

09-15-2022

Tougher Licensing Requirements and Quality Outcomes: Driving Instructors in the United Kingdom in **Grease or Grit?: International Case Studies of Occupational Licensing and Its Effects on Efficiency and Quality**

Maria Koumenta, Editor  
*Queen Mary,  
University of London and  
Knee Center for the  
Study of Occupational  
Regulation*

Mark Williams  
*Queen Mary,  
University of London*

Follow this and additional works at: [https://research.upjohn.org/up\\_press](https://research.upjohn.org/up_press)

 Part of the [Labor Economics Commons](#)

---

Citation

Koumenta, Maria and Mark Williams. 2022. "Tougher Licensing Requirements and Quality Outcomes: Driving Instructors in the United Kingdom." In *Grease or Grit?: International Case Studies of Occupational Licensing and Its Effects on Efficiency and Quality*, Morris M. Kleiner and Maria Koumenta, eds. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, pp. 31-50. <https://doi.org/10.17848/9780880996877.Ch3>

This title is brought to you by the Upjohn Institute. For more information, please contact [repository@upjohn.org](mailto:repository@upjohn.org).

# **Grease or Grit?**

## **International Case Studies of Occupational Licensing and Its Effects on Efficiency and Quality**

Morris M. Kleiner  
Maria Koumenta  
*Editors*

2022

W.E. Upjohn Institute for Employment Research  
Kalamazoo, Michigan

## Library of Congress Cataloging-in-Publication Data

Names: Kleiner, Morris M., editor. | W.E. Upjohn Institute for Employment Research.

Title: Grease or grit? : international case studies of occupational licensing and its effects on efficiency and quality / Morris M. Kleiner, Maria Koumenta, editor.

Description: Kalamazoo, Michigan : W.E. Upjohn Institute for Employment Research, 2022. | Includes bibliographical references and index. |

Summary: "The book provides a comprehensive approach to whether a dominant governmental institution in the labor market-occupational licensing-greases, which enhances, or on the other hand results in grit, which diminishes the efficient workings of labor and service markets in parts of Europe and the United States. The detailed case studies in the book indicate that an increase in the availability of service providers or enhanced competition does not have negative effects on the quality of the services provided, prices, or survey measures of consumer satisfaction" — Provided by publisher.

Identifiers: LCCN 2022026785 (print) | LCCN 2022026786 (ebook) | ISBN 9780880996860 (paperback) | ISBN 9780880996877 (ebook)

Subjects: LCSH: Occupations—Licenses—United States. |

Occupations—Licenses—Europe. | Labor market—United States. | Labor market—Europe.

Classification: LCC HD3630.U6 G74 2022 (print) | LCC HD3630.U6 (ebook) | DDC 331.120973—dc23/eng/20220728

LC record available at <https://lcn.loc.gov/2022026785>

LC ebook record available at <https://lcn.loc.gov/2022026786>

© 2022

W.E. Upjohn Institute for Employment Research  
300 S. Westnedge Avenue  
Kalamazoo, Michigan 49007-4686

The facts presented in this study and the observations and viewpoints expressed are the sole responsibility of the author. They do not necessarily represent positions of the W.E. Upjohn Institute for Employment Research.

Cover design by Carol A.S. Derks.

Index prepared by Diane Worden.

Printed in the United States of America.

Printed on recycled paper.

# 3

## **Tougher Licensing Requirements and Quality Outcomes**

### **Driving Instructors in the United Kingdom**

Maria Koumenta

*Queen Mary, University of London and  
Knee Center for the Study of Occupational Regulation*

Mark Williams

*Queen Mary, University of London*

The driving instructor profession is regulated in most countries based on road safety and consumer protection against accidents and fatalities. However, the regulations and criteria are inconsistent across Europe. The U.K., for example, has one of the least restrictive regimes for becoming a driving instructor. Although there are stipulations regarding the type of training required, the corresponding exams, and subsequent testing for competence, there are no preconditions regarding primary or secondary education, the length of required training, or mandatory traineeship. This is in sharp contrast with some European counterparts, where a postsecondary education is often required (such as in Finland, Greece, and Romania), as well as lengthy training provisions (e.g., 300 hours in Belgium; 630 hours in France; two years in Estonia, Greece, and Ireland). This cross-country variation raises questions about whether higher levels of licensing stringency are correlated with better safety outcomes for road users.

The first initiative to formalize eligibility to teach individuals driving skills in the U.K. came in the late 1950s from the Motor Schools Association and the Royal Automobile Club (both independent associations formed by owners of driving schools). The register of approved driving instructors (ADIs) was accepted by the U.K. Parliament in 1964, and in 1970 membership of the register became compulsory, meaning

that any person giving paid instruction to drive a motor car whose name is not on the register is guilty of an offense. Thus, in occupational regulation terms, driving instructors in the U.K. are licensed. As we show in the next section, however, a dual market of fully trained (licensed) and trainee driving (in the process of becoming licensed) instructors was in operation, both of which were eligible to provide driver teaching.

More recently, there have been changes involving the tightening of licensing requirements and the de facto abolition of the dual market for driving instruction. In this chapter we assess the impact of these proposals on the quality of the instructors and the service provided. In particular, we examine whether stricter licensing regulations imposed on driving instructors have resulted in better-quality providers operating in the market and better outcomes for learners as measured by their success in various aspects of the driving test. Empirically this is achieved by comparing such outcomes before and after the reforms took place.

## **REGULATORY CONTEXT**

The Driver and Vehicle Standards Agency is the U.K. regulatory body that manages the register of licensed driving instructors. To qualify, applicants must pass a criminal record check, followed by success in a three-part test administered by the agency:

- Part 1: a computer-based driving/instructional theory and hazard perception test
- Part 2: a practical driving ability test
- Part 3: a practical instructional ability test

After candidates pass the first two tests, they can then apply to the regulatory body for a trainee license, which allows them to give paid driving instruction without supervision by a licensed instructor before taking the Part 3 qualifying test. The cost of taking all the required tests, obtaining a trainee license, and joining the ADI Register is approximately \$1,030, of which about \$150 goes toward the cost of the Part 3 test (i.e., the cost of moving from a trainee to an ADI). Registration is for four years, after which there is a renewal application. The total fee covers the issue of the ADI license and other administration costs,

the cost of the check test, and a further Disclosure and Barring Service check prior to renewing their license at the end of the four-year period.

Only certified ADIs or potential ADIs who have been granted a trainee license by the regulator (hereafter “trainee instructor”) can give paid, in-car driving instruction. In practice, the driving instructor profession in the U.K. operates as a dual market of certified ADIs (fully qualified to provide instruction), and partially qualified (trainee) driving instructors also legally allowed to give instruction. The difference between the two is that the former have passed Part 3 of the test, whereas the latter have only passed Parts 1 and 2. Therefore, in theory, it is left to the consumer to choose between the two service providers. Although instructors are legally required to inform the students of their status (through displaying their badge when they are giving instruction), anecdotal evidence collected by the Driver and Vehicle Licensing Agency showed that learners tend not to be aware of whether they are receiving instruction from a fully approved (ADI) or a trainee instructor, and the fee they were paying was often the same regardless of the instructor’s status.

## **THE REFORM PROPOSALS**

In 2013, the U.K. government reviewed the regulatory framework for driving instructors. Concerns were raised regarding the extent to which, after qualifying as fully approved instructor, individuals started deviating from the guidance provided by the Driver and Vehicle Licensing Agency. For this reason, in 2014 a new “standards check” was introduced that requires ADIs to undergo further assessment of their instructional methods at least once during the four-year period that their license is valid; otherwise, they risk being dropped from the register. The process involves an assessor observing and grading the ADI; the grade range is A (indicating a high standard of driving instruction), B (sufficient level of competence), or Fail (unsatisfactory driving instruction performance). The new system was largely seen as a tightening of the right-to-practice regulations in the industry.

Additional concerns emerged regarding the low completion rates among trainee driving instructors as evidenced by the large proportion

of individuals who had completed the minimum required training (i.e., Parts 1 and 2) but had not progressed to complete the process (i.e., Part 3) and become ADIs. There was also evidence of high failure rates among those trainee instructors in the Part 3 test on instructional ability, despite multiple attempts. As a result, the market was populated by a mix of fully trained instructors and trainees (many with questionable ability to ever qualify), both of which could offer identical services and often at a similar price. Overall, this regime was seen to be compromising the quality of instruction received by prospective drivers, disincentivising trainee driving instructors from fully qualifying, and not providing transparency to the public, thus driving down standards in the market. As a result, the government put forward proposals to reform the trainee license scheme. In addition to improvements in the qualification tests, the proposals stipulated that trainee license holders cannot provide driving lessons for money unless they are accompanied by a fully licensed ADI for at least part of the duration of the total instruction.

## **RELEVANT LITERATURE**

There is a marked absence of studies on the regulation of driving instructors and its impact on quality. One exception is a study on the deregulation of Portuguese driving schools in the late 1990s (Seim and Vitorino 2011). Prior to the reform, driving schools were heavily regulated by the state. There were restrictions on the numbers of licenses issued based on population size and minimum distance requirements from competitors. Additionally, the state imposed fee caps on the schools' pricing. These regulations were partially lifted in 1998, and preliminary results show that it had a direct impact on service availability as evidenced by a 116 percent increase in the number of driving schools by 2010. Avrillier, Hivert, and Kramarz (2010) explore the effect of a demand shock (the end of conscription in France, which automatically provided young French men with a driving license) on the heavily regulated French driving school industry. Their results demonstrate that as a result of the rigid entry restrictions (which included a long and costly path to become an instructor), the industry could not respond by quickly increasing supply (as it would have done if it was

competitive), and therefore service availability suffered. The authors also find an increase in the price of driving lessons (even when the industry finally started growing) and a reduction in the number of individuals getting their licenses (which can be attributed to either better screening of low-skilled students or a deterioration of the quality of instruction offered by driving instructors).

Turning to the wider literature, we find some studies that parallel the rationale and quality measures proposed here. Several studies have examined the relationship between regulation stringency within the teaching profession and its effect on quality, using student test scores as an indicator of the latter. We deem these to be of interest, given that driving instructors are also engaged in a form of teaching. An early study by Kleiner and Petree (1988) examines the impact of variations in the restrictiveness of licensing on educational performance using state-level data for the 1972–1982 period. Their measures of performance include the average level of the SAT and ACT standardized test scores and the proportion of students who graduate high school; their results are mixed and dependent on the estimation technique. With regard to the standardized scores, the authors find a positive relationship between regulation and standardized test scores, while the reverse is true for graduation rates. In a similar vein, Angrist and Guryan (2004) study the relationship between testing prospective teachers (to certify they meet minimum standards) and subsequent performance by students. Their evidence is also mixed in that while students of accredited teachers do better on the Praxis test, teacher testing has a negative effect on the average SAT score of a teacher's undergraduate institution. Kane, Rockoff, and Staiger (2005) also find little difference in student achievement between students taught by licensed, unlicensed, and certified teachers in the same schools in New York, while Kane and Staiger (2005), using a quality measure based on improvements in student achievement, again find no evidence that licensed teachers are more effective.

## **DATA AND METHODOLOGY**

The Department of Transport and the Driver and Vehicle Licensing Agency produce publicly available data on driving test pass rates for

students and instructors that are on the U.K. government's website in a series of Excel files. The raw files are not organized in a consistent manner by geographical and time units. To remedy this, we aggregate the geographical units up to postcode level, maximizing the number of observations within panels. We are thus left with a data set of observations (time points) nested within U.K. postcode areas.

Within these files, we extract four measures of quality relating to the instruction and service. First, driving instructor quality within postcode by time cells is proxied by driving instructor practical test pass rates (Part 2 test). Second, quality of service is proxied by practical driving test pass rates of students. This is supplemented with two more indicators of service quality: practical test pass rates at first attempt and practical test pass rates at the first attempt with zero faults (a perfect test score).

Our goals in this chapter are as follows. First, we want to establish whether the reforms affected the quality of instructors as measured by their success in the Part 2 test. The reforms would have had a positive effect on the quality of instructors if it deterred those with substandard skills from entering the occupation. As such, we would expect to see an increase in the pass rates of instructors in the Part 2 test. Second, using the three indicators of learner outcomes (practical driving test pass rates, pass at first attempt, and pass at first attempt with zero faults), we examine whether the quality of service changed after the reform. Our analytical approach follows similar studies on the impact of licensing on teachers where teacher quality is derived from variables relating to student performance in relevant tests (see section on related literature). Third, we examine whether the reforms discouraged substandard trainee instructors from entering the occupation and/or encouraged them to exit it, as well as whether it incentivized trainees to take the tests so that they can fully qualify as fully licensed trainers (i.e., to switch from trainees to ADIs). In the final part of our analysis, we use price data from the U.K. Office for National Statistics to estimate changes in the cost of driving lessons.

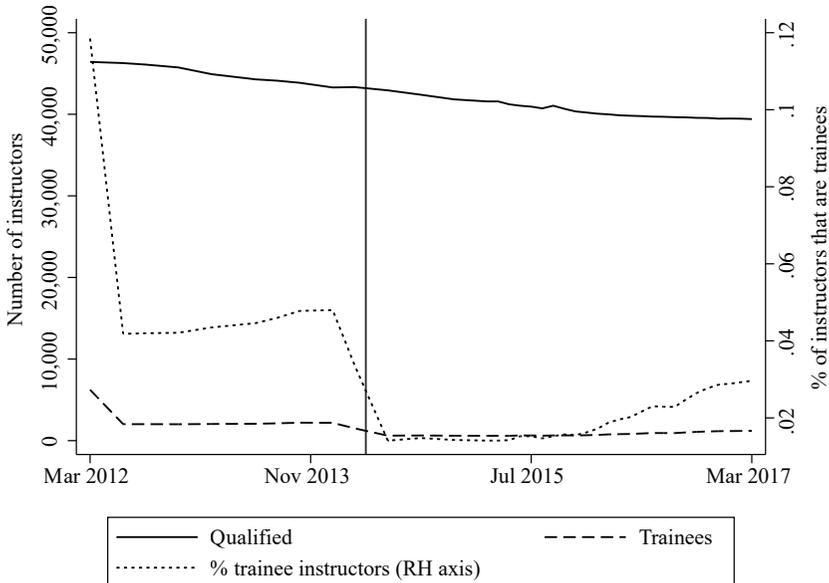
The analysis examines descriptive trends in the numbers of trainees and fully qualified instructors over time and descriptive trends in several quality indicators, particularly before and after the reform. We extend this by examining variation in trends pre- and postreform within postcode areas by whether postcode areas fell into the top, middle, or

bottom tercile in terms of the share of instructors who were trainees prior to the reform. This is an especially informative analysis as we expect the reform to affect both instructor and learner outcomes through its effect on the ratio of trainees to fully qualified instructors. Finally, we test the robustness of the descriptive associations by controlling for other factors that can account for the observed trends.

## RESULTS

We begin by describing key aggregate trends in the data, starting with the number of instructors (see Figure 3.1). As can be seen, over time there has been a sharp decline in the number of trainee instructors

**Figure 3.1 Number of Qualified and Trainee Driving Instructors over Time**

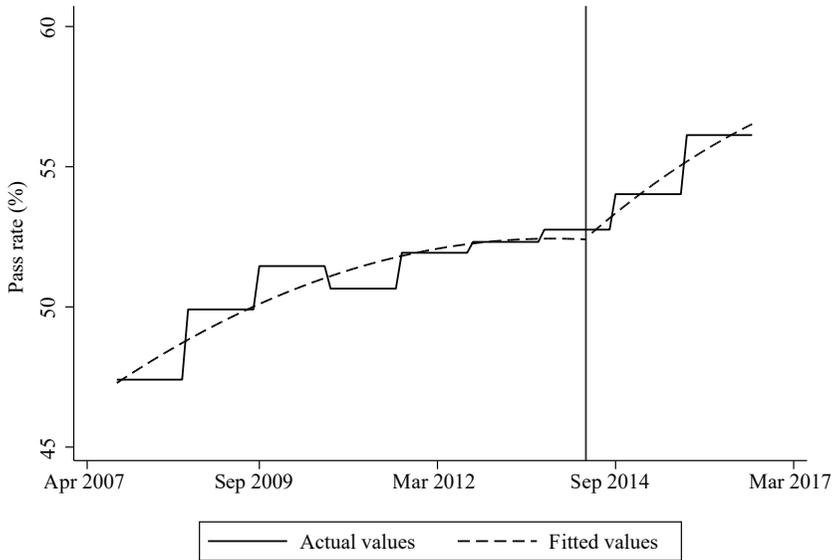


SOURCE: Authors' calculations using data from the Department of Transport and the Driver and Vehicle Licensing Agency.

and a smaller decline of qualified instructors (ADIs). Overall, the number of trainees is much smaller than the number of qualified instructors. The proportion of instructors who are trainees has fallen relatively dramatically, from around 12 percent in March 2012 to around 3 percent in March 2017. Examining the timing of the decline, it appears there were some anticipatory effects of the reform proposals (which became operational in April 2014). It is possible, for example, that trainee instructors who did not feel competent enough to pass the Part 3 exam and qualify as ADIs exited the market, leaving only the more competent ones active. Unfortunately, the data do not go back further in time, so we are unable to provide a longer-term picture to put this decline into context. Nonetheless, on the surface, the reform proposals have influenced the composition of instructors, which translates to fewer driving instructors in the market.

Turning to trends in the indicators of instructor quality, there was a 4 percentage point increase in the pass rate of trainee instructors in Part 2 (the driving practical) between March 2012 and March 2017, indicating that the average quality of instructors (at least new entrants and as judged by their success in this exam) has been improving over time (Figure 3.2). The rate of upward trend in pass rates seemed to increase after April 2014 (see the fitted values that fit a quadratic trend term). One possible explanation is that in anticipation of the reform, which would make entry and operation in the market more stringent, the low-quality prospective driving instructors were discouraged from entering the occupation. Overall, we can rule out explanations relating to the exam becoming easier or simpler, or those relating to any improvements in the training and support prospective driving instructors received between the two periods, as we know that the procedure and requirements remained the same.

We examine trends in instructor pass rates by whether postcode areas fall into the bottom, middle, or top third of the distribution of shares in trainee instructors for the period prior to the reform (Figure 3.3). If the reform increased the average quality of trainee instructors (as measured by pass rates on the instructor practical tests), then we might see steeper increases in pass rates in those areas that initially had a higher share of trainee instructors (as their higher share in those areas would translate to higher pass rates). While we find definite differences in pass rates prior to the reform proposals, with pass rates being

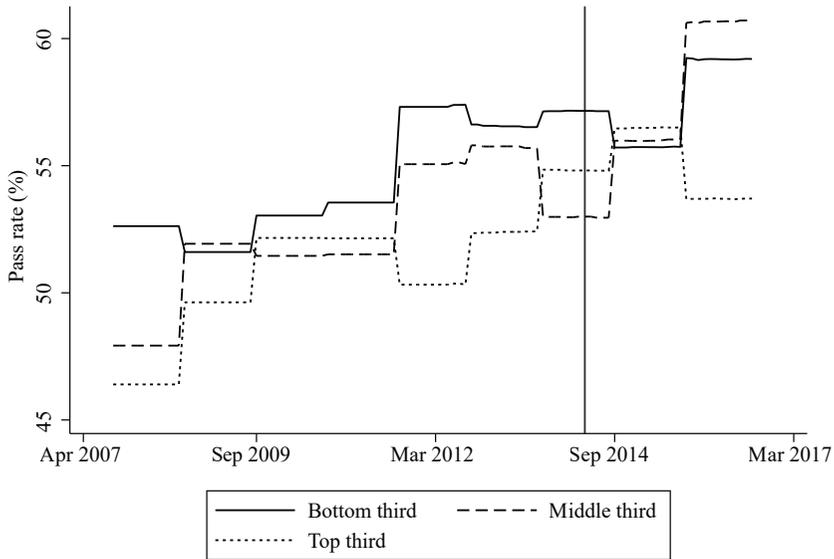
**Figure 3.2 Instructor Practical Test Pass Rates over Time**

NOTE: Authors' calculations using data from the Department of Transport and the Driver and Vehicle Licensing Agency.

the lowest in areas with the highest share of trainee instructors, pass rates seem to improve the most in areas that had lower shares of trainee instructors to begin with.

Turning to our proxies for service quality for learners, before the reform, we observe a general upward trend in total practical test pass rates (Figure 3.4)—the part of the qualification process that is affected by driving instructors. After the reform, trends in practical test pass rates slowed and levelled out. By contrast, the theory test pass rates have been steadily falling, likely due in part to stricter standards imposed by the Driver and Vehicle Licensing Agency. Since the theory test must be taken before the practical test, the upward trend in practical pass rates may be due to elimination of very low ability would-be drivers who cannot pass the theory test as the procedures became stricter rather than an improvement in the quality of tuition received by would-be drivers. In Figure 3.5, we explore two more fine-grained measures of performance in the practical test: pass rates at first attempt (as learners

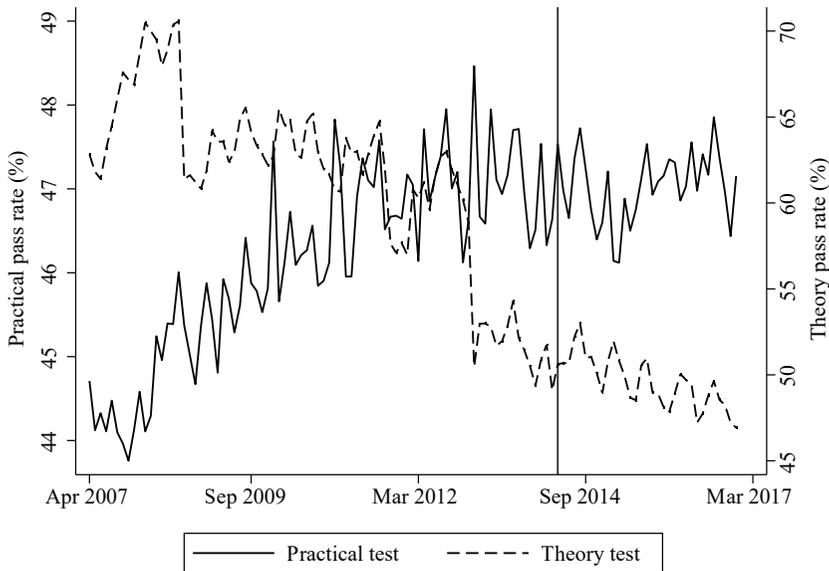
**Figure 3.3 Instructor Practical Test Pass Rates—by Prereform Trainee Instructor Share Tercile**



SOURCE: Authors’ calculations using data from the Department of Transport and the Driver and Vehicle Licensing Agency.

can take the test multiple times if they fail) and zero-faults pass rates at first attempt (obtaining a perfect score on their first attempt). Here too we find similar trends as with the overall pass rates for the practical test: a general upward trend that levels out after the reform proposals. On the face of it, then, it appears the reform has had no visible effect on the quality of the service as measured by performance on the practical test by learners.

Finally, we explore whether trends in practical test pass rates vary over time according to the share of instructors who were trainees prior to the reform (Figure 3.6). While we find clear differences in pass rates according to the share of instructors who were trainees, with postcodes in the bottom third having significantly lower pass rates than all of the postcodes, we find trends that are broadly similar to those in Figure 3.4. Consequently, even in this more fine-grained approach, we find little evidence that the reform resulted in higher pass rates for learners.

**Figure 3.4 Learner Practical and Theory Test Pass Rates**

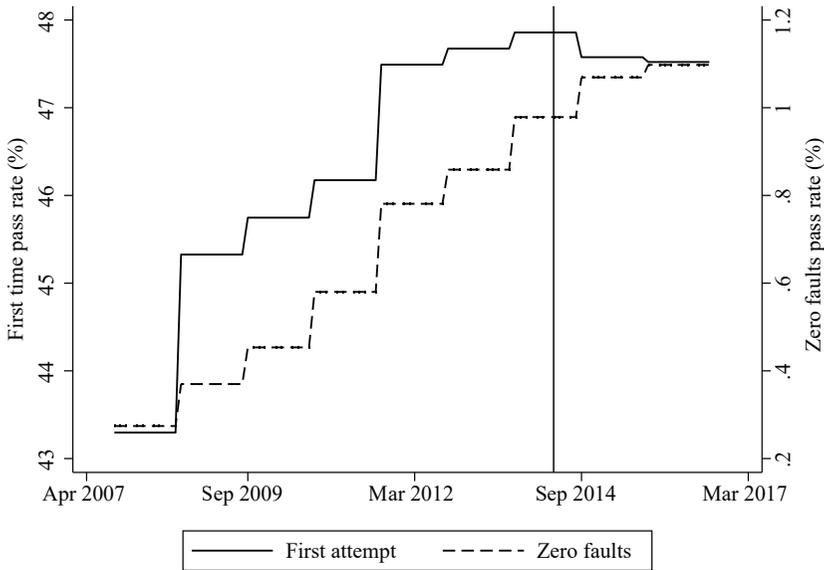
SOURCE: Authors' calculations using data from the Department of Transport and the Driver and Vehicle Licensing Agency.

### Multivariate Estimates

Our analysis so far has been descriptive in nature. As such, it does not consider other factors that might account for the associations we observe in the previous graphs. We can improve on this approach by comparing each of the quality indicators before and after the reform, stripping out all the time-invariant factors that might affect the outcomes of interest.<sup>1</sup> In terms of exploring the effect of the reform on instructors, we examine four outcomes (which relate to our previous descriptive analysis):

- 1) The number of trainee instructors. This is a proxy for the number of people wanting to enter the profession as an ADI. If this decreased after the reform, it could signify that new and possibly lower-skilled individuals were discouraged from entering the profession or decided to exit because of concerns about their ability to qualify (i.e., pass the Part 3 test).

**Figure 3.5 Learner Practical Test Pass Rates—First Attempt and Zero Faults**

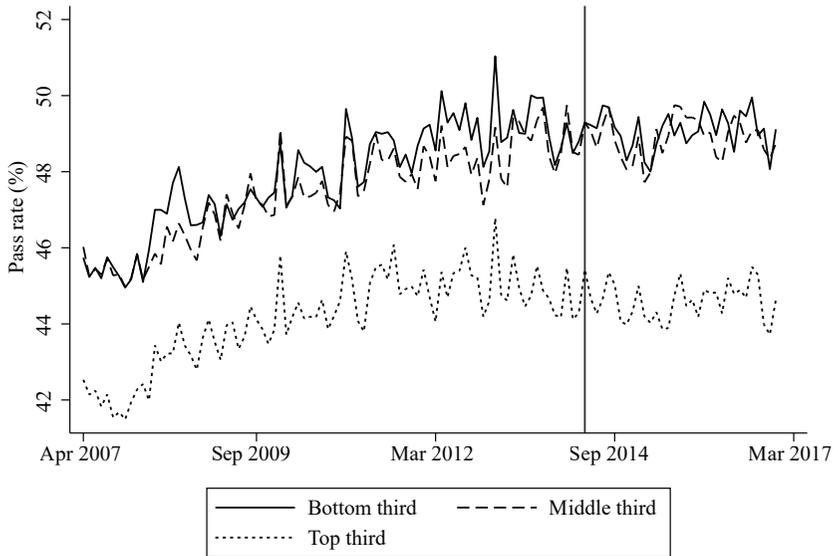


SOURCE: Authors’ calculations using data from the Department of Transport and the Driver and Vehicle Licensing Agency.

- 2) The number of Part 3 tests taken. If these decrease, it could also signify discouraging new and low-quality entrants.<sup>2</sup>
- 3) The pass rate of instructors taking the practical test (defined as the percentage of passes over the number of tests taken). If the pass rate increases, it may signify an increase in quality of new instructors after the reform.
- 4) The number of qualified instructors before and after the reform proposals.

Starting with the estimates for instructor outcomes (Table 3.1), we find that the number of trainee instructors fell in the period following the reform proposals relative to before it (Column 1), and that this is robust to the general time trend (Column 2). This translates to roughly 78 percent fewer trainee instructors within postcodes on average in the period after the reforms. Nonetheless, the number of Part 3 tests being

**Figure 3.6 Learner Practical Test Pass Rates by Prereform Trainee Instructor Share Tercile**



SOURCE: Authors' calculations using data from the Department of Transport and the Driver and Vehicle Licensing Agency.

taken appears to be higher than the general trend after the reform proposals once the time trend is taken into account (Column 4), while the pass rate of trainees was no different before and after the reform proposals once general time trends are taken into account (Column 6). Finally, the number of qualified instructors was lower after the reforms but only marginally—by roughly 1.7 percent (Column 8). Taken together, these results imply that more tests are being taken postreform than expected, but at the same time the number of instructors is falling despite the pass rate remaining stable, perhaps due to exiting.

We examine another four outcomes in terms of the effect on driving students. First, the number of practical tests taken by students. If this falls postreform, it may indicate a fall in the access to instructors, and so fewer people are taking the test within a given time period. Second, the pass rate of the practical test (defined as the percentage of passes over the number of tests taken). This is a straightforward indicator of

**Table 3.1 Fixed-Effects Regression Models of Instructor Outcomes Pre- and Postreform**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Number of trainee instructors (log)		Number of Part 3 tests (log)		Part 3 test pass rate		Number of qualified instructors (log)	
Pre vs. post period	-1.017*** (0.047)	-1.531*** (0.071)	-0.811*** (0.054)	0.260*** (0.066)	4.243*** (1.122)	-1.442 (1.272)	-0.112*** (0.014)	-0.017*** (0.004)
Time trend		0.015*** (0.002)		-0.019*** (0.001)		0.102*** (0.017)		-0.003*** (0.000)
Constant	2.485*** (0.034)	1.379*** (0.138)	4.680*** (0.014)	5.517*** (0.047)	52.561*** (0.280)	48.121*** (0.856)	5.483*** (0.010)	5.687*** (0.039)
R <sup>2</sup>	0.741	0.755	0.623	0.812	0.464	0.501	0.995	0.996
N obs	4,752	4,752	7,128	7,128	7,116	7,116	4,752	4,752
N panels	147	147	78	78	78	78	147	147

NOTE: \*significant at the 0.05 level; \*\*significant at the 0.01 level; \*\*\*significant at the 0.001 level. Robust standard errors clustered on postcode area in parentheses.

the quality of instruction. Third, the pass rate at first attempt. Fourth, the proportion of passes at the first attempt with zero faults (a perfect score). These latter two are also straightforward indicators of the quality of instruction.

Turning to the estimates for learner outcomes (Table 3.2), we examine the number of practical tests taken by students and find that there is no difference before and after the reforms (Column 1), but when we take into account the reduction in practical tests through the time trend, the number of tests taken is about 13 percent higher (Column 2). We also find higher pass rates after the reform than before it (Column 3), but once we consider the general upward trend in pass rates (as previously mentioned, perhaps this is due to the tightening up of the theory test procedures), we find the effect in fact becomes negative. There is a similar pattern of both higher pass rates at first attempt and zero faults at first attempt being higher in the period following the reform, but yet again, once we factor in the general time trends in these two outcomes, the pass rates in the period postreform become lower than before it. Overall, these improved estimates further confirm the robustness of our descriptive analysis.

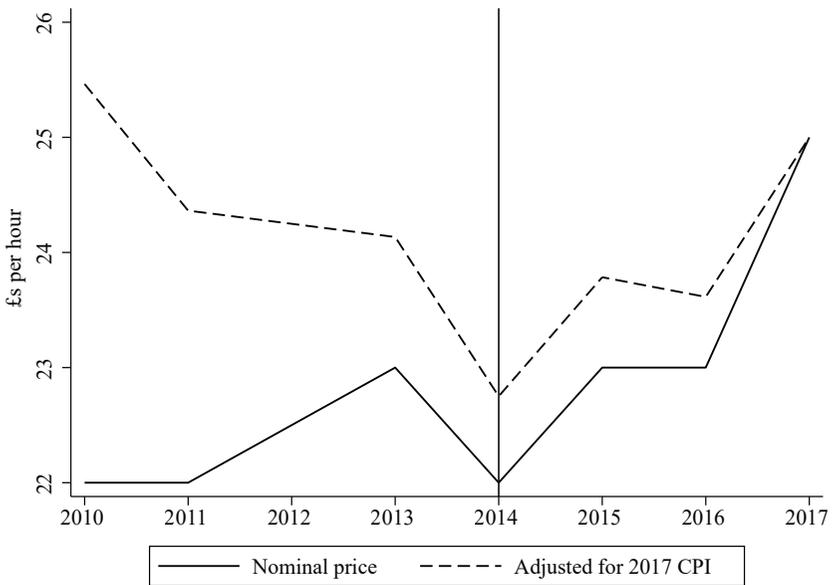
## **PRICE OF DRIVING LESSONS**

In the final part of our analysis, we use data from the U.K. Office for National Statistics to calculate the price of driving lessons (one hour) before and after the reform proposals. We present data on both the nominal price and the price adjusted for 2017 CPI. As Figure 3.7 shows, after a period of falling real prices, the price of driving lessons increased after the reform proposals. Although the price of a driving lesson at the cut-off date of the last available data is still lower than it was before the reform proposals, there is a clear upward trajectory. One possible explanation for this trend relates to the lower availability of driving instructors in the market after the reform proposals, which has enabled incumbents to increase their fees.

**Table 3.2 Fixed-Effects Regression Estimates of Learner Outcomes Pre- and Postreform**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Number of practical tests taken		Test pass rates		Practical tests pass rate(first attempt)		Practical test pass rates (zero faults)	
Pre vs. post period	-0.009 (0.022)	0.127*** (0.020)	1.283*** (0.269)	-1.147*** (0.263)	1.752*** (0.257)	-1.533*** (0.234)	0.535*** (0.043)	-0.032 (0.046)
Time trend		-0.002*** (0.000)		0.042*** (0.005)		0.061*** (0.005)		0.011*** (0.001)
Constant	6.766*** (0.006)	6.866*** (0.017)	47.888*** (0.073)	46.107*** (0.240)	47.189*** (0.066)	44.426*** (0.286)	0.647*** (0.011)	0.170** (0.052)
R <sup>2</sup>	0.906	0.909	0.744	0.763	0.835	0.875	0.638	0.729
N obs.	13,412	13,412	13,400	13,400	12,396	12,396	12,396	12,396
N panels	116	116	116	116	116	116	116	116

NOTE: \*significant at the 0.05 level; \*\*significant at the 0.01 level; \*\*\*significant at the 0.001 level. Robust standard errors clustered on postcode area in parentheses.

**Figure 3.7 Prices for One-Hour Driving Lessons**

SOURCE: Authors' calculations using Office for National Statistics data.

## CONCLUSION

Entry into the profession of driving instructor in the U.K. has been subject to compulsory training requirements, although in practice there was a dual market of fully trained and trainee driving instructors who both could offer instruction for payment. This study aimed to explore the impact of the proposals to reform the driving instructor occupation in the U.K. In particular, the state was concerned that the quality of instruction offered to prospective drivers was compromised because trainee driving instructors often were not able to finish their training and therefore may be unable to provide the same quality instruction as fully licensed instructors. The 2014 reform initiatives were designed to increase the stringency of regulations such that only ADIs or trainees accompanied by ADIs would be able to offer paid tuition. In addition, the U.K. made the requirements to demonstrate continuing professional

competence more strict. In this study, we assess the effect that the proposed changes had on the quality of service.

Starting with service availability, we looked at various outcomes for instructors. Our results show that the number of trainee instructors fell in the period following the reform proposals relative to before, with around 78 percent fewer trainee instructors within postcodes on average in the period after. There was also a small drop in the number of trainee driving instructors qualifying as ADIs. We interpret this as a sign that the reform proposals discouraged instructors in the labor market from continuing to practice (e.g., those that had previously failed the Part 3 test) or from entering the market in the first place. In that sense, the reform proposals meet their goals. However, the question is whether this reduced availability of driving instructors in the market (which can be adverse for consumers) translated to any benefits for the other quality indicators.

The reform proposals also seem to have put some pressure on trainee instructors to take the relevant tests so they could qualify (as the reform proposals intended), but we do not observe an improvement in the Part 3 test pass rates before and after. As such, we find no evidence of improvement in the quality of instructors. Turning to the outcomes for learners, we note that in addition to the proposed restrictions on the ability of trainee instructors to provide fully unsupervised instruction, we have the parallel improvements in the standards check (i.e., the review of instructional methods that happens once every four years), both of which were intended to affect the quality of instruction offered. Overall, we do not find any improvement in the three quality measures of learner performance. If anything, overall pass rates, pass rates at first attempt, and zero faults all become negative (once time trends are considered). Why these measures deteriorate is an open question, but our broad conclusion is that the reform proposals are certainly not showing an improvement in the quality of driving students as we had expected.

Our final measures of quality relate to prices. We find that the price of a one-hour lesson increased after the reform proposals. This is in line with expectations relating to how the lower supply of practitioners in the market is likely to affect the cost of these services. Given that the state does not specify a minimum number of driving lessons learners have to do before taking the driving test, it is possible that the trend of increasing prices we observe is affecting demand for driving lessons.

To conclude, the reform proposals attempted to make access to the driving instructor occupation more stringent. From the evidence presented here, it is doubtful whether this has resulted in better quality outcomes. Our findings echo other studies that have on average failed to show that more intense driver education courses produce safer drivers. A recent review of international data on accidents by the U.S. Department of Transportation (2009), for example, concludes that there is little evidence that the crash records of those who underwent intensive formal training are different from those who did not. Instead, according to the report, traffic management, attitudes, motivations, peer influences, and cognitive and decision-making skills are more influential in shaping driving behaviors (see also Abdel-Aty and Radwan [2000]; French et al. [1993]; and Sümer [2003] for further evidence). While a detailed analysis of this body of work is beyond the scope of this study, the findings have led many to question what should be expected of driving instructors and the stringency of the level of training to which they should be subject in order to meet such expectations (Waller 1978). A key contribution of our analysis to such policy debates is to show that service quality in the market for driving instruction does not change much with more stringent entry criteria. The fact that we find no evidence that increasing the hurdles to become licensed is associated with better outcomes deserves attention from policymakers in highly regulated jurisdictions. Overall, we think that the findings from this chapter make a contribution to these wider debates about the optimal level of regulation of driving instructors.

### Notes

1. This empirical strategy is known as fixed effects regression models in econometrics.
2. As before, we do not expect this to be affected by the cost of the Part 3 exam (i.e., £111 of a total of £750).

## References

- Abdel-Aty, Mohamed, and A. Essam Radwan. 2000. "Modelling Traffic Accident Occurrence and Involvement." *Accident Analysis & Prevention* 32(5): 633–642.
- Angrist, Joshua D., and Jonathan Guryan. 2004. "Teacher Testing, Teacher Education, and Teacher Characteristics." *American Economic Review* 94(2): 241–246.
- Avrillier, Paul, Laurent Hivert, and Francis Kramarz. 2010. "Driven Out of Employment? The Impact of the Abolition of National Service on Driving Schools and Aspiring Drivers." *British Journal of Industrial Relations* 48(4): 784–807.
- French, Davina J., R.J. West, James Elander, and John Martin Wilding. 1993. "Decision-Making Style, Driving Style, and Self-Reported Involvement in Road Traffic Accidents." *Ergonomics* 36(6): 627–644.
- Kane, Thomas J., and Douglas O. Staiger. 2005. "Using Imperfect Information to Identify Effective Teachers." Unpublished working paper. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.701.1105&rep=rep1&type=pdf> (accessed December 14, 2021).
- Kane, Thomas J., Jonah E. Rockoff, and Douglas O. Staiger. 2008. "What Does Certification Tell Us about Teacher Effectiveness? Evidence from New York City." *Economics of Education Review* 27(6): 615–631.
- Kleiner, Morris M., and Daniel L. Petree. 1988. "Unionism and Licensing of Public School Teachers: Impact on Wages and Educational Output." In *When Public Sector Workers Unionize*, Richard B. Freeman and Casey Ichniowski, eds. Chicago: University of Chicago Press, pp. 305–322.
- Seim, Katja, and Maria Ana Vitorino. 2011. "Efficiency Gains from Removing Entry and Price Controls: Evidence from a Change in Regulation." Wharton School Working Paper. Philadelphia: Wharton School, University of Pennsylvania.
- Sümer, Nebi. 2003. "Personality and Behavioral Predictors of Traffic Accidents: Testing a Contextual Mediated Model." *Accident Analysis & Prevention* 35(6): 949–964.
- U.S. Department of Transportation, National Highway Traffic Safety Administration. 2009. *Feasibility Study on Evaluating Driver Education Curriculum*. Washington, DC: U.S. Department of Transportation.
- Waller, Patricia F. 1978. *Driver Performance Tests: Their Role and Potential*. Report No. DOT-HS-7-01698. Chapel Hill: University of North Carolina, Highway Safety Research Center.