 k€ for services); finally, the micro-BIC regime is for firms with a turnover below 76,3 k€ (27 k€ for services). Our study uses both BRN and RSI data: in so doing, we encompass almost all French driving schools in our study. For the SUSE data, we consider all years between 1992 and 2002. Along with the

SUSE data, we use the Censuses conducted in France in 1990 and 1999. As we match the SUSE data with the census data, we can design a detailed nationwide map of what happened to driving schools before and after the 1997 military reform.

2.2 The driving schools industry

The driving schools industry is heavily regulated, as it proves long and costly to become a driving school instructor or to be able to run a driving school. Indeed, to become an instructor, one needs to get a State-defined diploma called BEPECASER (*Brevet pour l'exercice de la profession d'enseignant de la conduite automobile et de la sécurité routière*). At least 600 hours of training are explicitly needed (and more if motorcycle and truck is added). But only 60 hours out of 600 take place in a driving school to learn the practical aspects, as the main part of lessons includes very formal issues such as reports, discussions, etc. The training costs amount to 5,000 euros and training lasts 9 months. The exam counts at least 3 different steps over a 6 months period! In 2006, 1,545 BEPECASER were delivered and the success rate was of around two candidates out of three. In addition to the BEPECASER, a license from the “*préfet*” (the regional representative of the State) must be obtained: this license is valid 5 years and must then be renewed.

In order to have the right to open a new driving school, one needs to have at least a 3 years experience in teaching driving and to show “an ability to run a firm” since 1999.

2.3 The 1997 Reform

The discussions about a potential reform of the military service in France were initiated by Jacques Chirac in 1996. The difficulties encountered by the French army during

the Gulf War convinced him of the necessity of a reform. During the Gulf War the French force Daguet was stigmatized for its lack of mobility, its lack of autonomy vis-à-vis the American forces. It became clear that the large number of conscripts made the French army much too static and unable to defend French interests overseas. With French borders no longer under threat, the need for a large army had weakened and the country had thus to replace its conscripts by a smaller, more mobile and better performing professional army.

These concerns were potentially enough to reignite an old debate between a great share of the French left still attached to maintaining a democratic army (perceived as an inheritance of the French Revolution) and a fraction of the right which promoted the idea that defense had to be left in the hands of professionals. In fact this debate never took place. The reform was never discussed as a political choice of decisive and strategic character (Cluzel and Thibault 2005; Paquetteau 1997). Even the parties of the left, a priori the most hostile towards the idea of a professional army (especially the communist party), did not really defend the retention of the national service and they all favoured a deep reform of the compulsory conscription.

Compulsory military service was broadly perceived by the public as a pure waste of time. This year off - away from civilian and social realities - was all the more difficult to accept as it took place at a crucial moment of one's life, between the end of education and the entry into the labor market. At the beginning, the replacement of military service by civil service was considered, but the idea was abandoned. Conscription was finally suspended in 1997 and the military administration stopped using conscripts in August 2001. According to the military administration, the number of conscripts was stable in the early nineties; about 200,000 implying that roughly 40 to 50 percent of each birth cohort was called up by the administration and actually did the national service. After Chirac's initiative in 1996, the

number of conscripts declined rapidly from 202,000 in 1996 to almost zero in 2001 (see Figure 1).

III. Impact of the reform on holding a driver's license

3.1 The negative impact of the reform on holding a driver's license for young men

First it must be proved that indeed some men were getting their driver's license while doing their national service. Since the information could not be obtained from the French Ministry of Defense, we had to convince ourselves differently before looking at the data. To do so, it is useful to look at the number of B driver's licenses (French car driver's license) delivered by driving schools between 1990 and 2006 (data from the French *Securité Routière*: see Figure 2). It shows that before 1997 more women than men got their driver's license from a driving school but starting in 1997 the opposite occurred: there are now more men than women who get their driver's license from a driving school. This corroborates the assumption that a new portion of men had to enter a driving school after the reform because they could not expect to obtain their driver's license for free in the army anymore. This will be confirmed with the difference in difference analysis based on our first two data sets.

3.1.1 Holding a driver's license: the car park data (SOFRES survey)

The first data source, the car park data conducted annually between 1995 and 2002, makes it possible to construct annual representative samples of the French population aged 18 to 23, and born either before or after the 1997 reform. Precisely we consider post-reform men as the men born up from 1978: indeed, figures show that conscription started to fall for the 1978 generation, even the 1977 generation. Thus we can examine whether men aged 18 to 23

in 2002 (i.e. after the reform) have a lower driver's license possession rate than men of the same age in 1995 (i.e. before the reform), both relative to the evolution of women's rate considered as a trend. Note that the method accounts for a possible general change in demand for driver's license, due for example to a price raise, but that it does not account for a possible trend towards women's emancipation (that point will be examined below with the second source of data). Such a decrease would be a clear signal that our assumption about the impact of the reform on driver's license is true. Tables 1 and 2 show regressions of a driver's license indicator (for people aged 18 to 23) on a complete set of indicators for sex, post or pre-reform, socio-economic background (in Table 1) and density of population (in Table 2, more exactly urban area versus rural area).

When considering the whole population, any significant fall can hardly be detected for post-reform young men (Table not shown). However, when interacted with other variables such as living in an urban area, having access to a public transport near home, being from a low socio-economic background (Table 3), the fall turns out to be important and significant. One interpretation goes as follows: young men living in rural areas have strong incentives to get their driver's license, since no other means of transportation is available, for instance to reach shops, services or working place, whereas young men living in urban areas can often do without a car.

Furthermore, coming from a low socio-economic background makes it more difficult to afford a driver's license (learning and tests fees). As a consequence, one can assume that those young men could not fully compensate the abolition of compulsory conscription, .

3.1.2 Holding a driver's license: the global transport survey data (*Ile de France* only)

The previous difficulties with our first source force us to study the second piece of data, for Paris and its surrounding region (Paris region called *Ile-de-France*). Paris region is a

compact urban area but with a large diversity of towns and social arrangements. At least, roughly speaking, we can separate Paris city on the one side and the rest of the region on the other side (Paris suburbs and more remote places). A main difference with the previous nationwide data is that we now have only three years of survey: 1983, 1991 and 2001. It is thus not possible to make an annual analysis as before. A way to evidence the expected decrease in post-reform men's driver's license rate is thus to regress a driver's license indicator on a complete set of year-age-gender interactions.

Table 3 shows the impact of age, sex, and generation on driver's license possession. We analyze the results for different age groups: 23 to 30, 23-24 and 27 to 30, 23-24 and 29-30. We also analyze outcomes for different income categories and places of residence. We only report a fraction of these results. Because we use contrasts with women and previous generations of the same age, the analysis is a triple difference. All regressors are shown in the Table. In particular, indicators are included for men aged 23-24 in 1983, 1991, 2001 as well as for men aged 25 and above. Similarly, indicators are included for women. The F-test in the last line tests for the equality of two differences: the coefficients on men aged 25 and above (the exact content depends on the column) in 2001 minus that for men aged 23-24 in the same year; the same difference for the year 1991. Essentially, we expect to see a much smaller effect for men aged 23-24 in year 2001 because those men were not at risk of being drafted in contrast with all other categories. Indeed, for all categories of men aged 23 and 24, the probability of having a driver's license is smaller in 2001, after the abolition of the draft than before, in 1991, in comparison with older but still young men.

Interestingly, this result also holds for those coming from families with mid-to-high incomes in general and in particular for those living in the *Ile-de-France* region but not in Paris. All those regressions that are not reported (i.e. for low income, whatever the place of

residence and for mid-to-high incomes living within Paris) display coefficients such that the null is accepted. Hence, for these groups, there is no effect and the triple difference has essentially no meaning.

IV. Impact of the reform on employment

In the following Tables, we analyze the causal effect of having a driver's license on employment outcomes. First, as clearly appears from the preceding discussion, men from the earliest generation should be the only one affected by the abolition of the draft. Furthermore, given the dates of surveys (1983, 1991, 2001), men aged 23-24 in 2001 should be affected whereas men aged 25 and above should not. Hence, we focus on this discontinuity and contrast the impact of age, sex, and generation on employment and holding a driver's license.

Table 5 shows the OLS effect of having a driver's license on employment for the whole group. For all non-reported groups, the coefficient on this variable is also strongly positive and significant. Hence, there is no need to report them. Of course, this is not our last word because, as already mentioned several times, holding a driver's license is endogenous in this regression: indeed, employment may well cause license holding because employment may well buy the lessons needed to obtain the license (reverse causality). This explains why we present in the next Table (Table 6) our IV results, using men aged 25 and above in 2001 as our instrument. We also present in Appendix (Table A.2) the reduced form regression of employment on the set of exogenous variables, including the instrument.

Again, as in Table 4, we only present results for which the instrument is valid and, indeed, that display significant causal effects of holding a driver's license on holding a job. The effect is strong, stronger than in the OLS results, as usual. It is also much more imprecise, again a usual feature of IV estimates. For those results that are not reported (low income, and

mid-to-high in Paris), all IV estimates are not significantly different from zero (with small coefficients).

The reduced form results show the effect of the instrument on employment. The F-test statistics that is computed at the bottom of the Table is similar to that computed in Table 4. The instrument is positively and strongly correlated with the employment outcome. Or, conversely, the probability difference in employment between males aged 23-24 and males aged 25 and above is much larger (and negative) in 2001 than it was in 1991.

Indeed, even though the draft is a very likely explanation for this fact, a good instrument is such that all the effects of the draft should go through the endogenous variable, i.e. holding a driver's license. Unfortunately, some doubts must be raised at this stage. For instance, professional courses were offered for the low-educated during the military service. In addition, Maurin and Xenogiani have shown that university students were tempted to do additional years of education to postpone, and eventually avoid, the draft. They also showed that this was mostly true for a fraction of the students, those with relatively bad prospects within the university system, who abandoned before completing college.

It is however tempting to understand why we find no effect for those living in low-income families but a clear and strong effect for relatively wealthier men, in particular those whose place of residence is outside Paris (no effect for those living within Paris). Clearly, Paris versus its outskirts (which can be quite far away from Paris, because *Ile-de-France* is pretty wide) offers much better public transport. We do not have at this stage a fully spelled out explanation for this result.

V. Impact of the reform on driving schools

Another noteworthy effect of the abolition of the draft in France is the effect on the driving schools industry. As explained earlier, this industry is heavily regulated both in terms of entry of new schools and supply of new instructors. Indeed, because the fraction of women

and men among the young is likely to differ widely at a local level we can use the 1997 abolition of conscription as a natural experiment, specifically as a shock on demand for driver's licenses, randomly distributed all over the country; All of a sudden, thousands of young men who could acquire the driver's license independently of driving schools now turned to them and the increase in demand was depending on the local (random) demography.

Our data encompass almost all driving schools in France (see part II above). However, because we have access to data on firms and not to data on establishments, small independent firms and groups with multiple establishments cannot be distinguished in the SUSE file; both are equally considered as firms. This can affect our results. Indeed, multi-establishment firms are considered in our data as "normal" firms but have a very large turnover, employment, wages, etc., and located in the city where their head office stands. Obviously, the evolution of such groups has simply no meaning at a local level, in particular when compared to "small" driving schools located at a unique city. In order to put aside groups from our analysis, we concentrate on firms with a turnover below 500,000 French francs (around 75,000 euros). Results are robust when considering firms below 1 million French francs (around 150,000 euros). Also in order to remain at a local level, we do not include driving schools located in the three largest French cities, namely Paris, Lyon and Marseille.

The results are presented in Tables 8, 9, and 10 (Table 10 being a robustness test with fewer variables). In Table 8 we focus on average outcomes in the city when in Table 9 we focus on total outcomes in the city. They show that in cities with a larger fraction of men among the young in the years following 1997, new driving schools were created in larger numbers during these years and the average wages paid in the driving schools in the city strongly increased. More surprisingly, driving schools did not fare better (no significant increase in operating profits, added value or even sales summed over all driving schools within a given city) and employment did not increase in the cities with more young men.

Because supply of instructors was limited, their total number appears to have stayed fixed in a city but some deciding to quit their former employer to create new driving schools (with no employee besides them and therefore no wage information). As a consequence, employers increased wages in order to retain employees. Hence operating profit did not increase. This phenomenon is obviously a direct consequence of the driving schools industry regulations: as it is long and costly to become a monitor: supply cannot respond to the demand as quickly as it should have, had the industry be more competitive.

However, total sales should have grown in cities where the fraction of young men is large around 1997, which is not what we observe. A first explanation could be that some young people turned to the multi-establishment driving schools (that we did not keep in our analysis file). Another explanation could be that the emergence of new driving schools induced a decrease in prices. What can be assumed is that new driving schools offered lower prices in order to attract customers. Indeed, driving schools are a typical case of occupational licensing where reputation drives the market: old driving schools that could prove the quality of their learning can demand higher prices, whereas new ones must first conquer their reputation and set lower prices. Driving schools prices can span a large scale of prices, usually from 500 to 1,000 euros in urban areas, sometimes more in more rural areas. Unfortunately, we have no hint on the evolution of prices in our data to corroborate such hypotheses.

These results tend to show that the specific regulations that weigh on the driving schools industry in France did not allow them to absorb the flow of new young customers after 1997. One can question the justification of such regulations for a profession that remains basically a tutoring, with no particular technical knowledge or practice that would be long to acquire.

VI. Conclusions

Compulsory conscription in France was abolished in November 1997. Before the reform, the military service was a way for some young French men to obtain a car driver's license for free. After the reform that opportunity disappeared. We find that the reform was followed by a significant decline in the relative proportion of men possessing a driver's license. These findings suggest that a substantial fraction of men would have had a driver's license if they were born some years earlier (about 6 %). Additional investigations show that the reform had an impact mostly on young men coming from urban areas who could not or did not have to make up for the decrease in driver's license obtaining.

This policy change provides an instrument to make an IV analysis of the causal effect of having a driver's license on employment. We end up with estimates suggesting that possessing a car driver's license is significantly important to employment for people living in urban areas. One reason for this can be that they often live in places where other relatively cheap means of transportation, like public transports, are available. Yet, our results cannot settle whether the specific difficulties encountered by young men on the job market after 1997 are attributable to the lack of a driver's license in itself or to the lack of other abilities the national service could provide, such as professional courses.

This policy change also represents a natural experiment allowing the analyst to examine the driving schools industry, as thousands of young men who used to pass the driver's license in the army turned to driving schools after 1997. Matching administrative data on firms with the population Census at different dates, we show that the number of driving schools increased in those cities with lots of young men. Wages also increased for those who did not (or could not) create their own school. This was a way used by incumbents to prevent establishment of competing driving schools. In many respects, the abolition of the draft was a real "manna" for driving schools and driving instructors.

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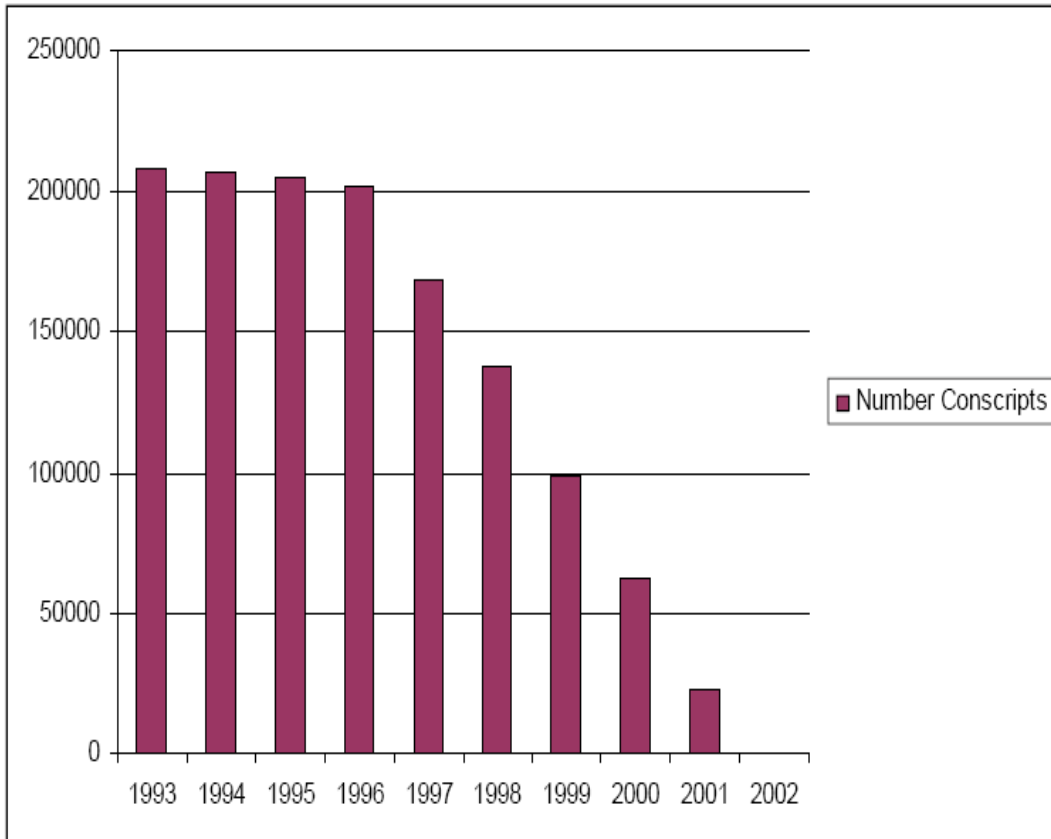
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Figure 1

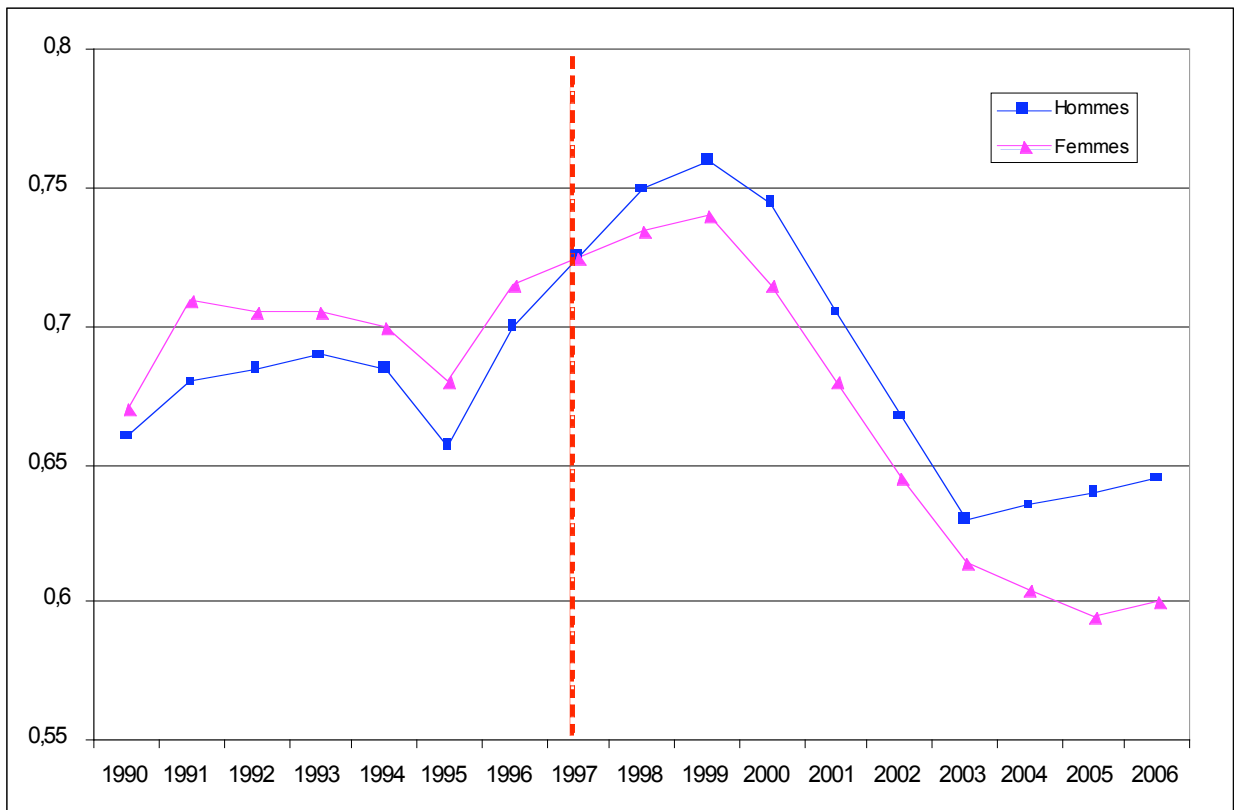
Decline in the number of conscripts after 1997



Source : French ministry of defense (out of Maurin and Xenogiani 2004)

Figure 2

Number of driver's licenses delivered in driving schools divided by the number of people aged 18-24 in France from 1990 to 2006



Source : French Sécurité Routière

Table 1

The effect of the reform on driver's licenses for men from low socio-economic background

	All		Non self supporting	
Constant	0.705 **	(0.011)	0.697 **	(0.011)
Born before 1977	0.086 **	(0.016)	0.085 **	(0.017)
Men born before 1977	0.031 **	(0.017)	0.035 **	(0.017)
Men born after 1978	0.047 **	(0.016)	0.054 **	(0.016)
Low incomes born before 1977	-0.078 **	(0.017)	-0.127 **	(0.021)
Low incomes born after 1978	-0.087 **	(0.018)	-0.150 **	(0.021)
Men * Low incomes born before 1977	-0.022	(0.025)	-0.020	(0.029)
Men * Low incomes born after 1978	-0.059 **	(0.027)	-0.036	(0.030)
R squared	0.02		0.03	
Number of observations	9700		8375	

Source: Car Park Surveys (1995-2002) from the SOFRES

Sample: people aged 18-23

Notes:

The dependent variable is the driver's license.

* Statistically significant at the .10 level, ** Statistically significant at the .05 level

Standard errors in parentheses.

The low incomes dummy is a household level information; the self supporting information is inferred from the age of the other people living in the same household.

Table 2

The effect of the reform on driver's licenses for men living in urban areas

	All	
Constant	0.688 **	(0.014)
Born before 1977	0.111 **	(0.020)
Men born before 1977	0.051 **	(0.020)
Men born after 1978	0.065 **	(0.020)
Living in a urban area and born before 1977	-0.075 **	(0.018)
Living in a urban area and born after 1978	-0.026	(0.018)
Men living in a urban area and born before 1977	-0.037	(0.026)
Men living in a urban area and born after 1978	-0.057 **	(0.026)
R squared	0.02	
Number of observations	9700	

Source: Car Park Surveys (1995-2002) from the SOFRES

Sample: people aged 18-23

Reading:

The dependant variable is the driver's license.

* Statistically significant at the .10 level, ** Statistically significant at the .05 level

Standard errors in parentheses.

Table 3

The effect of the reform on driver's licenses for men from low socio-economic background in urban areas

	All		All (low incomes considered only for non self supporting people)		Non self supporting only	
Constant	0.685 **	(0.015)	0.698 **	(0.013)	0.679 **	(0.015)
Born before 1977	0.079 **	(0.021)	0.062 **	(0.018)	0.078 **	(0.022)
Men born before 1977	0.014	(0.022)	0.027	(0.018)	0.012	(0.023)
Men born after 1978	0.026	(0.021)	0.030	(0.019)	0.028	(0.021)
Low incomes born before 1977	-0.083 **	(0.022)	-0.182 **	(0.027)	-0.179 **	(0.029)
Low incomes born before 1977	-0.056 **	(0.023)	-0.164 **	(0.027)	-0.145 **	(0.028)
Men * Low incomes born before 1977	-0.007	(0.032)	0.000	(0.038)	0.015	(0.040)
Men * Low incomes born after 1978	-0.070 **	(0.036)	-0.081 **	(0.040)	-0.079 *	(0.041)
R squared	0.01		0.03		0.04	
Number of observations	6080		6080		5055	

Source: Car Park Surveys (1995-2002) from the SOFRES

Sample: people aged 18-23 living in urban areas

Reading:

The dependant variable is the driver's license

* Statistically significant at the .10 level, ** Statistically significant at the .05 level

Standard errors in parentheses

The "low incomes" dummy is household level information and is interacted with the "non self supporting" dummy in the second column.

Table 4

The effect of the reform on driver's licenses for people living with public transport close by

	All	
Constant	00.714 **	(0.015)
Born before 1977	00.111 **	(0.022)
Men born before 1977	00.03100	(0.024)
Men born after 1978	00.053 **	(0.022)
PT born before 1977	-0.099 **	(0.019)
PT born after 1978	-0.062 **	(0.019)
Men*PT born before 1977	-0.00700	(0.028)
Men*PT born after 1978	-0.037 *0	(0.027)
R squared	0.02	
Number of observations	9700	

Source: Car Park Surveys (1995-2002) from the SOFRES

Sample: people aged 18-23

Reading:

The dependant variable is the driver's license.

* Statistically significant at the .20 level, ** Statistically significant at the .05 level

Standard errors in parentheses.

PT dummy means with public transport near home.

Table 5

Driving Licenses and the Draft

	Age 23 - 30		Age 23-24 and 27-30		Age 23-24 and 29-30		Age 23 to 30 for Middle-High Income Individuals		Age 23 to 30 for Middle-High Income, Out of Paris	
	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err
Intercept	0.7181	0.0214	0.7181	0.0213	0.7181	0.0214	0.7433	0.0240	0.7453	0.0261
Year 1983	-0.0975	0.0154	-0.0893	0.0191	-0.1043	0.0277	-0.1477	0.0165	-0.1440	0.0178
Age<25 in 1991	-0.0666	0.0314	-0.0584	0.0333	-0.0733	0.0390	-0.1595	0.0345	-0.1910	0.0369
Women, age<25 in 1983-1991	0.0150	0.0328	0.0068	0.0346	0.0217	0.0402	0.1329	0.0354	0.1569	0.0381
Women, age>=25 in 2001	-0.0019	0.0242	0.0006	0.0251	0.0219	0.0287	0.0581	0.0268	0.0657	0.0293
Women, age>=25 in 1983-1991	0.0211	0.0238	0.0328	0.0250	0.0359	0.0285	0.1024	0.0269	0.1120	0.0292
Men*(Year 1983)*(age <25)	0.1977	0.0339	0.1895	0.0356	0.2045	0.0410	0.2448	0.0356	0.2590	0.0385
Men*(Year 1991)*(age <25)	0.2001	0.0434	0.1919	0.0446	0.2068	0.0492	0.3328	0.0487	0.3626	0.0520
Men*(Year 1983)*(age >=25)	0.2679	0.0288	0.2575	0.0320	0.2641	0.0407	0.3220	0.0312	0.3266	0.0339
Men*(Year 1991)*(age >=25)	0.1756	0.0240	0.1814	0.0250	0.2052	0.0290	0.1874	0.0269	0.1903	0.0291
Men*(Year 2001)*(age >=25)	0.1359	0.0246	0.1530	0.0255	0.1668	0.0294	0.1452	0.0270	0.1603	0.0294
Men*(Year 2001)*(age < 25)	0.0354	0.0303	0.0354	0.0301	0.0354	0.0303	0.0618	0.0337	0.0783	0.0358
R square	0.05		0.05		0.05		0.05		0.05	
Number of observations	10,240		7,679		4,973		7,301		5,896	
F test, p-value	7.29	0.007	6.94	0.0084	5.54	0.0187	19.73	0.0001	21.73	0.0001

Notes: Source Enquête Transport Ile de France (1983, 1991, 2001). The F-test is for the equality of (Men in 2001 with age above or equal to 25 minus Men in 2001 with age 23 and 24) with the same difference in 1991.

Table 6

Employment and Driving Licenses (OLS)

	Age 23 - 30	
	Estimate	Std Err
Intercept	0.5764	0.0131
Driving license	0.2441	0.0098
Year 1983	0.0177	0.0153
Age<25 in 1991	-0.0520	0.0311
Women, age<25 in 1983-1991	-0.0443	0.0268
Women, age>=25 in 2001	-0.0189	0.0153
Women, age>=25 in 1983-1991	-0.0380	0.0147
Men*(Year 1983)*(age <25)	0.0270	0.0280
Men*(Year 1991)*(age <25)	-0.0656	0.0387
Men*(Year 1983)*(age >=25)	0.1007	0.0218
Men*(Year 1991)*(age >=25)	0.0791	0.0150
Men*(Year 2001)*(age <25)	-0.1850	0.0236
R square		0.1
Number of observations		10,240

Notes: Source Enquête Transport Ile de France (1983, 1991, 2001).

Table 7

Employment and Driving Licenses (IV)

	Age 23 - 30		Age 23-24 and 27-30		Age 23-24 and 29-30		Age 23 to 30 for Middle-High Income Individuals		Age 23 to 30 for Middle-High Income, Out of Paris	
	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err
Intercept	-1.0340	0.3271	-1.0346	0.3029	-1.0534	0.3192	-0.6793	0.3009	-0.6174	0.2888
Driving license	2.2049	0.3973	2.2057	0.3662	2.2319	0.3935	1.7722	0.3499	1.6831	0.3305
Year 1983	0.2088	0.0514	0.1925	0.0532	0.2042	0.0743	0.2175	0.0603	0.1852	0.0574
Age<25 in 1991	0.0786	0.0740	0.0622	0.0761	0.0731	0.0919	0.1743	0.0857	0.1866	0.0917
Women, age<25 in 1983-1991	0.1287	0.0690	0.1451	0.0747	0.1356	0.0868	-0.0398	0.0536	-0.0587	0.0555
Women, age>=25 in 2001	0.1871	0.0538	0.2136	0.0549	0.1769	0.0599	0.0839	0.0365	0.0681	0.0380
Women, age>=25 in 1983-1991	0.1229	0.0461	0.0964	0.0470	0.0963	0.0572	0.0122	0.0312	0.0124	0.0326
Men*(Year 1983)*(age <25)	-0.1583	0.0726	-0.1421	0.0742	-0.1563	0.0961	-0.1873	0.0704	-0.1862	0.0707
Men*(Year 1991)*(age <25)	-0.2555	0.0943	-0.2393	0.0951	-0.2536	0.1141	-0.3728	0.1123	-0.3642	0.1146
Men*(Year 1983)*(age >=25)	-0.2223	0.0814	-0.1839	0.0805	-0.1782	0.1086	-0.2301	0.0844	-0.1729	0.0800
Men*(Year 1991)*(age >=25)	-0.0628	0.0440	-0.0493	0.0475	-0.0902	0.0711	-0.0550	0.0401	-0.0484	0.0383
Men*(Year 2001)*(age <25)	-0.0521	0.0589	-0.0522	0.0593	-0.0531	0.0617	-0.0996	0.0524	-0.1218	0.0518
R square	0.01		0.02		0.02		0.02		0.02	
Number of observations	10,240		7,679		4,973		7,301		5,896	

Notes: Source Enquête Transport Ile de France (1983, 1991, 2001).

Table 8

Variable	Number of Driving Schools		Average Operating Profit		Average Value-Added		Average Employment		Average Sales		Average Wages	
	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err
trend 1992 to 1997	0.551	0.110	-0.263	2.408	-8.036	5.712	-0.520	0.252	-11.071	8.558	1.602	1.105
trend 1997 to 2002	-0.525	0.178	-3.739	3.889	10.672	9.225	0.797	0.406	10.958	13.820	-2.724	1.778
trend 1992-1997*(fraction young in 1999)	1.638	0.118	-1.436	2.574	-22.369	6.104	-0.847	0.269	-27.577	9.145	1.205	1.134
trend 1997-2002*(fraction young in 1999)	-1.035	0.197	1.188	4.297	21.333	10.193	0.904	0.449	19.498	15.270	-1.327	1.897
trend 1992-1997*(fraction men among the 20 to 34 in 1999)	-1.763	0.204	0.606	4.456	23.335	10.570	1.358	0.465	30.938	15.835	-4.317	2.039
trend 1997-2002*(fraction men among the 20 to 34 in 1999)	1.436	0.331	9.078	7.216	-21.507	17.116	-1.852	0.754	-16.237	25.642	7.591	3.301
R-square	0.820		0.477		0.747		0.701		0.757		0.536	

Sources: Suse, 1992 to 2002. C ensus 1990 and 1999. The first 5 regressions use 10,505 observations; the last has 9,056.

Table 9

Variable	Number of Driving Schools		Total Operating Profit		Total Value-Added		Total Employment		Total Sales		Total Wages	
	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err
trend 1992 to 1997	0.551	0.110	0.633	4.102	17.828	11.167	0.628	0.496	42.793	17.931	12.962	7.444
trend 1997 to 2002	-0.525	0.178	-5.663	6.624	-5.503	18.033	-0.046	0.801	-25.391	28.957	-2.637	12.022
trend 1992-1997*(fraction young in 1999)	1.638	0.118	-1.425	4.384	81.298	11.933	4.252	0.530	147.010	19.161	62.260	7.955
trend 1997-2002*(fraction young in 1999)	-1.035	0.197	10.991	7.320	-0.780	19.926	-2.022	0.886	-42.737	31.996	-6.201	13.284
trend 1992-1997*(fraction men among the 20 to 34 in 1999)	-1.763	0.204	-0.545	7.590	-72.110	20.662	-3.105	0.918	-149.258	33.179	-53.570	13.775
trend 1997-2002*(fraction men among the 20 to 34 in 1999)	1.436	0.331	8.152	12.291	18.720	33.459	1.012	1.487	80.267	53.727	11.543	22.306
R-square	0.820		0.415		0.819		0.793		0.811		0.815	

Sources: Suse, 1992 to 2002. C ensus 1990 and 1999. The first 5 regressions use 10,505 observations; the last has 9,056.

Table 10

Variable	Number of Driving Schools		Average Operating Profit		Average Value-Added		Average Employment		Average Sales		Average Wages	
	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err
trend 1992 to 1997	1.174	0.105	-0.800	2.229	-16.309	5.293	-0.830	0.233	-21.489	7.929	2.082	1.016
trend 1997 to 2002	-0.941	0.170	-3.292	3.620	18.463	8.596	1.120	0.378	18.566	12.877	-3.254	1.651
trend 1992-1997*(fraction men among the 20 to 34 in 1999)	-2.119	0.208	0.900	4.434	27.754	10.527	1.520	0.463	36.795	15.770	-4.616	2.022
trend 1997-2002*(fraction men among the 20 to 34 in 1999)	1.703	0.338	8.829	7.195	-25.537	17.083	-2.010	0.752	-20.834	25.591	7.927	3.286
R-square	0.812		0.477		0.747		0.701		0.751		0.536	

Sources: Suse, 1992 to 2002. Census 1990 and 1999. The first 5 regressions use 10,505 observations; the last has 9,056.

Appendix Table A.1

Descriptive statistics

Sex	Age	Year	All Driver's license			Low incomes Driver's license		
			nb obs	Std deviation		nb obs	Std deviation	
Men	under 25	1983	1410	0.73	(8.7)	217	0.59	(9.7)
		1991	1667	0.68	(8.9)	669	0.60	(9.4)
		2001	1317	0.59	(10.0)	413	0.50	(10.4)
	more than 25	1983	7488	0.86	(6.8)	977	0.65	(9.3)
		1991	8401	0.89	(5.9)	2827	0.80	(7.6)
		2001	7946	0.91	(5.8)	1747	0.81	(8.1)
Women	under 25	1983	1605	0.52	(9.9)	317	0.35	(9.6)
		1991	1829	0.55	(9.6)	785	0.46	(9.6)
		2001	1319	0.51	(10.4)	458	0.41	(10.4)
	more than 25	1983	8115	0.53	(9.9)	1248	0.23	(8.3)
		1991	9271	0.65	(9.2)	3531	0.44	(9.6)
		2001	8802	0.71	(9.3)	2295	0.47	(10.4)

Source: Global Transport surveys (1983, 1991 and 2001) from the “Direction Regionale de l’Equipement d’Ile de France”

Appendix Table A.2

Reduced Form: Employment and the Draft

	Age 23 - 30		Age 23-24 and 27-30		Age 23-24 and 29-30		Age 23 to 30 for Middle-High Income Individuals		Age 23 to 30 for Middle-High Income, Out of Paris	
	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err	Estimate	Std Err
Intercept	0.5494	0.0217	0.5494	0.0213	0.5494	0.0218	0.6380	0.0237	0.6370	0.0265
Year 1983	-0.0061	0.0156	-0.0044	0.0192	-0.0285	0.0282	-0.0443	0.0163	-0.0571	0.0181
Age<25 in 1991	-0.0682	0.0318	-0.0665	0.0334	-0.0906	0.0398	-0.1084	0.0342	-0.1349	0.0374
Women, age<25 in 1983-1991	0.1617	0.0332	0.1600	0.0347	0.1841	0.0409	0.1957	0.0350	0.2053	0.0387
Women, age>=25 in 2001	0.1830	0.0245	0.2150	0.0252	0.2256	0.0292	0.1869	0.0266	0.1786	0.0297
Women, age>=25 in 1983-1991	0.1695	0.0241	0.1688	0.0250	0.1763	0.0291	0.1936	0.0266	0.2009	0.0297
Men*(Year 1983)*(age <25)	0.2776	0.0343	0.2759	0.0357	0.3000	0.0418	0.2466	0.0352	0.2497	0.0390
Men*(Year 1991)*(age <25)	0.1856	0.0439	0.1839	0.0447	0.2080	0.0501	0.2171	0.0482	0.2460	0.0527
Men*(Year 1983)*(age >=25)	0.3684	0.0292	0.3841	0.0320	0.4113	0.0414	0.3406	0.0309	0.3768	0.0344
Men*(Year 1991)*(age >=25)	0.3243	0.0243	0.3508	0.0251	0.3677	0.0295	0.2771	0.0267	0.2720	0.0295
Men*(Year 2001)*(age >=25)	0.2996	0.0249	0.3374	0.0256	0.3723	0.0299	0.2573	0.0267	0.2698	0.0298
Men*(Year 2001)* (age < 25)	0.0259	0.0306	0.0259	0.0302	0.0259	0.0309	0.0098	0.0333	0.0099	0.0364
R square	0.06		0.07		0.08		0.04		0.05	
Number of observations	10,240		7,679		4,973		7,301		5,896	
F test, p-value	8.3	0.004	8.8	0.003	10.5	0.0012	13.5	0.0002	17.86	0.0001

Notes: Source Enquête Transport Ile de France (1983, 1991, 2001). The F-test is for the equality of (Men in 2001 with age above or equal to 25 minus Men in 2001 with age 23 and 24) with the same difference in 1991.