The Heterogeneous Impact of COVID-19 on University Student´s Academic Performance

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Abstract

In this paper we study the pandemic's effects on the academic results of a group of university level students in a Chilean School of Economics and Business. We ask whether students from better socio-economic conditions outperformed those from poorer families. The hypothesis is that higher resources in terms of studying and living conditions, internet connections, and computer access would have contributed to increasing the gap among students from dissimilar backgrounds. Results obtained are consistent with this hypothesis, especially for those students coming from public schools. Using a differences-in-differences approach with fixed effects, we find an increase of about 40-50% in course dropping-out rates and about 30% reduction in course passing rates compared with students from private schools. Given the fact that some policies, mostly benefitting poorer students were implemented during the period, we can conclude that the gap could have potentially been even larger during the pandemic. We also find evidence showing that, after controlling for socio-economic status, women and students with lower admission scores were less affected, while no significant effect was found between regular and special admission types.

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1. Introduction

The COVID pandemic affected various dimensions of people's lives. This strong and lasting shock has had and will have great and hard-to-foresee consequences in several dimensions, creating many research questions that need addressing. In the educational field, some relevant inquiries have been made in how students' learning was affected, not only due to the changes in the teaching methodology that came with remote learning, but also regarding the economic and psychological effects that could have affected students and their families.

In many households, parents lost their jobs and/or suffered significant income reductions (ILO, 2020). Other negative effects on students' performance were associated with the contagion itself and/or the worries around catching the COVID. This may generate psychological stress, affecting the capability for fulfilling academic duties. Additionally, many students, mostly from low socioeconomic backgrounds, had not the adequate resources to attend virtual classes or were limited due to shared use of computers, internet access limitations, and lack of physical spaces for studying. These could have led to situations that generated a lower performance directly or indirectly through the stress and the anxiety. All of these factors could have contributed to increasing the gap[1] between students from low-income and high-income households.

What do we know about the pandemic effects and its differences across individuals? Did it disproportionately affect more students from low-income

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[1] We use the term gap for referring to the difference in performance between students from private schools and those from public/subsidized schools.

households and fewer resources? These are the type of questions that motivate our paper. The study was conducted using data of students belonging to School of Economics and Business at Universidad de Chile (Facultad de Economía y Negocios, FEN). Our main hypothesis is that fewer resources should have generated larger negative effects for students from lower income households. Since we do not have a direct variable for household income, we used the type of high school the student graduated from as a proxy. Given the large socioeconomic segregation present in Chile, students who graduated from public and subsidized schools generally belong to lower-income households compared to those who attended private schools (González 2017; Hernández 2015). Then, in our estimations, we compare the performance of students coming from private schools with those from public and subsidized schools.[2]

An interesting factor to consider in this particular context were the special policies implemented by FEN for helping low-income students to deal with virtual learning. Among them, the most important were to lend out laptops, routers and internet chips, and also financial resources for students belonging to households facing economic problems due to the pandemic. Parallel to this, FEN implemented some academic measures in order to facilitate the adjustment to the new conditions originated by COVID. One of them was the "*Eliminación Excepcional Covid-19" (EE)* policy which changed the requirements surrounding dropping classes. Before the

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[2] In Chile there are three main types of schools. Public schools offer essentially free education and are managed by local municipalities. Subsidized schools are private institutions that receive state funding and families pay an additional fee but their cost is generally lower than private schools. Private schools are fully funded by fees paid by the student's families. FEN enrollment is made up of 20% for public, 26% for subsidized and 53% for private school students.

pandemic, an official elimination process occurred during the first month of each semester. That process allowed a student to drop several courses after of being enrolled, but under certain limits. The student had to remain enrolled in a minimum number of classes. Any attempt to drop out past this point in time required a formal justification (such as a medical condition validated by a doctor). The EE process implemented in the pandemic allowed a student to drop any number of classes at any moment prior to final exams without the need of a valid justification. This policy started halfway into the Fall 2020 semester[3] and was maintained during 2021 but with a smaller time period to drop courses. All of these measures were aimed to help students due to the particular conditions of this period and, in general, they should be favored to those students from low-socioeconomic status that suffered disproportionately the health and economic consequences of COVID-19.

Our study belongs to the literature about the academic effects of the pandemic. It is interesting because there is not a consensus about the consequences of it. There is mixed evidence on the impact of COVID-19 in various contexts and dimensions. Particularly, and related to our study, González et al. (2020) using a 458 student sample from the Universidad Autónoma de Madrid found that students actually did better during the pandemic due to improving their study habits. Iglesias-Pradas (2021) shows similar results in students from the Universidad Politécnica de Madrid, but without detailing the reason(s) for the better performance. On the other hand, Finnegan (2021) finds that Irish students had a marginally worse performance on

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[3] The FEN fall semester starts in March and ends at the beginning of July; the spring semester starts in the last week of July and ends in November.

final exams, which was coupled with a lower self-perception of learning. Similarly, Orlov et al. (2021) found a decrease in assessment scores for a sample of economics students at four American universities.

Related to mental health, several studies have shown evidence of the negative impact of lockdowns and economic problems (Cohen et al., 2020; Aucejo et al., 2020; Atlam et al., 2022). In Chile, Duarte et al. (2021) found that nearly 20% of adults suffered from psychological stress during the pandemic, especially in women and those who expected to lose their jobs. In the particular case of higher education students, Mac-Ginty (2021) reports that 75% of the surveyed first-year Chilean college students expressed that their mood worsened during the pandemic. Similar to the evidence provided by Duarte et al. (2019), this was worse for women.

Our research contributes to the literature that has studied the effects of the pandemic on students' performance, analyzing heterogeneous effects across individuals. There are several previous papers showing different impacts across types of individuals. Carlana et al. (2023), for Italy, found that school closures more negatively affected the performance of low socio-economic status students and also immigrants. They did not find any differences by gender. Aucejo et al. (2020) also presented evidence of a larger COVID-19 effect for some individuals in a sample of about 1,500 undergraduate students at Arizona State University. Specifically their findings indicated that lower-income students are 55% more likely than higher-income ones to have delayed graduation. Interestingly, this could be associated with higher prevalence of income and health-related shocks. In a related literature, Bacher-Hicks et al. (2021) showed differences in the adaptation to schooling shock favoring

high-income areas. Rodríguez-Planas (2022) for New York City's public university students also find evidence of heterogeneous effects. The negative impact of COVID-19 was greater for the most vulnerable students: low-income students, first-generation students, and transfer students[4].

We show novel evidence on these heterogeneous effects. We are particularly interested on differences depending on the socio-economic status of the students, but we also provide empirical evidence about differences across individuals depending on their admission tests score, gender, and type of admission. The admission test score is similar to the SAT model in the United States and it is required for applicating to the best universities in the country. In addition, since we possess panel data, we can control for all of their non-time variable characteristics of the individuals, such as intrinsic ability. We also benefit from having performance data pre- and post-pandemic for the same students.

Our results show that students who graduated from public and subsidized schools, i.e., poorer students, had a worse performance during the pandemic than students from private schools. Students from lower socioeconomic backgrounds tend to drop out of more classes and pass classes less often compared to their richer peers. In more measurable terms, we found an increase of around 40% to 50% in the passing gap in favor of private schools respect to subsidized and public schools, respectively. We also found evidence that women and students with lower admission scores were less affected, while there was no evidence for differences across enrollment type.

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[4] See also Bertoletti et al. (2023) for other sources of impact heterogeneity across Italian primary and middle schools.

The paper is structured as follows. In section 2, we describe the data and the most relevant stylized facts about students' performance. In Section 3, we present the estimation methodology. In Section 4, we discuss the results. Finally, in Section 5 we present the conclusions.

2. Data and Descriptive Statistics

Data is composed of semester results and individual student characteristics belonging to three undergraduate programs in economics and business in FEN. The study period is from the fall semester of 2016 to the spring semester of 2021. Our sample is composed of 22,141 observations for 4,120 students between 2016 and 2019, and 15,370 observations from 3,844 students for 2020 and 2021. This gives us 37,511 observations for 5,556 individual students for the entire period.

Figure 1 shows students' final semester grades, along with their passing rate. In this university, the grades are from 1 to 7, and students pass the course if they obtain a grade equal to or above 4.0. Students from private schools have better results in both categories. We can also notice that in Spring 2019, before the pandemic, there's a sharp increase in both figures. These results can be due to the several actions taken at the time because of the various social protests that started in Chile on October 18th of 2019. The semester finished earlier than previous years, exams were not presential and several courses closed with partial grades. Moreover, those students that did not pass the course had a second chance with a special exam on March, 2020.

As it can be appreciated in Figure 1, during the pandemic, average grade has been consistently higher than in previous semesters for the three different groups. It

increased from about 5.0 before COVID-19 up to an average close to 5.6. However, it is hard to infer that gap among them moved in some direction. In fact, the last semester for what we had information, there was not differences between students going to different schools. while the passing rate maintained the high values of Spring 2019 in Fall 2020, it returned to pre-pandemic for all students independent of the school type.

Regarding those that did not pass some courses, Figures 3, 4, and 5 show the evolution of the two types of students in this category: those that failed and those that dropped-out some course. Both are shown by school type. It can be appreciated that before the implementation of the EE, dropping classes was only a small part of the reasons for not passing a course. However, after its implementation, course eliminations went up and failing the courses went down. We find that the evidence is very similar across types of schools.

3. Methodology

To do the estimation, we used a differences-in-differences framework using students who graduated from private schools and those who graduated from public and subsidized schools as comparison groups.

For the estimate, we used the following specification:

$$Y_{it} = Pandemic_t * Public_i + Pandemic_t * Sub_i + \mu_i + v_t + \omega_{it} + \varepsilon_{it} \qquad (1)$$

Where Y_{it} is the result variable of interest: pass, fail, or drop out rate of student i in semester t. Each of these rates is calculated as the proportion of credits that a

student passes, fails, or drops in each semester. To ease interpretation, they are then multiplied by 100. $Pandemic_t$ is a dummy that takes a value of 1 if the semester is Fall 2020 or after. $Public_i$ and Sub_i are dummies that take a value of 1 if the student graduated from a public or subsidized school respectively. μ_i is a student-level fixed effect, v_t is a semester-level fixed effect, and ω_{it} is a cohort (number of semesters a student has completed) fixed effect. Standard errors are clustered at the student level. Afterwards, we interact *Pandemic* with *Gender* (1 if the student is a woman), *EntScore* (students' admission test score), and *SpAdm* (1 if the student enrolled using a special admission[5]) were added to study additional heterogeneities.

This is:

$$Y_{it} = Pandemic_t * (Public_i + Sub_i + Gender_i + EntScore_i + SpAdm_i) +$$

$$\mu_i + v_t + \omega_{it} + \varepsilon_{it} \qquad (2)$$

There are several points to consider when analyzing the results. First, it is important to consider FEN's aggressive policy of giving material help. This policy should have lessened the pandemic's effect on students from more vulnerable backgrounds.

Second, we must consider that using the high school as a proxy is an inexact measure of socioeconomic status. While a helpful approximation, students from public schools do not necessarily belong to lower-income households, nor are all

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[5] Special admissions are for top students in their high school but with test scores under the minimum required for entering the university. In this paper, we consider *Beca Excelencia Académica* (BEA), *Sistema de Ingreso Prioritario de Equidad Educativa* (SIPEE) and *Programa de Acceso a la Educación Superior* (PACE).

students from private schools from higher-income households. All of this should also lessen any effect found.

Finally, we need to bear in mind that — considering the overall context — students from the Universidad de Chile are high academic performers, which makes it likely that, for students from lower-income households, have grants and other benefits that would lessen the impact of the pandemic on their households. They also have already shown some ability to mitigate the disadvantages of poverty to have such achievement.

4. Results

Table 2 shows estimation results for equation (1). We find significant results for the dropping rates for both students coming from public and subsidized schools. The coefficients are positive, meaning that those students decided to drop out a higher quantity of courses during the pandemic. The impact is very large. The increases in dropping rates are 1.77 and 1.16 percentage points compared to students from private schools. Based on the gap presented in Table 1, this represents an increase of 4.5 and 2.7 times the pre-pandemic difference, respectively.

In the case of passing courses, we find a reduction of 1.53 percentage points for students from public schools, but the effect is significant only at 10%. For failing rates, this baseline regressions do not find evidence of differential performance during the pandemic.

In Table 3, when we incorporate additional interactions, the results vary and the coefficients for schools are significant for the passing and dropout rates. During the

pandemic, we find a negative impact on the passing rate gap for students from public and subsidized schools. The estimated reduction is 2.5 and 1.6 percentage points, respectively, representing a 56% and 42% of the pre-pandemic gap. Thus, the COVID-19 affected more severely to poorer students, reducing in a great magnitude their passing rates compared to students coming from private schools.

Considering the dropping rates, the impact of the pandemic is only significant at 5% for students from public schools. The estimated increase of 1.36 percentage points represents a 30% of the pre-pandemic difference between students from public and private schools. There is also an increase in dropping rates for students from subsidies schools. But it is only significant at 10%. In the case of failing rates, we find an increase for both public and subsidized schools, but only significant at 10% for students coming from the publics.

The incorporation of additional interactions reveals some other relevant heterogeneities in the COVID-19 impact on students' performance. Our results also show that, contrasting with some previous findings that women were more affected by the pandemic, Chilean female students at the University of Chile were less affected in terms of academic performance during the pandemic than their male counterparts. We find that women experienced during the pandemic a reduction in dropping rates and an increase in passing rates.

Interestingly, we find that students with higher admission test scores had a worse performance during the pandemic. Given that we are including an interaction between the type of school and the COVID-19 dummy, this is not necessarily a counterintuitive

result, and it can be attributed to other reasons than socioeconomic conditions, for example, students' overconfidence. We believe, however, that this issue would need deeper investigation.

We also analyze whether the type of admission, regular via test score or special, matters for performance during the pandemic. Our results show that the effect is not significant for the three performance variables that we use. It seems that differences in the type of school, gender and tests score are enough to capture heterogeneous effects across students and the type of admission is not relevant.

Finally, Tables 4 and 5 show the same estimation as 2 and 3 except the sample is restricted to students who were enrolled in a class both pre-pandemic and during the pandemic, i.e., focusing on the students who were directly affected by the pandemic during their university careers. Our main results do not change noticeably from the earlier findings. Then, we find that differences in individuals sampling do not generate differences in the impact of COVID-19 on students' performance.

5. Conclusion

The COVID-19 had extensive effects on society; one of particular interest is the impact on student performance from primary to tertiary education. Understandably, researchers are concerned that more vulnerable students could have been more affected, but there is little work done on this factor for university students. Using the data of students from the University of Chile, we explore this, along with other potential heterogeneities from the pandemic impact.

Our results are consistent with the hypothesis that students from lower socioeconomic backgrounds, specially those coming from public schools, passed fewer course and dropped out of more of them compared to their higher socioeconomic level peers, i.e., those from private schools. Considering that several policies to benefit more vulnerable students were implemented, specifically the provision of technology to increase access to the internet, it can be concluded that the performance gap increased during the pandemic. The implementation of additional policies seems necessary in the presence of shocks like the one which occurred during the COVID-19.

Regarding admission factors, students with higher scores on the admission test were more affected. However, after controlling for socioeconomic status, there is no evidence suggesting that differences by admission type are relevant. This paper also finds evidence that women were relatively less affected. Considering this jointly with the literature indicating that the pandemic had greater psychological impacts on women, it is suggested that psychological issues are likely not what was driving impacts from the pandemic in this case.

Our results are consistent with the idea that more disadvantaged students suffered more from COVID-19. However, given the data at hand, it is hard to dilucidate which are the exact reasons why the students from lower socioeconomic backgrounds were more affected and if the effect will be transitory or permanent. We think that this evidence opens interesting research questions on the mechanisms and the duration of these negative effects.

References

Alomyan, H. (2021). The Impact of Distance Learning on the Psychology and Learning of University Students during the COVID-19 Pandemic. International Journal of Instruction, 14(4), 585-606.

Aucejo, E. M., French, J., Araya, M. P. U., & Zafar, B. (2020). The impact of COVID-19 on student experiences and expectations: Evidence from a survey. *Journal of public economics*, *191*, 104271.

Bacher-Hicks, A., Goodman, J., & Mulhern, C. (2021). Inequality in household adaptation to schooling shocks: Covid-induced online learning engagement in real time. *Journal of Public Economics*, *193*, 104345.

Bertoletti, A., Cannistrà, M., Soncin, M., & Agasisti, T. (2023). The heterogeneity of Covid-19 learning loss across Italian primary and middle schools. Economics of Education Review, 95, 102435.

Carlana, M., La Ferrara, E., & Lopez, C. (2023, May). Exacerbated Inequalities: the Learning Loss from COVID-19 in Italy. In *AEA Papers and Proceedings* (Vol. 113, pp. 489-93). American Economic Association.

Duarte, F., & Jimenez-Molina, A. (2021). Psychological distress during the COVID-19´ epidemic in Chile: The role of economic uncertainty. PLoS One, 16(11), e0251683.

El Refae, G. G. A., Kaba, A., Eletter, S. (2021). The impact of demographic characteristics on academic performance: face-to-face learning versus distance

learning implemented to prevent the spread of COVID-19. The International Review of Research in Open and Distributed Learning, 22(1), 91-110.

Finnegan, M. (2021). The Impact on Student Performance and Experience of the Move from Face-to-face to Online Delivery in Response to COVID-19: A Case Study in an Irish Higher Education Institute. All Ireland Journal of Higher Education.

González, R. (2017). Segregación educativa en el sistema chileno desde una perspectiva comparada. Santiago, Chile: Centro de Estudios del Ministerio de Educación. Santiago. Chile.

Gonzalez, T., De La Rubia, M. A., Hincz, K. P., Comas-Lopez, M., Subirats, L., Fort, S., & Sacha, G. M. (2020). Influence of COVID-19 confinement on students' performance in higher education. PloS one, 15(10), e0239490.

Hernández, M., & Raczynski, D. (2015). Elección de escuela en Chile: De las dinámicas de distinción y exclusión a la segregación socioeconómica del sistema escolar. Estudios pedagógicos (Valdivia), 41(2), 127-141.

Iglesias-Pradas, S., Hernández-García, A., Chaparro-Peláez, J., & Prieto, J. L. (2021).´
Emergency remote teaching and students' academic performance in higher education during the COVID-19 pandemic: A case study. Computers in Human Behavior, 119, 106713.

Mac-Ginty, S., Jiménez-Molina, A., & Martínez, V. (2021). Impacto de la pandemia por´ COVID-19 en la salud mental de estudiantes universitarios en Chile. Revista Chilena de Psiquiatría y Neurología de la Infancia y de la Adolescencia, 32(1), 23-37.

Organización Internacional del Trabajo. (2020) Panorama Laboral 2020. América Latina y el Caribe.

Refaat El Said, G. (2021). El Said, G. R. (2021). How did the COVID-19 pandemic affect higher education learning experience? An empirical investigation of learners' academic performance at a university in a developing country. Advances in Human-Computer Interaction, 2021, 1-10.

Rodríguez-Planas, N. (2022). Hitting where it hurts most: COVID-19 and low-income urban college students. Economics of Education Review, 87, 102233.

Table 1: Descriptive Statistics

	Period	Public	Subsidized	Private
Students	Pre-Pandemic	901	1176	2043
	Pandemic	741	1153	1950
Women %	Pre-Pandemic	41.07%	43.53%	37.1%
	Pandemic	40.89%	48.83%	39.79%
Observations	Pre-Pandemic	4868	6176	11094
	Pandemic	3147	4759	7440
Average final grade	Pre-Pandemic	4.96 (0.81)	5.00 (0.82)	5.09 (0.76)
	Pandemic	5.29 (0.92)	5.32 (0.82)	5.46 (0.8)
Fail %	Pre-Pandemic	12.58% (21.2)	11.84% (20.8)	8.46% (16.7)
	Pandemic	7.20% (17.8)	6.21% (16.5)	4.04% (13.9)
Drop out %	Pre-Pandemic	1.76% (7.9)	1.79% (8.2)	1.36% (6.72)
	Pandemic	9.69% (20.3)	9.54% (20.7)	7.01% (18.9)
Pass %	Pre-Pandemic	85.65% (22.62)	86.37% (22.23)	90.17% (18.02)
	Pandemic	83.10% (26.9)	84.23% (26.3)	88.90% (23.46)

Pass, fail and drop out percentages are calculated as the percentage of academic credits over total academic workload. Standard deviations are presented in parentheses.

Table 2: Baseline Fixed Effects Estimation, Full Sample

	(1) Pass	(2) Drop out	(3) Fail
Public*Pandemic	-1.530*	1.778***	-0.248
	(0.801)	(0.578)	(0.576)
Sub*Pandemic	-0.806	1.167**	-0.361
	(0.686)	(0.490)	(0.470)
Constant	85.37***	1.260*	13.37***
	(4.147)	(0.747)	(4.149)
Observations	37,511	37,511	37,511
R-squared	0.094	0.102	0.074
Students	5,556	5,556	5,556
FE Semester	✓	✓	✓
FE Student	✓	✓	✓
FE Cohort	✓	✓	✓

Robust standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 3: Fixed Effects Estimation with Additional Interaction Terms, Full sample

	(1)	(2)	(3)
	Pass	Drop out	Fail
Public*Pandemic	-2.511***	1.360**	1.151*
	(0.914)	(0.662)	(0.653)
Sub*Pandemic	-1.618**	0.925*	0.693
	(0.745)	(0.557)	(0.495)
Gender*Pandemic	1.904***	-1.725***	-0.180
	(0.584)	(0.421)	(0.416)
EntScore*Pandemic	-0.0465***	-0.0150*	0.0616***
	(0.0117)	(0.00877)	(0.00751)
SpAdmi*Pandemic	0.230	-0.303	0.0732
	(1.258)	(0.867)	(0.888)
Constant	92.57***	2.983**	4.452
	(4.285)	(1.233)	(4.192)
Observations	35,418	35,418	35,418
R-Squared	0.091	0.098	0.074
Students	5,240	5,240	5,240
FE Semester	✓	✓	✓
FE Student	✓	✓	✓
FE Cohort	✓	✓	✓

Robust standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 4: Base Fixed Effects Estimation, Adjusted Sample

|	(1)	(2)	(3)
	Pass	Drop Out	Fail
Public*Pandemic	-1.587**	1.768***	-0.181
	(0.800)	(0.577)	(0.574)
Sub*Pandemic	-0.837	1.064**	-0.227
	(0.684)	(0.487)	(0.470)
Constant	80.01***	3.923***	16.07***
	(4.767)	(0.946)	(4.737)
Observations	23,265	23,265	23,265
R-Squared	0.083	0.105	0.099
Students	2,415	2,415	2,415
FE Semester	✓	✓	✓
FE Student	✓	✓	✓
FE Cohort	✓	✓	✓

Robust standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 5: Fixed Effects Estimation with Additional Interaction Terms, Adjusted Sample

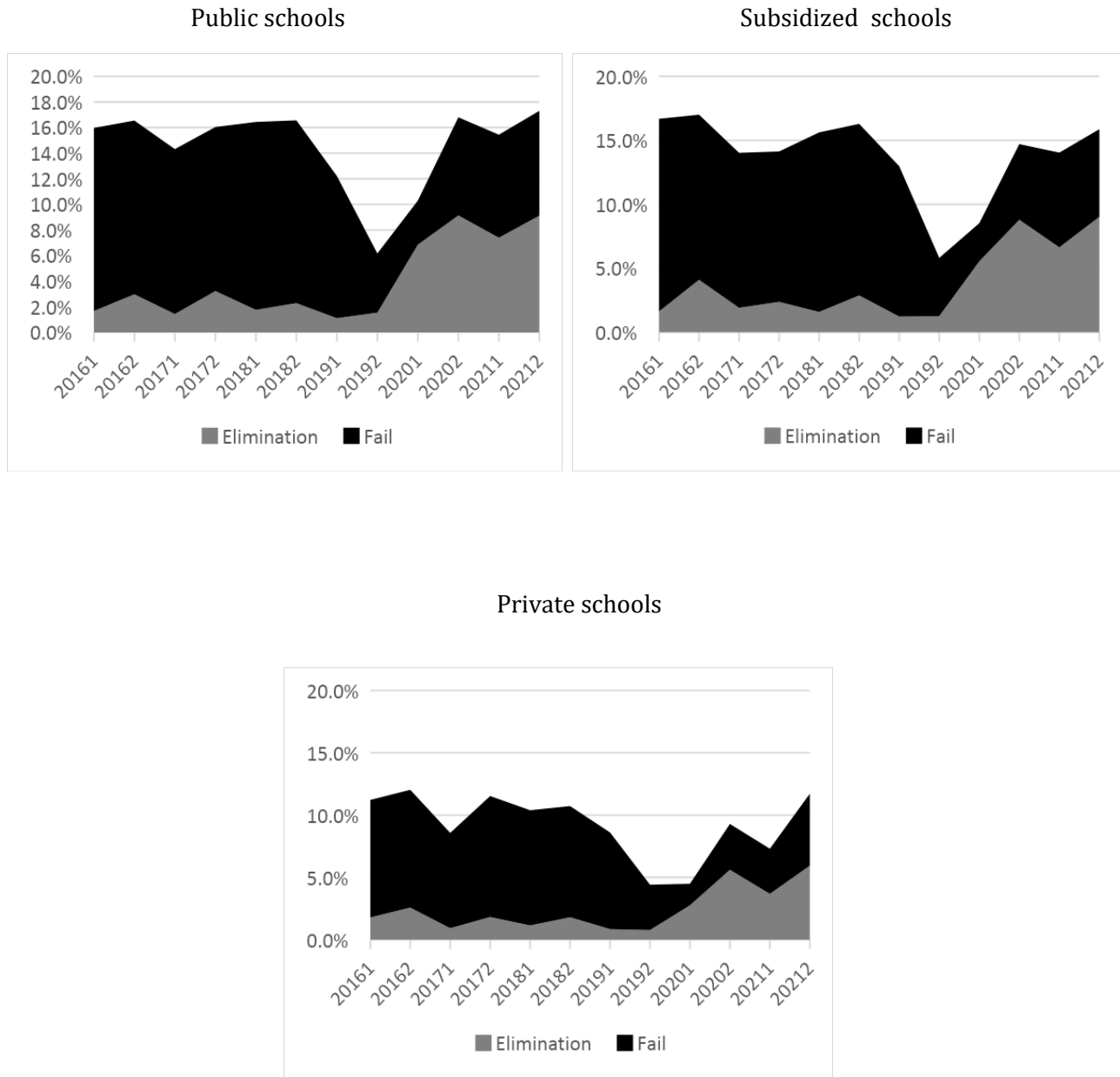|	(1)	(2)	(3)
	Pass	Drop out	Fail
Public*Pandemic	-2.504***	1.328**	1.175*
	(0.913)	(0.660)	(0.653)
Sub*Pandemic	-1.594**	0.846	0.748
	(0.744)	(0.554)	(0.496)
Gender*Pandemic	1.918***	-1.781***	-0.138
	(0.584)	(0.419)	(0.416)
EntScore*Pandemic	-0.0453***	-0.0140	0.0592***
	(0.0116)	(0.00869)	(0.00753)
SpAdm*Pandemia	0.150	-0.147	-0.00346
	(1.258)	(0.868)	(0.887)
Constant	87.47***	5.863***	6.671
	(4.899)	(1.514)	(4.767)
Obsertacions	22,162	22,162	22,162
R-Squared	0.082	0.104	0.100
Students	2,303	2,303	2,303
FE Semester	✓	✓	✓
FE Student	✓	✓	✓
FE Cohort	✓	✓	✓

Robust standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Figure 1

Average grade and passing rate
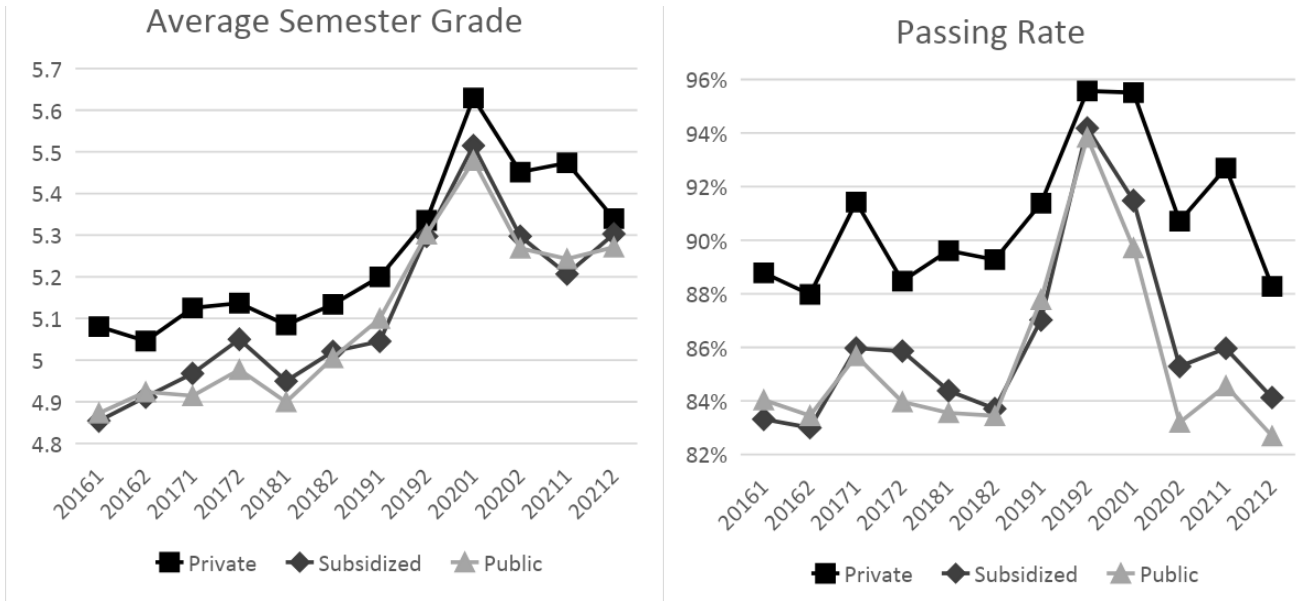
Source: Own elaboration based on FEN administrative data.

Figure 2

Public schools

Subsidized schools

Private schools

Source: Own elaboration based on FEN administrative data.