Documents de travail

N° G2021/01
Janvier 2021

Students' Preferences, Capacity Constraints and Post-Secondary Achievements in a Non-Selective System

Nagui BECHICHI - Georgia THEBAULT

Insee
Mesurer pour comprendre

Institut national de la statistique et des études économiques

G2021/01

Students' Preferences, Capacity Constraints and Post-Secondary Achievements in a Non-Selective System

Nagui BECHICHI* GEORGIA THEBAULT**

Janvier 2021

Département des Études Économiques – Timbre G201
88, avenue Verdier – CS 70 058 – 92 541 MONTROUGE CEDEX – France
Tél. : 33 (1) 87 69 59 54 – E-mail : d3e-dg@insee.fr – Site Web Insee : http://www.insee.fr

* Insee-Dese – Département des études économiques – Division « Redistribution et Politiques Sociales »
** PSE – École d'économie de Paris

Remerciements : Les auteurs remercient Sébastien Roux et Lionel Wilner pour leurs relectures et commentaires. Merci à Julien Grenet pour sa supervision tout au long de ce projet, et à Pauline Givord pour sa discussion de grande qualité et aux participants du séminaire D2E du 25 Février 2020. Nous remercions la sous-direction des systèmes d'information et études statistiques (SIES), en particulier Isabelle Kabla-Langlois, Clotilde Lixi, Cosima Bluntz et Pierre Boulet pour leur accueil et leur aide précieuse pour l'exploitation des données. Nous remercions par ailleurs la Direction de l'Evaluation de la Prospective et de la Performance (DEPP) pour avoir mis à notre disposition une partie des données mobilisées dans cette étude. Merci enfin à Clément de Chaisemartin, Marion Monnet et Gustave Kenedi pour leur différents retours et suggestions.

Préférences des étudiants, contraintes de capacité et réussite universitaire dans un système non-sélectif

Cet article étudie l'impact de la satisfaction des préférences des élèves concernant les formations universitaires sur leur parcours dans le supérieur. Pour ce faire, nous croisons les données SISE relatives à l'inscription dans les formations du supérieur en France avec les données administratives du système centralisé français de préinscription dans le supérieur Admission Post Bac (APB). Nous nous concentrons sur les licences universitaires en sous-capacité (dites « en tension »), qui ont eu recours au tirage au sort pour sélectionner leurs effectifs, pour les cohortes de 2013 à 2016. Cette composante aléatoire du système APB est utilisée comme un instrument de l'admission à la formation souhaitée par l'étudiant. Nous trouvons que l'admission à la licence universitaire classée en tête de la liste de vœux des candidats a un impact certain sur les chances de poursuite d'études supérieures : en moyenne, les candidats admis à la suite d'un tirage au sort favorable ont 10% de chances de plus de s'inscrire dans le supérieur par rapport aux candidats perdants du tirage au sort qui n'ont pu intégrer leur formation préférée. L'admission à la formation préférée a également un impact significatif sur d'autres aspects du parcours des étudiants, comme le maintien dans les études et la validation des années. Les effets estimés sont hétérogènes selon la filière d'étude souhaitée et le profil scolaire des candidats. En particulier, les élèves dont les chances initiales de réussite dans le supérieur sont les plus faibles sont davantage sensibles à leur admission dans leur premier choix.

Mots-clés : Enseignement supérieur, Préférences, Contraintes de capacité, Expérience randomisée, Procédures d'affectation.

Classification JEL : I23, I28, C21, D81.

Students' Preferences, Capacity Constraints and Post-Secondary Achievements in a Non-Selective System

Using rich administrative data on the French centralized assignment system of admission in higher education Admission Post Bac (APB) paired with data on university enrollment, this article provides new evidence on the impact of satisfying students' stated preferences on their achievements in higher education. To do so, we exploit lotteries embedded in APB to prioritize applicants in oversubscribed university programs as an instrument for admission. Focusing on cohorts 2013 to 2016, we show that admission to one's top-ranked program has a large impact on the pursuit of post-secondary education: on average, it increases students' chances of enrollment into higher education by 10% from the baseline. It also affects other aspects of students' educational pathways such as persistence in higher education, choice of major and degree completion. Effects are heterogeneous both by programs' field of study and applicants' profile. In particular, students at the margin of pursuing higher education are more sensitive to capacity constraints in their favorite program.

Keywords: Centralized Matching Market, Higher Education, Preferences, Capacity Constraints, Randomized Control Trial.

Introduction

Access to higher education is a crucial issue in labor economics, as differences in education levels translate into persistent earnings and employment inequalities. The swift rise of mass education at the tertiary level went hand in hand with high drop out and repetition rates, as well as increased strain on the capacity of programs. Among members of the Organization for Economic Co-operation and Development (OECD), the average completion rate of full-time tertiary students only reached 38 % in 2017 (OECD, 2019).

Over the last decade, researchers and policy makers have worked jointly to improve admission systems in higher education, trying to achieve more equity, quality, and mobility for students (European Parliament, 2014). In this process, the quality of the student-program match has been identified as a key determinant of success in higher education (Arcidiacono et al., 2014; Arcidiacono and Lovenheim, 2016; Hoxby and Avery, 2013; Black et al., 2015; Dillon and Smith, 2017), and assignment systems have been put at the center stage of the debate. Contributions from market design theory have shown that centralized assignment system and the use of specific matching mechanisms can be welfare improving (Niederle and Roth, 2003; Roth and Xing, 1997; Machado and Szerman, 2016; Abdulkadiroğlu et al., 2017a), leading to significant worldwide changes in the way students are allocated to schools and university programs. However, there are still some frictions in these processes, among which mismatch - that is to say the inadequacy between students' and programs' characteristics - has been singled out as a major issue. Still, little is known about the importance of satisfying students' preferences in this phenomenon, and its consequences on students' educational pathways has not been fully investigated. This should be particularly salient in a context where capacity constraints are binding, and highly demanded programs which lack available seats have to reject some applicants. Eventually, not satisfying students' preferences in default of capacity could be costly both individually and collectively. In France, the collective cost of setbacks in students' trajectory is estimated at 500 million euros per year, which corresponds to the entire budget of two middle-size universities (France Stratégie, 2017). Among others, this includes the cost of the inadequacy resulting from students' not having access to their desired curriculum. Opening new seats in specific fields of study still represents a substantial public cost[1] and must be in line with actual employment prospects to facilitate students' transition into the world of work.

This paper evaluates the impact of satisfying students preferences under capacity constraints on students' achievement. We focus on higher education in France, where capacity constraints and low success rates in first year of university are a major policy concern.

[1]In France, the state subsidizes each opening of a seat in an oversubscribed university program up to 1600 euros (Cours des Comptes, 2020).

Among students entering higher education in 2014, only 29 % obtained their bachelor degree within three years, i.e without any grade repetition or interruption (MESRI-SIES, 2019), and only one out of 10 students continue their second year of bachelor in the same program as the one chosen in their first year (France Stratégie, 2017).

We exploit two specific features of the French higher education system: i) its high degree of centralization, and ii) its predominant share of non-selective programs, where lotteries were implemented to break ties in programs facing capacity constraints.

From 2009 to 2017, students seeking admission to higher education had to go through a national centralized platform called *Admission Post Bac* (APB), which covered almost all public and private higher education programs. Students willing to pursue higher education were required to submit a rank-ordered list of programs, and were later allocated through a College-Proposing Deferred Acceptance Mechanism.

The French higher education system is dual. It is composed of two types of higher education programs: selective and university programs. On the one hand, selective programs are provided in various types of public and private institutions, and are allowed to freely rank their applicants. On the other hand, holding a secondary school certificate (*Baccalauréat*) is the only legal condition to get access to a university program: universities do not rank their applicants one the basis on any additional academic criteria. University programs gather half of high school graduates, and include some of the most popular programs such as medical studies, sports, law or psychology degrees. Since applicants could not be ranked based on their prior academic achievements, non-academic priorities rules were used to rank students applying to a given university program. In cases where capacities were insufficient to offer a seat to all priority applicants (i.e those with the highest level of priority), lotteries were used to break ties.

Using tie-breaking lotteries as an instrument for admission into oversubscribed university programs, we show that, on average, admission to one's first choice increases the probability to be enrolled in higher education within three years after high school by 10 %. As a benchmark, Fack and Grenet (2015) show that providing 1,500 euros cash allowances to a comparable population[2] increases students' enrollment rates in higher education by 5 to 7 %. On top of this effect on the extensive margin, the admission to the top-ranked program also affects many aspects of students' educational trajectory, such as persistence in higher education, changes of field of study or degree completion. For instance, students admitted to their first choice are on average more likely to be enrolled in third year of bachelor within three years by 27 %. Finally, our results are neither driven by a single type of university program nor by a specific profile of applicant. Yet, our results are heterogeneous according to these two dimensions. In particular, students applying to Sports Studies or Social Sciences are more sensitive to the outcome of the admission procedure.

[2]These results are estimated on the universe of students applying for need-based grants in French higher education over the period 2008-2010 with data on all students enrolled in French public universities.

The analysis of the heterogeneity of effect by socio-demographic and schooling characteristics shows that low-achieving students and students from vocational high schools are more affected by the admission to their top-ranked program. Students with no relevant alternative are also more affected by the outcome of the assignment procedure. Overall, these results suggest that capacity constraints might be particularly detrimental to students at the margin of pursuing higher education.

Our contribution to the existing literature is twofold. First, our paper focuses on a larger set of programs and applicants than most studies using admission discontinuities do. Capacity constraints generate discontinuities in assignment systems. Applicants ranked close to the admission threshold (either just above or just below) have similar characteristics but different chances of being admitted. These discontinuities have been commonly used as a source of identification to estimate the effect of attending specific schools on academic outcomes. This strand of the literature, with landmark studies on Magnet and Charter schools in the United States, has notably shown that students can benefit from going to another school than their default option (Abdulkadiroğlu et al., 2014, 2017b), which can have a positive impact on college enrollment (Deming et al., 2014) and earnings (Hoekstra, 2009). However, the majority of these papers focus on specific kinds of programs, most of them being elite schools with high academic standards. By design, they also have to restrict their analysis to students at the margin of eligibility, and thus study a narrow set of students. Our paper focuses on a nationwide lottery for admission to the university, which is the main type of higher education programs in France. Since students could not be differentiated based on their grades, our sample consists of individuals of all abilities, with diverse socio-demographic characteristics and schooling preferences. It also encompasses all students with the same level of priority, included students far from the admission cutoff. This characteristic of the French system enables us to assess the effect of being admitted to one's first choice on a comprehensive set of students considering a first entry into higher education. To the best of our knowledge, this is a unique feature of our study, since most papers exploiting school lotteries deal with selective admission process on a narrower set of students. Second, our paper focuses on higher education, where rejections due to capacity constraints are more likely to be salient in students' decisions to stay or leave the educational system. At the end of compulsory schooling, going to the labor market rather than pursuing education becomes a more relevant outside option. To study this trade-off, we build a unique data-set based on linked individual-level administrative data, that allows us to track students every year they apply to and enroll in higher education, at least three years after high school graduation for cohorts 2013 to 2016. Such precision of the data enables us to study students' educational pathways on multiple dimensions such as persistence in higher education, the choice of major and degree completion.

The remainder of the paper is organized as follows. Section 1 describes the institutional background, Section 2 presents the data used for this study and some summary statistics. Section 3 presents the empirical strategy. Section 4 displays the estimates and a preliminary discussion of the results. Section 5 concludes.

1 Institutional Background

1.1 The French Higher Education System

General Context The French tertiary education system is predominantly public, and pursuing higher education is generally affordable. The majority of educational programs is publicly funded, and private institutions only amount to 18.2 % of higher education students (DEPP and SD-SIES, 2017). Tuition fees for public university are very low (on average 170 euros per year for a bachelor degree). Each student can either pursue an academic or a vocational training, both provided by public institutions.

Until 2018 and the *Loi relative à l'orientation et à la réussite des étudiants (ORE)* university reform[3], the French higher education system was composed of two kinds of programs. Undergraduate university programs (*Licence*) were generally not selective: every student holding the *Baccalauréat* was entitled to access to a first year of university[4]. Since university programs hosted about half of new entrants in higher education, a significant share of applicants was therefore not recruited on the basis of their academic records. By contrast, all the other available programs - later referred to as selective programs - were able to select applicants at their discretion, and thus to prioritize students with the highest academic standing. Selective programs typically included programs located in other types of educational institutions than universities, such as programs provided in high schools including preparatory classes (*Classes Préparatoires aux Grandes Ecoles* (CPGE)) and vocational training (*Sections de Technicien Supérieur* (STS)), or undergraduate business and engineering schools.

In university programs, non-academic priority criteria were used to distinguish between the applicants. Priorities were based on students' educational district and the rank of the program within students' rank-ordered list. Lotteries were then used to break ties among applicants with the same level of priority.

Over our period of study, the increase in available seats at the university only partly offset the growing trend in the number of applicants. In the meantime, concerns were raised regarding the functioning of the French higher education system. The debate mainly focused on oversubscribed university programs, where capacities were not large enough to offer a seat to all the applicants who had the highest level of priority. The use of lotteries to select students became more salient, which lead some students and parents

[3]Law 2018-166, published the 8th of March 2018.

[4]Section L. 612-3 of the former Education code valid until the 10th of March 2018.

to question the fairness of the system. This was one of the main reasons advocated in favor of the introduction of a new platform called *Parcoursup* in 2018, which changed the matching mechanism and gave universities clearance to prioritize applicants based on their academic records.

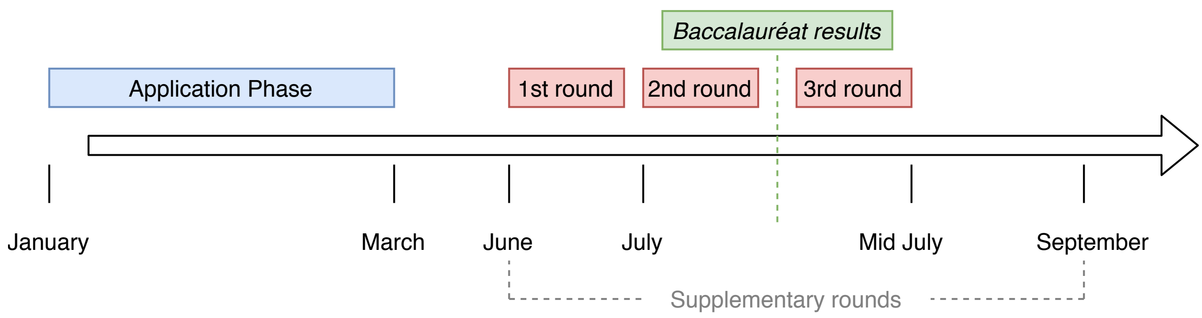
Admission Post-Bac (APB) From 2009 to 2017, students seeking admission to higher education[5] had to go through a national platform called *Admission Post Bac* (APB), where they could apply to both public and private institutions, including university programs and selective programs. The APB system gathered around 12,000 programs and 800,000 applicants every year. To fulfill their applications, students had to make a rank-ordered list (ROL) of programs, and were later allocated through a centralized matching mechanism, based on the College-Proposing Deferred Acceptance (DA) algorithm (Gale and Shapley, 1962). In the case of APB, applicants were requested to submit and to commit to their ROL from January to March. After having received all applications, programs also ranked their applicants. This ranking was made on a discretionary basis for selective programs, whereas it was automatically generated by the APB system according to both the legal priority rules and the lottery outcome for university programs.

The DA is an algorithm that enables to sequentially allocate seats to students while respecting as much as possible students' preferences and programs' priorities. It proceeds as follows:

Step 1 First choice applications are sent to the programs. Programs tentatively assign their seat to applicants one by one, while respecting priority order (detailed below), until their capacity is reached. Remaining applicants are rejected.

Step k Rejected applicants apply to *k-th*-ranked programs. Once again, programs tentatively assign their seats to applicants one by one according to their priority. The procedure ends when there is no more applicants to assign or seat to fill.

Figure 1: Timeline of the Application and Matching Process in APB



The matching procedure involved three rounds of admission from June to July (Fig-

[5]Students who were already enrolled in a first year of undergraduate studies and who wanted to switch field could also apply to another program through APB. In this paper, we focus on high school students who are potential new entrants into higher education.

ure 1). At the beginning of the first round of admission, students were offered seats by programs based on the matching outcome determined by the DA algorithm, and each student received at most one offer. Students could accept the offer, turn it down or conditionally accept it, waiting for applicants selected by higher-ranked programs to withdraw from the procedure in the subsequent rounds. Applicants could exit the procedure at any point in time. The three-round articulated procedure was made to reallocate vacant seats. In particular, the final results of the *Baccalauréat* were published between the second and the third rounds of the procedure. Students who failed the exam were not able to compete for a seat anymore, and their seats were re-offered in the third round. Finally, applicants could participate in supplementary rounds, which took place between June and September, and helped students to apply to programs with remaining seats.

1.2 University Programs: Priorities and Lotteries

Definitions Our setting is composed of four main elements: applicants, programs, priorities and programs' capacities. Let $i \in \left\{1, ..., I\right\}$ denote applicants and $s \in \left\{0, 1, ..., S\right\}$ programs, where $s = 0$ is an outside option. Let q_s stand for program s's capacity, where n_s represents the number of applicants to the program s. Applicants have preferences over programs s, whereas programs have priorities over applicants. Applicants to a given university program are assigned to priority groups. Applicant i's priority group at program s is written p_{is}.

Let C_i be i's ROL of programs, where $c_{is} \in \left\{\emptyset, 1, ..., N\right\}^2$ denotes program s' position in C_i, and $c_{is} = \emptyset$ means that the program is not ranked by student i. c_{is} is decomposed into two elements c^r_{is} and c^a_{is}, which respectively stand for the relative and the absolute rank of program s in applicant i's ROL. Program s's absolute rank corresponds to its position within applicant's i ROL, whereas its relative rank represents its position with respect to the other programs in the same field of study in the ROL. The number of programs that applicants can rank is limited, though this figure varies over the period, from 46 in 2013 to 64 in 2017.

Priority Rules For each university program s, the priority group p_{is} for applicant i is a function of i's educational district and ROL such that:

$$p_{is} = f(\underbrace{1\{district_i = district_s\}}_{\text{Educational district}}, \quad \underbrace{c^r_{is},\ c^a_{is}}_{s\text{' position in } C_i} \quad)$$

where $p_{is} < p_{js}$ means that school s prioritizes i over j. Priorities are lexicographic, which implies that $\forall(c, c'); f(1, c) < f(0, c')$, meaning that applicants from the educational district always have priority over outside applicants. Students are then sorted sequentially by their relative and absolute rank: we have $\forall(c^a, c'^a) \in \mathbb{N}^{*2}$, if $c^r < c'^r$, then $f(.\ , c^r, c^a) < f(.\ , c'^r, c'^a)$. This last feature is unusual, as it has been shown that using applicants'

ROL as a criterion to prioritize applications cancels the strategy-proofness of the DA. We discuss the implication of this specificity for our study at the end of this section.

To illustrate priority rules, let's consider a simple example. Assume five applicants a, b, c, d and e who apply to two Law degrees S_1 and S_2, as displayed in table 1. S_1 is located in Paris, whereas S_2 is in Créteil, another French educational district. We focus on S_1's ranking of applicants. Applicants a, b, c and d are from Paris, so they have priority over e. Applicant c ranked S_1 as her second absolute choice, so she will lose priority over a, b and d. Finally, b and d have ranked S_1 as their first relative and absolute rank in Law. a has put S_1 as her first relative rank in Law, but second absolute rank. Consequently, b and d will have priority over a.

Table 1: Priority and Random Draw in Non-Selective Programs: An Example

Applicants	**a**	**b**	**c**	**d**	**e**
Catchment area	Paris	Paris	Paris	Paris	Créteil
Students' rank-ordered-list					
1st rank	Other	S_1	S_2	S_1	S_1
2nd rank	S_1	S_2	S_1	Other	S_2
3rd rank	S_2	Other	Other	S_2	Other
Program S_1's ranking					
Priority group	2	1	3	1	4
Lottery number	*	2	*	1	*
Final rank	**3**	**2**	**4**	**1**	**5**

Notes: S_1 is located in the district of Paris, S_2 is located in the district of Créteil.

Lottery For applicants in the same priority group for program s i.e., such as $p_{is} = p_{js}$, lotteries are used to break ties. The lottery ensures the "Equal Treatment of Equal" (ETE) property, meaning that students with the same stated preferences and priorities have the same chances of having access to the program. For each program s and applicant i, the lottery number $Rand_{is}$ is drawn from a discrete uniform distribution $\mathcal{U}$ as follows:

$$Rand_{is} \rightsquigarrow \mathcal{U}\left[1, \sum_{k=1}^{n_s} 1\left\{p_{ks} = p_{is}\right\}\right]$$

The lottery system works as a multiple tie-breaking rule, meaning that a student is assigned a lottery number for each of her application to a university program. Eventually, for a given program s, every applicant is given a rank according to her priority group and the outcome of the lottery. Hence, i's position in program s' ranking of applicants is given by the number of students having priority over i (A_s), plus the tie-breaking random component :

$$r_{is} = \underbrace{\sum_{k=1}^{n_s} 1\Big\{p_{ks} < p_{is}\Big\}}_{A_s} + Rand_{is} \tag{1}$$

Turning to our illustration (table 1), student d belongs to the same priority group as b: they both belong to S_1 educational district, and they put S_1 as their first absolute and relative rank. A random draw is used to break ties between b and d: the issue of the lottery is that d is ranked first, and b second. The final ranking of program S_1 is therefore: d, b, a, c, e.

Top-Priority Group and Oversubscribed Program We focus on the *top-priority group* of applicants, which we define as the set of applicants with the highest level of priority for a given university program s. In our previous example (table 1), the top-priority group would consist of b and d.

Applicants from the top-priority group - later called *priority applicants* - are of particular interest for two reasons. First, they represent the best potential match between programs' institutional criteria and students' preferences according to the matching mechanism. Priority applicants stated their strong preference for entering this very program by ranking it at the top of their ROL.

Top-priority groups are also the only ones among which the probability to receive an offer in the first round of the procedure is only determined by the random draw, suggesting that the outcome of the lottery is very likely to affect students' final assignment. Indeed, priority applicants are also in first positions of programs' ranking, and thus automatically receive an admission offer if their lottery number is below the program's capacity.[6] Priority applicants are thus directly affected by capacity constraints, and would be the primary beneficiaries of the opening of new seats in oversubscribed programs.

Turning to equation (1), belonging to the top-priority group means that $A_s = 0$. Within this group, the probability of a student i to get an offer from program s is straightforward and given by:

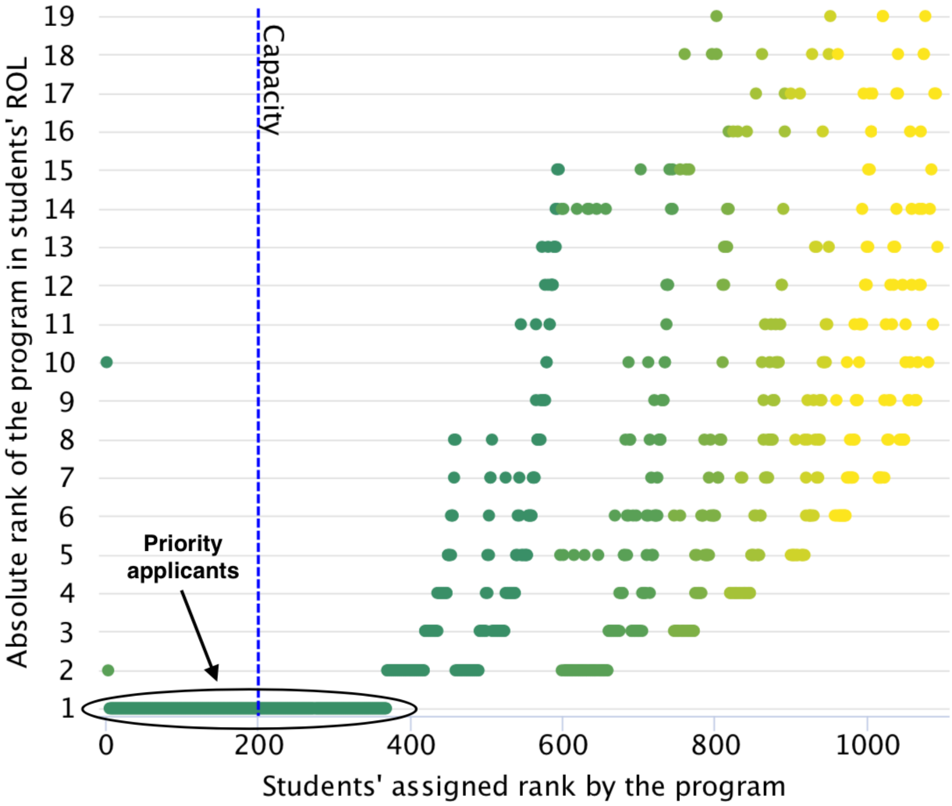
$$\begin{aligned} Prob\,(\text{Offer}_{is}|A_s = 0) &= Prob\,(r_{is} \leq q_s|A_s = 0) = Prob\,(Rand_{is} \leq q_s) \\ &= \frac{q_s}{\sum_{k=1}^{n_s} 1\Big\{p_{ks} = p_{is}\Big\}} \qquad \text{if } 0 \leq q_s < \sum_{k=1}^{n_s} 1\Big\{p_{ks} = p_{is}\Big\}; \\ &= 1 \qquad \text{otherwise} \end{aligned}$$

[6] For this set of applicants, the matching derived by the DA algorithm is equivalent to the one resulting from the Boston Mechanism (Abdulkadiroğlu et al. (2017b)).

We define as *oversubscribed* a program s whose capacity is lower than the number of its priority applicants i.e. $0 \leq q_s < \sum_{k=1}^{n_s} 1\Big\{p_{ks} = p_{is}\Big\}$. In these cases, the lottery had a decisive impact on students' chances of admissions. Only priority applicants with a rank below the program's capacity received an offer from the university after the first admission round. This means that the probability of a priority applicant to receive an offer is strictly below one.

Figure 2 displays program's ranking of applicants for an illustrative oversubscribed program. We restrict the sample to students from the priority educational district, which is the first criterion to sort applicants. Shades depict the relative rank of the program in students' ROL, the second criterion to distinguish applicants: the lighter the shade, the larger the relative rank. Finally, the Y axis gives applicants' absolute rank, the last sorting criterion. As marked by the vertical dash line, the capacity of the program (200) was not large enough to satisfy every applicant from the top-priority group, that is to say students from the priority district who ranked the program as their first relative and absolute choice. Only priority applicants randomly ranked between 0 and 200 received an offer during the first round of the matching procedure.

Figure 2: Program's Ranking of Applicants and Capacity: The Case of an Oversubscribed Program



Source: Admission Post Bac data from 2013 to 2017 (MESRI-SIES).
Notes: The figure displays absolute rank in students' rank-ordered list (ROL) as a function of their ranking by the program. Shades depict relative ranks in student's ROL: the lighter the shade, the larger the relative rank. Priority applicants have ranked the program as their first absolute and relative rank.

Preference Revelation in APB The APB matching mechanism is based on the so-called DA algorithm. Among its main features, this mechanism is strategy-proof, meaning that ranking the programs truthfully is a dominant strategy for all applicants (Gale and Shapley, 1962). Nevertheless, the use of students' ROL in the priority rules of university programs raises the issue of truthful revelation of preferences in APB. For instance, one could argue that some applicants who think they have no chance to be admitted in their first-best program strategically ranked a second-best university program at the top of their ROL (which makes them part of the top priority group for this program) in order to maximize their chances to be recruited somewhere.

The question of the correspondence between submitted ROL and applicants' preferences is complex, but the principal concerns are addressed in the following lines. First, the APB system of priority rules in university programs has become public information only during summer 2016, which reduces the chances of applicants strategically reporting ROL that do not correspond to their true preferences. More specifically, if district priority was a well known fact, the use of students' ROL to differentiate applicants was not official before the publication of the algorithm. Students were explicitly advised to rank programs according to their true preference, both on the official website and documentation available to students and teachers. Second, the APB system being a mix of a proper DA mechanism for selective programs and a rather different system (a variant of a Boston mechanism) for university programs, the window for strategic behaviors is not clear from a theoretical perspective. We cannot exclude that some students might have not reported their true preference as their first choice. However, since students are ranked according to their ROL in the Boston Mechanism, there is an important weight given to the first choice in the decision making process (Abdulkadiroğlu et al., 2011). This was a real incentive to put a program they preferred, at least among programs they considered as achievable.

2 Data and Summary Statistics

2.1 Data

Administrative sources Our analysis is based on linked individual-level administrative data which allows us to track students throughout their academic careers. We combine two main sources of information, the APB databases (2013-2017) and the *Système d'Information sur le Suivi de l'Etudiant* (SISE) databases (2013-2018), which were provided by the statistical service of the Directorate General of Higher Education (*Sous-direction des systèmes d'Information et des Etudes Statistiques*) (DGESIP/DGRI- SIES) and the Directorate of Evaluation, Prospective and Performance (*Direction de l'Évaluation, de la Prospective et de la Performance*) (MENJ - DEPP).

The APB files contain comprehensive information on students' ROL of programs, programs' rankings of applicants, and the matching outcome. They directly stem from memory files of the matching procedure. For each round of the procedure, we are able to know applicants' admission status for each of their applications, i.e. if the applicant has been rejected, if she has been offered a seat and accepted the offer, or if she chose to conditionally accept the offer to wait for other responses from higher-ranked programs. APB databases also provide information on students' socio-demographic characteristics (parents' socio-economic status, students' gender, age, place of birth, place of residence and scholarship status in high school[7]) as well as schooling characteristics, such as the type of *Baccalauréat* prepared (general or vocational) and distinctions obtained at the *Baccalauréat*. Additional details about the databases are displayed in the appendix A. The APB databases are matched with the SISE databases, using a unique student identifier, the *Identifiant National Etudiant* (INE), a 10 digit code assigned to every student who went through the French educational system. The SISE databases are records of all

[7] *Bourse sur critères sociaux*, a national need-based scholarship program.

students registered in public universities and of the majority of students enrolled in private institutions. In total, the SISE programs represent about 80% of students enrolled in higher education in France. We complete the SISE databases with the BPBAC data-sets, which record enrollment in selective programs located in high schools, namely *Sections de Technicien Supérieur* (STS) and *Classes Préparatoires aux Grandes Ecoles* (CPGE)[8]. These students represent more than 10 % of the total number of students enrolled in higher education. For each year a student is enrolled in an educational institution, the SISE databases contain detailed information on the institution and degree attended. These data are available for school years 2013 to 2018. We have therefore information up to six years after APB admissions for the 2013 cohort, whereas we are limited to two years after the matching procedure for the 2017 cohort.

Sample Restriction Our study focuses on priority applicants to university oversubscribed programs between 2013 to 2017. We restrict our analysis to high school applicants who successfully complete their applications. We also restrict our sample to programs where at least 30 priority applicants received an offer in the first round of the procedure, and at least 30 others did not. Our final sample of analysis is a cross-sectional data-set of 102,072 high school priority applicants to oversubscribed programs.

2.2 Summary Statistics

Oversubscribed Programs' Characteristics University programs became increasingly attractive over the period (table 7 in appendix A). Their share in students' ROL went up from 28 % in 2013 to 43 % in 2017. More importantly, university programs constitute an increasing proportion of students' top-ranked program: they accounted for 39 % of students' first choice in 2017, against 31 % in 2013. Part of the explanation for this trend is the change in the rules of APB: during the period, students had to rank at least one university program for their ROL to be valid. Meanwhile, the number of seats filled in university programs throughout the three regular rounds of APB only increased slowly. This growing pressure on university programs mechanically increases the risk of seeing more oversubscribed programs over the years. Further details about applications in APB are displayed in appendix A.

Table 2 summarizes information on oversubscribed programs included in our sample, which are grouped into five main fields of study based on the French official classification of programs[9]. Following the above mentioned general trend in applications, the number of oversubscribed programs in our sample has raised from 39 in 2013 to 110 in 2017, which corresponds to a 161 % increase in the number of priority applicants over five years.

[8]Hereafter, SISE programs refer to both SISE and BPBAC programs.

[9]The correspondence table between fields and type of programs at a disaggregated level is displayed in appendix A table 9.

The greatest jump occurs between 2016 and 2017, the year before the implementation of *Parcoursup*. In relation to the total number of university programs, oversubscribed programs account for only a small fraction of the higher education supply. Nonetheless, their capacity represents 4 to 9 % of university programs' total capacity, and students concerned by the lottery represent 10 % of university's available seats on average over the period, which represents a sizable share of students entering in higher education.

Table 2: Summary Statistics of Oversubscribed Programs

	2013	2014	2015	2016	2017	All years
Oversubscribed Programs						
Health & Sciences	5	2	3	3	10	23
Humanities	3	2	2	5	13	25
Law & Economics	8	9	7	10	19	53
Social Sciences	7	8	16	11	26	68
Sports Studies	16	22	28	30	42	138
All fields	39	43	56	59	110	307
Inertia	82 %	66 %	86 %	100 %	100 %	89 %
Priority Applicants						
Lottery winners	8,835	8,450	10,038	11,376	20,127	58,826
Lottery losers	5,235	5,042	6,987	9,370	16,612	43,246
All	14,070	13,492	17,025	20,746	36,739	102,072
University programs' capacity	8 %	7 %	8 %	9 %	15 %	10 %

Source: APB administrative data from 2013 to 2017, from the French statistical service of the ministry of higher education (MESRI-SIES).
Scope: Oversubscribed university programs with at least 30 lottery winners and 30 lottery losers.
Notes: Inertia refers to the share of programs which stay oversubscribed throughout the period. The last row of the table displays the percentage of total university programs' capacity that priority applicants represent.

Of the 102,072 applicants in our sample, 58 % are randomly selected to receive an offer in the first round of the procedure. As the number of priority applicants increases - and the number of seats available does so but not as rapidly - the share of lottery winners slightly decreases over the period, from 62 % in 2013 to 54 % in 2017. Finally, once oversubscribed, programs tend to remain as such in subsequent years. Around 43 % of the programs in our sample appear more than one year and, on average, 89 % of them stay oversubscribed until the end of the period from the moment they entered our sample.

Oversubscribed programs are spread all over the country, with a larger concentration for the region Ile-de-France and great urban centers as Lyon. Bachelor degrees specialized in Sports Studies are the most represented field in our sample. Sports programs prepare students not only for the Physical Education (PE) examination, but also for a variety of jobs related to sport (coach, sport management, bridges with physiotherapist degrees etc.).

Good labor market prospects for graduates has pushed demand up for such programs (France Stratégie and Cereq, 2019), with the number of oversubscribed sports degrees almost tripling over the period [10] (Table 2). Sports is not only the most represented field of study, but also the category with the largest number of priority applicants. Sports degrees are followed by Social Sciences and Law and Economics. Social Sciences oversubscribed programs are mainly composed of Psychology degrees, while Law degrees represent the principal type of oversubscribed programs in Law and Economics (appendix A table 9).

Priority Applicants' Characteristics Table 3 compares priority applicants in our sample (left-hand side) with APB applicants who ranked another type of program at the top of their list as well as the whole set of APB applicants (right-hand side) along several socio-demographic and schooling characteristics. Academic ability is measured by distinctions obtained at the *Baccalauréat*[11]. There are five different type of distinctions, depending on the final GPA (over 20): Highest honors (above 16), High honors (from 14 to 16), Honors (from 12 to 14), Graduation with no distinction (from 10 to 12), and Failure (below 10). The other schooling characteristics are the age relative to the usual age of students preparing the *Baccalauréat* and the type of high school attended (general or vocational[12]). Socio-economic status has been aggregated into four categories (High SES, Medium-High SES, Medium-Low SES, and Low SES) based on 2 digit socio-professional categories, following the usual definition of the French Ministry of Education. The other socio-demographic characteristics are gender and need-based scholarship status.

Even though our sample only covers a small fraction of the entire APB platform, it is still very representative of high school students applying through the platform, and exhibits a great variety of programs and applicants' profiles. On average, priority applicants have a very similar profile as the other applicants in APB, and especially with those who ranked an undersubscribed university program as their first choice. The composition of priority applicants also substantially varies across fields of study. Sports degrees only gather 25 % of female students, instead of 84 % for Social Sciences programs. Some oversubscribed programs tend to recruit higher-achieving students, or students from high socio-economic status. For instance, Science and Health programs consist of students with an excellent academic level, 14 % of priority applicants having graduated high school with

[10] Over the period of study, the total number of Sport studies programs remained constant (about 85).

[11] This information is easily comparable between applicants from different high schools, though it should be noted that the final results of the *Baccalauréat* are published between the second and the third admission round. We assume that the outcome of the lottery does not affect students' achievements and believe that this hypothesis is very likely to be verified. This variable is thus considered to be a pre-treatment characteristic in this article. Using another proxy such as the continuous assessment in high school would not allow us to assess students' ability, as high schools have different strategies when it comes to grading their students.

[12] Students from vocational (*lycées professionnels*) and technological high-schools (*lycées technologiques)* belong to this group.

the highest honors (against 8 % for the entire APB platform). In contrast, 56 % of Sports priority applicants (50 % in Social Sciences) obtained their *Baccalauréat* with no distinction. Regarding students' social background, 42 % of priority applicants to Humanities degrees come from very high socio-economic status (against 29 % on average for all APB applicants). Sports and Social Sciences also recruit students from a relatively lower social background.

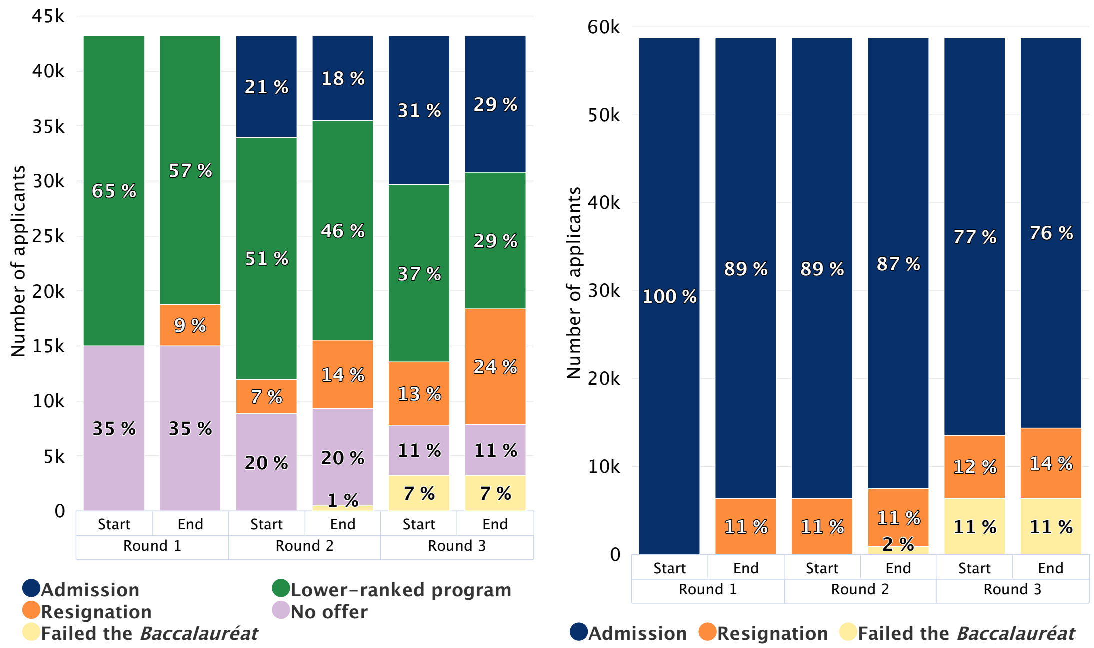
Table 3: Summary Statistics: Priority Applicants

	Priority Applicants in Oversubscribed University Programs						All Applicants, by Top-Ranked Program		
	Field of study								
	Health & Sciences	Humanities	Law & Economics	Social Sciences	Sports Studies	All Fields	Undersubscribed University Programs	Selective Programs	All Programs
Count (k)	10	4	16	18	55	102	827	1,843	2,934
Socio-demographic characteristics									
Female	0.60	0.69	0.64	0.84	0.25	0.46	0.64	0.48	0.52
Scholarship beneficiary	0.14	0.15	0.21	0.2	0.16	0.17	0.2	0.2	0.2
SES									
Very High	0.41	0.42	0.4	0.26	0.27	0.31	0.31	0.28	0.29
Medium-High	0.14	0.13	0.11	0.17	0.18	0.16	0.16	0.15	0.15
Medium-Low	0.27	0.29	0.25	0.32	0.32	0.31	0.29	0.3	0.30
Low	0.17	0.15	0.21	0.23	0.21	0.21	0.23	0.26	0.25
No information	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.02
Schooling characteristics									
General track	0.94	0.86	0.78	0.77	0.71	0.76	0.84	0.48	0.58
Age on time	0.75	0.67	0.66	0.68	0.66	0.67	0.7	0.64	0.65
Baccalauréat Distinctions									
Highest honors	0.14	0.04	0.06	0.02	0.01	0.03	0.07	0.09	0.08
High honors	0.2	0.13	0.15	0.1	0.06	0.1	0.15	0.16	0.15
Honors	0.26	0.28	0.27	0.27	0.21	0.24	0.26	0.29	0.28
No distinction	0.33	0.44	0.41	0.5	0.56	0.5	0.41	0.39	0.41
Failed	0.07	0.1	0.1	0.11	0.16	0.13	0.1	0.07	0.09
Applications in the ROL									
Average number	6.4	7.8	9.6	5.3	6.8	6.9	4.6	7.8	6.9
Same field as the 1st choice	0.77	0.69	0.65	0.71	0.63	0.66			
Only one program ranked	0.19	0.09	0.04	0.09	0.06	0.07	0.22	0.06	0.11

Source: APB administrative data from 2013 to 2017, from the French statistical service of the ministry of higher education (MESRI-SIES).
Scope: Left-hand side: Priority applicants applying to an oversubscribed university program with at least 30 lottery winners and 30 lottery losers. Right-hand side: all the high school applicants preparing the *Baccalauréat* by the end of the year.
Notes: Socio-economic status has been divided into four categories (High SES, Medium-High SES, Medium-Low SES, and Low SES) based on two-digit socio-professional categories. Academic ability is measured by distinctions obtained at the *Baccalauréat.* The student gets the highest honors if she graduated with a GPA that is above 16 over 20, high honors if her GPA is between 14 and 16, and honors if her GPA is between 12 and 14. Students graduate with no distinction if their GPA is below 12 over 20, and fail the *Baccalauréat* if their GPA falls below 10.

Dynamics of Offers and Admissions Figure 3 depicts the dynamics of students' admission throughout the three rounds of the APB procedure. By construction, all lottery winners received an offer from their top-ranked program in the first round, which they could accept or reject. At the end of the procedure, 76 % of them have been admitted to the program. The rest of these applicants failed the *Baccalauréat* (11 %) or voluntary resigned (14 %). Among lottery losers, 65 % directly received an offer from a program ranked below in their ROL and could decide to accept the offer or postpone their answer to wait for a potential offer coming from their first choice in rounds 2 or 3. After the last round of admission, 29 % of lottery losers were eventually admitted to their first choice, and 29 % were admitted to a lower ranked program. Only 11 % of lottery losers remained without any offer, which means that most of them had the possibility to pursue higher education through their application to APB.

Figure 3: Dynamics of Admission to Top-Ranked Program, by Treatment Assignment



Lottery losers ($Z = 0$) Lottery winners ($Z = 1$)

Source: APB administrative data from 2013 to 2017, from the French statistical service of the ministry of higher education (MESRI-SIES).
Scope: Oversubscribed university programs with at least 30 lottery winners and 30 lottery losers.
Notes: The figure compares the admission status of applicants by treatment assignment at the beginning (programs' offers) and the end (applicants' responses) of the three regular rounds of the APB procedure.

Two-Sided Non Compliance As shown in Figure 3, there are different pathways from lottery assignment to admission[13]. On the one hand, some applicants who received an offer might deliberately reject it, whereas other applicants who failed the *Baccalauréat* are not able to accept any offer. These students are not sensitive to the treatment assignment,

[13]For the sake of the argument, we posit here the monotonicity assumption, also known as the "no defier" assumption. See section 3.2 about the validity of the strategy.

and should be seen as never-takers. On the other hand, some applicants who narrowly lost the lottery (i.e. those with a lottery number $Rand_{is}$ that is just above the program's capacity q_s) still managed to enroll in their first choice during the subsequent rounds of the procedure by benefiting from seats freed by never-takers. Since they get the treatment without being assigned to it, these applicants are considered as always-takers. This group of students is likely to be specific, as vacant seats of the 2nd and 3rd rounds are offered to the pool of applicants who have not already accepted another offer (or resigned from the system) in the first round. For instance, these applicants waited for a potential new offer from their top-ranked program because they were more informed about the rules of the procedures, less risk-adverse, or more willing to enroll in the program. Conversely, a subset of unassigned students might also have cancelled their application due to endogenous factors. In particular, some applicants could have accepted the offer they received from a lower-ranked program (or an outside option) in the first round of admission only because they received it earlier. As shown by Grenet et al. (2019), it is costly to learn information about programs in a centralized system like APB, and students tend to accept early offers more often, even though they are not preferable. As applicants do not get any information about their rank and their probability to receive an offer in the next rounds of the procedure, some might directly accept the offer they received in the first round.

Eventually, the Equal Treatment of Equals (ETE) property ensures that conditional on the priority group, first-round offers are sent independently of confounding factors that could induce an omitted variables bias. However, this is not the case for final admission because of two-sided non-compliance. Applicants who accept the offer represent a self-selected subset of those who received it, and it is likely that they differ on unobserved characteristics that are both related to academic achievement and offer acceptance. Besides, the offers sent in the subsequent rounds of the procedure are only sent to applicants who are still competing for a seat, and cannot be considered as random anymore.

3 Empirical strategy

3.1 Design

Our purpose is to assess the causal effect of being admitted to one's top-ranked program on post-secondary educational outcomes. To do so, we take advantage of the exogenous variation embedded in the APB centralized assignment system. Lottery tie-breaking assigns priority applicants to oversubscribed programs as in a stratified randomized trial, where students exogenously received an offer (or not) from their top-ranked program.
Formally, let Y_{isc} be a post-secondary educational outcome for student i from cohort c (2013 to 2017) who put the program s at the top of her ROL. We define the treatment D_{isc} as being admitted to one's top-ranked program. We therefore consider as assigned

to treatment lottery winners i.e, priority applicants who received an offer from their top-ranked program in the first admission round of the procedure ($Rand_{isc} \leq q_{sc}$). Lottery losers are considered as unassigned to the treatment. Treatment assignment is thus defined by the dummy $Z_{isc} = 1\Big\{Rand_{isc} \leq q_{sc}\Big\}$, which equals one if student i is a lottery winner.

Local Average Treatment Effect To get an accurate picture of the effect of admission to one's top-ranked program, a simple comparison of students with respect to their admission status to the top-ranked program would be misleading, as well as a comparison of students with respect to the outcome of the lottery (the treatment assignment).

To overcome this issue, we estimate a Local Average Treatment Effect (LATE) focusing on the sub-population of compliers (Angrist et al., 1996), i.e., applicants who are sensitive to the treatment assignment in the sense that they are actually willing to enroll in the top-ranked program. We instrument admission D_{isc} to the top-ranked program by treatment assignment Z_{isc} in the first round of admission[14]. The LATE, i.e., the effect of the treatment on the compliers, is given by the Wald estimator:

$$\beta = \frac{E[Y_{isc}|Z_{isc} = 1] - E[Y_{isc}|Z_{isc} = 0]}{E[D_{isc}|Z_{isc} = 1] - E[D_{isc}|Z_{isc} = 0]}$$

Estimation We estimate the following linear probability model by two-stage least squares (2SLS):

$$Y_{isc} = \alpha + \beta D_{isc} + \lambda_{sc} + X_i^{'}\mu + \nu_{isc} \tag{2}$$

where X_i is a vector of individual constant socio-demographic and schooling characteristics (gender, referent parent's SES, need-based scholarship status, age when applying to APB, type of *Baccalauréat* - general or vocational - and *Baccalauréat* distinctions)[15], ν_{isc} are individual error terms, and λ_{sc} are program×cohort fixed effects. These latter are used to distinguish between the applicants to the 307 different programs where the randomization has occurred. As there are different probabilities of assignment among our randomization units, we follow Abadie et al. (2017) and cluster our standard errors at the program×cohort level. Our first stage is given by the following equation:

$$D_{isc} = \alpha + \beta Z_{isc} + \lambda_{sc} + X_i^{'}\mu + \epsilon_{isc} \tag{3}$$

[14] In this framework, another valid instrument is a dummy equal to 1 if the priority applicant had a lottery number $Rand_{isc}$ that is lower than the one of the last applicant who received an offer at the end of the three rounds (Behaghel and De Chaisemartin, 2020). We do not use this instrument because in our setting almost all priority applicants would have been eventually considered as assigned to the treatment, as there is an important share of between-rounds rejections due to failures at the *Baccalauréat*.

[15] Even though we show in the following balancing checks section that the vector X_{isc} is almost perfectly orthogonal to our random assignment Z_{isc} in our sample of analysis, we include these characteristics in the equation to improve the accuracy of our estimates of treatment effects.

where ϵ_{isc} are individual error terms, and our treatment D_{isc} is instrumented by our treatment assignment Z_{isc}.

Outcomes of Interest We define four cumulative outcomes to investigate the different channels through which admission to one's first choice might affect students' trajectory in higher education. We set a three-year time frame from APB admissions to study three families of outcomes: (1) enrollment decision, (2) persistence in higher education and (3) completion of studies. Enrollment decision is captured by a dummy equal to one if the applicant has ever enrolled in higher education within three years. This provides evidence on whether capacity constraints can generate substantial discouragement effects on the pursuit of higher education. Persistence in higher education is measured by two outcomes: being enrolled every year in higher education, and being enrolled in higher education in the same field of study every year. Finally, students' completion of studies is measured by a dummy variable equal to one if the student is enrolled in her third/final year of bachelor within three years.
Due to data constraints, we exclude cohort 2017 from all the following estimations, since we are not able to track students three years after their high school graduation for the moment. Therefore, only 197 clusters (program×cohort) are considered to compute the LATE estimates[16].

3.2 Validity of the Strategy

Balancing Checks Since receiving an offer to a top-ranked oversubscribed program is the result of a lottery, priority applicants should have similar observable and unobservable characteristics with respect to treatment assignment ($Z_{isc} \perp X_{isc}, \epsilon_{isc}$). Figure 4 graphically summarizes the results of the balancing checks on observed socio-demographics and schooling characteristics defined in section 2.2, namely gender, students' social background, relative age, type of high school and distinctions at the *Baccalauréat*.

These tests are derived from linear probability models where our treatment assignment dummy Z is regressed on a single observable characteristic and fixed effects for each cluster (program×cohort), our unit of randomization. These fixed effects are necessary to compare applicants with the same ex-ante probability of assignment to treatment[17].

[16] Results including cohort 2017 will be presented in future versions of this paper, as soon as the upcoming versions of SISE databases becomes available. As a robustness check, we have done the estimates of the LATE separately for each cohort from 2013 to 2016 and the coefficients (available on demand) do not qualitatively differ between cohorts. This suggests that our results are not likely to change by adding cohort 2017 in the estimates.

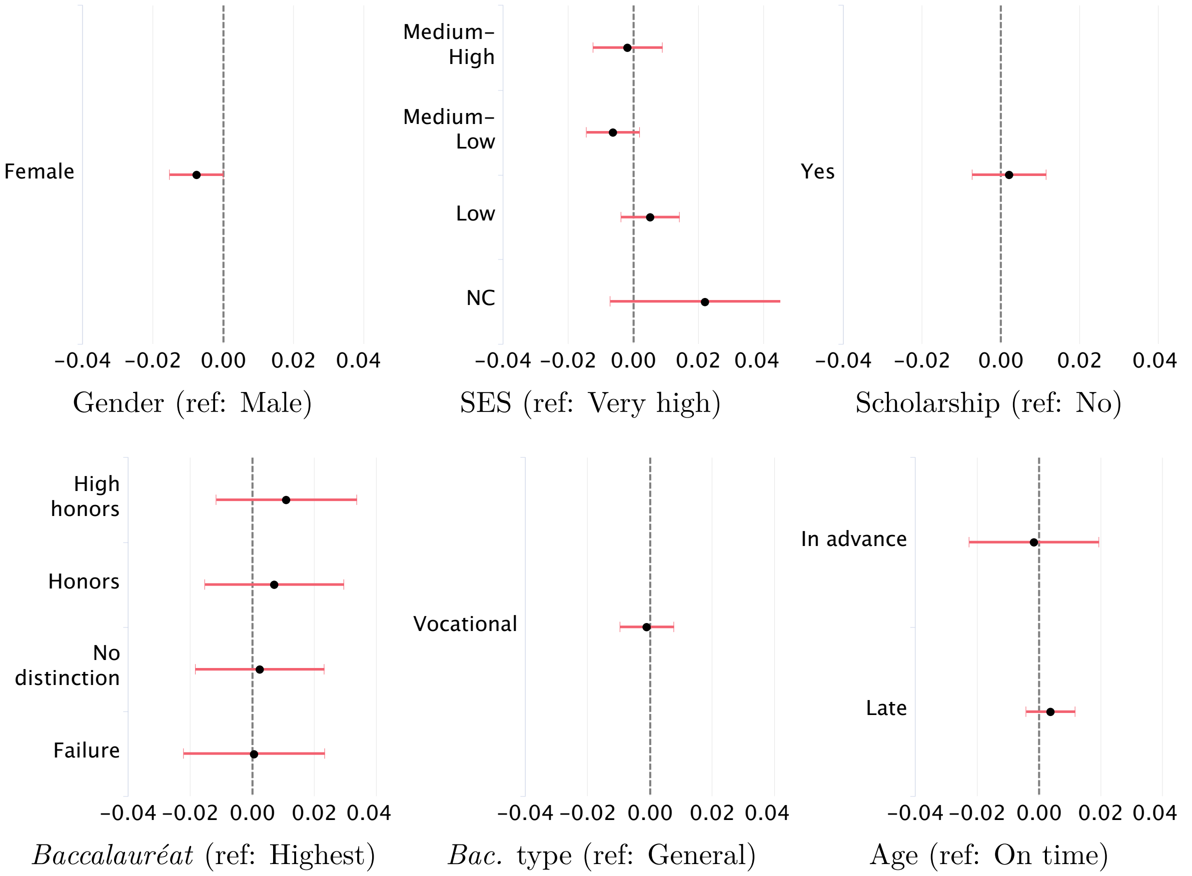
[17] Since the assignment rate differs from one program to another, and since all programs recruit students with different profiles, the raw balance between the pooled sample of assigned and unassigned students is not guaranteed. However, our sample appears to be fairly balanced when we do not add the program×cohort fixed effects.

Figure 4 displays the estimate and the 95 % confidence interval for the characteristic of interest for each of the six regression models.

In almost all cases, lottery winners and losers do not significantly differ on observable characteristics, which suggests that students are homogeneously distributed between the two groups that were created by the random draw. It should be noted that the coefficient for female (-0.008) is the only one with a p-value below 0.05 (0.048): this suggests that male were slightly more likely to be randomly drawn. Alternative specifications have been tested as robustness checks. We first have considered a joint model including the whole set of characteristics and failed to reject the joint hypothesis test of the nullity of all the characteristics. We also have considered nonlinear specifications, namely Logit and Probit. These estimates yield to the same conclusions as our linear specification (Table 10 in Appendix B).

This confirms the assumption that lottery winners and losers present also similar unobserved characteristics. Hence, it seems reasonable to think that lottery winners and losers started with equal chances of success in higher education before the beginning of the APB procedure, which strengthens the credibility of our estimates.

Figure 4: Balancing Checks of Selected Observed Characteristics in Our Final Sample



Source: APB administrative data from 2013 to 2016, from the French statistical service of the ministry of higher education (MESRI-SIES).
Scope: Oversubscribed university programs with at least 30 lottery winners and 30 lottery losers.
Notes: The figure gives the estimated effect of each observable characteristic on the probability to receive an offer from the program in the first round of APB (lottery winner), i.e. being assigned to the treatment group. The coefficients are estimated in separated linear probability models including program×cohort fixed effects. The red bars show 95 % confidence intervals computed with robust standard errors clustered at the program×cohort level.

First Stage Our instrument meets the usual conditions to be valid. First, it satisfies the rank condition: it is positively correlated with the treatment, since only applicants being offered a seat at some point during the procedure can be admitted to their first choice. By design, our instrument is independent of the vector of potential outcomes and treatment assignment. We believe that it also satisfies the exclusion restriction and the monotonicity assumption. Indeed, we posit that there is no defiers in our setting, as it seems very unlikely that some applicant would accept an offer only because they have not been offered one in the first round of admission.

It has been shown that in some encouragement designs, random assignment to the treatment can have an effect in itself on the outcome of interest. In fact, lottery losers could feel they have been treated unfairly, which could have an impact on their academic achievement. They could also misinterpret losing the lottery as a signal that they are not a good fit for the university, and lose confidence in their ability to succeed. Though we cannot prove formally that our instrument verifies the exclusion restriction assumption, we assume that the lottery is not likely to have an effect in itself on post-secondary outcomes, and only affects students' achievement through admission to one's first choice.

As previously discussed, there is imperfect compliance in our setting. However, this is not a threat to the internal validity of our design, since lottery winners are still more likely to be admitted to their first choice than lottery losers at the end of the procedure. Results for the first stage estimates are reported in Table 4. Our instrument turns out to be very strong, as the value of the F-stat is large (around 500). It is associated with a 120 % increase from the baseline probability of being admitted to one's first choice for lottery losers (of 31 %). Because our instrument is a lottery, our estimates are robust to the inclusion of pre-treatment observed characteristics as control variables (see column 3).

Table 4: First Stage Estimates

	Outcome: Admission to 1st choice (0/1)		
	Raw difference	Program×cohort fixed effects	Full model
Marginal effect of the instrument			
Baseline probability	0.31	0.31	0.31
Lottery winner	0.47***	0.40***	0.40***
	(0.02)	(0.02)	(0.02)
F-stat	503	507	506
Socio-demographic characteristics			✓
Schooling characteristics			✓
Program×cohort fixed effects		✓	✓
Nb. of applicants	65,333	65,333	65,333
Nb. of clusters (program×cohort)	197	197	197
R^2	0.22	0.28	0.48

Notes: *p<0.05; **p<0.01; ***p<0.001 ; standard errors clustered at the program*cohort level in parenthesis. Socio-demographic characteristics include gender, age, SES and scholarship status. Schooling characteristics include the type of *Baccalauréat* (general or vocational) as well as *Baccalauréat* distinctions. The baseline probability is the mean of the outcome variable for lottery losers ($Z = 0$).
APB cohorts: 2013 to 2016.

4 Results

4.1 Main Results

Table 5 displays our main estimates of the treatment effect for our five outcomes of interest. The first column displays the results for the estimation of the effect of the lottery i.e., the effect of the Intent-to-Treat (ITT), and the second column shows the estimation of the LATE by 2SLS. The estimated coefficients are displayed in percentage points (p.p.).
For each specification and outcome, we provide a baseline probability of the outcome in order to give an idea of the magnitude of the treatment effect. For ITT estimates, the baseline probability is simply the observed mean of the outcome for lottery losers. Since the estimated LATE gives a treatment effect for the sub-population of compliers, we would like to display in the second column the baseline probability for compliers only i.e., the mean of the outcome for untreated compliers. This value is unknown, as it is not possible to individually identify compliers in our setting. As a second-best proxy, we compute a baseline probability that is the observed mean of the outcome for untreated lottery losers ($Z_{isc} = 0$ and $D_{isc} = 0$) who obtained their *Baccalauréat*. This last filter helps reducing the share of potential never-takers, as failure at the *Baccalauréat* forces students to reject any admission offer regardless of the lottery outcome.

The treatment effect estimates are significantly different from zero at the 1 % level for all higher education outcomes and all specifications. Overall, we find that having access to one's first choice improve students' chances to pursue and persist in higher education. Unsurprisingly, ITT estimates display lower coefficients due to imperfect compliance. Nevertheless, these coefficients are also significantly different from zero at the 1% level for all the outcomes we consider. Later in this section, we focus on the LATE estimates.
The former estimates include all priority applicants. However, applicants who failed the *Baccalauréat* are not allowed to enroll in higher education. As a robustness check, we estimated the same models on the subset of students who actually obtained their diploma, and were thus entitled to enroll in higher education. Results are displayed in appendix in Table 11, and yield to the same conclusions, which is not surprising, since lotteries created balanced samples in terms of students' high school academic performances (Figure 4).

Students' Phasing out When outcomes become more difficult to achieve, the baseline probability of success declines. Only a few students manage to have an educational pathway without interruption, repetition or changes of field of study. If the baseline probability of ever being enrolled in higher education is 75 %, it falls to 27 % for being enrolled three years successively without changing fields. This is evidence of students phasing out, as the baseline probability of having an uninterrupted trajectory (being enrolled in 3$^{\text{rd}}$ year of bachelor after three years) is only 22 %. This has a direct consequence for the interpretation of our results: if our treatment effects are close in absolute terms for all the outcomes we consider, they represent a different relative impact if we take account of gaps in the baseline probability of success.

Enrollment Decision On average, students who were admitted to their first choice are more likely to have ever been enrolled in higher education within three years by 8 p.p.. This is a sizable effect, as it represents a 10 % increase from the baseline probability of 75 %. Following students up to three years after their *Baccalauréat* enables us to capture not only a immediate disappointment effect the year following the end of the matching procedure, but what seems to be a lasting discouragement effect on students who did not obtained their first choice. This suggests that capacity constraints on students' preferred program might have a disincentive effect on the pursuit of higher education. This is true besides any consideration on the characteristics of the preferred program itself (quality of teaching, difficulty, student support etc.).

Persistence and Completion On average, students who were admitted to their first choice are more likely to have been enrolled every year successively by 8 p.p., and also to have done it without changing field of study by 12 p.p., which respectively corresponds to an increase by 20 % and 44 % from the baseline. In terms of academic success, students who were admitted to their first choice are more likely to be enrolled in 3$^{\text{rd}}$ year of bachelor three years after their high school graduation by 6 p.p., which corresponds to a 27 % increase from the baseline. Overall, students who obtained their first choice are thus less likely to change their field of study, but also less likely to have repeated a class or taken a gap year. In relative terms, these effects are larger than the one we observe on the decision to pursue higher education. This suggests that our estimates of the treatment effect on students' persistence and completion do not solely capture the lagging effect of enrollment decision, but something that could be the result of the quality of the match between students and programs, or due to the characteristics of the programs, namely the difficulty of their curriculum or their ability to support students.

Table 5: Effect of Admission to Top-Ranked Program on Various Higher Education Outcomes

	ITT	LATE
Treatment effects 3 years after admission		
1. At least one registration		
Baseline probability	0.78	0.75
Treatment effect	0.03 (0.00)***	0.08 (0.01)***
2. Enrolled every year		
Baseline probability	0.41	0.40
Treatment effect	0.03 (0.00)***	0.08 (0.01)***
3. Enrolled every year in the same field of study		
Baseline probability	0.30	0.27
Treatment effect	0.05 (0.01)***	0.12 (0.01)***
4. Enrolled in 3rd year of bachelor		
Baseline probability	0.23	0.22
Treatment effect	0.02 (0.00)***	0.06 (0.01)***
Controls		
Socio-demographic characteristics	✓	✓
Schooling characteristics	✓	✓
Program×cohort fixed effects	✓	✓
Nb. of applicants	65,333	65,333
Nb. of clusters (program×cohort)	197	197

Notes: *p<0.05; **p<0.01; ***p<0.001 ; standard errors clustered at the program×cohort level in parenthesis. ITT: Intent-to-treat, LATE: Local average treatment effect. Socio-demographic characteristics include gender, age, SES and scholarship status. Schooling characteristics include the type of *Baccalauréat* (general or vocational) as well as *Baccalauréat* distinctions. In column 1, the baseline probability is the mean of the outcome variable for lottery losers ($Z = 0$). In column 2, the baseline probability is the mean of the outcome variable for untreated lottery losers ($Z = D = 0$) who obtained the *Baccalauréat*.
APB cohorts: 2013 to 2016.

4.2 Treatment Effect Heterogeneity

To understand who are the individuals that are the most affected by the outcome of the admission procedure, we turn to an analysis of the heterogeneity of the treatment. We first focus on between-program differences in the intensity of the treatment, and then explore between-students heterogeneity based on a set of pre-treatment individual characteristics.

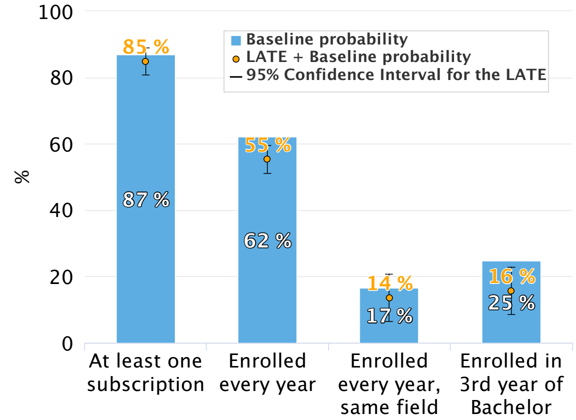
Heterogeneity by field of study of top-ranked program

One of the main sources of heterogeneity in our sample lies in the different types of field of study represented among oversubscribed programs. Their recruitment largely differs in terms of socio-economic background and academic status. Indeed, as described in Table 3, oversubscribed programs in Social Sciences and Sports Studies tend to attract students coming from less favored social background and with lower academic level. Science and Health programs recruit students with very high academic level, whereas programs in Humanities are particularly demanded by applicants from upper social background. Fields of study also have different gender ratios, some being predominantly composed of male students (Sports Studies) or of female students (Social Sciences). Finally, each type of program is specific regarding the content of its curriculum, and does not necessarily have the same number of equivalent within selective programs. This represents another source of variation that might have a differentiated impact on students' trajectory in higher education.

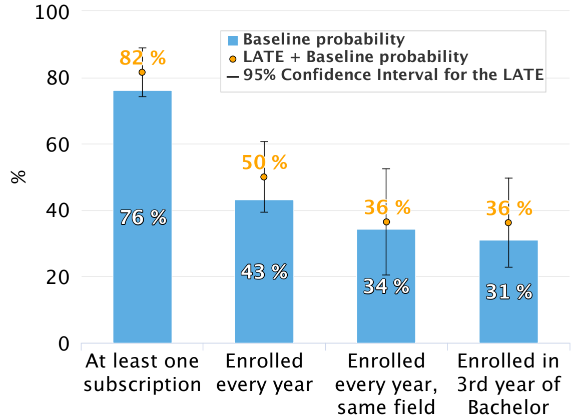
We investigate this potential source of heterogeneity by separately re-estimating treatment effects for each of our five main fields of study. The results are illustrated in Figure 5. We find significant effects at the 5 % level for all type of fields of study except Humanities (probably due to small sample size), which suggest that the effect of the treatment is not field-specific. Students applying to Sports seem to be the most affected by the outcome of the admission procedure. On average, priority applicants to Sports programs who obtained their first choice are more likely to ever be enrolled in higher education by 10 p.p. (13% from the baseline), and also to be enrolled three times successively without switching field of study by 15 p.p. (56 % from the baseline). Regarding completion, we observe that on average, those who obtained their first choice are 37 % more likely to be enrolled in 3^{rd} year of bachelor three years after high school (8p.p.). Interpretation is similar for students applying to Social Sciences.

The sign and the magnitude of these effects are consistent with the content and the difficulty of each curriculum. For instance, students who obtained their first choice in Science and Health are actually less likely to be enrolled in 3^{rd} of bachelor three years after high school (-9p.p., namely -36% from the baseline). This stems from students going to medical school, whose first year of bachelor is a difficult exam based on a *numerus clausus*. This example shows that satisfying students preferences is not the sole determinant of students' success, especially in highly demanding curriculum. Sports Studies, in turn, have no close equivalent in the universe of higher education programs, and can only be provided by universities. This might explain the large effects on the extensive margin.

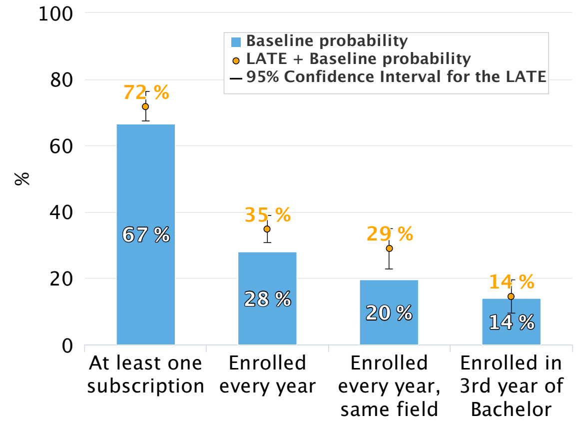
Figure 5: Heterogeneity of the LATE by Field of Study



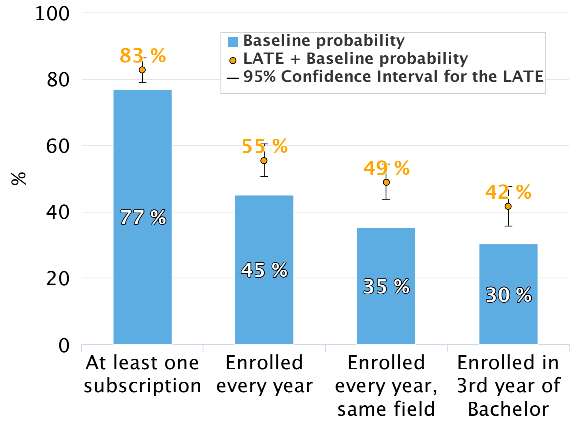
Health & Sciences *(13 clusters - 6,591 applicants)*



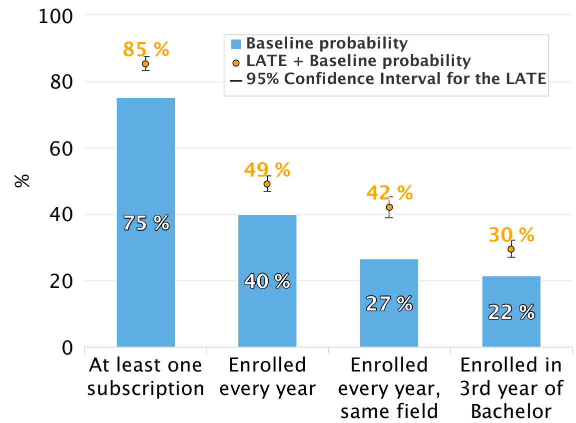
Humanities *(12 clusters - 1,719 applicants)*



Law & Economics *(34 clusters - 9,560 applicants)*



Social Sciences *(42 clusters - 10,606 applicants)*



Sports Studies *(96 clusters - 36,804 applicants)*

Notes: The figure reports LATE estimates given by equation (2) on different educational outcomes separately for each field of study. The filled bars indicate the baseline probability, which is the mean of the outcome variable for untreated lottery losers ($Z = D = 0$) who obtained the *Baccalauréat*. The solid dots show the estimated treatment effects (added to the baseline probability), with 95 % confidence intervals denoted by vertical capped bars. Confidence intervals are computed with robust standard errors clustered at the program×cohort level. The LATE estimate differs significantly from 0 at the 5 % confidence level if the capped bar around the point estimate does not overlap with the filled bar. Socio-demographic and schooling characteristics as well as program×cohort fixed effects are added in all models. Socio-demographic characteristics include gender, age, SES and scholarship status. Schooling characteristics include the type of *Baccalauréat* (general or vocational) as well as *Baccalauréat* distinctions.
APB cohorts: 2013 to 2016.

Heterogeneity Among Applicants

Table 6 displays results for estimates on the whole sample of programs, where the treatment indicator has been interacted with some students' socio-demographic and schooling characteristics. We chose to focus on four features: students' gender, scholarship status, type of high school attended and academic level (*Baccalauréat* achieved with highest/high honors or not). P-values for the difference of the LATE estimates between the modalities of the interacted characteristic are displayed below the treatment effects.

Treatment effects are significantly different from zero for all sub-populations and all outcomes, except successive enrollment for high-achieving students, and enrollment in third year of bachelor for high-achieving students and vocational high school graduates. Once again, if treatment effects are of similar order of magnitude, they can substantially differ in relation to the baseline probability of success of each sub-population.

Significant differences between modalities are observed regarding enrollment in higher education. On average, male students are more affected than female students (9 p.p. against 6 p.p.), with respectively a 12% and a 8% increase from a baseline probability of 77% and 73%. Students without a scholarship are more affected on the extensive margin: they are more likely to ever been enrolled in higher education by 8p.p., whereas the effect is not significant for students benefiting from a need-based scholarship. This could be explained by a higher entry cost for students with no scholarship, or by the fact that these students have more outside options. Students' benefiting from a need-based scholarship in high school are also eligible for a scholarship in higher education if they enroll in specific public or contract-based programs, which are mostly available through APB. This could deter these students with a potential scholarship in higher studies to enroll in a more expensive program that is outside the scope of APB programs. Vocational high school graduates are twice more affected than general graduates by the result of the matching procedure: on average, vocational graduates who obtained their first choice are more likely to be enrolled in higher education by 12 p.p. (against 6 p.p. for general graduates) which represent a 20% increase from a baseline probability 59% (respectively 7% from a baseline of 81%). Interestingly, the treatment effects for high-achieving students do not differ significantly from the coefficients for low-achieving students, which suggests that capacity constraints do not have a differentiated effect along students' ability on the extensive margin.

Results are less straightforward regarding outcomes of persistence and completion in higher education. Most differences are not significant, and the heterogeneity of the treatment is difficult to interpret. Nonetheless, there are a few points to notice. First, treatments effects are larger for general high school graduates than vocational ones regarding enrollment every year in the same field of study (14 p.p. against 8 p.p.). However, in relative terms, vocational graduates are clearly more affected by their admission status to their first choice, as the treatment effects represent a 88% increase from a baseline of 9% (against 41% from a baseline of 34% for general graduates). Eventually, admission to one's first choice seems to have no effect on completion on time for vocational graduates, but still does for general graduates (8p.p.). Treatment effects are also larger for low-achieving students regarding persistence in higher education: on average, they are more likely to enroll in the same field of study every year by 13 p.p., which represents a 52% increase from a baseline probability of 25%. Rejection to one's first choice appears to exert a discouragement effect on more vulnerable students.

All in all, this analysis of the heterogeneity of the treatment suggests that students at the margin of pursuing higher education are the most affected by the outcome of the admission procedure. Being admitted to one's first choice has a larger impact on higher educational trajectories for low-achieving students and/or from vocational high schools, who are the individuals with the lowest probability to access and succeed in higher education in the first place.

Table 6: Treatment Heterogeneity by Selected Applicants' Characteristics

	Gender		Scholarship		Type of *Baccalauréat*		*Baccalauréat* Distinctions	
	Male	Female	Yes	No	General	Vocational	Highest/High	Else
Treatment effects 3 years after admission								
1. At least one subscription								
Baseline probability	0.77	0.73	0.79	0.74	0.81	0.59	0.78	0.74
Treatment effect	0.09***	0.06***	0.04	0.08***	0.06***	0.12***	0.06**	0.08***
	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)
P-value of the difference	0.01		0.04		0.03		0.57	
2. Enrolled every year								
Baseline probability	0.41	0.40	0.37	0.41	0.51	0.15	0.57	0.38
Treatment effect	0.09***	0.06***	0.07***	0.08***	0.08***	0.06**	0.05	0.08***
	(0.01)	(0.02)	(0.02)	(0.01)	(0.01)	(0.02)	(0.03)	(0.01)
P-value of the difference	0.13		0.67		0.31		0.45	
3. Enrolled every year in the same field of study								
Baseline probability	0.26	0.27	0.23	0.28	0.34	0.09	0.36	0.25
Treatment effect	0.13***	0.12***	0.13***	0.12***	0.14***	0.08***	0.06*	0.13***
	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)	(0.03)	(0.01)
P-value of the difference	0.30		0.76		0.01		0.03	
4. Enrolled in 3rd year of bachelor								
Baseline probability	0.20	0.24	0.15	0.24	0.30	0.05	0.42	0.20
Treatment effect	0.06***	0.06***	0.08***	0.06***	0.08***	0.01	0.06	0.06***
	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)	(0.03)	(0.01)
P-value of the difference	0.85		0.35		< 0.01		> 0.99	
Controls								
Socio-demographic characteristics	✓		✓		✓		✓	
Schooling characteristics	✓		✓		✓		✓	
Program×cohort fixed effects	✓		✓		✓		✓	
Nb. of applicants	65,333		65,333		65,333		65,333	
Nb. of clusters (program×cohort)	197		197		197		197	

Notes: *p<0.05; **p<0.01; ***p<0.001 ; standard errors clustered at the program×cohort level in parenthesis. Each cell reports the LATE estimated coefficient of the dummy of admission to top-ranked program (instrumented by the treatment assignment) interacted with the characteristic mentioned above. One regression model is estimated for each characteristic, i.e the treatment dummy is only interacted with one variable. Socio-demographic characteristics include gender, age, SES and scholarship status. Schooling characteristics include the type of *Baccalauréat* (general or vocational) as well as *Baccalauréat* distinctions. The baseline probability is the mean of the outcome variable for untreated lottery losers ($Z = D = 0$) who obtained the *Baccalauréat*.
APB cohorts: 2013 to 2016.

Heterogeneity by Potential Admission Status for Other Applications

Though the definition of our treatment is clear, our strategy of identification does not allow us to disentangle between different counterfactual status. Not being accepted to one's first choice encompasses different situations, since applicants who finished the admission procedure with no offer are, for instance, mixed up with applicants eventually admitted to their second-ranked program. Yet, comparing treated applicants with a subset of applicants from the control group violates the causal chain between the treatment and our outcomes of interest. For instance, by considering only untreated applicants that are admitted to a program at the end of the procedure, we ignore the fact that these students represent a particular subset of our control group. These applicants: (i) ranked more than one program in their ROL; (ii) were ranked high enough to receive an offer in at least one of these other programs and (iii) purposely accepted an offer coming from a second-best program.

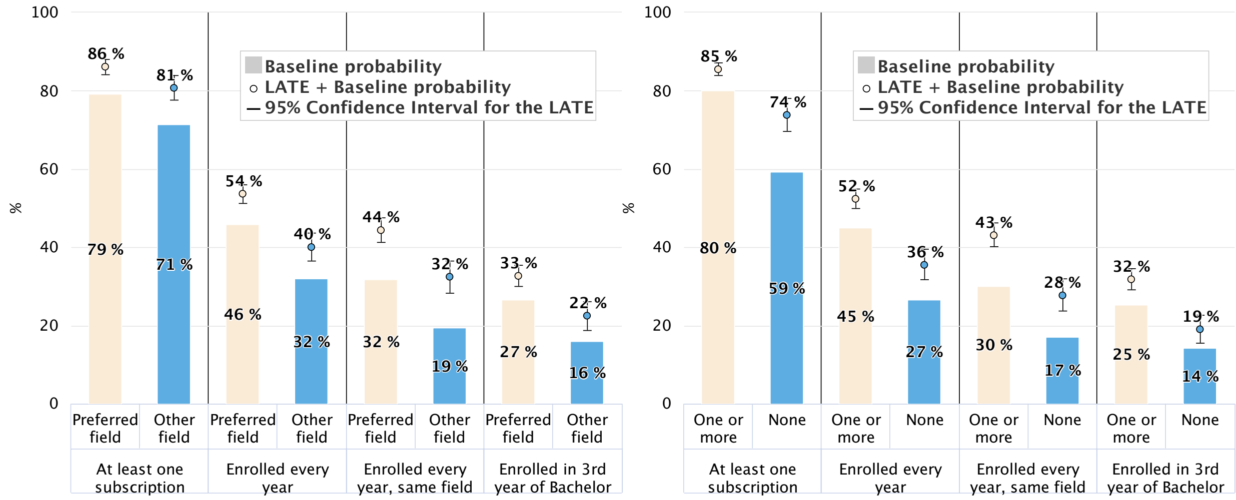
If we cannot know the admission status of treated applicants if they had not been treated, it is still possible to take advantage of some predetermined characteristics to imagine what could have been the counterfactual outcome of the admission procedure. To understand to what extent the effect of the treatment might vary depending on this counterfactual, we split our sample along two variables, which are the type of program ranked in second place in the ROL, and the existence of plausible alternatives in the ROL. More specifically, the first variable is a dummy that equals to one if the second-ranked program belongs to the same field of study than the top-ranked program. The second variable is a dummy equal to one if the student was ranked below the first-round admission cutoff for at least one program (other than the top-ranked) in her ROL. These variables are defined before the treatment assignment, and give an insight on the extent to which students had a relevant alternative in their ROL. Details about their construction and their distribution are given in appendix C.

Figure 6 displays the LATE estimates on subsets of priority applicants based on the type of field of their second-ranked program and the existence of a plausible alternative in their ROL. For each subset of priority applicants and each higher education outcome, the effect of the treatment is significant at the 5 % level. This suggests that, regardless of the potential counterfactual admission status, admission to the top-ranked program influences students' trajectories in higher education.
Treatment effects are similar between applicants whose second choice is in the same field of study as their first choice, and those who applied to another field of study. Nevertheless, baseline probabilities substantially differ between the two groups. Untreated applicants whose second choice was in the same field of study as their first choice are more likely to enroll in higher education within three years (79 % against 71 %), to register every year in higher education (46 % against 32 %), to keep on studying in the same field (32 % against 19 %) and to enroll in third year of bachelor three year after graduation (27 % against 16 %). This result suggests that admission to the top-ranked program might have a stable effect *per se*, this effect being relatively stronger for applicants who have a very different second-best option.

Comparisons between applicants with at least one or no plausible alternative lead to the same conclusion. Baseline probabilities are lower for applicants with no plausible alternative, and this is true for all higher education outcomes. Applicants with no alternative are less likely to be enrolled in higher education within three years (59 % against 80 %), to register every year (27 % against 45 %), to stay in the same field (17 % against

30 %) and to be enrolled in third year of bachelor within three years (14 % against 25 %). Once again, LATE point estimates are similar for the two sub-samples, except for enrollment in higher education within three years, for which the effect of the treatment is larger for applicants with no alternative. Being accepted to one's first choice increases the probability of ever been enrolled in higher education by 15 p.p., this effect being much lower for applicants with plausible alternative programs (+5 p.p.).

Figure 6: LATE Estimates by Potential Counterfactual Admission Status



Field of the second-ranked program

Existence of plausible alternatives

Notes: The figure reports LATE estimates given by equation (2) on different educational outcomes for sub-set of priority applicants based on two variables: the field of the second-ranked program and the existence of plausible alternative program. The filled bars indicate the baseline probability, which is for each group the mean of the outcome variable for untreated lottery losers ($Z = D = 0$) who obtained the *Baccalauréat*. The solid dots show the estimated treatment effects (added to the baseline probability), with 95 % confidence intervals denoted by vertical capped bars. Confidence intervals are computed with robust standard errors clustered at the program×cohort level. The LATE estimate differs significantly from 0 at the 5% confidence level if the capped bar around the point estimate does not overlap with the filled bar. Socio-demographic and schooling characteristics as well as program×cohort fixed effects are added in all models. Socio-demographic characteristics include gender, age, SES and scholarship status. Schooling characteristics include the type of *Baccalauréat* (general or vocational) as well as *Baccalauréat* distinctions.

APB cohorts: 2013 to 2016.

5 Conclusion

Our paper estimates the impact of satisfying students' preferences under capacity constraints on academic achievements. It concludes that limiting access to highly demanded programs can entail a substantial cost for students at the margin of pursuing higher education, as programs might be imperfect substitutes. Using tie-breaking lotteries as an instrument for final admission to French oversubscribed university programs, we show that being admitted to one's top-ranked program has a sizable impact on students' trajectory in higher education. Our results suggest that allocating students to their stated preferred program is an efficient way not only to increase students' probability to enroll in higher education, but also for them to study without interruption, repetition or change of field of study.

Our treatment effects have been estimated on a rather comprehensive set of students and university programs. However, the extrapolation of our results to a larger set of applicants might be questioned. The correspondence between stated preferences in applicants' ROL and true preferences is far from trivial in the framework of APB, and further investigation about the interaction between the DA for selective programs and the altered Boston for non-selective programs would be needed to clarify this issue. Nonetheless, this does not threaten the internal validity of our IV strategy. Applicants are randomly assigned to the treatment, we are therefore confident that lottery losers and winners do not differ on the way they conceived their ROL.

This empirical evidence of the impact of capacity constraints on students' achievement could have several policy implications in higher education. In the absence of openings of new university seats, providing information about programs' capacity constraints and helping students to find relevant alternatives could be a solution to circumvent students' drop out, in a context where success rates in bachelor in France are quite low: only 28% of students obtain their bachelor within three years spent at the university after high school, and 12% during their fourth year (DEPP and SD-SIES, 2019). Better accommodating students' preferences seems then a cost-effective way to limit substantial expenses, as it could mitigate changes of field of study, repetition and drop outs. For instance, Fack and Grenet (2015) show that providing 1,500 euros cash allowances to a comparable population increases students' enrollment rates in higher education by 5 to 7 %.

Our analysis of the heterogeneity of the treatment highlights two main points. First, all students are affected by their admission status to their first choice, regardless of their gender, their prior academic achievement, their type of *Baccalauréat* and their socio-economic background. Second, more vulnerable high school students benefit the most from having access to their preferred program. Individuals at the margin of pursuing higher education are the most affected by the outcome of the admission procedure, as larger effects are observed for low-achieving students, students coming from less favored socio-economic background, and students from vocational high schools. These individuals have the lowest baseline probability to access and succeed in higher education to start with. For instance, students coming from lower social background have a probability to achieve their bachelor within three or four years of 27%, against 48% for students from upper social background (DEPP and SD-SIES, 2019). These differences interact with program's curriculum peculiarities, with stronger effects for programs with a larger share of vulnerable students or fewer alternatives in higher education. Better accommodating stated preferences of vulnerable students would help to mitigate this discouraging effect on achievements in higher education.

Eventually, our attempts to qualify the counterfactual situation in case of non-admission to the top-ranked program suggest that, if all applicants significantly benefit from obtaining their first choice, students with no plausible alternative program in their ROL are those who gain the most. The estimated effects are also stronger for students whose second choice is in a different field of study as their first choice. Help in building consistent ROL, especially by making salient students' chances of admission and available alternative programs could level the playing field among students. These are relatively free of charges measures that could have a sizable effect on mismatch at the university, and so mitigate drops out and changes of field of study.

In 2018, the *ORE* reform introduced a new system of admission to higher education programs called *Parcoursup*. Under this system, universities are allowed to differentiate applicants based on their grades. Among oversubscribed programs, high-achieving applicants are now more likely to be admitted. Solving the capacity constraints dilemma by selecting students on their academic performances is expected to have positive consequences on the quality of the student-program match, assuming that grades are a good proxy for students' ability to succeed in higher education. However, in light of our results, this policy change might have a detrimental effect on the post-secondary trajectory of low-achieving students. This population is the most responsive to the outcome of the admission procedure and might be especially hurt by the rejection from their preferred program. This negative effect could be counterbalanced by other features of the reform such as the generalization of admission quotas for students benefiting from a scholarship. All these questions should be investigated to understand better the functioning of this new system.

Bibliography

A. Abadie, S. Athey, G. Imbens, and J. Wooldridge. When should you adjust standard errors for clustering? 10 2017.

A. Abdulkadiroğlu, Y.-K. Che, and Y. Yasuda. Resolving conflicting preferences in school choice: The ”boston mechanism” reconsidered. American Economic Review, 101(1): 399–410, 2011.

A. Abdulkadiroğlu, J. Angrist, and P. Pathak. The Elite Illusion: Achievement Effects at Boston and New York Exam Schools. Econometrica, 82(1):137–196, 2014. ISSN 1468-0262. doi: 10.3982/ECTA10266. URL `https://onlinelibrary.wiley.com/doi/abs/10.3982/ECTA10266`.

A. Abdulkadiroğlu, N. Agarwal, and P. A. Pathak. The Welfare Effects of Coordinated Assignment: Evidence from the New York City High School Match. American Economic Review, 107(12):3635–3689, Dec. 2017a. ISSN 0002-8282. doi: 10.1257/aer.20151425. URL `http://pubs.aeaweb.org/doi/10.1257/aer.20151425`.

A. Abdulkadiroğlu, J. D. Angrist, Y. Narita, and P. A. Pathak. Research Design Meets Market Design: Using Centralized Assignment for Impact Evaluation. Econometrica, 85(5):1373–1432, 2017b. ISSN 1468-0262. doi: 10.3982/ECTA13925. URL `https://onlinelibrary.wiley.com/doi/abs/10.3982/ECTA13925`.

J. D. Angrist, G. W. Imbens, and D. B. Rubin. Identification of causal effects using instrumental variables. Journal of the American statistical Association, 91(434):444–455, 1996.

P. Arcidiacono and M. Lovenheim. Affirmative Action and the Quality–Fit Trade-off. Journal of Economic Literature, 54(1):3–51, Mar. 2016. ISSN 0022-0515. doi: 10.1257/jel.54.1.3. URL `http://pubs.aeaweb.org/doi/10.1257/jel.54.1.3`.

P. Arcidiacono, E. Aucejo, P. Coate, and V. J. Hotz. Affirmative action and university fit: Evidence from Proposition 209. page 29, 2014.

L. Behaghel and C. De Chaisemartin. Estimating the effect of treatments allocated by randomized waiting lists. Working Paper, 2020.

S. E. Black, K. E. Cortes, and J. A. Lincove. Academic Undermatching of High-Achieving Minority Students: Evidence from Race-Neutral and Holistic Admissions Policies. American Economic Review, 105(5):604–610, May 2015. ISSN 0002-8282. doi: 10.1257/aer.p20151114. URL `http://pubs.aeaweb.org/doi/10.1257/aer.p20151114`.

Cours des Comptes. Un premier bilan de l’accès à l’enseignement supérieur dans le cadre de la loi orientation et réussite des étudiants. Report, 2020.

D. J. Deming, J. S. Hastings, T. J. Kane, and D. O. Staiger. School Choice, School Quality, and Postsecondary Attainment. American Economic Review, 104(3):991–1013, Mar. 2014. ISSN 0002-8282. doi: 10.1257/aer.104.3.991. URL https://www.aeaweb.org/articles?id=10.1257/aer.104.3.991.

DEPP and SD-SIES. Repères et références statistiques sur les enseignements, la formation et la recherche. 2017.

DEPP and SD-SIES. Repères et références statistiques sur les enseignements, la formation et la recherche. 2019.

E. W. Dillon and J. A. Smith. Determinants of the Match between Student Ability and College Quality. Journal of Labor Economics, 35(1):45–66, Jan. 2017. ISSN 0734-306X, 1537-5307. doi: 10.1086/687523. URL https://www.journals.uchicago.edu/doi/10.1086/687523.

European Parliament. Higher education entrance qualification and entrance in europe: a comparison. Technical report, 2014.

G. Fack and J. Grenet. Improving college access and success for low-income students: Evidence from a large need-based grant program. American Economic Journal: Applied Economics, 7(2):1–34, 2015.

France Stratégie. La transition lycée-enseignement supérieur. Technical report, 2017.

France Stratégie and Cereq. Vision prospective partagée des emplois et des compétences, les métiers du sport. 2019.

D. Gale and L. S. Shapley. College admissions and the stability of marriage. The American Mathematical Monthly, 69(1):9–15, 1962.

J. Grenet, H. Yinghua, and D. Kübler. Decentralizing Centralized Matching Markets: Implications from Early Offers in University Admissions. Working Paper, 2019.

M. Hoekstra. The Effect of Attending the Flagship State University on Earnings: A Discontinuity-Based Approach. The Review of Economics and Statistics, 91(4):717–724, Oct. 2009. ISSN 0034-6535. doi: 10.1162/rest.91.4.717. URL https://doi.org/10.1162/rest.91.4.717.

C. Hoxby and C. Avery. The Missing "One-Offs": The Hidden Supply of High-Achieving, Low-Income Students. Brookings Papers on Economic Activity, 2013(1):1–65, 2013. ISSN 1533-4465. doi: 10.1353/eca.2013.0000. URL http://muse.jhu.edu/content/crossref/journals/brookings_papers_on_economic_activity/v2013/2013.1.hoxby.html.

C. Machado and C. Szerman. Centralized Admission and the Student-College Match. SSRN Electronic Journal, 2016. ISSN 1556-5068. doi: 10.2139/ssrn.2844131. URL https://www.ssrn.com/abstract=2844131.

MESRI-SIES. Parcours et réussite en licence : les résultats de la session 2018. Dec. 2019.

M. Niederle and A. Roth. Unraveling Reduces Mobility in a Labor Market: Gastroenterology with and without a Centralized Match. Journal of Political Economy, 111 (6):1342–1352, Dec. 2003. ISSN 0022-3808, 1537-534X. doi: 10.1086/378530. URL https://www.journals.uchicago.edu/doi/10.1086/378530.

OECD. Education at a glance. Technical report, 2019.

A. Roth and X. Xing. Turnaround Time and Bottlenecks in Market Clearing: Decentralized Matching in the Market for Clinical Psychologists. Journal of Political Economy, 105(2):284–329, Apr. 1997. ISSN 0022-3808, 1537-534X. doi: 10.1086/262074. URL https://www.journals.uchicago.edu/doi/10.1086/262074.

Appendix

A Data Appendix

Data Sources There are a few caveats to the APB databases, the main one being that the APB procedure is not fully comprehensive. Some private programs are not included in the platform, though they might represent a relevant outside option for some students. Consequently, this database does not allow us to distinguish between applicants who resigned from APB because they chose an external private program from those who actually stopped studying. This issue is partly resolved later by exploiting our second source of data, which enables us to track higher education students throughout the years on a broader set of programs. APB files are not databases that are meant to be directly used by researchers. Their primary use is to be inputs for the matching algorithm, therefore there is no comprehensive documentation to precisely identify each element of the databases. An important part of our work was thus to retrieve the structure of the files and to reconcile every element to understand how the matching procedure worked.

The SISE databases have a large coverage, but do not include every higher education program in France. In particular, students registered in some specific programs such as paramedical and social programs are absent from this source[18]. Moreover, students who go abroad to pursue higher education can only be retrieved if they are still registered in a French institution. It is the case for students traveling with the Erasmus program. Hence we do not know if students missing from the SISE databases are either studying in programs that are out of coverage or actually dropped out from higher education. We partly treat this issue by following students over multiple years. In our sample, about eight of ten students have enrolled in SISE higher education programs within three years following university admission.

Table 7 summarizes characteristics of APB applicants and programs for the years 2013 to 2017. For consistency reasons, we focus on students who successfully registered in the regular procedure of APB. The first element to notice is the increasing trend in the number of potential first entrants into higher education. The number of active applicants who obtained their *Baccalauréat* substantially increased over the period, from around 499,000 in 2013 to 569,000 in 2017. In the meantime, the estimated overall capacity of programs increased from around 416,000 to 477,000. This discrepancy between the number of applicants and programs' size suggests that capacity constraints were increasingly binding within the APB system. However, this imbalance does not take into account voluntary resignations, neither additional seats that were filled later on during the supplementary round of the procedure. Eventually, a sizable share of applicants did not enroll in higher

[18]Paramedical and social programs represent about 4 % of students enrolled in higher education. Subsequent versions of the SISE database incorporates these programs.

Table 7: General Statistics - Applicants, Programs and Applications

	2013	2014	2015	2016	2017
Applicants (k)					
High school students	549	572	582	605	626
Baccalauréat obtained	499	523	532	555	569
All applicants	710	763	788	814	843
Capacity					
Seats filled (k)					
University programs	183	195	216	230	238
All programs	416	434	461	480	477
Nb. of programs					
University programs	2,068	2,201	2,242	2,060	2,036
All programs	9,705	10,092	10,435	10,428	10,005
Applications in the ROL					
Average number					
University programs [s.d]	1.7 [2.3]	1.9 [2.5]	2.1 [2.5]	2.9 [3.7]	3.2 [3.8]
All programs [s.d]	5.9 [5.3]	6.1 [5.6]	6.2 [5.6]	7.1 [6.1]	7.4 [6.3]
Top-ranked program					
University program	0.31	0.33	0.34	0.35	0.39

Source: APB administrative data from 2013 to 2017, from the French statistical service of the ministry of higher education (MESRI-SIES).
Scope: Applicants successfully registered in the regular procedure of APB.
Notes: The number of seats filled is proxied by the number of applicants who were admitted through the regular procedure of APB. It does not take into account the seats filled during the complementary round of APB.

education, or chose a program outside the APB platform.
University programs became increasingly attractive over the period. Their share in students' ROL went up from 28 % in 2013 to 43 % in 2017. More importantly, university programs also represent an increasing proportion of students' top-ranked program: they accounted for 39 % of students' first choice in 2017, against 31 % in 2013. Part of the explanation for this trend is the change in the rules of APB: during the period, students had to rank at least one university program for their ROL to be valid. Meanwhile, the number of seats filled in university programs throughout the three regular rounds of APB has slowly moved from around 183,000 in 2013 to 238,000 in 2017. This growing pressure on university programs has mechanically increased the risk of seeing more oversubscribed programs over the years.

Dynamics of Admissions Table 8 displays students' final admission status and programs' characteristics by treatment assignment status. This table displays additional elements on the discrepancy between top-ranked programs and the programs students are finally assigned to. Among lottery losers admitted to a program at the end of the procedure, half were admitted to their top-ranked program, 21 % to their second choice, and the rest (29 %) to a program ranked below in their ROL. Eventually, 71 % of lottery losers who are finally admitted to a program through APB end up in their top-ranked field of study. More than 65 % of lottery losers were registered in SISE programs the year following the APB procedure. This share is higher than the one of students admitted through APB (58 %) since SISE data-sets recover some programs that are not included in the platform APB. Conversely, 72 % of lottery winners are found in higher education a year after the APB procedure, though 75 % of them were admitted to their first choice. This means that a sizable number of lottery winners did not register in their first choice after the summer holidays.

Table 8: Final Admission Status, by Treatment Assignment

	Treatment assignment	
	Lottery losers ($Z = 0$)	Lottery winners ($Z = 1$)
Count	43,246	58,826
Admission status (share of all applicants)		
Admission	58%	75%
No offer	11%	0%
Failed the *Baccalauréat*	7%	11%
Resignation	24%	14%
Program of admission (share of admitted applicants)		
Rank of admission		
Top-ranked ($T = 1$)	50%	100%
Ranked 2	21%	0%
Ranked 3 or below	29%	0%
Other features		
University programs	94%	100%
Preferred field of study	71%	100%
Registration in higher studies		
Enrolment in $t + 1$	114%	96%

Source: APB administrative data from 2013 to 2017 and SISE data from 2013 to 2018, from the French statistical service of the ministry of higher education (MESRI-SIES).
Scope: Oversubscribed university programs with at least 30 lottery winners and 30 lottery losers.

Table 9: Type of Oversubscribed Non-Selective Programs by Field of Study

Field	Type of Programs	Oversubscribed Programs	
		Number	Priority Candidates
Law & Economics	*Economic & Social Administration*	5	813
	Law	17	5,907
	Economics	2	334
	Economics & Management	4	1,229
	Management	11	3,740
	Political Sciences	8	1,172
	Health & Social Sciences	6	2,753
	Total	53	15,948
Humanities	*Arts*	6	792
	Performing Arts	4	578
	Plastic Arts	1	292
	Cinema	3	537
	Applied Foreign Languages	4	558
	Foreign languages, Literature & Civilizations	7	1,106
	Total	25	3,863
Health & Sciences	*Mathematics*	3	1,275
	Medicine, Pharmacy, Dentistry, Midwifery	12	5,485
	Physics	1	212
	Earth & Life Sciences	6	2,528
	Engineering	1	100
	Total	23	9,600
Social Sciences	*Geography*	1	67
	History	1	128
	Information & Communication	8	1193
	Mathematics Applied to Social Sciences	3	480
	Psychology	27	9,751
	Sciences of Education	23	4,235
	Language Sciences	2	1,208
	Sociology	3	661
	Total	68	17,723
Sports	*Science & Technique of Physical & Sports Activities*	138	54,938
	Total	138	54,938
All Fields		307	102,073

B Robustness Checks

Table 10: Balancing Checks of Pre-treatment Characteristics for Alternative Specifications

	Model Specification		
	Linear	Logit	Probit
Average Marginal Effects			
Gender			
Male	ref.	ref.	ref.
Female	-0.008^{*} (0.004)	-0.008^{*} (0.004)	-0.008^{*} (0.004)
Quality of Fit	$R^2 = 0.18$	*Log* $L/N = -0.58$	*Log* $L/N = -0.58$
SES			
Very High	ref.	ref.	ref.
Medium-High	-0.002 (0.005)	-0.002 (0.005)	-0.002 (0.005)
Medium-Low	-0.006 (0.004)	-0.006 (0.004)	-0.006 (0.004)
Low	0.005 (0.005)	0.005 (0.005)	0.005 (0.005)
No information	0.022 (0.015)	0.022 (0.015)	0.023 (0.015)
Quality of Fit	$R^2 = 0.18$	*Log* $L/N = -0.58$	*Log* $L/N = -0.58$
Scholarship beneficiary			
No Scholarship	ref.	ref.	ref.
Scholarship	0.002 (0.005)	0.002 (0.005)	0.002 (0.005)
Quality of Fit	$R^2 = 0.18$	*Log* $L/N = -0.58$	*Log* $L/N = -0.58$
Baccalauréat Distinctions			
Highest honors	ref.	ref.	ref.
High honors	0.011 (0.012)	0.012 (0.012)	0.010 (0.012)
Honors	0.007 (0.011)	0.007 (0.012)	0.007 (0.012)
No distinctions	0.002 (0.011)	0.003 (0.011)	0.002 (0.011)
Failure	0.000 (0.012)	0.000 (0.012)	0.000 (0.012)
Quality of Fit	$R^2 = 0.18$	*Log* $L/N = -0.58$	*Log* $L/N = -0.58$
Type of Baccalauréat			
General	ref.	ref.	ref.
Vocational	-0.001 (0.004)	-0.001 (0.004)	-0.001 (0.004)
Quality of Fit	$R^2 = 0.18$	*Log* $L/N = -0.58$	*Log* $L/N = -0.58$
Age			
On time	ref.	ref.	ref.
In advance	-0.002 (0.011)	-0.002 (0.010)	-0.002 (0.011)
Late	0.004 (0.004)	0.004 (0.004)	0.003 (0.004)
Quality of Fit	$R^2 = 0.18$	*Log* $L/N = -0.58$	*Log* $L/N = -0.58$
Controls			
Program×cohort fixed effects	✓	✓	✓
Nb of applicants	65,333	65,333	65,333
Nb. of clusters (program×cohort)	197	197	197

Notes: *p<0.05; **p<0.01; ***p<0.001 ; standard errors clustered at the program×cohort level in parenthesis. For each characteristic, the table reports coefficients estimated in separated models where assignment to treatment is the dependent variable. All models include fixed effects for program×cohort, our randomization unit.

APB cohorts: 2013 to 2016.

Table 11: LATE estimates including or excluding applicants who failed the *Baccalauréat*

	All applicants	*Baccalauréat* obtained
Treatment effects 3 years after admission		
1. At least one registration		
Treatment effect	0.08***	0.08***
	(0.01)	(0.01)
2. Registered every year		
Treatment effect	0.08***	0.08***
	(0.01)	(0.01)
3. Registered every year in the same field of study		
Treatment effect	0.12***	0.13***
	(0.01)	(0.01)
4. Enrolled in 3rd year of bachelor		
Treatment effect	0.06***	0.06***
	(0.01)	(0.01)
Controls		
Sociodemographics	✓	✓
Schooling chr.	✓	✓
Program*cohort fixed effects	✓	✓
Nb. of applicants	65,333	56,908
Nb. of clusters (program×cohort)	197	197

Notes: *p<0.05; **p<0.01; ***p<0.001 ; standard errors clustered at the program×cohort level in parenthesis. Socio-demographic characteristics include gender, age, SES and scholarship status. Schooling characteristics include the type of *Baccalauréat* (general or vocational) as well as *Baccalauréat* distinctions. *APB cohorts:* 2013 to 2016.

C Heterogeneity of the Treatment: Details on Students' ROL Characteristics

Second-Ranked Program Second choices are an intuitive way to search for counterfactual; they suggest what kind of programs students are willing to go to if they are rejected from their first choice. This, by definition, their second best. Random assignment of the treatment allows us to have balanced samples with respect to the nature of the second-ranked program. We therefore split our sample into three subsets according to the field of study of the second-ranked program. More precisely, we distinguish applicants who ranked in second position a program in the same field of study as their first choice from applicants who applied to another field of study. We also distinguish the few applicants who only applied to a single program only.

Table 12 compares the admission status of priority applicants depending on second choices' characteristics. Though having roughly the same probability of being admitted somewhere at the end of the procedure, unassigned students who ranked second a program in the same field of study as their top-ranked program (two thirds of the sample) are more likely to be admitted to this field (47%) compared to unassigned students who ranked a different field of study (28%). Conversely, those whose second choice is in another field of study are more likely to be admitted to their second-ranked program (20% against 10%)[19]. The few priority applicants whose ROL consists of a single program have no chance to get an offer from another program than the one they ranked first in their ROL. These applicants won't receive any offer from other programs through the three rounds of APB, meaning that the counterfactual situation for these applicants is undoubtedly non-admission. Only one quarter of untreated students with only one program ranked in their ROL are finally admitted.

Existence of Plausible Alternatives We do not know in advance students' actual chances to be admitted in another program in case of rejection from their first choice. These probabilities depend students' position in programs' ordered list of applicants with respect to their capacity. We create a dummy variable that allows to approximate applicants' *ex-ante* chances to be admitted in another program. For all the lower-ranked programs within priority applicants' ROL, we look in retrospect at the rank of the last applicant who actually received an offer in the first round of admission. If a priority applicant has in her list at least one lower-ranked program where she was ranked below the last applicant who received an offer in the first admission round, she would receive an offer from this program in case of non-assignment to the treatment. We say that these applicants have

[19]This is partly due to the fact that the relative rank is part of the priority rules: the applicants who put second the same field of study have a relative rank of 2 (because they already applied to one program in that field), whereas students applying to another field wild get a relative rank of 1 that increases their chances to receive an offer.

at least one plausible alternative program. Conversely, priority applicants with a rank that is always too high to receive an offer from the other programs in their ROL have no plausible alternative. They may be admitted to a program by the end of the three rounds of APB, but won't receive any offer in the first round if they are randomly drawn by the top-ranked program.

Table 12 compares the admission status of priority applicants depending on the existence of a plausible alternative. Two thirds of applicants have a plausible alternative, regardless of their treatment assignment status. These applicants are more likely to be admitted somewhere at the end of the procedure (66%, against 42% for those with no plausible alternatives). Naturally, applicants with a plausible alternative have also more chances to be admitted to their second-ranked program (17% against 4%) or their preferred field of study (44% against 34%).

Table 12: Admission Status by Treatment Assignment and ROL Characteristics

	Treatment assignment	
	Lottery losers ($Z = 0$)	Lottery winners ($Z = 1$)
All priority applicants	43,246	58,826
Second-ranked program in the ROL		
Preferred field of study		
Count	29,337	38,336
Admitted somewhere	60%	78%
Top-ranked program	30%	78%
Program ranked 2 in the ROL	10%	0%
Preferred field of study	47%	78%
Other field of study		
Count	11,447	15,483
Admitted somewhere	57%	74%
Top-ranked program	25%	74%
Program ranked 2 in the ROL	20%	0%
Preferred field of study	28%	74%
Only one program ranked		
Count	2,462	5,007
Admitted somewhere	25%	58%
Top-ranked program	25%	58%
Program ranked 2 in the ROL	0%	0%
Preferred field of study	25%	58%
Existence of plausible alternatives		
At least one plausible alternative		
Count	28,042	37,682
Admitted somewhere	66%	80%
Top-ranked program	28%	80%
Program ranked 2 in the ROL	17%	0%
Preferred field of study	44%	80%
No plausible alternative		
Count	15,204	21,144
Admitted somewhere	42%	68%
Top-ranked program	30%	68%
Program ranked 2 in the ROL	4%	0%
Preferred field of study	34%	68%

Source: APB administrative data from 2013 to 2017, from the French statistical service of the ministry of higher education (MESRI-SIES).
Scope: Oversubscribed university programs with at least 30 lottery winners and 30 lottery losers.
Notes: A program is a plausible alternative for an applicant if her rank is below the rank of the last applicant who received an offer from that program in the first admission round.

Liste des documents de travail de la Direction des Études et Synthèses Économiques

G 9001 J. FAYOLLE et M. FLEURBAEY
Accumulation, profitabilité et endettement des entreprises

G 9002 H. ROUSSE
Détection et effets de la multicolinéarité dans les modèles linéaires ordinaires - Un prolongement de la réflexion de BELSLEY, KUH et WELSCH

G 9003 P. RALLE et J. TOUJAS-BERNATE
Indexation des salaires : la rupture de 1983

G 9004 D. GUELLEC et P. RALLE
Compétitivité, croissance et innovation de produit

G 9005 P. RALLE et J. TOUJAS-BERNATE
Les conséquences de la désindexation. Analyse dans une maquette prix-salaires

G 9101 Équipe AMADEUS
Le modèle AMADEUS - Première partie - Présentation générale

G 9102 J.L. BRILLET
Le modèle AMADEUS - Deuxième partie - Propriétés variantielles

G 9103 D. GUELLEC et P. RALLE
Endogenous growth and product innovation

G 9104 H. ROUSSE
Le modèle AMADEUS - Troisième partie - Le commerce extérieur et l'environnement international

G 9105 H. ROUSSE
Effets de demande et d'offre dans les résultats du commerce extérieur manufacturé de la France au cours des deux dernières décennies

G 9106 B. CREPON
Innovation, taille et concentration : causalités et dynamiques

G 9107 B. AMABLE et D. GUELLEC
Un panorama des théories de la croissance endogène

G 9108 M. GLAUDE et M. MOUTARDIER
Une évaluation du coût direct de l'enfant de 1979 à 1989

G 9109 P. RALLE et alii
France - Allemagne : performances économiques comparées

G 9110 J.L. BRILLET
Micro-DMS ***NON PARU***

G 9111 A. MAGNIER
Effets accélérateur et multiplicateur en France depuis 1970 : quelques résultats empiriques

G 9112 B. CREPON et G. DUREAU
Investissement en recherche-développement : analyse de causalités dans un modèle d'accélérateur généralisé

G 9113 J.L. BRILLET, H. ERKEL-ROUSSE, J. TOUJAS-BERNATE
"France-Allemagne Couplées" - Deux économies vues par une maquette macro-économétrique

G 9201 W.J. ADAMS, B. CREPON, D. ENCAOUA
Choix technologiques et stratégies de dissuasion d'entrée

G 9202 J. OLIVEIRA-MARTINS, J. TOUJAS-BERNATE
Macro-economic import functions with imperfect competition - An application to the E.C. Trade

G 9203 I. STAPIC
Les échanges internationaux de services de la France dans le cadre des négociations multilatérales du GATT
Juin 1992 (1ère version)
Novembre 1992 (version finale)

G 9204 P. SEVESTRE
L'économétrie sur données individuelles-temporelles. Une note introductive

G 9205 H. ERKEL-ROUSSE
Le commerce extérieur et l'environnement international dans le modèle AMADEUS (réestimation 1992)

G 9206 N. GREENAN et D. GUELLEC
Coordination within the firm and endogenous growth

G 9207 A. MAGNIER et J. TOUJAS-BERNATE
Technology and trade: empirical evidences for the major five industrialized countries

G 9208 B. CREPON, E. DUGUET, D. ENCAOUA et P. MOHNEN
Cooperative, non cooperative R & D and optimal patent life

G 9209 B. CREPON et E. DUGUET
Research and development, competition and innovation: an application of pseudo maximum likelihood methods to Poisson models with heterogeneity

G 9301 J. TOUJAS-BERNATE
Commerce international et concurrence imparfaite : développements récents et implications pour la politique commerciale

G 9302 Ch. CASES
Durées de chômage et comportements d'offre de travail : une revue de la littérature

G 9303 H. ERKEL-ROUSSE
Union économique et monétaire : le débat économique

G 9304 N. GREENAN - D. GUELLEC / G. BROUSSAUDIER - L. MIOTTI
Innovation organisationnelle, dynamisme technologique et performances des entreprises

G 9305 P. JAILLARD
Le traité de Maastricht : présentation juridique et historique

G 9306 J.L. BRILLET
Micro-DMS : présentation et propriétés

G 9307 J.L. BRILLET
Micro-DMS - variantes : les tableaux

G 9308 S. JACOBZONE
Les grands réseaux publics français dans une perspective européenne

G 9309 L. BLOCH - B. CŒURÉ
Profitabilité de l'investissement productif et transmission des chocs financiers

G 9310 J. BOURDIEU - B. COLIN-SEDILLOT
Les théories sur la structure optimale du capital : quelques points de repère

G 9311 J. BOURDIEU - B. COLIN-SEDILLOT
Les décisions de financement des entreprises françaises : une évaluation empirique des théories de la structure optimale du capital

G 9312 L. BLOCH - B. CŒURÉ
Q de Tobin marginal et transmission des chocs financiers

G 9313 Équipes Amadeus (INSEE), Banque de France, Métric (DP)
Présentation des propriétés des principaux modèles macroéconomiques du Service Public

G 9314 B. CREPON - E. DUGUET
Research & Development, competition and innovation

G 9315 B. DORMONT
Quelle est l'influence du coût du travail sur l'emploi ?

G 9316 D. BLANCHET - C. BROUSSE
Deux études sur l'âge de la retraite

G 9317 D. BLANCHET
Répartition du travail dans une population hétérogène : deux notes

G 9318 D. EYSSARTIER - N. PONTY
AMADEUS - an annual macro-economic model for the medium and long term

G 9319 G. CETTE - Ph. CUNÉO - D. EYSSARTIER - J. GAUTIÉ
Les effets sur l'emploi d'un abaissement du coût du travail des jeunes

G 9401 D. BLANCHET
Les structures par âge importent-elles ?

G 9402 J. GAUTIÉ
Le chômage des jeunes en France : problème de formation ou phénomène de file d'attente ? Quelques éléments du débat

G 9403 P. QUIRION
Les déchets en France : éléments statistiques et économiques

G 9404 D. LADIRAY - M. GRUN-REHOMME
Lissage par moyennes mobiles - Le problème des extrémités de série

G 9405 V. MAILLARD
Théorie et pratique de la correction des effets de jours ouvrables

G 9406 F. ROSENWALD
La décision d'investir

G 9407 S. JACOBZONE
Les apports de l'économie industrielle pour définir la stratégie économique de l'hôpital public

G 9408 L. BLOCH, J. BOURDIEU, B. COLIN-SEDILLOT, G. LONGUEVILLE
Du défaut de paiement au dépôt de bilan : les banquiers face aux PME en difficulté

G 9409 D. EYSSARTIER, P. MAIRE
Impacts macro-économiques de mesures d'aide au logement - quelques éléments d'évaluation

G 9410 F. ROSENWALD
Suivi conjoncturel de l'investissement

G 9411 C. DEFEUILLEY - Ph. QUIRION
Les déchets d'emballages ménagers : une analyse économique des politiques française et allemande

G 9412 J. BOURDIEU - B. CŒURÉ - B. COLIN-SEDILLOT
Investissement, incertitude et irréversibilité
Quelques développements récents de la théorie de l'investissement

G 9413 B. DORMONT - M. PAUCHET
L'évaluation de l'élasticité emploi-salaire dépend-elle des structures de qualification ?

G 9414 I. KABLA
Le Choix de breveter une invention

G 9501 J. BOURDIEU - B. CŒURÉ - B. SEDILLOT
Irreversible Investment and Uncertainty:
When is there a Value of Waiting?

G 9502 L. BLOCH - B. CŒURÉ
Imperfections du marché du crédit, investissement des entreprises et cycle économique

G 9503 D. GOUX - E. MAURIN
Les transformations de la demande de travail par qualification en France
Une étude sur la période 1970-1993

G 9504 N. GREENAN
Technologie, changement organisationnel, qualifications et emploi : une étude empirique sur l'industrie manufacturière

G 9505 D. GOUX - E. MAURIN
Persistance des hiérarchies sectorielles de salaires: un réexamen sur données françaises

G 9505 Bis D. GOUX - E. MAURIN
Persistence of inter-industry wages differentials: a reexamination on matched worker-firm panel data

G 9506 S. JACOBZONE
Les liens entre RMI et chômage, une mise en perspective
NON PARU - article sorti dans Économie et Prévision n° 122 (1996) - pages 95 à 113

G 9507 G. CETTE - S. MAHFOUZ
Le partage primaire du revenu
Constat descriptif sur longue période

G 9601 Banque de France - CEPREMAP - Direction de la Prévision - Érasme - INSEE - OFCE
Structures et propriétés de cinq modèles macro-économiques français

G 9602 Rapport d'activité de la DESE de l'année 1995

G 9603 J. BOURDIEU - A. DRAZNIEKS
L'octroi de crédit aux PME : une analyse à partir d'informations bancaires

G 9604 A. TOPIOL-BENSAÏD
Les implantations japonaises en France

G 9605 P. GENIER - S. JACOBZONE
Comportements de prévention, consommation d'alcool et tabagie : peut-on parler d'une gestion globale du capital santé ?
Une modélisation microéconométrique empirique

G 9606 C. DOZ - F. LENGLART
Factor analysis and unobserved component models: an application to the study of French business surveys

G 9607 N. GREENAN - D. GUELLEC
La théorie coopérative de la firme

G 9608 N. GREENAN - D. GUELLEC
Technological innovation and employment reallocation

G 9609 Ph. COUR - F. RUPPRECHT
L'intégration asymétrique au sein du continent américain : un essai de modélisation

G 9610 S. DUCHENE - G. FORGEOT - A. JACQUOT
Analyse des évolutions récentes de la productivité apparente du travail

G 9611 X. BONNET - S. MAHFOUZ
The influence of different specifications of wages-prices spirals on the measure of the NAIRU: the case of France

G 9612 PH. COUR - E. DUBOIS, S. MAHFOUZ, J. PISANI-FERRY
The cost of fiscal retrenchment revisited: how strong is the evidence?

G 9613 A. JACQUOT
Les flexions des taux d'activité sont-elles seulement conjoncturelles ?

G 9614 ZHANG Yingxiang - SONG Xueqing
Lexique macroéconomique Français-Chinois

G 9701 J.L. SCHNEIDER
La taxe professionnelle : éléments de cadrage économique

G 9702 J.L. SCHNEIDER
Transition et stabilité politique d'un système redistributif

G 9703 D. GOUX - E. MAURIN
Train or Pay: Does it Reduce Inequalities to Encourage Firms to Train their Workers?

G 9704 P. GENIER
Deux contributions sur dépendance et équité

G 9705 E. DUGUET - N. IUNG
R & D Investment, Patent Life and Patent Value
An Econometric Analysis at the Firm Level

G 9706 M. HOUDEBINE - A. TOPIOL-BENSAÏD
Les entreprises internationales en France : une analyse à partir de données individuelles

G 9707 M. HOUDEBINE
Polarisation des activités et spécialisation des départements en France

G 9708 E. DUGUET - N. GREENAN
Le biais technologique : une analyse sur données individuelles

G 9709 J.L. BRILLET
Analyzing a small French ECM Model

G 9710 J.L. BRILLET
Formalizing the transition process: scenarios for capital accumulation

G 9711 G. FORGEOT - J. GAUTIÉ
Insertion professionnelle des jeunes et processus de déclassement

G 9712 E. DUBOIS
High Real Interest Rates: the Consequence of a Saving Investment Disequilibrium or of an insufficient Credibility of Monetary Authorities?

G 9713 Bilan des activités de la Direction des Études et Synthèses Économiques - 1996

G 9714 F. LEQUILLER
Does the French Consumer Price Index Overstate Inflation?

G 9715 X. BONNET
Peut-on mettre en évidence les rigidités à la baisse des salaires nominaux ?
Une étude sur quelques grands pays de l'OCDE

G 9716 N. IUNG - F. RUPPRECHT
Productivité de la recherche et rendements d'échelle dans le secteur pharmaceutique français

G 9717 E. DUGUET - I. KABLA
Appropriation strategy and the motivations to use the patent system in France - An econometric analysis at the firm level

G 9718 L.P. PELÉ - P. RALLE
Âge de la retraite : les aspects incitatifs du régime général

G 9719 ZHANG Yingxiang - SONG Xueqing
Lexique macroéconomique français-chinois, chinois-français

G 9720 M. HOUDEBINE - J.L. SCHNEIDER
Mesurer l'influence de la fiscalité sur la localisation des entreprises

G 9721 A. MOUROUGANE
Crédibilité, indépendance et politique monétaire
Une revue de la littérature

G 9722 P. AUGERAUD - L. BRIOT
Les données comptables d'entreprises
Le système intermédiaire d'entreprises
Passage des données individuelles aux données sectorielles

G 9723 P. AUGERAUD - J.E. CHAPRON
Using Business Accounts for Compiling National Accounts: the French Experience

G 9724 P. AUGERAUD
Les comptes d'entreprise par activités - Le passage aux comptes - De la comptabilité d'entreprise à la comptabilité nationale - *A paraître*

G 9801 H. MICHAUDON - C. PRIGENT
Présentation du modèle AMADEUS

G 9802 J. ACCARDO
Une étude de comptabilité générationnelle pour la France en 1996

G 9803 X. BONNET - S. DUCHÊNE
Apports et limites de la modélisation « Real Business Cycles »

G 9804 C. BARLET - C. DUGUET - D. ENCAOUA - J. PRADEL
The Commercial Success of Innovations
An econometric analysis at the firm level in French manufacturing

G 9805 P. CAHUC - Ch. GIANELLA - D. GOUX - A. ZILBERBERG
Equalizing Wage Differences and Bargaining Power - Evidence form a Panel of French Firms

G 9806 J. ACCARDO - M. JLASSI
La productivité globale des facteurs entre 1975 et 1996

G 9807 Bilan des activités de la Direction des Études et Synthèses Économiques - 1997

G 9808 A. MOUROUGANE
Can a Conservative Governor Conduct an Accomodative Monetary Policy?

G 9809 X. BONNET - E. DUBOIS - L. FAUVET
Asymétrie des inflations relatives et menus costs : tests sur l'inflation française

G 9810 E. DUGUET - N. IUNG
Sales and Advertising with Spillovers at the firm level: Estimation of a Dynamic Structural Model on Panel Data

G 9811 J.P. BERTHIER
Congestion urbaine : un modèle de trafic de pointe à courbe débit-vitesse et demande élastique

G 9812 C. PRIGENT
La part des salaires dans la valeur ajoutée : une approche macroéconomique

G 9813 A.Th. AERTS
L'évolution de la part des salaires dans la valeur ajoutée en France reflète-t-elle les évolutions individuelles sur la période 1979-1994 ?

G 9814 B. SALANIÉ
Guide pratique des séries non-stationnaires

G 9901 S. DUCHÊNE - A. JACQUOT
Une croissance plus riche en emplois depuis le début de la décennie ? Une analyse en comparaison internationale

G 9902 Ch. COLIN
Modélisation des carrières dans Destinie

G 9903 Ch. COLIN
Évolution de la dispersion des salaires : un essai de prospective par microsimulation

G 9904 B. CREPON - N. IUNG
Innovation, emploi et performances

G 9905 B. CREPON - Ch. GIANELLA
Wages inequalities in France 1969-1992
An application of quantile regression techniques

G 9906 C. BONNET - R. MAHIEU
Microsimulation techniques applied to intergenerational transfers - Pensions in a dynamic framework: the case of France

G 9907 F. ROSENWALD
L'impact des contraintes financières dans la décision d'investissement

G 9908 Bilan des activités de la DESE - 1998

G 9909 J.P. ZOYEM
Contrat d'insertion et sortie du RMI
Évaluation des effets d'une politique sociale

G 9910 Ch. COLIN - Fl. LEGROS - R. MAHIEU
Bilans contributifs comparés des régimes de retraite du secteur privé et de la fonction publique

G 9911 G. LAROQUE - B. SALANIÉ
Une décomposition du non-emploi en France

G 9912 B. SALANIÉ
Une maquette analytique de long terme du marché du travail

G 9912 Bis Ch. GIANELLA
Une estimation de l'élasticité de l'emploi peu qualifié à son coût

G 9913 Division « Redistribution et Politiques Sociales »
Le modèle de microsimulation dynamique DESTINIE

G 9914 E. DUGUET
Macro-commandes SAS pour l'économétrie des panels et des variables qualitatives

G 9915 R. DUHAUTOIS
Évolution des flux d'emplois en France entre 1990 et 1996 : une étude empirique à partir du fichier des bénéfices réels normaux (BRN)

G 9916 J.Y. FOURNIER
Extraction du cycle des affaires : la méthode de Baxter et King

G 9917 B. CRÉPON - R. DESPLATZ - J. MAIRESSE
Estimating price cost margins, scale economies and workers' bargaining power at the firm level

G 9918 Ch. GIANELLA - Ph. LAGARDE
Productivity of hours in the aggregate production function: an evaluation on a panel of French firms from the manufacturing sector

G 9919 S. AUDRIC - P. GIVORD - C. PROST
Évolution de l'emploi et des coûts par qualification entre 1982 et 1996

G 2000/01 R. MAHIEU
Les déterminants des dépenses de santé : une approche macroéconomique

G 2000/02 C. ALLARD-PRIGENT - H. GUILMEAU - A. QUINET
The real exchange rate as the relative price of nontrables in terms of tradables: theoretical investigation and empirical study on French data

G 2000/03 J.-Y. FOURNIER
L'approximation du filtre passe-bande proposée par Christiano et Fitzgerald

G 2000/04 Bilan des activités de la DESE - 1999

G 2000/05 B. CREPON - F. ROSENWALD
Investissement et contraintes de financement : le poids du cycle
Une estimation sur données françaises

G 2000/06 A. FLIPO
Les comportements matrimoniaux de fait

G 2000/07 R. MAHIEU - B. SÉDILLOT
Microsimulations of the retirement decision: a supply side approach

G 2000/08 C. AUDENIS - C. PROST
Déficit conjoncturel : une prise en compte des conjonctures passées

G 2000/09 R. MAHIEU - B. SÉDILLOT
Équivalent patrimonial de la rente et souscription de retraite complémentaire

G 2000/10 R. DUHAUTOIS
Ralentissement de l'investissement : petites ou grandes entreprises ? industrie ou tertiaire ?

G 2000/11 G. LAROQUE - B. SALANIÉ
Temps partiel féminin et incitations financières à l'emploi

G2000/12 Ch. GIANELLA
Local unemployment and wages

G2000/13 B. CREPON - Th. HECKEL
- Informatisation en France : une évaluation à partir de données individuelles
- Computerization in France: an evaluation based on individual company data

G2001/01 F. LEQUILLER
- La nouvelle économie et la mesure de la croissance du PIB
- The new economy and the measure ment of GDP growth

G2001/02 S. AUDRIC
La reprise de la croissance de l'emploi profite-t-elle aussi aux non-diplômés ?

G2001/03 I. BRAUN-LEMAIRE
Évolution et répartition du surplus de productivité

G2001/04 A. BEAUDU - Th. HECKEL
Le canal du crédit fonctionne-t-il en Europe ? Une étude de l'hétérogénéité des comportements d'investissement à partir de données de bilan agrégées

G2001/05 C. AUDENIS - P. BISCOURP - N. FOURCADE - O. LOISEL
Testing the augmented Solow growth model: An empirical reassessment using panel data

G2001/06 R. MAHIEU - B. SÉDILLOT
Départ à la retraite, irréversibilité et incertitude

G2001/07 Bilan des activités de la DESE - 2000

G2001/08 J. Ph. GAUDEMET
Les dispositifs d'acquisition à titre facultatif d'annuités viagères de retraite

G2001/09 B. CRÉPON - Ch. GIANELLA
Fiscalité, coût d'usage du capital et demande de facteurs : une analyse sur données individuelles

G2001/10 B. CRÉPON - R. DESPLATZ
Évaluation des effets des dispositifs d'allégements de charges sociales sur les bas salaires

G2001/11 J.-Y. FOURNIER
Comparaison des salaires des secteurs public et privé

G2001/12 J.-P. BERTHIER - C. JAULENT
R. CONVENEVOLE - S. PISANI
Une méthodologie de comparaison entre consommations intermédiaires de source fiscale et de comptabilité nationale

G2001/13 P. BISCOURP - Ch. GIANELLA
Substitution and complementarity between capital, skilled and less skilled workers: an analysis at the firm level in the French manufacturing industry

G2001/14 I. ROBERT-BOBEE
Modelling demographic behaviours in the French microsimulation model Destinie: An analysis of future change in completed fertility

G2001/15 J.-P. ZOYEM
Diagnostic sur la pauvreté et calendrier de revenus : le cas du "Panel européen des ménages »

G2001/16 J.-Y. FOURNIER - P. GIVORD
La réduction des taux d'activité aux âges extrêmes, une spécificité française ?

G2001/17 C. AUDENIS - P. BISCOURP - N. RIEDINGER
Existe-t-il une asymétrie dans la transmission du prix du brut aux prix des carburants ?

G2002/01 F. MAGNIEN - J.-L. TAVERNIER - D. THESMAR
Les statistiques internationales de PIB par habitant en standard de pouvoir d'achat : une analyse des résultats

G2002/02 Bilan des activités de la DESE - 2001

G2002/03 B. SÉDILLOT - E. WALRAET
La cessation d'activité au sein des couples : y a-t-il interdépendance des choix ?

G2002/04 G. BRILHAULT
- Rétropolation des séries de FBCF et calcul du capital fixe en SEC-95 dans les comptes nationaux français
- Retropolation of the investment series (GFCF) and estimation of fixed capital stocks on the ESA-95 basis for the French balance sheets

G2002/05 P. BISCOURP - B. CRÉPON - T. HECKEL - N. RIEDINGER
How do firms respond to cheaper computers? Microeconometric evidence for France based on a production function approach

G2002/06 C. AUDENIS - J. DEROYON - N. FOURCADE
L'impact des nouvelles technologies de l'information et de la communication sur l'économie française - un bouclage macro-économique

G2002/07 J. BARDAJI - B. SÉDILLOT - E. WALRAET
Évaluation de trois réformes du Régime Général d'assurance vieillesse à l'aide du modèle de microsimulation DESTINIE

G2002/08 J.-P. BERTHIER
Réflexions sur les différentes notions de volume dans les comptes nationaux : comptes aux prix d'une année fixe ou aux prix de l'année précédente, séries chaînées

G2002/09 F. HILD
Les soldes d'opinion résument-ils au mieux les réponses des entreprises aux enquêtes de conjoncture ?

G2002/10 I. ROBERT-BOBÉE
Les comportements démographiques dans le modèle de microsimulation Destinie - Une comparaison des estimations issues des enquêtes Jeunes et Carrières 1997 et Histoire Familiale 1999

G2002/11 J.-P. ZOYEM
La dynamique des bas revenus : une analyse des entrées-sorties de pauvreté

G2002/12 F. HILD
Prévisions d'inflation pour la France

G2002/13 M. LECLAIR
Réduction du temps de travail et tensions sur les facteurs de production

G2002/14 E. WALRAET - A. VINCENT
- Analyse de la redistribution intragénérationnelle dans le système de retraite des salariés du privé - Une approche par microsimulation
- Intragenerational distributional analysis in the french private sector pension scheme - A microsimulation approach

G2002/15 P. CHONE - D. LE BLANC - I. ROBERT-BOBEE
Offre de travail féminine et garde des jeunes enfants

G2002/16 F. MAUREL - S. GREGOIR
Les indices de compétitivité des pays : interprétation et limites

G2003/01 N. RIEDINGER - E.HAUVY
Le coût de dépollution atmosphérique pour les entreprises françaises : Une estimation à partir de données individuelles

G2003/02 P. BISCOURP et F. KRAMARZ
Création d'emplois, destruction d'emplois et internationalisation des entreprises industrielles françaises : une analyse sur la période 1986-1992

G2003/03 Bilan des activités de la DESE - 2002

G2003/04 P.-O. BEFFY - J. DEROYON -
N. FOURCADE - S. GREGOIR - N. LAÏB -
B. MONFORT
Évolutions démographiques et croissance : une projection macro-économique à l'horizon 2020

G2003/05 P. AUBERT
La situation des salariés de plus de cinquante ans dans le secteur privé

G2003/06 P. AUBERT - B. CRÉPON
Age, salaire et productivité
La productivité des salariés décline-t-elle en fin de carrière ?

G2003/07 H. BARON - P.O. BEFFY - N. FOURCADE - R. MAHIEU
Le ralentissement de la productivité du travail au cours des années 1990

G2003/08 P.-O. BEFFY - B. MONFORT
Patrimoine des ménages, dynamique d'allocation et comportement de consommation

G2003/09 P. BISCOURP - N. FOURCADE
Peut-on mettre en évidence l'existence de rigidités à la baisse des salaires à partir de données individuelles ? Le cas de la France à la fin des années 90

G2003/10 M. LECLAIR - P. PETIT
Présence syndicale dans les firmes : quel impact sur les inégalités salariales entre les hommes et les femmes ?

G2003/11 P.-O. BEFFY - X. BONNET - M. DARRACQ-PARIES - B. MONFORT
MZE: a small macro-model for the euro area

G2004/01 P. AUBERT - M. LECLAIR
La compétitivité exprimée dans les enquêtes trimestrielles sur la situation et les perspectives dans l'industrie

G2004/02 M. DUÉE - C. REBILLARD
La dépendance des personnes âgées : une projection à long terme

G2004/03 S. RASPILLER - N. RIEDINGER
Régulation environnementale et choix de localisation des groupes français

G2004/04 A. NABOULET - S. RASPILLER
Les déterminants de la décision d'investir : une approche par les perceptions subjectives des firmes

G2004/05 N. RAGACHE
La déclaration des enfants par les couples non mariés est-elle fiscalement optimale ?

G2004/06 M. DUÉE
L'impact du chômage des parents sur le devenir scolaire des enfants

G2004/07 P. AUBERT - E. CAROLI - M. ROGER
New Technologies, Workplace Organisation and the Age Structure of the Workforce: Firm-Level Evidence

G2004/08 E. DUGUET - C. LELARGE
Les brevets accroissent-ils les incitations privées à innover ? Un examen microéconométrique

G2004/09 S. RASPILLER - P. SILLARD
Affiliating versus Subcontracting:
the Case of Multinationals

G2004/10 J. BOISSINOT - C. L'ANGEVIN - B. MONFORT
Public Debt Sustainability: Some Results on the French Case

G2004/11 S. ANANIAN - P. AUBERT
Travailleurs âgés, nouvelles technologies et changements organisationnels : un réexamen à partir de l'enquête « REPONSE »

G2004/12 X. BONNET - H. PONCET
Structures de revenus et propensions différentes à consommer - Vers une équation de consommation des ménages plus robuste en prévision pour la France

G2004/13 C. PICART
Évaluer la rentabilité des sociétés non financières

G2004/14 J. BARDAJI - B. SÉDILLOT - E. WALRAET
Les retraites du secteur public : projections à l'horizon 2040 à l'aide du modèle de microsimulation DESTINIE

G2005/01 S. BUFFETEAU - P. GODEFROY
Conditions de départ en retraite selon l'âge de fin d'études : analyse prospective pour les générations 1945 à1974

G2005/02 C. AFSA - S. BUFFETEAU
L'évolution de l'activité féminine en France : une approche par pseudo-panel

G2005/03 P. AUBERT - P. SILLARD
Délocalisations et réductions d'effectifs dans l'industrie française

G2005/04 M. LECLAIR - S. ROUX
Mesure et utilisation des emplois instables dans les entreprises

G2005/05 C. L'ANGEVIN - S. SERRAVALLE
Performances à l'exportation de la France et de l'Allemagne - Une analyse par secteur et destination géographique

G2005/06 Bilan des activités de la Direction des Études et Synthèses Économiques - 2004

G2005/07 S. RASPILLER
La concurrence fiscale : principaux enseignements de l'analyse économique

G2005/08 C. L'ANGEVIN - N. LAÏB
Éducation et croissance en France et dans un panel de 21 pays de l'OCDE

G2005/09 N. FERRARI
Prévoir l'investissement des entreprises
Un indicateur des révisions dans l'enquête de conjoncture sur les investissements dans l'industrie.

G2005/10 P.-O. BEFFY - C. L'ANGEVIN
Chômage et boucle prix-salaires :
apport d'un modèle « qualifiés/peu qualifiés »

G2005/11 B. HEITZ
A two-states Markov-switching model of inflation in France and the USA: credible target VS inflation spiral

G2005/12 O. BIAU - H. ERKEL-ROUSSE - N. FERRARI
Réponses individuelles aux enquêtes de conjoncture et prévision macroéconomiques :
Exemple de la prévision de la production manufacturière

G2005/13 P. AUBERT - D. BLANCHET - D. BLAU
The labour market after age 50: some elements of a Franco-American comparison

G2005/14 D. BLANCHET - T. DEBRAND - P. DOURGNON - P. POLLET
L'enquête SHARE : présentation et premiers résultats de l'édition française

G2005/15 M. DUÉE
La modélisation des comportements démographiques dans le modèle de microsimulation DESTINIE

G2005/16 H. RAOUI - S. ROUX
Étude de simulation sur la participation versée aux salariés par les entreprises

G2006/01 C. BONNET - S. BUFFETEAU - P. GODEFROY
Disparités de retraite de droit direct entre hommes et femmes : quelles évolutions ?

G2006/02 C. PICART
Les gazelles en France

G2006/03 P. AUBERT - B. CRÉPON -P. ZAMORA
Le rendement apparent de la formation continue dans les entreprises : effets sur la productivité et les salaires

G2006/04 J.-F. OUVRARD - R. RATHELOT
Demographic change and unemployment:
what do macroeconometric models predict?

G2006/05 D. BLANCHET - J.-F. OUVRARD
Indicateurs d'engagements implicites des systèmes de retraite : chiffrages, propriétés analytiques et réactions à des chocs démographiques types

G2006/06 G. BIAU - O. BIAU - L. ROUVIERE
Nonparametric Forecasting of the Manufacturing Output Growth with Firm-level Survey Data

G2006/07 C. AFSA - P. GIVORD
Le rôle des conditions de travail dans les absences pour maladie

G2006/08 P. SILLARD - C. L'ANGEVIN - S. SERRAVALLE
Performances comparées à l'exportation de la France et de ses principaux partenaires
Une analyse structurelle sur 12 ans

G2006/09 X. BOUTIN - S. QUANTIN
Une méthodologie d'évaluation comptable du coût du capital des entreprises françaises : 1984-2002

G2006/10 C. AFSA
L'estimation d'un coût implicite de la pénibilité du travail chez les travailleurs âgés

G2006/11 C. LELARGE
Les entreprises (industrielles) françaises sont-elles à la frontière technologique ?

G2006/12 O. BIAU - N. FERRARI
Théorie de l'opinion
Faut-il pondérer les réponses individuelles ?

G2006/13 A. KOUBI - S. ROUX
Une réinterprétation de la relation entre productivité et inégalités salariales dans les entreprises

G2006/14 R. RATHELOT - P. SILLARD
The impact of local taxes on plants location decision

G2006/15 L. GONZALEZ - C. PICART
Diversification, recentrage et poids des activités de support dans les groupes (1993-2000)

G2007/01 D. SRAER
Allègements de cotisations patronales et dynamique salariale

G2007/02 V. ALBOUY - L. LEQUIEN
Les rendements non monétaires de l'éducation : le cas de la santé

G2007/03 D. BLANCHET - T. DEBRAND
Aspiration à la retraite, santé et satisfaction au travail : une comparaison européenne

G2007/04 M. BARLET - L. CRUSSON
Quel impact des variations du prix du pétrole sur la croissance française ?

G2007/05 C. PICART
Flux d'emploi et de main-d'œuvre en France : un réexamen

G2007/06 V. ALBOUY - C. TAVAN
Massification et démocratisation de l'enseignement supérieur en France

G2007/07 T. LE BARBANCHON
The Changing response to oil price shocks in France: a DSGE type approach

G2007/08 T. CHANEY - D. SRAER - D. THESMAR
Collateral Value and Corporate Investment
Evidence from the French Real Estate Market

G2007/09 J. BOISSINOT
Consumption over the Life Cycle: Facts for France

G2007/10 C. AFSA
Interpréter les variables de satisfaction : l'exemple de la durée du travail

G2007/11 R. RATHELOT - P. SILLARD
Zones Franches Urbaines : quels effets sur l'emploi salarié et les créations d'établissements ?

G2007/12 V. ALBOUY - B. CRÉPON
Aléa moral en santé : une évaluation dans le cadre du modèle causal de Rubin

G2008/01 C. PICART
Les PME françaises : rentables mais peu dynamiques

G2008/02 P. BISCOURP - X. BOUTIN - T. VERGÉ
The Effects of Retail Regulations on Prices
Evidence form the Loi Galland

G2008/03 Y. BARBESOL - A. BRIANT
Économies d'agglomération et productivité des entreprises : estimation sur données individuelles françaises

G2008/04 D. BLANCHET - F. LE GALLO
Les projections démographiques : principaux mécanismes et retour sur l'expérience française

G2008/05 D. BLANCHET - F. TOUTLEMONDE
Évolutions démographiques et déformation du cycle de vie active : quelles relations ?

G2008/06 M. BARLET - D. BLANCHET - L. CRUSSON
Internationalisation et flux d'emplois : que dit une approche comptable ?

G2008/07 C. LELARGE - D. SRAER - D. THESMAR
Entrepreneurship and Credit Constraints - Evidence from a French Loan Guarantee Program

G2008/08 X. BOUTIN - L. JANIN
Are Prices Really Affected by Mergers?

G2008/09 M. BARLET - A. BRIANT - L. CRUSSON
Concentration géographique dans l'industrie manufacturière et dans les services en France : une approche par un indicateur en continu

G2008/10 M. BEFFY - É. COUDIN - R. RATHELOT
Who is confronted to insecure labor market histories? Some evidence based on the French labor market transition

G2008/11 M. ROGER - E. WALRAET
Social Security and Well-Being of the Elderly: the Case of France

G2008/12 C. AFSA
Analyser les composantes du bien-être et de son évolution
Une approche empirique sur données individuelles

G2008/13 M. BARLET - D. BLANCHET - T. LE BARBANCHON
Microsimuler le marché du travail : un prototype

G2009/01 P.-A. PIONNIER
Le partage de la valeur ajoutée en France, 1949-2007

G2009/02 Laurent CLAVEL - Christelle MINODIER
A Monthly Indicator of the French Business Climate

G2009/03 H. ERKEL-ROUSSE - C. MINODIER
Do Business Tendency Surveys in Industry and Services Help in Forecasting GDP Growth?
A Real-Time Analysis on French Data

G2009/04 P. GIVORD - L. WILNER
Les contrats temporaires : trappe ou marchepied vers l'emploi stable ?

G2009/05 G. LALANNE - P.-A. PIONNIER - O. SIMON
Le partage des fruits de la croissance de 1950 à 2008 : une approche par les comptes de surplus

G2009/06 L. DAVEZIES - X. D'HAULTFOEUILLE
Faut-il pondérer ?… Ou l'éternelle question de l'économètre confronté à des données d'enquête

G2009/07 S. QUANTIN - S. RASPILLER - S. SERRAVALLE
Commerce intragroupe, fiscalité et prix de transferts : une analyse sur données françaises

G2009/08 M. CLERC - V. MARCUS
Élasticités-prix des consommations énergétiques des ménages

G2009/09 G. LALANNE - E. POULIQUEN - O. SIMON
Prix du pétrole et croissance potentielle à long terme

G2009/10 D. BLANCHET - J. LE CACHEUX - V. MARCUS
Adjusted net savings and other approaches to sustainability: some theoretical background

G2009/11 V. BELLAMY - G. CONSALES - M. FESSEAU - S. LE LAIDIER - É. RAYNAUD
Une décomposition du compte des ménages de la comptabilité nationale par catégorie de ménage en 2003

G2009/12 J. BARDAJI - F. TALLET
Detecting Economic Regimes in France: a Qualitative Markov-Switching Indicator Using Mixed Frequency Data

G2009/13 R. AEBERHARDT - D. FOUGÈRE - R. RATHELOT
Discrimination à l'embauche : comment exploiter les procédures de *testing* ?

G2009/14 Y. BARBESOL - P. GIVORD - S. QUANTIN
Partage de la valeur ajoutée, approche par données microéconomiques

G2009/15 I. BUONO - G. LALANNE
The Effect of the Uruguay round on the Intensive and Extensive Margins of Trade

G2010/01 C. MINODIER
Avantages comparés des séries des premières valeurs publiées et des séries des valeurs révisées - Un exercice de prévision en temps réel de la croissance trimestrielle du PIB en France

G2010/02 V. ALBOUY - L. DAVEZIES - T. DEBRAND
Health Expenditure Models: a Comparison of Five Specifications using Panel Data

G2010/03 C. KLEIN - O. SIMON
Le modèle MÉSANGE réestimé en base 2000
Tome 1 – Version avec volumes à prix constants

G2010/04 M.-É. CLERC - É. COUDIN
L'IPC, miroir de l'évolution du coût de la vie en France ? Ce qu'apporte l'analyse des courbes d'Engel

G2010/05 N. CECI-RENAUD - P.-A. CHEVALIER
Les seuils de 10, 20 et 50 salariés : impact sur la taille des entreprises françaises

G2010/06 R. AEBERHARDT - J. POUGET
National Origin Differences in Wages and Hierarchical Positions - Evidence on French Full-Time Male Workers from a matched Employer-Employee Dataset

G2010/07 S. BLASCO - P. GIVORD
Les trajectoires professionnelles en début de vie active : quel impact des contrats temporaires ?

G2010/08 P. GIVORD
Méthodes économétriques pour l'évaluation de politiques publiques

G2010/09 P.-Y. CABANNES - V. LAPÈGUE - E. POULIQUEN - M. BEFFY - M. GAINI
Quelle croissance de moyen terme après la crise ?

G2010/10 I. BUONO - G. LALANNE
La réaction des entreprises françaises à la baisse des tarifs douaniers étrangers

G2010/11 R. RATHELOT - P. SILLARD
L'apport des méthodes à noyaux pour mesurer la concentration géographique - Application à la concentration des immigrés en France de 1968 à 1999

G2010/12 M. BARATON - M. BEFFY - D. FOUGÈRE
Une évaluation de l'effet de la réforme de 2003 sur les départs en retraite - Le cas des enseignants du second degré public

G2010/13 D. BLANCHET - S. BUFFETEAU - E. CRENNER S. LE MINEZ
Le modèle de microsimulation Destinie 2 : principales caractéristiques et premiers résultats

G2010/14 D. BLANCHET - E. CRENNER
Le bloc retraites du modèle Destinie 2 : guide de l'utilisateur

G2010/15 M. BARLET - L. CRUSSON - S. DUPUCH - F. PUECH
Des services échangés aux services échangeables : une application sur données françaises

G2010/16 M. BEFFY - T. KAMIONKA
Public-private wage gaps: is civil-servant human capital sector-specific?

G2010/17 P.-Y. CABANNES - H. ERKEL-ROUSSE - G. LALANNE - O. MONSO - E. POULIQUEN
Le modèle Mésange réestimé en base 2000 Tome 2 - Version avec volumes à prix chaînés

G2010/18 R. AEBERHARDT - L. DAVEZIES
Conditional Logit with one Binary Covariate: Link between the Static and Dynamic Cases

G2011/01 T. LE BARBANCHON - B. OURLIAC - O. SIMON
Les marchés du travail français et américain face aux chocs conjoncturels des années 1986 à 2007 : une modélisation DSGE

G2011/02 C. MARBOT
Une évaluation de la réduction d'impôt pour l'emploi de salariés à domicile

G2011/03 L. DAVEZIES
Modèles à effets fixes, à effets aléatoires, modèles mixtes ou multi-niveaux : propriétés et mises en œuvre des modélisations de l'hétérogénéité dans le cas de données groupées

G2011/04 M. ROGER - M. WASMER
Heterogeneity matters: labour productivity differentiated by age and skills

G2011/05 J.-C. BRICONGNE - J.-M. FOURNIER V. LAPÈGUE - O. MONSO
De la crise financière à la crise économique L'impact des perturbations financières de 2007 et 2008 sur la croissance de sept pays industrialisés

G2011/06 P. CHARNOZ - É. COUDIN - M. GAINI
Wage inequalities in France 1976-2004: a quantile regression analysis

G2011/07 M. CLERC - M. GAINI - D. BLANCHET
Recommendations of the Stiglitz-Sen-Fitoussi Report: A few illustrations

G2011/08 M. BACHELET - M. BEFFY - D. BLANCHET
Projeter l'impact des réformes des retraites sur l'activité des 55 ans et plus : une comparaison de trois modèles

G2011/09 C. LOUVOT-RUNAVOT
L'évaluation de l'activité dissimulée des entreprises sur la base des contrôles fiscaux et son insertion dans les comptes nationaux

G2011/10 A. SCHREIBER - A. VICARD
La tertiarisation de l'économie française et le ralentissement de la productivité entre 1978 et 2008

G2011/11 M.-É. CLERC - O. MONSO - E. POULIQUEN
Les inégalités entre générations depuis le baby-boom

G2011/12 C. MARBOT - D. ROY
Évaluation de la transformation de la réduction d'impôt en crédit d'impôt pour l'emploi de salariés à domicile en 2007

G2011/13 P. GIVORD - R. RATHELOT - P. SILLARD
Place-based tax exemptions and displacement effects: An evaluation of the Zones Franches Urbaines program

G2011/14 X. D'HAULTFOEUILLE - P. GIVORD - X. BOUTIN
The Environmental Effect of Green Taxation: the Case of the French "Bonus/Malus"

G2011/15 M. BARLET - M. CLERC - M. GARNEO - V. LAPÈGUE - V. MARCUS
La nouvelle version du modèle MZE, modèle macroéconométrique pour la zone euro

G2011/16 R. AEBERHARDT - I. BUONO - H. FADINGER
Learning, Incomplete Contracts and Export Dynamics: Theory and Evidence form French Firms

G2011/17 C. KERDRAIN - V. LAPÈGUE
Restrictive Fiscal Policies in Europe: What are the Likely Effects?

G2012/01 P. GIVORD - S. QUANTIN - C. TREVIEN
A Long-Term Evaluation of the First Generation of the French Urban Enterprise Zones

G2012/02 N. CECI-RENAUD - V. COTTET
Politique salariale et performance des entreprises

G2012/03 P. FÉVRIER - L. WILNER
Do Consumers Correctly Expect Price Reductions? Testing Dynamic Behavior

G2012/04 M. GAINI - A. LEDUC - A. VICARD
School as a shelter? School leaving-age and the business cycle in France

G2012/05 M. GAINI - A. LEDUC - A. VICARD
A scarred generation? French evidence on young people entering into a tough labour market

G2012/06 P. AUBERT - M. BACHELET
Disparités de montant de pension et redistribution dans le système de retraite français

G2012/07 R. AEBERHARDT - P GIVORD - C. MARBOT
Spillover Effect of the Minimum Wage in France: An Unconditional Quantile Regression Approach

G2012/08 A. EIDELMAN - F. LANGUMIER - A. VICARD
Prélèvements obligatoires reposant sur les ménages : des canaux redistributifs différents en 1990 et 2010

G2012/09 O. BARGAIN - A. VICARD
Le RMI et son successeur le RSA découragent-ils certains jeunes de travailler ? Une analyse sur les jeunes autour de 25 ans

G2012/10 C. MARBOT - D. ROY
Projections du coût de l'APA et des caractéristiques de ses bénéficiaires à l'horizon 2040 à l'aide du modèle Destinie

G2012/11 A. MAUROUX
Le crédit d'impôt dédié au développement durable : une évaluation économétrique

G2012/12 V. COTTET - S. QUANTIN - V. RÉGNIER
Coût du travail et allègements de charges : une estimation au niveau établissement de 1996 à 2008

G2012/13 X. D'HAULTFOEUILLE - P. FÉVRIER - L. WILNER
Demand Estimation in the Presence of Revenue Management

G2012/14 D. BLANCHET - S. LE MINEZ
Joint macro/micro evaluations of accrued-to-date pension liabilities: an application to French reforms

G2013/01-F1301 T. DEROYON - A. MONTAUT - P-A PIONNIER
Utilisation rétrospective de l'enquête Emploi à une fréquence mensuelle : apport d'une modélisation espace-état

G2013/02-F1302 C. TREVIEN
Habiter en HLM : quel avantage monétaire et quel impact sur les conditions de logement ?

G2013/03 A. POISSONNIER
Temporal disaggregation of stock variables - The Chow-Lin method extended to dynamic models

G2013/04 P. GIVORD - C. MARBOT
Does the cost of child care affect female labor market participation? An evaluation of a French reform of childcare subsidies

G2013/05 G. LAME - M. LEQUIEN - P.-A. PIONNIER
Interpretation and limits of sustainability tests in public finance

G2013/06 C. BELLEGO - V. DORTET-BERNADET
La participation aux pôles de compétitivité : quelle incidence sur les dépenses de R&D et l'activité des PME et ETI ?

G2013/07 P.-Y. CABANNES - A. MONTAUT - P.-A. PIONNIER
Évaluer la productivité globale des facteurs en France : l'apport d'une mesure de la qualité du capital et du travail

G2013/08 R. AEBERHARDT - C. MARBOT
Evolution of Instability on the French Labour Market During the Last Thirty Years

G2013/09 J-B. BERNARD - G. CLÉAUD
Oil price: the nature of the shocks and the impact on the French economy

G2013/10 G. LAME
Was there a « Greenspan Conundrum » in the Euro area?

G2013/11 P. CHONÉ - F. EVAIN - L. WILNER - E. YILMAZ
Introducing activity-based payment in the hospital industry : Evidence from French data

G2013/12 C. GRISLAIN-LETRÉMY
Natural Disasters: Exposure and Underinsurance

G2013/13 P.-Y. CABANNES - V. COTTET - Y. DUBOIS - C. LELARGE - M. SICSIC
French Firms in the Face of the 2008/2009 Crisis

G2013/14 A. POISSONNIER - D. ROY
Households Satellite Account for France in 2010. Methodological issues on the assessment of domestic production

G2013/15 G. CLÉAUD - M. LEMOINE - P.-A. PIONNIER
Which size and evolution of the government expenditure multiplier in France (1980-2010)?

G2014/01 M. BACHELET - A. LEDUC - A. MARINO
Les biographies du modèle Destinie II : rebasage et projection

G2014/02 B. GARBINTI
L'achat de la résidence principale et la création d'entreprises sont-ils favorisés par les donations et héritages ?

G2014/03 N. CECI-RENAUD - P. CHARNOZ - M. GAINI
Évolution de la volatilité des revenus salariaux du secteur privé en France depuis 1968

G2014/04 P. AUBERT
Modalités d'application des réformes des retraites et prévisibilité du montant de pension

G2014/05 C. GRISLAIN-LETRÉMY - A. KATOSSKY
The Impact of Hazardous Industrial Facilities on Housing Prices: A Comparison of Parametric and Semiparametric Hedonic Price Models

G2014//06 J.-M. DAUSSIN-BENICHOU - A. MAUROUX
Turning the heat up. How sensitive are households to fiscal incentives on energy efficiency investments?

G2014/07 C. LABONNE - G. LAMÉ
Credit Growth and Capital Requirements: Binding or Not?

G2014/08 C. GRISLAIN-LETRÉMY et C. TREVIEN
The Impact of Housing Subsidies on the Rental Sector: the French Example

G2014/09 M. LEQUIEN et A. MONTAUT
Croissance potentielle en France et en zone euro : un tour d'horizon des méthodes d'estimation

G2014/10 B. GARBINTI - P. LAMARCHE
Les hauts revenus épargnent-ils davantage ?

G2014/11 D. AUDENAERT - J. BARDAJI - R. LARDEUX - M. ORAND - M. SICSIC
Wage Resilience in France since the Great Recession

G2014/12 F. ARNAUD - J. BOUSSARD - A. POISSONNIER - H. SOUAL
Computing additive contributions to growth and other issues for chain-linked quarterly aggregates

G2014/13 H. FRAISSE - F. KRAMARZ - C. PROST
Labor Disputes and Job Flows

G2014/14 P. GIVORD - C. GRISLAIN-LETRÉMY - H. NAEGELE
How does fuel taxation impact new car purchases? An evaluation using French consumer-level dataset

G2014/15 P. AUBERT - S. RABATÉ
Durée passée en carrière et durée de vie en retraite : quel partage des gains d'espérance de vie ?

G2015/01 A. POISSONNIER
The walking dead Euler equation
Addressing a challenge to monetary policy models

G2015/02 Y. DUBOIS - A. MARINO
Indicateurs de rendement du système de retraite français

G2015/03 T. MAYER - C. TREVIEN
The impacts of Urban Public Transportation: Evidence from the Paris Region

G2015/04 S.T. LY - A. RIEGERT
Measuring Social Environment Mobility

G2015/05 M. A. BEN HALIMA - V. HYAFIL-SOLELHAC M. KOUBI - C. REGAERT
Quel est l'impact du système d'indemnisation maladie sur la durée des arrêts de travail pour maladie ?

G2015/06 Y. DUBOIS - A. MARINO
Disparités de rendement du système de retraite dans le secteur privé : approches intergénéra-tionnelle et intragénérationnelle

G2015/07 B. CAMPAGNE - V. ALHENC-GELAS - J.-B. BERNARD
No evidence of financial accelerator in France

G2015/08 Q. LAFFÉTER - M. PAK
Élasticités des recettes fiscales au cycle économique : étude de trois impôts sur la période 1979-2013 en France

G2015/09 J.-M. DAUSSIN-BENICHOU, S. IDMACHICHE, A. LEDUC et E. POULIQUEN
Les déterminants de l'attractivité de la fonction publique de l'État

G2015/10 P. AUBERT
La modulation du montant de pension selon la durée de carrière et l'âge de la retraite : quelles disparités entre assurés ?

G2015/11 V. DORTET-BERNADET - M. SICSIC
Effet des aides publiques sur l'emploi en R&D dans les petites entreprises

G2015/12 S. GEORGES-KOT
Annual and lifetime incidence of the value-added tax in France

G2015/13 M. POULHÈS
Are Enterprise Zones Benefits Capitalized into Commercial Property Values? The French Case

G2015/14 J.-B. BERNARD - Q. LAFFÉTER
Effet de l'activité et des prix sur le revenu salarial des différentes catégories socioprofessionnelles

G2015/15 C. GEAY - M. KOUBI - G de LAGASNERIE
Projections des dépenses de soins de ville, construction d'un module pour Destinie

G2015/16 J. BARDAJI - J.-C. BRICONGNE - B. CAMPAGNE - G. GAULIER
Compared performances of French companies on the domestic and foreign markets

G2015/17 C. BELLÉGO - R. DE NIJS
The redistributive effect of online piracy on the box office performance of American movies in foreign markets

G2015/18 J.-B. BERNARD - L. BERTHET
French households financial wealth: which changes in 20 years?

G2015/19 M. POULHÈS
Fenêtre sur Cour ou *Chambre avec Vue* ?
Les prix hédoniques de l'immobilier parisien

G2016/01 B. GARBINTI - S. GEORGES-KOT
Time to smell the roses? Risk aversion, the timing of inheritance receipt, and retirement

G2016/02 P. CHARNOZ - C. LELARGE - C. TREVIEN
Communication Costs and the Internal Organization of Multi-Plant Businesses: Evidence from the Impact of the French High-Speed Rail

G2016/03 C. BONNET - B. GARBINTI - A. SOLAZ
Gender Inequality after Divorce: The Flip Side of Marital Specialization - Evidence from a French Administrative Database

G2016/04 D. BLANCHET - E. CAROLI - C. PROST - M. ROGER
Health capacity to work at older ages in France

G2016/05 B. CAMPAGNE - A. POISSONNIER
MELEZE: A DSGE model for France within the Euro Area

G2016/06 B. CAMPAGNE - A. POISSONNIER
Laffer curves and fiscal multipliers: lessons from Mélèze model

G2016/07 B. CAMPAGNE - A. POISSONNIER
Structural reforms in DSGE models: a case for sensitivity analyses

G2016/08 Y. DUBOIS et M. KOUBI
Relèvement de l'âge de départ à la retraite : quel impact sur l'activité des séniors de la réforme des retraites de 2010 ?

G2016/09 A. NAOUAS - M. ORAND - I. SLIMANI HOUTI
Les entreprises employant des salariés au Smic : quelles caractéristiques et quelle rentabilité ?

G2016/10 T. BLANCHET - Y. DUBOIS - A. MARINO - M. ROGER
Patrimoine privé et retraite en France

G2016/11 M. PAK - A. POISSONNIER
Accounting for technology, trade and final consumption in employment: an Input-Output decomposition

G2017/01 D. FOUGÈRE - E. GAUTIER - S. ROUX
Understanding Wage Floor Setting in Industry-Level Agreements: Evidence from France

G2017/02 Y. DUBOIS - M. KOUBI
Règles d'indexation des pensions et sensibilité des dépenses de retraites à la croissance économique et aux chocs démographiques

G2017/03 A. CAZENAVE-LACROUTZ - F. GODET
L'espérance de vie en retraite sans incapacité sévère des générations nées entre 1960 et 1990 : une projection à partir du modèle Destinie

G2017/04 J. BARDAJI - B. CAMPAGNE - M.-B. KHDER - Q. LAFFÉTER - O. SIMON (Insee) A.-S. DUFERNEZ - C. ELEZAAR - P. LEBLANC - E. MASSON - H. PARTOUCHE (DG-Trésor)
Le modèle macroéconométrique Mésange : réestimation et nouveautés

G2017/05 J. BOUSSARD - B. CAMPAGNE
Fiscal Policy Coordination in a Monetary Union at the Zero-Lower-Bound

G2017/06 A. CAZENAVE-LACROUTZ - A. GODZINSKI
Effects of the one-day waiting period for sick leave on health-related absences in the French central civil service

G2017/07 P. CHARNOZ - M. ORAND
Qualification, progrès technique et marchés du travail locaux en France, 1990-2011

G2017/08 K. MILIN
Modélisation de l'inflation en France par une approche macrosectorielle

G2017/09 C.-M. CHEVALIER - R. LARDEUX
Homeownership and labor market outcomes: disentangling externality and composition effects

G2017/10 P. BEAUMONT
Time is Money: Cash-Flow Risk and Export Market Behavior

G2018/01 S. ROUX - F. SAVIGNAC
SMEs' financing: Divergence across Euro area countries?

G2018/02 C.-M. CHEVALIER - A. LUCIANI
Computerization, labor productivity and employment: impacts across industries vary with technological level

G2018/03 R.MONIN - M. SUAREZ CASTILLO
L'effet du CICE sur les prix : une double analyse sur données sectorielles et individuelles

G2018/04 R. LARDEUX
Who Understands The French Income Tax? Bunching Where Tax Liabilities Start

G2018/05 C.-M. CHEVALIER
Financial constraints of innovative firms and sectoral growth

G2018/06 R. S.-H. LEE - M. PAK
Pro-competitive effects of globalisation on prices, productivity and markups: Evidence in the Euro Area

G2018/07 C.-M. CHEVALIER
Consumption inequality in France between 1995 and 2011

G2018/08 A. BAUER - B. GARBINTI - S. GEORGES-KOT
Financial Constraints and Self-Employment in France, 1945-2014

G2018/09 P. BEAUMONT – A. LUCIANI
Prime à l'embauche dans les PME : évaluation à partir des déclarations d'embauche

G2018/10 C BELLÉGO – V. DORTET-BERNADET - M. TÉPAUT
Comparaison de deux dispositifs d'aide à la R&D collaborative public-privé

G2018/11 R. MONIN – M. SUAREZ CASTILLO
Réplication et rapprochement des travaux d'évaluation de l'effet du CICE sur l'emploi en 2013 et 2014

G2018/12 A. CAZENAVE-LACROUTZ - F. GODET – V. LIN
L'introduction d'un gradient social dans la mortalité au sein du modèle Destinie 2

G2019/01 F1901 M. ANDRÉ – A.-L. BIOTTEAU
Effets de moyen terme d'une hausse de TVA sur le niveau de vie et les inégalités : une approche par microsimulation

G2019/02 A. BOURGEOIS – A. BRIAND
Le modèle Avionic : la modélisation Input/Output des comptes nationaux

G2019/03 A. GODZINSKI – M. SUAREZ CASTILLO
Short-term health effects of public transport disruptions: air pollution and viral spread channels

G2019/04 F1903 L. AEBERHARDT - F. HATIER - M. LECLAIR - B. PENTINAT - J.-D. ZAFAR
L'économie numérique fausse-t-elle le partage volume-prix du PIB ?

G2019/05 A. CAZENAVE-LACROUTZ – E. YILMAZ
Dans quelle mesure les incitations tarifaires et la procédure de mise sous accord préalable ont-elles contribué au développement de la chirurgie ambulatoire ?

G2019/06 J.-P. CLING – S. EGHBAL-TEHERANI – M. ORZONI – C. PLATEAU
The Differences between EU Countries for Sustainable Development Indicators:
It is (mainly) the Economy!

G2019/07 P. CHONÉ – L. WILNER
Competition on Unobserved Attributes: The Case of the Hospital Industry

G2019/08 P. PORA – L. WILNER
Child Penalties and Financial Incentives: Exploiting Variation along the Wage Distribution

G2019/09 E. GAUTIER – S. ROUX – M. SUAREZ CASTILLO
Do Minimum Wages make Wages more Rigid ? Evidence from French Micro Data

G2019/10 M. ANDRÉ – A. SIREYJOL
Imposition des couples et des familles : effets budgétaires et redistributifs de l'impôt sur le revenu

G2019/11 K. MOHKAM – O. SIMON
L'empreinte matière de l'économie française : une analyse par matière et catégorie de produits

G2019/12 S. BUNEL – B. HADJIBEYLI
Évaluation du crédit d'impôt innovation

G2019/13 C. BONNET – F. GODET – A. SOLAZ
Gendered economic determinants of couple formation over 50 in France

G2019/14 P. GIVORD – M. SUAREZ CASTILLO
Excellence for all? Heterogeneity in high schools' value-added

G2019/15 G. CETTE – L. KOEHL – T. PHILIPPON
Labor Share in Some Advanced Countries

G2020/01 J. SILHOL – B. VENTELOU
Les zones d'intervention prioritaire reflètent-elles des écarts de pratiques des médecins généralistes ?

G2020/02 B. BOUCHTENIK – R. LARDEUX
The Take-Up of Unemployment Benefit Extensions

G2020/03 J-M. GERMAIN
A Welfare Based Estimate of "Real Feel GDP" for Europe and the USA

G2020/04 J. BOUSSARD – R. LEE
Competition, Profit Share and Concentration

G2020/05 P. PORA
Keep Working and Spend Less?
Collective Childcare and Parental Earnings in France

G2020/06 R. MONIN – M. SUAREZ CASTILLO
Product Switching, market power and distance to core competency

G2020/07 L. WILNER
How do citizens perceive centralization reforms? Evidence from the merger of French regions

G2020/08 L. WILNER
The persistence of subjective well-being: permanent happiness, transitory misery?

G2020/09 J-M. GERMAIN – T. LELLOUCH
Comptabilité économique de la soutenabilité climatique

G2020/10 A. BAUER – M. ROTEMBERG
Tax avoidance in French Firms:
Evidence from the Introduction of a Tax Notch

G2020/11 P. AGHION - A. BERGEAUD
M. LEQUIEN - M. J. MELITZ
The Heterogeneous Impact of Market Size on Innovation: Evidence from French Firm-Level Exports

G2020/12 L. GALIANA – B. SAKAROVITCH
F. SÉMÉCURBE – Z. SMOREDA
Residential segregation, daytime segregation and spatial frictions : an analysis

G2020/13 A. BAUER – J. BOUSSARD
Market Power and Labor Share

G2020/14 A. BAUER – J. BOUSSARD – D. LASHKARI
Information Technology and Returns to Scale

G2020/15 V. LIN – O. MESLIN
Hausse des prix immobiliers et mesure du niveau de vie

G2021/01 N. BECHICHI – G. THEBAULT
Students' Preferences, Capacity Constraints and Post-Secondary Achievements in a Non-Selective System